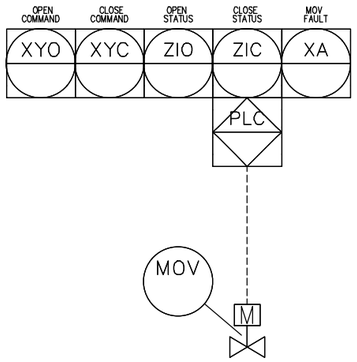
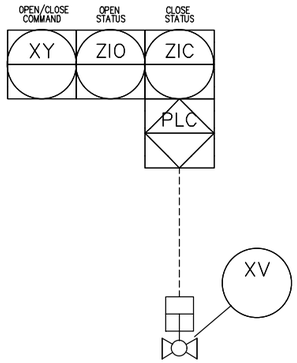
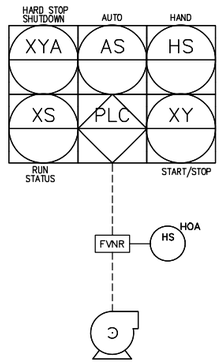
DETAIL 1
ELECTRIC MOV



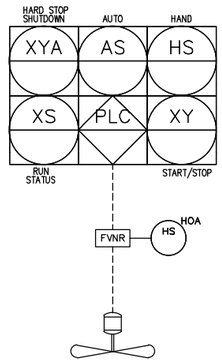
DETAIL 2
PNEUMATIC VALVE



DETAIL 3
TRANSFER PUMP



DETAIL 4
MIXER



NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	DWH	WHA		6/13/24
A	ISSUED FOR APPROVAL, HPF #23329	WRC	WHA		4/24/24

REFERENCE DRAWINGS

DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

CONSULTANTS INC.

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
INSTRUMENT DETAILS
MIDLAND, TEXAS

STANDARD LEGEND

DWG. 01-001 | REV. 0 | SCALE NONE | JOB NO. 23329 | DRAWN BY: WRC | FILE:

LEGEND	
F.O.	
UTP CAT 5	
MODBUS TPC/IP	
MODBUS RTU	

CONTROL ROOM

WORKSTATION CONSOLE FACTORY TALK SE

NETWORK SWITCH 01

RIO-100 RAW AREA

AEN2TR

Network Switch 02

Prosoft PLX-31

LT-036 LT-033 LT-030

LT-016 LT-034 LT-031

120 Ohm LT-037 LT-035 LT-032

PLC-200 BLEND AREA

L33ER

Network Switch 03

Prosoft PLX-31

LT-011 LT-012 LT-013

LT-014 LT-015 120 Ohm

RIO-300 FINISH PRODUCT

AEN2TR

Network Switch 04

Prosoft PLX-31

PANELVIEW

HMI

LT-038 LT-039 LT-040

LT-041 LT-042 LT-043

120 Ohm LT-044 LT-045

Notes

REV	DATE	DRAWN BY	CHECKED BY	DESCRIPTION	PROJECT #	PROJ.ENG.	SIGNATURE
A	5/1/24	JF	AH	ISSUED FOR APPROVAL	23329		

PROJECT DRAWING REVISION

IN CASE OF DEVIATIONS A MARKED UP PRINT SHALL BE SENT TO THE PROJECT ENGINEER

OXY APPROVAL

REV	DATE	APP. BY	DESCRIPTION	PROJECT NUMBER	PROJ.ENG.	SPEC.ENG.

MASTER DRAWING REVISION

NOTES/REFERENCE DRAWING

APPROVAL

OBSIDIAN CHEMICAL MIXING-MIDLAND

SCALE: NTS

CAD DRAWING

0 1 2 3 4 5 6 7

OBSIDIAN CHEMICAL SOLUTIONS

DWG TYPE: INS

DESCRIPTION: NETWORK ARCHITECTURE CONTROL NETWORK ARCHITECTURE

DWG	ASSET	FACILITY CODE	DISC. CODE	SERIAL NUMBER	SHEET NUMBER	REV
23329-50-100					1	1

Obsidian Chemical Solution

PLC IO List

Document No. **23329-50-101**

A	6/6/2024	Issued for Approval (IFA)	JF		
REV	**DATE**	**DESCRIPTION**	**ORIG**	**CHK**	**APPR**
Document No.		**Asset Code** / **Facility Code**	**Discipline Code**	**Serial No.**	**Sheet No.**

Document: IO List
Facility: Obsidian
Date: 06/06/2024
Prepared by: JF Revision: REV A

Obsidian - Chemical Mixing
PLC-200
Blend Area

OBSIDIAN CHEMICAL SOLUTIONS

Device Tag	Description	Type	Rack	Slot	Point	Signal	Scale	Manufacturer	Model	Reference Drawing Number	Installed?	Calib?	FAT Checked?	Loop Check
5069-330ER ALLEN BRADLEY CONTROLLER (LOCAL, SLOT 0) Private IP: 192.168.1.3 // Public IP:														
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 1)														
XA-200_24VDC	PLC 24VDC Power Fail Alarm (Reserved)	DI	LOCAL	1	0	24 VDC		Allen Bradley	5069-IB16					
XA-201_Network	PLC Network Communication Switch Alarm (Reserved)	DI	LOCAL	1	1	24 VDC		Allen Bradley	5069-IB16					
SD-200	Panel Fast Stop Shutdown Push Button	DI	LOCAL	1	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-011A	Blend Tank BT-011 Inbound MOV Valve Open Limit	DI	LOCAL	1	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-011A	Blend Tank BT-011 Inbound MOV Valve Closed Limit	DI	LOCAL	1	4	24 VDC		Allen Bradley	5069-IB16					
XA-011A	Blend Tank BT-011 Inbound MOV Valve Fault Switch	DI	LOCAL	1	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-011B	Blend Tank BT-011 Outbound MOV Valve Open Limit	DI	LOCAL	1	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-011B	Blend Tank BT-011 Outbound MOV Valve Closed Limit	DI	LOCAL	1	7	24 VDC		Allen Bradley	5069-IB16					
XA-011B	Blend Tank BT-011 Outbound MOV Valve Fault Switch	DI	LOCAL	1	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-012A	Blend Tank BT-012 Inbound MOV Valve Open Limit	DI	LOCAL	1	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-012A	Blend Tank BT-012 Inbound MOV Valve Closed Limit	DI	LOCAL	1	10	24 VDC		Allen Bradley	5069-IB16					
XA-012A	Blend Tank BT-012 Inbound MOV Valve Fault Switch	DI	LOCAL	1	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-012B	Blend Tank BT-012 Outbound MOV Valve Open Limit	DI	LOCAL	1	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-012B	Blend Tank BT-012 Outbound MOV Valve Closed Limit	DI	LOCAL	1	13	24 VDC		Allen Bradley	5069-IB16					
XA-012B	Blend Tank BT-012 Outbound MOV Valve Fault Switch	DI	LOCAL	1	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	LOCAL	1	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 2)														
ZIO-013A	Blend Tank BT-013 Inbound MOV Valve Open Limit	DI	LOCAL	2	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-013A	Blend Tank BT-013 Inbound MOV Valve Closed Limit	DI	LOCAL	2	1	24 VDC		Allen Bradley	5069-IB16					
XA-013A	Blend Tank BT-013 Inbound MOV Valve Fault Switch	DI	LOCAL	2	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-013B	Blend Tank BT-013 Outbound MOV Valve Open Limit	DI	LOCAL	2	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-013B	Blend Tank BT-013 Outbound MOV Valve Closed Limit	DI	LOCAL	2	4	24 VDC		Allen Bradley	5069-IB16					
XA-013B	Blend Tank BT-013 Outbound MOV Valve Fault Switch	DI	LOCAL	2	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-013C	P106 / 107 to Blend Tank B9T-013 Outbound MOV Valve Open Limit	DI	LOCAL	2	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-013C	P106 / 107 to Blend Tank B9T-013 Outbound MOV Valve Closed Limit	DI	LOCAL	2	7	24 VDC		Allen Bradley	5069-IB16					
XA-013C	P106 / 107 to Blend Tank B9T-013 Outbound MOV Valve Fault Switch	DI	LOCAL	2	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-014	Blend Tank BT-014 Outbound MOV Valve Open Limit	DI	LOCAL	2	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-014	Blend Tank BT-014 Outbound MOV Valve Closed Limit	DI	LOCAL	2	10	24 VDC		Allen Bradley	5069-IB16					
XA-014	Blend Tank BT-014 Outbound MOV Valve Fault Switch	DI	LOCAL	2	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-015	Blend Tank BT-015 Outbound MOV Valve Open Limit	DI	LOCAL	2	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-015	Blend Tank BT-015 Outbound MOV Valve Closed Limit	DI	LOCAL	2	13	24 VDC		Allen Bradley	5069-IB16					
XA-015	Blend Tank BT-015 Outbound MOV Valve Fault Switch	DI	LOCAL	2	14	24 VDC		Allen Bradley	5069-IB16					
ZIO-201A	Blending Pump P-201 Discharge MOV Valve Open Limit	DI	LOCAL	2	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 3)														
ZIC-201A	Blending Pump P-201 Discharge MOV Valve Closed Limit	DI	LOCAL	3	0	24 VDC		Allen Bradley	5069-IB16					
XA-201A	Blending Pump P-201 Discharge MOV Valve Fault Switch	DI	LOCAL	3	1	24 VDC		Allen Bradley	5069-IB16					
ZIO-201B	Blending Pump P-201 Discharge to Product MOV Valve Open Limit	DI	LOCAL	3	2	24 VDC		Allen Bradley	5069-IB16					
ZIC-201B	Blending Pump P-201 Discharge to Product MOV Valve Closed Limit	DI	LOCAL	3	3	24 VDC		Allen Bradley	5069-IB16					
XA-201B	Blending Pump P-201 Discharge to Product MOV Valve Fault Switch	DI	LOCAL	3	4	24 VDC		Allen Bradley	5069-IB16					
ZIO-201C	Blending Pump P-201 to Blend Tank BT-011 Recirculation MOV Valve Open Limit	DI	LOCAL	3	5	24 VDC		Allen Bradley	5069-IB16					
ZIC-201C	Blending Pump P-201 to Blend Tank BT-011 Recirculation MOV Valve Closed Limit	DI	LOCAL	3	6	24 VDC		Allen Bradley	5069-IB16					
XA-201C	Blending Pump P-201 to Blend Tank BT-011 Recirculation MOV Valve Fault Switch	DI	LOCAL	3	7	24 VDC		Allen Bradley	5069-IB16					
ZIO-201D	Blending Pump P-201 Air Line XV Valve Open Limit	DI	LOCAL	3	8	24 VDC		Allen Bradley	5069-IB16					
ZIC-201D	Blending Pump P-201 Air Line XV Valve Close Limit	DI	LOCAL	3	9	24 VDC		Allen Bradley	5069-IB16					
ZIO-201E	Blending Pump P-201 to Blend Tank BT-011 Outlet to Product MOV Valve Open Limit	DI	LOCAL	3	10	24 VDC		Allen Bradley	5069-IB16					
ZIC-201E	Blending Pump P-201 to Blend Tank BT-011 Outlet to Product MOV Valve Closed Limit	DI	LOCAL	3	11	24 VDC		Allen Bradley	5069-IB16					
XA-201E	Blending Pump P-201 to Blend Tank BT-011 Outlet to Product MOV Valve Fault Switch	DI	LOCAL	3	12	24 VDC		Allen Bradley	5069-IB16					
ZIO-202A	Blending Pump P-202 Discharge MOV Valve Open Limit	DI	LOCAL	3	13	24 VDC		Allen Bradley	5069-IB16					
ZIC-202A	Blending Pump P-202 Discharge MOV Valve Closed Limit	DI	LOCAL	3	14	24 VDC		Allen Bradley	5069-IB16					
XA-202A	Blending Pump P-202 Discharge MOV Valve Fault Switch	DI	LOCAL	3	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 4)														
ZIO-202B	Blending Pump P-202 Discharge to Product MOV Valve Open Limit	DI	LOCAL	4	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-202B	Blending Pump P-202 Discharge to Product MOV Valve Closed Limit	DI	LOCAL	4	1	24 VDC		Allen Bradley	5069-IB16					
XA-202B	Blending Pump P-202 Discharge to Product MOV Valve Fault Switch	DI	LOCAL	4	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-202C	Blending Pump P-202 to Blend Tank BT-012 Recirculation MOV Valve Open Limit	DI	LOCAL	4	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-202C	Blending Pump P-202 to Blend Tank BT-012 Recirculation MOV Valve Closed Limit	DI	LOCAL	4	4	24 VDC		Allen Bradley	5069-IB16					
XA-202C	Blending Pump P-202 to Blend Tank BT-012 Recirculation MOV Valve Fault Switch	DI	LOCAL	4	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-202D	Blending Pump P-202 Air Line XV Valve Open Limit	DI	LOCAL	4	6	24 VDC		Allen Bradley	5069-IB16					

ZIC-202D	Blending Pump P-202 Air Line XV Valve Close Limit	DI	LOCAL	4	7	24 VDC		Allen Bradley	5069-IB16					
ZIO-202E	Blending Pump P-202 Outlet to Product MOV Valve Open Limit	DI	LOCAL	4	8	24 VDC		Allen Bradley	5069-IB16					
ZIC-202E	Blending Pump P-202 Outlet to Product MOV Valve Closed Limit	DI	LOCAL	4	9	24 VDC		Allen Bradley	5069-IB16					
XA-202E	Blending Pump P-202 Outlet to Product MOV Valve Fault Switch	DI	LOCAL	4	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-203A	Blending Pump P-203 Discharge MOV Valve Open Limit	DI	LOCAL	4	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-203A	Blending Pump P-203 Discharge MOV Valve Closed Limit	DI	LOCAL	4	12	24 VDC		Allen Bradley	5069-IB16					
XA-203A	Blending Pump P-203 Discharge MOV Valve Fault Switch	DI	LOCAL	4	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-203B	Blending Pump P-203 Discharge to Product MOV Valve Open Limit	DI	LOCAL	4	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-203B	Blending Pump P-203 Discharge to Product MOV Valve Closed Limit	DI	LOCAL	4	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 5)														
XA-203B	Blending Pump P-203 Discharge to Product MOV Valve Fault Switch	DI	LOCAL	5	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-203C	Blending Pump P-203 to Blend Tank BT-013 Recirculation MOV Valve Open Limit	DI	LOCAL	5	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-203C	Blending Pump P-203 to Blend Tank BT-013 Recirculation MOV Valve Closed Limit	DI	LOCAL	5	2	24 VDC		Allen Bradley	5069-IB16					
XA-203C	Blending Pump P-203 to Blend Tank BT-013 Recirculation MOV Valve Fault Switch	DI	LOCAL	5	3	24 VDC		Allen Bradley	5069-IB16					
ZIO-203D	Blending Pump P-203 Air Line XV Valve Open Limit	DI	LOCAL	5	4	24 VDC		Allen Bradley	5069-IB16					
ZIC-203D	Blending Pump P-203 Air Line XV Valve Close Limit	DI	LOCAL	5	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-204A	Blending Pump P-204 Discharge MOV Valve Open Limit	DI	LOCAL	5	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-204A	Blending Pump P-204 Discharge MOV Valve Closed Limit	DI	LOCAL	5	7	24 VDC		Allen Bradley	5069-IB16					
XA-204A	Blending Pump P-204 Discharge MOV Valve Fault Switch	DI	LOCAL	5	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-204B	Blending Pump P-204 Transfer to BT-011 MOV Valve Open Limit	DI	LOCAL	5	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-204B	Blending Pump P-204 Transfer to BT-011 MOV Valve Closed Limit	DI	LOCAL	5	10	24 VDC		Allen Bradley	5069-IB16					
XA-204B	Blending Pump P-204 Transfer to BT-011 MOV Valve Fault Switch	DI	LOCAL	5	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-205A	Blending Pump P-205 Discharge MOV Valve Open Limit	DI	LOCAL	5	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-205A	Blending Pump P-205 Discharge MOV Valve Closed Limit	DI	LOCAL	5	13	24 VDC		Allen Bradley	5069-IB16					
XA-205A	Blending Pump P-205 Discharge MOV Valve Fault Switch	DI	LOCAL	5	14	24 VDC		Allen Bradley	5069-IB16					
ZIO-200	Additive Header to BT-011 / BT-012 XV Valve Open Limit	DI	LOCAL	5	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 6)														
ZIC-200	Additive Header to BT-011 / BT-012 XV Valve Closed Limit	DI	LOCAL	6	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-205B	Blending Pump P-205 Transfer to BT-012 MOV Valve Open Limit	DI	LOCAL	6	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-205B	Blending Pump P-205 Transfer to BT-012 MOV Valve Closed Limit	DI	LOCAL	6	2	24 VDC		Allen Bradley	5069-IB16					
XA-205B	Blending Pump P-205 Transfer to BT-012 MOV Valve Fault Switch	DI	LOCAL	6	3	24 VDC		Allen Bradley	5069-IB16					
HS-201	Blending Pump P-201 Hand Status	DI	LOCAL	6	4	24 VDC		Allen Bradley	5069-IB16					
AS-201	Blending Pump P-201 Auto Status	DI	LOCAL	6	5	24 VDC		Allen Bradley	5069-IB16					
XI-201	Blending Pump P-201 Run Status	DI	LOCAL	6	6	24 VDC		Allen Bradley	5069-IB16					
HS-202	Blending Pump P-202 Hand Status	DI	LOCAL	6	7	24 VDC		Allen Bradley	5069-IB16					
AS-202	Blending Pump P-202 Auto Status	DI	LOCAL	6	8	24 VDC		Allen Bradley	5069-IB16					
XI-202	Blending Pump P-202 Run Status	DI	LOCAL	6	9	24 VDC		Allen Bradley	5069-IB16					
HS-203	Blending Pump P-203 Hand Status	DI	LOCAL	6	10	24 VDC		Allen Bradley	5069-IB16					
AS-203	Blending Pump P-203 Auto Status	DI	LOCAL	6	11	24 VDC		Allen Bradley	5069-IB16					
XI-203	Blending Pump P-203 Run Status	DI	LOCAL	6	12	24 VDC		Allen Bradley	5069-IB16					
HS-204	Blending Pump P-204 Hand Status	DI	LOCAL	6	13	24 VDC		Allen Bradley	5069-IB16					
AS-204	Blending Pump P-204 Auto Status	DI	LOCAL	6	14	24 VDC		Allen Bradley	5069-IB16					
XI-204	Blending Pump P-204 Run Status	DI	LOCAL	6	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (LOCAL, SLOT 7)														
HS-205	Blending Pump P-205 Hand Status	DI	LOCAL	7	0	24 VDC		Allen Bradley	5069-IB16					
AS-205	Blending Pump P-205 Auto Status	DI	LOCAL	7	1	24 VDC		Allen Bradley	5069-IB16					
XI-205	Blending Pump P-205 Run Status	DI	LOCAL	7	2	24 VDC		Allen Bradley	5069-IB16					
HS-011	Mixer-011 for BT-011 Blending Hand Status	DI	LOCAL	7	3	24 VDC		Allen Bradley	5069-IB16					
AS-011	Mixer-011 for BT-011 Blending Auto Status	DI	LOCAL	7	4	24 VDC		Allen Bradley	5069-IB16					
XI-011	Mixer-011 for BT-011 Blending Run Status	DI	LOCAL	7	5	24 VDC		Allen Bradley	5069-IB16					
HS-012	Mixer-012 for BT-012 Blending Hand Status	DI	LOCAL	7	6	24 VDC		Allen Bradley	5069-IB16					
AS-012	Mixer-012 for BT-012 Blending Auto Status	DI	LOCAL	7	7	24 VDC		Allen Bradley	5069-IB16					
XI-012	Mixer-012 for BT-012 Blending Run Status	DI	LOCAL	7	8	24 VDC		Allen Bradley	5069-IB16					
HS-013	Mixer-013 for BT-012 Blending Hand Status	DI	LOCAL	7	9	24 VDC		Allen Bradley	5069-IB16					
AS-013	Mixer-013 for BT-012 Blending Auto Status	DI	LOCAL	7	10	24 VDC		Allen Bradley	5069-IB16					
XI-013	Mixer-013 for BT-012 Blending Run Status	DI	LOCAL	7	11	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	LOCAL	7	12	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	LOCAL	7	13	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	LOCAL	7	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	LOCAL	7	15	24 VDC		Allen Bradley	5069-IB16					
5069-OB16 DIGITAL OUTPUT MODULE (LOCAL, SLOT 8)														
XYO-011A	Blend Tank BT-011 Inbound MOV Valve Open Command	DO	LOCAL	8	0	24 VDC		Allen Bradley	5069-OB16					
XYC-011A	Blend Tank BT-011 Inbound MOV Valve Close Command	DO	LOCAL	8	1	24 VDC		Allen Bradley	5069-OB16					
XYO-011B	Blend Tank BT-011 Outbound MOV Valve Open Command	DO	LOCAL	8	2	24 VDC		Allen Bradley	5069-OB16					
XYC-011B	Blend Tank BT-011 Outbound MOV Valve Close Command	DO	LOCAL	8	3	24 VDC		Allen Bradley	5069-OB16					
XYO-012A	Blend Tank BT-012 Inbound MOV Valve Open Command	DO	LOCAL	8	4	24 VDC		Allen Bradley	5069-OB16					
XYC-012A	Blend Tank BT-012 Inbound MOV Valve Close Command	DO	LOCAL	8	5	24 VDC		Allen Bradley	5069-OB16					
XYO-013A	Blend Tank BT-013 Inbound MOV Valve Open Command	DO	LOCAL	8	6	24 VDC		Allen Bradley	5069-OB16					
XYC-013A	Blend Tank BT-013 Inbound MOV Valve Close Command	DO	LOCAL	8	7	24 VDC		Allen Bradley	5069-OB16					
XYO-013B	Blend Tank BT-013 Outbound MOV Valve Open Command	DO	LOCAL	8	8	24 VDC		Allen Bradley	5069-OB16					
XYC-013B	Blend Tank BT-013 Outbound MOV Valve Close Command	DO	LOCAL	8	9	24 VDC		Allen Bradley	5069-OB16					
XYO-013C	P106 / 107 to Blend Tank B9T-013 Outbound MOV Valve Open Command	DO	LOCAL	8	10	24 VDC		Allen Bradley	5069-OB16					
XYC-013C	P106 / 107 to Blend Tank B9T-013 Outbound MOV Valve Closed Command	DO	LOCAL	8	11	24 VDC		Allen Bradley	5069-OB16					
XYO-014	Blend Tank BT-014 Outbound MOV Valve Open Command	DO	LOCAL	8	12	24 VDC		Allen Bradley	5069-OB16					
XYC-014	Blend Tank BT-014 Outbound MOV Valve Closed Command	DO	LOCAL	8	13	24 VDC		Allen Bradley	5069-OB16					

XYO-015	Blend Tank BT-015 Outbound MOV Valve Open Command	DO	LOCAL	8	14	24 VDC		Allen Bradley	5069-OB16					
XYC-015	Blend Tank BT-015 Outbound MOV Valve Closed Command	DO	LOCAL	8	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (LOCAL, SLOT 9)														
XYO-201A	Blending Pump P-201 Discharge MOV Valve Open Command	DO	LOCAL	9	0	24 VDC		Allen Bradley	5069-OB16					
XYC-201A	Blending Pump P-201 Discharge MOV Valve Close Command	DO	LOCAL	9	1	24 VDC		Allen Bradley	5069-OB16					
XYO-201B	Blending Pump P-201 Discharge to Product MOV Valve Open Command	DO	LOCAL	9	2	24 VDC		Allen Bradley	5069-OB16					
XYC-201B	Blending Pump P-201 Discharge to Product MOV Valve Close Command	DO	LOCAL	9	3	24 VDC		Allen Bradley	5069-OB16					
XYO-201C	Blending Pump P-201 to Blend Tank BT-011 Recirculation MOV Valve Open Command	DO	LOCAL	9	4	24 VDC		Allen Bradley	5069-OB16					
XYC-201C	Blending Pump P-201 to Blend Tank BT-011 Recirculation MOV Valve Close Command	DO	LOCAL	9	5	24 VDC		Allen Bradley	5069-OB16					
XY-201D	Blending Pump P-201 Air Line XV Valve Open Command	DO	LOCAL	9	6	24 VDC		Allen Bradley	5069-OB16					
XYO-201E	Blending Pump P-201 Outlet to Product XV Valve Open Command	DO	LOCAL	9	7	24 VDC		Allen Bradley	5069-OB16					
XYC-201E	Blending Pump P-201 Outlet to Product MOV Valve Close Command	DO	LOCAL	9	8	24 VDC		Allen Bradley	5069-OB16					
XYO-202A	Blending Pump P-202 Discharge MOV Valve Open Command	DO	LOCAL	9	9	24 VDC		Allen Bradley	5069-OB16					
XYC-202A	Blending Pump P-202 Discharge MOV Valve Close Command	DO	LOCAL	9	10	24 VDC		Allen Bradley	5069-OB16					
XYO-202B	Blending Pump P-202 Discharge to Product MOV Valve Open Command	DO	LOCAL	9	11	24 VDC		Allen Bradley	5069-OB16					
XYC-202B	Blending Pump P-202 Discharge to Product MOV Valve Close Command	DO	LOCAL	9	12	24 VDC		Allen Bradley	5069-OB16					
XYO-202C	Blending Pump P-202 to Blend Tank BT-012 Recirculation MOV Valve Open Command	DO	LOCAL	9	13	24 VDC		Allen Bradley	5069-OB16					
XYC-202C	Blending Pump P-202 to Blend Tank BT-012 Recirculation MOV Valve Close Command	DO	LOCAL	9	14	24 VDC		Allen Bradley	5069-OB16					
XY-202D	Blending Pump P-202 Air Line XV Valve Open Command	DO	LOCAL	9	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (LOCAL, SLOT 10)														
XYO-202E	Blending Pump P-202 Outlet to Product XV Valve Open Command	DO	LOCAL	10	0	24 VDC		Allen Bradley	5069-OB16					
XYC-202E	Blending Pump P-202 Outlet to Product MOV Valve Close Command	DO	LOCAL	10	1	24 VDC		Allen Bradley	5069-OB16					
XYO-203A	Blending Pump P-203 Discharge MOV Valve Open Command	DO	LOCAL	10	2	24 VDC		Allen Bradley	5069-OB16					
XYC-203A	Blending Pump P-203 Discharge MOV Valve Close Command	DO	LOCAL	10	3	24 VDC		Allen Bradley	5069-OB16					
XYO-203B	Blending Pump P-203 Discharge to Product MOV Valve Open Command	DO	LOCAL	10	4	24 VDC		Allen Bradley	5069-OB16					
XYC-203B	Blending Pump P-203 Discharge to Product MOV Valve Close Command	DO	LOCAL	10	5	24 VDC		Allen Bradley	5069-OB16					
XYO-203C	Blending Pump P-203 to Blend Tank BT-013 Recirculation MOV Valve Open Command	DO	LOCAL	10	6	24 VDC		Allen Bradley	5069-OB16					
XYC-203C	Blending Pump P-203 to Blend Tank BT-013 Recirculation MOV Valve Close Command	DO	LOCAL	10	7	24 VDC		Allen Bradley	5069-OB16					
XY-203D	Blending Pump P-203 Air Line XV Valve Open Command	DO	LOCAL	10	8	24 VDC		Allen Bradley	5069-OB16					
XYO-204A	Blending Pump P-204 Discharge MOV Valve Open Command	DO	LOCAL	10	9	24 VDC		Allen Bradley	5069-OB16					
XYC-204A	Blending Pump P-204 Discharge MOV Valve Close Command	DO	LOCAL	10	10	24 VDC		Allen Bradley	5069-OB16					
XYO-204B	Blending Pump P-204 Transfer to BT-011 MOV Valve Open Command	DO	LOCAL	10	11	24 VDC		Allen Bradley	5069-OB16					
XYC-204B	Blending Pump P-204 Transfer to BT-011 MOV Valve Close Command	DO	LOCAL	10	12	24 VDC		Allen Bradley	5069-OB16					
ZIO-205A	Blending Pump P-205 Discharge MOV Valve Open Limit	DO	LOCAL	10	13	24 VDC		Allen Bradley	5069-OB16					
ZIC-205A	Blending Pump P-205 Discharge MOV Valve Closed Limit	DO	LOCAL	10	14	24 VDC		Allen Bradley	5069-OB16					
ZIO-205B	Blending Pump P-205 Transfer to BT-012 MOV Valve Open Limit	DO	LOCAL	10	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (LOCAL, SLOT 11)														
ZIC-205B	Blending Pump P-205 Transfer to BT-012 MOV Valve Closed Limit	DO	LOCAL	11	0	24 VDC		Allen Bradley	5069-OB16					
XY-200	Additive Header to BT-011 / BT-012 XV Valve Open Command	DO	LOCAL	11	1	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	2	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	3	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	4	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	5	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	6	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	7	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	8	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	9	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	10	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	11	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	12	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	13	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	LOCAL	11	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (LOCAL, SLOT 12)														
XY-202	Blending Pump P-202 Air Line XV Valve Open Command	DO	LOCAL	12	0	24 VDC		Allen Bradley	5069-OB16					
XY-203	Blending Pump P-203 Air Line XV Valve Open Command	DO	LOCAL	12	1	24 VDC		Allen Bradley	5069-OB16					
XY-201	Blend Pump P-201 Run Command	DO	LOCAL	12	2	24 VDC		Allen Bradley	5069-OB16					
XYA-201	Blend Pump P-201 Hard Stop	DO	LOCAL	12	3	24 VDC		Allen Bradley	5069-OB16					
XY-202	Blend Pump P-202 Run Command	DO	LOCAL	12	4	24 VDC		Allen Bradley	5069-OB16					
XYA-202	Blend Pump P-202 Hard Stop	DO	LOCAL	12	5	24 VDC		Allen Bradley	5069-OB16					
XY-203	Blend Pump P-203 Command	DO	LOCAL	12	6	24 VDC		Allen Bradley	5069-OB16					
XYA-203	Blend Pump P-203 Hard Stop	DO	LOCAL	12	7	24 VDC		Allen Bradley	5069-OB16					
XY-204	Blend Pump P-204 Run Command	DO	LOCAL	12	8	24 VDC		Allen Bradley	5069-OB16					
XYA-204	Blend Pump P-204 Hard Stop	DO	LOCAL	12	9	24 VDC		Allen Bradley	5069-OB16					
XY-205	Blend Pump P-205 Run Command	DO	LOCAL	12	10	24 VDC		Allen Bradley	5069-OB16					
XYA-205	Blend Pump P-205 Hard Stop	DO	LOCAL	12	11	24 VDC		Allen Bradley	5069-OB16					
XY-011	Blend Tank BT-011 Mixer Run Command	DO	LOCAL	12	12	24 VDC		Allen Bradley	5069-OB16					
XYA-011	Blend Tank BT-011 Mixer Hard Stop	DO	LOCAL	12	13	24 VDC		Allen Bradley	5069-OB16					
XY-012	Blend Tank BT-012 Mixer Run Command	DO	LOCAL	12	14	24 VDC		Allen Bradley	5069-OB16					
XYA-012	Blend Tank BT-012 Mixer Hard Stop	DO	LOCAL	12	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (LOCAL, SLOT 13)														
XY-202	Blending Pump P-202 Air Line XV Valve Open Command	DO	LOCAL	13	0	24 VDC		Allen Bradley	5069-OB16					
XY-203	Blending Pump P-203 Air Line XV Valve Open Command	DO	LOCAL	13	1	24 VDC		Allen Bradley	5069-OB16					
XY-201	Blend Pump P-201 Run Command	DO	LOCAL	13	2	24 VDC		Allen Bradley	5069-OB16					
XYA-201	Blend Pump P-201 Hard Stop	DO	LOCAL	13	3	24 VDC		Allen Bradley	5069-OB16					

XY-202	Blend Pump P-202 Run Command	DO	LOCAL	13	4	24 VDC		Allen Bradley	5069-OB16					
XYA-202	Blend Pump P-202 Hard Stop	DO	LOCAL	13	5	24 VDC		Allen Bradley	5069-OB16					
XY-203	Blend Pump P-203 Command	DO	LOCAL	13	6	24 VDC		Allen Bradley	5069-OB16					
XYA-203	Blend Pump P-203 Hard Stop	DO	LOCAL	13	7	24 VDC		Allen Bradley	5069-OB16					
XY-204	Blend Pump P-204 Run Command	DO	LOCAL	13	8	24 VDC		Allen Bradley	5069-OB16					
XYA-204	Blend Pump P-204 Hard Stop	DO	LOCAL	13	9	24 VDC		Allen Bradley	5069-OB16					
XY-205	Blend Pump P-205 Run Command	DO	LOCAL	13	10	24 VDC		Allen Bradley	5069-OB16					
XYA-205	Blend Pump P-205 Hard Stop	DO	LOCAL	13	11	24 VDC		Allen Bradley	5069-OB16					
XY-011	Blend Tank BT-011 Mixer Run Command	DO	LOCAL	13	12	24 VDC		Allen Bradley	5069-OB16					
XYA-011	Blend Tank BT-011 Mixer Hard Stop	DO	LOCAL	13	13	24 VDC		Allen Bradley	5069-OB16					
XY-012	Blend Tank BT-012 Mixer Run Command	DO	LOCAL	13	14	24 VDC		Allen Bradley	5069-OB16					
XYA-012	Blend Tank BT-012 Mixer Hard Stop	DO	LOCAL	13	15	24 VDC		Allen Bradley	5069-OB16					
5069-IF8 ANALOG INPUT MODULE (LOCAL, SLOT 14)														
PT-201A	Blend Pump P-201 Discharge Filter U/s Pressure	AI	LOCAL	14	0	4-20 mA		Allen Bradley	5069-IF8					
PT-201B	Blend Pump P-201 Discharge Filter D/s Pressure	AI	LOCAL	14	1	4-20 mA		Allen Bradley	5069-IF8					
PT-202A	Blend Pump P-202 Discharge Filter U/s Pressure	AI	LOCAL	14	2	4-20 mA		Allen Bradley	5069-IF8					
PT-202B	Blend Pump P-202 Discharge Filter D/s Pressure	AI	LOCAL	14	3	4-20 mA		Allen Bradley	5069-IF8					
PT-203A	Blend Pump P-203 Discharge Filter U/s Pressure	AI	LOCAL	14	4	4-20 mA		Allen Bradley	5069-IF8					
PT-203B	Blend Pump P-203 Discharge Filter D/s Pressure	AI	LOCAL	14	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	14	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	14	7	4-20 mA		Allen Bradley	5069-IF8					
5069-IF8 ANALOG INPUT MODULE (LOCAL, SLOT 15)														
WT-2011	Blend Tank BT-011 Load Cell Weight Transmitter	AI	LOCAL	15	0	4-20 mA		Allen Bradley	5069-IF8					
WT-2012	Blend Tank BT-012 Load Cell Weight Transmitter	AI	LOCAL	15	1	4-20 mA		Allen Bradley	5069-IF8					
WT-2013	Blend Tank BT-013 Load Cell Weight Transmitter	AI	LOCAL	15	2	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	15	3	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	15	4	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	15	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	15	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	LOCAL	15	7	4-20 mA		Allen Bradley	5069-IF8					

	Document: IO List Facility: Obsidian Date: 06/06/2024 Prepared by: JF Revision: REV A	**Obsidian - Chemical Mixing RIO-100 Raw Area**												

Device Tag	Description	Type	Rack	Slot	Point	Signal	Scale	Manufacturer	Model	Reference Drawing Number	Installed?	Calib?	FAT Checked?	Loop Check
5069-330ER ALLEN BRADLEY CONTROLLER (RIO-100, SLOT 0) Private IP: 192.168.1.3 // Public IP:														
5069-AENTR ALLEN BRADLEY CONTROLLER (Main CP RIO 100, SLOT 0) IP:192.168.1.10 Public:														
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 1)														
XA-100_24VDC	PLC 24VDC Power Fail Alarm (Reserved)	DI	RIO-100	1	0	24 VDC		Allen Bradley	5069-IB16					
XA-101_Network	PLC Network Communication Switch Alarm (Reserved)	DI	RIO-100	1	1	24 VDC		Allen Bradley	5069-IB16					
SD-100	Panel Fast Stop Shutdown Push Button	DI	RIO-100	1	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-030A	Raw Tank UT-030 Inbound MOV Valve Open Limit	DI	RIO-100	1	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-030A	Raw Tank UT-030 Inbound MOV Valve Close Limit	DI	RIO-100	1	4	24 VDC		Allen Bradley	5069-IB16					
XA-030A	Raw Tank UT-030 Inbound MOV Valve Fault Switch	DI	RIO-100	1	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-030B	Raw Tank UT-030 Outbound MOV Valve Open Limit	DI	RIO-100	1	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-030B	Raw Tank UT-030 Outbound MOV Valve Close Limit	DI	RIO-100	1	7	24 VDC		Allen Bradley	5069-IB16					
XA-030B	Raw Tank UT-030 Outbound MOV Valve Fault Switch	DI	RIO-100	1	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-030	Raw Tank UT-030 Air Line XV Valve Open Limit	DI	RIO-100	1	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-030	Raw Tank UT-030 Air Line XV Valve Close Limit	DI	RIO-100	1	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-031A	Raw Tank UT-031 Inbound MOV Valve Open Limit	DI	RIO-100	1	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-031A	Raw Tank UT-031 Inbound MOV Valve Close Limit	DI	RIO-100	1	12	24 VDC		Allen Bradley	5069-IB16					
XA-031A	Raw Tank UT-031 Inbound MOV Valve Fault Switch	DI	RIO-100	1	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-031B	Raw Tank UT-031 Outbound MOV Valve Open Limit	DI	RIO-100	1	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-031B	Raw Tank UT-031 Outbound MOV Valve Close Limit	DI	RIO-100	1	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 2)														
XA-031B	Raw Tank UT-031 Outbound MOV Valve Fault Switch	DI	RIO-100	2	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-031	Raw Tank UT-031 Air Line XV Valve Open Limit	DI	RIO-100	2	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-031	Raw Tank UT-031 Air Line XV Valve Close Limit	DI	RIO-100	2	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-032A	Raw Tank UT-032 Inbound MOV Valve Open Limit	DI	RIO-100	2	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-032A	Raw Tank UT-032 Inbound MOV Valve Close Limit	DI	RIO-100	2	4	24 VDC		Allen Bradley	5069-IB16					
XA-032A	Raw Tank UT-032 Inbound MOV Valve Fault Switch	DI	RIO-100	2	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-032B	Raw Tank UT-032 Outbound MOV Valve Open Limit	DI	RIO-100	2	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-032B	Raw Tank UT-032 Outbound MOV Valve Close Limit	DI	RIO-100	2	7	24 VDC		Allen Bradley	5069-IB16					
XA-032B	Raw Tank UT-032 Outbound MOV Valve Fault Switch	DI	RIO-100	2	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-032	Raw Tank UT-032 Air Line XV Valve Open Limit	DI	RIO-100	2	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-032	Raw Tank UT-032 Air Line XV Valve Close Limit	DI	RIO-100	2	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-033A	Raw Tank UT-033 Inbound MOV Valve Open Limit	DI	RIO-100	2	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-033A	Raw Tank UT-033 Inbound MOV Valve Close Limit	DI	RIO-100	2	12	24 VDC		Allen Bradley	5069-IB16					
XA-033A	Raw Tank UT-033 Inbound MOV Valve Fault Switch	DI	RIO-100	2	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-033B	Raw Tank UT-033 Outbound MOV Valve Open Limit	DI	RIO-100	2	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-033B	Raw Tank UT-033 Outbound MOV Valve Close Limit	DI	RIO-100	2	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 3)														
XA-033B	Raw Tank UT-033 Outbound MOV Valve Fault Switch	DI	RIO-100	3	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-033	Raw Tank UT-033 Air Line XV Valve Open Limit	DI	RIO-100	3	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-033	Raw Tank UT-033 Air Line XV Valve Close Limit	DI	RIO-100	3	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-034A	Raw Tank UT-034 Inbound MOV Valve Open Limit	DI	RIO-100	3	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-034A	Raw Tank UT-034 Inbound MOV Valve Close Limit	DI	RIO-100	3	4	24 VDC		Allen Bradley	5069-IB16					
XA-034A	Raw Tank UT-034 Inbound MOV Valve Fault Switch	DI	RIO-100	3	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-034B	Raw Tank UT-034 Outbound MOV Valve Open Limit	DI	RIO-100	3	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-034B	Raw Tank UT-034 Outbound MOV Valve Close Limit	DI	RIO-100	3	7	24 VDC		Allen Bradley	5069-IB16					
XA-034B	Raw Tank UT-034 Outbound MOV Valve Fault Switch	DI	RIO-100	3	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-034	Raw Tank UT-034 Air Line XV Valve Open Limit	DI	RIO-100	3	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-034	Raw Tank UT-034 Air Line XV Valve Close Limit	DI	RIO-100	3	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-035A	Raw Tank UT-035 Inbound MOV Valve Open Limit	DI	RIO-100	3	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-035A	Raw Tank UT-035 Inbound MOV Valve Close Limit	DI	RIO-100	3	12	24 VDC		Allen Bradley	5069-IB16					
XA-035A	Raw Tank UT-035 Inbound MOV Valve Fault Switch	DI	RIO-100	3	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-035B	Raw Tank UT-035 Outbound MOV Valve Open Limit	DI	RIO-100	3	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-035B	Raw Tank UT-035 Outbound MOV Valve Close Limit	DI	RIO-100	3	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 4)														
XA-035B	Raw Tank UT-035 Outbound MOV Valve Fault Switch	DI	RIO-100	4	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-035	Raw Tank UT-035 Air Line XV Valve Open Limit	DI	RIO-100	4	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-035	Raw Tank UT-035 Air Line XV Valve Close Limit	DI	RIO-100	4	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-036A	Raw Tank UT-036 Inbound MOV Valve Open Limit	DI	RIO-100	4	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-036A	Raw Tank UT-036 Inbound MOV Valve Close Limit	DI	RIO-100	4	4	24 VDC		Allen Bradley	5069-IB16					
XA-036A	Raw Tank UT-036 Inbound MOV Valve Fault Switch	DI	RIO-100	4	5	24 VDC		Allen Bradley	5069-IB16					

