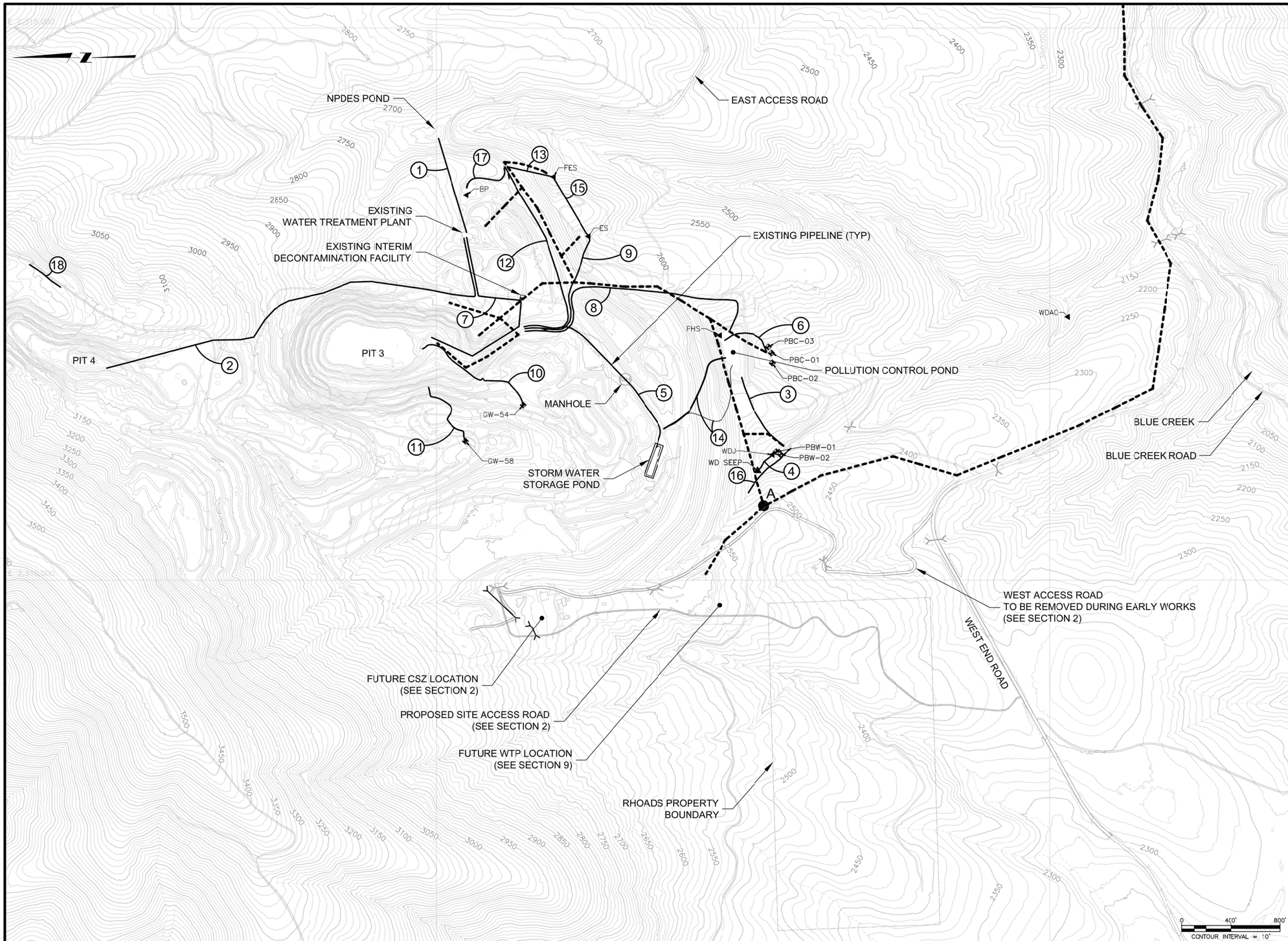

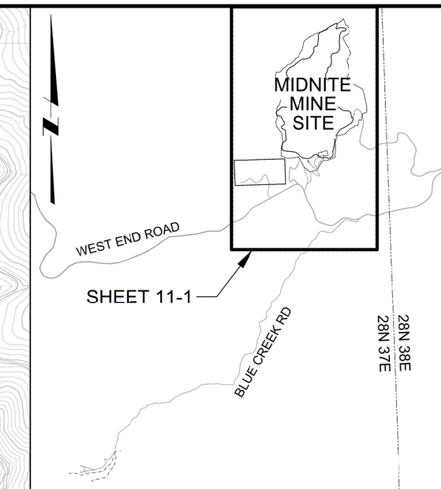

KEY MAP
NOT TO SCALE

LEGEND:

- EXISTING POWER LINE
- A EXISTING AVISTA METERING POLE

NOTES:

1. TOPOGRAPHY SHOWN ON THIS DRAWING DOES NOT NECESSARILY REPRESENT THE GRADING PRIOR TO OR AFTER THE CONSTRUCTION OF TEMPORARY POWER LINE. TOPOGRAPHY OF THE SITE WILL BE CHANGING THROUGHOUT REMEDIAL ACTION ACTIVITIES.
2. REFER TO DRAWING 11-2 FOR SUBMERSIBLE DEWATERING PUMP AND INSTRUMENTATION SCHEDULES.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.

EXISTING PIPELINE FUNCTIONS	
1	NPDES DISCHARGE PIPELINE
2	WTP INFLUENT PIPELINE FROM PIT 4
3	WESTERN DRAINAGE DISCHARGE PIPELINE TO THE PCP
4	WESTERN DRAIN SEEPS COLLECTION PIPELINES
5	STORM WATER STORAGE POND EFFLUENT PIPELINE TO PIT 3
6	TOE SEEP COLLECTOR PIPELINE TO THE PCP
7	WTP INFLUENT PIPELINE FROM PIT 3
8	PCP DISCHARGE PIPELINE TO PIT 3
9	EAST SEEP PIPELINE TO PIT 3
10	BPA GW-54 DEWATERING WELL DISCHARGE PIPELINE TO PIT 3
11	BPA GW-58 DEWATERING WELL DISCHARGE PIPELINE TO PIT 3
12	BLOOD POOL DISCHARGE PIPELINE TO PIT 3
13	FAR EAST SEEP COLLECTOR PIPELINE TO THE BLOOD POOL
14	SOUTH WASTE ROCK PILE SW DRAIN PIPE
15	FAR EAST SEEP COLLECTOR PIPELINE TO EAST SEEP COLLECTOR
16	WESTERN DRAINAGE BYPASS PIPE
17	BLOOD POOL SEEP COLLECTOR PIPELINE
18	SURFACE WATER DIVERSION PIPELINE

ISSUE REV	DESCRIPTION	TECH	ENG	DATE
3	ISSUED FOR 100% DESIGN	MJC	JL	06-15
2	ISSUED FOR 90% DESIGN	MJC	JL	07-14

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DRAWING REFERENCE(S):
- EXISTING TOPOGRAPHY BASED UPON LIDAR MAPPING BY SPATIAL INTEL 2010. WASHINGTON STATE PLANE-NORTH, NAD83/NAVD88.
- PREMINE TOPOGRAPHY AND PIT EXCAVATION TOPOGRAPHY BASED UPON INFORMATION PREPARED BY USBM, JULY 1995 AND PROVIDED BY DAWN MINING COMPANY, LLC. ORIGINAL COORDINATE SYSTEM USED IN USBM MAPPING (NAD27/NGVD29) HAS BEEN CONVERTED TO WASHINGTON STATE PLANE-NORTH, NAD83/NAVD88 COORDINATES.

DESIGNED BY	J JI	06-15
DRAWN BY	M CARTER	06-15
CHECKED BY	D MIKLAS	06-15
APPROVED BY	S ARENS	06-15
PROJECT MANAGER	V DRAIN	07-14

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: EXISTING POWER LINE MIDNITE MINE SITE

MWH

SHEET 11-1 | REVISION 3
FILE NAME 11-1 | DATE JUNE 2015

PW: \\AMERVPWNT03.MWHGLOBAL.COM: AM_PROJECTS03\DOCUMENTS\FTC2_NEWMONT\MIDNIGHT MINE\RD-RA\03-SHEET SET\2015-01-01 BOOR\11_ELECTRICAL\11-1.dwg

SUBMERSIBLE DEWATERING PUMP SCHEDULE

PUMP NO.	TEMPORARY, PERMANENT, EXISTING	CHANGES ANTICIPATED DURING CONSTRUCTION REQUIRE TEMPORARY PUMP	LOCATION	DESCRIPTION	ESTIMATED CAPACITY (GPM)	ESTIMATED FINAL TDH (FT)	ESTIMATED FINAL HP	DRIVE	ESTIMATED VOLTAGE AND PHASE	ESTIMATED CONSTRUCTION PHASE(S) WHERE PUMP IS OPERATIONAL	WATER LEVEL CONTROL	CONTROL LEVEL - MIN (FT AMSL)	CONTROL LEVEL - MAX (FT AMSL)	NOTES
-	TEMP, EXISTING	NO	EXISTING PIT 3 DEWATERING	PIT 3 TO EXISTING WTP	500	-	75	EXISTING	480V -3PHASE	1	MANUAL	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	EXISTING PIT 4 DEWATERING	PIT 4 TO EXISTING WTP	500	-	25	EXISTING	EXISTING	EARLY WORKS	MANUAL	EXISTING	EXISTING	DIESEL; WILL BE DECOMM
-	TEMP, EXISTING	NO	BPA WELL GW-58	BPA DEWATERING WELL TO PIT 3	15	EXISTING	0.5	EXISTING	230V -1PHASE	EARLY WORKS	MANUAL	MANUAL	MANUAL	WILL BE DECOMM IN EARLY WORKS
-	TEMP, EXISTING	NO	CENTRAL DRAINAGE/TOE SEEP COLLECTOR	CENTRAL DRAINAGE (PBC-01) TO PCP	1	EXISTING	0.1	EXISTING	0-24V DC	1,2	EXISTING	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	CENTRAL DRAINAGE/TOE SEEP COLLECTOR	CENTRAL DRAINAGE (PBC-02) TO PCP	1	EXISTING	0.1	EXISTING	0-24V DC	1,2	EXISTING	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	CENTRAL DRAINAGE/TOE SEEP COLLECTOR	CENTRAL DRAINAGE (PBC-03) TO PCP	1	EXISTING	0.1	EXISTING	0-24V DC	1,2	EXISTING	EXISTING	EXISTING	DIESEL; WILL BE DECOMM
-	TEMP, EXISTING	NO	CENTRAL PUMPBACK	CENTRAL (RESTROOM) PUMPBACK TO PCP	5	EXISTING	EXISTING	EXISTING	EXISTING	1	EXISTING	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	WESTERN DRAINAGE	WESTERN DRAINAGE (PBW-01) TO WET WELL	1	EXISTING	0.1	EXISTING	0-24V DC	1	EXISTING	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	WESTERN DRAINAGE	WESTERN DRAINAGE (PBW-02) TO WET WELL	1	EXISTING	0.1	EXISTING	0-24V DC	1	EXISTING	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	WESTERN DRAINAGE WET WELL	WESTERN DRAINAGE WET WELL TO PCP (GREEN)	10	EXISTING	10	EXISTING	480V -3PHASE	1	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	WESTERN DRAINAGE WET WELL	WESTERN DRAINAGE WET WELL TO PCP (YELLOW)	10	EXISTING	10	EXISTING	480V -3PHASE	1	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	WESTERN DRAINAGE WET WELL	WESTERN DRAINAGE WET WELL TO PCP (RED)	10	EXISTING	10	EXISTING	480V -3PHASE	1	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	FAR EAST DRAINAGE	FAR EAST DRAINAGE TO BLOOD POOL	15	EXISTING	2	EXISTING	230V -1PHASE	1	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	FAR EAST DRAINAGE	FAR EAST DRAINAGE TO BLOOD POOL	15	EXISTING	1.5	EXISTING	230V -1PHASE	1	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	FAR EAST DRAINAGE	FAR EAST DRAINAGE TO EAST SEEP COLLECTOR	10	EXISTING	0.5	EXISTING	230V -1PHASE	1	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	FAR EAST DRAINAGE	FAR EAST DRAINAGE (MWED-05) TO PUMPBACK	1	EXISTING	0.1	EXISTING	0-24V DC	1,2	EXISTING	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	EAST SEEP	EAST SEEP PUMPBACK #1 TO PIT 3	10	EXISTING	0.75	EXISTING	230V -1PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	EAST SEEP	EAST SEEP PUMPBACK #2 TO PIT 3	10	EXISTING	0.75	EXISTING	230V -1PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	EAST SEEP	EAST SEEP STANDBY TO PIT 3	10	EXISTING	3	EXISTING	230V -1PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	BLOOD POOL	BLOOD POOL TO PIT 3; BP PUMPBACK #1	5	EXISTING	2	EXISTING	230V -1PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	BLOOD POOL	BLOOD POOL TO PIT 3; BP PUMPBACK #2	5	EXISTING	2	EXISTING	230V -1PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	NO	BLOOD POOL	BLOOD POOL TO PIT 3; BP AUX PUMP	5	EXISTING	2	EXISTING	230V -1PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	YES	PCP (PCP-1 EAST)	PCP TO PIT 3 (PHASE 1); SOUTH POND (PHASE 2)	50	203	40	EXISTING	480V -3PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	TEMP, EXISTING	YES	PCP (PCP-2 WEST)	PCP TO PIT 3 (PHASE 1); SOUTH POND (PHASE 2)	50	203	40	EXISTING	480V -3PHASE	1,2	FLOAT	EXISTING	EXISTING	WILL BE DECOMM
-	PERM, EXISTING	NO	BPA WELL GW-54	BPA DEWATERING WELL TO EQ POND	25	120	7.5	EXISTING	230V -1PHASE	1,2,3,+	MANUAL/ TRANSDUCER PHASE 1,2,3,+	2660	2665	USE EXISTING PUMP. NEW CONTROL PANEL AND TRANSDUCER INSTALLED IN PHASE 1.
P-0031	PERM	YES	PIT 3 WASTE ROCK DEWATERING	PIT 3 TO EQ POND	228	450	50	FVNR	480V -3PHASE	2,3,+	TRANSDUCER	2544	2549	PIT 3 PUMPS/FLOWMETERS IN ONE CONTROL PANEL
P-0035	PERM	YES	PIT 3 UNDERDRAIN	PIT 3 TO EQ POND	366	500	60	FVNR	480V -3PHASE	2,3,+	TRANSDUCER	2516	2523	PIT 3 PUMPS/FLOWMETERS IN ONE CONTROL PANEL
P-0041	PERM	YES	PIT 4 WASTE ROCK DEWATERING	PIT 4 TO EQ POND	68	250	7.5	FVNR	480V -3PHASE	1,2,3,+	TRANSDUCER	2999	3004	PIT 4 PUMPS/FLOWMETERS IN ONE CONTROL PANEL
P-0045	PERM	YES	PIT 4 UNDERDRAIN	PIT 4 TO EQ POND	128	315	15	FVNR	480V -3PHASE	1,2,3,+	TRANSDUCER	2960	2967	PIT 4 PUMPS/FLOWMETERS IN ONE CONTROL PANEL
TP-0060	TEMP	NO	CENTRAL DRAINAGE ALLUVIAL	CENTRAL TRENCH TO WET WELL	15	37	0.5	FVNR	230V -1PHASE	1,2,3,+	TRANSDUCER	SEE SECTION 7	SEE SECTION 7	
TP-0070	TEMP	NO	WESTERN DRAINAGE ALLUVIAL	WESTERN TRENCH TO WET WELL	15	51	0.5	FVNR	230V -1PHASE	1,2,3,+	TRANSDUCER	SEE SECTION 7	SEE SECTION 7	
TP-0080	TEMP	NO	EASTERN DRAINAGE ALLUVIAL	FAR EAST TRENCH TO WET WELL	15	42	0.5	FVNR	230V -1PHASE	1,2,3,+	TRANSDUCER	SEE SECTION 7	SEE SECTION 7	
TP-0090	TEMP	NO	ALLUVIAL GROUND WATER CONTROLS WET WELL	DRAINAGE SYSTEMS TO EQ POND	45	205	5	FVNR	230V -1PHASE	1,2,3,+	FLOAT	SEE SECTION 10	SEE SECTION 10	
P-0101	PERM	NO	SEEPAGE COLLECTOR DEWATERING WET WELL	TO PERMANENT BPA WET WELL	10	250	1	FVNR	230V -1PHASE	3,+	FLOAT	SEE SECTION 10	SEE SECTION 10	
TP-0131	TEMP	YES	SOUTH POND EAST CELL	SOUTH POND TO WTP	250	75	7.5	FVNR	480V -3PHASE	2	TRANSDUCER	SEE SECTION 5	SEE SECTION 5	SOUTH POND CONTROLS INTO ONE CONTROL PANEL
TP-0132	TEMP	YES	SOUTH POND WEST CELL	SOUTH POND TO WTP	250	75	7.5	FVNR	480V -3PHASE	2	TRANSDUCER	SEE SECTION 5	SEE SECTION 5	SOUTH POND CONTROLS INTO ONE CONTROL PANEL
P-0105	TEMP	YES	WEST POND	WEST POND TO WTP	500	55	15	FVNR	480V -3PHASE	3,+	TRANSDUCER	SEE SECTION 5	SEE SECTION 5	

