

PennWest

Exploration

MCC PACKAGE

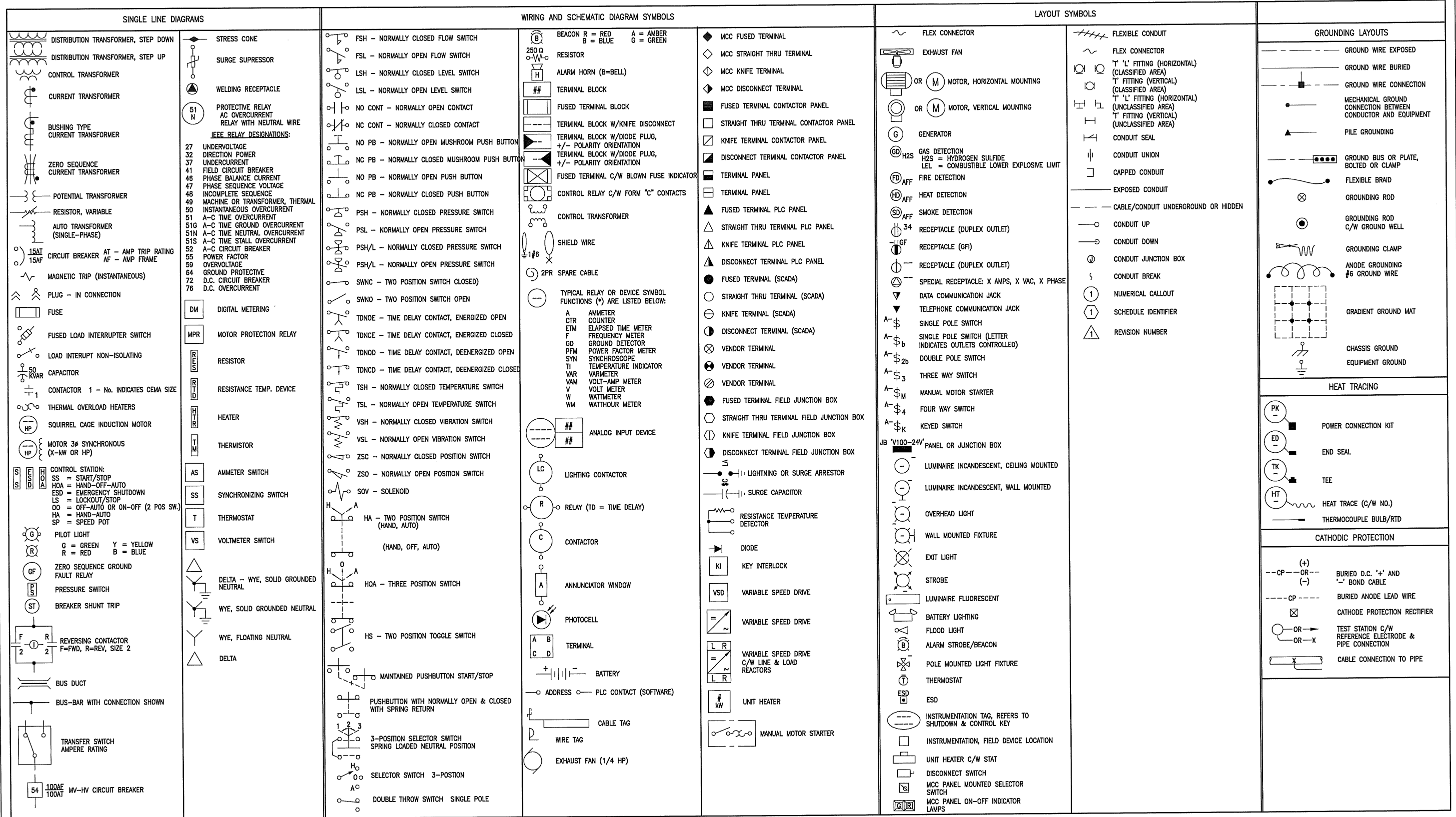
LSD: VARIOUS

STANDARD SATELLITE WELLPAD MCC DESIGN

TYPICAL ELECTRICAL

AFE#: VARIOUS

JUNE 18, 2012



DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

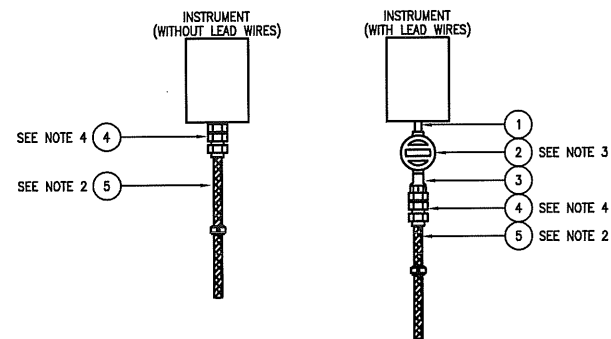
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SCALE: N.T.S. SIZE: D
EPCM PROJECT#: VARIOUS

PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ELECTRICAL SYMBOLS LEGEND

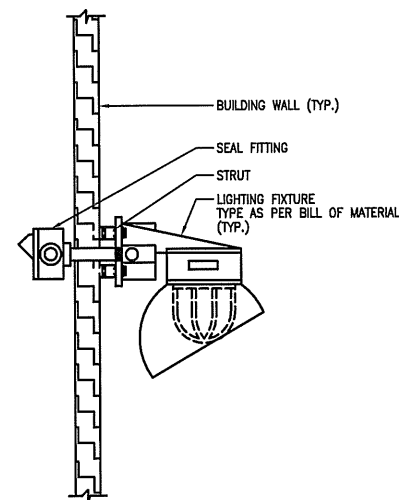
DWG# TYPICAL-ELC-0002 SHT 1 OF 1 REV 0



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	1/2" NIPPLE	
2	1	1/2" CONDUIT FITTING C/W 2 TERMINAL	C-H GUA SERIES
3	1	REDUCER (IF REQUIRED)	C-H RE21
4	1	TECK CONNECTOR	
5	1	TECK CABLE	