ZIO-036B	Raw Tank UT-036 Outbound MOV Valve Open Limit	DI	RIO-100	4	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-036B	Raw Tank UT-036 Outbound MOV Valve Close Limit	DI	RIO-100	4	7	24 VDC		Allen Bradley	5069-IB16					
XA-036B	Raw Tank UT-036 Outbound MOV Valve Fault Switch	DI	RIO-100	4	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-036	Raw Tank UT-036 Air Line XV Valve Open Limit	DI	RIO-100	4	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-036	Raw Tank UT-036 Air Line XV Valve Close Limit	DI	RIO-100	4	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-037A	Raw Tank UT-037 Inbound MOV Valve Open Limit	DI	RIO-100	4	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-037A	Raw Tank UT-037 Inbound MOV Valve Close Limit	DI	RIO-100	4	12	24 VDC		Allen Bradley	5069-IB16					
XA-037A	Raw Tank UT-037 Inbound MOV Valve Fault Switch	DI	RIO-100	4	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-037B	Raw Tank UT-037 Outbound MOV Valve Open Limit	DI	RIO-100	4	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-037B	Raw Tank UT-037 Outbound MOV Valve Close Limit	DI	RIO-100	4	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 5)														
XA-037B	Raw Tank UT-037 Outbound MOV Valve Fault Switch	DI	RIO-100	5	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-037	Raw Tank UT-037 Air Line XV Valve Open Limit	DI	RIO-100	5	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-037	Raw Tank UT-037 Air Line XV Valve Close Limit	DI	RIO-100	5	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-100A	Common Header UT-031 / 034 MOV Valve Open Limit	DI	RIO-100	5	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-100A	Common Header UT-031 / 034 MOV Valve Close Limit	DI	RIO-100	5	4	24 VDC		Allen Bradley	5069-IB16					
XA-100A	Common Header UT-031 / 034 MOV Valve Fault Switch	DI	RIO-100	5	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-100B	Common Header UT-035 / 037 MOV Valve Open Limit	DI	RIO-100	5	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-100B	Common Header UT-035 / 037 MOV Valve Close Limit	DI	RIO-100	5	7	24 VDC		Allen Bradley	5069-IB16					
XA-100B	Common Header UT-035 / 037 MOV Valve Fault Switch	DI	RIO-100	5	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-016	Water Tank UT-016 Outbound MOV Valve Open Limit	DI	RIO-100	5	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-016	Water Tank UT-016 Outbound MOV Valve Close Limit	DI	RIO-100	5	10	24 VDC		Allen Bradley	5069-IB16					
XA-016	Water Tank UT-016 Outbound MOV Valve Fault Switch	DI	RIO-100	5	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-105A	Raw Pump P-105 Transfer to Blending Suction MOV Valve Open Limit	DI	RIO-100	5	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-105A	Raw Pump P-105 Transfer to Blending Suction MOV Valve Close Limit	DI	RIO-100	5	13	24 VDC		Allen Bradley	5069-IB16					
XA-105A	Raw Pump P-105 Transfer to Blending Suction MOV Valve Fault Switch	DI	RIO-100	5	14	24 VDC		Allen Bradley	5069-IB16					
ZIO-105B	Raw Pump P-105 Transfer to Blending Discharge XV Valve Open Limit	DI	RIO-100	5	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 6)														
ZIC-105B	Raw Pump P-105 Transfer to Blending Discharge XV Valve Close Limit	DI	RIO-100	6	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-105C	Raw Pump P-105 Pnuematic XV Valve Open Limit	DI	RIO-100	6	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-105C	Raw Pump P-105 Pnuematic XV Valve Close Limit	DI	RIO-100	6	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-106A	Raw Pump P-106 Transfer to Blending Suction MOV Valve Open Limit	DI	RIO-100	6	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-106A	Raw Pump P-106 Transfer to Blending Suction MOV Valve Close Limit	DI	RIO-100	6	4	24 VDC		Allen Bradley	5069-IB16					
XA-106A	Raw Pump P-106 Transfer to Blending Suction MOV Valve Fault Switch	DI	RIO-100	6	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-106B	Raw Pump P-106 Transfer to Blending Discharge XV Valve Open Limit	DI	RIO-100	6	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-106B	Raw Pump P-106 Transfer to Blending Discharge XV Valve Close Limit	DI	RIO-100	6	7	24 VDC		Allen Bradley	5069-IB16					
ZIO-106C	Raw Pump P-106 Pnuematic XV Valve Open Limit	DI	RIO-100	6	8	24 VDC		Allen Bradley	5069-IB16					
ZIC-106C	Raw Pump P-106 Pnuematic XV Valve Close Limit	DI	RIO-100	6	9	24 VDC		Allen Bradley	5069-IB16					
ZIO-107A	Raw Pump P-107 Transfer to Blending Suction MOV Valve Open Limit	DI	RIO-100	6	10	24 VDC		Allen Bradley	5069-IB16					
ZIC-107A	Raw Pump P-107 Transfer to Blending Suction MOV Valve Close Limit	DI	RIO-100	6	11	24 VDC		Allen Bradley	5069-IB16					
XA-107A	Raw Pump P-107 Transfer to Blending Suction MOV Valve Fault Switch	DI	RIO-100	6	12	24 VDC		Allen Bradley	5069-IB16					
ZIO-107B	Raw Pump P-107 Transfer to Blending Discharge XV Valve Open Limit	DI	RIO-100	6	13	24 VDC		Allen Bradley	5069-IB16					
ZIC-107B	Raw Pump P-107 Transfer to Blending Discharge XV Valve Close Limit	DI	RIO-100	6	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	6	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 7)														
ZIC-107C	Raw Pump P-107 Pnuematic XV Valve Close Limit	DI	RIO-100	7	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-107C	Raw Pump P-107 Pnuematic XV Valve Close Limit	DI	RIO-100	7	1	24 VDC		Allen Bradley	5069-IB16					
HS-101	Truck Loading Pump P-101 Hand Status	DI	RIO-100	7	2	24 VDC		Allen Bradley	5069-IB16					
AS-101	Truck Loading Pump P-101 Auto Status	DI	RIO-100	7	3	24 VDC		Allen Bradley	5069-IB16					
XI-101	Truck Loading Pump P-101 Run Status	DI	RIO-100	7	4	24 VDC		Allen Bradley	5069-IB16					
HS-102	Truck Loading Pump P-102 Hand Status	DI	RIO-100	7	5	24 VDC		Allen Bradley	5069-IB16					
AS-102	Truck Loading Pump P-102 Auto Status	DI	RIO-100	7	6	24 VDC		Allen Bradley	5069-IB16					
XI-102	Truck Loading Pump P-102 Run Status	DI	RIO-100	7	7	24 VDC		Allen Bradley	5069-IB16					
HS-103	Truck Loading Pump P-103 Hand Status	DI	RIO-100	7	8	24 VDC		Allen Bradley	5069-IB16					
AS-103	Truck Loading Pump P-103 Auto Status	DI	RIO-100	7	9	24 VDC		Allen Bradley	5069-IB16					
XI-103	Truck Loading Pump P-103 Run Status	DI	RIO-100	7	10	24 VDC		Allen Bradley	5069-IB16					
HS-104	Truck Loading Pump P-104 Hand Status	DI	RIO-100	7	11	24 VDC		Allen Bradley	5069-IB16					
AS-104	Truck Loading Pump P-104 Auto Status	DI	RIO-100	7	12	24 VDC		Allen Bradley	5069-IB16					
XI-104	Truck Loading Pump P-104 Run Status	DI	RIO-100	7	13	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	7	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	7	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-100, SLOT 8)														
HS-105	Raw to Blend Pump P-105 Hand Status	DI	RIO-100	8	0	24 VDC		Allen Bradley	5069-IB16					
AS-105	Raw to Blend Pump P-105 Auto Status	DI	RIO-100	8	1	24 VDC		Allen Bradley	5069-IB16					
XI-105	Raw to Blend Pump P-105 Run Status	DI	RIO-100	8	2	24 VDC		Allen Bradley	5069-IB16					
HS-106	Raw to Blend Pump P-106 Hand Status	DI	RIO-100	8	3	24 VDC		Allen Bradley	5069-IB16					
AS-106	Raw to Blend Pump P-106 Auto Status	DI	RIO-100	8	4	24 VDC		Allen Bradley	5069-IB16					
XI-106	Raw to Blend Pump P-106 Run Status	DI	RIO-100	8	5	24 VDC		Allen Bradley	5069-IB16					
HS-107	Raw to Blend Pump P-107 Hand Status	DI	RIO-100	8	6	24 VDC		Allen Bradley	5069-IB16					
AS-107	Raw to Blend Pump P-107 Auto Status	DI	RIO-100	8	7	24 VDC		Allen Bradley	5069-IB16					
XI-107	Raw to Blend Pump P-107 Run Status	DI	RIO-100	8	8	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	8	9	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	8	10	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	8	11	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	8	12	24 VDC		Allen Bradley	5069-IB16					

	Spare	DI	RIO-100	8	13	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	8	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-100	8	15	24 VDC		Allen Bradley	5069-IB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-100, SLOT 9)														
XYO-030A	Raw Tank UT-030 Inbound MOV Valve Open Command	DO	RIO-100	9	0	24 VDC		Allen Bradley	5069-OB16					
XYC-030A	Raw Tank UT-030 Inbound MOV Valve Close Command	DO	RIO-100	9	1	24 VDC		Allen Bradley	5069-OB16					
XYO-030B	Raw Tank UT-030 Outbound MOV Valve Open Command	DO	RIO-100	9	2	24 VDC		Allen Bradley	5069-OB16					
XYC-030B	Raw Tank UT-030 Outbound MOV Valve Close Command	DO	RIO-100	9	3	24 VDC		Allen Bradley	5069-OB16					
XY-030	Raw Tank UT-030 Air Line XV Open Command	DO	RIO-100	9	4	24 VDC		Allen Bradley	5069-OB16					
XYO-031A	Raw Tank UT-031 Inbound MOV Valve Open Command	DO	RIO-100	9	5	24 VDC		Allen Bradley	5069-OB16					
XYC-031A	Raw Tank UT-031 Inbound MOV Valve Close Command	DO	RIO-100	9	6	24 VDC		Allen Bradley	5069-OB16					
XYO-031B	Raw Tank UT-031 Outbound MOV Valve Open Command	DO	RIO-100	9	7	24 VDC		Allen Bradley	5069-OB16					
XYC-031B	Raw Tank UT-031 Outbound MOV Valve Close Command	DO	RIO-100	9	8	24 VDC		Allen Bradley	5069-OB16					
XY-031	Raw Tank UT-031 Air Line XV Open Command	DO	RIO-100	9	9	24 VDC		Allen Bradley	5069-OB16					
XYO-032A	Raw Tank UT-032 Inbound MOV Valve Open Command	DO	RIO-100	9	10	24 VDC		Allen Bradley	5069-OB16					
XYC-032A	Raw Tank UT-032 Inbound MOV Valve Close Command	DO	RIO-100	9	11	24 VDC		Allen Bradley	5069-OB16					
XYO-032B	Raw Tank UT-032 Outbound MOV Valve Open Command	DO	RIO-100	9	12	24 VDC		Allen Bradley	5069-OB16					
XYC-032B	Raw Tank UT-032 Outbound MOV Valve Close Command	DO	RIO-100	9	13	24 VDC		Allen Bradley	5069-OB16					
XY-032	Raw Tank UT-032 Air Line XV Open Command	DO	RIO-100	9	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	9	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-100, SLOT 10)														
XYO-033A	Raw Tank UT-033 Inbound MOV Valve Open Command	DO	RIO-100	10	0	24 VDC		Allen Bradley	5069-OB16					
XYC-033A	Raw Tank UT-033 Inbound MOV Valve Close Command	DO	RIO-100	10	1	24 VDC		Allen Bradley	5069-OB16					
XYO-033B	Raw Tank UT-033 Outbound MOV Valve Open Command	DO	RIO-100	10	2	24 VDC		Allen Bradley	5069-OB16					
XYC-033B	Raw Tank UT-033 Outbound MOV Valve Close Command	DO	RIO-100	10	3	24 VDC		Allen Bradley	5069-OB16					
XY-033	Raw Tank UT-033 Air Line XV Open Command	DO	RIO-100	10	4	24 VDC		Allen Bradley	5069-OB16					
XYO-034A	Raw Tank UT-034 Inbound MOV Valve Open Command	DO	RIO-100	10	5	24 VDC		Allen Bradley	5069-OB16					
XYC-034A	Raw Tank UT-034 Inbound MOV Valve Close Command	DO	RIO-100	10	6	24 VDC		Allen Bradley	5069-OB16					
XYO-034B	Raw Tank UT-034 Outbound MOV Valve Open Command	DO	RIO-100	10	7	24 VDC		Allen Bradley	5069-OB16					
XYC-034B	Raw Tank UT-034 Outbound MOV Valve Close Command	DO	RIO-100	10	8	24 VDC		Allen Bradley	5069-OB16					
XY-034	Raw Tank UT-034 Air Line XV Open Command	DO	RIO-100	10	9	24 VDC		Allen Bradley	5069-OB16					
XYO-035A	Raw Tank UT-035 Inbound MOV Valve Open Command	DO	RIO-100	10	10	24 VDC		Allen Bradley	5069-OB16					
XYC-035A	Raw Tank UT-035 Inbound MOV Valve Close Command	DO	RIO-100	10	11	24 VDC		Allen Bradley	5069-OB16					
XYO-035B	Raw Tank UT-035 Outbound MOV Valve Open Command	DO	RIO-100	10	12	24 VDC		Allen Bradley	5069-OB16					
XYC-035B	Raw Tank UT-035 Outbound MOV Valve Close Command	DO	RIO-100	10	13	24 VDC		Allen Bradley	5069-OB16					
XY-035	Raw Tank UT-035 Air Line XV Open Command	DO	RIO-100	10	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	10	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-100, SLOT 11)														
XYO-036A	Raw Tank UT-036 Inbound MOV Valve Open Command	DO	RIO-100	11	0	24 VDC		Allen Bradley	5069-OB16					
ZIC-036A	Raw Tank UT-036 Inbound MOV Valve Close Command	DO	RIO-100	11	1	24 VDC		Allen Bradley	5069-OB16					
XYO-036B	Raw Tank UT-036 Outbound MOV Valve Open Command	DO	RIO-100	11	2	24 VDC		Allen Bradley	5069-OB16					
XYC-036B	Raw Tank UT-036 Outbound MOV Valve Close Command	DO	RIO-100	11	3	24 VDC		Allen Bradley	5069-OB16					
XY-036	Raw Tank UT-036 Air Line XV Open Command	DO	RIO-100	11	4	24 VDC		Allen Bradley	5069-OB16					
XYO-037A	Raw Tank UT-037 Inbound MOV Valve Open Command	DO	RIO-100	11	5	24 VDC		Allen Bradley	5069-OB16					
ZIC-037A	Raw Tank UT-037 Inbound MOV Valve Close Command	DO	RIO-100	11	6	24 VDC		Allen Bradley	5069-OB16					
XYO-037B	Raw Tank UT-037 Outbound MOV Valve Open Command	DO	RIO-100	11	7	24 VDC		Allen Bradley	5069-OB16					
XYC-037B	Raw Tank UT-037 Outbound MOV Valve Close Command	DO	RIO-100	11	8	24 VDC		Allen Bradley	5069-OB16					
XY-037	Raw Tank UT-037 Air Line XV Open Command	DO	RIO-100	11	9	24 VDC		Allen Bradley	5069-OB16					
XYO-100A	Common Header UT-031 / 034 MOV Valve Open Command	DO	RIO-100	11	10	24 VDC		Allen Bradley	5069-OB16					
XYC-100A	Common Header UT-031 / 034 MOV Valve Close Command	DO	RIO-100	11	11	24 VDC		Allen Bradley	5069-OB16					
XYO-100B	Common Header UT-035 / 037 MOV Valve Open Command	DO	RIO-100	11	12	24 VDC		Allen Bradley	5069-OB16					
XYC-100B	Common Header UT-035 / 037 MOV Valve Close Command	DO	RIO-100	11	13	24 VDC		Allen Bradley	5069-OB16					
XYO-016	Water Tank UT-016 Outbound MOV Valve Open Command	DO	RIO-100	11	14	24 VDC		Allen Bradley	5069-OB16					
XYC-016	Water Tank UT-016 Outbound MOV Valve Close Command	DO	RIO-100	11	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-100, SLOT 12)														
XYO-105A	Raw Pump P-105 Transfer to Blending Suction MOV Valve Open Command	DO	RIO-100	12	0	24 VDC		Allen Bradley	5069-OB16					
XYC-105A	Raw Pump P-105 Transfer to Blending Suction MOV Valve Close Command	DO	RIO-100	12	1	24 VDC		Allen Bradley	5069-OB16					
XY-105B	Raw Pump P-105 Transfer to Blending Discharge XV Valve Open Command	DO	RIO-100	12	2	24 VDC		Allen Bradley	5069-OB16					
XY-105C	Raw Pump P-105 Pneumatic XV Valve Open Command	DO	RIO-100	12	3	24 VDC		Allen Bradley	5069-OB16					
XYO-106A	Raw Pump P-106 Transfer to Blending Suction MOV Valve Open Command	DO	RIO-100	12	4	24 VDC		Allen Bradley	5069-OB16					
XYC-106A	Raw Pump P-106 Transfer to Blending Suction MOV Valve Close Command	DO	RIO-100	12	5	24 VDC		Allen Bradley	5069-OB16					
XY-106B	Raw Pump P-106 Transfer to Blending Discharge XV Valve Open Command	DO	RIO-100	12	6	24 VDC		Allen Bradley	5069-OB16					
XY-106C	Raw Pump P-106 Pneumatic XV Valve Open Command	DO	RIO-100	12	7	24 VDC		Allen Bradley	5069-OB16					
XYO-107A	Raw Pump P-107 Transfer to Blending Suction MOV Valve Open Command	DO	RIO-100	12	8	24 VDC		Allen Bradley	5069-OB16					
XYC-107A	Raw Pump P-107 Transfer to Blending Suction MOV Valve Close Command	DO	RIO-100	12	9	24 VDC		Allen Bradley	5069-OB16					
XY-107B	Raw Pump P-107 Transfer to Blending Discharge XV Valve Open Command	DO	RIO-100	12	10	24 VDC		Allen Bradley	5069-OB16					
XY-107C	Raw Pump P-107 Pneumatic XV Valve Open Command	DO	RIO-100	12	11	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	12	12	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	12	13	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	12	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	12	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-100, SLOT 13)														
XY-101	Raw Pump P-101 Run Command	DO	RIO-100	13	0	24 VDC		Allen Bradley	5069-OB16					
XYA-101	Raw Pump P-101 Hard Stop	DO	RIO-100	13	1	24 VDC		Allen Bradley	5069-OB16					
XY-102	Raw Pump P-102 Run Command	DO	RIO-100	13	2	24 VDC		Allen Bradley	5069-OB16					

XYA-102	Raw Pump P-102 Hard Stop	DO	RIO-100	13	3	24 VDC		Allen Bradley	5069-OB16					
XY-103	Raw Pump P-103 Run Command	DO	RIO-100	13	4	24 VDC		Allen Bradley	5069-OB16					
XYA-103	Raw Pump P-103 Hard Stop	DO	RIO-100	13	5	24 VDC		Allen Bradley	5069-OB16					
XY-104	Raw Pump P-104 Run Command	DO	RIO-100	13	6	24 VDC		Allen Bradley	5069-OB16					
XYA-104	Raw Pump P-104 Hard Stop	DO	RIO-100	13	7	24 VDC		Allen Bradley	5069-OB16					
XY-105	Raw to Blend Pump P-105 Run Command	DO	RIO-100	13	8	24 VDC		Allen Bradley	5069-OB16					
XYA-105	Raw to Blend Pump P-105 Hard Stop	DO	RIO-100	13	9	24 VDC		Allen Bradley	5069-OB16					
XY-106	Raw to Blend Pump P-106 Run Command	DO	RIO-100	13	10	24 VDC		Allen Bradley	5069-OB16					
XYA-106	Raw to Blend Pump P-106 Hard Stop	DO	RIO-100	13	11	24 VDC		Allen Bradley	5069-OB16					
XY-107	Raw to Blend Pump P-107 Run Command	DO	RIO-100	13	12	24 VDC		Allen Bradley	5069-OB16					
XYA-107	Raw to Blend P-107 Hard Stop	DO	RIO-100	13	13	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	13	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-100	13	15	24 VDC		Allen Bradley	5069-OB16					
5069-IF8 ANALOG INPUT MODULE (RIO-100, SLOT 14)														
PT-101A	Raw Pump P-101 Discharge Filter U/s Pressure	AI	RIO-100	14	0	4-20 mA		Allen Bradley	5069-IF8					
PT-101B	Raw Pump P-101 Discharge Filter D/s Pressure	AI	RIO-100	14	1	4-20 mA		Allen Bradley	5069-IF8					
PT-102A	Raw Pump P-102 Discharge Filter U/s Pressure	AI	RIO-100	14	2	4-20 mA		Allen Bradley	5069-IF8					
PT-102B	Raw Pump P-102 Discharge Filter D/s Pressure	AI	RIO-100	14	3	4-20 mA		Allen Bradley	5069-IF8					
FT-016	UT-016 Water Flow Meter	AI	RIO-100	14	4	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	14	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	14	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	14	7	4-20 mA		Allen Bradley	5069-IF8					
5069-IF16F HIGH FREQUENCY COUNTER MODULE (RIO-100, SLOT 15)														
FQI-016	UT-016 Water Meter Totalizer	AI	RIO-100	15	0	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	1	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	2	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	3	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	4	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	7	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	8	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	9	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	10	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	11	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	12	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	13	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	14	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-100	15	15	4-20 mA		Allen Bradley	5069-IF8					

Document: IO List
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Date: 06/06/2024
Prepared by: JF Revision: REV A

Obsidian - Chemical Mixing
RIO-300
Finish Area

OBSIDIAN CHEMICAL SOLUTIONS

Device Tag	Description	Type	Rack	Slot	Point	Signal	Scale	Manufacturer	Model	Reference Drawing Number	Installed?	Calib?	FAT Checked?	Loop Check
5069-330ER ALLEN BRADLEY CONTROLLER (RIO-300, SLOT 0) Private IP: 192.168.1.3 // Public IP:														
5069-AENTR ALLEN BRADLEY CONTROLLER (Main CP RIO 300, SLOT 0) IP:192.168.1.20 Public:														
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 1)														
XA-300_24VDC	PLC 24VDC Power Fail Alarm (Reserved)	DI	RIO-300	1	0	24 VDC		Allen Bradley	5069-IB16					
XA-301_Network	PLC Network Communication Switch Alarm (Reserved)	DI	RIO-300	1	1	24 VDC		Allen Bradley	5069-IB16					
SD-300	Panel Fast Stop Shutdown Push Button	DI	RIO-300	1	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-038A	Finish Tank UT-038 Inbound MOV Valve Open Limit	DI	RIO-300	1	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-038A	Finish Tank UT-038 Inbound MOV Valve Close Limit	DI	RIO-300	1	4	24 VDC		Allen Bradley	5069-IB16					
XA-038A	Finish Tank UT-038 Inbound MOV Valve Fault Switch	DI	RIO-300	1	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-038B	Finish Tank UT-038 Outbound MOV Valve Open Limit	DI	RIO-300	1	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-038B	Finish Tank UT-038 Outbound MOV Valve Close Limit	DI	RIO-300	1	7	24 VDC		Allen Bradley	5069-IB16					
XA-038B	Finish Tank UT-038 Outbound MOV Valve Fault Switch	DI	RIO-300	1	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-038C	Finish Tank UT-038 Recirculation MOV Valve Open Limit	DI	RIO-300	1	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-038C	Finish Tank UT-038 Recirculation MOV Valve Close Limit	DI	RIO-300	1	10	24 VDC		Allen Bradley	5069-IB16					
XA-038C	Finish Tank UT-038 Recirculation MOV Valve Fault Switch	DI	RIO-300	1	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-038	Finish Tank UT-038 Air Line XV Valve Open Limit	DI	RIO-300	1	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-038	Finish Tank UT-038 Air Line XV Valve Close Limit	DI	RIO-300	1	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-039A	Finish Tank UT-039 Inbound MOV Valve Open Limit	DI	RIO-300	1	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-039A	Finish Tank UT-039 Inbound MOV Valve Close Limit	DI	RIO-300	1	15	24 VDC		Allen Bradley	5069-IB16					
XA-039A	Finish Tank UT-039 Inbound MOV Valve Fault Switch	DI	RIO-300	1	12	24 VDC		Allen Bradley	5069-IB16					
ZIO-039B	Finish Tank UT-039 Outbound MOV Valve Open Limit	DI	RIO-300	1	13	24 VDC		Allen Bradley	5069-IB16					
ZIC-039B	Finish Tank UT-039 Outbound MOV Valve Close Limit	DI	RIO-300	1	14	24 VDC		Allen Bradley	5069-IB16					
XA-039B	Finish Tank UT-039 Outbound MOV Valve Fault Switch	DI	RIO-300	1	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 2)														
ZIO-039C	Finish Tank UT-039 Recirculation MOV Valve Open Limit	DI	RIO-300	2	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-039C	Finish Tank UT-039 Recirculation MOV Valve Close Limit	DI	RIO-300	2	1	24 VDC		Allen Bradley	5069-IB16					
XA-039C	Finish Tank UT-039 Recirculation MOV Valve Fault Switch	DI	RIO-300	2	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-039	Finish Tank UT-039 Air Line XV Valve Open Limit	DI	RIO-300	2	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-039	Finish Tank UT-039 Air Line XV Valve Close Limit	DI	RIO-300	2	4	24 VDC		Allen Bradley	5069-IB16					
ZIO-040A	Finish Tank UT-040 Inbound MOV Valve Open Limit	DI	RIO-300	2	5	24 VDC		Allen Bradley	5069-IB16					
ZIC-040A	Finish Tank UT-040 Inbound MOV Valve Close Limit	DI	RIO-300	2	6	24 VDC		Allen Bradley	5069-IB16					
XA-040A	Finish Tank UT-040 Inbound MOV Valve Fault Switch	DI	RIO-300	2	7	24 VDC		Allen Bradley	5069-IB16					
ZIO-040B	Finish Tank UT-040 Outbound MOV Valve Open Limit	DI	RIO-300	2	8	24 VDC		Allen Bradley	5069-IB16					
ZIC-040B	Finish Tank UT-040 Outbound MOV Valve Close Limit	DI	RIO-300	2	9	24 VDC		Allen Bradley	5069-IB16					
XA-040B	Finish Tank UT-040 Outbound MOV Valve Fault Switch	DI	RIO-300	2	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-040C	Finish Tank UT-040 Recirculation MOV Valve Open Limit	DI	RIO-300	2	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-040C	Finish Tank UT-040 Recirculation MOV Valve Close Limit	DI	RIO-300	2	12	24 VDC		Allen Bradley	5069-IB16					
XA-040C	Finish Tank UT-040 Recirculation MOV Valve Fault Switch	DI	RIO-300	2	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-040	Finish Tank UT-040 Air Line XV Valve Open Limit	DI	RIO-300	2	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-040	Finish Tank UT-040 Air Line XV Valve Close Limit	DI	RIO-300	2	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 3)														
ZIO-041A	Finish Tank UT-041 Inbound MOV Valve Open Limit	DI	RIO-300	3	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-041A	Finish Tank UT-041 Inbound MOV Valve Close Limit	DI	RIO-300	3	1	24 VDC		Allen Bradley	5069-IB16					
XA-041A	Finish Tank UT-041 Inbound MOV Valve Fault Switch	DI	RIO-300	3	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-041B	Finish Tank UT-041 Outbound MOV Valve Open Limit	DI	RIO-300	3	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-041B	Finish Tank UT-041 Outbound MOV Valve Close Limit	DI	RIO-300	3	4	24 VDC		Allen Bradley	5069-IB16					
XA-041B	Finish Tank UT-041 Outbound MOV Valve Fault Switch	DI	RIO-300	3	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-041C	Finish Tank UT-041 Recirculation MOV Valve Open Limit	DI	RIO-300	3	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-041C	Finish Tank UT-041 Recirculation MOV Valve Close Limit	DI	RIO-300	3	7	24 VDC		Allen Bradley	5069-IB16					
XA-041C	Finish Tank UT-041 Recirculation MOV Valve Fault Switch	DI	RIO-300	3	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-041	Finish Tank UT-041 Air Line XV Valve Open Limit	DI	RIO-300	3	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-041	Finish Tank UT-041 Air Line XV Valve Close Limit	DI	RIO-300	3	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-042A	Finish Tank UT-042 Inbound MOV Valve Open Limit	DI	RIO-300	3	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-042A	Finish Tank UT-042 Inbound MOV Valve Close Limit	DI	RIO-300	3	12	24 VDC		Allen Bradley	5069-IB16					
XA-042A	Finish Tank UT-042 Inbound MOV Valve Fault Switch	DI	RIO-300	3	13	24 VDC		Allen Bradley	5069-IB16					
ZIO-042B	Finish Tank UT-042 Outbound MOV Valve Open Limit	DI	RIO-300	3	14	24 VDC		Allen Bradley	5069-IB16					
ZIC-042B	Finish Tank UT-042 Outbound MOV Valve Close Limit	DI	RIO-300	3	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 4)														
XA-042B	Finish Tank UT-042 Outbound MOV Valve Fault Switch	DI	RIO-300	4	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-042C	Finish Tank UT-042 Recirculation MOV Valve Open Limit	DI	RIO-300	4	1	24 VDC		Allen Bradley	5069-IB16					

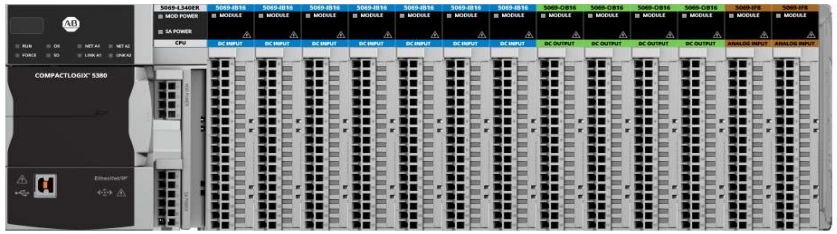
ZIC-042C	Finish Tank UT-042 Recirculation MOV Valve Close Limit	DI	RIO-300	4	2	24 VDC		Allen Bradley	5069-IB16					
XA-042C	Finish Tank UT-042 Recirculation MOV Valve Fault Switch	DI	RIO-300	4	3	24 VDC		Allen Bradley	5069-IB16					
ZIO-042	Finish Tank UT-042 Air Line XV Valve Open Limit	DI	RIO-300	4	4	24 VDC		Allen Bradley	5069-IB16					
ZIC-042	Finish Tank UT-042 Air Line XV Valve Close Limit	DI	RIO-300	4	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-043A	Finish Tank UT-043 Inbound MOV Valve Open Limit	DI	RIO-300	4	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-043A	Finish Tank UT-043 Inbound MOV Valve Close Limit	DI	RIO-300	4	7	24 VDC		Allen Bradley	5069-IB16					
XA-043A	Finish Tank UT-043 Inbound MOV Valve Fault Switch	DI	RIO-300	4	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-043B	Finish Tank UT-043 Outbound MOV Valve Open Limit	DI	RIO-300	4	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-043B	Finish Tank UT-043 Outbound MOV Valve Close Limit	DI	RIO-300	4	10	24 VDC		Allen Bradley	5069-IB16					
XA-043B	Finish Tank UT-043 Outbound MOV Valve Fault Switch	DI	RIO-300	4	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-043C	Finish Tank UT-043 Recirculation MOV Valve Open Limit	DI	RIO-300	4	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-043C	Finish Tank UT-043 Recirculation MOV Valve Close Limit	DI	RIO-300	4	13	24 VDC		Allen Bradley	5069-IB16					
XA-043C	Finish Tank UT-043 Recirculation MOV Valve Fault Switch	DI	RIO-300	4	14	24 VDC		Allen Bradley	5069-IB16					
ZIO-043	Finish Tank UT-043 Air Line XV Valve Open Limit	DI	RIO-300	4	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 5)														
ZIC-043	Finish Tank UT-043 Air Line XV Valve Close Limit	DI	RIO-300	5	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-044A	Finish Tank UT-044 Inbound MOV Valve Open Limit	DI	RIO-300	5	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-044A	Finish Tank UT-044 Inbound MOV Valve Close Limit	DI	RIO-300	5	2	24 VDC		Allen Bradley	5069-IB16					
XA-044A	Finish Tank UT-044 Inbound MOV Valve Fault Switch	DI	RIO-300	5	3	24 VDC		Allen Bradley	5069-IB16					
ZIO-044B	Finish Tank UT-044 Outbound MOV Valve Open Limit	DI	RIO-300	5	4	24 VDC		Allen Bradley	5069-IB16					
ZIC-044B	Finish Tank UT-044 Outbound MOV Valve Close Limit	DI	RIO-300	5	5	24 VDC		Allen Bradley	5069-IB16					
XA-044B	Finish Tank UT-044 Outbound MOV Valve Fault Switch	DI	RIO-300	5	6	24 VDC		Allen Bradley	5069-IB16					
ZIO-044C	Finish Tank UT-044 Recirculation MOV Valve Open Limit	DI	RIO-300	5	7	24 VDC		Allen Bradley	5069-IB16					
ZIC-044C	Finish Tank UT-044 Recirculation MOV Valve Close Limit	DI	RIO-300	5	8	24 VDC		Allen Bradley	5069-IB16					
XA-044C	Finish Tank UT-044 Recirculation MOV Valve Fault Switch	DI	RIO-300	5	9	24 VDC		Allen Bradley	5069-IB16					
ZIO-044	Finish Tank UT-044 Air Line XV Valve Open Limit	DI	RIO-300	5	10	24 VDC		Allen Bradley	5069-IB16					
ZIC-044	Finish Tank UT-044 Air Line XV Valve Close Limit	DI	RIO-300	5	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-045A	Finish Tank UT-045 Inbound MOV Valve Open Limit	DI	RIO-300	5	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-045A	Finish Tank UT-045 Inbound MOV Valve Close Limit	DI	RIO-300	5	13	24 VDC		Allen Bradley	5069-IB16					
XA-045A	Finish Tank UT-045 Inbound MOV Valve Fault Switch	DI	RIO-300	5	14	24 VDC		Allen Bradley	5069-IB16					
ZIO-045B	Finish Tank UT-045 Outbound MOV Valve Open Limit	DI	RIO-300	5	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 6)														
XA-045B	Finish Tank UT-045 Outbound MOV Valve Fault Switch	DI	RIO-300	6	0	24 VDC		Allen Bradley	5069-IB16					
ZIO-045C	Finish Tank UT-045 Recirculation MOV Valve Open Limit	DI	RIO-300	6	1	24 VDC		Allen Bradley	5069-IB16					
ZIC-045C	Finish Tank UT-045 Recirculation MOV Valve Close Limit	DI	RIO-300	6	2	24 VDC		Allen Bradley	5069-IB16					
XA-045C	Finish Tank UT-045 Recirculation MOV Valve Fault Switch	DI	RIO-300	6	3	24 VDC		Allen Bradley	5069-IB16					
ZIO-045	Finish Tank UT-045 Air Line XV Valve Open Limit	DI	RIO-300	6	4	24 VDC		Allen Bradley	5069-IB16					
ZIC-045	Finish Tank UT-045 Air Line XV Valve Close Limit	DI	RIO-300	6	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-300A	Finish Area Common Header (From Blend to UT-038/39/40)) MOV Valve Open Limit	DI	RIO-300	6	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-300A	Finish Area Common Header (From Blend to UT-038/39/40)) MOV Valve Close Limit	DI	RIO-300	6	7	24 VDC		Allen Bradley	5069-IB16					
XA-300A	Finish Area Common Header (From Blend to UT-038/39/40) MOV Valve Fault Switch	DI	RIO-300	6	8	24 VDC		Allen Bradley	5069-IB16					
ZIO-300B	Finish Area Common Header (From Blend to UT-041/42/43) MOV Valve Open Limit	DI	RIO-300	6	9	24 VDC		Allen Bradley	5069-IB16					
ZIC-300B	Finish Area Common Header (From Blend to UT-041/42/43) MOV Valve Close Limit	DI	RIO-300	6	10	24 VDC		Allen Bradley	5069-IB16					
XA-300B	Finish Area Common Header (From Blend to UT-041/42/43) MOV Valve Fault Switch	DI	RIO-300	6	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-300C	Finish Area Common Header (From Blend to UT-044/45) MOV Valve Open Limit	DI	RIO-300	6	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-300C	Finish Area Common Header (From Blend to UT-044/45) MOV Valve Close Limit	DI	RIO-300	6	13	24 VDC		Allen Bradley	5069-IB16					
XA-300C	Finish Area Common Header (From Blend to UT-044/45) MOV Valve Fault Switch	DI	RIO-300	6	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	6	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 7)														
ZIO-300D	Finish Area Common Header (Recirculation to UT-044/45) MOV Valve Open Limit	DI	RIO-300	7	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-300D	Finish Area Common Header (Recirculation to UT-044/45) MOV Valve Close Limit	DI	RIO-300	7	1	24 VDC		Allen Bradley	5069-IB16					
XA-300D	Finish Area Common Header (Recirculation to UT-044/45) MOV Valve Fault Switch	DI	RIO-300	7	2	24 VDC		Allen Bradley	5069-IB16					
ZIO-301A	Finish Truck Loading Pump P-301 Suction MOV Valve Open Limit	DI	RIO-300	7	3	24 VDC		Allen Bradley	5069-IB16					
ZIC-301A	Finish Truck Loading Pump P-301 Suction MOV Valve Closed Limit	DI	RIO-300	7	4	24 VDC		Allen Bradley	5069-IB16					
XA-301A	Finish Truck Loading Pump P-301 Suction MOV Valve Fault Switch	DI	RIO-300	7	5	24 VDC		Allen Bradley	5069-IB16					
ZIO-301B	Finish Truck Loading Pump P-301 Discharge XV Valve Open Limit	DI	RIO-300	7	6	24 VDC		Allen Bradley	5069-IB16					
ZIC-301B	Finish Truck Loading Pump P-301 Discharge XV Valve Closed Limit	DI	RIO-300	7	7	24 VDC		Allen Bradley	5069-IB16					
ZIO-301C	Finish Truck Loading Pump P-301 Discharge to Loading MOV Valve Open Limit	DI	RIO-300	7	8	24 VDC		Allen Bradley	5069-IB16					
ZIC-301C	Finish Truck LoadingPump P-301 Discharge to Loading MOV Valve Closed Limit	DI	RIO-300	7	9	24 VDC		Allen Bradley	5069-IB16					
XA-301C	Finish Truck Loading Pump P-301 Discharge to Loading MOV Valve Fault Switch	DI	RIO-300	7	10	24 VDC		Allen Bradley	5069-IB16					
ZIO-301D	Finish Truck Loading Pump P-301 Air Line XV Valve Open Limit	DI	RIO-300	7	11	24 VDC		Allen Bradley	5069-IB16					
ZIC-301D	Finish Truck Loading Pump P-301 Air Line XV Valve Close Limit	DI	RIO-300	7	12	24 VDC		Allen Bradley	5069-IB16					
ZIO-302A	Finish Truck Loading Pump P-302 Suction MOV Valve Open Limit	DI	RIO-300	7	13	24 VDC		Allen Bradley	5069-IB16					
ZIC-302A	Finish Truck Loading Pump P-302 Suction MOV Valve Closed Limit	DI	RIO-300	7	14	24 VDC		Allen Bradley	5069-IB16					
XA-302A	Finish Truck Loading Pump P-302 Suction MOV Valve Fault Switch	DI	RIO-300	7	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 8)														
ZIO-302B	Finish Truck Loading Pump P-302 Discharge XV Valve Open Limit	DI	RIO-300	8	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-302B	Finish Truck Loading Pump P-302 Discharge XV Valve Closed Limit	DI	RIO-300	8	1	24 VDC		Allen Bradley	5069-IB16					
ZIO-302C	Finish Truck Loading Pump P-302 Discharge to Loading MOV Valve Open Limit	DI	RIO-300	8	2	24 VDC		Allen Bradley	5069-IB16					
ZIC-302C	Finish Truck LoadingPump P-302 Discharge to Loading MOV Valve Closed Limit	DI	RIO-300	8	3	24 VDC		Allen Bradley	5069-IB16					
XA-302C	Finish Truck Loading Pump P-302 Discharge to Loading MOV Valve Fault Switch	DI	RIO-300	8	4	24 VDC		Allen Bradley	5069-IB16					
ZIO-302D	Finish Truck Loading Pump P-302 Air Line XV Valve Open Limit	DI	RIO-300	8	5	24 VDC		Allen Bradley	5069-IB16					
ZIC-302D	Finish Truck Loading Pump P-302 Air Line XV Valve Close Limit	DI	RIO-300	8	6	24 VDC		Allen Bradley	5069-IB16					
ZIO-303A	Finish Truck Loading Pump P-303 Suction MOV Valve Open Limit	DI	RIO-300	8	7	24 VDC		Allen Bradley	5069-IB16					
ZIC-303A	Finish Truck Loading Pump P-303 Suction MOV Valve Closed Limit	DI	RIO-300	8	8	24 VDC		Allen Bradley	5069-IB16					