INSTRUMENTATION SCHEDULE

EARLY WORKS

TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	LINE SIZE	RANGE	SHEET(S)	COMMENTS
LT-0041	PIT 4 WASTE ROCK DEWATERING LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0041	PIT 4 WASTE ROCK DEWATERING TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	4"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0045	PIT 4 UNDERDRAIN LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0045	PIT 4 UNDERDRAIN FLOW TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	4"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0060	CENTRAL DRAINAGE LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0060	CENTRAL DRAINAGE FLOW TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	2"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0070	WESTERN DRAINAGE LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0070	WESTERN DRAINAGE FLOW TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	2"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0080	FAR EAST DRAINAGE LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0080	FAR EAST DRAINAGE FLOW TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	2"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LSHH-0090	ALLUVIAL WET WELL HIGH HIGH LEVEL ALARM	FLYGT	ENM-10	NO/NC CONTACT	N/A	N/A	11-5	PROVIDE WITH APPROPRIATE CABLE LENGTH, OR APPROVED EQUAL
LSH-0090	ALLUVIAL WET WELL HIGH LEVEL ALARM	FLYGT	ENM-10	NO/NC CONTACT	N/A	N/A	11-5	PROVIDE WITH APPROPRIATE CABLE LENGTH, OR APPROVED EQUAL
LSL-0090	ALLUVIAL WET WELL LOW LEVEL ALARM	FLYGT	ENM-10	NO/NC CONTACT	N/A	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE CABLE LENGTH, OR APPROVED EQUAL

PHASE 1

TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	LINE SIZE	RANGE	SHEET(S)	COMMENTS
LT-0054	EXISTING BPA WELL (GW-54) LEVEL	KPSI	SERIES 700	24V DC	N/A	SEE NOTE 1	11-6	OR APPROVED EQUAL
FE/FIT-0054	EXISTING BPA WELL (GW-54) FLOW TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	2"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0031	PIT 3 WASTE ROCK DEWATERING LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0031	PIT 3 WASTE ROCK DEWATERING FLOW TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	6"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0035	PIT 3 UNDERDRAIN LEVEL	KPSI	SERIES 700	24V DC	N/A	0-15'	11-5	OR APPROVED EQUAL
FE/FIT-0035	PIT 3 UNDERDRAIN TRANSMITTER & SENSOR	ENDRESS-HAUSER	PROMAG 53W	120V AC	6"	SEE NOTE 1	11-5	PROVIDE WITH APPROPRIATE FACTORY CABLE LENGTH, OR APPROVED EQUAL
LT-0131	SOUTH POND LEVEL	KPSI	SERIES 700	24V DC	N/A	0-75'	11-5	OR APPROVED EQUAL
LT-0132	SOUTH POND LEVEL	KPSI	SERIES 700	24V DC	N/A	0-75'	11-5	OR APPROVED EQUAL

PHASE 2

	DESCRIPTION	MAKE	MODEL	SUPPLY	LINE SIZE	RANGE	SHEET(S)	COMMENTS
LT-0105	WEST POND LEVEL	KPSI	SERIES 700	24V DC	N/A	0-75'	11-6	OR APPROVED EQUAL

NOTE:

1. CONTRACTOR TO VERIFY ALL INFORMATION.
2. CONTRACTOR IS RESPONSIBLE FOR CONVEYANCE OF WATER TO THE APPROPRIATE LOCATIONS AND THE MAINTENANCE OF APPROVED WATERLEVELS THROUGHOUT ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES AND PROJECT DELAYS DUE TO A FAILURE TO MAINTAIN WATER LEVELS AND CONVEYANCE SYSTEMS.
3. CONTRACTOR MAY USE THE EXISTING PUMPING EQUIPMENT AS IS SEES FIT. MAINTENANCE, MODIFICATION, OR DISPOSAL AND REPLACEMENT OF PUMPING EQUIPMENT DURING PROJECT TO MEET EVOLVING PROJECT NEEDS IS THE CONTRACTOR'S DECISION AND AT THE CONTRACTOR'S EXPENSE.
4. SEE SECTION 10 FOR FINAL LOCATIONS OF CONTROL PANELS.

ISSUE REV	DESCRIPTION	TECH	ENG	DATE
3	ISSUED FOR 100% DESIGN	MJC	SA	06-15
2	ISSUED FOR 90% DESIGN	MJC	JD	07-14

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DESIGNED BY	J. J.	06-15
DRAWN BY	M. CARTER	06-15
CHECKED BY	D. MIKLAS	06-15
APPROVED BY	S. ARENS	06-15
PROJECT MANAGER	V. DRAIN	06-15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON

PROJECT: MIDNITE MINE

TITLE: PUMP SCHEDULE

MWH

SHEET: 11-2 | REVISION: 3

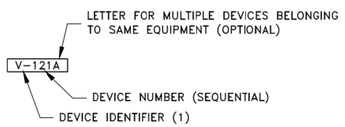
FILE NAME: 11-2 | DATE: JUNE 2015

O:\Industrial Projects\MIDNITE MINE\Deliverables_Working Documents\Basis of Design Rpt\Appendix AA - Power Distr for 90-100%\11-2

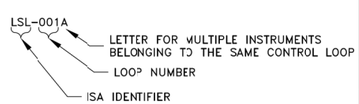
ISA INSTRUMENT IDENTIFICATION TABLE

PRECEEDING LETTERS			SUCCEEDING LETTERS		
MEASURED OR INITIATING VARIABLE		MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		EMERGENCY	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL	
D	DENSITY OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY	MOISTURE		MIDDLE
N	VIDEO		USER'S CHOICE	USER'S CHOICE	NORMAL
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT CONNECTION		STOP
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD, OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	Y-AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	

EQUIPMENT TAG



INSTRUMENT/SCADA TAG

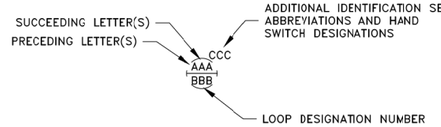


LOOP NUMBER CRITERIA

(1) DEVICE IDENTIFIERS

G	GATE
H	HVAC
M	MECHANICAL
P	PUMP
V	VALVE

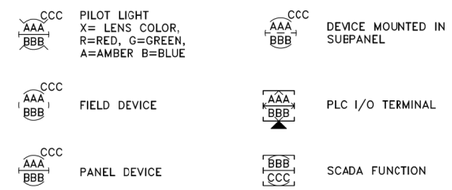
TAG NUMBERS AND ADDITIONAL DESIGNATIONS



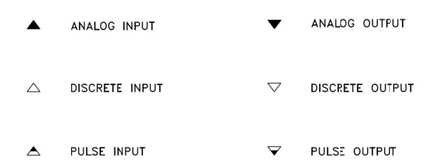
P&ID INTERFACE SYMBOLS

NOTE:

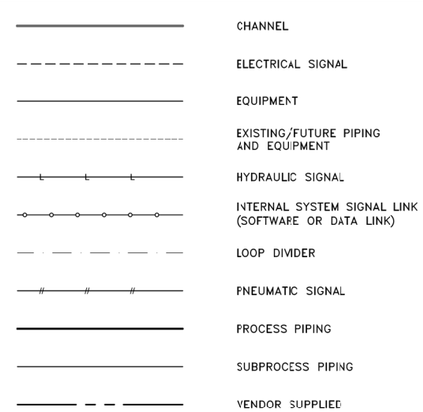
REFER TO ISA INSTRUMENT IDENTIFICATION TABLE FOR DEFINITION OF LETTERS AAA INSIDE THE BUBBLES. BBB REPRESENTS LOOP ID (IF USED). SEE ABBREVIATIONS LIST FOR SUPERSCRIPT CCC.



INPUT/OUTPUT SYMBOLS



P&ID LINETYPES



P&ID ABBREVIATIONS

AI	ANALOG INPUT
AO	ANALOG OUTPUT
ARV	AIR RELIEF VALVE
AS	AIR SUPPLY
BaCL2	BARIUM CHLORIDE
BWL	BOTTOM WATER LEVEL
CL2	CHLORINE
CV	CONTROL VALVE/CONTROL VARIABLE
DCS	DISTRIBUTED CONTROL SYSTEM
DI	DISCRETE INPUT
DO	DISSOLVED OXYGEN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
ETM	ELAPSED TIME METER
ETMf	ELAPSED TIME METER (FAST SPEED)
ETMs	ELAPSED TIME METER (SLOW SPEED)
ES	EMERGENCY STOP
FA	FOUL AIR
FC	FAIL CLOSED
FE	FLOW ELEMENT
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
GA	GALLONS
GCP	GENERATOR CONTROL PANEL
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H2S	HYDROGEN SULFIDE
HMI	HUMAN MACHINE INTERFACE
IO	INPUT/OUTPUT
ISB	INTRINSICALLY SAFE BARRIER
LAN	LOCAL AREA NETWORK
LOH	LOW, OFF, HIGH
LCP	LOCAL CONTROL PANEL
M	MOTOR
MA	MILLIAMP
MCC	MOTOR CONTROL CENTER
MFR(S)	MANUFACTURER(S)
MGD	MILLION GALLONS PER DAY
MGL	MILLIGRAMS PER LITER
MLR	MIXED LIQUOR RETURN
MC	MOISTURE
MOD	MODULATING
MTU	MASTER TELEMETRY UNIT
NTU	TURBIDITY
N/S	NORTH/SOUTH
OIT	OPERATOR INTERFACE TERMINAL
OL	OVERLOAD
P	PUMP
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PER	PERMISSIVE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
POS	POSITION
POT	POTENTIOMETER
PPM	PARTS PER MILLION
PR	PAIR
PSI	POUNDS PER SQUARE INCH
PV	PROCESS VARIABLE
RF	RADIO FREQUENCY
RH	RELATIVE HUMIDITY
RIO	REMOTE INPUT OUTPUT
RST	RESET
RTU	REMOTE TELEMETRY UNIT
RVSS	REVERSE VOLTAGE SOFT START
SB	SLUDGE BLANKET
SD	SMOKE DETECTOR
SLC	SINGLE LOOP CONTROLLER
SO2	SULFUR DIOXIDE
SP	SET POINT/SPARE
SPD	SPEED
SV	SOLENOID OPERATED VALVE
TP	TEMPORARY PUMP
T/M	TEMPERATURE AND/OR MOISTURE
TSS	TOTAL SUSPENDED SOLIDS
TWL	TOP WATER LEVEL
UG	UNDERGROUND
VFD	VARIABLE FREQUENCY DRIVE
VTP	VERTICAL TURBINE PUMP

HAND SWITCH DESIGNATIONS

ES	EMERGENCY STOP
FOR	FORWARD-OFF-REVERSE
FR	FORWARD-REVERSE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORA	HAND-OFF-REMOTE-AUTO
IOE	INTERNAL-OFF-EXTERNAL
JOA	JOG-OFF-AUTO
LOAR	LOWER-OFF-AUTO-RAISE
LOR	LOCAL-OFF-REMOTE
LR	LOCAL-REMOTE
MA	MANUAL-AUTO
MOA	MANUAL-OFF-AUTO
MOR	MOMENTARY-OFF-RUN
OC	OPEN-CLOSE
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OC	ON-OFF
OCA	ON-OFF-AUTO
OCC	ON-OFF-CLOSE
OCR	ON-OFF-REMOTE
OSC	OPEN-STOP-CLOSE
POT	POTENTIOMETER
ROO	RESET-OFF-ON
RST	RESET PUSHBUTTON
SS	START-STOP