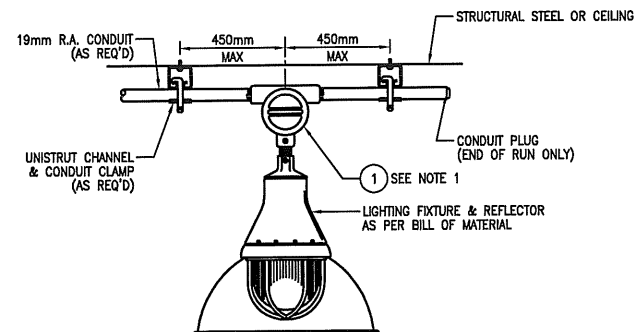
- NOTES:**
- CONDUIT FITTING ZONE 1 - EXPLOSION PROOF
ZONE 2 - VAPOUR TIGHT
 - RUN TECK CABLE IN 100mm WIDE ALUMINUM CHANNEL
 - OUTLET BOX AND NIPPLE SHALL BE USED WHEN INSTRUMENT IS SUPPLIED WITH POTTED LEADS (EXAMPLE SOLENOID).
 - EXPLOSION PROOF TECK CONNECTORS SHALL BE USED FOR CLASS 1 ZONE 1 AND FOR SPARKING DEVICES IN ZONE 2 AREAS. WATERTIGHT TECK CONNECTORS SHALL BE USED FOR NON SPARKING DEVICES IN ZONE 2 AREAS AND FOR UNCLASSIFIED AREAS.

INSTRUMENT HOOK-UP WITH TECK CABLE (01) N.T.S.



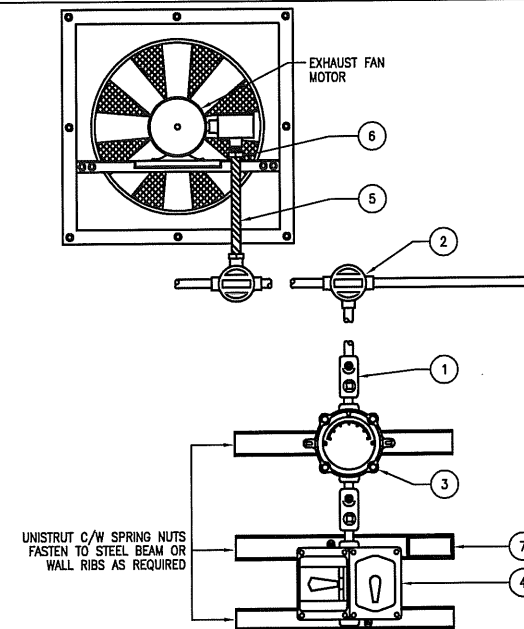
- NOTES:**
- CONDUIT FITTINGS: CLASS 1 ZONE 1 - EXPLOSION PROOF

OUTDOOR WALL MOUNTED FIXTURE INSTALLATION (02) N.T.S.



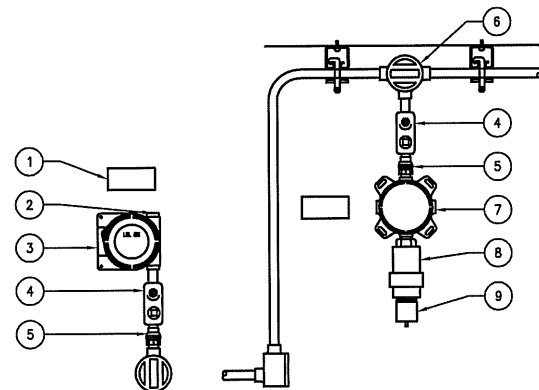
- NOTES:**
- TEE FITTINGS TO BE SIZED TO ACCOMMODATE NUMBER OF WIRES AS PER C.E.C. 12-3038.

PENDANT MOUNTED LIGHTING FIXTURE (03) N.T.S.



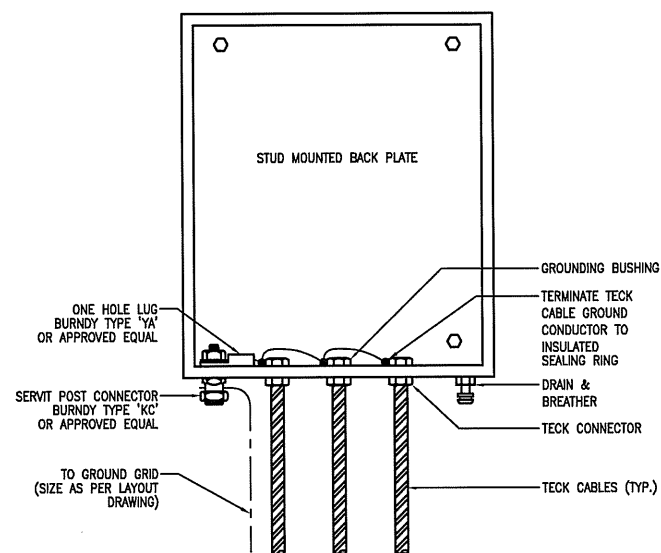
ITEM	QTY.	DESCRIPTION	REMARKS
1	1	SEAL	C-H EYS216
2	AS REQ'D	CONDUIT FITTING	AS PER AREA CLASS
3	1	THERMOSTAT	AS PER PLAN DWG.
4	AS REQ'D	MANUAL MOTOR STARTER & HAND-AUTO CONTROL STATION	DSD910, EDSC272 DSD SR 30221
5	AS REQ'D	FLEXIBLE CONDUIT- AS REQUIRED	C-H ECLK SERIES
6	AS REQ'D	UNION	C-H UNY205
7	AS REQ'D	LAMACOID NAMEPLATE ON STRUT COVER	~

EXHAUST FAN CONNECTION (04) CLASS 1 ZONE 1

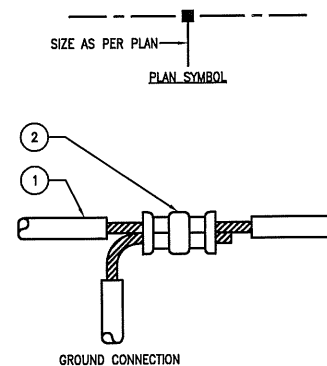


ITEM	QTY.	DESCRIPTION	REMARKS
1	AS REQ'D	LAMACOID NAMEPLATE	~
2	AS REQ'D	CONDUIT PLUG	PLG2
3	1	TRANSMITTER	SEE B.O.M.
4	AS REQ'D	SEAL	EYS216
5	AS REQ'D	UNION	UNY205
6	AS REQ'D	CONDUIT FITTING	GUAT-26
7	1	SENSOR SEPARATION KIT	SEE B.O.M.
8	1	SENSOR	SEE B.O.M.
9	1	CALIBRATION CUP	SEE B.O.M.