XA-303A	Finish Truck Loading Pump P-303 Suction MOV Valve Fault Switch	DI	RIO-300	8	9	24 VDC		Allen Bradley	5069-IB16					
ZIO-303B	Finish Truck Loading Pump P-303 Discharge XV Valve Open Limit	DI	RIO-300	8	10	24 VDC		Allen Bradley	5069-IB16					
ZIC-303B	Finish Truck Loading Pump P-303 Discharge XV Valve Closed Limit	DI	RIO-300	8	11	24 VDC		Allen Bradley	5069-IB16					
ZIO-303C	Finish Truck Loading Pump P-303 Discharge to Loading MOV Valve Open Limit	DI	RIO-300	8	12	24 VDC		Allen Bradley	5069-IB16					
ZIC-303C	Finish Truck Loading Pump P-303 Discharge to Loading MOV Valve Close Limit	DI	RIO-300	8	13	24 VDC		Allen Bradley	5069-IB16					
XA-303C	Finish Truck Loading Pump P-303 Discharge to Loading MOV Valve Fault Switch	DI	RIO-300	8	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	8	15	24 VDC		Allen Bradley	5069-IB16					
5069-IB16 DIGITAL INPUT MODULE (RIO-300, SLOT 9)														
ZIO-303D	Finish Truck Loading Pump P-303 Air Line XV Valve Open Limit	DI	RIO-300	9	0	24 VDC		Allen Bradley	5069-IB16					
ZIC-303D	Finish Truck Loading Pump P-303 Air Line XV Valve Close Limit	DI	RIO-300	9	1	24 VDC		Allen Bradley	5069-IB16					
HS-301	Finish to Truck Loading Pump P-301 Hand Status	DI	RIO-300	9	2	24 VDC		Allen Bradley	5069-IB16					
AS-301	Finish to Truck Loading Pump P-301 Auto Status	DI	RIO-300	9	3	24 VDC		Allen Bradley	5069-IB16					
XI-301	Finish to Truck Loading Pump P-301 Run Status	DI	RIO-300	9	4	24 VDC		Allen Bradley	5069-IB16					
HS-302	Finish to Truck Loading Pump P-302 Hand Status	DI	RIO-300	9	5	24 VDC		Allen Bradley	5069-IB16					
AS-302	Finish to Truck Loading Pump P-302 Auto Status	DI	RIO-300	9	6	24 VDC		Allen Bradley	5069-IB16					
XI-302	Finish to Truck Loading Pump P-302 Run Status	DI	RIO-300	9	7	24 VDC		Allen Bradley	5069-IB16					
HS-303	Finish to Truck Loading Pump P-303 Hand Status	DI	RIO-300	9	8	24 VDC		Allen Bradley	5069-IB16					
AS-303	Finish to Truck Loading Pump P-303 Auto Status	DI	RIO-300	9	9	24 VDC		Allen Bradley	5069-IB16					
XI-303	Finish to Truck Loading Pump P-303 Run Status	DI	RIO-300	9	10	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	9	11	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	9	12	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	9	13	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	9	14	24 VDC		Allen Bradley	5069-IB16					
	Spare	DI	RIO-300	9	15	24 VDC		Allen Bradley	5069-IB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-300, SLOT 10)														
XYO-038A	Finish Tank UT-038 Inbound MOV Valve Open Command	DO	RIO-300	10	0	24 VDC		Allen Bradley	5069-OB16					
XYC-038A	Finish Tank UT-038 Inbound MOV Valve Close Command	DO	RIO-300	10	1	24 VDC		Allen Bradley	5069-OB16					
XYO-038B	Finish Tank UT-038 Outbound MOV Valve Open Command	DO	RIO-300	10	2	24 VDC		Allen Bradley	5069-OB16					
XYC-038B	Finish Tank UT-038 Outbound MOV Valve Close Command	DO	RIO-300	10	3	24 VDC		Allen Bradley	5069-OB16					
XYO-038C	Finish Tank UT-038 Recirculation MOV Valve Open Command	DO	RIO-300	10	4	24 VDC		Allen Bradley	5069-OB16					
XYC-038C	Finish Tank UT-038 Recirculation MOV Valve Close Command	DO	RIO-300	10	5	24 VDC		Allen Bradley	5069-OB16					
XY-038	Finish Tank UT-038 Air Line XV Valve Open Command	DO	RIO-300	10	6	24 VDC		Allen Bradley	5069-OB16					
XYO-039A	Finish Tank UT-039 Inbound MOV Valve Open Command	DO	RIO-300	10	7	24 VDC		Allen Bradley	5069-OB16					
XYC-039A	Finish Tank UT-039 Inbound MOV Valve Close Command	DO	RIO-300	10	8	24 VDC		Allen Bradley	5069-OB16					
XYO-039B	Finish Tank UT-039 Outbound MOV Valve Open Command	DO	RIO-300	10	9	24 VDC		Allen Bradley	5069-OB16					
XYC-039B	Finish Tank UT-039 Outbound MOV Valve Close Command	DO	RIO-300	10	10	24 VDC		Allen Bradley	5069-OB16					
XYO-039C	Finish Tank UT-039 Recirculation MOV Valve Open Command	DO	RIO-300	10	11	24 VDC		Allen Bradley	5069-OB16					
XYC-039C	Finish Tank UT-039 Recirculation MOV Valve Close Command	DO	RIO-300	10	12	24 VDC		Allen Bradley	5069-OB16					
XY-039	Finish Tank UT-039 Air Line XV Valve Open Command	DO	RIO-300	10	13	24 VDC		Allen Bradley	5069-OB16					
XYO-040A	Finish Tank UT-040 Inbound MOV Valve Open Command	DO	RIO-300	10	14	24 VDC		Allen Bradley	5069-OB16					
XYC-040A	Finish Tank UT-040 Inbound MOV Valve Close Command	DO	RIO-300	10	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-300, SLOT 11)														
XYO-040B	Finish Tank UT-040 Outbound MOV Valve Open Command	DO	RIO-300	11	0	24 VDC		Allen Bradley	5069-OB16					
XYC-040B	Finish Tank UT-040 Outbound MOV Valve Close Command	DO	RIO-300	11	1	24 VDC		Allen Bradley	5069-OB16					
XYO-040C	Finish Tank UT-040 Recirculation MOV Valve Open Command	DO	RIO-300	11	2	24 VDC		Allen Bradley	5069-OB16					
XYC-040C	Finish Tank UT-040 Recirculation MOV Valve Close Command	DO	RIO-300	11	3	24 VDC		Allen Bradley	5069-OB16					
XY-040	Finish Tank UT-040 Air Line XV Valve Open Command	DO	RIO-300	11	4	24 VDC		Allen Bradley	5069-OB16					
XYO-041A	Finish Tank UT-041 Inbound MOV Valve Open Command	DO	RIO-300	11	5	24 VDC		Allen Bradley	5069-OB16					
XYC-041A	Finish Tank UT-041 Inbound MOV Valve Close Command	DO	RIO-300	11	6	24 VDC		Allen Bradley	5069-OB16					
XYO-041B	Finish Tank UT-041 Outbound MOV Valve Open Command	DO	RIO-300	11	7	24 VDC		Allen Bradley	5069-OB16					
XYC-041B	Finish Tank UT-041 Outbound MOV Valve Close Command	DO	RIO-300	11	8	24 VDC		Allen Bradley	5069-OB16					
XYO-041C	Finish Tank UT-041 Recirculation MOV Valve Open Command	DO	RIO-300	11	9	24 VDC		Allen Bradley	5069-OB16					
XYC-041C	Finish Tank UT-041 Recirculation MOV Valve Close Command	DO	RIO-300	11	10	24 VDC		Allen Bradley	5069-OB16					
XY-041	Finish Tank UT-041 Air Line XV Valve Open Command	DO	RIO-300	11	11	24 VDC		Allen Bradley	5069-OB16					
XYO-042A	Finish Tank UT-042 Inbound MOV Valve Open Command	DO	RIO-300	11	12	24 VDC		Allen Bradley	5069-OB16					
XYC-042A	Finish Tank UT-042 Inbound MOV Valve Close Command	DO	RIO-300	11	13	24 VDC		Allen Bradley	5069-OB16					
XYO-042B	Finish Tank UT-042 Outbound MOV Valve Open Command	DO	RIO-300	11	14	24 VDC		Allen Bradley	5069-OB16					
XYC-042B	Finish Tank UT-042 Outbound MOV Valve Close Command	DO	RIO-300	11	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-300, SLOT 12)														
XYO-042C	Finish Tank UT-042 Recirculation MOV Valve Open Command	DO	RIO-300	12	0	24 VDC		Allen Bradley	5069-OB16					
XYC-042C	Finish Tank UT-042 Recirculation MOV Valve Close Command	DO	RIO-300	12	1	24 VDC		Allen Bradley	5069-OB16					
XY-042	Finish Tank UT-042 Air Line XV Valve Open Command	DO	RIO-300	12	2	24 VDC		Allen Bradley	5069-OB16					
XYO-043A	Finish Tank UT-043 Inbound MOV Valve Open Command	DO	RIO-300	12	3	24 VDC		Allen Bradley	5069-OB16					
XYC-043A	Finish Tank UT-043 Inbound MOV Valve Close Command	DO	RIO-300	12	4	24 VDC		Allen Bradley	5069-OB16					
XYO-043B	Finish Tank UT-043 Outbound MOV Valve Open Command	DO	RIO-300	12	5	24 VDC		Allen Bradley	5069-OB16					
XYC-043B	Finish Tank UT-043 Outbound MOV Valve Close Command	DO	RIO-300	12	6	24 VDC		Allen Bradley	5069-OB16					
XYO-043C	Finish Tank UT-043 Recirculation MOV Valve Open Command	DO	RIO-300	12	7	24 VDC		Allen Bradley	5069-OB16					
XYC-043C	Finish Tank UT-043 Recirculation MOV Valve Close Command	DO	RIO-300	12	8	24 VDC		Allen Bradley	5069-OB16					
XY-043	Finish Tank UT-043 Air Line XV Valve Open Command	DO	RIO-300	12	9	24 VDC		Allen Bradley	5069-OB16					
XYO-044A	Finish Tank UT-044 Inbound MOV Valve Open Command	DO	RIO-300	12	10	24 VDC		Allen Bradley	5069-OB16					
XYC-044A	Finish Tank UT-044 Inbound MOV Valve Close Command	DO	RIO-300	12	11	24 VDC		Allen Bradley	5069-OB16					
XYO-044B	Finish Tank UT-044 Outbound MOV Valve Open Command	DO	RIO-300	12	12	24 VDC		Allen Bradley	5069-OB16					
XYC-044B	Finish Tank UT-044 Outbound MOV Valve Close Command	DO	RIO-300	12	13	24 VDC		Allen Bradley	5069-OB16					
XYO-044C	Finish Tank UT-044 Recirculation MOV Valve Open Command	DO	RIO-300	12	14	24 VDC		Allen Bradley	5069-OB16					
XYC-044C	Finish Tank UT-044 Recirculation MOV Valve Close Command	DO	RIO-300	12	15	24 VDC		Allen Bradley	5069-OB16					

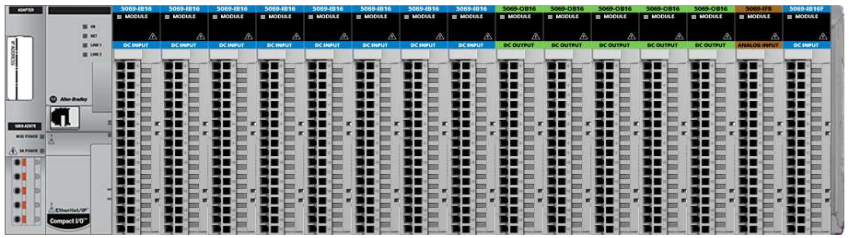
5069-OB16 DIGITAL OUTPUT MODULE (RIO-300, SLOT 13)														
XY-044	Finish Tank UT-044 Air Line XV Valve Open Command	DO	RIO-300	13	0	24 VDC		Allen Bradley	5069-OB16					
XYO-045A	Finish Tank UT-045 Inbound MOV Valve Open Command	DO	RIO-300	13	1	24 VDC		Allen Bradley	5069-OB16					
XYC-045A	Finish Tank UT-045 Inbound MOV Valve Close Command	DO	RIO-300	13	2	24 VDC		Allen Bradley	5069-OB16					
XYO-045B	Finish Tank UT-045 Outbound MOV Valve Open Command	DO	RIO-300	13	3	24 VDC		Allen Bradley	5069-OB16					
XYC-045B	Finish Tank UT-045 Outbound MOV Valve Close Command	DO	RIO-300	13	4	24 VDC		Allen Bradley	5069-OB16					
XYO-045C	Finish Tank UT-045 Recirculation MOV Valve Open Command	DO	RIO-300	13	5	24 VDC		Allen Bradley	5069-OB16					
XYC-045C	Finish Tank UT-045 Recirculation MOV Valve Close Command	DO	RIO-300	13	6	24 VDC		Allen Bradley	5069-OB16					
XY-045	Finish Tank UT-045 Air Line XV Valve Open Command	DO	RIO-300	13	7	24 VDC		Allen Bradley	5069-OB16					
XYO-300A	Finish Area Common Header (From Blend to UT-038/39/40)) MOV Valve Open Command	DO	RIO-300	13	8	24 VDC		Allen Bradley	5069-OB16					
XYC-300A	Finish Area Common Header (From Blend to UT-038/39/40)) MOV Valve Close Command	DO	RIO-300	13	9	24 VDC		Allen Bradley	5069-OB16					
XYO-300B	Finish Area Common Header (From Blend to UT-041/42/43) MOV Valve Open Command	DO	RIO-300	13	10	24 VDC		Allen Bradley	5069-OB16					
XYC-300B	Finish Area Common Header (From Blend to UT-041/42/43) MOV Valve Close Command	DO	RIO-300	13	11	24 VDC		Allen Bradley	5069-OB16					
XYO-300C	Finish Area Common Header (From Blend to UT-044/45) MOV Valve Open Command	DO	RIO-300	13	12	24 VDC		Allen Bradley	5069-OB16					
XYC-300C	Finish Area Common Header (From Blend to UT-044/45) MOV Valve Close Command	DO	RIO-300	13	13	24 VDC		Allen Bradley	5069-OB16					
XYO-300D	Finish Area Common Header (Recirculation to UT-044/45) MOV Valve Open Command	DO	RIO-300	13	14	24 VDC		Allen Bradley	5069-OB16					
XYC-300D	Finish Area Common Header (Recirculation to UT-044/45) MOV Valve Close Command	DO	RIO-300	13	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-300, SLOT 14)														
XY-301A	Finish Truck Loading Pump P-301 Suction MOV Valve Open Command	DO	RIO-300	14	0	24 VDC		Allen Bradley	5069-OB16					
XYC-301A	Finish Truck Loading Pump P-301 Suction MOV Valve Closed Command	DO	RIO-300	14	1	24 VDC		Allen Bradley	5069-OB16					
XY-301B	Finish Truck Loading Pump P-301 Discharge XV Valve Open Command	DO	RIO-300	14	2	24 VDC		Allen Bradley	5069-OB16					
XYO-301C	Finish Truck Loading Pump P-301 Discharge to Loading MOV Valve Open Command	DO	RIO-300	14	3	24 VDC		Allen Bradley	5069-OB16					
XYC-301C	Finish Truck LoadingPump P-301 Discharge to Loading MOV Valve Closed Command	DO	RIO-300	14	4	24 VDC		Allen Bradley	5069-OB16					
XY-301D	Finish Truck Loading Pump P-301 Air Line XV Valve Open Command	DO	RIO-300	14	5	24 VDC		Allen Bradley	5069-OB16					
XYO-302A	Finish Truck Loading Pump P-302 Suction MOV Valve Open Command	DO	RIO-300	14	6	24 VDC		Allen Bradley	5069-OB16					
XYC-302A	Finish Truck Loading Pump P-302 Suction MOV Valve Closed Command	DO	RIO-300	14	7	24 VDC		Allen Bradley	5069-OB16					
XYO-302B	Finish Truck Loading Pump P-302 Discharge XV Valve Open Command	DO	RIO-300	14	8	24 VDC		Allen Bradley	5069-OB16					
XYO-302C	Finish Truck Loading Pump P-302 Discharge to Loading MOV Valve Open Command	DO	RIO-300	14	9	24 VDC		Allen Bradley	5069-OB16					
XYC-302C	Finish Truck Loading Pump P-302 Discharge to Loading MOV Valve Close Command	DO	RIO-300	14	10	24 VDC		Allen Bradley	5069-OB16					
XY-302D	Finish Truck Loading Pump P-302 Air Line XV Valve Open Command	DO	RIO-300	14	11	24 VDC		Allen Bradley	5069-OB16					
XYO-303A	Finish Truck Loading Pump P-303 Suction MOV Valve Open Command	DO	RIO-300	14	12	24 VDC		Allen Bradley	5069-OB16					
XYC-303A	Finish Truck Loading Pump P-303 Suction MOV Valve Closed Command	DO	RIO-300	14	13	24 VDC		Allen Bradley	5069-OB16					
XYO-303B	Finish Truck Loading Pump P-303 Discharge XV Valve Open Command	DO	RIO-300	14	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	14	15	24 VDC		Allen Bradley	5069-OB16					
5069-OB16 DIGITAL OUTPUT MODULE (RIO-300, SLOT 15)														
XYO-303C	Finish Truck Loading Pump P-303 Discharge to Loading MOV Valve Open Command	DO	RIO-300	15	0	24 VDC		Allen Bradley	5069-OB16					
XYC-303C	Finish Truck Loading Pump P-303 Discharge to Loading MOV Valve Close Command	DO	RIO-300	15	1	24 VDC		Allen Bradley	5069-OB16					
XY-303D	Finish Truck Loading Pump P-303 Air Line XV Valve Open Command	DO	RIO-300	15	2	24 VDC		Allen Bradley	5069-OB16					
XYA-302	Finish Pump P-302 Hard Stop	DO	RIO-300	15	3	24 VDC		Allen Bradley	5069-OB16					
XY-301	Finish Pump P-301 Run Command	DO	RIO-300	15	4	24 VDC		Allen Bradley	5069-OB16					
XYA-301	Finish Pump P-301 Hard Stop	DO	RIO-300	15	5	24 VDC		Allen Bradley	5069-OB16					
XY-302	Finish Pump P-302 Run Command	DO	RIO-300	15	6	24 VDC		Allen Bradley	5069-OB16					
XYA-302	Finish Pump P-302 Hard Stop	DO	RIO-300	15	7	24 VDC		Allen Bradley	5069-OB16					
XY-303	Finish Pump P-303 Run Command	DO	RIO-300	15	8	24 VDC		Allen Bradley	5069-OB16					
XYA-303	Finish Pump P-303 Hard Stop	DO	RIO-300	15	9	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	15	10	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	15	11	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	15	12	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	15	13	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	15	14	24 VDC		Allen Bradley	5069-OB16					
	Spare	DO	RIO-300	15	15	24 VDC		Allen Bradley	5069-OB16					
5069-IF8 ANALOG INPUT MODULE (RIO-300, SLOT 16)														
PT-301A	Finish Pump P-301 Discharge Filter U/s Pressure	AI	RIO-300	16	0	4-20 mA		Allen Bradley	5069-IF8					
PT-301B	Finish Pump P-301 Discharge Filter D/s Pressure	AI	RIO-300	16	1	4-20 mA		Allen Bradley	5069-IF8					
PT-302A	Finish Pump P-302 Discharge Filter U/s Pressure	AI	RIO-300	16	2	4-20 mA		Allen Bradley	5069-IF8					
PT-302B	Finish Pump P-302 Discharge Filter D/s Pressure	AI	RIO-300	16	3	4-20 mA		Allen Bradley	5069-IF8					
PT-302A	Finish Pump P-302 Discharge Filter U/s Pressure	AI	RIO-300	16	4	4-20 mA		Allen Bradley	5069-IF8					
PT-302B	Finish Pump P-302 Discharge Filter D/s Pressure	AI	RIO-300	16	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	16	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	16	7	4-20 mA		Allen Bradley	5069-IF8					
5069-IF8 ANALOG INPUT MODULE (RIO-300, SLOT 17)														
FT-301	Finish Pump P-301 Flow Rate	AI	RIO-300	17	0	4-20 mA		Allen Bradley	5069-IF8					
FT-302	Finish Pump P-302 Flow Rate	AI	RIO-300	17	1	4-20 mA		Allen Bradley	5069-IF8					
FT-303	Finish Pump P-303 Flow Rate	AI	RIO-300	17	2	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	17	3	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	17	4	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	17	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	17	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	17	7	4-20 mA		Allen Bradley	5069-IF8					
5069-IF16F HIGH FREQUENCY COUNTER MODULE (RIO-300, SLOT 18)														
FQI-301	UT-301 Water Meter Totalizer	AI	RIO-300	18	0	4-20 mA		Allen Bradley	5069-IF8					
FQI-302	UT-302 Water Meter Totalizer	AI	RIO-300	18	1	4-20 mA		Allen Bradley	5069-IF8					
FQI-303	UT-303 Water Meter Totalizer	AI	RIO-300	18	2	4-20 mA		Allen Bradley	5069-IF8					

	Spare	AI	RIO-300	18	3	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	4	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	5	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	6	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	7	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	8	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	9	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	10	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	11	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	12	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	13	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	14	4-20 mA		Allen Bradley	5069-IF8					
	Spare	AI	RIO-300	18	15	4-20 mA		Allen Bradley	5069-IF8					

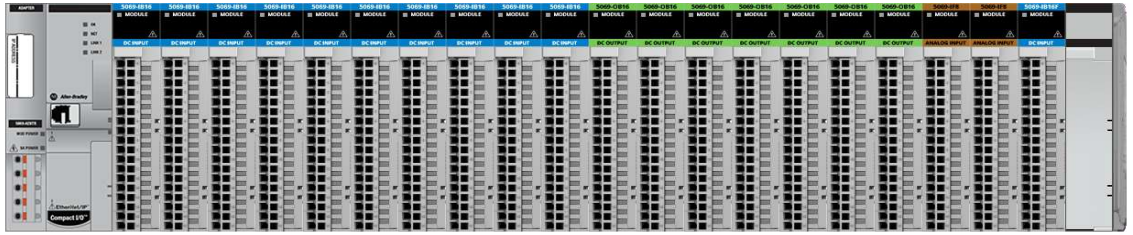
Platform 'Blend PLC L340ER'



Platform 'Raw Area RIO'



Platform 'Finish RIO'



HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

Changed information
New information
Delete tag

HPF Project No.: 23329
Client: Obsidian
Project Name: Obsidian Chemical Blending

Date: 7/15/2024
Revision: B
Drawing Number: 23329-50-102-1
Description: Instrument Cable and Conduit Schedule

CONDUIT AND CABLE SCHEDULE FOR INSTRUMENTS

CABLE NO.	FIELD/SHOP INSTALLATION	CABLE REV	CABLE TAG	CABLE ROUTE	FROM FIELD	TO CABINET	CONDUIT SIZE	CABLE PAIRS	WIRE SIZE	VOLTAGE LEVEL	CABLE CATEGORY	CABLE METAL	INST TYPE	MOTOR HP	LOAD IN AMPERES	MANUF CAT #	CABLE DIA	CABLE AREA	OTHER LOAD	CABLE AREA X #OF CABLES	SUM OF CABLE AREAS	TOTAL WIRE AREA9	CONDUIT-FT TRAY	CONDUIT-FT RGS/CLX	WEIGHT/ M-FT	VOLTAGE DROP	LENGTH-FT (+15%) CABLE	LENGTH-FT (+15%) CONDUCTOR
1	Field	A	24VDC-MOV-030A		MOV-030A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
2	Field	A	24VDC-MOV-030B		MOV-030B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
4	Field	A	24VDC-MOV-031A		MOV-031A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
5	Field	A	24VDC-MOV-031B		MOV-031B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
7	Field	A	24VDC-MOV-032A		MOV-032A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
8	Field	A	24VDC-MOV-032B		MOV-032B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
10	Field	A	24VDC-MOV-033A		MOV-033A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
11	Field	A	24VDC-MOV-033B		MOV-033B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
13	Field	A	24VDC-MOV-034A		MOV-034A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
14	Field	A	24VDC-MOV-034B		MOV-034B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
16	Field	A	24VDC-MOV-035A		MOV-035A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
17	Field	A	24VDC-MOV-035B		MOV-035A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
19	Field	A	24VDC-MOV-036A		MOV-036A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
20	Field	A	24VDC-MOV-036B		MOV-036B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
22	Field	A	24VDC-MOV-037A		MOV-037A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
23	Field	A	24VDC-MOV-037B		MOV-037B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
25	Field	A	24VDC-MOV-100A		MOV-100A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
26	Field	A	24VDC-MOV-100B		MOV-100B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
27	Field	A	24VDC-MOV-016		MOV-100B	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
28	Field	A	24VDC-MOV-105A		MOV-105A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
31	Field	A	24VDC-MOV-106A		MOV-106A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
34	Field	A	24VDC-MOV-107A		MOV-107A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
37	Field	A	24VDC-P-101		FVN-101	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		40		397.00	0.36%	46.00	46.00
38	Field	A	24VDC-P-102		FVN-102	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		38		397.00	0.35%	44.00	44.00
39	Field	A	24VDC-P-103		FVN-103	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		36		397.00	0.33%	42.00	42.00
40	Field	A	24VDC-P-104		FVN-104	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		34		397.00	0.32%	40.00	40.00
41	Field	A	24VDC-P-105		FVN-105	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		32		397.00	0.29%	37.00	37.00
42	Field	A	24VDC-P-106		FVN-106	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		30		397.00	0.28%	35.00	35.00
43	Field	A	24VDC-P-107		FVN-107	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		28		397.00	0.26%	33.00	33.00
58	Field	A	24VDC-MOV-011A		MOV-011A	RIO-100		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		110		397.00	1.01%	127.00	127.00
59	Field	A	24VDC-MOV-011B		MOV-011B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		110		397.00	1.01%	127.00	127.00
60	Field	A	24VDC-MOV-012A		MOV-012A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
61	Field	A	24VDC-MOV-012B		MOV-012B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
62	Field	A	24VDC-MOV-013A		MOV-013A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
64	Field	A	24VDC-MOV-013C		MOV-013C	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
65	Field	A	24VDC-MOV-014		MOV-014	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
66	Field	A	24VDC-MOV-015		MOV-015	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
67	Field	A	24VDC-MOV-201A		MOV-201A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		100		397.00	0.91%	115.00	115.00
68	Field	A	24VDC-MOV-201B		MOV-201B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		100		397.00	0.91%	115.00	115.00
69	Field	A	24VDC-MOV-201C		MOV-201C	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		100		397.00	0.91%	115.00	115.00
70	Field	A	24VDC-MOV-201D		MOV-201D	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		100		397.00	0.91%	115.00	115.00
71	Field	A	24VDC-MOV-201E		MOV-201E	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		100		397.00	0.91%	115.00	115.00
72	Field	A	24VDC-MOV-202A		MOV-202A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
73	Field	A	24VDC-MOV-202B		MOV-202B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
74	Field	A	24VDC-MOV-202C		MOV-202C	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
75	Field	A	24VDC-MOV-202D		MOV-202D	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
76	Field	A	24VDC-MOV-202E		MOV-202E	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
77	Field	A	24VDC-MOV-203A		MOV-203A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
78	Field	A	24VDC-MOV-203B		MOV-203B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
79	Field	A	24VDC-MOV-203C		MOV-203C	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
80	Field	A	24VDC-MOV-203D		MOV-203D	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
81	Field	A	24VDC-MOV-204A		MOV-204A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
82	Field	A	24VDC-MOV-204B		MOV-204B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
83	Field	A	24VDC-MOV-205A		MOV-205A	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
84	Field	A	24VDC-MOV-205B		MOV-205B	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
86	Field	A	24VDC-P-201		FVN-201	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
87	Field	A	24VDC-P-202		FVN-202	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
88	Field	A	24VDC-P-203		FVN-203	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
89	Field	A	24VDC-P-204		FVN-204	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
90	Field	A	24VDC-P-205		FVN-205	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
91	Field	A	24VDC-M-011		M-011	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		100		397.00	0.91%	115.00	115.00
92	Field	A	24VDC-M-012		M-012	PLC-200		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
106	Field	A	24VDC-MOV-038A		MOV-038A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
107	Field	A	24VDC-MOV-038B		MOV-038B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
108	Field	A	24VDC-MOV-038C		MOV-03BC	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
110	Field	A	24VDC-MOV-039A		MOV-039A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

Changed information
New information
Delete tag

HPF Project No.: 23329
Client: Obsidian
Project Name: Obsidian Chemical Blending

Date: 7/15/2024
Revision: B
Drawing Number: 23329-50-102-1
Description: Instrument Cable and Conduit Schedule

CONDUIT AND CABLE SCHEDULE FOR INSTRUMENTS

CABLE NO.	FIELD/SHOP INSTALLATION	CABLE REV	CABLE TAG	CABLE ROUTE	FROM FIELD	TO CABINET	CONDUIT SIZE	CABLE PAIRS	WIRE SIZE	VOLTAGE LEVEL	CABLE CATEGORY	CABLE METAL	INST TYPE	MOTOR HP	LOAD IN AMPERES	MANUF CAT #	CABLE DIA	CABLE AREA	OTHER LOAD	CABLE AREA X #OF CABLES	SUM OF CABLE AREAS	TOTAL WIRE AREA9	CONDUIT-FT TRAY	CONDUIT-FT RGS/CLX	WEIGHT/ M-FT	VOLTAGE DROP	LENGTH-FT (+15%) CABLE	LENGTH-FT (+15%) CONDUCTOR
111	Field	A	24VDC-MOV-039B		MOV-039B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		60		397.00	0.55%	69.00	69.00
112	Field	A	24VDC-MOV-039C		MOV-039C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
114	Field	A	24VDC-MOV-040A		MOV-040A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		60		397.00	0.55%	69.00	69.00
115	Field	A	24VDC-MOV-040B		MOV-040B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
116	Field	A	24VDC-MOV-040C		MOV-040C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
118	Field	A	24VDC-MOV-041A		MOV-041A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
119	Field	A	24VDC-MOV-041B		MOV-041B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		80		397.00	0.73%	92.00	92.00
120	Field	A	24VDC-MOV-041C		MOV-041C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
122	Field	A	24VDC-MOV-042A		MOV-042A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
123	Field	A	24VDC-MOV-042B		MOV-042B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		60		397.00	0.55%	69.00	69.00
124	Field	A	24VDC-MOV-042C		MOV-042C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		70		397.00	0.64%	81.00	81.00
126	Field	A	24VDC-MOV-043A		MOV-043A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		45		397.00	0.41%	52.00	52.00
127	Field	A	24VDC-MOV-043B		MOV-043B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		35		397.00	0.32%	41.00	41.00
128	Field	A	24VDC-MOV-043C		MOV-043C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		45		397.00	0.41%	52.00	52.00
130	Field	A	24VDC-MOV-044A		MOV-044A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
131	Field	A	24VDC-MOV-044B		MOV-044B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		75		397.00	0.69%	87.00	87.00
132	Field	A	24VDC-MOV-044C		MOV-044C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		85		397.00	0.78%	98.00	98.00
134	Field	A	24VDC-MOV-045A		MOV-045A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
135	Field	A	24VDC-MOV-045B		MOV-045B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		55		397.00	0.51%	64.00	64.00
136	Field	A	24VDC-MOV-045C		MOV-045C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		65		397.00	0.59%	75.00	75.00
138	Field	A	24VDC-MOV-300A		MOV-300A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
139	Field	A	24VDC-MOV-300B		MOV-300B	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
140	Field	A	24VDC-MOV-300C		MOV-300C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
141	Field	A	24VDC-MOV-300D		MOV-300D	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		90		397.00	0.82%	104.00	104.00
142	Field	A	24VDC-MOV-301A		MOV-301A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
144	Field	A	24VDC-MOV-301C		MOV-301C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
146	Field	A	24VDC-MOV-302A		MOV-302A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
148	Field	A	24VDC-MOV-302C		MOV-302C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
150	Field	A	24VDC-MOV-303A		MOV-303A	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
152	Field	A	24VDC-MOV-303C		MOV-303C	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		50		397.00	0.46%	58.00	58.00
154	Field	A	24VDC-P-301		FVN-301	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		88		397.00	0.81%	102.00	102.00
155	Field	A	24VDC-P-302		FVN-302	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		88		397.00	0.81%	102.00	102.00
156	Field	A	24VDC-P-303		FVN-302	RIO-300		8	16	600V	PIOS	TINNED	DIG		0.19	**HW120 01608**	0.90	0.64		1	0.64		88		397.00	0.81%	102.00	102.00

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329	Date:	7/15/2024
Client:	Obsidian	Revision:	B
Project Name:	Obsidian Chemical Blending	Drawing Number:	23329-50-102-2
		Description:	Instrument Cable and Conduit Schedule

CONDUIT AND CABLE BILL OF MATERIAL FOR INSTRUMENTS Based on 23329-50-102-1

Wire Size	Cable Voltage	Houston Wire Catalog No.	Runs	Estimated Length/Ft.
24	600V	BEL-7937A	4	358
22	600V	BELD-3105A	24	1,185
16	600V	HW120 01602	43	3,399
16	600V	HW120 01604	34	2,437
16	600V	HW120 01608	99	8,245
16	600V	HW05001601 (Black)		
16	600V	HW05001601 (White)		

Conduit Size	Estimated Length	
	RGS	AG
6	0	0
5	0	0
4	0	0
3 1/2	0	0
3	0	0
2 1/2	0	0
2	0	0
1 1/2	0	0
1 1/4	0	0
1	0	0
3/4	0	0

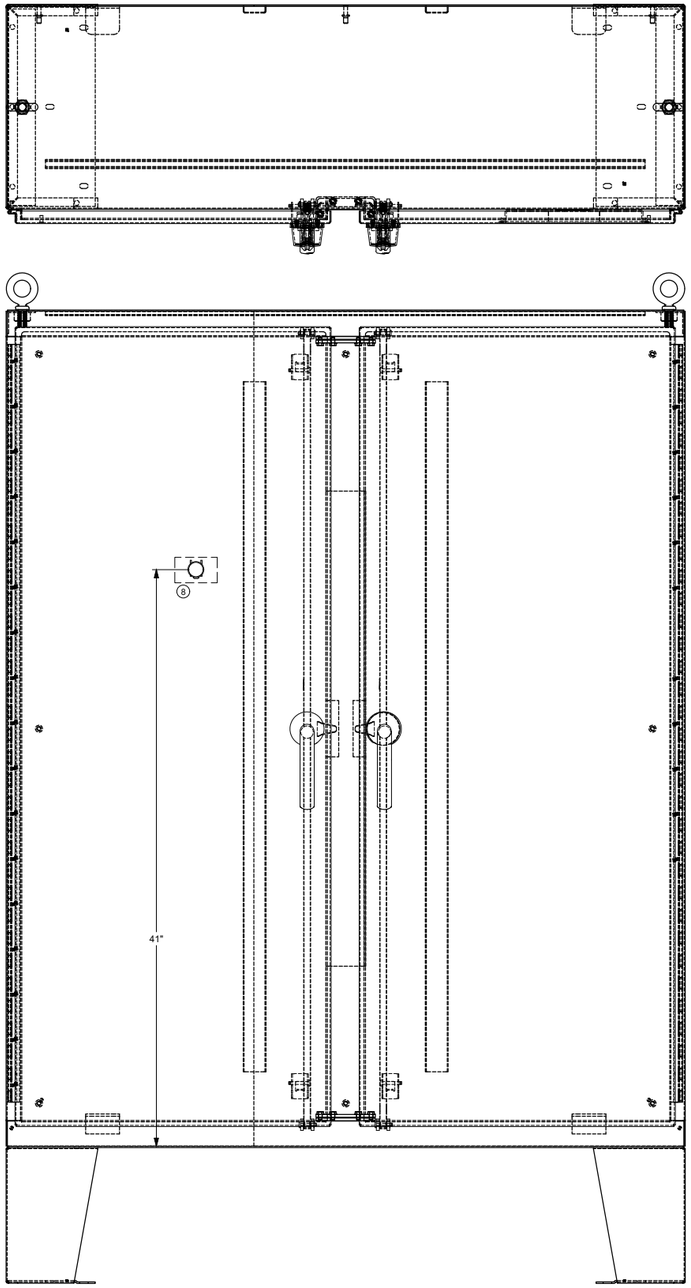
Cable Gland #	QTY.

SPECIFICATION NOTES:

1) All Pairs shall be Black & White
2) All Triads shall be Black, White and Red.
3) Multiple Pair cable shall have pairs numbered starting with 1.
4) Multiple Triad cable shall have triads numbered starting with 1.
5) Three Phase wiring shall have the phases color coded as black, red, & blue.
6) All under ground conduit should be coated.
7) On skid wiring is assumed to be included by skid vendor.

GENERAL NOTES:

1) This is an estimated BOM. It is the responsibility of the Contractor to measure and field verify all lengths noted on the BOM and the Cable & Conduit Schedule.



ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	POLYSAFE STANDARD ENCLOSURE 74 X 60 X 18	HOFFA74H6018LP3PT	HOFFMAN
2	1	PANELVIEW PROTECTION BRACKET PLATE	CUSTOM	CUSTOM
3	1	WINDOW KIT; HINGED; SPL TYPE 316L; GRAY; 22.19 X 16.14 IN, F8936	AWDH2420N4	HOFFMAN
4	1	PANELVIEW PLUS 7 12.1" GRAPHIC TERMINAL PERFORMANCE SER. A	2711P-T12W22D9P	ALLEN-BRADLEY
5	1	LIGHT PACKAGE SWITCH	G8752737	HOFFMAN
6	1	HOFFMAN LED24V15 LIGHT KIT,LED,1.79IN. H X 15IN. L	G8752764	HOFFMAN
7	2	CONN PROGRAM PORT RJ45 JACK	5600635	PHOENIX CONTACT
8	1	RED MUSHROOM 40MM EMERGENCY STOP SWITCHING PUSH PULL. (OPTIONAL)	XB4BT842	SCHNEIDER ELECTRIC

PANEL COATING

ALL PANELS SHOULD BE COATED EXTERNALLY WITH AN ACRYLIC ALIPHATIC URETHANE FOR UV CHEMICAL PROTECTION WITH THE FOLLOWING REFERENCE.

ITEM	DESCRIPTION
PANEL APPLICATION COATING	PITTHANE ULTRA 95-812 (PORCELAIN WHITE)
COATING	PITTHANE ULTRA 95-819

NO EXCEPTION SHALL BE MADE FOR THE PANEL APPLICATION COATING AND COATING ITEMS REFERENCED ABOVE.

TAG "A"

PLC-200

TAG "B"

SUPPLY CIRCUIT

VOLTAGE:	24VDC
MAIN CIRCUIT BREAKER RATING	20A

TAG "C"

CAUTION

MAIN CIRCUIT BREAKER "CB-1"
MUST BE IN OFF POSITION
BEFORE SERVICING ENCLOSURE

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

EXTERNAL LAYOUT PLC-200
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

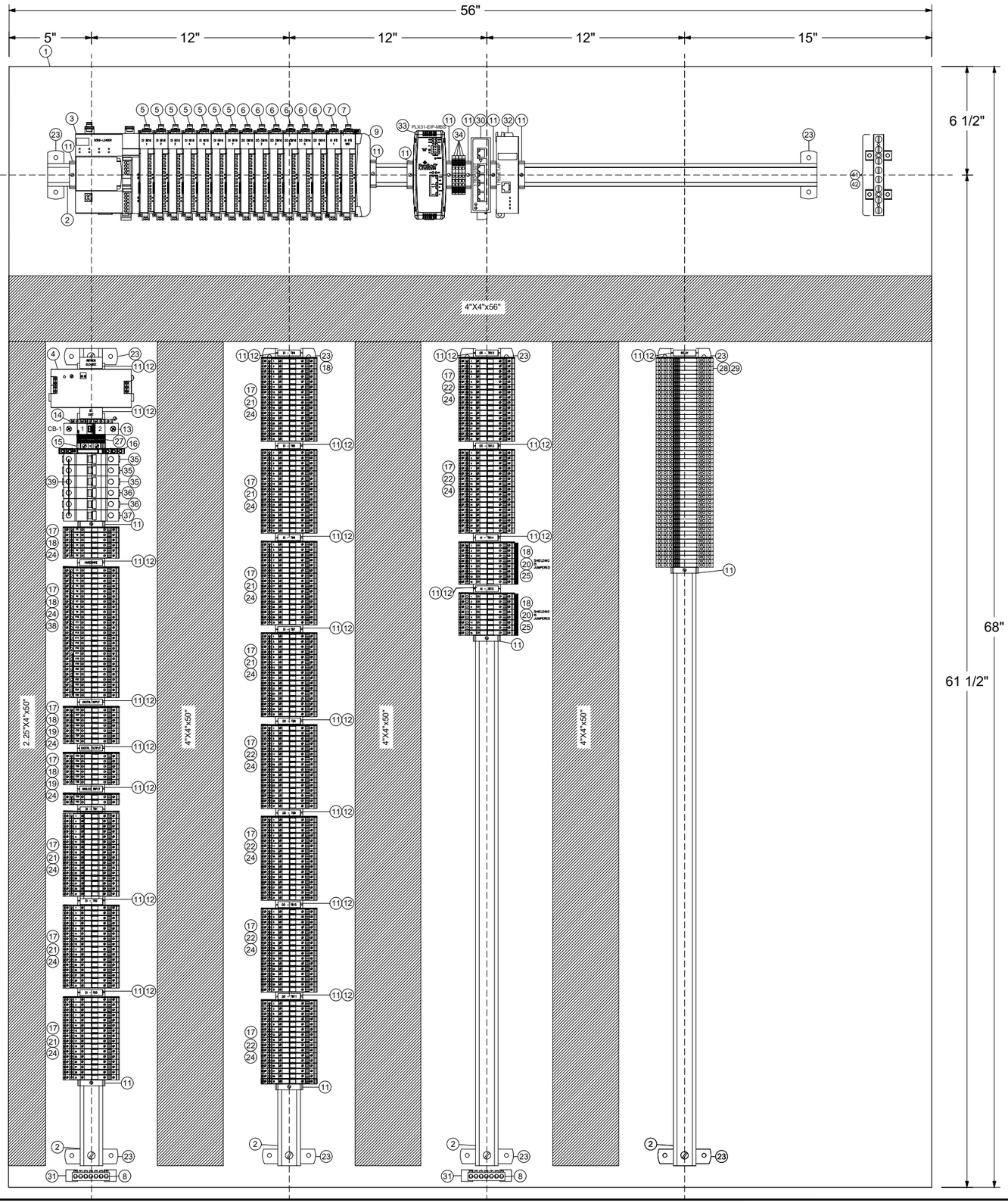
HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

DWG.	23329-50-102	REV.	A	SCALE	JOB NO.	23329	DRAWN BY:	BJT	FILE:	23329-50-102

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR APPROVAL, HPF# 23329	BJT	JF			07/18/24

REFERENCE DRAWINGS

DWG. NO.



ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	BACK PLANE 56 X 68	HOFFA72P60	HOFFMAN
2	5	A-B 199DR1 DIN MOUNTING RAIL	199DR1	ALLEN-BRADLEY
3	1	A-B 5069-L340ER COMPACTLOGIX 4MB EN	5069L340ER	ALLEN-BRADLEY
4	1	BASIC POWER SUPPLY, 24-28V DC, 480 W, 100-240V AC INPUT VOLTAGE	1606-XLB480E	ALLEN-BRADLEY
5	7	A-B 5069-IB16 5069 CMPCT I/O 16 CHNL 24VDC	5069IB16	ALLEN-BRADLEY
6	6	A-B 5069-OB16 5069 CMPCT I/O 16 CHNL 24VDC	5069OB16	ALLEN-BRADLEY
7	2	A-B 5069-IF8 5069 CMPCT I/O 8 CHNL VOLT/CURRENT	5069IF8	ALLEN-BRADLEY
8	1	5-TERMINAL GROUND BAR KIT	PK7GTA	EATON
9	1	END CAP / TERMINATOR	1769-ECR	ALLEN-BRADLEY
10	1	2.25" X 4" X 50' WIRE DUCT	F2X4LG6	PANDUIT
11	27	1492 TERMINAL BLOCK ACCESSORIES END ANCHOR	1492-EAJ35	ALLEN-BRADLEY
12	21	1492 TERMINAL BLOCK MARKER HOLDER	1492-GM5X30	ALLEN-BRADLEY
13	1	DC CIRCUIT BREAKER 20 AMP	1489-M1C200	ALLEN-BRADLEY
14	1	M4/6. DL LIGHTED TERMINAL	11517825	ENTRELEC
15	1	1492-J FEED THROUGH GRAY TERMINAL	1492-J4	ALLEN-BRADLEY
16	1	TERMINAL BLOCK RELAY	700-HLT1Z24	ALLEN-BRADLEY
17	255	1492-J TERMINAL BLOCK, TWO-LEVEL BLOCK, FUSE CIRCUIT, GRAY	1492-JD3FB	ALLEN-BRADLEY
18	21	1492 TERMINAL BLOCK ACCESSORIES END BARRIER, GRAY	1492-EBJD3FB	ALLEN-BRADLEY
19	40	0.5 A FUSE (TBDC)	GMA-3-R	BUSSMAN
20	16	63 MA FUSE(AI/AO)	GMA-63-R	BUSSMAN
21	112	250 MA FUSE(DI)	GMA-250-R	BUSSMAN
22	96	1 A FUSE(DO)	GMA-1-R	BUSSMAN
23	10	RAIL SUPPORT BRACKET	STS-25	IBOCO
24	67	JUMPER COMB 4 POLES	1492-SJ8A-4	ALLEN-BRADLEY
25	16	TERMINAL BLOCK, THREE-LEVEL FEED-THROUGH BLOCK(AI/AO)	1492-JD3FB	ALLEN-BRADLEY
26	4	4" X 4" X 6.5' WIRE DUCT	FS4X4BL6NM	PANDUIT
27	1	1492-J FEED THROUGH GREEN TERMINAL	1492-JG4	ALLEN-BRADLEY
28	52	TERM BLOCK STYLE 24V DC 1 POLE RELAYS	700-TBR24	ALLEN-BRADLEY
29	52	24V DC GP TERMINAL BLOCK RELAY	700-HLTZ24	ALLEN-BRADLEY
30	1	STRATIX 2000 UNMANAGED SWITCH, 5 COPPER 10/100 PORTS	1783-US5T	ALLEN-BRADLEY
31	1	SUPPORT BRACKET FOR INSULATED DIN RAIL MOUNTING	1201141	PHOENIX CONTACT
32	1	3 PORT ETHERNET/IP TAP	1783-ETAP	ALLEN-BRADLEY
33	1	ETHERNET/IP™ TO MODBUS® SERIAL GATEWAY	PLX31-EIP-MBS	PROSOFT
34	4	1492 IEC SCREW TERMINAL BLOCKS	1492-JG3	ALLEN-BRADLEY
35	3	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 1A	1492-SPM1C010	ALLEN-BRADLEY
36	2	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 20A	1492-SPM1C200	ALLEN-BRADLEY
37	1	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 5A	1492-SPM1C050	ALLEN-BRADLEY
38	25	0.5 A FUSE (TBDC)	GMA-500-R	ALLEN-BRADLEY
39	6	BUS BAR, 80 A, 1 PHASE, 1	1492-A1B8	ALLEN-BRADLEY
40	1	UNIVERSAL GROUND BAR, 6 PORT, #14 - #4 AWG	UGB2/0-414-6	PANDUIT
41	1	STAND-OFFS FOR UNIVERSAL GROUND BAR	UGB-IN-SO	PANDUIT

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

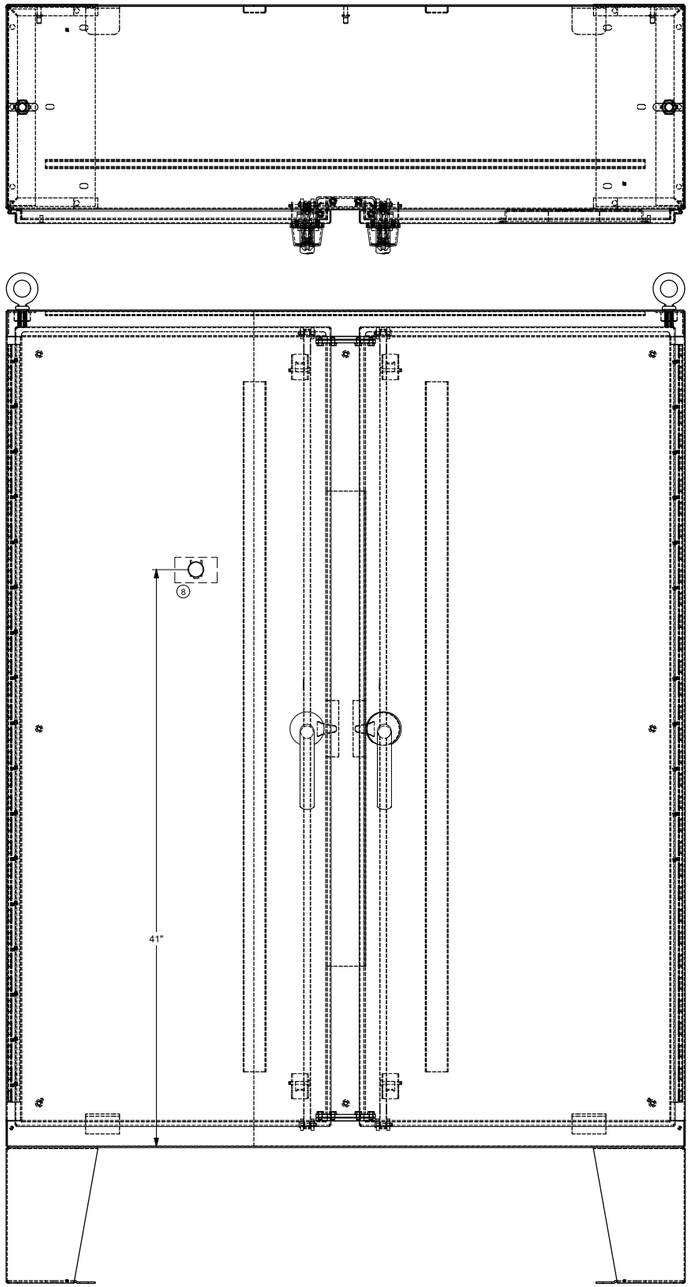
INTERNAL LAYOUT PLC-200
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

HPF
CONSULTANTS, INC.
ENGINEERING, DESIGN, & INSPECTION
MIDLAND, TEXAS

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A.	ISSUED FOR APPROVAL, HPF# 23329	BJT	JF			07/18/24

REFERENCE DRAWINGS
DWG. NO.

DRAWN BY: BJT | FILE: 23329-50-103
JOB NO. 23329 | SCALE
DWG. 23329-50-103 | REV. A



ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	POLYSAFE STANDARD ENCLOSURE 74 X 60 X 18	HOFFA74H6018LP3PT	HOFFMAN
2	1	PANELVIEW PROTECTION BRACKET PLATE	CUSTOM	CUSTOM
3	1	WINDOW KIT; HINGED; SPL TYPE 316L; GRAY; 22.19 X 16.14 IN, F8936	AWDH2420N4	HOFFMAN
4	1	PANELVIEW PLUS 7 12.1" GRAPHIC TERMINAL PERFORMANCE SER. A	2711P-T12W22D9P	ALLEN-BRADLEY
5	1	LIGHT PACKAGE SWITCH	G8752737	HOFFMAN
6	1	HOFFMAN LED24V15 LIGHT KIT,LED,1.79IN. H X 15IN. L	G8752764	HOFFMAN
7	2	CONN PROGRAM PORT RJ45 JACK	5600635	PHOENIX CONTACT
8	1	RED MUSHROOM 40MM EMERGENCY STOP SWITCHING PUSH PULL. (OPTIONAL)	XB4BT842	SCHNEIDER ELECTRIC

PANEL COATING

ALL PANELS SHOULD BE COATED EXTERNALLY WITH AN ACRYLIC ALIPHATIC URETHANE FOR UV CHEMICAL PROTECTION WITH THE FOLLOWING REFERENCE.

ITEM	DESCRIPTION
PANEL APPLICATION COATING	PITTHANE ULTRA 95-812 (PORCELAIN WHITE)
COATING	PITTHANE ULTRA 95-819

NO EXCEPTION SHALL BE MADE FOR THE PANEL APPLICATION COATING AND COATING ITEMS REFERENCED ABOVE.

TAG "A"

RIO-100

TAG "B"

SUPPLY CIRCUIT

VOLTAGE:	24VDC
MAIN CIRCUIT BREAKER RATING	20A

TAG "C"

CAUTION

MAIN CIRCUIT BREAKER "CB-1"
MUST BE IN OFF POSITION
BEFORE SERVICING ENCLOSURE

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

EXTERNAL LAYOUT RIO-100
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

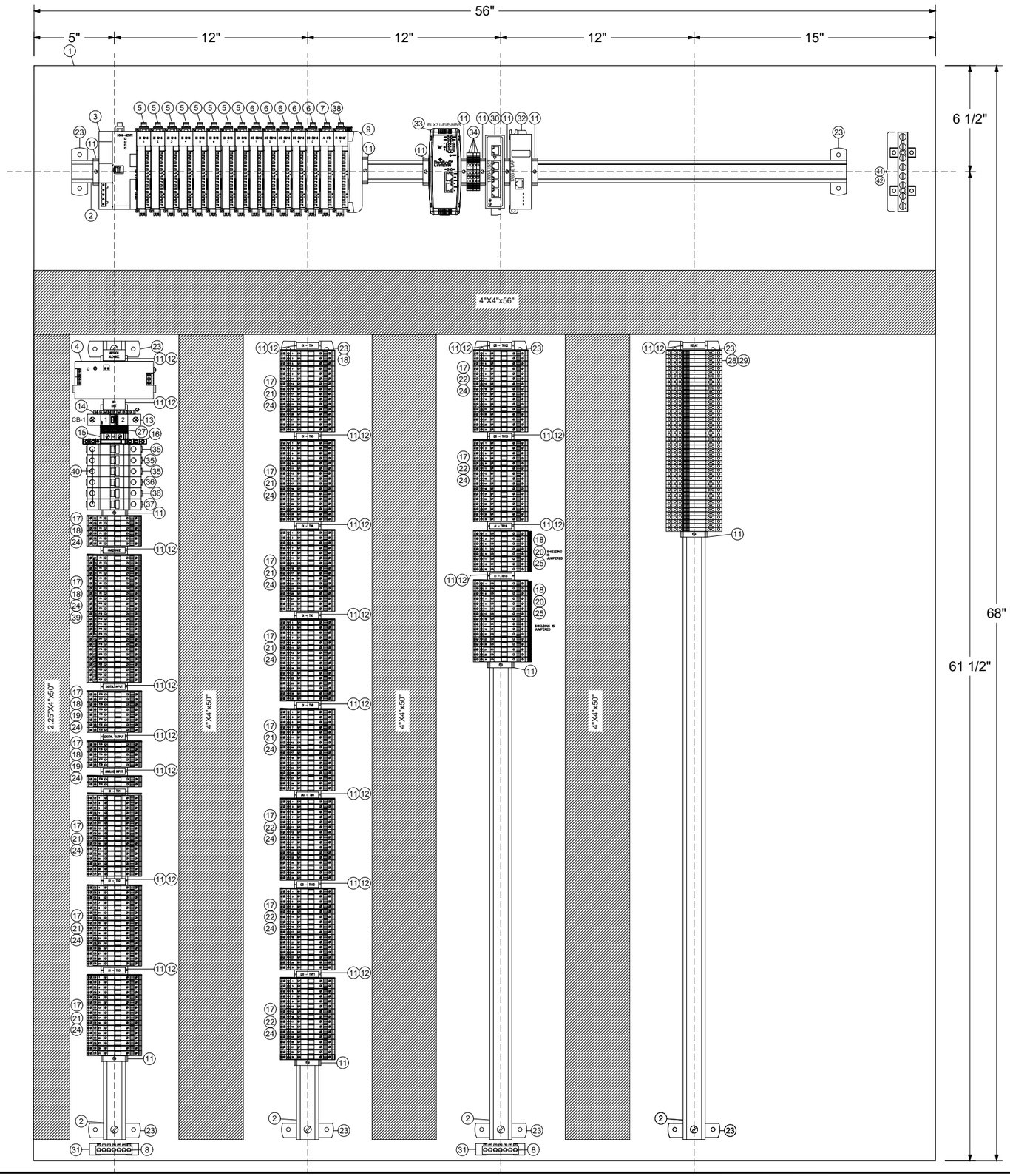
HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

DWG.	23329-50-105	REV.	A	SCALE
JOB NO.	23329	DRAWN BY:	BJT	FILE: 23329-50-105

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR APPROVAL, HPF# 23329	BJT	JF			07/18/24

REFERENCE DRAWINGS

DWG. NO.



ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	BACK PLANE 56 X 68	HOFFA72P60	HOFFMAN
2	5	A-B 199DR1 DIN MOUNTING RAIL	199DR1	ALLEN-BRADLEY
3	1	A-B 5069-AENTR COMPACTLOGIX 4MB EN	5069-AENTR	ALLEN-BRADLEY
4	1	BASIC POWER SUPPLY, 24-28V DC, 480 W, 100-240V AC INPUT VOLTAGE	1606-XLB480E	ALLEN-BRADLEY
5	8	A-B 5069-IB16 5069 CMPCT I/O 16 CHNL 24VDC	5069IB16	ALLEN-BRADLEY
6	5	A-B 5069-OB16 5069 CMPCT I/O 16 CHNL 24VDC	5069OB16	ALLEN-BRADLEY
7	1	A-B 5069-IF8 5069 CMPCT I/O 8 CHNL VOLT/CURRENT	5069IF8	ALLEN-BRADLEY
8	1	5-TERMINAL GROUND BAR KIT	PK7GTA	EATON
9	1	END CAP / TERMINATOR	1769-ECR	ALLEN-BRADLEY
10	1	2.25" X 4" X 50' WIRE DUCT	F2X4LG6	PANDUIT
11	27	1492 TERMINAL BLOCK ACCESSORIES END ANCHOR	1492-EAJ35	ALLEN-BRADLEY
12	21	1492 TERMINAL BLOCK MARKER HOLDER	1492-GM5X30	ALLEN-BRADLEY
13	1	DC CIRCUIT BREAKER 20 AMP	1489-M1C200	ALLEN-BRADLEY
14	1	M4/6. DL LIGHTED TERMINAL	11517825	ENTRELEC
15	1	1492-J FEED THROUGH GRAY TERMINAL	1492-J4	ALLEN-BRADLEY
16	1	TERMINAL BLOCK RELAY	700-HLT1Z24	ALLEN-BRADLEY
17	249	1492-J TERMINAL BLOCK, TWO-LEVEL BLOCK, FUSE CIRCUIT, GRAY	1492-JD3FB	ALLEN-BRADLEY
18	22	1492 TERMINAL BLOCK ACCESSORIES END BARRIER, GRAY	1492-EBJD3FB	ALLEN-BRADLEY
19	40	3 A FUSE (TBDC)	GMA-3-R	BUSSMAN
20	32	63 MA FUSE(AI/AO)	GMA-63-R	BUSSMAN
21	112	250 MA FUSE(DI)	GMA-250-R	BUSSMAN
22	96	1 A FUSE(DO)	GMA-1-R	BUSSMAN
23	10	RAIL SUPPORT BRACKET	STS-25	IBOCO
24	67	JUMPER COMB 4 POLES	1492-SJ8A-4	ALLEN-BRADLEY
25	32	TERMINAL BLOCK, THREE-LEVEL FEED-THROUGH BLOCK(AI/AO)	1492-JD3FB	ALLEN-BRADLEY
26	4	4" X 4" X 6.5' WIRE DUCT	FS4X4BL6NM	PANDUIT
27	1	1492-J FEED THROUGH GREEN TERMINAL	1492-JG4	ALLEN-BRADLEY
28	46	TERM BLOCK STYLE 24V DC 1 POLE RELAYS	700-TBR24	ALLEN-BRADLEY
29	46	24V DC GP TERMINAL BLOCK RELAY	700-HLTZ24	ALLEN-BRADLEY
30	1	STRATIX 2000 UNMANAGED SWITCH, 5 COPPER 10/100 PORTS	1783-US5T	ALLEN-BRADLEY
31	1	SUPPORT BRACKET FOR INSULATED DIN RAIL MOUNTING	1201141	PHOENIX CONTACT
32	1	3 PORT ETHERNET/IP TAP	1783-ETAP	ALLEN-BRADLEY
33	1	ETHERNET/IP™ TO MODBUS® SERIAL GATEWAY	PLX31-EIP-MBS	PROSOFT
34	4	1492 IEC SCREW TERMINAL BLOCKS	1492-JG3	ALLEN-BRADLEY
35	3	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 1A	1492-SPM1C010	ALLEN-BRADLEY
36	2	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 20A	1492-SPM1C200	ALLEN-BRADLEY
37	1	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 5A	1492-SPM1C050	ALLEN-BRADLEY
38	1	5069 COMPACT I/O 16 CHANNEL FAST 24VDC SINK INPUT MODULE	5069-IB16F	ALLEN-BRADLEY
39	25	0.5 A FUSE (TBDC)	GMA-500-R	ALLEN-BRADLEY
40	6	BUS BAR, 80 A, 1 PHASE, 1	1492-A1B8	ALLEN-BRADLEY
41	1	UNIVERSAL GROUND BAR, 6 PORT, #14 - #4 AWG	UGB2/0-414-6	PANDUIT
42	1	STAND-OFFS FOR UNIVERSAL GROUND BAR	UGB-IN-SO	PANDUIT

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

INTERNAL LAYOUT RIO-100
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

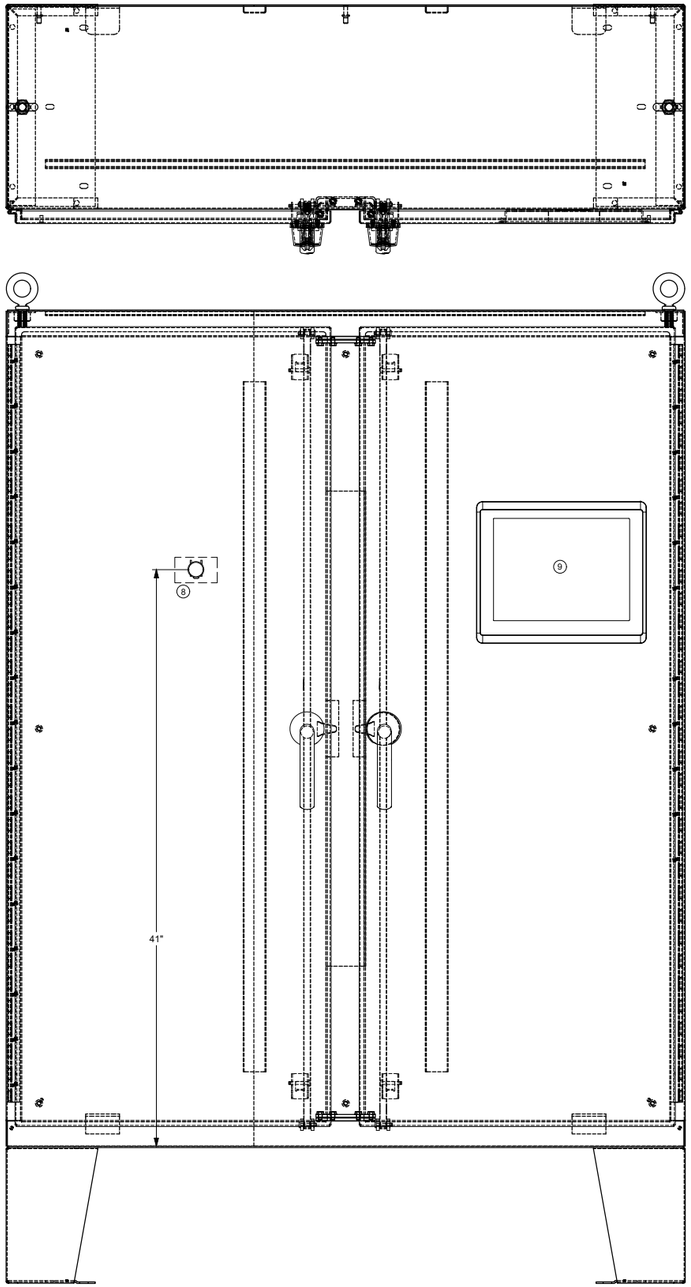
HPF
CONSULTANTS, INC.
ENGINEERING, DESIGN, & INSPECTION
MIDLAND, TEXAS

DWG.	23329-50-106	REV.	A	SCALE		JOB NO.	23329	DRAWN BY:	BJT	FILE:	23329-50-106

NO.	REVISION/ISSUE	BY	CHK	REVIEW/APPR.	DATE
A	ISSUED FOR APPROVAL, HPF# 23329	BJT	JF		07/18/24

REFERENCE DRAWINGS

DWG. NO.



ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	POLYSAFE STANDARD ENCLOSURE 74 X 60 X 18	HOFFA74H6018LP3PT	HOFFMAN
2	1	PANELVIEW PROTECTION BRACKET PLATE	CUSTOM	CUSTOM
3	1	WINDOW KIT; HINGED; SPL TYPE 316L; GRAY; 22.19 X 16.14 IN, F8936	AWDH2420N4	HOFFMAN
4	1	PANELVIEW PLUS 7 12.1" GRAPHIC TERMINAL PERFORMANCE SER. A	2711P-T12W22D9P	ALLEN-BRADLEY
5	1	LIGHT PACKAGE SWITCH	G8752737	HOFFMAN
6	1	HOFFMAN LED24V15 LIGHT KIT,LED,1.79IN. H X 15IN. L	G8752764	HOFFMAN
7	2	CONN PROGRAM PORT RJ45 JACK	5600635	PHOENIX CONTACT
8	1	RED MUSHROOM 40MM EMERGENCY STOP SWITCHING PUSH PULL. (OPTIONAL)	XB4BT842	SCHNEIDER ELECTRIC
9	1	A-B 2711P-T15C22D9P PNLVW PLUS 7 GRAPHIC TER	2711P-T15C22D9P	ALLEN-BRADLEY

PANEL COATING

ALL PANELS SHOULD BE COATED EXTERNALLY WITH AN ACRYLIC ALIPHATIC URETHANE FOR UV CHEMICAL PROTECTION WITH THE FOLLOWING REFERENCE.

ITEM	DESCRIPTION
PANEL APPLICATION COATING	PITTHANE ULTRA 95-812 (PORCELAIN WHITE)
COATING	PITTHANE ULTRA 95-819

NO EXCEPTION SHALL BE MADE FOR THE PANEL APPLICATION COATING AND COATING ITEMS REFERENCED ABOVE.

TAG "A"

RIO-300

TAG "B"

SUPPLY CIRCUIT

VOLTAGE:	24VDC
MAIN CIRCUIT BREAKER RATING	20A

TAG "C"

CAUTION

MAIN CIRCUIT BREAKER "CB-1"
MUST BE IN OFF POSITION
BEFORE SERVICING ENCLOSURE

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

EXTERNAL LAYOUT RIO-300
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

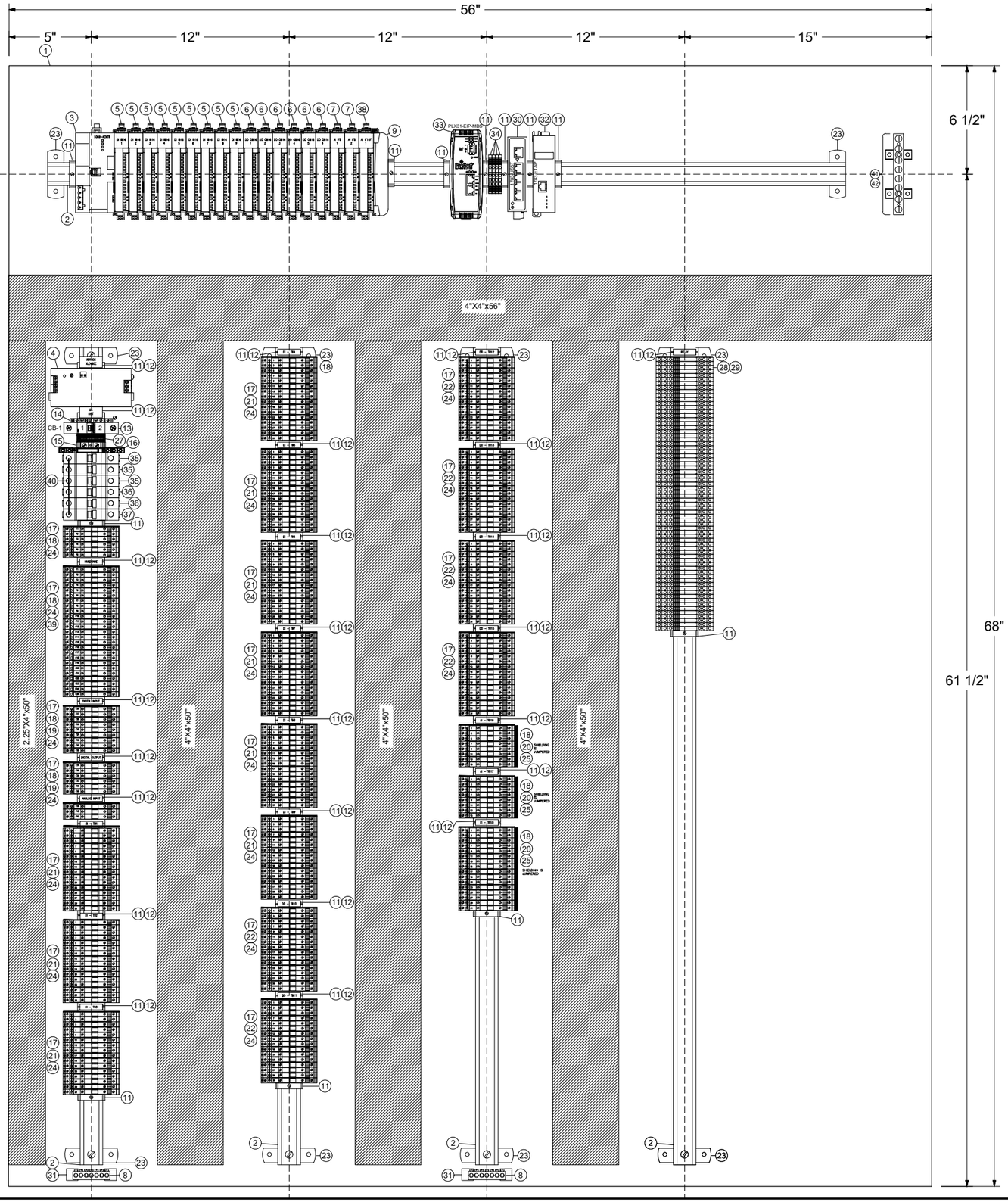
HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

DWG.	23329-50-108	REV.	A	SCALE	JOB NO.	23329	DRAWN BY:	BJT	FILE:	23329-50-108

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR APPROVAL, HPF# 23329	BJT	JF			07/18/24

REFERENCE DRAWINGS

DWG. NO.



ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	BACK PLANE 56 X 68	HOFFA72P60	HOFFMAN
2	5	A-B 199DR1 DIN MOUNTING RAIL	199DR1	ALLEN-BRADLEY
3	1	A-B 5069-AENTR COMPACTLOGIX 4MB EN	5069-AENTR	ALLEN-BRADLEY
4	1	BASIC POWER SUPPLY, 24-28V DC, 480 W, 100-240V AC INPUT VOLTAGE	1606-XLB480E	ALLEN-BRADLEY
5	9	A-B 5069-IB16 5069 CMPCT I/O 16 CHNL 24VDC	5069IB16	ALLEN-BRADLEY
6	6	A-B 5069-OB16 5069 CMPCT I/O 16 CHNL 24VDC	5069OB16	ALLEN-BRADLEY
7	2	A-B 5069-IF8 5069 CMPCT I/O 8 CHNL VOLT/CURRENT	5069IF8	ALLEN-BRADLEY
8	2	5-TERMINAL GROUND BAR KIT	PK7GTA	EATON
9	1	END CAP / TERMINATOR	1769-ECR	ALLEN-BRADLEY
10	1	2.25" X 4" X 50' WIRE DUCT	F2X4LG6	PANDUIT
11	36	1492 TERMINAL BLOCK ACCESSORIES END ANCHOR	1492-EAJ35	ALLEN-BRADLEY
12	26	1492 TERMINAL BLOCK MARKER HOLDER	1492-GM5X30	ALLEN-BRADLEY
13	1	DC CIRCUIT BREAKER 20 AMP	1489-M1C200	ALLEN-BRADLEY
14	1	M4/6. DL LIGHTED TERMINAL	11517825	ENTRELEC
15	1	1492-J FEED THROUGH GRAY TERMINAL	1492-J4	ALLEN-BRADLEY
16	1	TERMINAL BLOCK RELAY	700-HLT1Z24	ALLEN-BRADLEY
17	289	1492-J TERMINAL BLOCK, TWO-LEVEL BLOCK, FUSE CIRCUIT, GRAY	1492-JD3FB	ALLEN-BRADLEY
18	31	1492 TERMINAL BLOCK ACCESSORIES END BARRIER, GRAY	1492-EBJD3FB	ALLEN-BRADLEY
19	18	3 A FUSE (TBDC)	GMA-3-R	BUSSMAN
20	40	63 MA FUSE(AI/AO)	GMA-63-R	BUSSMAN
21	128	250 MA FUSE(DI)	GMA-250-R	BUSSMAN
22	112	1 A FUSE(DO)	GMA-1-R	BUSSMAN
23	10	RAIL SUPPORT BRACKET	STS-25	IBOCO
24	29	SIDE JUMPER, INSULATED, 5MM, 24 POLE, GRAY	1492-SJ5A-24	ALLEN-BRADLEY
25	40	TERMINAL BLOCK, THREE-LEVEL FEED-THROUGH BLOCK(AI/AO)	1492-JD3F3FB	ALLEN-BRADLEY
26	4	4" X 4" X 6.5' WIRE DUCT	FS4X4BL6NM	PANDUIT
27	1	1492-J FEED THROUGH GREEN TERMINAL	1492-JG4	ALLEN-BRADLEY
28	68	TERM BLOCK STYLE 24V DC 1 POLE RELAYS	700-TBR24	ALLEN-BRADLEY
29	68	24V DC GP TERMINAL BLOCK RELAY	700-HLTZ24	ALLEN-BRADLEY
30	1	STRATIX 2000 UNMANAGED SWITCH, 5 COPPER 10/100 PORTS	1783-US5T	ALLEN-BRADLEY
31	2	SUPPORT BRACKET FOR INSULATED DIN RAIL MOUNTING	1201141	PHOENIX CONTACT
32	1	3 PORT ETHERNET/IP TAP	1783-ETAP	ALLEN-BRADLEY
33	1	ETHERNET/IP™ TO MODBUS® SERIAL GATEWAY	PLX31-EIP-MBS	PROSOFT
34	4	1492 IEC SCREW TERMINAL BLOCKS	1492-JG3	ALLEN-BRADLEY
35	3	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 1A	1492-SPM1C010	ALLEN-BRADLEY
36	2	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 20A	1492-SPM1C200	ALLEN-BRADLEY
37	1	SUPPLEMENTARY PROTECTORS, 1 POLE CONFIGURATION, TRIP CURVE C, 5A	1492-SPM1C050	ALLEN-BRADLEY
38	1	5069 COMPACT I/O 16 CHANNEL FAST 24VDC SINK INPUT MODULE	5069-IB16F	ALLEN-BRADLEY
39	25	0.5 A FUSE (TBDC)	GMA-500-R	ALLEN-BRADLEY
40	6	BUS BAR, 80 A, 1 PHASE, 1	1492-A1B8	ALLEN-BRADLEY
41	1	UNIVERSAL GROUND BAR, 6 PORT, #14 - #4 AWG	UGBZ/0-414-6	PANDUIT
42	1	STAND-OFFS FOR UNIVERSAL GROUND BAR	UGB-IN-SO	PANDUIT

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

INTERNAL LAYOUT RIO-300
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

HPF
CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

DWG.	23329-50-109	REV.	A	SCALE		JOB NO.	23329	DRAWN BY:	BJT
DWG.	23329-50-109	REV.	A	SCALE		JOB NO.	23329	DRAWN BY:	BJT

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR APPROVAL, HPF# 23329	BJT	JF			07/18/24

DWG. NO.	REFERENCE DRAWINGS

SQUARE D ENCLOSURE:
MODEL#: Q0140L200PGRB

LPN-100
120VAC

DISCONNECT SOURCE
DPL-102 CKT 8,10

SERVICE	AMP LOAD Aϕ	AMP LOAD Bϕ	CIRCUIT NUMBER	CIRCUIT BREAKER	200A Aϕ N Bϕ	CIRCUIT BREAKER	CIRCUIT NUMBER	AMP LOAD Aϕ	AMP LOAD Bϕ	SERVICE
PLC-200	15		1	20		225	2	110.0		PRIMARY
MOV-CKT201		12.5	3	20			4		95.0	
MOV-CKT202	12.5		5	20		20	6	15		RIO-100
MOV-CKT203		12.5	7	20		20	8		12.5	MOV-CKT101
MOV-CKT204	12.5		9	20		20	10	12.5		MOV-CKT102
MOV-CKT205		10	11	15		20	12		12.5	MOV-CKT103
RECEPTACLE-1	15		13	20	GFPE	20	14	12.5		MOV-CKT104
RECEPTACLE-2		15	15	20	GFPE	10	16		5	MOVCKT-105
SPACE			17		GFPE	20	18	15		RECEPTACLE-2
SPACE			19		GFPE	20	20		15	RECEPTACLE-4
SPACE			21				22			SPACE
SPACE			23				24			SPACE
SPACE			25				26			SPACE
SPACE			27				28			SPACE
SPACE			29				30			SPACE
SPACE			31				32			SPACE
SPACE			33				34			SPACE
SPACE			35				36			SPACE
SPARE			37				38			SPACE
SPACE			39				40			SPACE
SPARE			41				42			SPACE
ESTIMATED TOTAL	55	50						55	45	ESTIMATED TOTAL

S/N
GND
EQUIPMENT GND KIT

SQUARE D ENCLOSURE:
MODEL#: Q0140L200PGRB

LPN-200
120/240VAC

DISCONNECT SOURCE
DPL-102 CKT 8,10

SERVICE	AMP LOAD Aϕ	AMP LOAD Bϕ	CIRCUIT NUMBER	CIRCUIT BREAKER	200A Aϕ N Bϕ	CIRCUIT BREAKER	CIRCUIT NUMBER	AMP LOAD Aϕ	AMP LOAD Bϕ	SERVICE
MOV-CKT301	12.5		1	20		225	2	103.0		PRIMARY
MOV-CKT303		12.5	3	20			4		50.0	
MOV-CKT305	12.5		5	20		20	6	15		RIO-300
MOV-CKT307		12.5	7	20		20	8		12.5	MOV-CKT302
MOV-CKT309	8		9	10		20	10	12.5		MOV-CKT304
RECEPTACLE-5	15		11	20	GFPE	20	12		12.5	MOV-CKT306
SPACE			13			20	14	12.5		MOV-CKT308
SPACE			15		GFPE	20	16	15		RECEPTACLE-6
SPACE			17				18			SPACE
SPACE			19				20			SPACE
SPACE			21				22			SPACE
SPACE			23				24			SPACE
SPACE			25				26			SPACE
SPACE			27				28			SPACE
SPACE			29				30			SPACE
SPACE			31				32			SPACE
SPACE			33				34			SPACE
SPACE			35				36			SPACE
SPARE			37				38			SPACE
SPACE			39				40			SPACE
SPARE			41				42			SPACE
ESTIMATED TOTAL	48	25						55	25	ESTIMATED TOTAL

S/N
GND
EQUIPMENT GND KIT

REFERENCE DRAWINGS

DWG. NO.

NO.	REVISION/ISSUE	BY	CHK. REVIEW/APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	KJG	JoN	07/16/24

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098
CONSULTANTS, INC.

DRAWN BY: KJG | FILE:23329-60-516

JOB NO. 23329 | SCALE NONE | REV. 0 | DWG. 23329-60-516

AUTOMATED BLEND PLANT
LPN-100 & LPN-200
PANEL SCHEDULES

MIDLAND, TEXAS

25kA SHORT CIRCUIT CURRENT RATING, COPPER BUS,
SQUARE D #H W/ #HCJ3273WP, INTERIOR: #HCJ32736CU
AND TYPE JG OR BG BREAKERS

DPL-101
480VAC

POWER SOURCE: DS-101

SERVICE	AMP LOAD Aϕ	AMP LOAD Bϕ	AMP LOAD Cϕ	CIRCUIT NUMBER	CIRCUIT BREAKER	MAIN LUGS	CIRCUIT BREAKER	CIRCUIT NUMBER	AMP LOAD Aϕ	AMP LOAD Bϕ	AMP LOAD Cϕ	SERVICE
P-105 15 HP	21			1	30A 3P		15A 3P	2	3			P-204 1.5 HP
		21		3				4		3		
			21	5				6			3	
P-106 15 HP	21			7	30A 3P		15A 3P	8	3			P-205 1.5 HP
		21		9				10		3		
			21	11				12			3	
P-107 15 HP	21			13	30A 3P		40A 3P	14	27			P-301 20 HP
		21		15				16		27		
			21	17				18			27	
P-201 5 HP	7.6			19	20A 3P		40A 3P	20	27			P-302 20 HP
		7.6		21				22		27		
			7.6	23				24			27	
P-202 75 HP	96			25	125A 3P		40A 3P	26	27			P-303 20 HP
		96		27				28		27		
			96	29				30			27	
P-203 75 HP	96			31	125A 3P			32				SPACE
		96		33				34				
			96	35				36				
SPACE				37			225A 3P	38	215			DPL-102
				39				40		215		
				41				42			59	
ESTIMATED TOTAL	262.6	262.6	262.6						302	302	146	ESTIMATED TOTAL

25kA SHORT CIRCUIT CURRENT RATING, COPPER BUS,
SQUARE D #H W/ #HCJ3273WP, INTERIOR #HCJ32736CU
AND TYPE JG OR BG BREAKERS

DPL-102
480VAC

POWER SOURCE: DPL-101

SERVICE	AMP LOAD Aϕ	AMP LOAD Bϕ	AMP LOAD Cϕ	CIRCUIT NUMBER	CIRCUIT BREAKER	MAIN LUGS	CIRCUIT BREAKER	CIRCUIT NUMBER	AMP LOAD Aϕ	AMP LOAD Bϕ	AMP LOAD Cϕ	SERVICE
BT-011 5 HP	7.6			1	20A 3P		20A 3P	2	7.6			P-104 5 HP
		7.6		3				4		7.6		
			7.6	5				6			7.6	
BT-012 5 HP	7.6			7	20A 3P		200A 2P	8	156			XT-100 75KVA
		7.6		9				10		156		
			7.6	11				12				SPACE
P-101 15 HP	21			13	60A 3P			14				SPACE
		21		15				16				
			21	17				18				
P-102 5 HP	7.6			19	20A 3P			20				SPACE
		7.6		21				22				
			7.6	23				24				
P-103 5 HP	7.6			25	20A 3P			26				SPACE
		7.6		27				28				
			7.6	29				30				
SPACE				31				32				SPACE
				33				34				
				35				36				
SPACE				37				38				SPACE
				39				40				
				41				42				
ESTIMATED TOTAL	51.4	51.4	51.4						163.6	163.6	7.6	ESTIMATED TOTAL

REFERENCE DRAWINGS

DWG. NO.