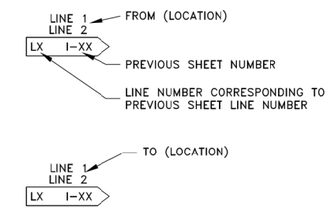
PROCESS IDENTIFIERS

A	AERATION
AIR	COMPRESSED AIR
AS	AIR SUPPLY
BD	BOTTOM DRAIN
BS	BLENDED SLUDGE
BW	BACKWASH
C	CONDENSATE
CD	CHEMICAL DRAIN AND VENT
CL	CHLORINE (GAS OR LQUID STATE)
CLS	CHLORINE SOLUTION
CLV	CHLORINE GAS UNDER VACUUM
CSL	CIRCULATED SLUDGE
CV	CHLORINATOR VENT AND DETECTION LINE
DN	DECANT
DSL	DIGESTED SLUDGE
DW	DEMINERALIZED WATER
EE	ENGINE EXHAUST
EV	EVAPORATIVE COOLING
EWR	ENGINE COOLING WATER RETURN
EWS	ENGINE COOLING WATER SUPPLY
EX	AIR EXHAUST
FA	FOUL AIR
FE	FINAL EFFLUENT
FM	FORCE MAIN
FOR	FUEL RETURN
FOS	FUEL SUPPLY
FS	FROTH SPRAY
FSP	FIRE PROTECTION SPRINKLER SYSTEM
FW	FINISHED WATER
G	GRIT
H	HYPOCHLORITE
HR	HEATING WATER RETURN
HS	HEATING WATER SUPPLY
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HY	HYDRAULIC
IA	INSTRUMENT AIR
LO	LUBE OIL
LSP	LANDSCAPING SPRINKLER SYSTEM
ML	MIXED LIQUOR
NG	NOT USED NATURAL GAS
NPW	NON-POTABLE WATER
OF	OVERFLOW
PA	PLANT AIR
PD	PLANT DRAIN
PEA	POLYMER-ANIONIC
PEC	POLYMER-CATIONIC
PEF	PRIMARY EFFLUENT
PEN	POLYMER-NONIONIC
PI	PLANT INFLUENT
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RSL	RAW SLUDGE
RW	RAW WATER
RWL	RAINWATER LEADER
S	SCUM
SA	SAMPLE LINE
SB	SODIUM BISULFITE
SD	SANITARY DRAIN AND VENT
SDR	STORM DRAIN
SE	SECONDARY EFFLUENT
SF	SLUDGE FILTRATE
SG	SLUDGE GAS
SN	SUBNATANT
SPD	SUMP PUMP DISCHARGE
SS	SANITARY SEWER
ST	STEAM
SU	STRUCTURE UNDERDRAIN
SUC	STRUCTURE UNDERDRAIN COLLECTOR
SW	SEAL WATER
TSL	THICKENED SLUDGE
UW	UTILITY WATER
WAS	WASTE ACTIVATED SLUDGE
WLO	WASTE LUBE OIL
WW	WASTEWATER

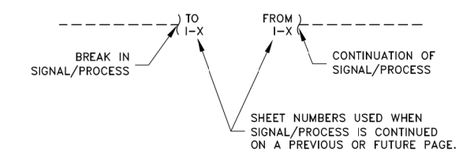
GENERAL NOTES

1. ADDITIONAL INSTRUMENTATION AND CONTROL SYMBOLS MAY BE USED AS REQUIRED. SYMBOLS AND NOMENCLATURE ARE BASED ON ISA STANDARD S-5.1.
2. SEE ASSOCIATED ELECTRICAL SYMBOL SHEETS FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.
3. SEE SECTION 10 FOR LIMITS OF DUAL WALL PIPE.

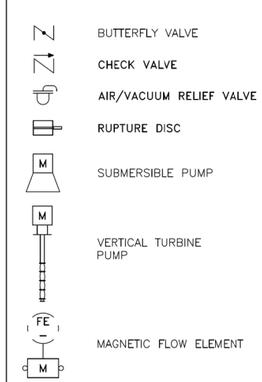
PROCESS/SIGNAL LINE TO/FROM A PRECEDING SHEET



CONTINUATION



GENERAL SYMBOLS



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APPROVED BY	S ARENS	06-15
PROJECT MANAGER	V DRAIN	06-15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL P&ID LEGEND
SHEET: 11-3
REVISION: 3
FILE NAME:
DATE: JUNE 2015

MWH

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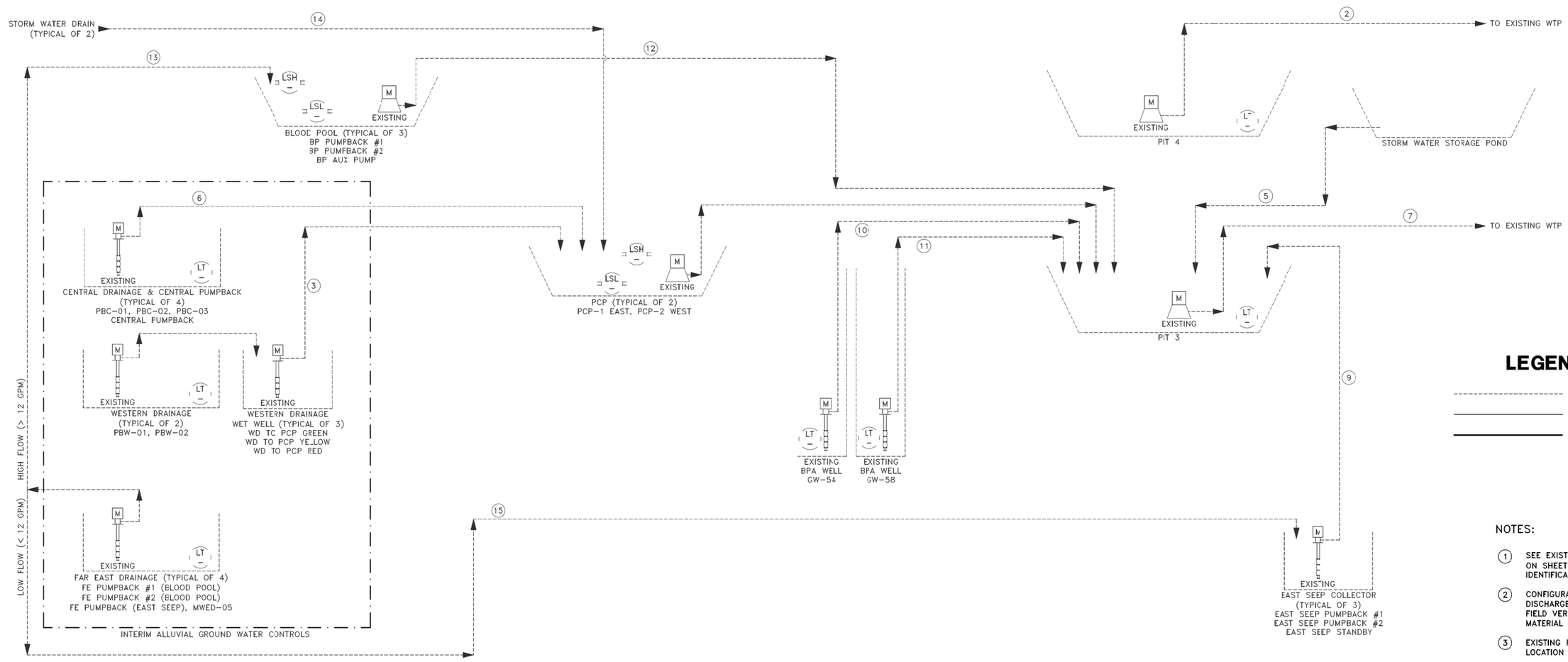
SCADA

PLC–CP

FIELD



LEGEND

- OLD EXISTING
- EXISTING FROM PREVIOUS PHASE
- NEW (PER PHASE)

NOTES:

1. SEE EXISTING PIPELINE TABLE ON SHEET 11–1 FOR PIPELINE IDENTIFICATION AND NUMBERING.
2. CONFIGURATION OF EXISTING DISCHARGE PIPING UNKNOWN. FIELD VERIFY QUANTITY, SIZE, MATERIAL AND LOCATION.
3. EXISTING PUMP TYPE, SIZE, AND LOCATION TO BE FIELD VERIFIED.

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PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL P&ID EXISTING STRUCTURES
SHEET: 11-4
REVISION: 3
FILE NAME:
DATE: JUNE 2015

MWH

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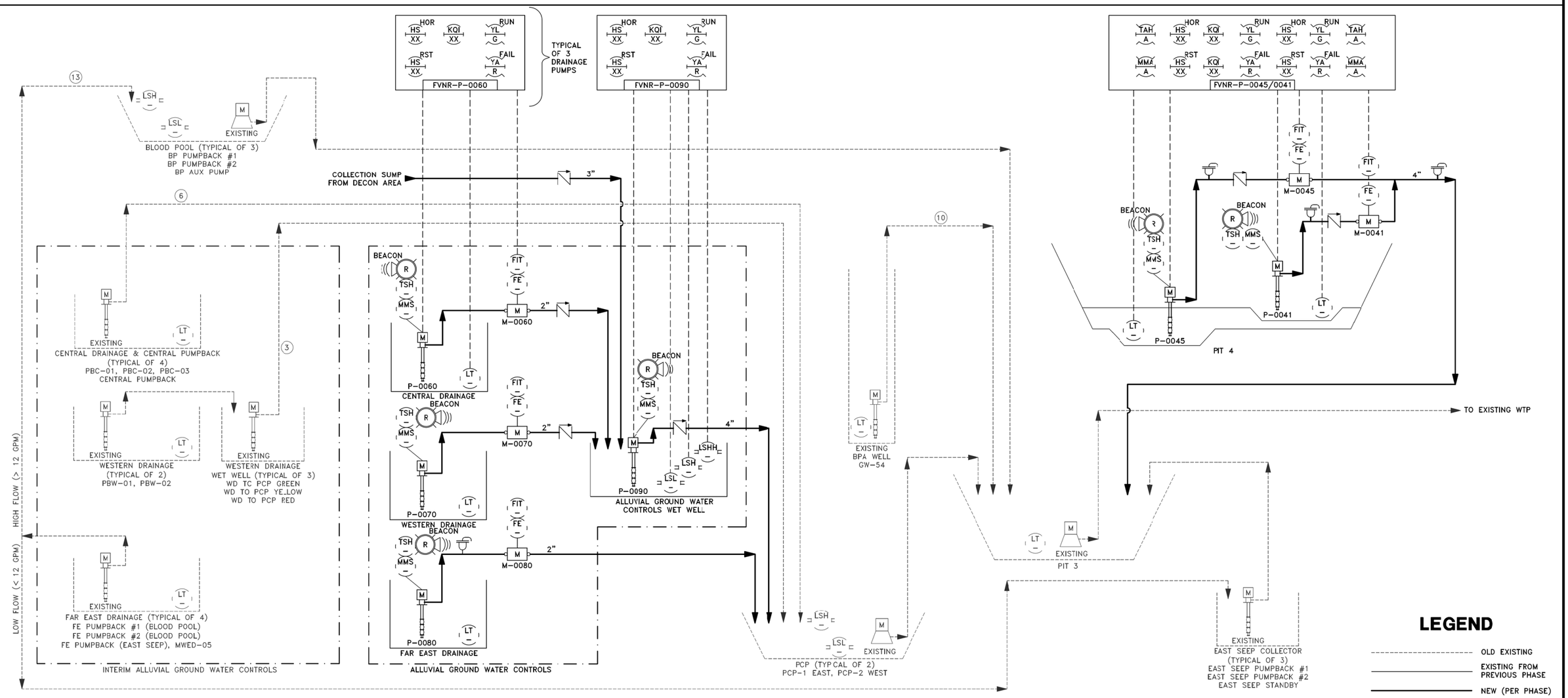
SCADA

PLC-CP

FIELD



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NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
PHASE 1 P&ID (START)

MWH

SHEET: 11-5
REVISION: 3
FILE NAME:
DATE: JUNE 2015

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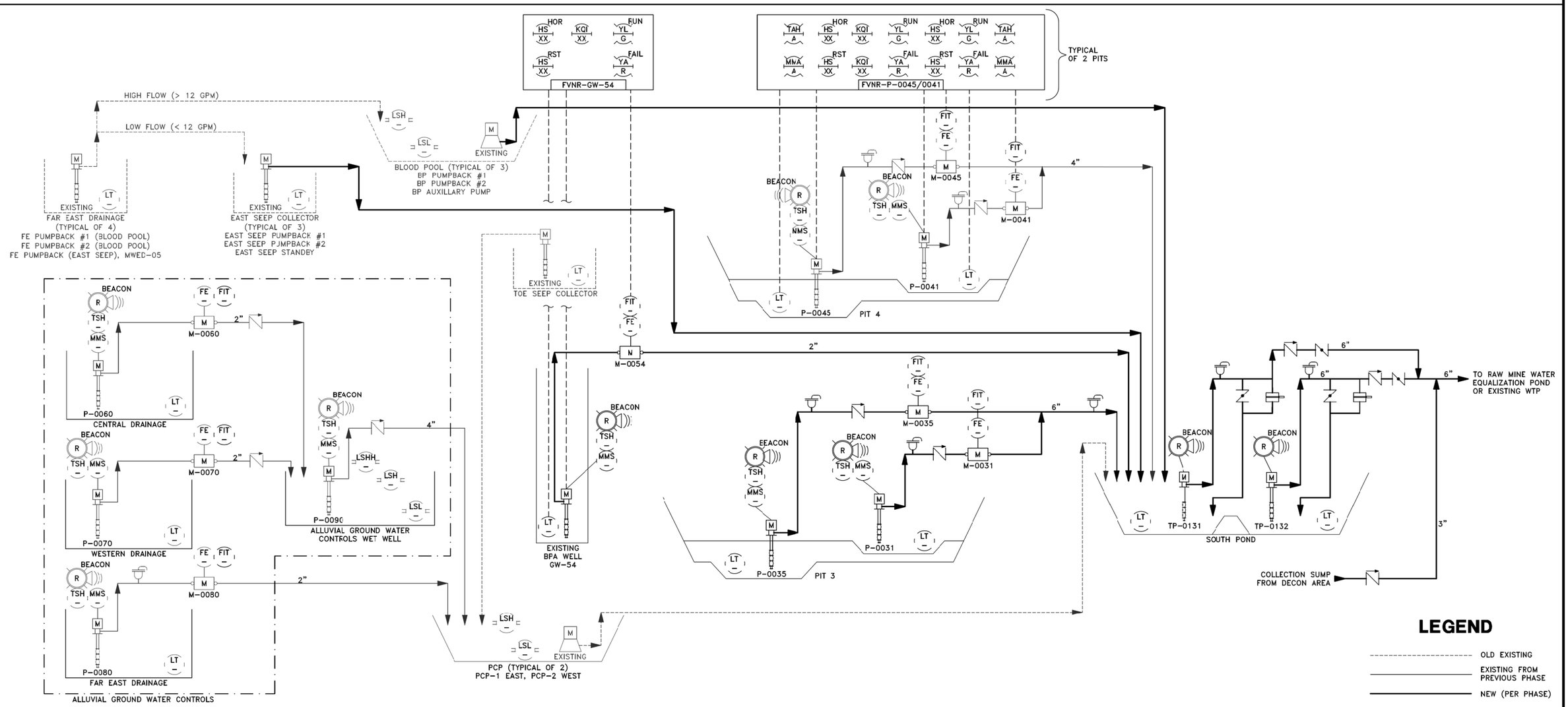
SCADA

PLC-CP

FIELD



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NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON

PROJECT: MIDNITE MINE

TITLE: ELECTRICAL
PHASE 2 P&ID (START)

MWH

SHEET: 11-6

REVISION: 3

FILE NAME:

DATE: JUNE 2015

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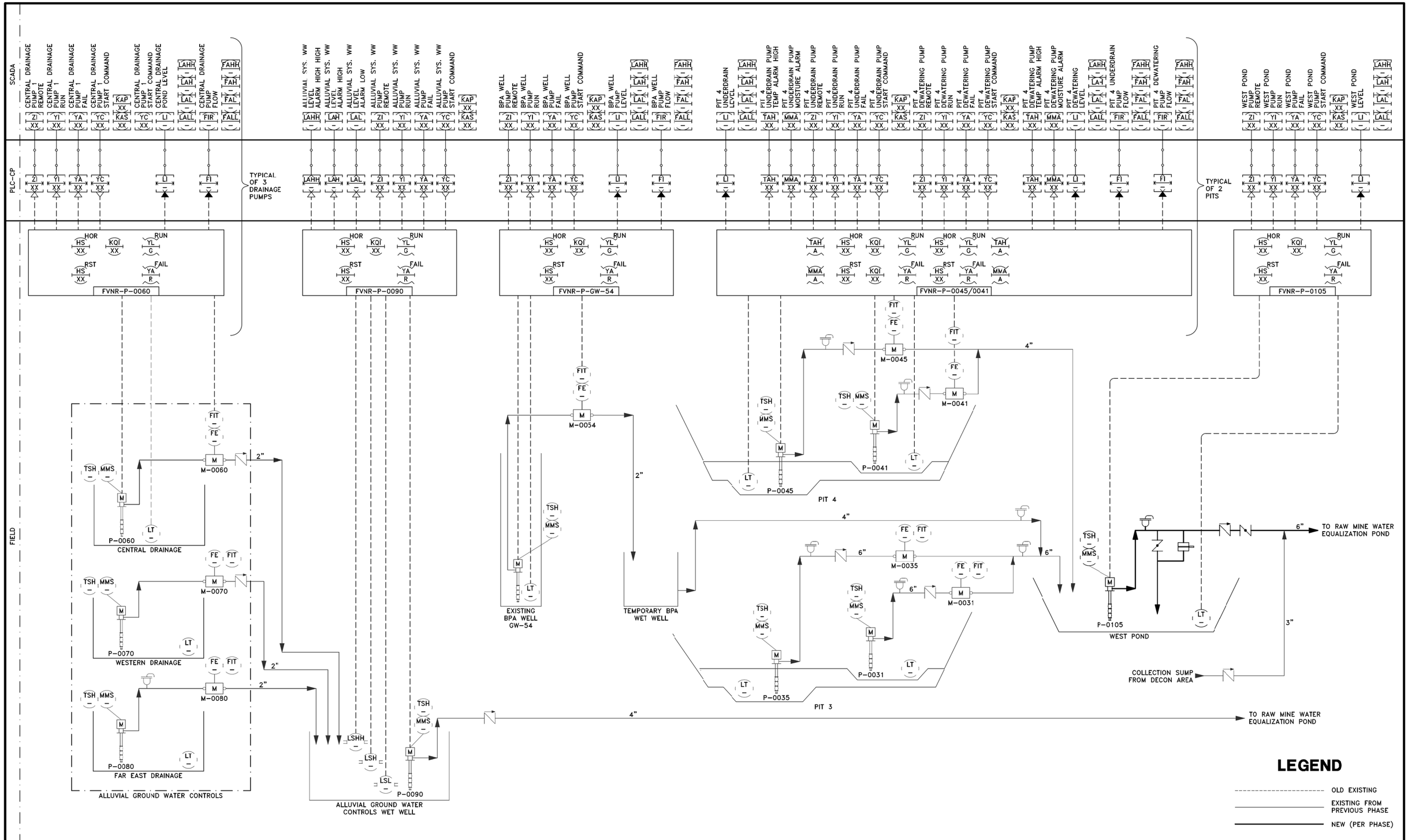

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PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
PHASE 3 P&ID (START)
SHEET: 11-7
REVISION: 3
FILE NAME:
DATE: JUNE 2015

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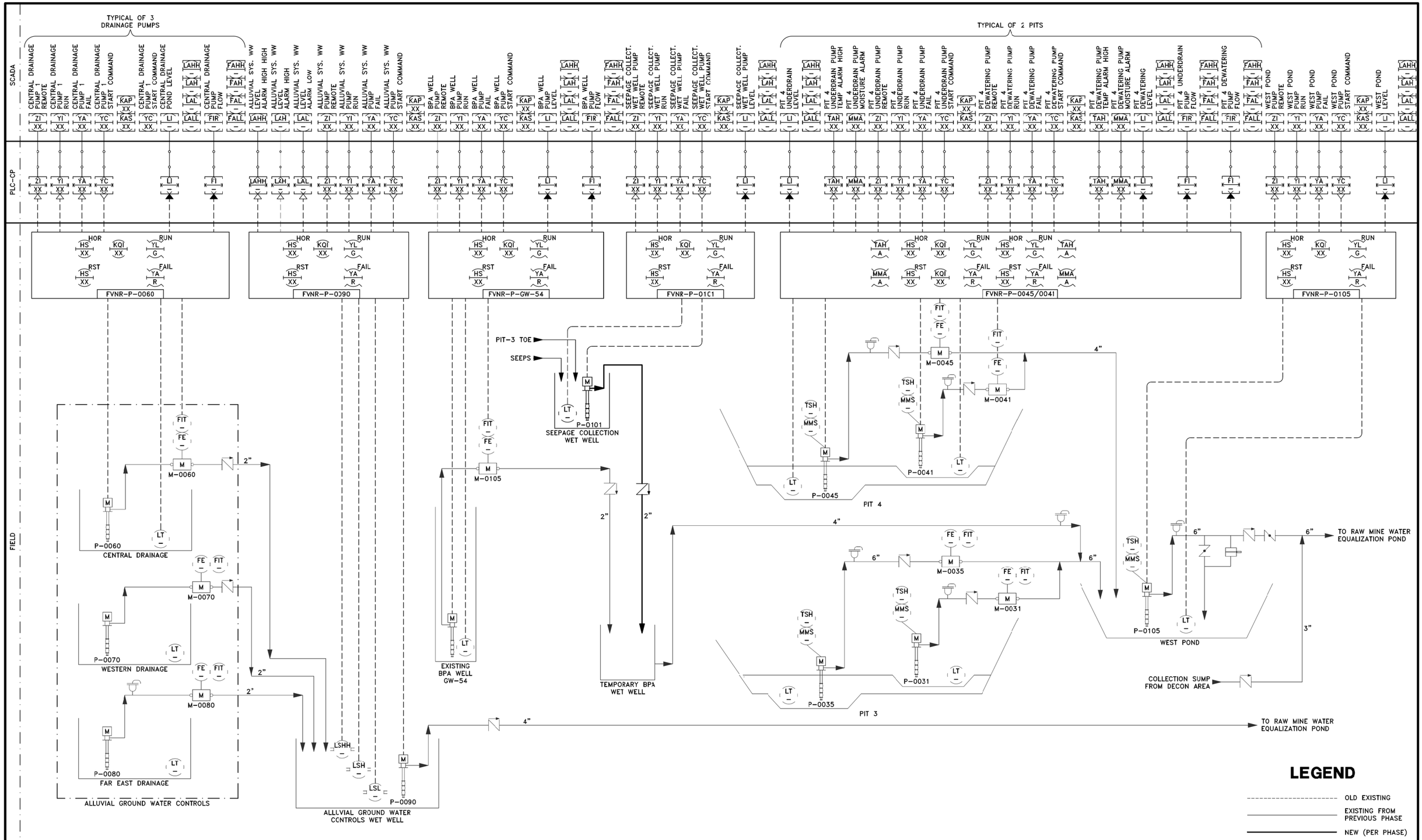

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PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL PHASE 3 P&ID (END)

MWH

SHEET: 11-8
REVISION: 3
FILE NAME:
DATE: JUNE 2015

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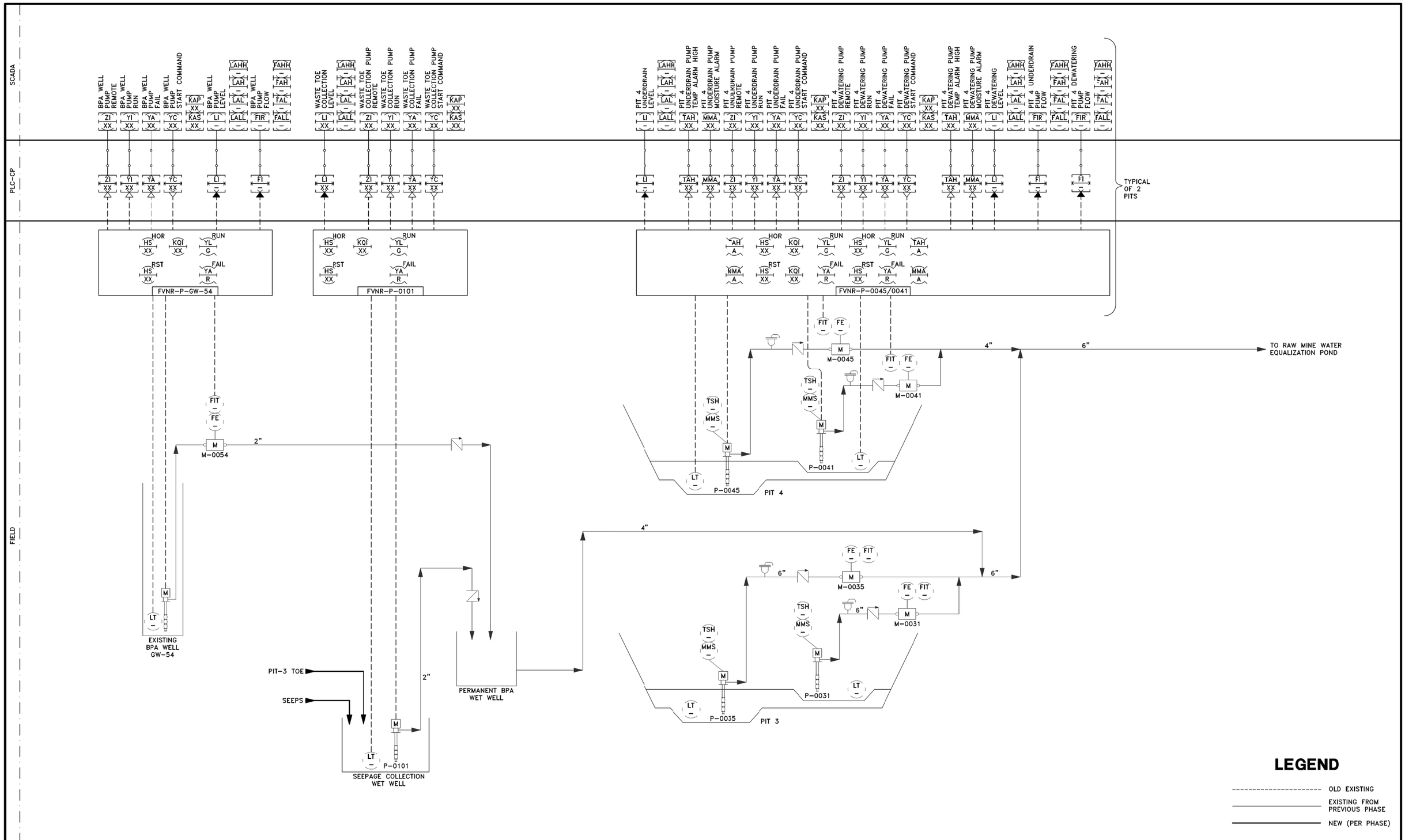

LEGEND

- OLD EXISTING
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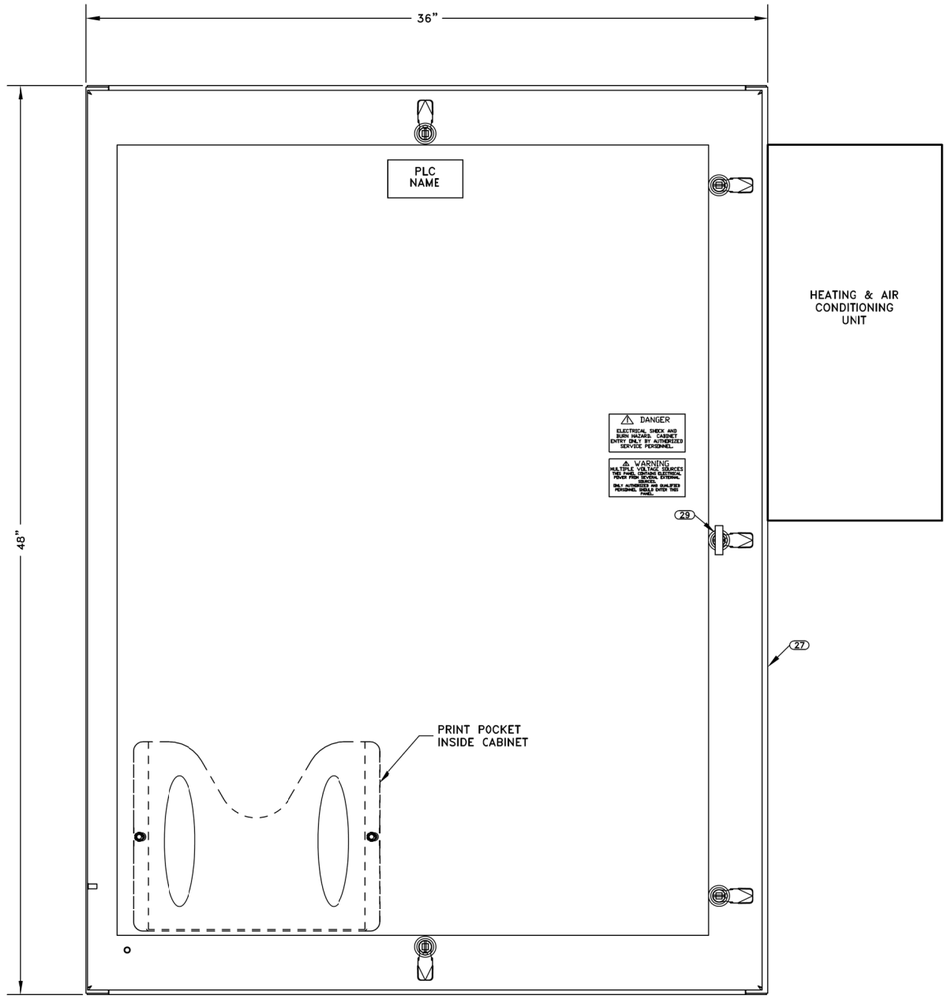
PROJECT MANAGER	V DRAIN	06–15

NEWMONT

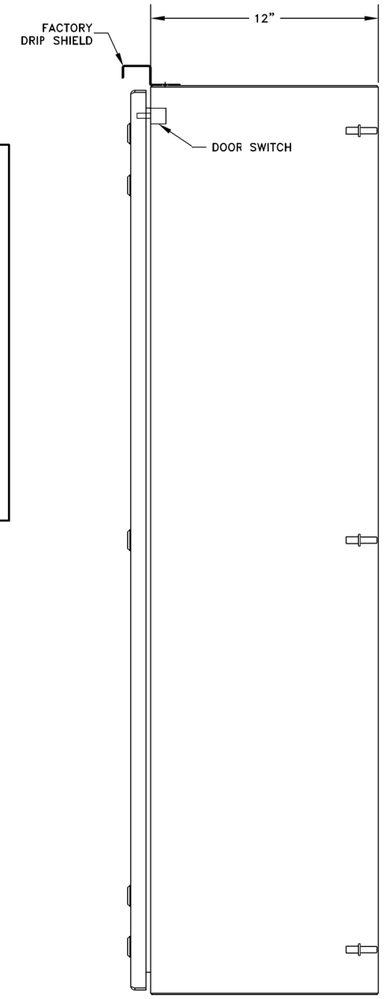
PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL P&ID END OF REMEDIAL ACTION
SHEET: 11-9
REVISION: 3
FILE NAME:
DATE: JUNE 2015