GAS DETECTION TRANSMITTER AND REMOTE SENSOR (05) CLASS 1 ZONE 1



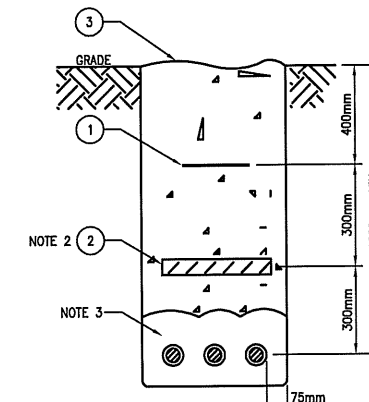
INTERNAL ENCLOSURE GROUNDING (06) N.T.S.



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	GREEN TWH INSULATION AS PER LAYOUT DRAWINGS	
2	1	COMPRESSION TYPE CONNECTION, CABLE TO CABLE, C-TAP.	T&B 54760 OR EQUAL

- NOTES:**
- CONNECTION SHALL BE SPRAYED WITH GLYPTAL AND WRAPPED WITH TWO LAYERS OF RUBBER TAPE AND TWO LAYERS OF SCOTCH BB TAPE.

GROUND TAP CONNECTION (07) N.T.S.



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	UNDERGROUND CABLE WARNING TAPE	
2	1	TREATED 50mm PLANK OR 50mm RED CONCRETE	
3	1	BACKFILL	

- NOTES:**
- PLACING SAND IN TRENCH. TRENCH IS TO BE CLEARED OF ALL ROCKS & DIRT CLODS BEFORE
 - IN SUBSTATION RED CONCRETE OR TREATED PLANKING IS NOT REQUIRED.
 - ALLOW 100mm OF SAND ABOVE AND BELOW CABLES.

ON-SITE CABLE TRENCH DETAIL (08) N.T.S.

DRAWING#	REFERENCE DRAWING TITLE

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ENGINEER STAMP

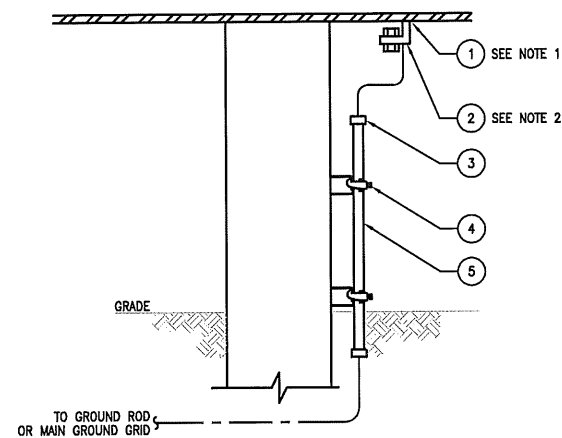
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SCALE	N.T.S.	SIZE	D
EPCM PROJECT#:	VARIOUS		

PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
STANDARD ELECTRICAL DETAILS

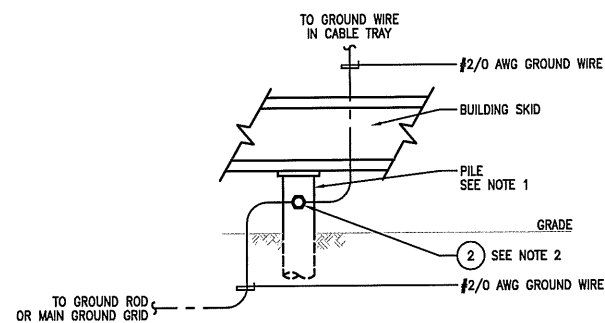
DWG# TYPICAL-ELC-0003 SHT 1 OF 1 REV 0



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	6mm x 25mm FLAT STEEL BAR	
2	2	INSULATING BUSHING (SLEEVE BONDED TO GROUND CONDUCTOR)	
3	AS REQ'D	BUSHING	
4	AS REQ'D	CONDUIT STRAP - ONE HOLE	T&B OR EQUAL
5	AS REQ'D	19mm RIGID PVC OR ALUMINUM CONDUIT	

- NOTES:**
- USE 6mm DIAMETER x 40mm LG. SILICON BRONZE C/W NUT & LOCK WASHER TO ATTACH BURNDY GROUNDING CONNECTOR (TYPE KC IF GROUND WIRE ENDS, OR TYPE GZ IF GROUND WIRE LOOPS).
 - WELD 6mm x 25mm FLAT STEEL BAR TO VESSEL SKIRT OR SADDLE. (DO NOT WELD DIRECTLY TO VESSEL)

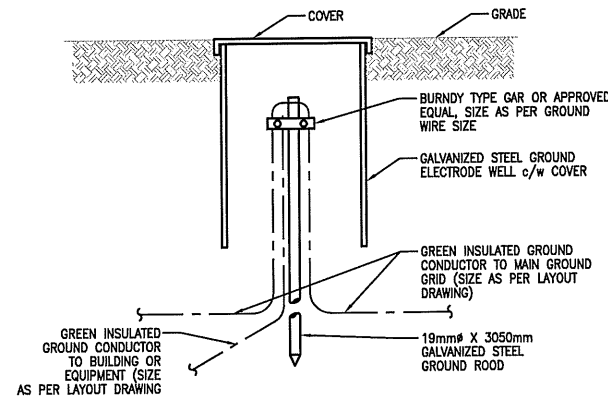
TANK OR VESSEL GROUND (09) N.T.S.



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	CABLE TO PILE GROUND CONNECTOR	T&B SP-6SS OR BURNDY KC26

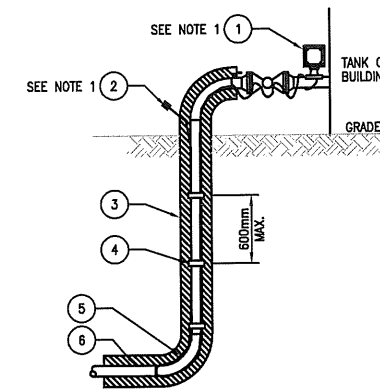
- NOTES:**
- WHEN BUILDINGS ARE PLACED ON STEEL PILES, USE PILES INSTEAD OF GROUND RODS.
 - DRILL AND TAP PILE AND ATTACH GROUND CONNECTOR.

BUILDING PILE GROUND (10) N.T.S.



- NOTES:**
- BARE COPPER CONNECTIONS SHALL BE COATED WITH GLYPHTAL.
 - LOCATE ROD OFF CENTRE TO FACILITATE WORKING SPACE.