NO.	REVISION/ISSUE	DATE	BY	CHK. REVIEW/APPR.
0	ISSUED FOR CONSTRUCTION, HPF #23329	07/16/24	KJG	JoN

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

CONSULTANTS INC

DRAWN BY: KJG | FILE: 23329-60-517

AUTOMATED BLEND PLANT
DPL-101 & DPL-102
PANEL SCHEDULES
MIDLAND, TEXAS

DWG. 23329-60-517 | REV. 0 | SCALE NONE | JOB NO. 23329

V L-L DISTR LINE - OHP

PPL-101

KEARNEY
(SEE TABLE 1)

#2 BARE
(3)LA
(SEE TABLE 1)

XT-101
225kVA Δ/Y
3-75kVA-1ø
V L-L/480V
Z=4.5%

#6 BARE GND

#2 BARE
(3)LA

DS-101 (4) 1/C #350MCM, W/1/C #2 GND, XHHW-2

TABLE 1		
V L-L	PRIMARY FUSE 501kVA TRANSFORMER	PRIMARY LIGHTING ARRESTER
12.47kV	25A KS	18kV
21.6kV	15A X	27kV
22.86kV		
24.9kV		

TRANSFORMER POLE

BLEND AREA

DS-101

TYPE
LPS-RK
600A

SQUARE D OR EQUIVALENT: 600A MLO #HCJ3273WP, INTERIOR #HCJ32736CU

DPL-101

3/C #350MCM, W/3-#7 GND DLP-101

480VAC, 600A, 35kA (SCCR), 3ø

CKT-1,3,5 30 AT 3P	CKT-7,9,11 30 AT 3P	CKT-13,15,17 30 AT 3P	CKT-19,21,23 40 AT 3P	CKT-25,27,29 125 AT 3P	CKT-31,33,35 125 AT 3P	CKT-37,39,41	CKT-2,4,6 15 AT 3P	CKT-8,10,12 15 AT 3P	CKT-14,16,18 40 AT 3P	CKT-20,22,24 40 AT 3P	CKT 26,28,30 40 AT 3P	CKT-32,34,36	CKT-38,40,42 225 AT 3P
FVN-P105	FVN-P106	FVN-P107	FVN-P201	FVN-P202	FVN-P203		FVN-P204	FVN-P205	FVN-P301	FVN-P302	FVN-P303		DPL-102
3/C #6 AWG W/ 1-#8 GND	3/C #6 AWG W/ 1-#8 GND	3/C #6 AWG W/ 1-#8 GND	3/C #6 AWG W/ 1-#8 GND	3/C 1/0 AWG W/ 1-#6 GND	3/C 1/0 AWG W/ 1-#6 GND		3/C #8 AWG W/ 1-#10 GND	3/C #8 AWG W/ 1-#10 GND	3/C #6 AWG W/ 1-#8 GND	3/C #6 AWG W/ 1-#8 GND	3/C #6 AWG W/ 1-#8 GND		3/C #350MCM, W/ 3-#7 GND
30A TYPE LPSRK, CPT 480V 120V, S-2, OL 4.2A, H O A	30A TYPE LPSRK, CPT 480V 120V, S-2, OL 24.2A, H O A	30A TYPE LPSRK, CPT 480V 120V, S-2, OL 24.2A, H O A	12A TYPE LPSRK, CPT 480V 120V, S-2, OL 8.74A, H O A	125A TYPE LPSRK, CPT 480V 120V, S-4, OL 110.4A, H O A	125A TYPE LPSRK, CPT 480V 120V, S-4, OL 110.4A, H O A		5A TYPE LPSRK, CPT 480V 120V, S-1, OL 3.17A, H O A	5A TYPE LPSRK, CPT 480V 120V, S-1, OL 3.17A, H O A	40A TYPE LPSRK, CPT 480V 120V, S-2, OL 31.1A, H O A	40A TYPE LPSRK, CPT 480V 120V, S-2, OL 31.1A, H O A	40A TYPE LPSRK, CPT 480V 120V, S-2, OL 31.1A, H O A		TO DPL-102 (DWG 61-102)

FIELD (TYP)

P-P105	P-106	P-P107	P-201	P-202	P-203	P-204	P-205	P-301	P-302	P-303	
3/C #6 AWG W/ 3-#12 GND	3/C #6 AWG W/ 3-#12 GND	3/C #6 AWG W/ 3-#12 GND	3/C #6 AWG W/ 3-#12 GND	3/C 1/0 AWG W/ 3-#8 GND	3/C 1/0 AWG W/ 3-#8 GND	3/C #8 AWG W/ 3-#14 GND	3/C #8 AWG W/ 3-#14 GND	3/C #6 AWG W/ 3-#12 GND	3/C #6 AWG W/ 3-#12 GND	3/C #6 AWG W/ 3-#12 GND	
15 HP	15 HP	15 HP	5 HP	75 HP	75 HP	1.5 HP	1.5 HP	20 HP	20 HP	20 HP	
P-105 CHEMICAL TANK TRANSFER PUMP FLC -21A RPM - 1770	P-106 CHEMICAL TANK TRANSFER PUMP FLC -21A RPM - 1770	P-107 CHEMICAL TANK TRANSFER PUMP FLC -21A RPM - 1770	P-201 BLEND TANK TRANSFER PUMP FLC -7.6A RPM - 1750	P-202 BLEND TANK TRANSFER PUMP FLC -96A RPM - 1750	P-203 BLEND TANK TRANSFER PUMP FLC -96A RPM - 1750	P-204 BLEND TANK TRANSFER PUMP FLC -3A RPM - 1760	P-205 BLEND TANK TRANSFER PUMP FLC -3A RPM - 1760	P-301 BLEND TANK TRANSFER PUMP FLC -27A RPM - 1750	P-302 BLEND TANK TRANSFER PUMP FLC -27A RPM - 1750	P-303 BLEND TANK TRANSFER PUMP FLC -27A RPM - 1750	

REFERENCE DRAWINGS

DWG. NO.

NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
A	ISSUED FOR APPROVAL, HPF #23329	SDF	JoN		07/16/24
0	ISSUED FOR CONSTRUCTION, HPF #23329	dGb	JoN		6/06/24

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

CONSULTANTS INC

DRAWN BY: SDF | FILE:23329-61-101

JOB NO. 23329 | SCALE: NONE | REV. 0

DWG. 23329-61-101

OBSIDIAN
AUTOMATED BLEND PLANT
SINGLE LINE DIAGRAM
MIDLAND, TEXAS

FROM DPL-101
(DWG 61-101)

SQUARE D OR EQUIVALENT: 600A MLO #HCJ3273WP, INTERIOR #HCJ32736CU

DPL-102

480VAC, 600A, 35kA (SCCR), 3ø

CKT-1,3,5	CKT-7,9,11	CKT-13,15,17	CKT-19,21,23	CKT-25,27,29	CKT-31,33,35	CKT-37,39,41	CKT-2,4,6	CKT-8,10	CKT-14,16	CKT-20,22	CKT-26,28,30	CKT-32,34,36	CKT-38,40,42
20 AT 3P	20 AT 3P	60 AT 3P	20 AT 3P	20 AT 3P			20 AT 3P	200 AT 2P					
FVN-BT011	FVN-BT012	FVN-P101	FVN-P102	FVN-P103			FVN-P104	XT-100					
3/C #8 AWG W/ 1-#10 GND	3/C #8 AWG W/ 1-#10 GND	3/C #8 AWG W/ 1-#10 GND	3/C #8 AWG W/ 1-#10 GND	3/C #8 AWG W/ 1-#10 GND			3/C #6 AWG W/ 1-#8 GND	3/C #6 AWG W/ 1-#8 GND					
12A TYPE LPSRK, CPT 480V 120V, S-1, OL 8.74A, H O A	12A TYPE LPSRK, CPT 480V 120V, S-1, OL 8.74A, H O A	30A TYPE LPSRK, CPT 480V 120V, S-2, OL 8.74A, H O A	12A TYPE LPSRK, CPT 480V 120V, S-1, OL 8.74A, H O A	12A TYPE LPSRK, CPT 480V 120V, S-1, OL 8.74A, H O A			12A TYPE LPSRK, CPT 480V 120V, S-1, OL 8.74A, H	XT-100 75 KVA, 1ø 480V/120-240V					
								LPN-100 3/C 4/0 AWG W/ 1-#4 GND		LPN-200 3/C 4/0 AWG W/ 1-#4 GND			
								LPN-100 LIGHTING PANEL		LPN-200 LIGHTING PANEL			
FIELD (TYP)													
P-BT-011	P-BT-012	P-P101	P-P102	P-P103			P-P104						
3/C #8 AWG W/ 3-#14 GND	3/C #8 AWG W/ 3-#14 GND	3/C #8 AWG W/ 3-#14 GND	3/C #8 AWG W/ 3-#14 GND	3/C #8 AWG W/ 3-#14 GND			3/C #6 AWG W/ 3-#12 GND						
5 HP	5 HP	15 HP	5 HP	5 HP			5 HP						
BT-011 BLEND TANK AGITATORS FLC -7.6A RPM - XXX	BT-012 BLEND TANK AGITATORS FLC -7.6A RPM - XXX	P-101 TANK LOADING PUMP FLC -21A RPM - XXX	P-102 TANK LOADING PUMP FLC -7.6A RPM - XXX	P-103 TANK LOADING PUMP FLC -7.6A RPM - XXX			P-104 TANK LOADING PUMP FLC -7.6A RPM - XXX						

NO.	REVISION/ISSUE	DATE	APPR.	CHK. REVIEW	BY
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/16/24		JN	dGb
A	ISSUED FOR APPROVAL, HPF #23329	6/06/24		JoN	SDF

REFERENCE DRAWINGS

DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

HPF CONSULTANTS INC.

OBSIDIAN
AUTOMATED BLEND PLANT
SINGLE LINE DIAGRAM
MIDLAND, TEXAS

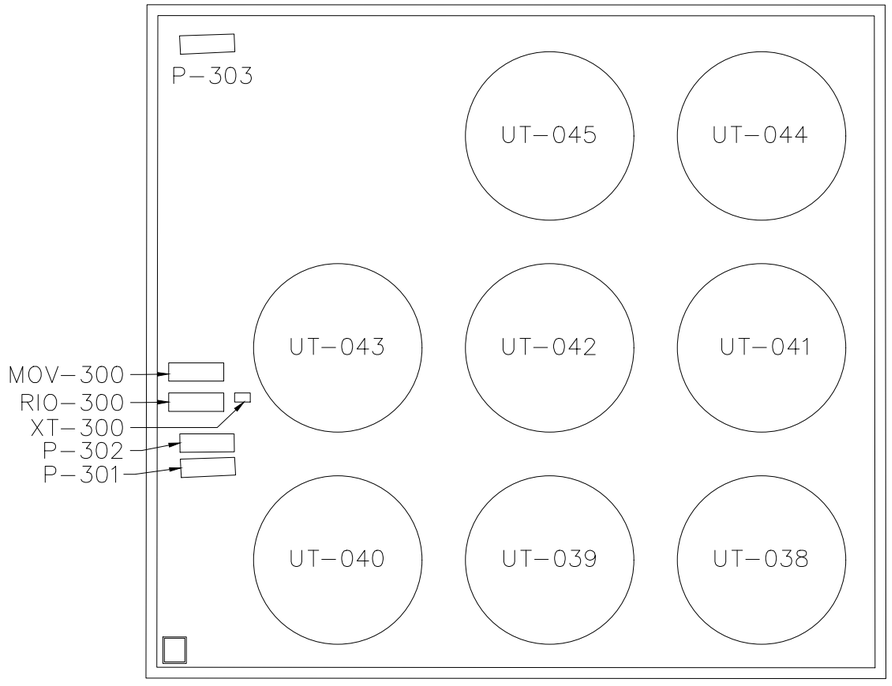
DWG.	23329-61-102	REV. 0	SCALE:	NONE	JOB NO.	23329	DRAWN BY:	SDF	FILE:23329-61-102

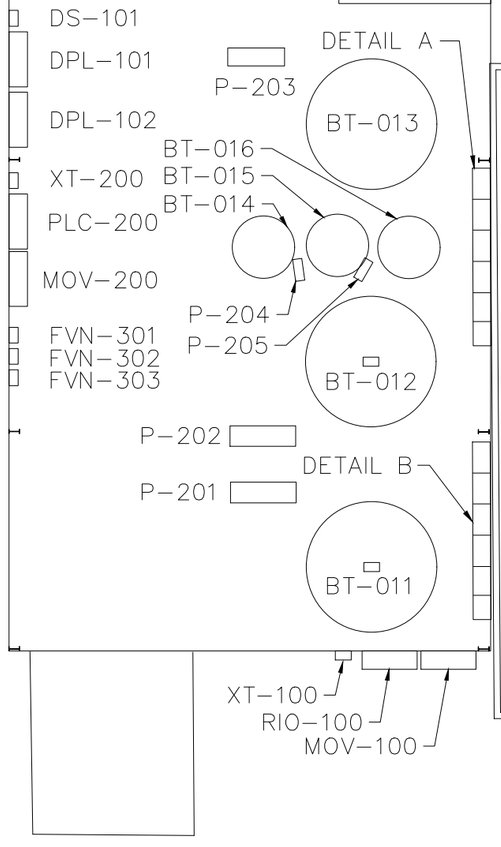
N

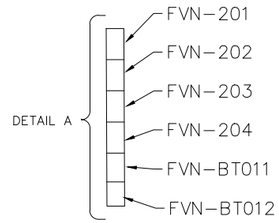
PLANT NORTH

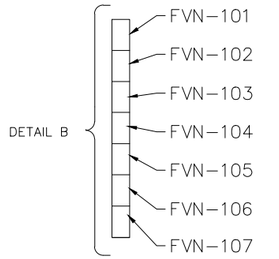
ELECTRICAL EQUIPMENT LIST

BT-011 BLEND TANK AGITATORS 5HP FVN SIZE-1 STARTER
BT-012 BLEND TANK AGITATORS 5HP FVN SIZE-1 STARTER
P-P-101 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-102 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-103 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-104 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-105 CHEM TNK TRF PUMP 15HP FVN SIZE-2 STARTER
P-P-106 CHEM TNK TRF PUMP 15HP FVN SIZE-2 STARTER
P-P-107 CHEM TNK TRF PUMP 15HP FVN SIZE-2 STARTER
P-P-201 BLEND TNK TRF PUMP 5HP FVN SIZE-1 STARTER
P-P-202 BLEND TNK TRF PUMP 75HP FVN SIZE-4 STARTER
P-P-203 BLEND TNK TRF PUMP 75HP FVN SIZE-4 STARTER
P-P-204 BLEND TNK TRF PUMP 1.5HP FVN SIZE-1 STARTER
P-P-205 BLEND TNK TRF PUMP 1.5HP FVN SIZE-1 STARTER
P-P-301 TANK LOADING PUMP 20HP FVN SIZE-2 STARTER
P-P-302 TANK LOADING PUMP 20HP FVN SIZE-2 STARTER
P-P-303 TANK LOADING PUMP 20HP FVN SIZE-2 STARTER
DPL-101 SQUARE D PANEL BOARD ENCLOSURE 600A MLO MODEL #HCJ32736WP, INTERIOR MODEL #HCJ32736CU
DPL-102 SQUARE D PANEL BOARD ENCLOSURE 600A MLO
XT-100 THRU 300 15KVA 240/120V MINI POWER ZONE
MOV-100 THRU 300 MOV'S ENCLOSURE CABINET
RIO-100 RIO ENCLOSURE CABINET
PLC-200 PLC ENCLOSURE CABINET
RIO-300 RIO ENCLOSURE CABINET

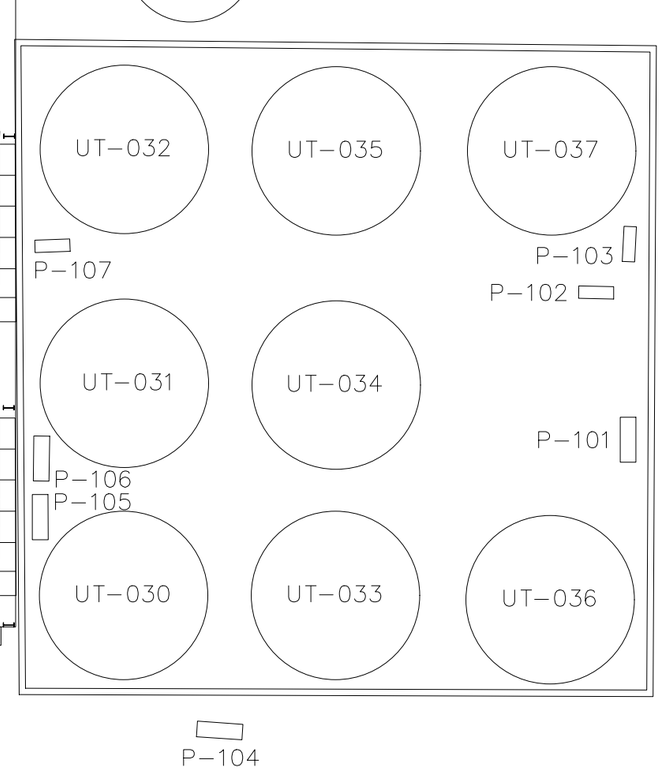








UT-016



HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

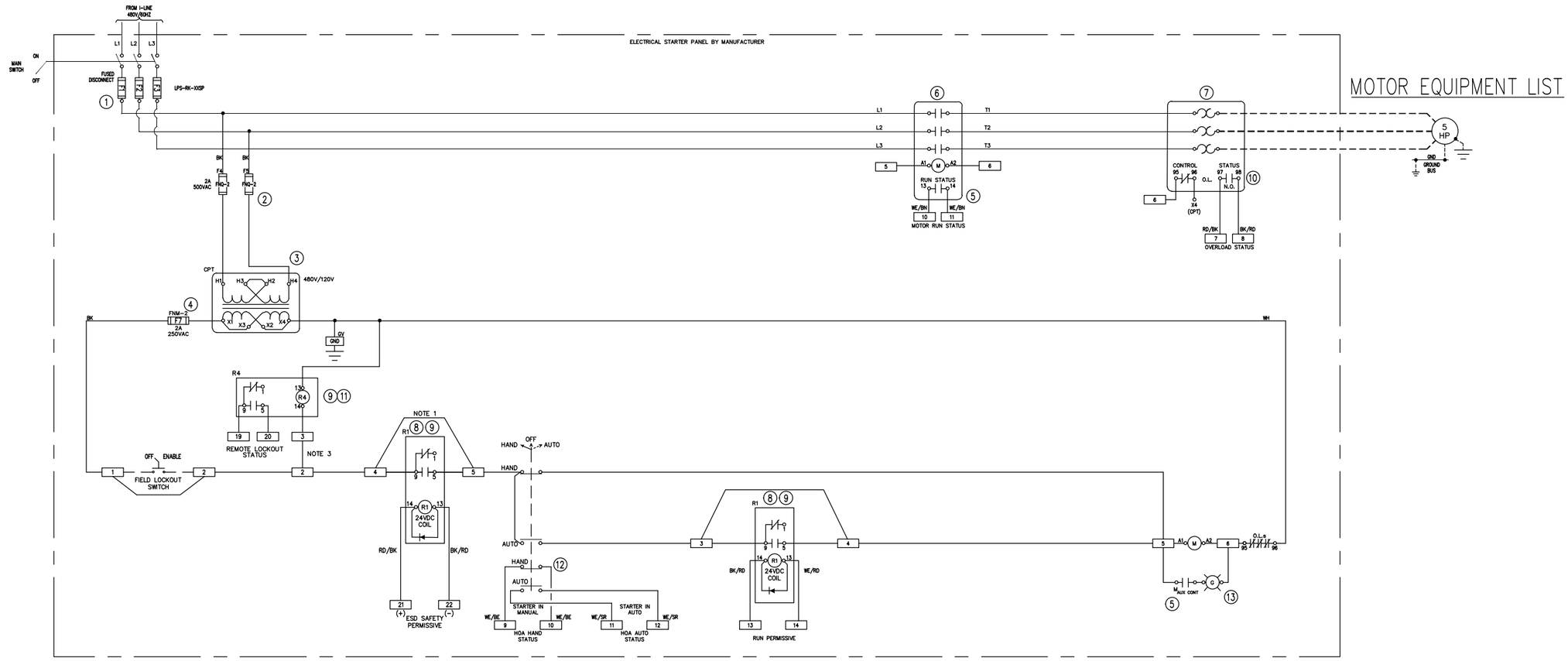
PLOT PLAN SKETCH
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANTT
MIDLAND, TX

HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

DWG.	23329-61-201	REV.	A	SCALE	1"=6'-4"	JOB NO.	23329	DRAWN BY:	dGb	FILE: 23329-61-201

NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
A.	ISSUED FOR REVIEW, HPF# 23329	dGb	JN		6/06/24

REFERENCE DRAWINGS
DWG. NO.



MOTOR EQUIPMENT LIST

PARTS LIST

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	FUSE DISCONNECT, 600V, (SEE FUSING TABLE), WITH FUSES (3)	PER CONTACTOR SIZE	BUSSMAN
2	3	FUSE, 2A, 500VAC	FNQ-2	BUSSMAN
3	1	INDUSTRIAL CONTROL TRANSFORMER 480-120VAC	9070T200D1	SQUARE D
4	1	FUSE, 2A, 250VAC	FNM-2	BUSSMAN
5	2	TYPE S, AUXILIARY CONTACT, 1 NO CONTACT	9999SX6	SCHNEIDER
6	1	MOTOR CONTACTOR, SIZE 0, 120V, 600VAC	8502SB02V02S	SCHNEIDER
7	1	THERMAL OVERLOAD, MOTOR LOGIC, SOLID STATE, CLASS 10/20	9065SF020	SCHNEIDER
8	2	SINGLE POLE DT RELAY 24VDC, 10A	RH1B-ULDC24V	IDEC
9	3	SOCKET, FOR RH1B RELAYS DIN RAIL MOUNT	SH1B-05	IDEC
10	1	OVERLOAD RELAY, SOLID STATE ISOLATED ALARM CONTACT	9999AC04	SCHNEIDER
11	1	RELAY, SPDT, 120 VAC	RH1B-ULAC120V	IDEC
12	1	SELECTOR SWITCH 600VAC 10A 30MM T-K	9001KS43BH13	SCHNEIDER
13	1	IDEC LED PILOT LIGHT 120V COLOR GREEN	APD199DN-G-120V	IDEC
14	1	30/60A DISC SW WITH OPERATING MECHANISM	9422TDF63	SCHNEIDER

FUSING GUIDE

NEMA STARTER SIZE	MOTOR HP	MOTOR DISC SIZE	MOTOR FUSE SIZE	MOTOR FUSE TYPE
		[AMPS]	[AMPS]	
0	5	20	12	LPS-RK

MOTOR EQUIPMENT LIST

BT-011 BLEND TANK AGITATORS
BT-012 BLEND TANK AGITATORS
P-101 TANK LOADING PUMP
P-102 TANK LOADING PUMP
P-103 TANK LOADING PUMP
P-104 TANK LOADING PUMP
P-201 BLEND TANK TRANSFER PUMP

1. REMOVE JUMPER BETWEEN TERMINALS 4 & 5 IF ESD RELAY (R1) IS USED.
2. REMOVE JUMPER BETWEEN TERMINALS 1 & 2 IF REMOTE LOCKOUT SWITCH WILL BE UTILIZED TO ENABLE OR DISABLE STARTER.
3. REMOVE JUMPER BETWEEN TERMINALS 2 & 3 IF REMOTE SWITCH WILL NOT BE USED TO ENABLE OR DISABLE THE STARTER.

NO.	REVISION/ISSUE	DATE	APPR.	CHK. REVIEW	BY
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/11/24		JN	KWN
A	ISSUED FOR APPROVAL, HPF #23329	7/2/24			AH

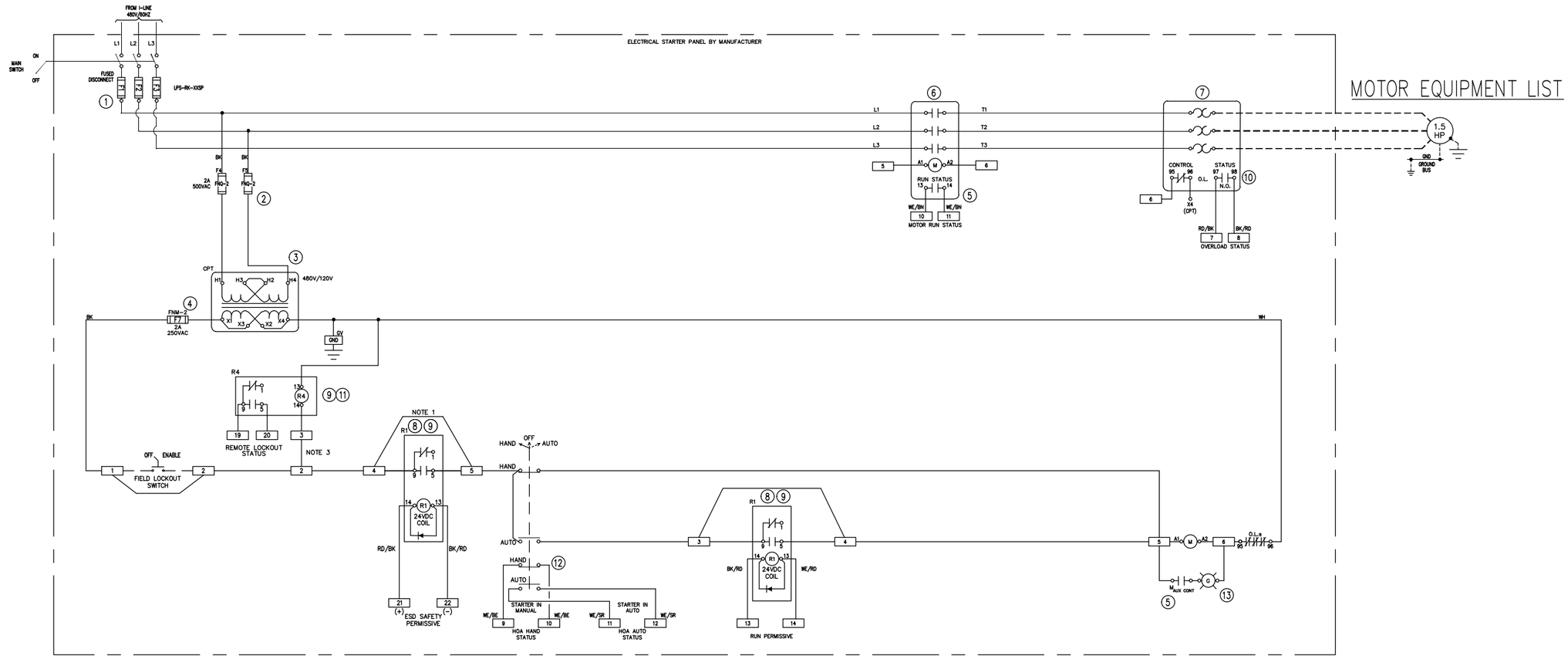
REFERENCE DRAWINGS
DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098
HPF CONSULTANTS, INC.

FILE: 23329-62-101
DRAWN BY: AH
JOB NO. 23329
SCALE NONE
REV. 0

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
SIZE 0 FVNR MOTOR SCHEMATIC 5 HP
MIDLAND, TEXAS

DWG. 23329-62-101



MOTOR EQUIPMENT LIST

PARTS LIST

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	FUSE DISCONNECT, 600V, (SEE FUSING TABLE), WITH FUSES (3)	PER CONTACTOR SIZE	BUSSMAN
2	3	FUSE, 2A, 500VAC	FNQ-2	BUSSMAN
3	1	INDUSTRIAL CONTROL TRANSFORMER 480-120VAC	9070T200D1	SQUARE D
4	1	FUSE, 2A, 250VAC	FNM-2	BUSSMAN
5	2	TYPE S, AUXILIARY CONTACT, 1 NO CONTACT	9999SX6	SCHNEIDER
6	1	MOTOR CONTACTOR, SIZE 0, 120V, 600VAC	8502SB02V02S	SCHNEIDER
7	1	THERMAL OVERLOAD, MOTOR LOGIC, SOLID STATE, CLASS 10/20	9065SF020	SCHNEIDER
8	2	SINGLE POLE DT RELAY 24VDC, 10A	RH1B-ULDC24V	IDEC
9	3	SOCKET, FOR RH1B RELAYS DIN RAIL MOUNT	SH1B-05	IDEC
10	1	OVERLOAD RELAY, SOLID STATE ISOLATED ALARM CONTACT	9999AC04	SCHNEIDER
11	1	RELAY, SPDT, 120 VAC	RH1B-ULAC120V	IDEC
12	1	SELECTOR SWITCH 600VAC 10A 30MM T-K	9001KS43BH13	SCHNEIDER
13	1	IDEC LED PILOT LIGHT 120V COLOR GREEN	APD199DN-G-120V	IDEC
14	1	30/60A DISC SW WITH OPERATING MECHANISM	9422TDF63	SCHNEIDER

FUSING GUIDE

NEMA STARTER SIZE	MOTOR HP	MOTOR DISC SIZE	MOTOR FUSE SIZE	MOTOR FUSE TYPE
		[AMPS]	[AMPS]	
0	1.5	20	5	LPS-RK

MOTOR EQUIPMENT LIST

P-204 BLEND TANK TRANSFER PUMP

1. REMOVE JUMPER BETWEEN TERMINALS 4 & 5 IF ESD RELAY (R1) IS USED.
2. REMOVE JUMPER BETWEEN TERMINALS 1 & 2 IF REMOTE LOCKOUT SWITCH WILL BE UTILIZED TO ENABLE OR DISABLE STARTER.
3. REMOVE JUMPER BETWEEN TERMINALS 2 & 3 IF REMOTE SWITCH WILL NOT BE USED TO ENABLE OR DISABLE THE STARTER.

NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	KWN	AH	JN	7/11/24
A	ISSUED FOR APPROVAL, HPF #23329	AH			7/2/24

REFERENCE DRAWINGS

DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

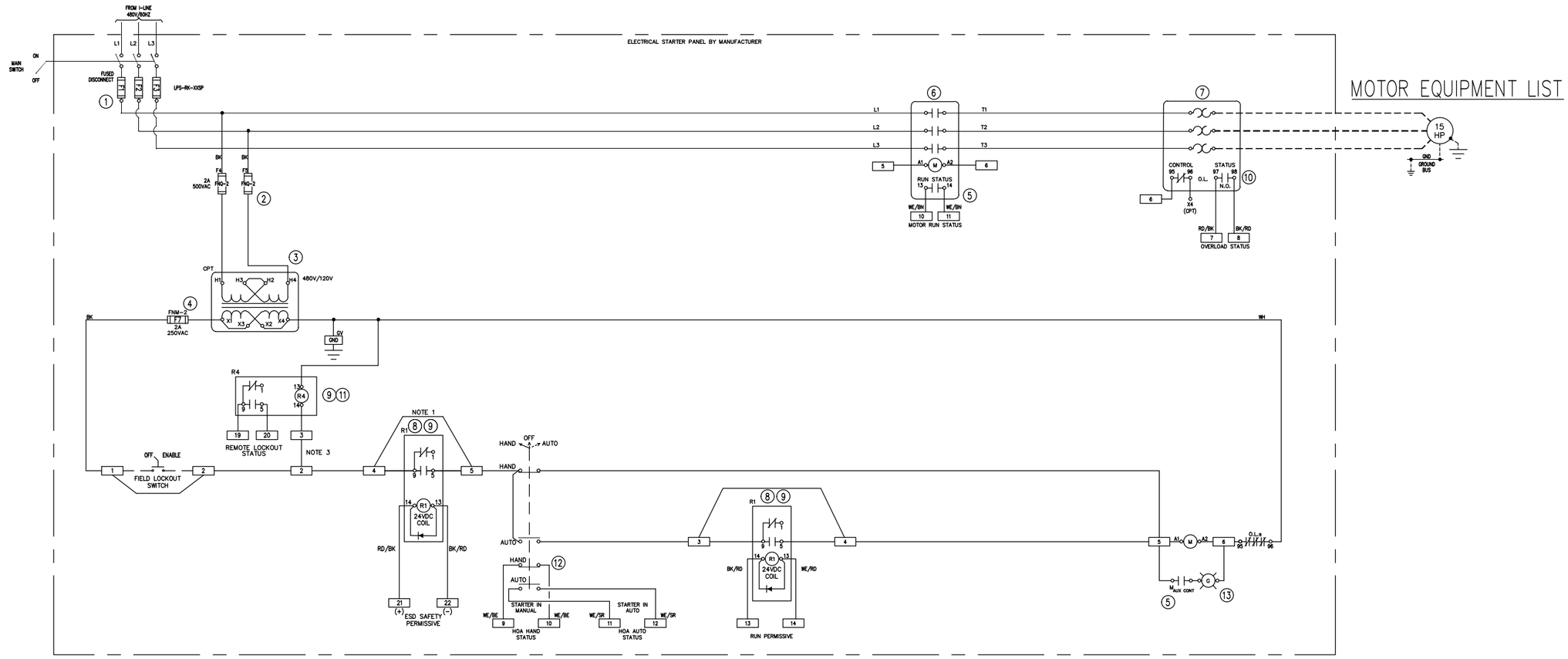
HPF CONSULTANTS INC.

DRAWN BY: AH | FILE: 23329-62-102

JOB NO. 23329

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
SIZE 0 FVNR MOTOR SCHEMATIC 1.5 HP
MIDLAND, TEXAS

DWG. 23329-62-102 | REV. 0 | SCALE NONE



MOTOR EQUIPMENT LIST

PARTS LIST

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	FUSE DISCONNECT, 600V, (SEE FUSING TABLE), WITH FUSES (3)	PER CONTACTOR SIZE	BUSSMAN
2	3	FUSE, 2A, 500VAC	FNQ-2	BUSSMAN
3	1	INDUSTRIAL CONTROL TRANSFORMER 480-120VAC	9070T200D1	SQUARE D
4	1	FUSE, 2A, 250VAC	FNM-2	BUSSMAN
5	2	TYPE S, AUXILIARY CONTACT, 1 NO CONTACT	9999SX6	SCHNEIDER
6	1	MOTOR CONTACTOR, SIZE 2, 120V, 600VAC	8502SD02V02S	SCHNEIDER
7	1	THERMAL OVERLOAD, MOTOR LOGIC, SOLID STATE, CLASS 10/20	9065SF220	SCHNEIDER
8	2	SINGLE POLE DT RELAY 24VDC, 10A	RH1B-ULDC24V	IDEC
9	3	SOCKET, FOR RH1B RELAYS DIN RAIL MOUNT	SH1B-05	IDEC
10	1	OVERLOAD RELAY, SOLID STATE ISOLATED ALARM CONTACT	9999AC04	SCHNEIDER
11	1	RELAY, SPDT, 120 VAC	RH1B-ULAC120V	IDEC
12	1	SELECTOR SWITCH 600VAC 10A 30MM T-K	9001KS43BH13	SCHNEIDER
13	1	IDEC LED PILOT LIGHT 120V COLOR GREEN	APD199DN-G-120V	IDEC
14	1	30/60A DISC SW WITH OPERATING MECHANISM	9422TDF63	SCHNEIDER

FUSING GUIDE

NEMA STARTER SIZE	MOTOR HP	MOTOR DISC SIZE	MOTOR FUSE SIZE	MOTOR FUSE TYPE
		[AMPS]	[AMPS]	
2	15	60	30	LPS-RK

MOTOR EQUIPMENT LIST

P-105 CHEMICAL TANK TRANSFER PUMP
P-106 CHEMICAL TANK TRANSFER PUMP
P-107 CHEMICAL TANK TRANSFER PUMP

1. REMOVE JUMPER BETWEEN TERMINALS 4 & 5 IF ESD RELAY (R1) IS USED.
2. REMOVE JUMPER BETWEEN TERMINALS 1 & 2 IF REMOTE LOCKOUT SWITCH WILL BE UTILIZED TO ENABLE OR DISABLE STARTER.
3. REMOVE JUMPER BETWEEN TERMINALS 2 & 3 IF REMOTE SWITCH WILL NOT BE USED TO ENABLE OR DISABLE THE STARTER.

NO.	REVISION/ISSUE	DATE	BY	CHK. REVIEW	APPR.
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/11/24	KWN	AH	JN
A	ISSUED FOR APPROVAL, HPF #23329	7/2/24	AH		

REFERENCE DRAWINGS

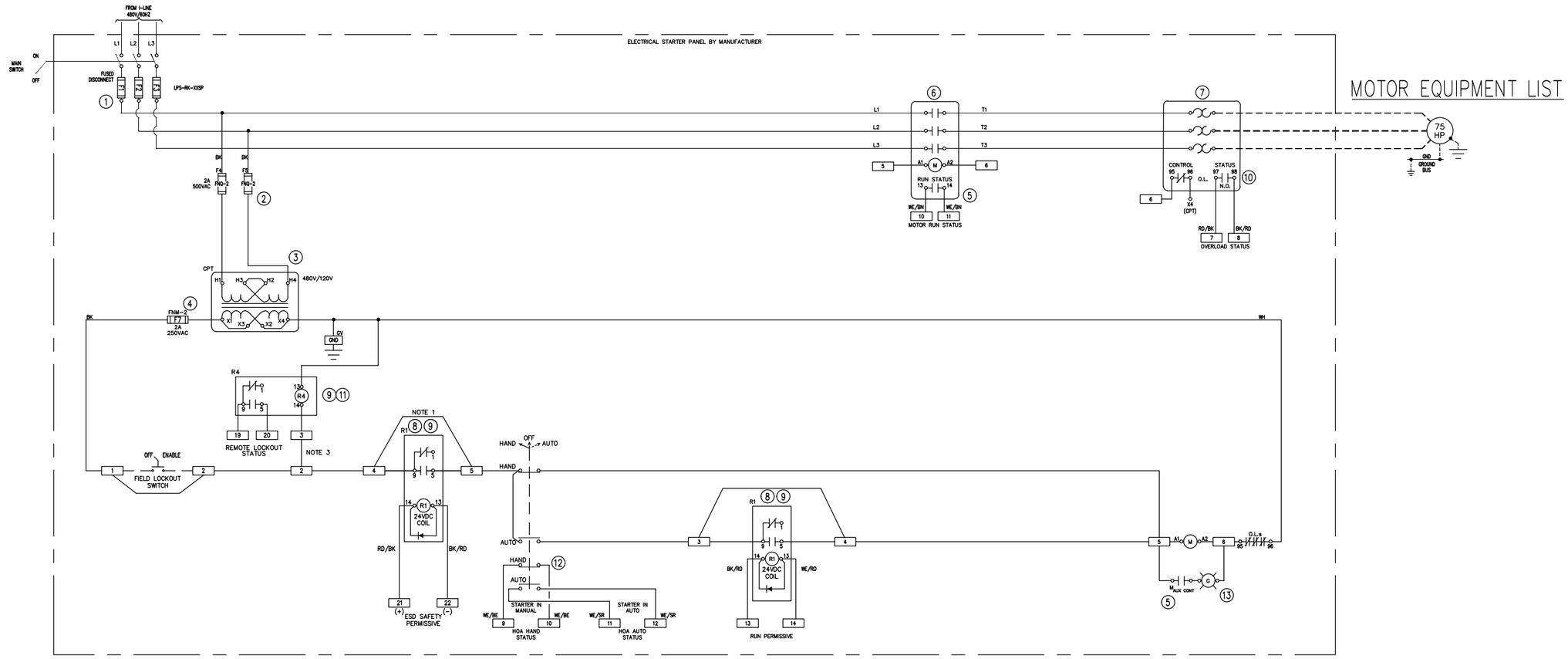
DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

CONSULTANTS, INC.

DRAWN BY:	AH
FILE:	23329-62-103
JOB NO.	23329
SCALE	NONE
REV.	0
DWG.	23329-62-103

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
SIZE 2 FVNR MOTOR SCHEMATIC 15 HP
MIDLAND, TEXAS



MOTOR EQUIPMENT LIST

PARTS LIST

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	FUSE DISCONNECT, 600V, (SEE FUSING TABLE), WITH FUSES (3)	PER CONTACTOR SIZE	BUSSMAN
2	3	FUSE, 2A, 500VAC	FNQ-2	BUSSMAN
3	1	INDUSTRIAL CONTROL TRANSFORMER 480-120VAC	9070T200D1	SQUARE D
4	1	FUSE, 2A, 250VAC	FNM-2	BUSSMAN
5	2	TYPE S, AUXILIARY CONTACT, 1 NO CONTACT	9999SX6	SCHNEIDER
6	1	MOTOR CONTACTOR, SIZE 4, 120V, 600VAC	8502SF02V02S	SCHNEIDER
7	1	THERMAL OVERLOAD, MOTOR LOGIC, SOLID STATE, CLASS 10/20	9065SF220	SCHNEIDER
8	2	SINGLE POLE DT RELAY 24VDC, 10A	RH1B-ULDC24V	IDEC
9	3	SOCKET, FOR RH1B RELAYS DIN RAIL MOUNT	SH1B-05	IDEC
10	1	OVERLOAD RELAY, SOLID STATE ISOLATED ALARM CONTACT	9999AC04	SCHNEIDER
11	1	RELAY, SPDT, 120 VAC	RH1B-ULAC120V	IDEC
12	1	SELECTOR SWITCH 600VAC 10A 30MM T-K	9001KS43BH13	SCHNEIDER
13	1	IDEC LED PILOT LIGHT 120V COLOR GREEN	APD199DN-G-120V	IDEC
14	1	30/60A DISC SW WITH OPERATING MECHANISM	9422ATF12	SCHNEIDER

FUSING GUIDE

NEMA STARTER SIZE	MOTOR HP	MOTOR DISC SIZE	MOTOR FUSE SIZE	MOTOR FUSE TYPE
		[AMPS]	[AMPS]	
4	75	225	125	LPS-RK

MOTOR EQUIPMENT LIST

P-202 BLEND TANK TRANSFER PUMP
P-203 BLEND TANK TRANSFER PUMP

1. REMOVE JUMPER BETWEEN TERMINALS 4 & 5 IF ESD RELAY (R1) IS USED.
2. REMOVE JUMPER BETWEEN TERMINALS 1 & 2 IF REMOTE LOCKOUT SWITCH WILL BE UTILIZED TO ENABLE OR DISABLE STARTER.
3. REMOVE JUMPER BETWEEN TERMINALS 2 & 3 IF REMOTE SWITCH WILL NOT BE USED TO ENABLE OR DISABLE THE STARTER.

NO.	REVISION/ISSUE	DATE	APPR.	CHK. REVIEW	BY
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/11/24		JN	KWN
A	ISSUED FOR APPROVAL, HPF #23329	7/2/24		AH	AH

REFERENCE DRAWINGS

DWG. NO.