MWH

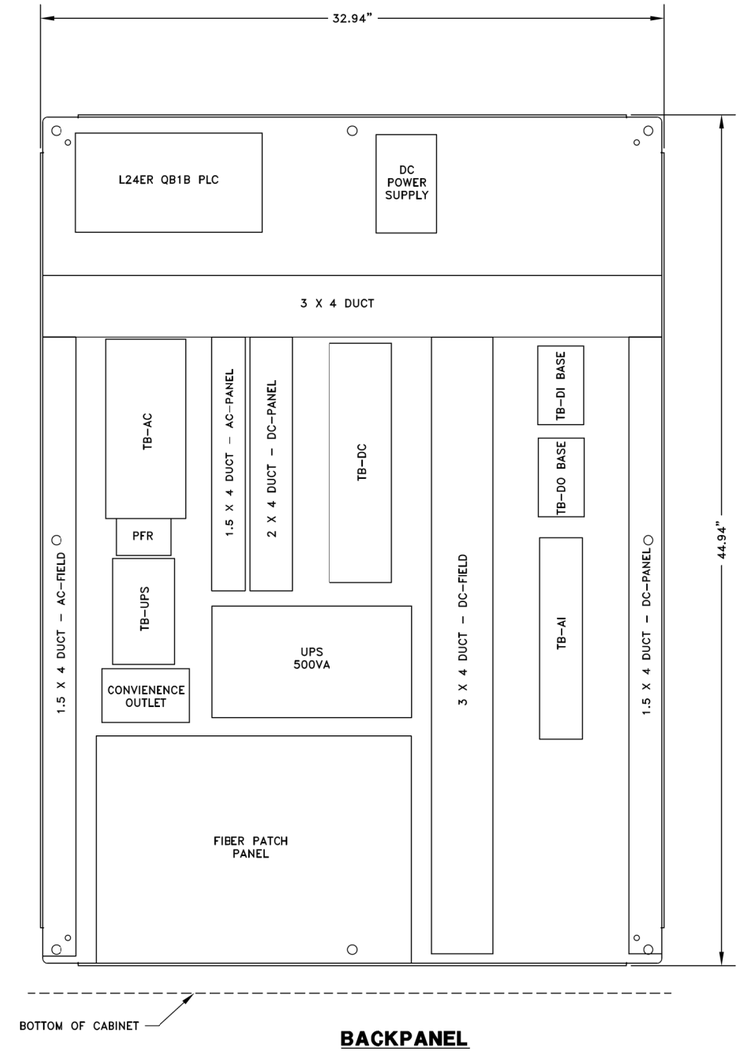
S:\Projects\Engineering\700\D728 MWH Midnite Mine (Collection)\SKM CAD Files\11-9 P&ID End of Remedial Action



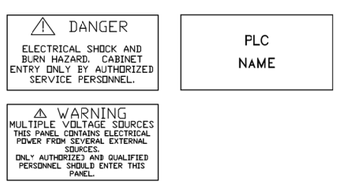
FRONT VIEW



SIDE VIEW



BACKPANEL



DOOR TAG DETAIL

NOTES:

1) CABINET SHALL BE PROVIDED WITH HEAT AND AIR CONDITIONING TO MAINTAIN 40° MIN. AND 90° MAX.
2) PANEL SHALL BE INSULATED.
3) INSTALL DRIP SHIELD.

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PROJECT MANAGER	V DRAIN	06–15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL TYPICAL PLC PANEL LAYOUT

MWH

SHEET: 11-10
REVISION: 3
FILE NAME:
DATE: JUNE 2015

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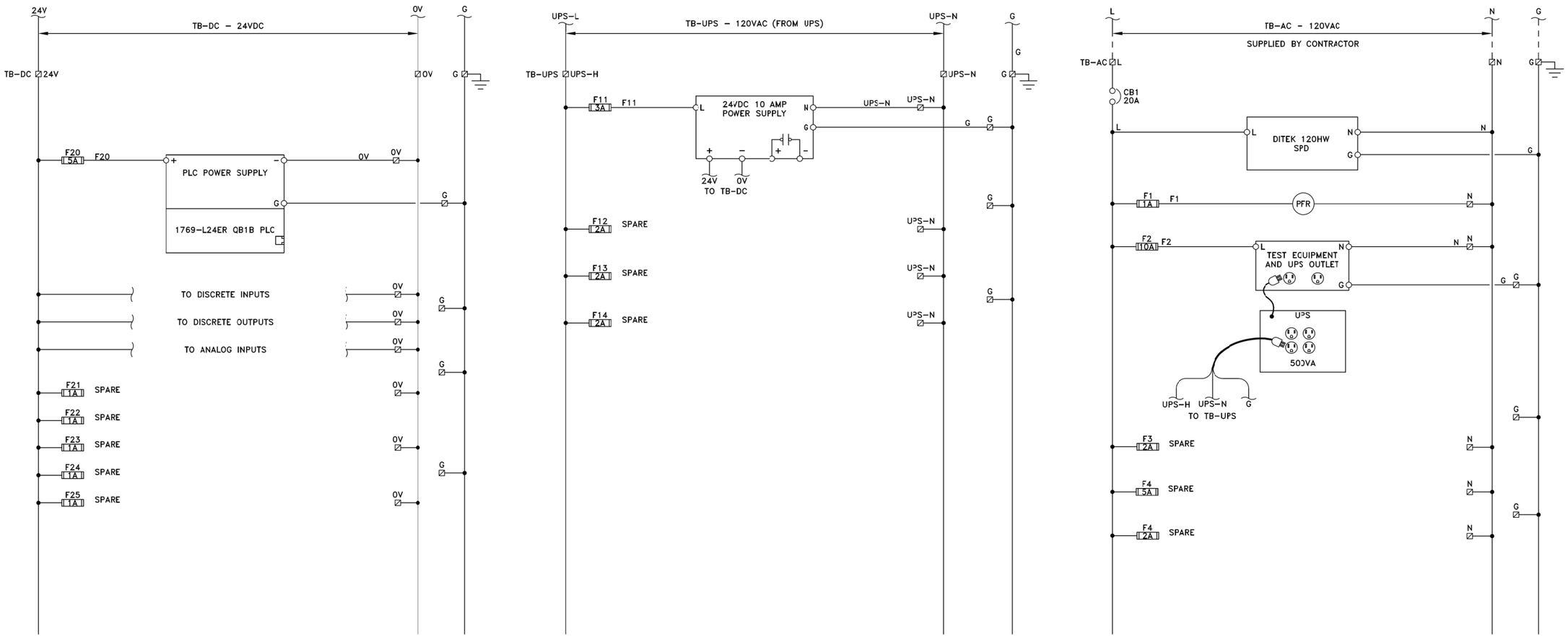

NOTES:

1) CONTRACTOR WIRING IS SHOWN AS DASHED.

A TYP **AC/DC WIRING DIAGRAM**

REV	DESCRIPTION	TECH	ENG	DATE
3	ISSUED FOR 100% DESIGN	TR	RSP	06–15
2	ISSUED FOR 90% DESIGN	TR	RSP	07–14

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CHECKED BY	R PACK	06–15
APPROVED BY	S ARENS	06–15
PROJECT MANAGER	V DRAIN	06–15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
PLC AC/DC WIRING DIAGRAM

MWH

SHEET: 11-11
REVISION: 3
FILE NAME:
DATE: JUNE 2015

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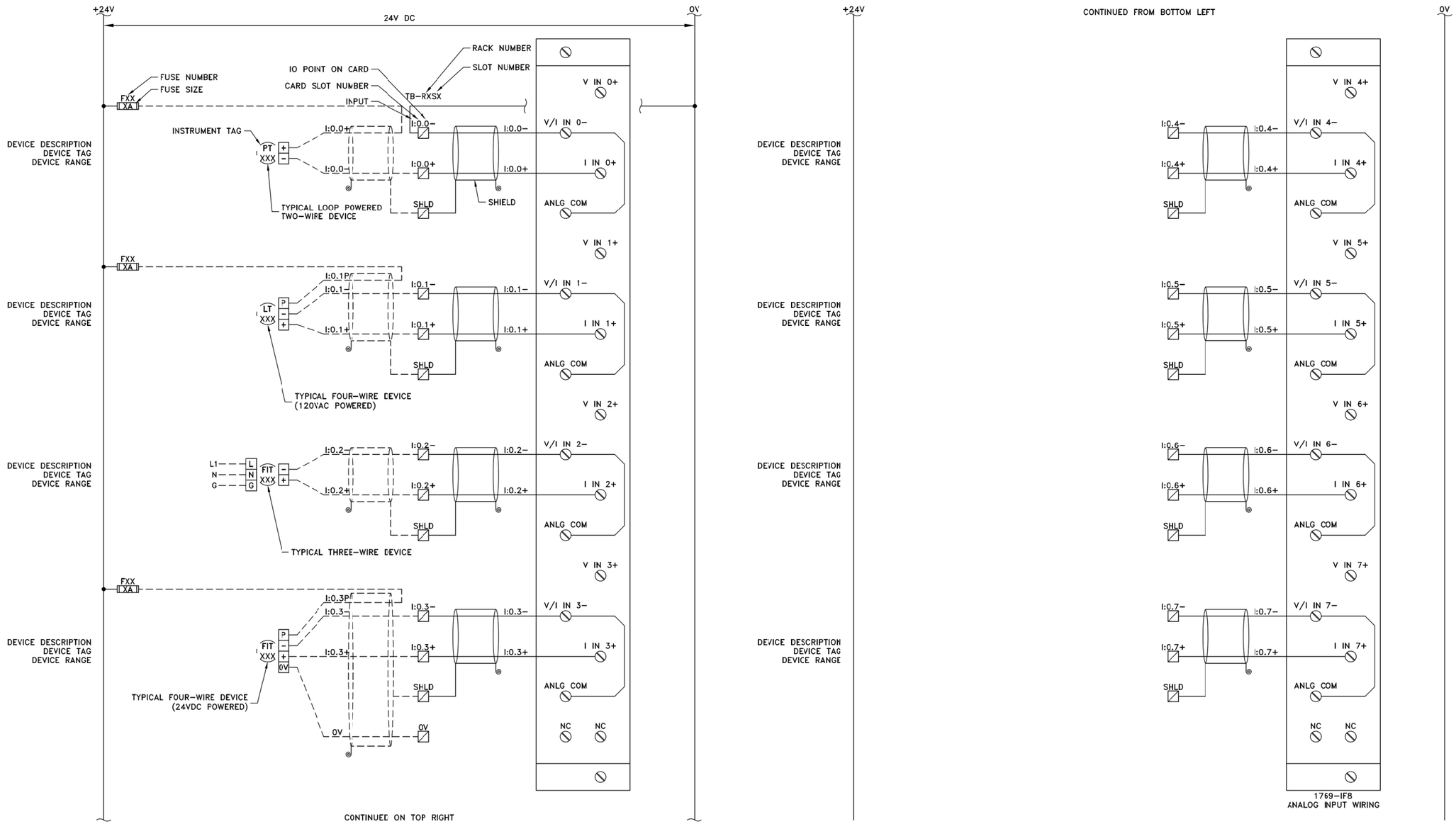

PLC NAME

PLC NAME:PLC-XXX — PLC LOCATION

LOCATION: PLC PANEL

PLC RACK AND SLOT NUMBER

RACK: X

SLOT: X

CARD TYPE

TYPE: ANALOG INPUT

MODEL: ALLEN BRADLEY 1769-IF8

CARD MANUFACTURER AND MODEL NUMBER

REV	DESCRIPTION	TECH	ENG	DATE
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NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON

PROJECT: MIDNITE MINE

TITLE: ELECTRICAL
PLC ANALOG INPUT WIRING DIAGRAM

MWH

SHEET: 11-12

REVISION: 3

FILE NAME

DATE: JUNE 2015

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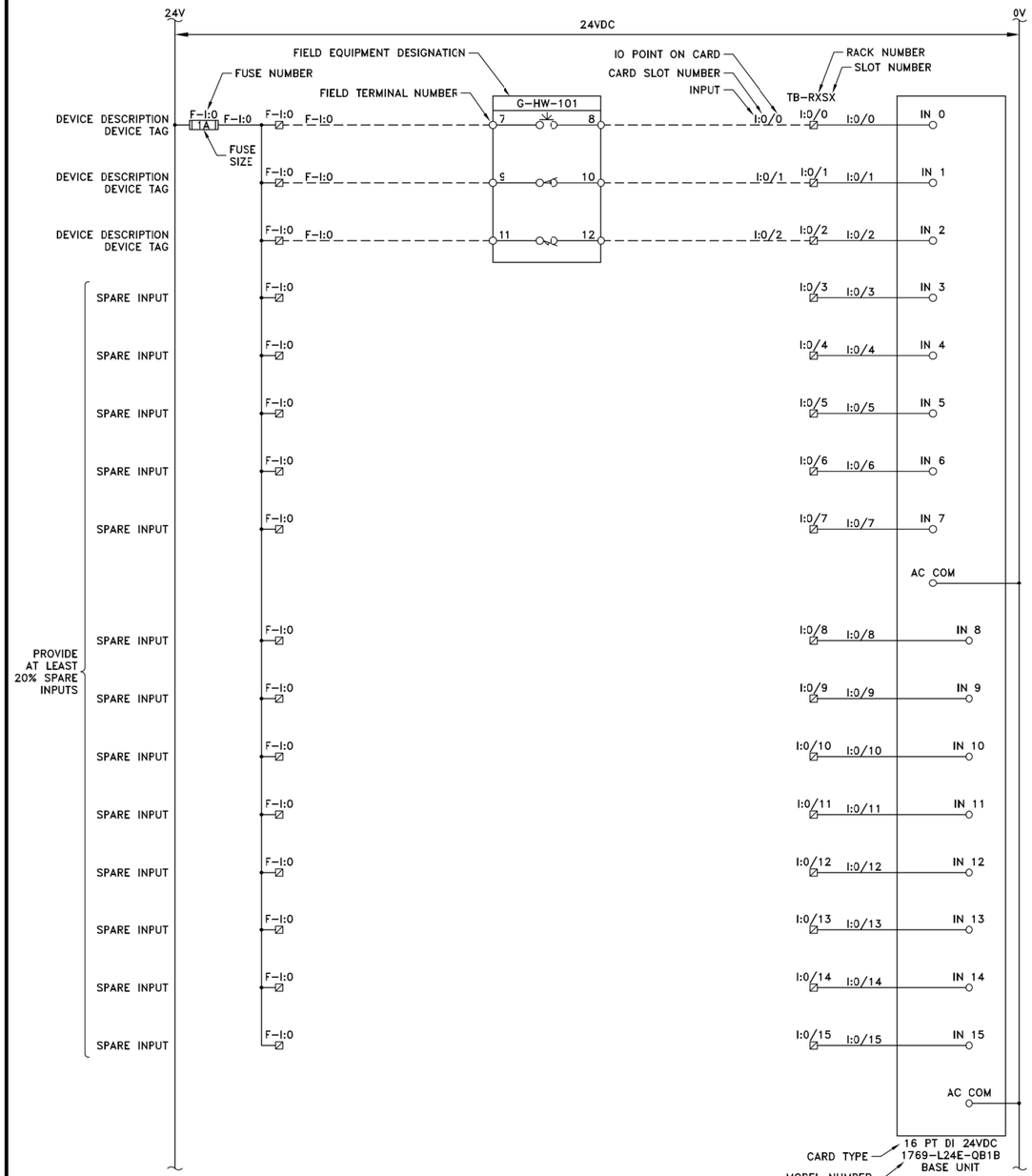