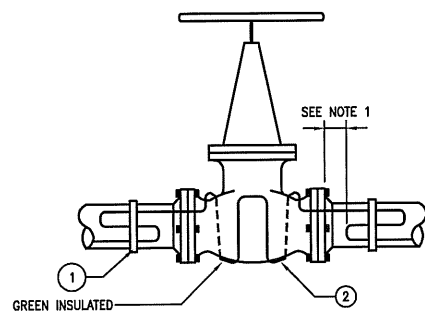
GROUND ROD WELL (11) N.T.S.



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	POWER CONNECTION KIT	
2	1	END TERMINATION KIT	
3	1	THERMAL INSULATION	
4	1	GLASS TAPE (TYP.)	
5	1	HEATING CABLE	
6	1	STEEL PIPE	

- NOTES:**
- POWER CONNECTION KIT & THE END TERMINATION KIT MUST BE INSTALLED ABOVE GRADE.

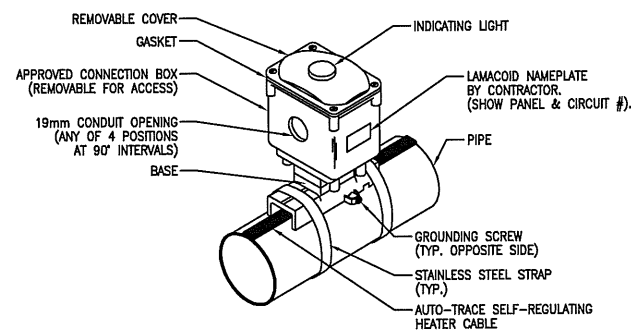
CLASS 1 DIV. 2 AREAS HEAT TRACING HOOK-UP (12) N.T.S.



ITEM	QTY.	DESCRIPTION	REMARKS
1	AS REQ'D	GLASS TAPE (TYP.)	
2	AS REQ'D	SELF-REGULATING HEAT TRACING CABLE	

- NOTES:**
- ALLOW A SUFFICIENT SET-BACK TO INSURE TRACER WILL NOT BE DAMAGED WHEN VALVE IS UNBOLTED.
 - HEAT TRACE CABLE ALLOWANCES FOR VALVES SHALL BE AS PER HEAT TRACE MANUFACTURER'S RECOMMENDATIONS FOR THE DIFFERENT VALVE SIZES.

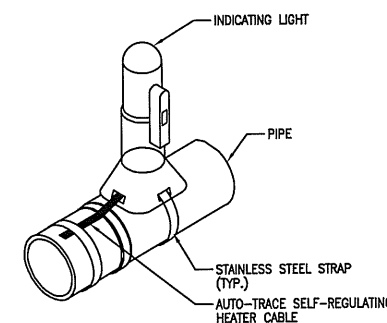
SELF-REGULATING HEATING CABLE(S) AT VALVES (13) N.T.S.



AUTO-TRACE HEATER CABLE CLASS 1, DIV.1 LIGHTED POWER/SPUCE KIT

- NOTES:**
- THE DETAIL ABOVE SHOWS GENERAL INSTALLATION METHOD. CONNECTION MAY BE POSITIONED AT ANY ANGLE AROUND THE PIPE.
 - H~2S ENVIRONMENT, FITTINGS TO BE NEMA 4X RATED.

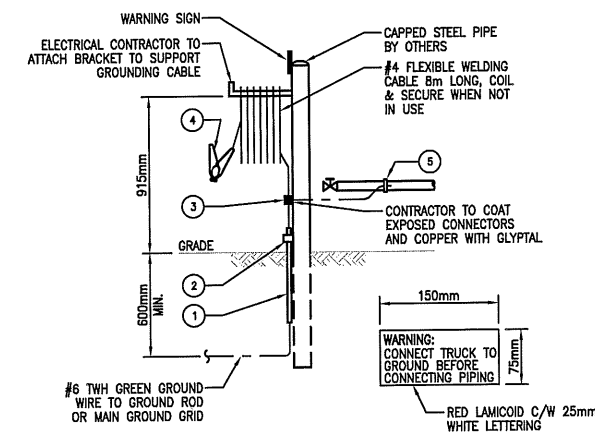
POWER CONNECTION KIT C/W INDICATING LIGHT FOR SELF-LIMITING HEATING CABLE (14) N.T.S.



AUTO-TRACE HEATER CABLE CLASS 1, DIV.1 LIGHTED END SEAL KIT

- NOTES:**
- END SEAL IS TO BE INSTALLED ON TOP OF PIPE. HEATING CABLE SHOULD BE ROTATED TO BOTTOM QUADRANT. SEE DETAIL HEAT TRACING INSTALLATION ON STRAIGHT PIPE.
 - H~2S ENVIRONMENT, FITTINGS TO BE NEMA 4X RATED.

END SEAL KIT C/W INDICATING LIGHT FOR SELF-LIMITING HEATING CABLE (15) N.T.S.



ITEM	QTY.	DESCRIPTION	REMARKS
1	1	GROUND STUB-UP PROTECTION	19mm PVC CONDUIT
2	1	ONE HOLE STRAP	T&B OR EQUAL
3	1	SERVIT POST	BURNDY K2C 26 OR EQUAL
4	1	GROUNDING CLAMP	LIND EQUIP. GAT-P OR EQUAL
5	1	GROUND CONNECTOR TO FIT PIPE SIZE	BURNDY GAR OR EQUAL

- NOTES:**
- CONTRACTOR TO SUPPLY & INSTALL WARNING SIGN.

TRUCK GROUNDING INSTALLATION (16) N.T.S.