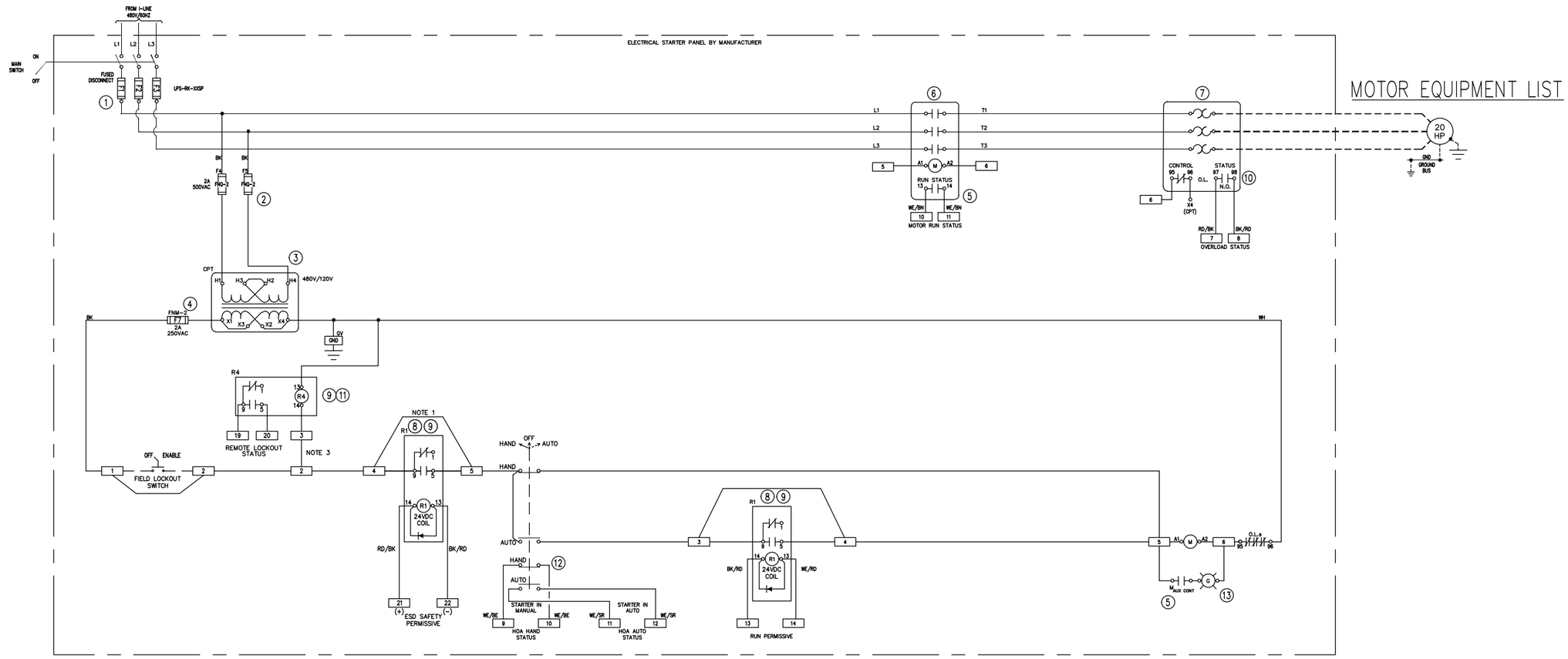
ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

DRAWN BY: AH | FILE:23329-62-104

JOB NO. 23329

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
SIZE 4 FVNR MOTOR SCHEMATIC 75 HP
MIDLAND, TEXAS

DWG. 23329-62-104 | REV. 0 | SCALE NONE



MOTOR EQUIPMENT LIST

P-301 TANK LOADING PUMP
P-302 TANK LOADING PUMP
P-303 TANK LOADING PUMP

PARTS LIST

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	FUSE DISCONNECT, 600V, (SEE FUSING TABLE), WITH FUSES (3)	PER CONTACTOR SIZE	BUSSMAN
2	3	FUSE, 2A, 500VAC	FNQ-2	BUSSMAN
3	1	INDUSTRIAL CONTROL TRANSFORMER 480-120VAC	9070T200D1	SQUARE D
4	1	FUSE, 2A, 250VAC	FNM-2	BUSSMAN
5	2	TYPE S, AUXILIARY CONTACT, 1 NO CONTACT	9999SX6	SCHNEIDER
6	1	MOTOR CONTACTOR, SIZE 2, 120V, 600VAC	8502SD02V02S	SCHNEIDER
7	1	THERMAL OVERLOAD, MOTOR LOGIC, SOLID STATE, CLASS 10/20	9065SF220	SCHNEIDER
8	2	SINGLE POLE DT RELAY 24VDC, 10A	RH1B-ULDC24V	IDEC
9	3	SOCKET, FOR RH1B RELAYS DIN RAIL MOUNT	SH1B-05	IDEC
10	1	OVERLOAD RELAY, SOLID STATE ISOLATED ALARM CONTACT	9999AC04	SCHNEIDER
11	1	RELAY, SPDT, 120 VAC	RH1B-ULAC120V	IDEC
12	1	SELECTOR SWITCH 600VAC 10A 30MM T-K	9001KS43BH13	SCHNEIDER
13	1	IDEC LED PILOT LIGHT 120V COLOR GREEN	APD199DN-G-120V	IDEC
14	1	30/60A DISC SW WITH OPERATING MECHANISM	9422TDF63	SCHNEIDER

FUSING GUIDE

NEMA STARTER SIZE	MOTOR HP	MOTOR DISC SIZE	MOTOR FUSE SIZE	MOTOR FUSE TYPE
		[AMPS]	[AMPS]	
2	20	60	40	LPS-RK

MOTOR EQUIPMENT LIST

1. REMOVE JUMPER BETWEEN TERMINALS 4 & 5 IF ESD RELAY (R1) IS USED.
2. REMOVE JUMPER BETWEEN TERMINALS 1 & 2 IF REMOTE LOCKOUT SWITCH WILL BE UTILIZED TO ENABLE OR DISABLE STARTER.
3. REMOVE JUMPER BETWEEN TERMINALS 2 & 3 IF REMOTE SWITCH WILL NOT BE USED TO ENABLE OR DISABLE THE STARTER.

NO.	REVISION/ISSUE	DATE	APPR.	CHK. REVIEW	BY
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/11/24		JN	KWN
A	ISSUED FOR APPROVAL, HPF #23329	7/2/24			AH

REFERENCE DRAWINGS

DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

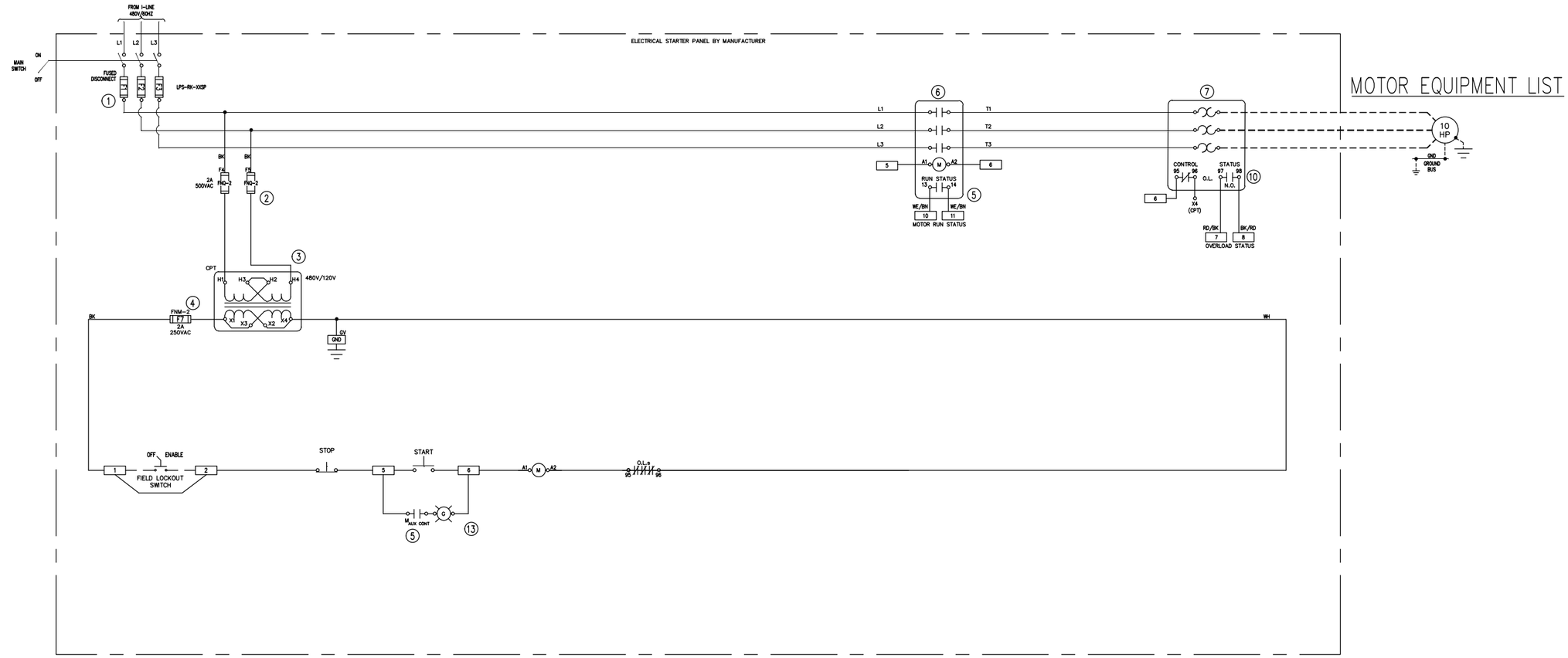
HPF CONSULTANTS, INC.

DRAWN BY: AH | FILE: 23329-62-105

JOB NO. 23329

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
SIZE 2 FVNR MOTOR SCHEMATIC 20 HP
MIDLAND, TEXAS

DWG. 23329-62-105 | REV. 0 | SCALE NONE



MOTOR EQUIPMENT LIST

PARTS LIST

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	FUSE DISCONNECT, 600V, (SEE FUSING TABLE), WITH FUSES (3)	PER CONTACTOR SIZE	BUSSMAN
2	3	FUSE, 2A, 500VAC	FNQ-2	BUSSMAN
3	1	INDUSTRIAL CONTROL TRANSFORMER 480-120VAC	9070T200D1	SQUARE D
4	1	FUSE, 2A, 250VAC	FNM-2	BUSSMAN
5	2	TYPE S, AUXILIARY CONTACT, 1 NO CONTACT	9999SX6	SCHNEIDER
6	1	MOTOR CONTACTOR, SIZE 1, 120V, 600VAC	8502SCO2V02S	SCHNEIDER
7	1	THERMAL OVERLOAD, MOTOR LOGIC, SOLID STATE, CLASS 10/20	9065SF120	SCHNEIDER
8	0	SINGLE POLE DT RELAY 24VDC, 10A	RH1B-ULDC24V	IDEC
9	1	SOCKET, FOR RH1B RELAYS DIN RAIL MOUNT	SH1B-05	IDEC
10	1	OVERLOAD RELAY, SOLID STATE ISOLATED ALARM CONTACT	9999AC04	SCHNEIDER
11	1	RELAY, SPDT, 120 VAC	RH1B-ULAC120V	IDEC
12	0	SELECTOR SWITCH 600VAC 10A 30MM T-K	9001KS43BH13	SCHNEIDER
13	0	IDEC LED PILOT LIGHT 120V COLOR GREEN	APD199DN-G-120V	IDEC
14	1	30/60A DISC SW WITH OPERATING MECHANISM	9422TDF63	SCHNEIDER

FUSING GUIDE

NEMA STARTER SIZE	MOTOR HP	MOTOR DISC SIZE	MOTOR FUSE SIZE	MOTOR FUSE TYPE
		[AMPS]	[AMPS]	
1	10	30	20	LPS-RK

MOTOR EQUIPMENT LIST

P-WTR WATER PUMP

NO.	REVISION/ISSUE	BY	CHK.	REVIEW/APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	KWN	JN	AH	7/11/24
A	ISSUED FOR APPROVAL, HPF #23329	AH			7/2/24

REFERENCE DRAWINGS

DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

HPF CONSULTANTS, INC.

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
SIZE 1 FVNR MOTOR SCHEMATIC 10 HP
MIDLAND, TEXAS

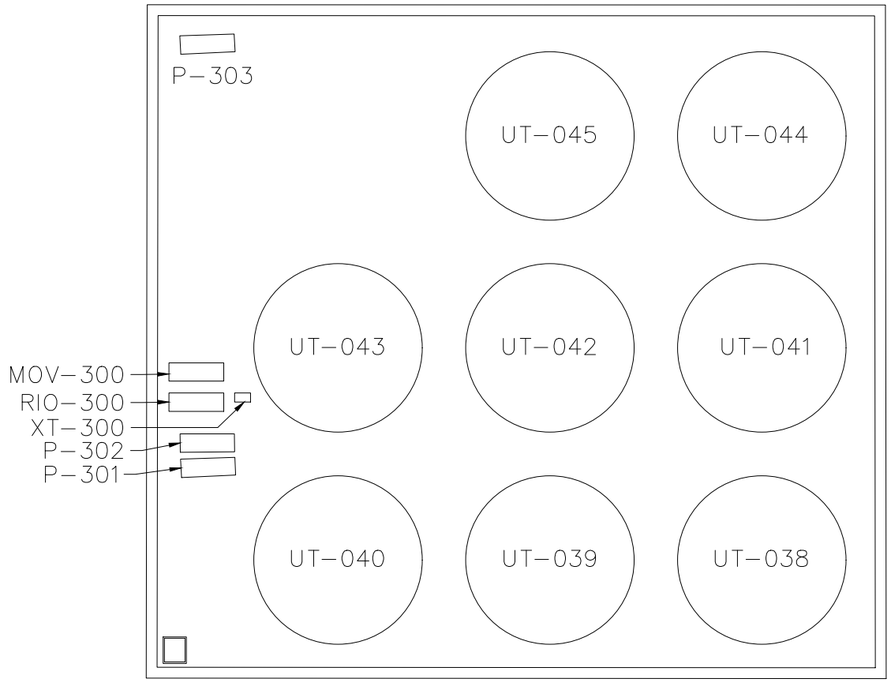
DWG: 23329-62-106 | REV. 0 | SCALE: NONE | JOB NO. 23329 | DRAWN BY: AH | FILE:23329-62-106

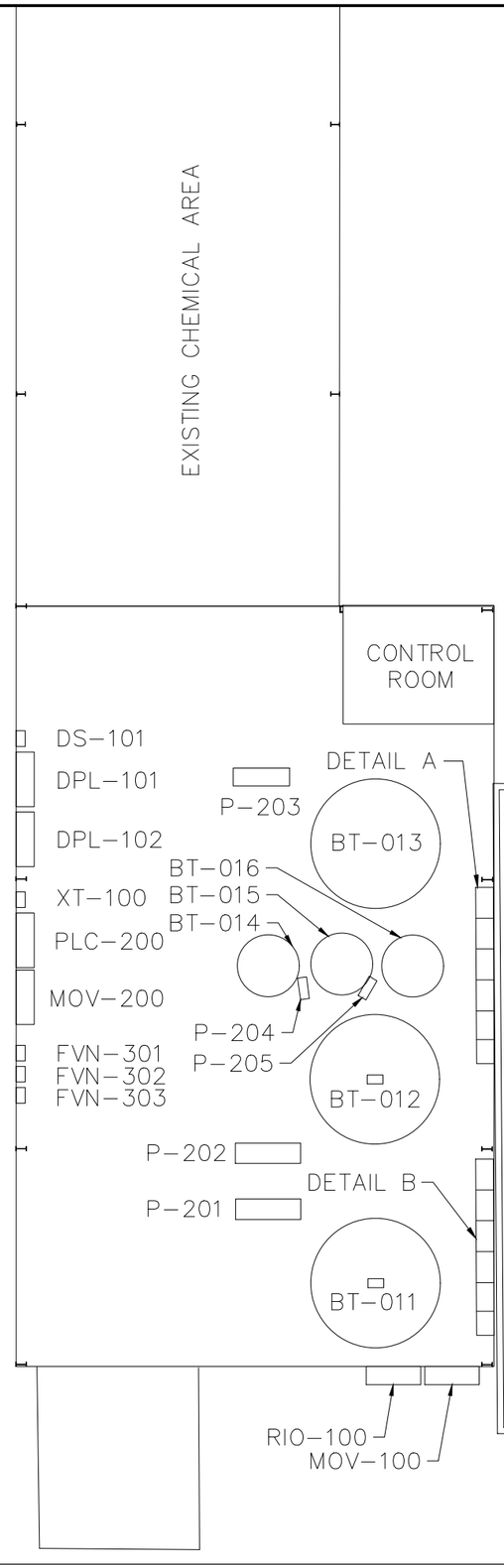
N

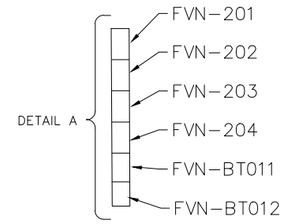
PLANT NORTH

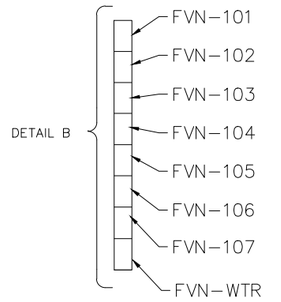
ELECTRICAL EQUIPMENT LIST

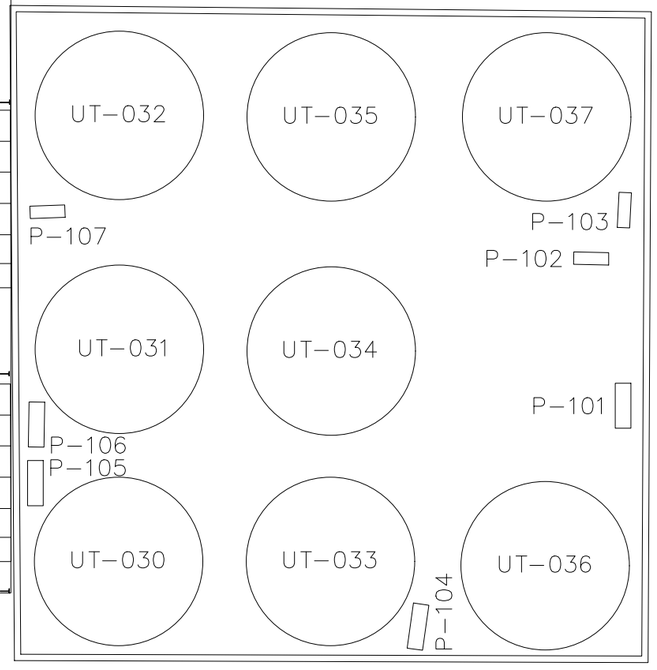
BT-011 BLEND TANK AGITATORS 5HP FVN SIZE-1 STARTER
BT-012 BLEND TANK AGITATORS 5HP FVN SIZE-1 STARTER
P-P-101 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-102 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-103 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-104 TANK LOADING PUMP 5HP FVN SIZE-1 STARTER
P-P-105 CHEM TNK TRF PUMP 15HP FVN SIZE-2 STARTER
P-P-106 CHEM TNK TRF PUMP 15HP FVN SIZE-2 STARTER
P-P-107 CHEM TNK TRF PUMP 15HP FVN SIZE-2 STARTER
P-P-201 BLEND TNK TRF PUMP 5HP FVN SIZE-1 STARTER
P-P-202 BLEND TNK TRF PUMP 75HP FVN SIZE-4 STARTER
P-P-203 BLEND TNK TRF PUMP 75HP FVN SIZE-4 STARTER
P-P-204 BLEND TNK TRF PUMP 1.5HP FVN SIZE-1 STARTER
P-P-205 BLEND TNK TRF PUMP 1.5HP FVN SIZE-1 STARTER
P-P-301 TANK LOADING PUMP 20HP FVN SIZE-2 STARTER
P-P-302 TANK LOADING PUMP 20HP FVN SIZE-2 STARTER
P-P-303 TANK LOADING PUMP 20HP FVN SIZE-2 STARTER
DPL-101 SQUARE D PANEL BOARD ENCLOSURE 600A MLO MODEL #HCJ32736WP, INTERIOR MODEL #HCJ32736CU
DPL-102 SQUARE D PANEL BOARD ENCLOSURE 600A MLO XT-100 75KVA 240/120V MINI POWER ZONE
MOV-100 THRU 300 MOV'S ENCLOSURE CABINET
RIO-100 RIO ENCLOSURE CABINET
PLC-200 PLC ENCLOSURE CABINET
RIO-300 RIO ENCLOSURE CABINET
LPN-100 LIGHTING PANEL
LPN-200 LIGHTING PANEL











HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

ELECTRICAL PLOT PLAN
FOR PLANNING PURPOSES ONLY
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	dGb	JN		7/16/24
A	ISSUED FOR REVIEW, HPF# 23329	dGb	JN		6/06/24

REFERENCE DRAWINGS

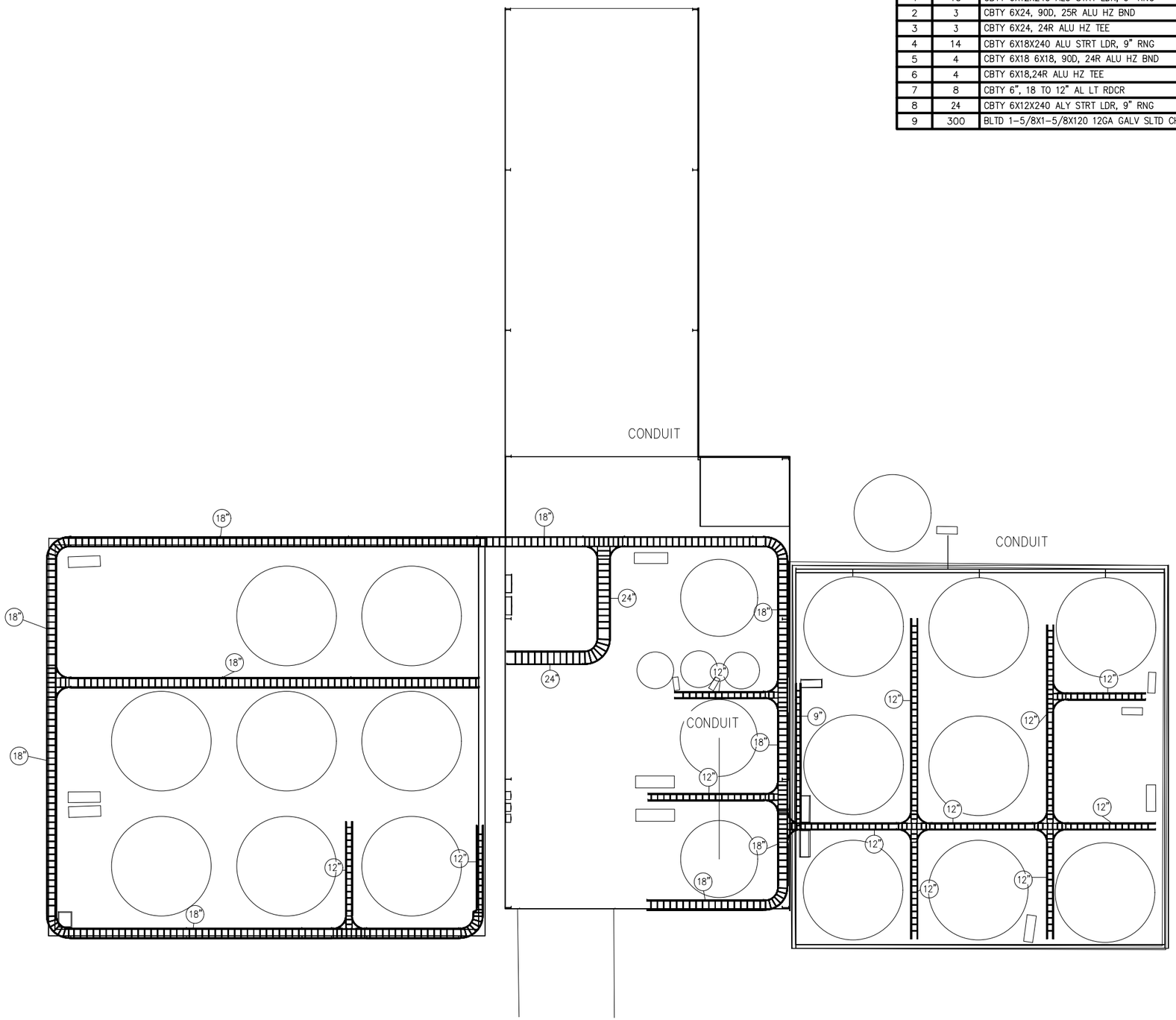
DWG. NO.

FILE: 23329-61-201 | DRAWN BY: dGb | JOB NO. 23329 | SCALE 1"=6'-4" | REV. 0 | DWG. 23329-62-201

N

PLANT NORTH

CABLE TRAY BILL OF MATERIAL				
ITEM	QTY/ SECTONS	DESCRIPTION	MANUFACTURER	PART NUMBER
1	10	CBTY 6X12X240 ALU STRT LDR, 9" RNG	OXY CONTRACTOR	46A0912240
2	3	CBTY 6X24, 90D, 25R ALU HZ BND	OXY CONTRACTOR	6A2490HB24
3	3	CBTY 6X24, 24R ALU HZ TEE	OXY CONTRACTOR	6A24HT24
4	14	CBTY 6X18X240 ALU STRT LDR, 9" RNG	OXY CONTRACTOR	46A0918240
5	4	CBTY 6X18 6X18, 90D, 24R ALU HZ BND	OXY CONTRACTOR	6A1890HB24
6	4	CBTY 6X18,24R ALU HZ TEE	OXY CONTRACTOR	6A18HT24
7	8	CBTY 6", 18 TO 12" AL LT RDCR	OXY CONTRACTOR	6A18LR12
8	24	CBTY 6X12X240 ALY STRT LDR, 9" RNG	OXY CONTRACTOR	46A0912240
9	300	BLTD 1-5/8X1-5/8X120 12GA GALV SLTD CHNL, 2" CNTR	OXY CONTRACTOR	B22SH120GLV



HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

CABLE TRAY PLAN
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

DWG.	23329-62-400
REV.	0
SCALE	1/8"=1'-0"
JOB NO.	23329
DRAWN BY:	KJG
FILE:	23329-62-400

HPF CONSULTANTS, INC.
ENGINEERING, SURVEYING & INSPECTION
MIDLAND, TEXAS

NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF# 23329	KJG	JoN		07/16/24

DWG. NO.

REFERENCE DRAWINGS

N

PLANT NORTH

EXISTING CHEMICAL AREA

CONTROL ROOM

DS-101

DS-101

DPL-101

DPL-101

DPL-102

DPL-102

XT-100

XT-100

PLC-200

PLC-200

MOV-200

FVN-301

FVN-302

FVN-303

P-P303

P-303

P-MOV300 CKT9

P-MOV300 CKT8

P-MOV300 CKT7

P-MOV300 CKT6

P-MOV300 CKT5

P-MOV300 CKT4

P-MOV300 CKT3

P-MOV300 CKT2

P-MOV300 CKT1

P-RIO300

P-P302

P-P301

MOV-300

RIO-300

P-302

P-301

UT-045

UT-044

UT-043

UT-042

UT-041

UT-040

UT-039

UT-038

LPN-100

LPN-200

P-MOV200CKT5

P-MOV200CKT4

P-MOV200CKT3

P-MOV200CKT2

P-MOV200CKT1

P-P301

P-P302

P-P303

P-FVN301

P-FVN302

P-FVN303

P-P203

P-203

DETAIL A

BT-013

BT-016

BT-015

BT-014

P-P204

P-204

P-P205

P-205

P-PBT012

BT-012

P-P202

P-202

DETAIL B

P-201

P-P201

P-BT011

BT-011

RIO-100

P-MOV100CKT5

P-MOV100CKT4

P-MOV100CKT3

P-MOV100CKT2

P-MOV100CKT1

RIO-100

MOV-100

UT-016

P-WTR

P-PWTR

P-P201

P-FVN201

P-FVN202

P-FVN203

P-FVN204

P-FVNBT011

P-FVNBT012

DETAIL A

FVN-201

FVN-202

FVN-203

FVN-204

FVN-BT011

FVN-BT012

P-P101

P-P102

P-P103

P-P104

P-P105

P-P106

P-P107

P-PWTR

DETAIL B

FVN-101

FVN-102

FVN-103

FVN-104

FVN-105

FVN-106

FVN-107

FVN-WTR

P-FNVP101

P-FNVP102

P-FNVP103

P-FNVP104

P-FNVP105

P-FNVP106

P-FNVP107

P-FVNPWTR

UT-032

UT-035

UT-037

UT-031

UT-034

UT-030

UT-033

UT-036

P-107

P-103

P-102

P-101

P-106

P-105

P-104

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

NO.	REVISION/ISSUE	DATE	BY	CHK. REVIEW	APPR.
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/16/24	KJG		

HPF CONSULTANTS, INC.
ENGINEERING DESIGN SUPERVISION INSPECTION
MIDLAND, TEXAS

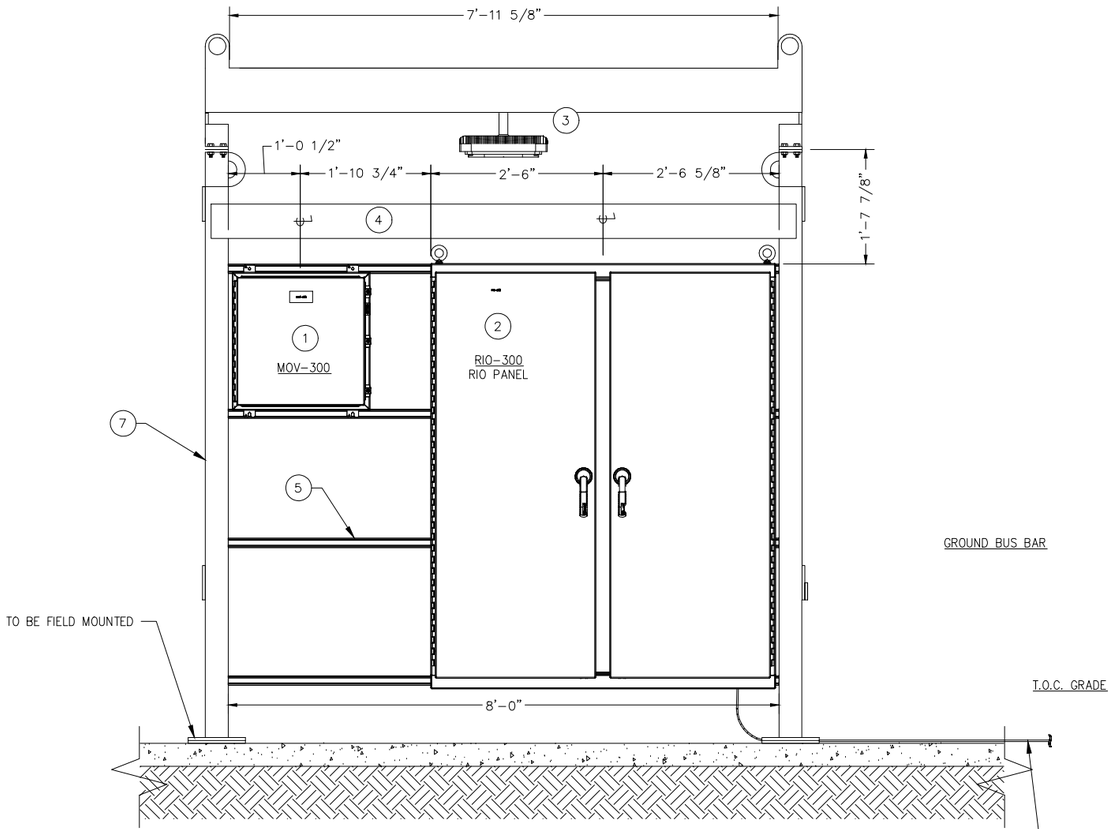
DWG. NO.	REFERENCE DRAWINGS
FILE:	23329-69-455
DRAWN BY:	ddb
JOB NO.	23329
SCALE	NTS
REV.	0
DWG.	23329-62-455

CABLE & ROUTING
OBSIDIAN CHEMICAL PLANT

MIDLAND, TX

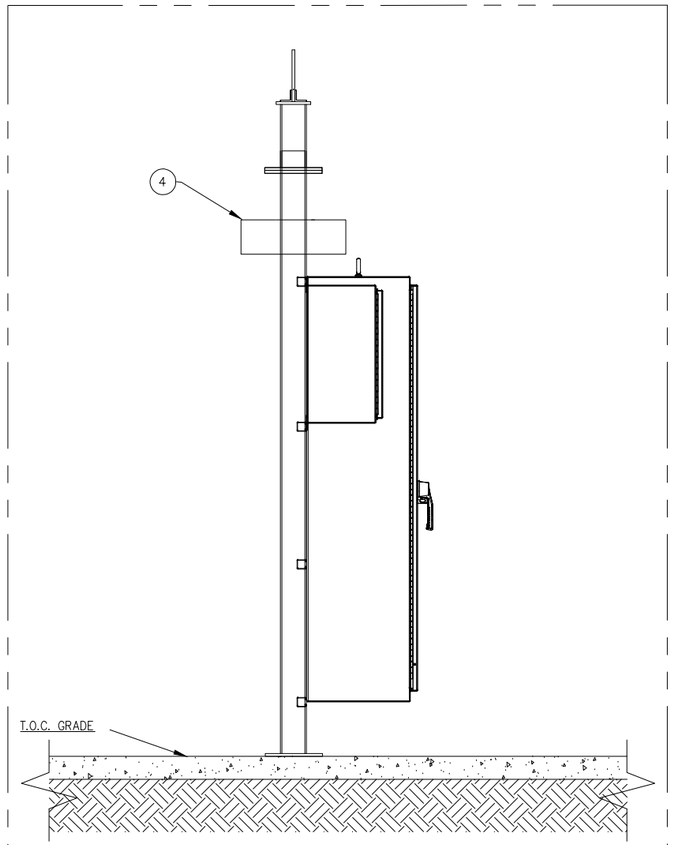
BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	MANUFACTURER	PROVIDED BY	PART NUMBER
1	1	ENCLOSURE, NEMA 4X, 24"X24"X8" CONTINUOUS HINDGE	HOFFMAN		A24H24BLP
2	1	ENCLOSURE, TWO-DOOR W/3 LATCH TYPE 4, 74"X60"X18"	HOFFMAN		A74H6018LP3PT
3	2	LED CANOPY LIGHT SURFACE MOUNT DIRECTLY UNDER CANOPY			
4	2	WIRE TROUGH, W/SLIP-ON REMOVABLE COVER, 96"L X10"W X10"H	HOFFMAN		A1010116RT
5	4	UNITSTRUT ALUMINUM SINGLE CHANNEL 10'	BLINE		
6	A/R	1/2" CHANNEL NUT, WASHER AND BOLT FOR UNISTRUT			
7	2	4" I-BEAM 20'			



SWRK-300
ELEVATION
(FRONT SIDE)

RIO-300 HAS A SEPARATE #2 GREEN INSULATED GROUND WIRE ATTACHED TO ISOLATED GROUND TRIAD.



SWRK-300
ELEVATION
(SIDE VIEW)

1. ELECTRICAL ENCLOSURES AND STARTERS ARE NOT TO SCALE.
2. EACH EQUIPMENT ENCLOSURE SHALL BE TAPPED WITH A #2 GREEN, INSULATED GROUND WIRE THAT IS ALSO TAPPED AT THE GROUND BAR.

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

8 FOOT SWITCH RACK LAYOUT
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

DWG.	23329-62-630	REV.	0	SCALE	NTS	JOB NO.	23329	DRAWN BY:	dCb	FILE:	23329-62-630

HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	dCb	JN			7/17/24

DWG. NO.

REFERENCE DRAWINGS

GROUNDING BILL OF MATERIAL

ITEM	QTY/ FT	DESCRIPTION	MANUFACTURER	PART NUMBER
1	830'	#2/0 BARE COPPER	HOUSTON WIRE	HW00020101
2	90'	#2/0 XHHW INSULATED JACKET, GREEN	HOUSTON WIRE	HW00200201
3	658'	#2 XHHW INSULATED JACKET, GREEN	HOUSTON WIRE	HW00200201
4	9	GROUND ROD, COPPERCLAD, 3/4" x 10'	nVent ERICO	613403
5	15	CONNECTOR, COMPRESSION C 1-2/0 TO 1-2/0 AWG	BURNDY	YGHC26C26
7	6	GROUND WIRE CLAMP, TWO CABLE, 3/4" ROD, 2/0 AWG WIRE	BURNDY	GP6429
8	3	GROUND WIRE CLAMP, THREE CABLE, 3/4" ROD, 2/0 AWG WIRE	BURNDY	GK6429
9	1065 LBS	POWER SET GROUND ENHANCEMENT MATERIAL 355 LBS PER HOLE	LORESCO	POWERSET
10	3	FIBRELYTE BOX 9" DIA x 12" HIGH	OLDCASTLE	FL08
11	17	COMPRESSION LUG, 1 HOLE, 2 AWG, 3/8" STUD HOLE	BURNDY	YA2CTC38
12	12	COMPRESSION TERMINAL, 2 HOLE, 2/0 AWG, 3/8" STUD HOLE	BURNDY	
13	17	BOLT, HEX 1/4"-20 X 2"L	BURNDY	25X200HEBBOX
14	17	HEX NUT 1/4" -20	BURNDY	25CHEN
15	17	FLAT WASHER, 1/4"	BURNDY	25FWSSBOX
16	44	COMPRESSION LUG, 1 HOLE, 2/0 AWG, 9/16" STUD HOLE	BURNDY	YAL26T12
17	73	BOLT, HEX 1/2"-13 X 1"	BURNDY	50X100HSSBUSA
18	100	HEX NUT 1/2" -13	BURNDY	50HSSNUSA
19	54	SPLIT WASHER, 1/2"	BURNDY	50SWSSMDUSA
20	12	GROUNDING CLAMP		
21	A/R	BONDING JUMPER, #1AWG, 600 AMPACITY, HARDWARE INCLUDED		
22	A/R	1" PVC SCHEDULE 40, PLAIN END, GRAY		

N PLANT NORTH

LEGEND

- 2/0 BARE COPPER
- 2/0 XHHW W/INSULATED JACKET
- GROUND ROD
- TEST WELL
- GROUND CONNECTION
- ## DETAIL TAG

EXISTING CHEMICAL AREA

CONTROL ROOM

DETAIL C: DS-101, DPL-101, DPL-102, XT-100, PLC-200, MOV-200, FVN-301, FVN-302, FVN-303

DETAIL A: FVN-201, FVN-202, FVN-203, FVN-204, FVN-BT011, FVN-BT012

DETAIL B: FVN-101, FVN-102, FVN-103, FVN-104, FVN-105, FVN-106, FVN-107, FVN-WTR

NOTE 1: GROUNDING CABLE MOUNTED ON CABLE TRAY.

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

NO.	REVISION/ISSUE	DATE	BY	CHK. REVIEW	APPR.
0	ISSUED FOR CONSTRUCTION, HPF #23329	7/16/24	dCb	JN	

HPF CONSULTANTS, INC.
ENGINEERING AGENCY INSPECTION
MIDLAND, TEXAS

DRAWN BY: dCb | CHK. REVIEW: JN | APPR.:

JOB NO. 23329 | DATE: 7/16/24

SCALE: NTS | FILE: 23329-61-201

REV. 0 | DWG. NO.