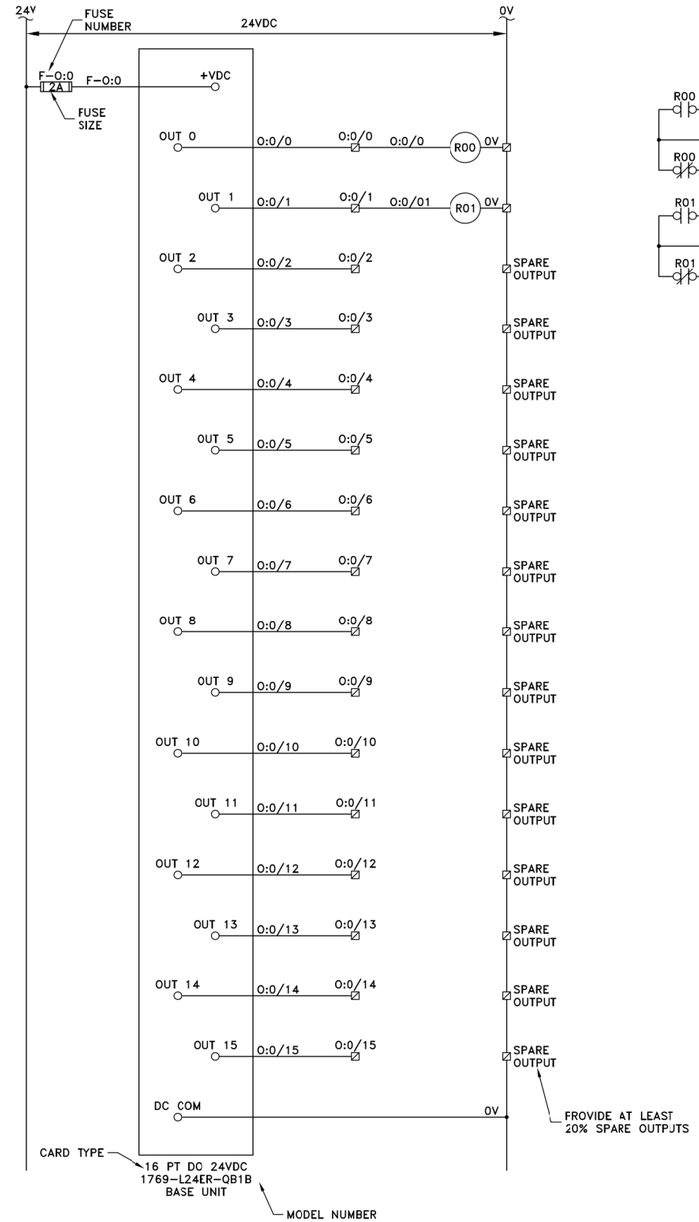

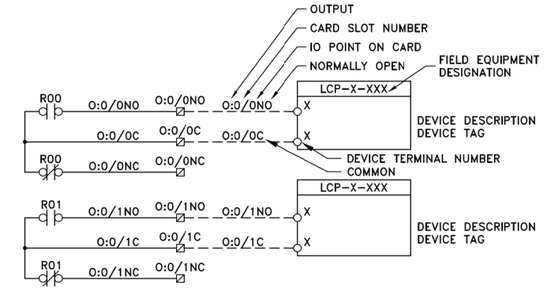

PLC NAME:
LOCATION:
RACK:
SLOT:
PLC NAME: PLC X
LOCATION: PLC PANEL
RACK: X
SLOT: X
PLC LOCATION
PLC RACK AND SLOT NUMBER

PLC NAME:
LOCATION:
RACK:
SLOT:
PLC NAME: PLC X
LOCATION: PLC PANEL
RACK: X
SLOT: X
PLC LOCATION
PLC RACK AND SLOT NUMBER

ISSUE REV	DESCRIPTION	TECH	ENG	DATE
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PROJECT MANAGER	V DRAIN	06-15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
PLC DISCRETE I/O WIRING DIAGRAM
SHEET: 11-13
REVISION: 3
FILE NAME:
DATE: JUNE 2015

MWH

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SCHEMATIC SYMBOLS

- REMOTE DEVICE
- DEVICE CONNECTION LUG OR TERMINAL
- SCHEMATIC POINT OF CONNECTION
- POWER STABS BUS CONNECTION
- POWER STABS LOAD CONNECTION

CIRCUIT BREAKER
- 100AF — FRAME SIZE
- 50AT — TRIP RATING
- MCP — BREAKER TYPE
- 3P — NUMBER OF POLES

DISCONNECT
- 30A — AMPERE RATING
- 4X — NEMA RATING

FUSE
- 30A — AMPERE RATING
- R — FUSE TYPE

FUSED DISCONNECT
- 30A — AMPERE RATING
- 4X — NEMA RATING
- 30A — AMPERE RATING
- R — FUSE TYPE

TRANSFORMER

CURRENT TRANSFORMER
- 100:5 — CT TURNS RATIO
- 3 — NUMBER OF CT'S

POTENTIAL TRANSFORMER
- 480:120 — PT VOLTAGE RATIO
- 3 — NUMBER OF PT'S

METERING EQUIPMENT
- UM — METER TYPE DESIGNATION
  - AM = AMMETER
  - SSM = SOLID STATE METER
  - UM = UTILITY METER
  - VM = VOLTMETER
  - WHM = WATT HOUR METER
  - WM = WATT METER

GENERATOR

MANUAL OR AUTOMATIC TRANSFER SWITCH
- 600A — AMPERE RATING
- 3R — NEMA RATING

TRANSIENT VOLTAGE SURGE SUPRESSOR
- TVSS CLASS C — TVSS CLASSIFICATION

MOTOR OVERLOAD RELAY

FULL VOLTAGE NON-REVERSING STARTER (FVNR)
- NEMA SIZE 1 — STARTER TYPE AND SIZE

FULL VOLTAGE REVERSING STARTER (FVR)
- NEMA SIZE 1 — STARTER TYPE AND SIZE

TWO-SPEED STARTER
- NEMA SIZE 1 — STARTER TYPE AND SIZE

- HF — HARMONIC FILTER
- LR — LOAD REACTOR
- VFD — VARIABLE FREQUENCY DRIVE
- RVSS — REDUCED VOLTAGE SOFT STARTER
- GROUND CONNECTION
- 5 — MOTOR, NUMBER DESIGNATES NEMA HORSEPOWER SIZE
- M — MOTOR STARTER, CONTACTOR, RELAY OR TIMER COIL
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- SOLENOID VALVE
- TERMINAL BLOCK
- EQUIPMENT PROGRAMMING CONSOLE
- OFF ON — XO — 2 POSITION SELECTOR SWITCH POSITION LEGEND: X=CLOSED O=OPEN
- H O A — XOO — 3 POSITION SELECTOR SWITCH HAND – OFF – AUTO POSITION LEGEND: X=CLOSED O=OPEN
- O C A — XOO — 3 POSITION SELECTOR SWITCH OPEN – CLOSE – AUTO POSITION LEGEND: X=CLOSED O=OPEN
- F O R — XOO — 3 POSITION SELECTOR SWITCH FORWARD – OFF – REVERSE POSITION LEGEND: X=CLOSED O=OPEN
- STOP — NORMALLY CLOSED PUSH BUTTON
- START — NORMALLY OPEN PUSH BUTTON

TYPICAL SWITCH CONFIGURATION
- FLOAT SWITCH – MAKE ON FALL
- FLOAT SWITCH – MAKE ON RISE
- FLOAT SWITCH – BREAK ON FALL
- FLOAT SWITCH – BREAK ON RISE
- SWITCH TYPE SYMBOL (SEE BELOW)
  - LEVEL SWITCH
  - PRESSURE SWITCH
  - FLOW OR TORQUE SWITCH
  - TEMPERATURE SWITCH
  - LIMIT SWITCH
- NOTC — TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE
- ETM — ELAPSED TIME METER
- CR — CONTROL RELAY

SCHEMATIC SYMBOLS (CONT.)

- TD — TIME DELAY RELAY
- AR — ALARM RELAY
- R — PILOT LIGHT LETTER INDICATES COLOR R=RED, A=AMBER, B=BLUE, G=GREEN
- 50 — INSTANTANEOUS SHORT-CIRCUIT TRIP DEVICE
- 51 — TIME OVERCURRENT TRIP DEVICE
- 51G — GROUND FAULT TRIP DEVICE

SCHEMATIC LINETYPES

- ELECTRICAL BUS
- EXISTING OR FUTURE ELECTRICAL BUS
- MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE
- EXISTING OR FUTURE MANUFACTURER/SHOP WIRE
- FIELD/CONTRACTOR INSTALLED WIRE
- EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE

ELEC. PLAN SYMBOLS

SITE PLAN DEVICES

X — X= (SEE BELOW)

- AE – ANALYZER ELEMENT
- AIT – ALALYZING INDICATING TRANSMITTER
- FE – FLOW ELEMENT
- FIT – FLOW INDICATING TRANSMITTER
- FS – FLOW SWITCH
- J – JUNCTION BOX
- JS – TORQUE SWITCH
- LE – LEVEL ELEMENT
- LIT – LEVEL INDICATING TRANSMITTER
- LS – LEVEL SWITCH
- M – MOTOR
- MH – MANHOLE
- MV – MOTOR OPERATED VALVE
- PB – PULLBOX
- PIT – PRESSURE INDICATING TRANSMITTER
- PS – PRESSURE SWITCH
- PT – PRESSURE TRANSMITTER
- SV – SOLENOID VALVE
- TS – TEMPERATURE SWITCH
- WE – WEIGHT ELEMENT
- WIT – WEIGHT INDICATING TRANSMITTER
- ZS – LIMIT SWITCH

- GROUND ROD
- WP — DUPLEX RECEPTACLE
  - DENOTES RECEPTACLE TYPE (BLANK) = STANDARD INDOORS GFCI = GND FLT CURRENT INT. WP = WEATHER PROOF & GFCI
- QUADRAPLEX RECEPTACLE
- WP — DUPLEX RECEPTACLE MOUNTED AT 44" AFF
- DATA JACK
- $ — SINGLE POLE SWITCH
- $3 — 3-WAY SWITCH
- $4 — 4-WAY SWITCH
- CONDUIT SEALOFF
- LTC CONNECTION
- MC CONNECTION
- DISCONNECT SWITCH
- T — THERMOSTAT
- 3 — CONDUIT HOME RUN NUMBER INDICATES QUANTITY OF CONDUCTORS INCLUDING GROUND
- X — COMMON CIRCUIT DESIGNATION

PLC SYMBOLS

LOCAL PANEL OR DEVICE TERMINAL BLOCK
- X — TERMINAL LABEL (SECONDARY)
- X — TERMINAL LABEL (SIZE PERMITTING)

PLC PANEL TERMINAL BLOCK
- X — TERMINAL LABEL

MCC TERMINAL BLOCK
- X — TERMINAL LABEL

PLC DISCRETE INPUT
- DIXX — DISCRETE INPUT LABEL

PLC DISCRETE OUTPUT (NORMALLY OPEN)
- DOXX — DISCRETE OUTPUT LABEL

PLC DISCRETE OUTPUT (NORMALLY CLOSED)
- DOXX — DISCRETE OUTPUT LABEL

PLC ANALOG INPUT
- AIXX — ANALOG INPUT LABEL

PLC ANALOG OUTPUT
- AOXX — ANALOG OUTPUT LABEL

PLC RTD
- RTDXX — RTD LABEL

ELECTRICAL PLAN LINETYPES

- EXPOSED CONDUIT
- EXISTING OR FUTURE EXPOSED CONDUIT
- UNDERGROUND CONDUIT
- EXISTING OR FUTURE UNDERGROUND CONDUIT
- BARE COPPER GROUND CONDUCTOR
- ELECTRICAL EQUIPMENT
- EXISTING OR FUTURE ELECTRICAL EQUIPMENT
- DEMOLTION
- CAPPED UNDERGROUND CONDUIT

NOTES

1. THE COMPLETED INSTALLATION SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER IN ACCORDANCE WITH THE LATEST NEC STANDARDS OF INSTALLATION UNDER COMPETENT SUPERVISION. INSTALL GROUNDING PER NEC.
2. VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND OTHER FACTORS, WHICH MAY AFFECT THE EXECUTION OF THE WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
3. THE CONTRACTOR SHALL COORDINATE WORK WITH THE UTILITIES PROVIDING SERVICES ON THIS PROJECT, AND SHALL COMPLY WITH ALL THEIR INSTALLATION REQUIREMENTS.
4. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE.
5. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR THE OWNER, WILL BE REJECTED AS DEFECTIVE.
6. LEAVE THE SITE CLEAN. REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK. DAMAGED PAINT AND FINISHES SHALL BE TOUCHED UP OR REPAINTED WITH MATCHING COLOR PAINT AND FINISH.
7. CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 AWG THROUGH #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW-2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 AWG GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316-10, 75° C BASED ON A 30° C AMBIENT.
8. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC. MINIMUM CONDUIT DEPTH SHALL BE 24 INCHES. MINIMUM UNDERGROUND CONDUIT SIZE SHALL BE 1 INCH.
9. CONDUITS SHALL BE MARKED AT EACH END WITH MATCHING NUMBERED BRASS OR NYLON TAGS. SPARE CONDUITS SHALL HAVE A PULL STRING INSTALLED AND SECURED.
10. EXPOSED CONDUITS SHALL BE GALVANIZED RIGID STEEL (GRS). MINIMUM SIZE 3/4 INCH, UNLESS OTHERWISE NOTED ON THE PLANS.
11. SAFETY SWITCHES, ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE.
12. WIRING DEVICES SHALL BE SPECIFICATION GRADE.
13. THE CONTRACTOR IS RESPONSIBLE FOR MANAGING, SCHEDULING, DOCUMENTING, AND PERFORMING THE WORK SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION AND CONTROL SYSTEM FOR THE FACILITY IS PROVIDED. ACCURATE SHOP AND RECORD DRAWINGS, AND OEM MANUALS SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF THE WORK.
14. TYPICAL DETAILS SHALL APPLY IN ALL CASES, WHETHER SPECIFICALLY REFERRED TO OR NOT.