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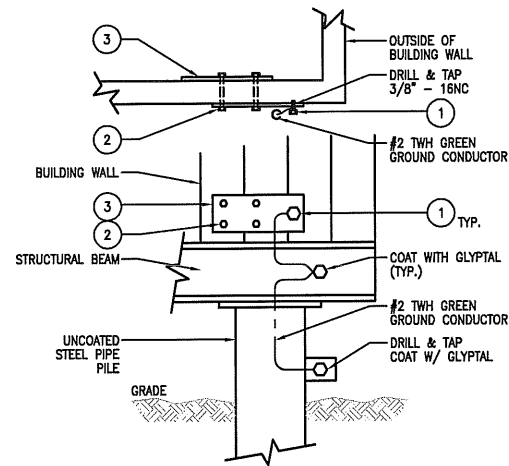
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EPCM PROJECT#:	VARIOUS		

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MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
STANDARD ELECTRICAL DETAILS

SCALE: N.T.S. SIZE: D
EPCM PROJECT#: VARIOUS
DWG# TYPICAL-ELC-0004 SHT 1 OF 1 REV 0



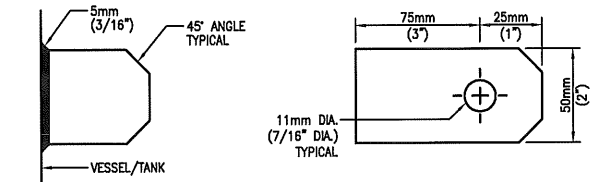
ITEM	QTY.	DESCRIPTION	REMARKS
1	2	SERVIT POST	BURNDY KC23 OR EQUAL
2	4	ALUMINUM HEX BOLT C/W NUT & WASHERS	9.5mm LENGTH TO SUIT
3	2	300 x 75 x 6mm ALUMINUM PLATE	

NOTES:

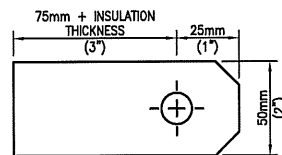
- BOTH GROUND BARS TO BE ALUMINUM AND SECURELY BOLTED TOGETHER THROUGH THE WALL. WIRE BRUSH WALL SURFACE AND BARS TO BARE METAL AND APPLY PENETROX "A" ON PLATE SURFACE TO ENSURE GOOD CONTACT BETWEEN GROUND BARS AND WALL.

FRAMELESS BUILDING GROUNDING
CLASSIFIED BUILDINGS

17



TYPICAL WELDING OF TAB
TAB "A"
(FOR TANKS AND STEEL COLUMNS)



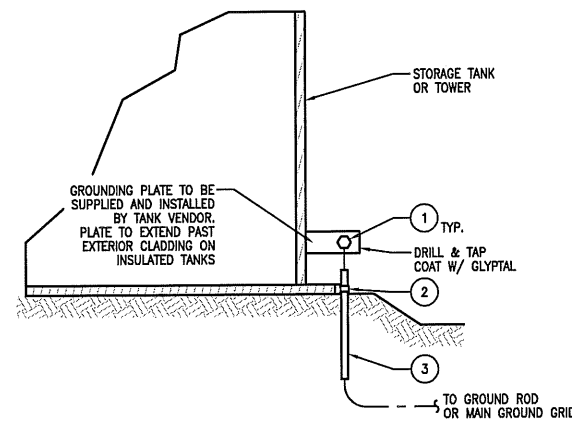
TAB "B"
(FOR INSULATED TANKS AND STEEL COLUMNS)

NOTES:

- ALL TABS - 10mm MILD STEEL - WELDABLE QUALITY.
- REMOVE BURR ON ALL EDGES, ROUND ALL CORNERS.

TYPICAL GROUNDING TABS
N.T.S.

18



ITEM	QTY.	DESCRIPTION	REMARKS
1	2	SERVIT POST	BURNDY KC23 OR EQUAL
2	AS REQ'D	CONDUIT STRAP - ONE HOLE	T&B OR EQUAL
3	AS REQ'D	19mm RIGID PVC CONDUIT	

NOTES:

- CONDUIT STUB-UP SHALL HAVE A MINIMUM HEIGHT OF 150mm ABOVE FINISHED GRADE.

STORAGE TANK/TOWER
N.T.S.

19

EHT CABLE ALLOWANCES

EQUIPMENT	PIPE SIZE	CABLE ALLOWANCE
BUTTERFLY VALVE	3"	915mm
	4"	915mm
CHECK VALVE	3"	1220mm
	4"	1220mm
	6"	1525mm
FLANGE	3"	915mm
	4"	915mm
	6"	1220mm
PIPE SUPPORT SHOE	3"	1830mm
	4"	1830mm
	6"	1830mm

EHT CABLE ALLOWANCES
N.T.S.

20

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STANDARD SATELLITE WELLPAD MCC DESIGN
STANDARD ELECTRICAL DETAILS

DWG# TYPICAL-ELC-0005 SHT 1 OF 1 REV 0

ELECTRICAL CONSTRUCTION NOTES

1.0 CODES STANDARDS DOCUMENTS

- 1.1 THE WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL AND PROVINCIAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
 PROVINCIAL BUILDING CODE
 NATIONAL BUILDING CODE
 CANADIAN ELECTRICAL CODE, LATEST EDITION
 ALBERTA OCCUPATIONAL HEALTH AND SAFETY REGULATIONS
 CODE FOR ELECTRICAL INSTALLATIONS AT OIL AND GAS FACILITIES, 2006.

 IN CASE A DISCREPANCY ARISES OR EXISTS BETWEEN CODES, STANDARDS AND DRAWINGS, THE MOST SEVERE SHALL GOVERN.
- 1.2 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ELECTRICAL PERMITS TO COMPLETE THE WORK AND SHALL PAY FEES FOR SUCH PERMITS. CONTRACTOR'S PERMIT SHALL COVER I.S. OR NON-INCENDIVE WIRING BETWEEN CONTROL PANEL AND END DEVICES. CONTROL PANEL CSA ONLY COVERS THE CONTROL PANEL INTERIOR WIRING.
- 1.3 THE CONTRACTOR SHALL PROVIDE A COPY OF THE PERMIT AND FINAL APPROVAL CERTIFICATE AT COMPLETION OF WORK.
- 1.4 THE CONTRACTOR SHALL AFFIX A BUILDING NAMEPLATE INSIDE THE MAIN DOOR OF RELOCATABLE SKID BUILDINGS HE WIRES, OUTLINING THE ELECTRICAL RATINGS: HIS PERMIT #, NAME, ADDRESS, AND ALLOW SPACE FOR THE ACCREDITED AGENCY APPROVAL STICKER.