DWG. 23329-62-700 | REFERENCE DRAWINGS

AREA GROUNDING PLAN
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

OBSIDIAN
CHEMICAL SOLUTIONS

CHEMICAL PLANT

(ELE) LOAD LIST

0	7/15/2024	Issued for Construction	JoN		
REV	**DATE**	**DESCRIPTION**	**ORIG**	**CHK**	**APPR**
Document No.		**Facility Code**	**Discipline**	**Serial No.**	**Sheet No.**
		23329	ELE	63-100	1

OBSIDIAN
CHEMICAL SOLUTIONS
23329-63-101
ELECTRICAL LOAD LIST

Name:	(ELE) LOAD LIST
Revision:	5
Effective Date:	7/15/2024
Page:	2 OF 2

PROJECT:	OBSIDIAN CHEMICAL PLANT
AREA:	GENERAL
FACILITY ID:	23329
PRJ MANAGER:	Abraham Chavez

ELECTRICAL LOAD CALCULATIONS

EQUIPMENT TAG	DESCRIPTION	CONN. HP (motors)	Voltage	BUILDING ELE RACK / BLDG	NEC FLC @ 460V	CONNECTED KVA	CONNECTED KW	LOAD FACTOR	DEMAND CONTINUOUS in [HP] after LF	DEMAND CONTINUOUS in [KVA] after LF	DEMAND CONTINUOUS in [KW] after LF	
BT-011	Blend Tanks Agitators	5	460	BLDG	7.6	4	4	0.9	5	4	3.4	
BT-012	Blend Tanks Agitators	5	460	BLDG	7.6	4	4	0.9	5	4	3.4	
P-101	Tank Loading Pump	5	460	BLDG	7.6	4	4	0.9	5	4	3.4	
P-102	Tank Loading Pump	5	460	FIELD	7.6	4	4	0.9	5	4	3.4	
P-103	Tank Loading Pump	5	460	FIELD	7.6	4	4	0.9	5	4	3.4	
P-104	Tank Loading Pump	5	460	FIELD	7.6	4	4	0.9	5	4	3.4	
P-105	Chemical Tank Transfer Pump	15	460	FIELD	21	13	11	0.9	14	12	10.1	
P-106	Chemical Tank Transfer Pump	15	460	FIELD	21	13	11	0.9	14	12	10.1	
P-107	Chemical Tank Transfer Pump	15	460	FIELD	21	13	11	0.9	14	12	10.1	
P-201	Blend Tanks Transfer Pump	5	460	BLDG	7.6	4	4	0.9	5	4	3.4	
P-202	Blend Tanks Transfer Pump	75	460	BLDG	96	66	56	0.9	68	59	50.4	
P-203	Blend Tanks Transfer Pump	75	460	BLDG	96	66	56	0.9	68	59	50.4	
P-204	Blend Tanks Transfer Pump	1.5	460	BLDG	3	1	1	0.9	1	1	1.0	
P-301	Tank Loading Pump	20	460	FIELD	27	18	15	0.9	18	16	13.4	
P-302	Tank Loading Pump	20	460	FIELD	27	18	15	0.9	18	16	13.4	
P-303	Tank Loading Pump	20	460	FIELD	27	18	15	0.9	18	16	13.4	
P-WTR	Water Pump	10	460	FIELD	14	9	7	0.9	9	8	6.7	
XT-100	TRANSFORMER 480-240/120, 1PH		480	FIELD	156	75		0.9		68		
TOTAL		**301.5**			**562**	**340**	**225**		**271**	**306**	**199**	

Largest Motor HP=	75
Total Connected, HP (motors)=	302
Total Connected, KVA =	340
Total Connected, kW=	225
Demand, HP only motors=	271
Total Demand KVA	306
Total Demand KW	199
Total Station Installed Capacity KVA	225
Spare Capacity [KVA]	-115
Transformer Size (Bank total)	**300**

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	7/15/2024
Revision:	0
Drawing Number:	23329-65-100

CONDUIT AND CABLE SCHEDULE FOR 480 VOLT SYSTEM

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH		CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
												TRAY	RGS			
1	0	**DS-101**	DS- 101	DPL-101	1-3/C	350 MCM	1 x #3	1	TC-ER		300.00	60			69.00	
2	0	**DPL-101-A**	DS-101	DPL-101	1-3/C	350 MCM	1 x #3	1	TC-ER		250.00	50			57.50	
3	0	**DPL-101-B**	DS-101	DPL-101	1-3/C	350 MCM	1 x #3	1	TC-ER		250.00	50			57.50	
4	0	**FVN-P105**	DPL-101 CKT 1,3,5	FVN-P105	1-3/C	6	1 x #8	1	TC-ER	15.00		80			92.00	
5	0	**P-P105**	FVN-P105	P-105	1-3/C	6	1 x #8	1	TC-ER	15.00		75			86.25	
6	0	**FVN-P106**	DPL-101 CKT 7,9,11	FVN-P106	1-3/C	6	1 x #8	1	TC-ER	15.00		110			126.50	
7	0	**P-P106**	FVN-P106	P-106	1-3/C	6	1 x #8	1	TC-ER	15.00		95			109.25	
8	0	**FVN-P107**	DPL-101 CKT 13,15,17	FVN-P107	1-3/C	6	1 x #8	1	TC-ER	15.00		110			126.50	
9	0	**P-P107**	FVN-P107	P-107	1-3/C	6	1 x #8	1	TC-ER	15.00		105			120.75	
10	0	**FVN-P201**	DPL-101 CKT 19,21,23	FVN-P202	1-3/C	6	1 x #8	1	TC-ER	5.00		70			80.50	
11	0	**P-P201**	FVN-P202	P-202	1-3/C	6	1 x #8	1	TC-ER	5.00		70			80.50	
12	0	**FVN-P202**	DPL-101 CKT 25,27,29	FVN-P202	1-3/C	1/0	1 x #6	1	TC-ER	75.00		110			126.50	
13	0	**P-P202**	FVN-P202	P-202	1-3/C	1/0	1 x #6	1	TC-ER	75.00		50			57.50	
14	0	**FVN-P203**	DPL-101 CKT 31,33,35	FVN-P203	1-3/C	1/0	1 x #6	1	TC-ER	75.00		110			126.50	
15	0	**P-P203**	FVN-P203	P-203	1-3/C	1/0	1 x #6	1	TC-ER	75.00		20			23.00	
16	0	**FVN-P204**	DPL-101 CKT 2,4,6	FVN-P204	1-3/C	8	1 x #10	1	TC-ER	1.50		85			97.75	
17	0	**P-P204**	FVN-P204	P-204	1-3/C	8	1 x #10	1	TC-ER	1.50		50			57.50	
18	0	**FVN-P205**	DPL-101 CKT 8,10,12	FVN-P205	1-3/C	8	1 x #10	1	TC-ER	1.50		90			103.50	
19	0	**P-P205**	FVN-P205	P-205	1-3/C	8	1 x #10	1	TC-ER	1.50		30			34.50	
20	0	**FVN-P301**	DPL-101 CKT 14,16,18	FVN-P301	1-3/C	6	1 x #8	1	TC-ER	20.00		40			46.00	
21	0	**P-P301**	FVN-P301	P-301	1-3/C	6	1 x #8	1	TC-ER	20.00		100			115.00	
22	0	**FVN-P302**	DPL-101 CKT 20,22,24	FVN-P302	1-3/C	6	1 x #8	1	TC-ER	20.00		45			51.75	
23	0	**P-P302**	FVN-P302	P-302	1-3/C	6	1 x #8	1	TC-ER	20.00		100			115.00	
24	0	**FVN-P303**	DPL-101 CKT 26,28,30	FVN-P303	1-3/C	6	1 x #8	1	TC-ER	20.00		40			46.00	
25	0	**P-P303**	FVN-P303	P-303	1-3/C	6	1 x #8	1	TC-ER	20.00		110			126.50	
26	0	**FVN-P101**	DPL-102 CKT 13,15,17	FVN-P101	1-3/C	8	1 x #10	1	TC-ER	15.00		100			115.00	
27	0	**P-P101**	FVN-P101	P-101	1-3/C	8	1 x #10	1	TC-ER	15.00		85			97.75	
28	0	**FVN-P102**	DPL-102 CKT 19,21,23	FVN-P102	1-3/C	8	1 x #10	1	TC-ER	5.00		110			126.50	
29	0	**P-P102**	FVN-P102	P-102	1-3/C	8	1 x #10	1	TC-ER	5.00		130			149.50	

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH		CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
												TRAY	RGS			
30	0	**FVN-P103**	DPL-102 CKT 25,27,29	FVN-P103	1-3/C	8	1 x #10	1	TC-ER	5.00		120			138.00	
31	0	**P-P103**	FVN-P103	P-103	1-3/C	8	1 x #10	1	TC-ER	5.00		120			138.00	
32	0	**FVN-P104**	DPL-102 CKT 2,4,6	FVN-P104	1-3/C	6	1 x #8	1	TC-ER	5.00		120			138.00	
33	0	**P-P104**	FVN-P104	P-104	1-3/C	6	1 x #8	1	TC-ER	5.00		110			126.50	
34	0	**FVN-BT011**	DPL-102 CKT 7,9,11	FVN-BT011	1-3/C	8	1 x #10	1	TC-ER	5.00		110			126.50	
35	0	**P-BT011**	FVN-BT011	BT-011	1-3/C	8	1 x #10	1	TC-ER	5.00		40			46.00	
36	0	**FVN-BT012**	DPL-102 CKT 1,3,5	FVN-BT012	1-3/C	8	1 x #10	1	TC-ER	5.00		130			149.50	
37	0	**P-BT012**	FVN-BT012	BT-012	1-3/C	8	1 x #10	1	TC-ER	5.00		40			46.00	
38	0	**XT-001**	DPL-102 CKT 8,10,12	XT-001	1-3/C	6	1 x #8	1	TC-ER		15.00	40			46.00	
39	0	**DPL-102**	DPL-101 CKT38,40,42	DPL-102	1-3/C	350 MCM	1 x #3	1	TC-ER		400.00	60			69.00	

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Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	7/16/2024
Revision:	0
Drawing Number:	23329-65-101

CONDUIT AND CABLE SCHEDULE FOR 120 VOLT SYSTEM

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH TRAY	LENGTH RGS	CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
1	0	**HSS-P201**	FVN-201	P-201	1-3/C	12	1 x #12	1	TC-ER		0.50	85			97.75	
2	0	**HSS-P202**	FVN-202	P-202	1-3/C	12	1 x #12	1	TC-ER		0.50	90			103.50	
3	0	**HSS-P-203**	FVN-203	P-203	1-3/C	12	1 x #12	1	TC-ER		0.50	120			138.00	
4	0	**HSS-P-204**	FVN-204	P-204	1-3/C	12	1 x #12	1	TC-ER		0.50	75			86.25	
5	0	**HSS-P-205**	FVN-205	P-204	1-3/C	12	1 x #12	1	TC-ER		0.50	75			86.25	
6	0	**HSS-P-101**	FVN-101	P-101	1-3/C	12	1 x #12	1	TC-ER		0.50	75			86.25	
7	0	**HSS-P-102**	FVN-102	P-102	1-3/C	12	1 x #12	1	TC-ER		0.50	95			109.25	
8	0	**HSS-P-103**	FVN-103	P-103	1-3/C	12	1 x #12	1	TC-ER		0.50	105			120.75	
9	0	**HSS-P-104**	FVN-104	P-104	1-3/C	12	1 x #12	1	TC-ER		0.50	20			23.00	
10	0	**HSS-P-105**	FVN-105	P-105	1-3/C	12	1 x #12	1	TC-ER		0.50	20			23.00	
11	0	**HSS-P-106**	FVN-106	P-106	1-3/C	12	1 x #12	1	TC-ER		0.50	20			23.00	
12	0	**HSS-P-107**	FVN-107	P-107	1-3/C	12	1 x #12	1	TC-ER		0.50	25			28.75	
13	0	**HSS-P-301**	FVN-301	P-301	1-3/C	12	1 x #12	1	TC-ER		0.50	105			120.75	
14	0	**HSS-P-302**	FVN-302	P-302	1-3/C	12	1 x #12	1	TC-ER		0.50	20			23.00	
15	0	**HSS-P-303**	FVN-302	P-303	1-3/C	12	1 x #12	1	TC-ER		0.50	100			115.00	
16	0	**HSS-P-BT011**	FVN-BT011	BT-011	1-3/C	12	1 x #12	1	TC-ER		0.50	70			80.50	
17	0	**HSS-P-BT012**	FVN-BT011	BT-011	1-3/C	12	1 x #12	1	TC-ER		0.50	70			80.50	
18	0	**HSS-P-WTR**	FVN-WTR	P-WTR	1-3/C	12	1 x #12	1	TC-ER		0.50	70			80.50	
19	0	**LPN-100**	XT-100	LPN-100	1-3/C	4/0	1 x #4	1	TC-ER		225.00	50			57.50	
20	0	**LPN-200**	XT-100	LPN-200	1-3/C	4/0	1 x #4	1	TC-ER		225.00	50			57.50	
21	0	**RIO-100**	LPN-100 CKT 6	RIO-100	1-3/C	12	1 x #12	1	TC-ER		0.50	70			80.50	
22	0	**PLC-200**	LPN-100 CKT 1	PLC-200	1-3/C	12	1 x #12	1	TC-ER		0.50	70			80.50	
23	0	**RIO-300**	LPN-200 CKT 6	RIO-300	1-3/C	12	1 x #12	1	TC-ER		0.50	70			80.50	
24	0	**P-MOV301**	LPN-200 CKT 1	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
25	0	**P-MOV302**	LPN-200 CKT 8	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
26	0	**P-MOV303**	LPN-200 CKT 3	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
27	0	**P-MOV304**	LPN-200 CKT 10	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	150			172.50	
28	0	**P-MOV305**	LPN-200 CKT 5	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	150			172.50	
29	0	**P-MOV306**	LPN-200 CKT 12	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	150			172.50	

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH TRAY	LENGTH RGS	CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
30	0	**P-MOV307**	LPN-200 CKT 7	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	150			172.50	
31	0	**P-MOV308**	LPN-200 CKT 14	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	150			172.50	
32	0	**P-MOV309**	LPN-200 CKT 9	MOV-300	1-3/C	8	1 x #10	1	TC-ER		0.29	150			172.50	
33	0	**P-MOV201**	LPN-100 CKT 3	MOV-200	1-3/C	8	1 x #10	1	TC-ER		0.29	30			34.50	
34	0	**P-MOV202**	LPN-100 CKT 5	MOV-200	1-3/C	8	1 x #10	1	TC-ER		0.29	30			34.50	
35	0	**P-MOV203**	LPN-100 CKT 7	MOV-200	1-3/C	8	1 x #10	1	TC-ER		0.29	30			34.50	
36	0	**P-MOV204**	LPN-100 CKT 9	MOV-200	1-3/C	8	1 x #10	1	TC-ER		0.29	30			34.50	
37	0	**P-MOV205**	LPN-100 CKT 11	MOV-200	1-3/C	8	1 x #10	1	TC-ER		0.29	30			34.50	
38	0	**P-MOV101**	LPN-100 CKT 8	MOV-100	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
39	0	**P-MOV102**	LPN-100 CKT 10	MOV-100	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
40	0	**P-MOV103**	LPN-100 CKT 12	MOV-100	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
41	0	**P-MOV104**	LPN-100 CKT 14	MOV-100	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
42	0	**P-MOV105**	LPN-100 CKT 16	MOV-100	1-3/C	8	1 x #10	1	TC-ER		0.29	70			80.50	
43	0	**P-MOV30A**	MOV-101	MOV-030A	1-5/C	12		1	CUTR		0.29	70			80.50	
44	0	**P-MOV30B**	MOV-101	MOV-030B	1-5/C	12		1	CUTR		0.29	70			80.50	
45	0	**P-MOV31A**	MOV-101	MOV-031A	1-5/C	12		1	CUTR		0.29	70			80.50	
46	0	**P-MOV31B**	MOV-101	MOV-031B	1-5/C	12		1	CUTR		0.29	70			80.50	
47	0	**P-MOV32A**	MOV-101	MOV-032A	1-5/C	12		1	CUTR		0.29	70			80.50	
48	0	**P-MOV32B**	MOV-101	MOV-032B	1-5/C	12		1	CUTR		0.29	70			80.50	
49	0	**P-MOV33A**	MOV-101	MOV-033A	1-5/C	12		1	CUTR		0.29	70			80.50	
50	0	**P-MOV33B**	MOV-101	MOV-033B	1-5/C	12		1	CUTR		0.29	70			80.50	
51	0	**P-MOV34A**	MOV-101	MOV-034A	1-5/C	12		1	CUTR		0.29	70			80.50	
52	0	**P-MOV34B**	MOV-101	MOV-034B	1-5/C	12		1	CUTR		0.29	70			80.50	
53	0	**P-MOV35A**	MOV-101	MOV-035A	1-5/C	12		1	CUTR		0.29	70			80.50	
54	0	**P-MOV35B**	MOV-102	MOV-035B	1-5/C	12		1	CUTR		0.29	70			80.50	
55	0	**P-MOV36A**	MOV-102	MOV-036A	1-5/C	12		1	CUTR		0.29	70			80.50	
56	0	**P-MOV36B**	MOV-102	MOV-036B	1-5/C	12		1	CUTR		0.29	70			80.50	
57	0	**P-MOV37A**	MOV-102	MOV-037A	1-5/C	12		1	CUTR		0.29	70			80.50	
58	0	**P-MOV37B**	MOV-102	MOV-037B	1-5/C	12		1	CUTR		0.29	70			80.50	
59	0	**P-MOV100A**	MOV-102	MOV-100A	1-5/C	12		1	CUTR		0.29	70			80.50	
60	0	**P-MOV100B**	MOV-102	MOV-100B	1-5/C	12		1	CUTR		0.29	70			80.50	
61	0	**P-MOV105A**	MOV-102	MOV-105A	1-5/C	12		1	CUTR		0.29	70			80.50	
62	0	**P-MOV106A**	MOV-102	MOV-106A	1-5/C	12		1	CUTR		0.29	70			80.50	
63	0	**P-MOV107A**	MOV-102	MOV-107A	1-5/C	12		1	CUTR		0.29	70			80.50	

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH TRAY	LENGTH RGS	CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
64	0	**P-MOV011A**	MOV-201	MOV-011A	1-5/C	12		1	CUTR		0.29	70			80.50	
65	0	**P-MOV011B**	MOV-201	MOV-011B	1-5/C	12		1	CUTR		0.29	70			80.50	
66	0	**P-MOV012A**	MOV-201	MOV-012A	1-5/C	12		1	CUTR		0.29	70			80.50	
67	0	**P-MOV012B**	MOV-201	MOV-012B	1-5/C	12		1	CUTR		0.29	70			80.50	
68	0	**P-MOV013A**	MOV-201	MOV-013A	1-5/C	12		1	CUTR		0.29	70			80.50	
69	0	**P-MOV013B**	MOV-201	MOV-013B	1-5/C	12		1	CUTR		0.29	70			80.50	
70	0	**P-MOV013C**	MOV-201	MOV-013C	1-5/C	12		1	CUTR		0.29	70			80.50	
71	0	**P-MOV014**	MOV-201	MOV-014	1-5/C	12		1	CUTR		0.29	70			80.50	
72	0	**P-MOV015**	MOV-201	MOV-015	1-5/C	12		1	CUTR		0.29	70			80.50	
73	0	**P-MOV201A**	MOV-201	MOV-201A	1-5/C	12		1	CUTR		0.29	70			80.50	
74	0	**P-MOV201B**	MOV-201	MOV-201B	1-5/C	12		1	CUTR		0.29	70			80.50	
75	0	**P-MOV201C**	MOV-201	MOV-201C	1-5/C	12		1	CUTR		0.29	70			80.50	
76	0	**P-MOV201D**	MOV-201	MOV-201D	1-5/C	12		1	CUTR		0.29	70			80.50	
77	0	**P-MOV201E**	MOV-201	MOV-201E	1-5/C	12		1	CUTR		0.29	70			80.50	
78	0	**P-MOV202A**	MOV-201	MOV-202A	1-5/C	12		1	CUTR		0.29	70			80.50	
79	0	**P-MOV202B**	MOV-201	MOV-202B	1-5/C	12		1	CUTR		0.29	70			80.50	
80	0	**P-MOV202C**	MOV-201	MOV-202C	1-5/C	12		1	CUTR		0.29	70			80.50	
81	0	**P-MOV202D**	MOV-201	MOV-202D	1-5/C	12		1	CUTR		0.29	70			80.50	
82	0	**P-MOV202E**	MOV-201	MOV-202E	1-5/C	12		1	CUTR		0.29	70			80.50	
83	0	**P-MOV38A**	MOV-301	MOV-038A	1-5/C	12		1	CUTR		0.50	70			80.50	
84	0	**P-MOV38B**	MOV-301	MOV-038B	1-5/C	12		1	CUTR		0.50	70			80.50	
85	0	**P-MOV38C**	MOV-301	MOV-038C	1-5/C	12		1	CUTR		0.50	70			80.50	
86	0	**P-MOV39A**	MOV-301	MOV-039A	1-5/C	12		1	CUTR		0.50	70			80.50	
87	0	**P-MOV39B**	MOV-301	MOV-039B	1-5/C	12		1	CUTR		0.50	70			80.50	
88	0	**P-MOV39C**	MOV-301	MOV-039C	1-5/C	12		1	CUTR		0.50	70			80.50	
89	0	**P-MOV40A**	MOV-301	MOV-040A	1-5/C	12		1	CUTR		0.50	70			80.50	
90	0	**P-MOV40B**	MOV-301	MOV-040B	1-5/C	12		1	CUTR		0.50	70			80.50	
91	0	**P-MOV40C**	MOV-301	MOV-040C	1-5/C	12		1	CUTR		0.50	70			80.50	
92	0	**P-MOV41A**	MOV-301	MOV-041A	1-5/C	12		1	CUTR		0.50	70			80.50	
93	0	**P-MOV41B**	MOV-302	MOV-041B	1-5/C	12		1	CUTR		0.50	70			80.50	
94	0	**P-MOV41C**	MOV-302	MOV-041C	1-5/C	12		1	CUTR		0.50	70			80.50	
95	0	**P-MOV42A**	MOV-302	MOV-042A	1-5/C	12		1	CUTR		0.50	70			80.50	
96	0	**P-MOV42B**	MOV-302	MOV-042B	1-5/C	12		1	CUTR		0.50	70			80.50	
97	0	**P-MOV42C**	MOV-302	MOV-042C	1-5/C	12		1	CUTR		0.50	70			80.50	

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH		CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
												TRAY	RGS			
98	0	**P-MOV43A**	MOV-302	MOV-043A	1-5/C	12		1	CUTR		0.50	70			80.50	
99	0	**P-MOV43B**	MOV-302	MOV-043B	1-5/C	12		1	CUTR		0.50	70			80.50	
100	0	**P-MOV43C**	MOV-302	MOV-043C	1-5/C	12		1	CUTR		0.50	70			80.50	
101	0	**P-MOV44A**	MOV-302	MOV-044A	1-5/C	12		1	CUTR		0.50	70			80.50	
102	0	**P-MOV44B**	MOV-302	MOV-044B	1-5/C	12		1	CUTR		0.50	70			80.50	
103	0	**P-MOV44C**	MOV-303	MOV-044C	1-5/C	12		1	CUTR		0.50	70			80.50	
104	0	**P-MOV45A**	MOV-303	MOV-045A	1-5/C	12		1	CUTR		0.50	70			80.50	
105	0	**P-MOV45B**	MOV-303	MOV-045B	1-5/C	12		1	CUTR		0.50	70			80.50	
106	0	**P-MOV45C**	MOV-303	MOV-045C	1-5/C	12		1	CUTR		0.50	70			80.50	
107	0	**P-MOV300A**	MOV-303	MOV-300A	1-5/C	12		1	CUTR		0.50	70			80.50	
108	0	**P-MOV300B**	MOV-303	MOV-300B	1-5/C	12		1	CUTR		0.50	70			80.50	
109	0	**P-MOV300C**	MOV-303	MOV-300C	1-5/C	12		1	CUTR		0.50	70			80.50	
110	0	**P-MOV300D**	MOV-303	MOV-300D	1-5/C	12		1	CUTR		0.50	70			80.50	

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	7/15/2024
Revision:	0
Drawing Number:	23329-65-200

BOM Based on 23329-65-100

Wire Size	Cable Voltage	Catalog No.	Runs	Estimated Length
350 MCM	600V	HW154 35003	4	253
6	600V	HW154 00603	17	1,633
1/0	600V	HW154 10103	4	334
8	600V	HW154 00803	14	1,426

Conduit Size	Estimated Length RGS
6	
5	
4	
3 1/2	
3	
2 1/2	
2	
1 1/2	
1 1/4	
1	
3/4	

Cable Gland #	QTY.
TMC2-050075A	62
TMC2-075099A	
TMC2-100118A	
TMC2-125137A	8
TMC2-150162A	
TMC2-150190A	
TMC2-200200A	4
TMC2-200233A	
TMC2-250272A	4
TMC2-350325A	
TMC2-400376A	
TMC2-400425A	
TMC2X-050075AX	
TMC2X-075099AX	
TMC2X-100118AX	
TMC2X-125137AX	
TMC2X-150162AX	
TMC2X-150190AX	
TMC2X-200200AX	
TMC2X-250233AX	
TMC2X-300272AX	
TMC2X-350325AX	
TMC2X-400376AX	
TMC2X-400425AX	

SPECIFICATION NOTES:

1) All Pairs shall be Black & White
2) All Triads shall be Black, White and Red.
3) Multiple Pair cable shall have pairs numbered starting with 1.
4) Multiple Triad cable shall have triads numbered starting with 1.
5) Three Phase wiring shall have the phases color coded as black, red, & blue.
6) All under ground conduit should be coated.

GENERAL NOTES:

1) This is an estimated BOM. It is the responsibility of the Contractor to measure and field verify all lengths noted on the BOM and the Cable & Conduit Schedule.

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	7/15/2024
Revision:	0
Drawing Number:	23329-65-201

BOM Based on 23329-65-101

Wire Size	Cable Voltage	Catalog No.	Runs	Estimated Length
12	600V	HW154 01203	21	1,668
4/0	600V	HW154 40103	2	115
8	600V	HW154 00803	19	1,852
12	600V	31-1, 12 awg 5C	74	5,969
6	600V	HW154 00603	6	552

Conduit Size	Estimated Length RGS
6	
5	
4	
3 1/2	
3	
2 1/2	
2	
1 1/2	
1 1/4	
1	
3/4	

Cable Gland #	QTY.
TMC2-050075A	240
TMC2-075099A	
TMC2-100118A	
TMC2-125137A	
TMC2-150162A	4
TMC2-150190A	
TMC2-200200A	
TMC2-200233A	
TMC2-250272A	
TMC2-350325A	
TMC2-400376A	
TMC2-400425A	
TMC2X-050075AX	
TMC2X-075099AX	
TMC2X-100118AX	
TMC2X-125137AX	
TMC2X-150162AX	
TMC2X-150190AX	
TMC2X-200200AX	
TMC2X-250233AX	
TMC2X-300272AX	
TMC2X-350325AX	
TMC2X-400376AX	
TMC2X-400425AX	

SPECIFICATION NOTES:

1) All Pairs shall be Black & White
2) All Triads shall be Black, White and Red.
3) Multiple Pair cable shall have pairs numbered starting with 1.
4) Multiple Triad cable shall have triads numbered starting with 1.
5) Three Phase wiring shall have the phases color coded as black, red, & blue.
6) All under ground conduit should be coated.

GENERAL NOTES:

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HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.: 23329
Client: OBSIDIAN
Project Name: CHEMICAL MIXING

Date: 6/12/2024
Revision: A
Drawing Number: 23329-65-300

CONDUIT AND CABLE SCHEDULE FOR 480 VOLT SYSTEM FIELD

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH		CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
												TRAY	RGS			
5	A	**P-P105**	FVN-P105	P-105	1-3/C	6	1 x #8	1	TC-ER	15.00		75			86.25	
7	A	**P-P106**	FVN-P106	P-106	1-3/C	6	1 x #8	1	TC-ER	15.00		95			109.25	
9	A	**P-P107**	FVN-P107	P-107	1-3/C	6	1 x #8	1	TC-ER	15.00		105			120.75	
11	A	**P-P201**	FVN-P202	P-202	1-3/C	6	1 x #8	1	TC-ER	5.00		70			80.50	
13	A	**P-P202**	FVN-P202	P-202	1-3/C	1/0	1 x #6	1	TC-ER	75.00		50			57.50	
15	A	**P-P203**	FVN-P203	P-203	1-3/C	1/0	1 x #6	1	TC-ER	75.00		20			23.00	
17	A	**P-P204**	FVN-P204	P-204	1-3/C	8	1 x #10	1	TC-ER	1.50		50			57.50	
19	A	**P-P205**	FVN-P205	P-205	1-3/C	8	1 x #10	1	TC-ER	1.50		30			34.50	
21	A	**P-P301**	FVN-P301	P-301	1-3/C	6	1 x #8	1	TC-ER	20.00		100			115.00	
23	A	**P-P302**	FVN-P302	P-302	1-3/C	6	1 x #8	1	TC-ER	20.00		100			115.00	
25	A	**P-P303**	FVN-P303	P-303	1-3/C	6	1 x #8	1	TC-ER	20.00		110			126.50	
27	A	**P-P101**	FVN-P101	P-101	1-3/C	8	1 x #10	1	TC-ER	15.00		85			97.75	
29	A	**P-P102**	FVN-P102	P-102	1-3/C	8	1 x #10	1	TC-ER	5.00		130			149.50	
31	A	**P-P103**	FVN-P103	P-103	1-3/C	8	1 x #10	1	TC-ER	5.00		120			138.00	
33	A	**P-P104**	FVN-P104	P-104	1-3/C	6	1 x #8	1	TC-ER	5.00		110			126.50	
35	A	**P-BT011**	FVN-BT011	BT-011	1-3/C	8	1 x #10	1	TC-ER	5.00		40			46.00	
37	A	**P-BT012**	FVN-BT012	BT-012	1-3/C	8	1 x #10	1	TC-ER	5.00		40			46.00	
38	A	**XT-001**	DPL-102 CKT 8,10,12	XT-001	1-3/C	6	1 x #8	1	TC-ER		15.00	40			46.00	
39	A	**XT-002**	DPL-102 CKT 14,16,18	XT-002	1-3/C	6	1 x #8	1	TC-ER		15.00	100			115.00	
40	A	**XT-003**	DPL-102 CKT 20,22,24	XT-003	1-3/C	6	1 x #8	1	TC-ER		15.00	160			184.00	

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	6/12/2024
Revision:	A
Drawing Number:	23329-65-400

BOM Based on 23329-65-300

Wire Size	Cable Voltage	Catalog No.	Runs	Estimated Length
6	600V	HW154 00603	11	1,225
1/0	600V	HW154 10103	2	81
8	600V	HW154 00803	7	569

Conduit Size	Estimated Length RGS
6	
5	
4	
3 1/2	
3	
2 1/2	
2	
1 1/2	
1 1/4	
1	
3/4	

Cable Gland #	QTY.
TMC2-050075A	36
TMC2-075099A	
TMC2-100118A	
TMC2-125137A	4
TMC2-150162A	
TMC2-150190A	
TMC2-200200A	
TMC2-200233A	
TMC2-250272A	
TMC2-350325A	
TMC2-400376A	
TMC2-400425A	
TMC2X-050075AX	
TMC2X-075099AX	
TMC2X-100118AX	
TMC2X-125137AX	
TMC2X-150162AX	
TMC2X-150190AX	
TMC2X-200200AX	
TMC2X-250233AX	
TMC2X-300272AX	
TMC2X-350325AX	
TMC2X-400376AX	
TMC2X-400425AX	

SPECIFICATION NOTES:

1) All Pairs shall be Black & White
2) All Triads shall be Black, White and Red.
3) Multiple Pair cable shall have pairs numbered starting with 1.
4) Multiple Triad cable shall have triads numbered starting with 1.
5) Three Phase wiring shall have the phases color coded as black, red, & blue.
6) All under ground conduit should be coated.

GENERAL NOTES:

1) This is an estimated BOM. It is the responsibility of the Contractor to measure and field verify all lengths noted on the BOM and the Cable & Conduit Schedule.

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	6/12/2024
Revision:	A
Drawing Number:	23329-65-500

CONDUIT AND CABLE SCHEDULE FOR 480 VOLT SYSTEM BLDG

No. GROUP	REVISION NO.	CABLE TAG	FROM	TO	# OF CONDUCTORS	WIRE SIZE	GND SIZE	# OF RUNS	CABLE TYPE	MOTOR HP	OTHER LOAD (kW)	LENGTH		CONDUIT SIZE	TOTAL CABLE LENGTH(FT)	Comments
												TRAY	RGS			
1	A	**DS-101**	DS- 101	DPL-101	1-3/C	350 MCM	1 x #3	1	TC-ER		300.00	60			69.00	
2	A	**DPL-101-A**	DS-101	DPL-101	1-3/C	350 MCM	1 x #3	1	TC-ER		250.00	50			57.50	
3	A	**DPL-101-B**	DS-101	DPL-101	1-3/C	350 MCM	1 x #3	1	TC-ER		250.00	50			57.50	
4	A	**FVN-P105**	DPL-101 CKT 1,3,5	FVN-P105	1-3/C	6	1 x #8	1	TC-ER	15.00		80			92.00	
6	A	**FVN-P106**	DPL-101 CKT 7,9,11	FVN-P106	1-3/C	6	1 x #8	1	TC-ER	15.00		110			126.50	
8	A	**FVN-P107**	DPL-101 CKT 13,15,17	FVN-P107	1-3/C	6	1 x #8	1	TC-ER	15.00		110			126.50	
10	A	**FVN-P201**	DPL-101 CKT 19,21,23	FVN-P202	1-3/C	6	1 x #8	1	TC-ER	5.00		70			80.50	
12	A	**FVN-P202**	DPL-101 CKT 25,27,29	FVN-P202	1-3/C	1/0	1 x #6	1	TC-ER	75.00		110			126.50	
14	A	**FVN-P203**	DPL-101 CKT 31,33,35	FVN-P203	1-3/C	1/0	1 x #6	1	TC-ER	75.00		110			126.50	
16	A	**FVN-P204**	DPL-101 CKT 2,4,6	FVN-P204	1-3/C	8	1 x #10	1	TC-ER	1.50		85			97.75	
18	A	**FVN-P205**	DPL-101 CKT 8,10,12	FVN-P205	1-3/C	8	1 x #10	1	TC-ER	1.50		90			103.50	
20	A	**FVN-P301**	DPL-101 CKT 14,16,18	FVN-P301	1-3/C	6	1 x #8	1	TC-ER	20.00		40			46.00	
22	A	**FVN-P302**	DPL-101 CKT 20,22,24	FVN-P302	1-3/C	6	1 x #8	1	TC-ER	20.00		45			51.75	
24	A	**FVN-P303**	DPL-101 CKT 26,28,30	FVN-P303	1-3/C	6	1 x #8	1	TC-ER	20.00		40			46.00	
26	A	**FVN-P101**	DPL-102 CKT 13,15,17	FVN-P101	1-3/C	8	1 x #10	1	TC-ER	15.00		100			115.00	
28	A	**FVN-P102**	DPL-102 CKT 19,21,23	FVN-P102	1-3/C	8	1 x #10	1	TC-ER	5.00		110			126.50	
30	A	**FVN-P103**	DPL-102 CKT 25,27,29	FVN-P103	1-3/C	8	1 x #10	1	TC-ER	5.00		120			138.00	
32	A	**FVN-P104**	DPL-102 CKT 2,4,6	FVN-P104	1-3/C	6	1 x #8	1	TC-ER	5.00		120			138.00	
34	A	**FVN-BT011**	DPL-102 CKT 7,9,11	FVN-BT011	1-3/C	8	1 x #10	1	TC-ER	5.00		110			126.50	
36	A	**FVN-BT012**	DPL-102 CKT 1,3,5	FVN-BT012	1-3/C	8	1 x #10	1	TC-ER	5.00		130			149.50	
41	A	**DPL-102**	DPL-101 CKT38,40,42	DPL-102	1-3/C	350 MCM	1 x #3	1	TC-ER		400.00	60			69.00	

HPF CONSULTANTS, INC
ENGINEERING & DESIGN
3106 N. Big Spring Street, Midland TX
(432) 685-4143
Texas Board Registration No. 4098

HPF Project No.:	23329
Client:	OBSIDIAN
Project Name:	CHEMICAL MIXING
Date:	6/12/2024
Revision:	A
Drawing Number:	23329-65-600

BOM Based on 23329-65-500

Wire Size	Cable Voltage	Catalog No.	Runs	Estimated Length
350 MCM	600V	HW154 35003	4	253
6	600V	HW154 00603	8	707
1/0	600V	HW154 10103	2	253
8	600V	HW154 00803	7	857

Conduit Size	Estimated Length RGS
6	
5	
4	
3 1/2	
3	
2 1/2	
2	
1 1/2	
1 1/4	
1	
3/4	

Cable Gland #	QTY.
TMC2-050075A	30
TMC2-075099A	
TMC2-100118A	
TMC2-125137A	4
TMC2-150162A	
TMC2-150190A	
TMC2-200200A	4
TMC2-200233A	
TMC2-250272A	4
TMC2-350325A	
TMC2-400376A	
TMC2-400425A	
TMC2X-050075AX	
TMC2X-075099AX	
TMC2X-100118AX	
TMC2X-125137AX	
TMC2X-150162AX	
TMC2X-150190AX	
TMC2X-200200AX	
TMC2X-250233AX	
TMC2X-300272AX	
TMC2X-350325AX	
TMC2X-400376AX	
TMC2X-400425AX	

SPECIFICATION NOTES:

1) All Pairs shall be Black & White
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3) Multiple Pair cable shall have pairs numbered starting with 1.
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5) Three Phase wiring shall have the phases color coded as black, red, & blue.
6) All under ground conduit should be coated.

GENERAL NOTES:

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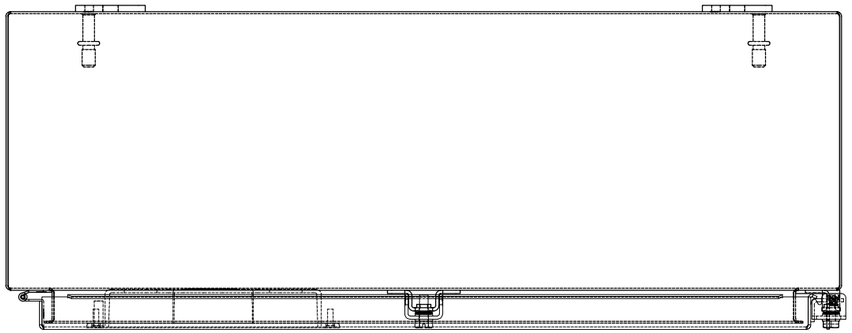
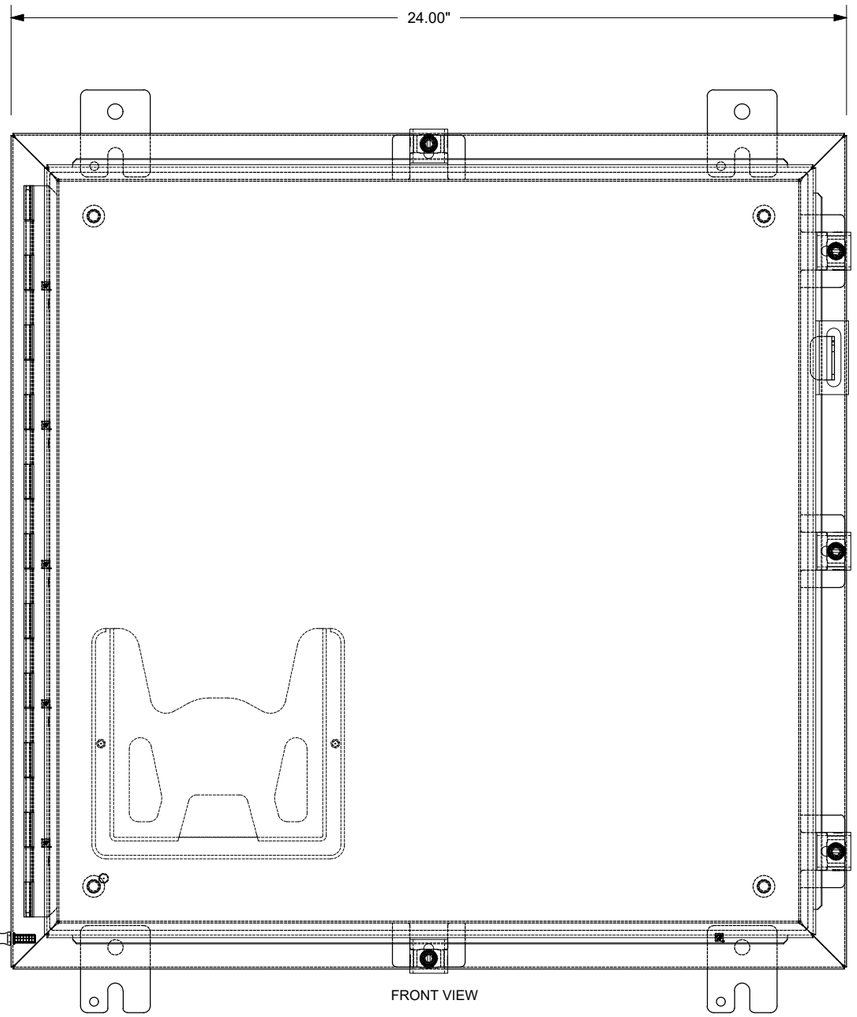
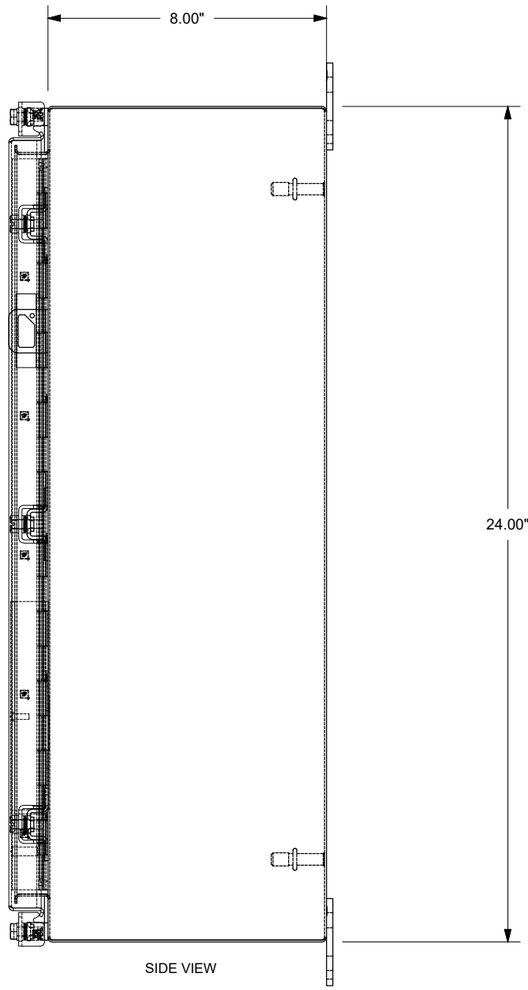
TOP VIEW





FRONT VIEW



SIDE VIEW

BILL OF MATERIAL

ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	HOFFMAN, CONTINUOUS HINGE ENCLOSURE W/ CLAMPS 24" X 24" X 8"	A24H24BLP	HOFFMAN
2	1	1492 TERMINAL BLOCK ACCESSORIES END ANCHOR	1492-EA35	ALLEN-BRADLEY
3	25	1492-I2G3 TERMINAL BLOCK, SINGLE-LEVEL BLOCK, FUSE CIRCUIT, GRAY	1492-J2G3	ALLEN-BRADLEY
4	5	1492 TERMINAL BLOCK ACCESSORIES END BARRIER, GRAY	1492-EBJ2G3-S	ALLEN-BRADLEY
5	1	RAIL SUPPORT BRACKET	975-25	RIDGID
6	2	JUMPER COMB 4 POLES	1492-SJ4A-4	ALLEN-BRADLEY
7	3	EMPTY SLOT FILLER	1756-N2	ALLEN-BRADLEY
8	1	DIN RAIL, ANCLED 35 DEG, ALUMINUM, 1 METER LONG	1492-DR1	ALLEN-BRADLEY
9	1	5-TERMINAL GROUND BAR KIT	PK5GTA	EATON
10	4	SUPPORT BRACKET FOR INSULATED DIN RAIL MOUNTING	1201141	PHOENIX CONTACT
11	1	WIRING DUCT, TYPE H, WIDE SLOT, DIP, 4.25 X 6", LIGHT GRAY	H2x6.DE	PANDUIT
12	1	WIRING DUCT COVER FOR HINGED COVER WIRING DUCT	HC6.DE	PANDUIT

PANEL COATING

ALL PANELS SHOULD BE COATED EXTERNALLY WITH AN ACRYLIC ALIPHATIC URETHANE FOR UV CHEMICAL PROTECTION WITH THE FOLLOWING REFERENCE.

ITEM	DESCRIPTION
PANEL APPLICATION COATING	PITTHANE ULTRA 95-812 (PORCELAIN WHITE)
COATING	PITTHANE ULTRA 95-878

NO EXCEPTION SHALL BE MADE FOR THE PANEL APPLICATION COATING AND COATING ITEMS REFERENCED ABOVE.