EQUIPMENT CALLOUT

EQUIP. TAG — EQUIPMENT CALLOUT
- DESCRIPTOR #1
- DESCRIPTOR #2
- DESCRIPTOR #3

100 / E-XX — TYP — DETAIL CALLOUT

FE / 100 — FIELD INSTRUMENT CALLOUT

CONDUIT CALLOUT

CXXX / PXXX / FXXX / SPXXX — GROUPED CONDUIT AND CIRCUIT IDENTIFICATION TAGS. REFER TO THE POWER ONE-LINE AND CONTROL ONE-LINE DIAGRAMS OR CONDUIT SCHEDULES FOR CONDUIT SIZES AND CONTENTS.
- C–CONTROL/INSTRUMENTATION
- P–POWER
- F–FIBER OPTIC/NETWORK
- SP–SPARE CONDUITS

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AI	ANALOG INPUT
AIC	AMPS INTERRUPTING CAPACITY
AO	ANALOG OUTPUT
AS	AIR SUPPLY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CL2	CHLORINE
CU	COPPER, BARE
CV	CONTROL VALVE
DCS	DISTRIBUTED CONTROL SYSTEM
DI	DISCRETE INPUT
DIA	DIAMETER
DO	DISCRETE OUTPUT
DP	DISTRIBUTION PANEL
DS	DISCONNECT SWITCH
DV/DT	DIFFERENTIAL VOLTAGE/TIME
DWG	DRAWING
ETM	ELAPSED TIME METER
EOL	ELECTRONIC OVERLOAD
FE	FLOW ELEMENT
FLA	FULL LOAD AMPS
FOC	FIBER OPTIC CABLE
FOR	FORWARD–OFF–REVERSE
FS	FLOW SWITCH
FVNR	FULL VOLTAGE NON–REVERSING
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GPM	GALLONS PER MINUTE
GRS	GALVANIZED RIGID STEEL
H2S	HYDROGEN SULFIDE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND–OFF–AUTO
HOR	HAND–OFF–REMOTE
HF	HARMONIC FILTER
I	CURRENT
IC	INSTRUMENTATION CABLE
IO	INPUT/OUTPUT
ISC	SHORT CIRCUIT CURRENT
J	JUNCTION BOX
LAN	LOCAL AREA NETWORK
LCP	LOCAL CONTROL PANEL
LOS	LOCK–OUT–STOP
LP	LIGHTING PANEL
LR	LOCAL/REMOTE
LS	LEVEL SWITCH
LTC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
M	MOTOR
MA	MANUAL/AUTO, MILLIAMP
MC	MANUFACTURER'S CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR(S)	MANUFACTURER(S)
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MOV	MOTOR OPERATED VALVE
MTU	MASTER TELEMETRY UNIT
NEC	NATIONAL ELECTRICAL CODE
NOTC	NORMALLY OPEN TIMED CLOSED
NPW	NON–POTABLE WATER
NTS	NOT TO SCALE
NTU	TURBIDITY
OIT	OPERATOR INTERFACE TERMINAL
OL	OVERLOAD
OO	ON/OFF (MAINTAINED)
OR	OFF–REMOTE
PB	PULL BOX
PC	PERSONAL COMPUTER
PFR	PHASE/POWER FAILURE RELAY
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PPM	PARTS PER MILLION
PR	PAIR
P	PRESSURE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PV	PROCESS VARIABLE
PVC	POLYVINYL CHLORIDE
RCP	REMOTE CONTROL PANEL
RF	RADIO FREQUENCY
RIO	REMOTE INPUT OUTPUT
RST	RESET
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TELEMETRY UNIT
RVSS	REDUCED VOLTAGE SOFT STARTER
SEQ	SERVICE ENTRANCE EQUIPMENT
SES	SERVICE ENTRANCE SECTION
SLOS	START–LOCK–OFF–STOP
SMC	SUBMERSIBLE MANUFACTURER CABLE
SO2	SULFUR DIOXIDE
SP	SET POINT/SPARE
SS	START/STOP
ST	SHUNT TRIP
TC	TELEPHONE CABLE
THWN	THERMOPLASTIC HEAT AND WATER RESISTANT NYLON COATED WIRE
TS	TEMPERATURE SWITCH
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UG	UNDERGROUND
V	VOLT
VA	VOLTAMP
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
ZS	POSITION SWITCH

REV	DESCRIPTION	TECH	ENG	DATE
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NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL LEGEND AND NOTES
SHEET: 11-14
REVISION: 3
FILE NAME:
DATE: JUNE 2015

MWH

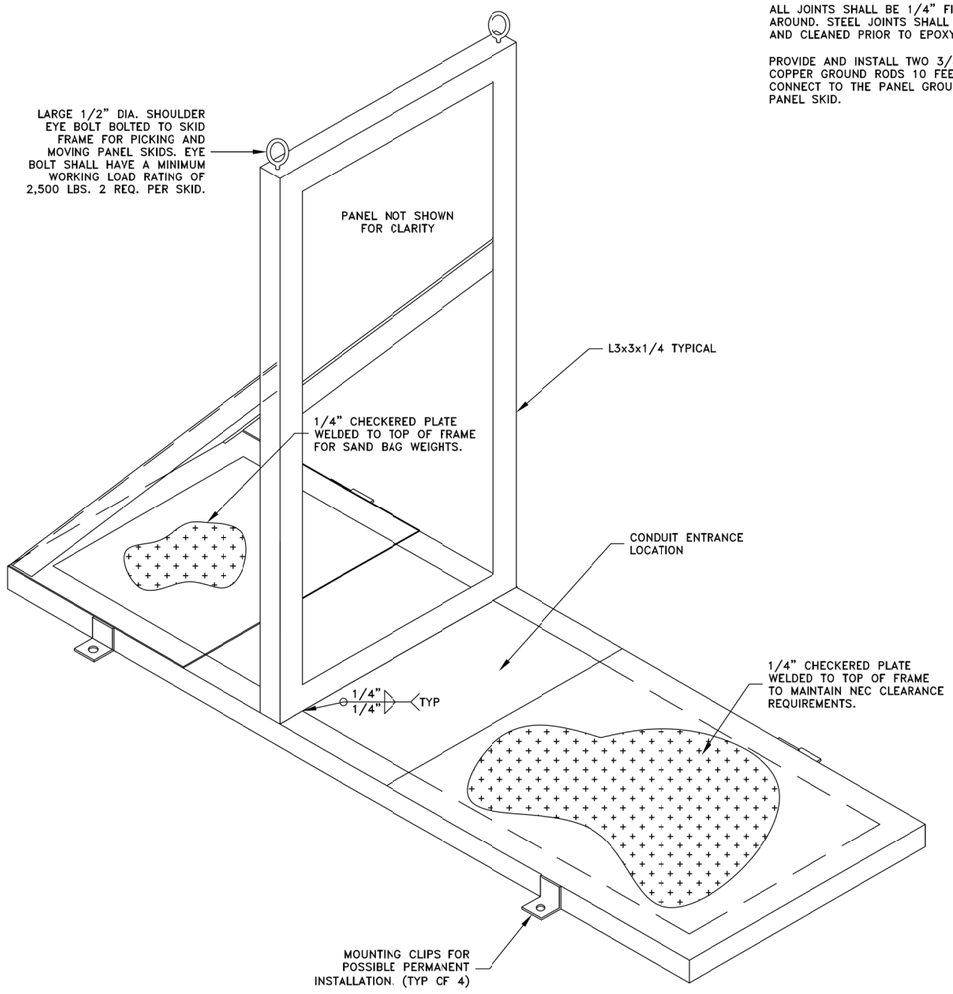
S:\Projects\Engineering\70\0728 MWH Midnite Mine (Collection)\Skt CAD Files\11-14 LEGEND AND NOTES

GENERAL NOTES:

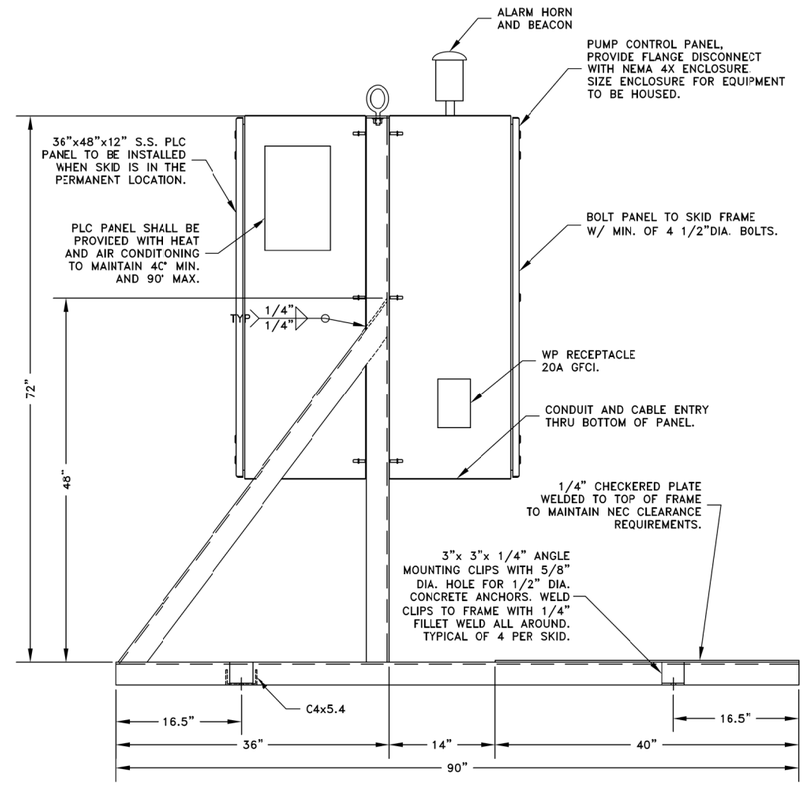
FABRICATE PANEL SKIDS FROM 3"x3"x1/4" ANGLE. MATERIAL SHALL BE STAINLESS STEEL OR EPOXY COATED STEEL.

ALL JOINTS SHALL BE 1/4" FILLET WELDED ALL AROUND. STEEL JOINTS SHALL BE SAND BLASTED AND CLEANED PRIOR TO EPOXY COATING.

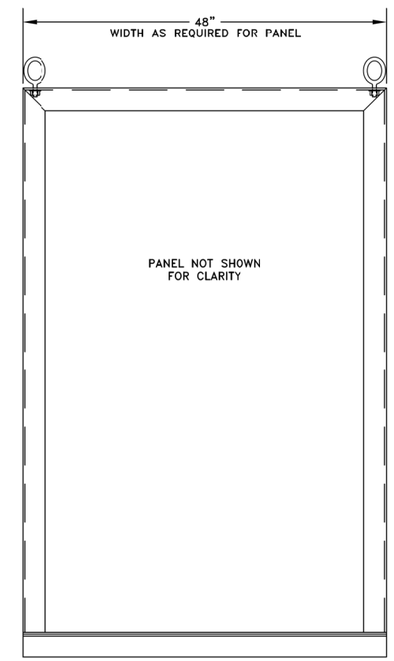
PROVIDE AND INSTALL TWO 3/4"DIA. x10'-0" COPPER GROUND RODS 10 FEET APART AND CONNECT TO THE PANEL GROUND FOR EACH PANEL SKID.



PANEL MOUNTING SKID ISOMETRIC VIEW



SIDE VIEW



FRONT VIEW

PANEL MOUNTING SKID SIDE VIEW

ISSUE REV	DESCRIPTION	TECH	ENG	DATE
3	ISSUED FOR 100% DESIGN	TR	RSP	06-15
2	ISSUED FOR 90% DESIGN	TR	RSP	07-14

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DRAWN BY	T ROUNDY	06-15
CHECKED BY	R PACK	06-15
APPROVED BY	S ARENS	06-15
PROJECT MANAGER	V DRAIN	06-15

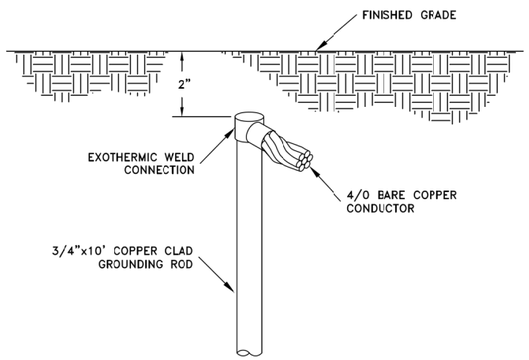
NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
PANEL MOUNTING SKID DETAILS 1

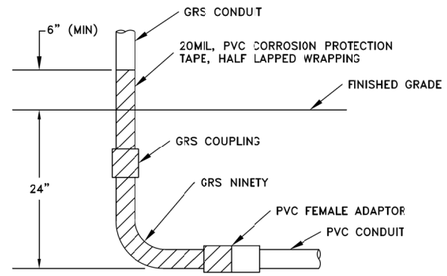
MWH

SHEET: 11-15
REVISION: 3
FILE NAME:
DATE: JUNE 2015

S:\Projects\Engineering\700\D728 MWH Midnite Mine (Collection)\SKM CAD Files\11-15 Panel Mounting Skid Detail



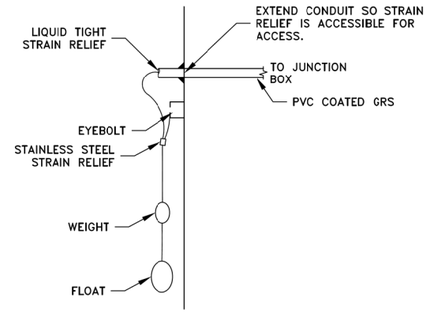
101 TYP **EXOTHERMIC GROUND ROD CONNECTION**
SCALE: NONE



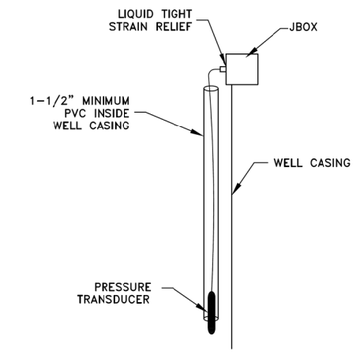
NOTES:

1. WHERE CONDUITS ARE INSTALLED IN A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.
2. IN CORROSIVE AREAS, PVC COATED GRS SHALL BE USED.