2.0 GENERAL

- 2.1 THE WORK SHALL CONSIST OF ALL ELECTRICAL REQUIREMENTS PER THE ATTACHED DRAWINGS AND SCOPE OF WORK.
- 2.2 THE WORK SHALL INCLUDE ALL LABOR, CONSTRUCTION EQUIPMENT, SUPERVISION, CONSUMABLES, TOOLS AND MISCELLANEOUS MATERIALS, ETC.
- 2.3 THE CONTRACTOR SHALL ENSURE GOOD LIAISON WITH ALL SUPPLIERS OF PACKAGED EQUIPMENT (VENDORS) AND SHALL COORDINATE ALL WORK WITH THE VENDOR AND OTHER CONTRACTORS AT THE WORKSITE.
- 2.4 THE DRAWINGS ARE INTENDED TO SHOW GENERAL DETAILS OF THE WORK. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO EXAMINE THE DRAWINGS BEFORE BEGINNING THE WORK AND REPORT ANY DISCREPANCIES AND INTERFERENCE'S WHICH MAY OCCUR TO THE COMPANY. THE ENTIRE SET OF DRAWINGS SHALL BE UTILIZED TO DETERMINE THE COMPLETE SCOPE OF WORK. THE CABLE SCHEDULE DOES NOT IDENTIFY ALL CABLES REQUIRED, AND THE CONTRACTOR SHALL PROVIDE ALL CABLES REQUIRED TO MAKE THE FINAL INSTALLATION ELECTRICALLY COMPLETE AND FUNCTIONALLY OPERABLE.
- 2.5 THE DRAWINGS ARE TO BE CONSIDERED FOR GUIDANCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE OVERALL DIMENSIONAL CORRECTNESS OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CHECK THE OVERALL DIMENSIONAL CORRECTNESS OF ALL EQUIPMENT AS IT RELATES TO PIPING, CIVIL, ELECTRICAL AND INSTRUMENT COMPONENTS.
- 2.6 THE CONTRACTOR SHALL REQUEST WRITTEN CONFIRMATION OF CHANGES PRIOR TO COMMENCING ANY WORK.
- 2.7 DEMOBILIZATION DRAWINGS ARE SHOWN AS "ELC-XXXX_DEMO". THESE WILL BE DELETED AFTER THE DEMOBILIZATION WORK IS COMPLETE.

3.0 CONSTRUCTION AND INSTALLATION

- 3.1 THE WORK SHALL INCLUDE SUPPLY AND INSTALLATION OF THE FOLLOWING EXCEPT WHERE OTHERWISE INDICATED: SEE BILL OF MATERIAL AND LAYOUT DRAWINGS FOR QUANTITIES AND CATALOG NUMBERS.
 - 3.1.1 EXTERIOR NEMA 4 FIBERGLASS ENCLOSURES C/W BREATHER, DRAIN, TERMINALS, NAMEPLATES, ETC.
 - 3.1.2 INTERIOR INCANDESCENT LIGHTING ABOVE MANDOORS WHEN SPECIFIED (GENERAL PURPOSE AREAS ONLY).
 - 3.1.3 INTERIOR METAL HALIDE LIGHTING C/W INTEGRAL BALLASTS.
 - 3.1.4 EXTERIOR HIGH PRESSURE SODIUM LIGHTING ABOVE MANDOORS, BUT NOT WITHIN THE CANOPY.
 - 3.1.5 RECEPTACLES.
 - 3.1.6 EXTERIOR EMERGENCY PUSHBUTTON STATIONS AT MANDOORS.
 - 3.1.7 ALL JUNCTION BOXES AS SHOWN ON DRAWINGS.
 - 3.1.8 MANUAL MOTOR STARTER, THERMOSTAT, AND CONTROL SWITCHES FOR SINGLE PHASE EXHAUST FANS.
 - 3.1.9 GROUNDING OF ALL MOTORS, PANELS, AND VESSELS TO SKID.
 - 3.1.10 THERMOSTATS AND CONTROL SWITCHES FOR UNIT HEATERS.
 - 3.1.11 SUPPLY AND INSTALL ALL WIRE/CABLE TO CONNECT ALL INSTRUMENTS TO JUNCTION BOXES.
 - 3.1.12 CONDUIT TO BE RIGID ALUMINUM, 21mm MINIMUM SIZE. EMT IS ALLOWED IN GENERAL PURPOSE BUILDINGS.