TAG "A"

MOV-100

TAG "B"

SUPPLY CIRCUIT

VOLTAGE: 120VAC
CIRCUIT BREAKER RATING 20A

TAG "C"

CAUTION

CIRCUIT BREAKERS (MULTIPLE SOURCE)
MUST BE IN OFF POSITION
BEFORE SERVICING ENCLOSURE

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

MOV-100 PANEL LAYOUT
120 VAC MOV POWER DISTRIBUTION PANEL
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

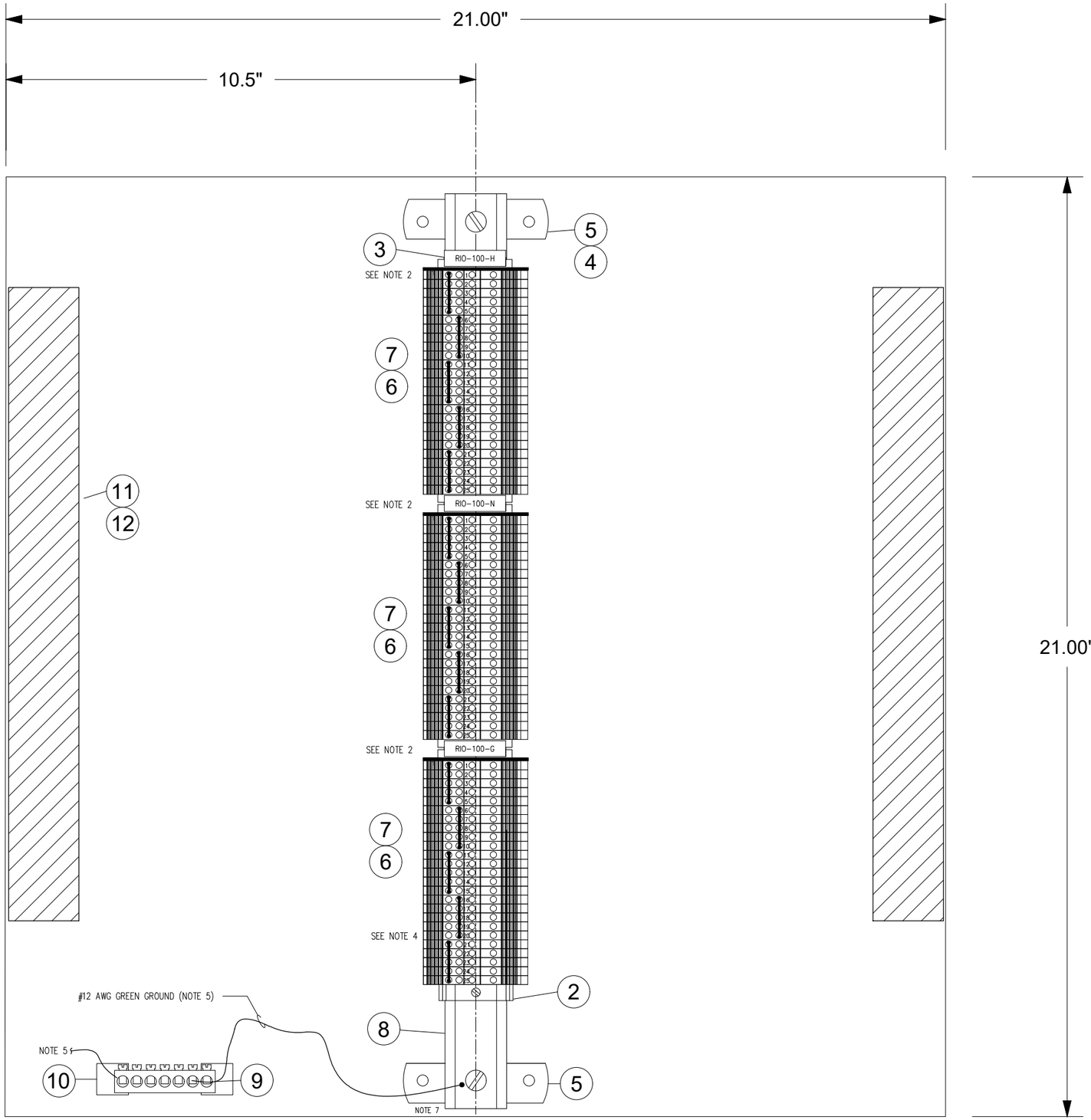
HPF
CONSULTANTS, INC.
ENGINEERING, PROCESS & INSPECTION
MIDLAND, TEXAS

DWG.	23329-67-100	REV.	A	SCALE:	JOB NO.	23329	DRAWN BY:	AH	FILE:	23329-67-100

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR CONSTRUCTION, HPF# 23329	AH	JF			07/19/24

REFERENCE DRAWINGS

DWG NO



BACK PANEL

NOTES

1. FOR MOV WIRING SCHEMATICS SEE DWG 23329-66-100.
2. FIELD TO INSTALL JUMPER AT H,N,G. PER 5 TERMINALS FOR EACH CIRCUIT.
3. FIELD TO ROUTE #12 AWG TO TERMINALS IN MOV CABINET TO POWER 5 MOV'S PER CKT.
4. FOR BILL OF MATERIAL FOR THIS DRAWING SEE DWG 23329-67-100.
5. #12 AWG GREEN GROUND WIRE TO GROUND LUG. SEE ELECTRICAL GROUNDING DETAILS 61-704 DETAIL #27.
6. THIS PANEL IS POWERED FROM LPN-100. SEE WIRING 23329-66-100.
7. DIN RAIL MUST BE PROPERLY BOUNDED TO A LOW RESISTANCE EARTH GROUND FOR PROPER OPERATION AND OVERVOLTAGE PROTECTION.

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

MOV-100 BACK PANEL LAYOUT
120 VAC MOV POWER DISTRIBUTION PANEL
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

DWG.	23329-67-101	REV.	A	SCALE	NTS	JOB NO.	23329	DRAWN BY:	AH	FILE:	23329-67-101

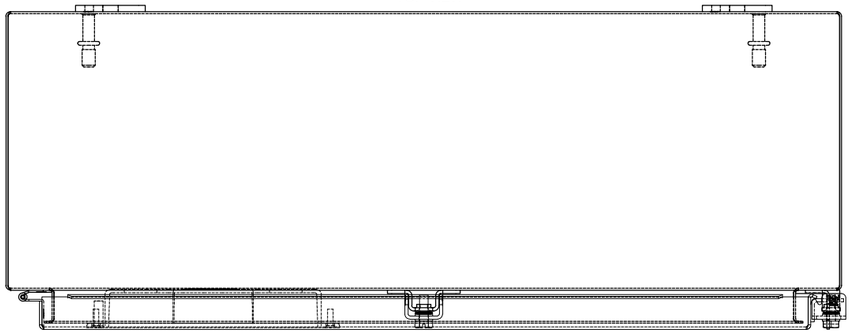
HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

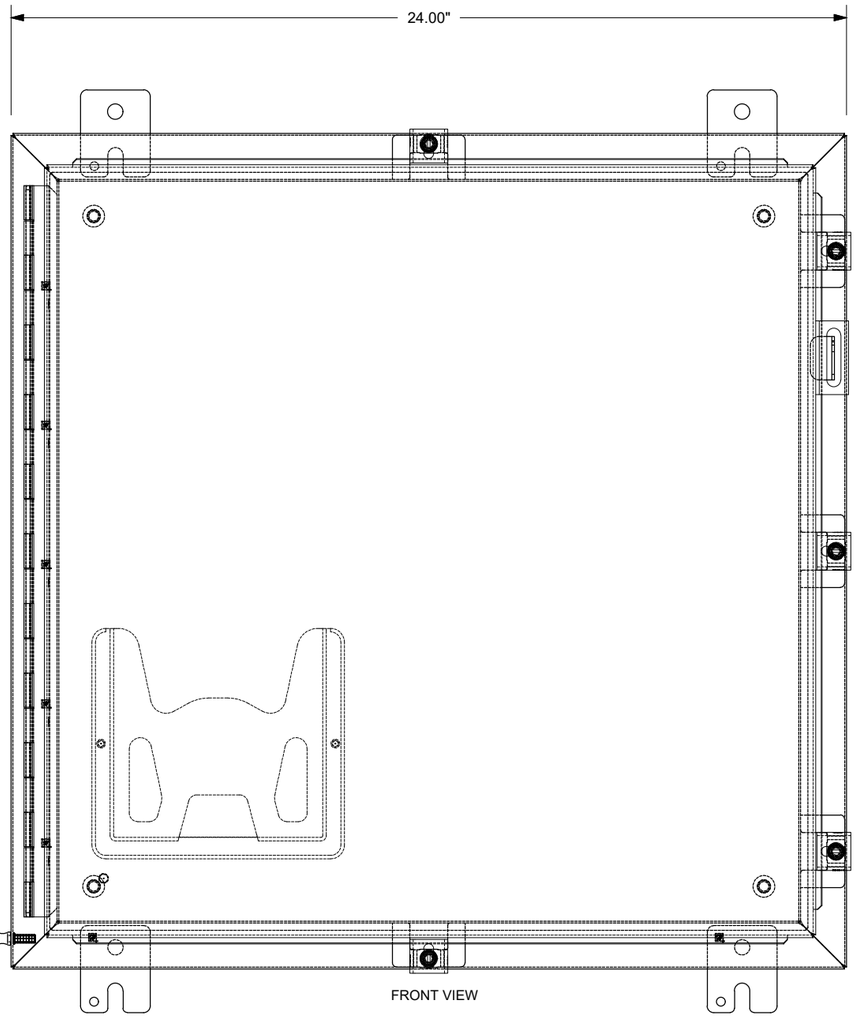
NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR CONSTRUCTION, HPF# 23329	AH	JF			07/18/24

DWG. NO.

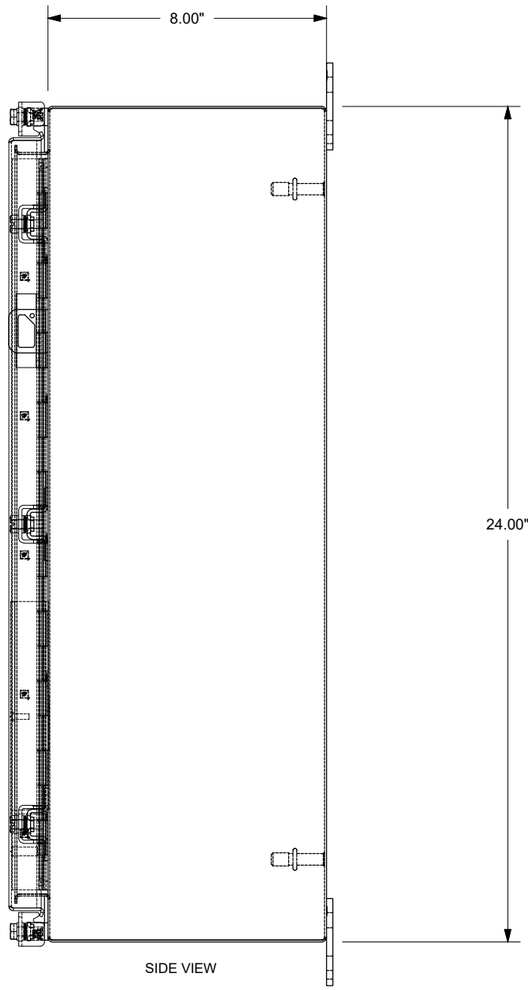
REFERENCE DRAWINGS

TOP VIEW





FRONT VIEW



SIDE VIEW

BILL OF MATERIAL

ITEM#	QTY	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	HOFFMAN CONTINUOUS HINEGE ENCLOSURE W/ CLAMPS 24" X 24" X 6"	A24H24HBLP	HOFFMAN
2	5	1492 TERMINAL BLOCK ACCESSORIES END ANCHOR	1492-EAJ35	ALLEN-BRADLEY
3	75	1492-JG3 TERMINAL BLOCK, SINGLE-LEVEL BLOCK, FUSE CIRCUIT, GRAY	1492-JG3F8	ALLEN-BRADLEY
4	5	1492 TERMINAL BLOCK ACCESSORIES END BARRIER, GRAY	1492-EBJG3F8	ALLEN-BRADLEY
5	1	DIN RAIL, SLOTTED	1492-AM1	ALLEN-BRADLEY
6	6	JUMPER COMB 4 POLES	1492-SJ3K-4	ALLEN-BRADLEY
7	3	EMPTY SLOT FILLER	1734-N12	ALLEN-BRADLEY
8	1	DIN RAIL, ANGLED 30 DEG, ALUMINUM, 1 METER LONG	1492-DR1	ALLEN-BRADLEY
9	1	ETERMINAL GROUND BAR KIT	PK7227A	EATON
10	2	SUPPORT BRACKET FOR INSULATED DIN RAIL MOUNTING	1201-N1	PHOENIX CONTACT
11	1	WIRING DUCT - TYPE H, WIDE SLOT, 2W" X 2H" X 6" - LIGHT GREY	H24X6-DF	PANDUIT
12	1	WIRING DUCT COVER FOR HINGED COVER WIRING DUCT	HC24-DF	PANDUIT

PANEL COATING

ALL PANELS SHOULD BE COATED EXTERNALLY WITH AN ACRYLIC ALIPHATIC URETHANE FOR UV CHEMICAL PROTECTION WITH THE FOLLOWING REFERENCE.

ITEM	DESCRIPTION
PANEL APPLICATION COATING	PITTHANE ULTRA 95-812 (PORCELAIN WHITE)
COATING	PITTHANE ULTRA 95-878

NO EXCEPTION SHALL BE MADE FOR THE PANEL APPLICATION COATING AND COATING ITEMS REFERENCED ABOVE.

TAG "A"

MOV-200

TAG "B"

SUPPLY CIRCUIT

VOLTAGE: 120VAC
MAIN CIRCUIT BREAKER RATING 20A

TAG "C"

CAUTION

CIRCUIT BREAKER(S) (MULTIPLE SOURCE) MUST BE IN OFF POSITION BEFORE SERVICING ENCLOSURE

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

MOV-200 PANEL LAYOUT
120 VAC MOV POWER DISTRIBUTION PANEL
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

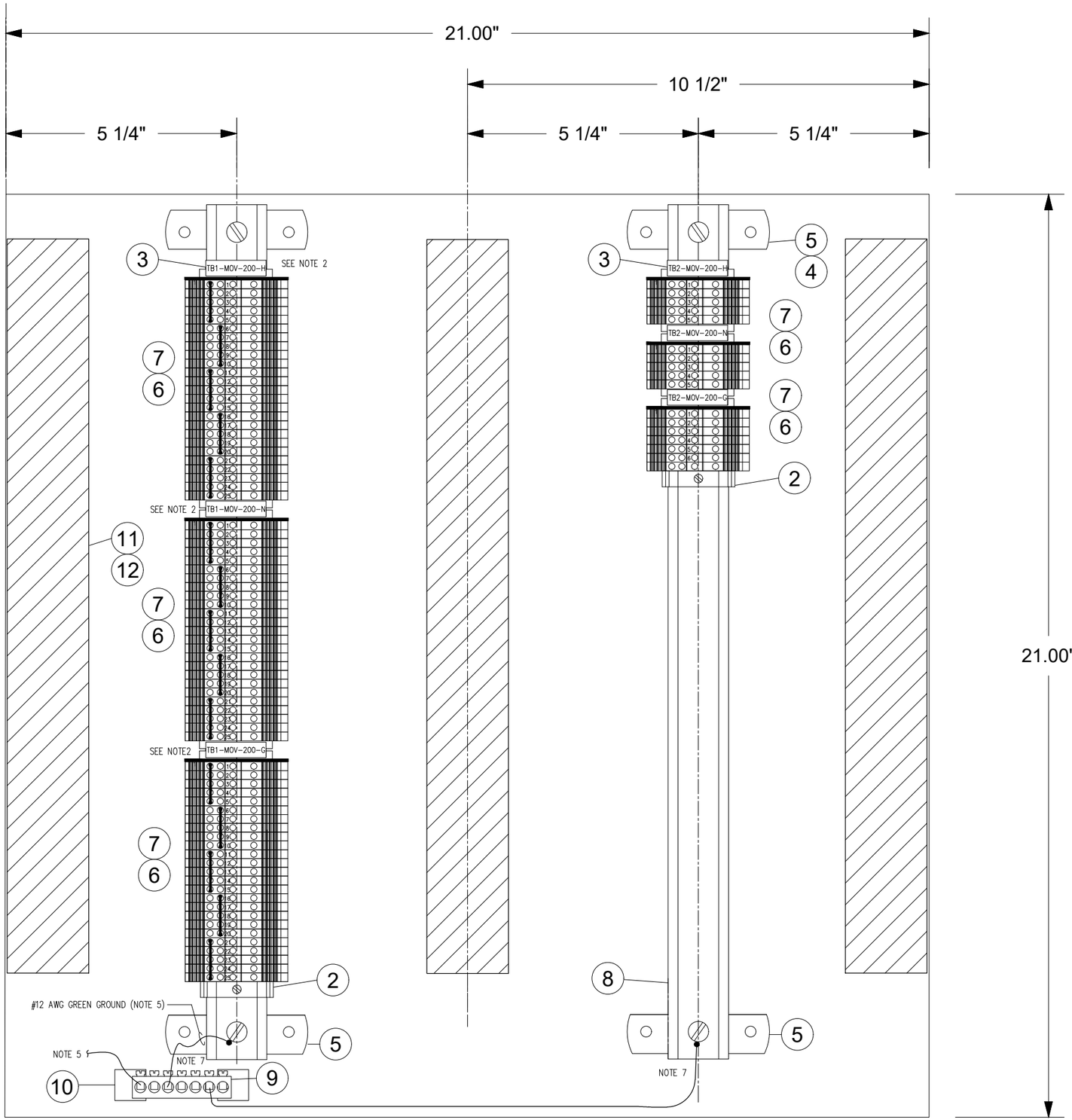
HPF
CONSULTANTS, INC.
ENGINEERING, PLANNING & INSPECTION
MIDLAND, TEXAS

DWG.	23329-67-103	REV.	A	SCALE:	NTS	JOB NO.	23329	DRAWN BY:	AH	FILE:	23329-67-103

NO.	REVISION/ISSUE	BY	CHK.	REVIEW	APPR.	DATE
A	ISSUED FOR CONSTRUCTION, HPF# 23329	AH	JF			07/19/24

REFERENCE DRAWINGS

DWG NO.



BACK PANEL

NOTES

1. FOR MOV WIRING SCHEMATICS SEE DWG 23329-66-100.
2. FIELD TO INSTALL JUMPER AT H,N,G. PER 5 TERMINALS FOR EACH CIRCUIT.
3. FIELD TO ROUTE #12 AWG TO TERMINALS IN MOV CABINET TO POWER 5 MOV'S PER CKT.
4. FOR BILL OF MATERIAL FOR THIS DRAWING SEE DWG 23329-67-103.
5. #12 AWG GREEN GROUND WIRE TO GROUND LUG. SEE ELECTRICAL GROUNDING DETAILS 61-704 DETAIL #27.
6. THIS PANEL IS POWERED FROM LPN-100. SEE WIRING 23329-66-100.
7. DIN RAIL MUST BE PROPERLY BOUNDED TO A LOW RESISTANCE EARTH GROUND FOR PROPER OPERATION AND OVERVOLTAGE PROTECTION.

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

MOV-200 BACK PANEL LAYOUT
120 VAC MOV POWER DISTRIBUTION PANEL
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

DWG.	23329-67-101	REV.	A	SCALE	NTS	JOB NO.	23329	DRAWN BY:	AH	FILE:	23329-67-101

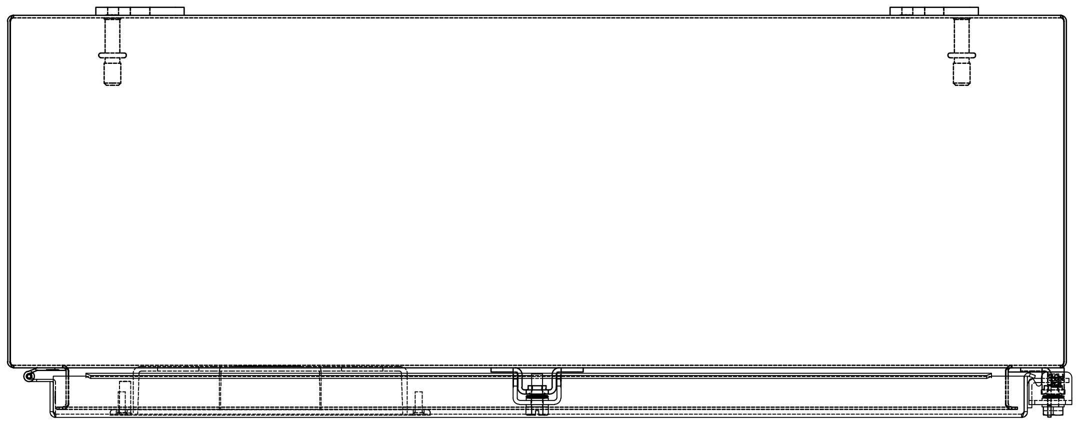
HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

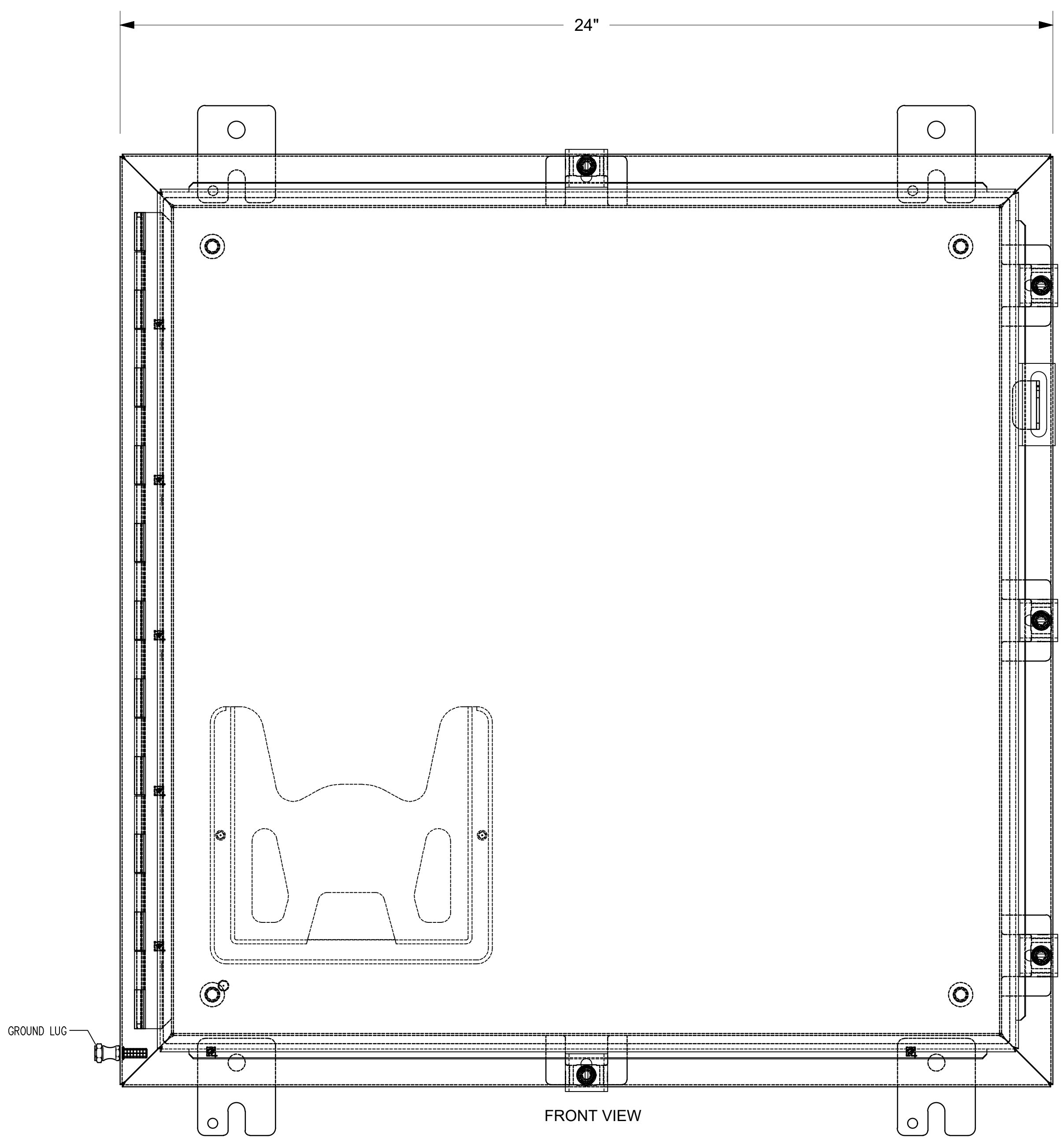
NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR.	DATE
A	ISSUED FOR CONSTRUCTION, HPF# 23329	AH	JF		07/18/24

REFERENCE DRAWINGS

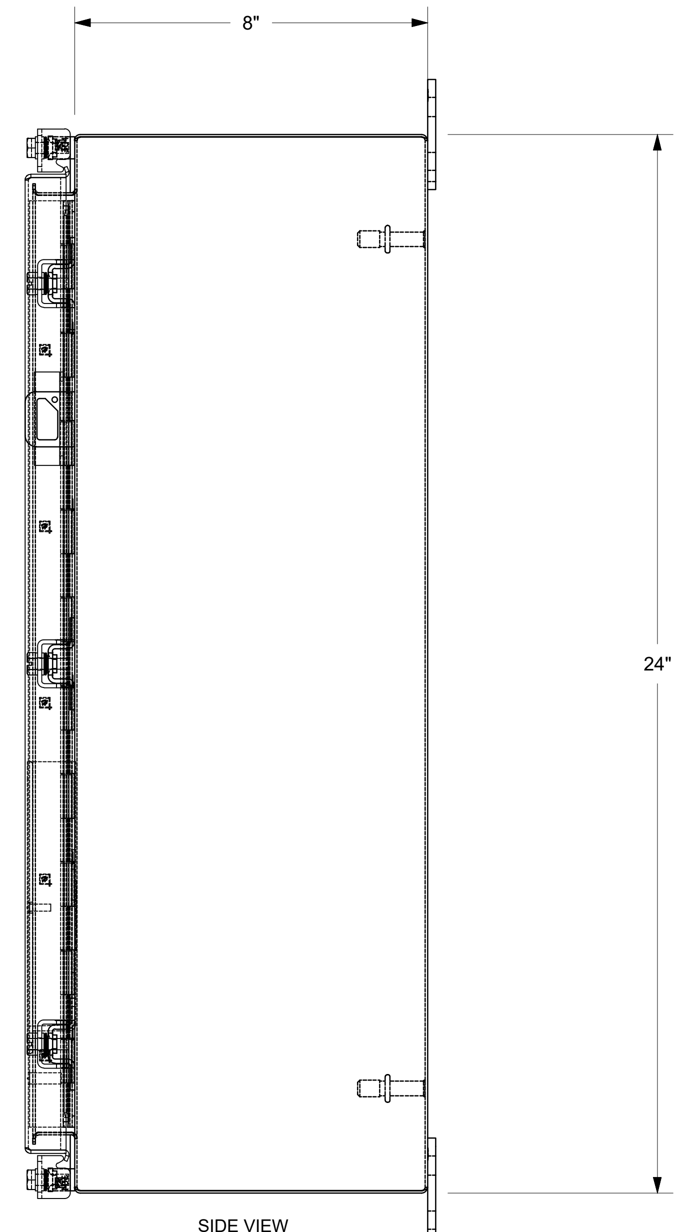
DWG. NO.

TOP VIEW





FRONT VIEW



SIDE VIEW

BILL OF MATERIAL				
ITEM#	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER
1	1	HOFFMAN CONTINUOUS HINDGE ENCLOSURE W/ CLAMPS 24" X 24" X 8"	A24H24BLP	HOFFMAN
2	1	1492 TERMINAL BLOCK ACCESSORIES END ANCHOR	1492-EAJ35	ALLEN-BRADLEY
3	75	1492-JG3 TERMINAL BLOCK, SINGLE-LEVEL BLOCK, FUSE CIRCUIT, GRAY	1492-JD3FB	ALLEN-BRADLEY
4	6	1492 TERMINAL BLOCK ACCESSORIES END BARRIER, GRAY	1492-EBJD3FB	ALLEN-BRADLEY
5	1	RAIL SUPPORT BRACKET	STS-25	IBOCO
6	6	JUMPER COMB 4 POLES	1492-SJ8A-4	ALLEN-BRADLEY
7	3	EMPTY SLOT FILLER	1756-N2	ALLEN BRADLEY
8	1	DIN RAIL, ANGLED 30 DEG, ALUMINUM, 1 METER LONG	1492-DR7	ALLEN-BRADLEY
9	1	5-TERMINAL GROUND BAR KIT	PK7GTA	EATON
10	2	SUPPORT BRACKET FOR INSULATED DIN RAIL MOUNTING	1201141	PHOENIX CONTACT
11	1	WIRING DUCT, TYPE H, WIDE SLOT 2W , x 2H, X 6', LIGHT GRAY	H2x2LG6	PANDUIT
12	1	WIRING DUCT COVER FOR HINGED COVER WIRING DUCT	HC2LG6	PANDUIT

PANEL COATING

ALL PANELS SHOULD BE COATED EXTERNALLY WITH AN ACRYLIC ALIPHATIC URETHANE FOR UV CHEMICAL PROTECTION WITH THE FOLLOWING REFERENCE.

ITEM	DESCRIPTION
PANEL APPLICATION COATING	PITTHANE ULTRA 95-812 (PORCELAIN WHITE)
COATING	PITTHANE ULTRA 95-819

NO EXCEPTION SHALL BE MADE FOR THE PANEL APPLICATION COATING AND COATING ITEMS REFERENCED ABOVE.

TAG "A"

MOV-300

TAG "B"

SUPPLY CIRCUIT

VOLTAGE: 120VAC
CIRCUIT BREAKER RATING 20A

TAG "C"

CAUTION

CIRCUIT BREAKERS (MULTIPLE SOURCE)
MUST BE IN OFF POSITION
BEFORE SERVICING ENCLOSURE

REFERENCE DRAWINGS	
DWG. NO.	

NO.	REVISION/ISSUE	BY	CHK.	REVIEW APPR.	DATE
A	ISSUED FOR CONSTRUCTION, HPF# 23329	AH	JF		07/18/24

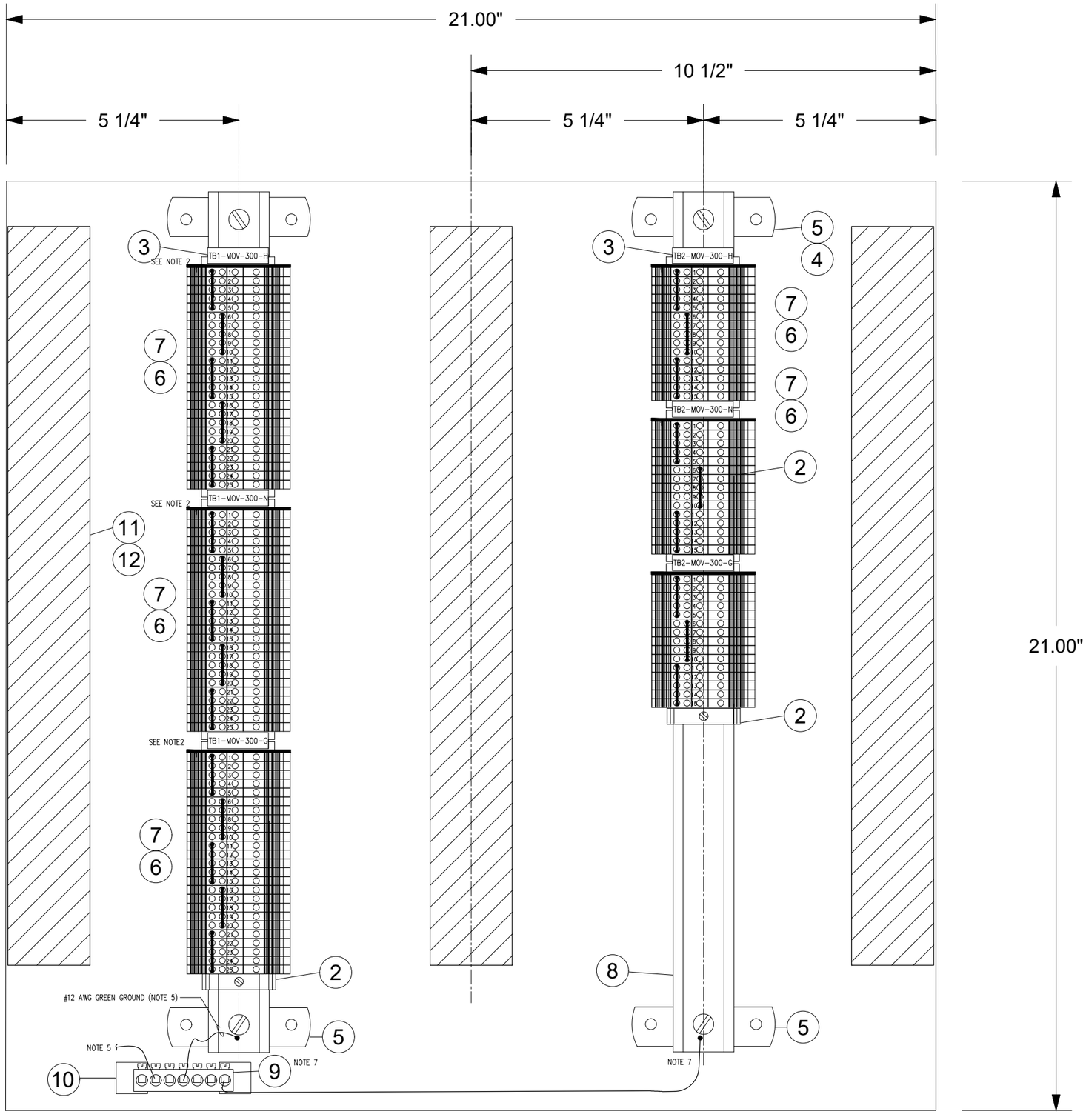
HPF
CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

JOB NO. 23329 DRAWN BY: AH FILE: 23329-67-106

MOV-300 PANEL LAYOUT
120 VAC MOV POWER DISTRIBUTION PANEL
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

DWG. 23329-67-106 REV. A SCALE

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098



BACK PANEL

NOTES

1. FOR MOV WIRING SCHEMATICS SEE DWG 23329-66-100.
2. FIELD TO INSTALL JUMPER AT H,N,G. PER 5 TERMINALS FOR EACH CIRCUIT.
3. FIELD TO ROUTE #12 AWG TO TERMINALS IN MOV CABINET TO POWER 5 MOV'S PER CKT.
4. FOR BILL OF MATERIAL FOR THIS DRAWING SEE DWG 23329-67-106.
5. #12 AWG GREEN GROUND WIRE TO GROUND LUG. SEE ELECTRICAL GROUNDING DETAILS 61-704 DETAIL #27.
6. THIS PANEL IS POWERED FROM LPN-200. SEE WIRING 23329-66-100.
7. DIN RAIL MUST BE PROPERLY BOUNDED TO A LOW RESISTANCE EARTH GROUND FOR PROPER OPERATION AND OVERVOLTAGE PROTECTION.

HPF CONSULTANTS, INC.
TBPE FIRM REG. # 4098

DWG.	23329-67-107	REV.	A	SCALE

MOV-300 BACK PANEL LAYOUT
120 VAC MOV POWER DISTRIBUTION PANEL
OBSIDIAN CHEMICAL PLANT
MIDLAND, TX

JOB NO.	23329	DRAWN BY:	AH	FILE:	23329-67-107

HPF CONSULTANTS, INC.
ENGINEERING, DESIGN & INSPECTION
MIDLAND, TEXAS

NO.	REVISION/ISSUE	DWG. NO.	REFERENCE DRAWINGS
A	ISSUED FOR CONSTRUCTION, HPF# 23329		

BY	CHK.	REVIEW/APPR.	DATE
AH	JF		07/18/24

P-101/102/103/104
TANK LOADING PUMP
MOTOR: 5HP @ ___RPM
TEFC 3/60/460V ELECTRIC MOTOR

UT-030 THRU 037
RAW MATERIAL STORAGE TANK
SIZE: 15'-6" O.D. x 30'-0"
CARBON STEEL
PRESS: 16 oz/in²
VAC: -1.0 oz/in²

P-105/106/107
CHEMICAL TANK TRANSFER PUMP
MOTOR: 15HP @ 1770 RPM
TEFC 3/60/460V ELECTRIC MOTOR

UT-016
FRESH WATER STORAGE TANK

TRUCK LOADING
P-101
P-102
P-103
P-104
MANUAL
HOA
FVNR
UT-036
UT-033
UT-030
UT-037
UT-035
UT-032
FRESH WATER
UT-016
UT-034
UT-031
P-105
P-106
P-107
TO BLEND TANKS
23329-71-101
24 VDC
MODBUS
I/A
DETAIL 1
DETAIL 2
DETAIL 3
SD-100
HARD STOP
ESD BUTTON

NO.	REVISION/ISSUE	DATE	APPR.
0	ISSUED FOR CONSTRUCTION, HPF #23329	6/13/24	
A	ISSUED FOR APPROVAL, HPF #23329	4/24/24	

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098
CONSULTANTS INC

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
RAW MATERIAL STORAGE
MIDLAND, TEXAS
PROCESS FLOW DIAGRAM

DWG.	REV.	SCALE	JOB NO.	DRAWN BY:	FILE:
71-100	A	NONE	23329	WRC	

BY	CHK.	REVIEW
DWH	WHA	
WRC	WHA	

REFERENCE DRAWINGS
DWG. NO.

P-201
BLEND TANK TRANSFER PUMP
MOTOR: 5HP @ 1750 RPM

P-202/203
BLEND TANK TRANSFER PUMP
MOTOR: 75HP @ 1750 RPM
TEFC 3/60/460V ELECTRIC MOTOR

P-204/205
BLEND TANK TRANSFER PUMP
MOTOR: 1.5HP @ 1750 RPM
TEFC 3/60/460V ELECTRIC MOTOR

BLEND TANK AGITATORS
MOTOR: 5HP @ 1750 RPM
TEFC 3/60/460V ELECTRIC MOTOR

BT-011 THRU 016
BLEND TANKS

FROM PUMP P-105
23329-71-100

FROM PUMP P-106
23329-71-100

FROM PUMP P-107
23329-71-100

BT-011

BT-012

BT-013

BT-014

BT-015

BT-016

P-201

P-202

P-203

P-204

P-205

TO PRODUCT
23329-71-102

TO PRODUCT
23329-71-102

SD-200

HARD STOP
ESD BUTTON

NO.	REVISION/ISSUE	BY	CHK. REVIEW	APPR. DATE
0	ISSUED FOR CONSTRUCTION, HPF #23329	AC	WHA	6/13/24
A	ISSUED FOR APPROVAL, HPF #23329	WRC	WHA	4/24/24

REFERENCE DRAWINGS
DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098
CONSULTANTS, INC.

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
BLENDING AREA
MIDLAND, TEXAS

PROCESS FLOW DIAGRAM

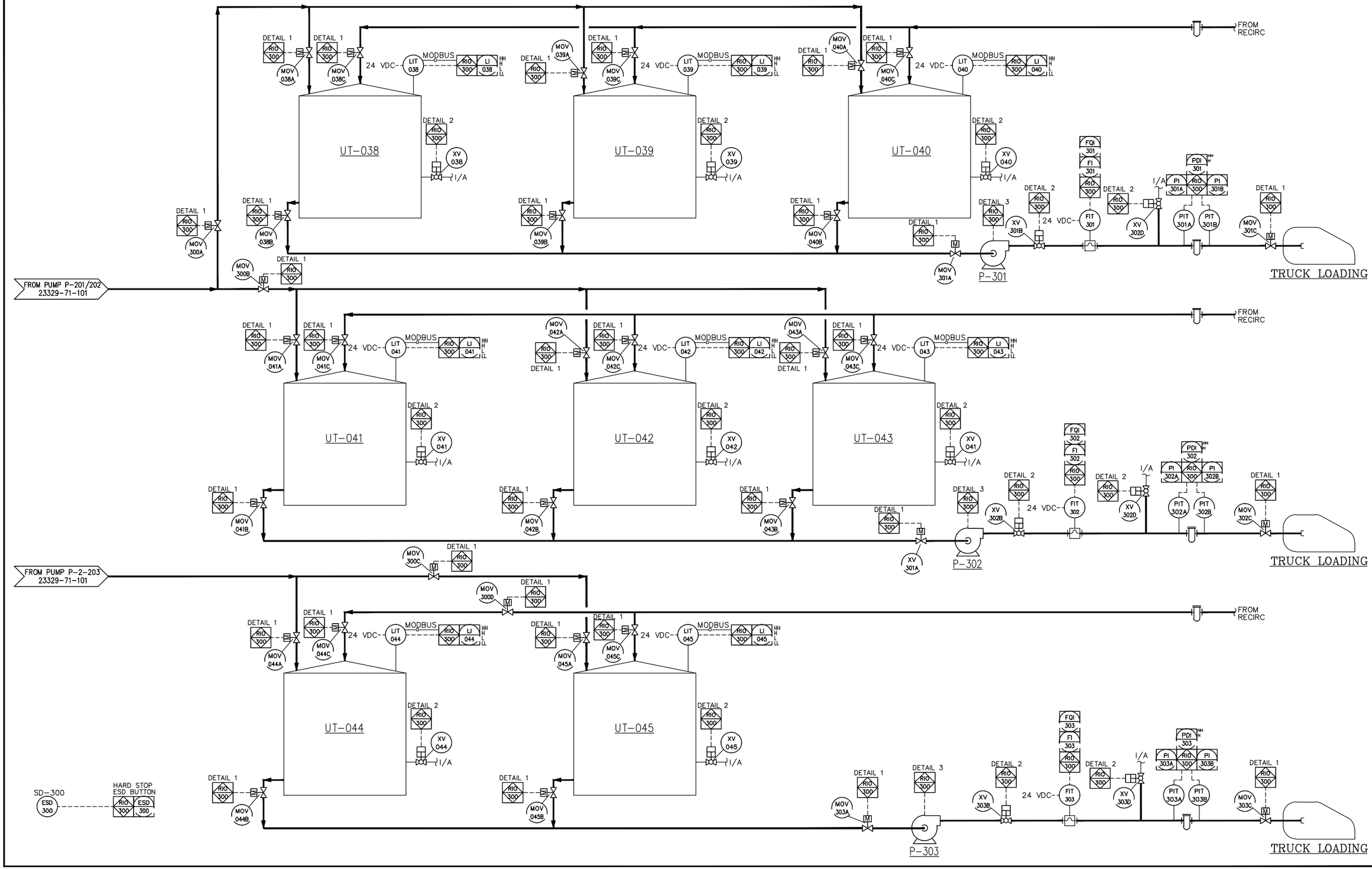
DWG.	REV.	SCALE	JOB NO.	DRAWN BY:	FILE:
71-101	A	NONE	23329	WRC	

UT-038 THRU 045
FINISHED PRODUCT STORAGE TANK

SIZE: 15'-6" O.D. x 30'-0"
CARBON STEEL
PRESS: 16 oz/in²
VAC: −1.0 oz/in²

P-301/302/303
TRUCK LOADING PUMP

MOTOR: 20HP @ 1750 RPM
TEFC 3/60/460V ELECTRIC MOTOR



NO.	REVISION/ISSUE	DATE	APPR.	CHK.	REVIEW	BY
0	ISSUED FOR CONSTRUCTION, HPF #23329	6/13/24		WHA		AC
A	ISSUED FOR APPROVAL, HPF #23329	4/24/24		WHA		WRC

REFERENCE DRAWINGS
DWG. NO.

ENGINEERING AND DESIGN
TEXAS REGISTERED
ENGINEERING FIRM 4098

CONSULTANTS INC.

DRAWN BY: WRC | FILE:
JOB NO. 23329
SCALE NONE

OBSIDIAN CHEMICAL SOLUTIONS
CHEMICAL MIXING PLANT AUTOMATION
FINISHED PRODUCT STORAGE
MIDLAND, TEXAS

PROCESS FLOW DIAGRAM
DWG. 71-102 REV. A