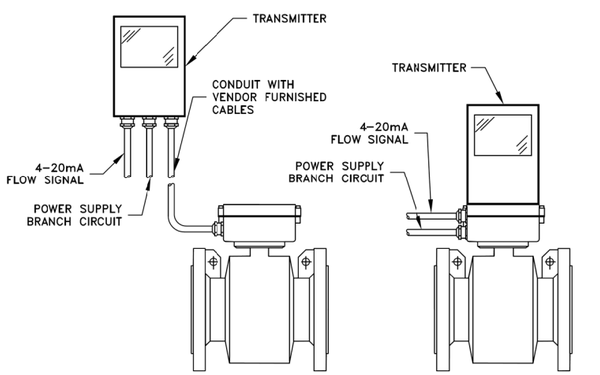
320 TYP **GRS STUB UP DETAIL**
SCALE: NONE



509 TYP **SUSPENDED FLOAT DETAIL**
SCALE: NONE



520 TYP **PRESSURE TRANSDUCER DETAIL**
SCALE: NONE



NOTES:

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

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

NOTE:
SEE SECTION 10 FOR LOCATIONS OF FLOATS AND TRANSDUCERS.

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PROJECT MANAGER	V DRAIN	06-15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
PANEL MOUNTING SKID DETAILS 2

MWH

SHEET: 11-16
REVISION: 3
FILE NAME:
DATE: JUNE 2015

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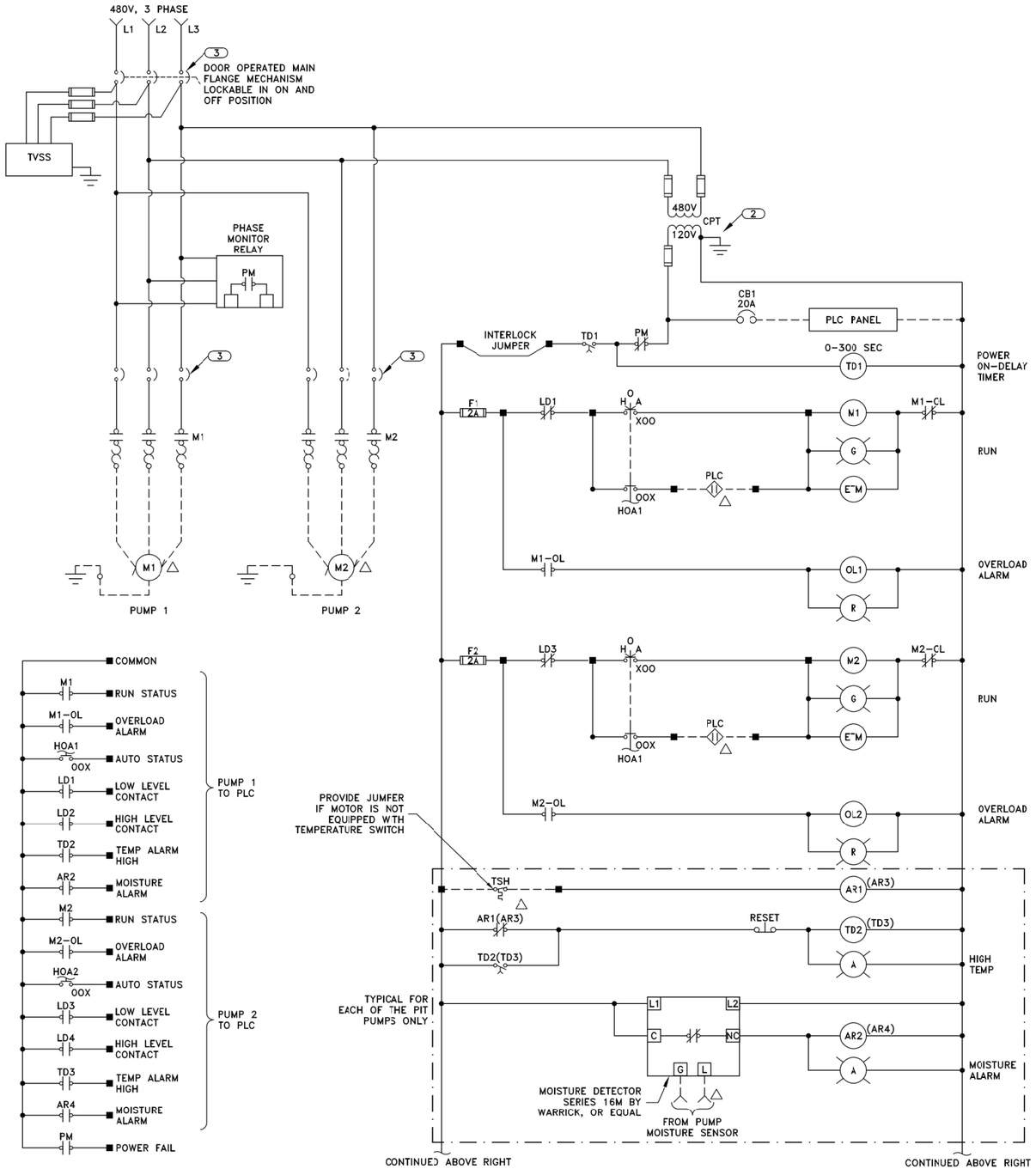

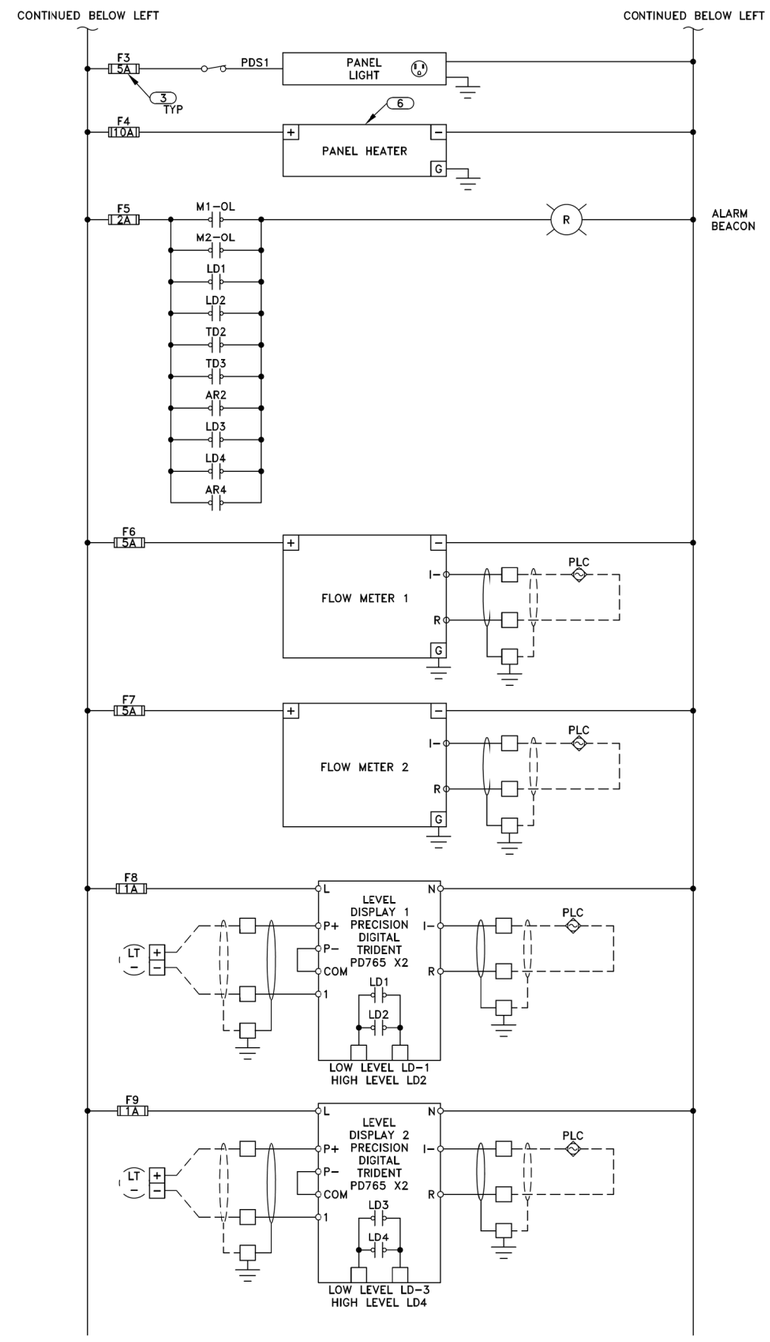

NOTES:

1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
2. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
3. FUSES AND OR BREAKERS SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
4. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.
5. ALL CONTROL SWITCHES AND DISPLAYS SHALL BE MOUNTED ON THE INNER DOOR OF THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.
6. SIZE PANEL HEATER TO MAINTAIN PANEL TEMPERATURE AT OR ABOVE 40°F.
7. SIZE PANEL AIR CONDITIONING TO MAINTAIN A PANEL TEMPERATURE AT OR BELOW 90°F.
8. CONTROL PANEL ENCLOSURE SHALL BE NEMA 4X S.S. W/ LOCKABLE HASP.
9. PHASE MONITOR RELAY SHALL MONITOR FOR PHASE LOSS, PHASE REVERSAL, OVER AND UNDER VOLTAGE.
10. SIGNALS AND INFORMATION WILL BE COMMUNICATED TO A CENTRALIZED PLC/SCADA SYSTEM AT THE NEW WATER TREATMENT PLANT. UNTIL THE WATER TREATMENT PLANT IS CONSTRUCTED, EACH PANEL WILL HAVE A BEACON AND ALARM HORN FOR COMMON ALARM.
11. PROVIDE RELAYS AS REQUIRED TO PROVIDE CONTACTS AS INDICATED

B TYP DUPLEX FVNR CONTROL SCHEMATIC

TYPICAL FOR: PIT 3 DEWATERING AND UNDERDRAIN PUMPS
PIT 4 DEWATERING AND UNDERDRAIN PUMPS
SOUTH POND WEST AND EAST PUMPS

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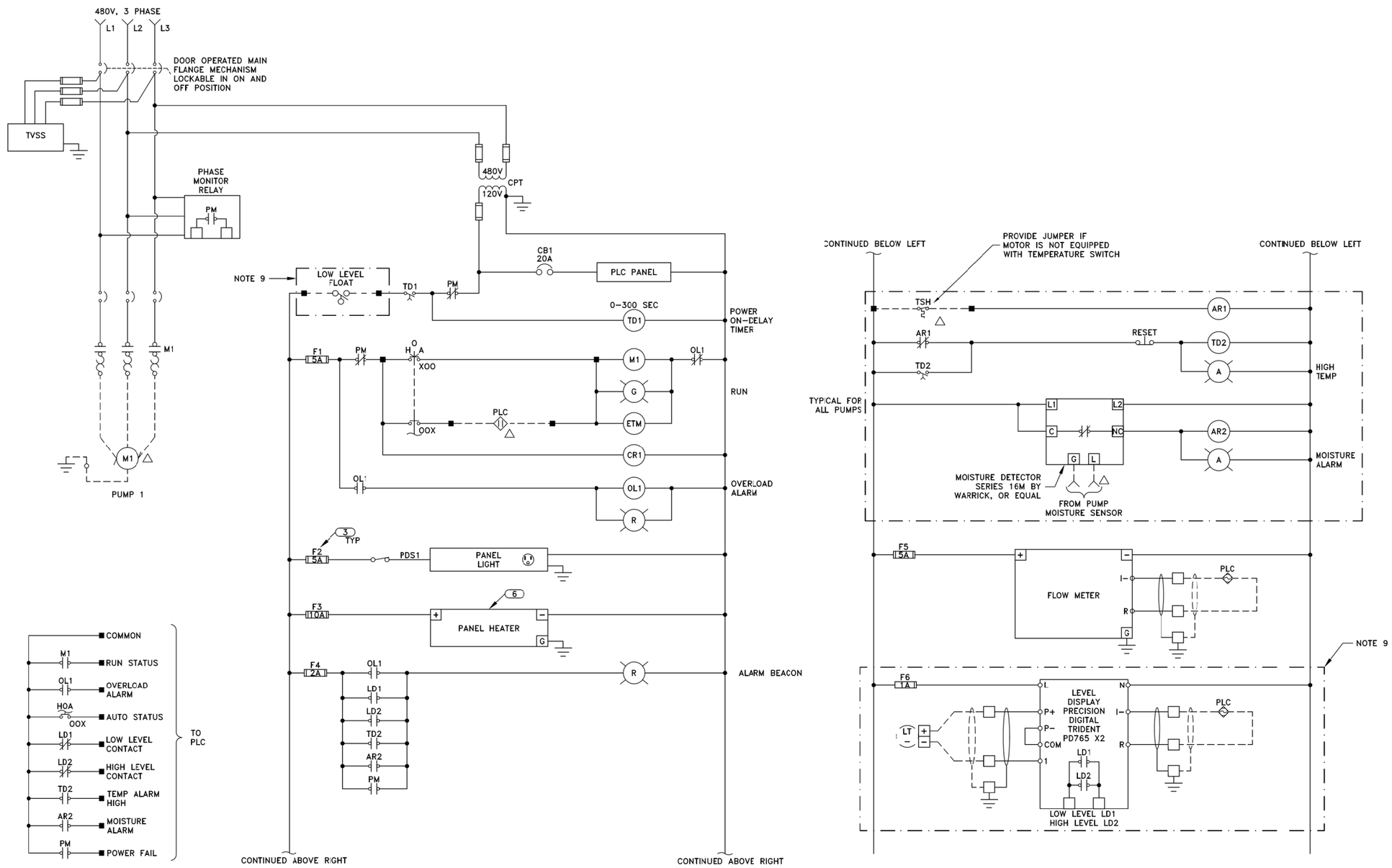
NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
DUPLEX FVNR CONTROL SCHEMATIC

MWH

SHEET 11-17 | REVISION 3
FILE NAME | DATE JUNE 2015

S:\Projects\Engineering\700\D728 MWH Midnite Mine (Collection)\SKM CAD Files\11-17 Duplex Simplex FVNR Motor Control Schematic



B TYP SIMPLEX FVNR CONTROL SCHEMATIC

TYPICAL FOR: CENTRAL DRAINAGE PUMP, WESTERN DRAINAGE PUMP
ALLUVIAL DRAINAGE SYSTEM WET WELL PUMP,
GW-54, SEEPAGE COLLECTION WET WELL PUMP,
FAR EAST DRAINAGE PUMP,

NOTES:

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6. SIZE PANEL HEATER TO MAINTAIN PANEL TEMPERATURE AT OR ABOVE 40°F.
7. CONTROL PANEL ENCLOSURE SHALL BE NEMA 4X S.S. W/ LOCKABLE HASP
8. PHASE MONITOR RELAY SHALL MONITOR FOR PHASE LOSS, PHASE REVERSAL, OVER AND UNDER VOLTAGE.
9. PUMP HAS EITHER A LOW LEVEL FLOAT OR LEVEL DISPLAY CONTACT. SEE P&ID'S

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PROJECT MANAGER	V DRAIN	06-15

NEWMONT

PROJECT LOCATION: WELLPINIT, WASHINGTON
PROJECT: MIDNITE MINE
TITLE: ELECTRICAL
SIMPLEX FVNR CONTROL SCHEMATIC

MWH

SHEET 11-18
REVISION 3
FILE NAME
DATE JUNE 2015

S:\Projects\Engineering\700\0728 MWH Midnite Mine (Collection)\SKM CAD Files\11-18 Simplex FVNR Motor Control Schematic