- 3.2 CONDUITS TO BE GROUPED ON RACKS WHERE POSSIBLE.
- 3.3 CONDUIT SUPPORTS TO BE 1 METER FROM ENCLOSURES, 1.5 METERS APART AND WITHIN 300mm OF FLEXIBLE CONDUITS.
- 3.4 XP FLEXIBLE CONDUITS TO BE COVERED WITH GYPTAL AND HEAT SHRINK OR THREE LAYERS OF ELECTRICAL TAPE. RELOCATE FACTORY NAME TAG TO CONDUIT EXTERIOR, ABOVE FINAL COVERING.
- 3.5 PACKING AND POURING OF ALL SEALS TO BE COMPLETED AT SITE AFTER RECEIPT OF APPROVAL. TECK CONNECTORS TO BE POURED AFTER SATISFACTORY MEGGAR TESTS RESULTS.
- 3.6 BOXES MOUNTED ON BUILDING WALLS TO HAVE ALUMINUM PLATES OR UNISTRUT INSTALLED BEHIND TO PROVIDE ADEQUATE MOUNTING STRENGTH. PLATES TO BE AFFIXED TO STUDS OR BE LONG ENOUGH TO SPAN TWO STUDS.
- 3.7 BOXES TO BE LOCATED ON PERIMETER WALLS, UNLESS OTHERWISE LOCATED.
- 3.8 ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A WHITE CORROSION RESISTANT LAMACOID NAMEPLATE, AFFIXED VIA STAINLESS STEEL SCREWS, RIVETS OR SILICONE.
- 3.9 ALL WIRING TO BE IDENTIFIED AT ALL TERMINALS, SPLICES OR JOINTS WITH PERMANENT, LEGIBLE, TYPE-WRITTEN HEAT SHRINK WIRE MARKERS.
- 3.10 CLEAN UP OF DEBRIS SHALL BE A DAILY ACTIVITY.
- 3.11 EMPTY CONDUITS TO BE CAPPED OFF AND IDENTIFIED.
- 3.12 SILICONE SEAL AROUND ALL CONDUITS PENETRATING THE BUILDING EXTERIOR.
- 3.13 GLYPTAL TO BE APPLIED TO ALL EXPOSED COPPER GROUND CONNECTIONS.
- 3.14 THREE PHASE POWER WIRE TO BE SIZED #10 AWG MIN. AS COLORED AS:
 PHASE A RED
 PHASE B BLACK
 PHASE C BLUE
 NEUTRAL WHITE
 GROUND GREEN
- 3.15 AC CONTROL CIRCUITS SHALL BE BLACK, SIZED #12 AWG. MINIMUM.
- 3.16 DC CURRENT CONDUCTORS SHALL BE WHITE (POSITIVE) AND BLACK (NEGATIVE).
- 3.17 INSTRUMENT WIRING (DISCRETES) SHALL BE #16 AWG. MINIMUM RW 90.
- 3.18 SOLENOIDS SHALL BE WIRED WHITE (POSITIVE) AND BLACK (NEGATIVE).
- 3.19 ANALOG PAIR WIRING TO BE 4-20mA 24 VDC, #16 AWG. INDIVIDUALLY SHIELDED. WIRES TO BE WHITE (POSITIVE) AND BLACK (NEGATIVE). ANALOG TRIADS TO BE #16 AWG. INDIVIDUALLY SHIELDED COLOR PER DWGS. SEALED ANALOG CABLES TO HAVE HEAT SHRINK INSTALLED OVER SHIELD CONDUCTOR, TO LOCATION PAST SEAL. CABLE OUTER JACKET TO BE COVERED WITH HEAT SHRINK. WIRES THROUGH SEALS TO BE CAPABLE OF BEING SEPARATED FROM SEAL PACKING. MULTIPLE ANALOG CABLE RUNS WITHIN THE SAME CONDUIT DO NOT REQUIRE REMOVAL OF OUTER JACKETS AT BUILDING AREA CLASSIFICATION CHANGE SEAL FITTING, IF CABLE JACKET REMAINS UNPIERCED.
- 3.20 DEVICE MOUNTING HEIGHTS (Q TO FLOOR LEVEL) ARE:
 SWITCHES 1219mm
 RECEPTACLES (PROCESS AREAS) 914mm
 RECEPTACLES (ADMIN/FINISHED AREAS) 300mm OR 200mm ABOVE BASEBOARD HEATERS
 MOTOR STARTERS 1426mm
 THERMOSTATS 1676mm
 HEATERS 2300mm
- 3.21 INTRINSICALLY SAFE AND NON-INCENDIVE WIRING MAY UTILIZE LIQUID TIGHT FLEX AND NON-EXPLOSION PROOF CONDUIT FITTINGS.
- 3.22 INSTALL #14 AWG RW90 FT4 GREEN COPPER BONDING CONDUCTOR WITHIN THE FLEXIBLE CONDUITS. THERE SHALL BE NO SPLICING OF BONDING CONDUCTORS WITHIN LB'S OR TEE FITTINGS. THERE SHALL BE NO SPLICING OF DEVICE/INSTRUMENT CONDUCTORS WITHIN LB'S OR TEE FITTINGS. USE OUTLET BODIES WITH BONDING SCREWS AND SUFFICIENT VOLUME TO ACCOMMODATE WIRING & SPLICES. CONTRACTOR TO MAINTAIN SEPARATION BETWEEN DISCRETE, ANALOG, RTD AND THERMOCOUPLE WIRING TO ENSURE TOTAL ENERGY WILL NOT SURPASS SAFETY LIMITATIONS.
- 3.23 SPADE AND RING LUGS TO BE UTILIZED WHERE SCREW TERMINALS ARE AVAILABLE. WIRE CONNECTORS TO BE UTILIZED ON SPLICES ONLY.
- 3.24 ALL LIGHTS AND DEVICES TO BE MOUNTED FOR FINAL INSPECTION PURPOSES. UPON ACCEPTANCE, LIGHTS TO BE REMOVED AND REPACKAGED IN THEIR ORIGINAL CONTAINERS TO AVOID DAMAGE IN TRANSPORT.
- 3.25 MOTOR STARTERS TO BE COMPLETE WITH PROPERLY SIZED OVERLOAD HEATERS, SIZED PER MOTOR FULL LOAD AMPACITY AND SERVICE FACTOR. THERMALLY PROTECTED MOTORS DO NOT REQUIRE MANUAL STARTERS.
- 3.26 CONTRACTOR TO COMPLETE INSTALLATION OF SHIP LOOSE ITEMS.

- 3.27 INSTALL #2 AWG RW90 FT4 GREEN COPPER GROUND CONDUCTORS FROM EQUIPMENT FRAMES TO SKID GROUND LUGS. INSTALL #6 AWG RW90 FT4 GREEN COPPER GROUND CONDUCTORS FROM JUNCTION BOXES TO SKID FRAME OR LEAVE 2 METER TAIL FOR FIELD CONNECTION.
- 3.28 CONDUIT SYSTEMS SHALL BE CLEANED OUT PRIOR TO WIRE INSTALLATION.
- 3.29 CARE SHALL BE TAKEN IN PULLING CONDUCTORS TO PREVENT DAMAGE TO THE INSULATION. DAMAGED CONDUCTORS SHALL BE REPLACED AT ELECTRICAL CONTRACTORS COST. WIRE PULLS IN CONDUITS SHALL NOT BE DONE IN AMBIENT TEMPERATURES BELOW 0° CELSIUS.
- 3.30 APPROVED WIRE PULLING COMPOUND MAY BE USED DURING CONDUCTOR PULLING. ALL EXCESS COMPOUND SHALL BE REMOVED FROM WIRE UPON COMPLETION OF WIRE PULLING.
- 3.31 SHIELDS OF INSTRUMENT CABLES SHALL BE GROUNDED ONLY AT ONE END (TYPICALLY THE SUPPLY END). THE FIELD END OF THE SHIELD SHALL BE LEFT UNGROUNDED INSIDE THE END DEVICE. INSTALL HEAT SHRINK INSULATION OVER THE SHIELD TO ENSURE ISOLATION FROM GROUND.
- 3.32 UNIONS SHALL BE INSTALLED WHERE REQUIRED TO FACILITATE EASY REMOVAL OF EQUIPMENT. WHERE SEALS ARE INSTALLED, THE UNION SHALL BE INSTALLED NEXT TO THE FIELD DEVICE TO FACILITATE REMOVAL OF THE EQUIPMENT WITHOUT BREAKAGE OF THE SEAL.
- 3.33 INSTALL DUXSEAL COMPOUND WITHIN ALL FITTINGS PENETRATING EXTERIOR WALLS (EXCEPT FOR POURED SEAL FITTING).
- 3.34 EXPANSION FITTINGS COMPLETE WITH GROUND JUMPER SHALL BE INSTALLED IN ACCORDANCE WITH GOOD PRACTICE AND WHERE CONDUITS CROSS BUILDINGS, PIPERACKS OR STRUCTURAL EXPANSION JOINTS. EXPANSION JOINTS ARE NOT REQUIRED IF THERE IS A BEND/OFFSET SUFFICIENT TO ACCOMMODATE THE EXPANSION IN THE VICINITY.
- 3.35 ALL FIELD ENTRIES TO TERMINATION BOXES SHALL BE BOTTOM ONLY.
- 3.36 TECK CABLE MAY BE UTILIZED FOR END DEVICE FINAL CONNECTIONS. PROVIDE CSA APPROVED CLASS 1 GLAND SEAL CONNECTORS. SEALS TO BE POURED AFTER MEGGAR TESTING.
- 3.37 PROVIDE A WHITE HEAT SHRINK COVERING OVER BLACK TECK CABLE CONDUCTORS USED AS A NEUTRAL. SHRINK TO FULLY COVER WIRE FROM CONNECTOR TO SPLICE POINT.
- 3.38 LIGHTING SHALL BE INSTALLED AS A COMPLETE SYSTEM OF FIXTURES, LAMPS, BALLAST'S, SUPPORTS, AND CONTROL DEVICES.
- 3.39 CONDUIT FITTINGS (I.E. LB'S, TEE'S) SHALL NOT BE USED FOR SPLICING OF GROUND WIRES OR ANY OTHER WIRES.
- 3.40 TERMINATION BOXES SHALL BE LOCATED 1524mm AWAY FROM EXHAUST VENTS, LOUVERS AND INSTRUMENT VENTS.
- 3.41 TERMINALS TO BE SIZED TO ACCEPT #10 AWG WIRE. LOADS LARGER THAN 30 AMPS REQUIRE TERMINALS SIZED TO ACCEPT #4 AWG WIRE.
- 3.42 TERMINALS TO BE CONNECTED TO ONE WIRE ONLY.
- 3.43 JUNCTION BOXES TO BE 1600mm MAXIMUM ABOVE SKID FLOOR ELEVATION, OR 2000mm ABOVE GRADE.
- 3.44 EXTERIOR CONDUITS SHALL ONLY RUN BELOW JUNCTION BOXES. CONDUITS STUB-OUTS FOR HEATERS SHALL BE WITHIN 1000mm A.F.F. OF SKID BASE.
- 3.45 FIELD INSTRUMENT WIRING METHOD FROM JUNCTION BOX TO DEVICE CAN BE VIA TECK CABLE OR RIGID ALUMINUM CONDUIT.
- 3.46 WIRING AND CABLING OF 3 PHASE MOTORS BY FIELD ELECTRICAL CONTRACTOR.
- 3.47 OWNER TO SUPPLY FIRE AND GAS EQUIPMENT UNLESS OTHERWISE INDICATED.
- 3.48 WHERE HEAT TRACE IS REQUIRED TO GO UNDERGROUND, CONTRACTOR TO SUPPLY AND INSTALL HEAT TRACING 1500mm BELOW GRADE AND RETURN 600mm ABOVE GRADE INTO END KIT.
- 3.49 FIELD WIRING TO TERMINATE IN MANUFACTURERS POWER KITS. CONDUIT FITTINGS (I.E. LB'S, TEE'S) SHALL NOT BE USED FOR THIS PURPOSE.
- 3.50 AT HEAT TRACE SPLICE'S OR PIPING TEE JOINTS, MANUFACTURER'S POWER KIT'S OR TEE KIT'S TO BE INSTALLED.
- 3.51 HEAT TRACE TAILS TO TERMINATE IN MANUFACTURER'S END KITS.
- 3.52 CONTRACTOR TO TEST CABLE UPON RECEIPT, AFTER INSTALLATION, AND PRIOR TO ENERGIZATION. DEFECTIVE TRACER TO BE REPLACED AND REPLACEMENT TO BE RETESTED AS ABOVE. CONTRACTOR TO SUBMIT TEST REPORTS TO OWNER.
- 3.53 ALL HEAT TRACE PIPE CLADDING TO BE IDENTIFIED WITH WARNING LABELS AT BEGINNING AND END OF RUN, AND EVERY 15 METERS IN BETWEEN.

4.0 EQUIPMENT AND MATERIALS

- 4.1 THE CONTRACTOR SHALL INSTALL NEW EQUIPMENT AND MATERIALS TO COMPLETE THE WORK.
- 4.2 THE CONTRACTOR SHALL BE RESPONSIBLE TO DELIVER, ACCEPT, OFF LOAD AND INSTALL ALL EQUIPMENT.
- 4.3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR WAREHOUSING AND LOCKABLE STORAGE OF ALL MATERIALS AND EQUIPMENT DURING THE WORK. THE CONTRACTOR SHALL REPLACE ALL LOST OR DAMAGED GOODS AT HIS COST.
- 4.4 RIGID CONDUITS TO BE ALUMINUM, MINIMUM SIZE 21mm, SUPPORT STRUT TO BE HOT DIPPED GALVANIZED STEEL.
- 4.5 VENDOR TO PROVIDE A COMPLETE PART DESCRIPTION FOR ANY "EQUALS" HE MAY PROVIDE. ENGINEER TO APPROVE EQUALS PRIOR TO INSTALLATION OF SAME.
- 4.6 TECK CABLE CLAMPS TO BE THOMAS & BETTS TYPE "CPC" (COBRA), "CH" OR COMPANY APPROVED EQUAL FOR ALL VERTICAL POWER CABLES. POWER CABLE TO BE TIE-WRAPPED ON HORIZONTAL RUNS. CONTROL CABLES TO BE BUNDLED AND TIE-WRAPPED. UTILIZE THE FIRST 150mm OF TRAY SPACE FOR CONTROL CABLES. ALL CABLES TO BE SECURED WITHIN 300mm OF BOXES AND EVERY 1.5M THEREAFTER.
- 4.7 CABLE TRAY SHALL BE ALUMINUM CLASS E LADDER TYPE, 150mm DEEP. TRAY COVERS TO BE INSTALLED WHERE SUBJECT TO MECHANICAL DAMAGE. TRAY TO BE BONDED WITH #2 AWG RW90 FT4 GREEN COPPER CONDUCTOR TO SKIDS. TOP OF TRAY TO BE 300mm BELOW LARGEST TERMINATION BOX. MULTIPLE TRAYS TO BE ALIGNED AT TOP AND BOTTOM ENDS. TRAYS TO HAVE END PLATES AND CABLE DROP OUT PLATES. HIGH VOLTAGE TRAYS TO BE IDENTIFIED WITH WARNING LABELS ON BOTH SIDES OF TRAY, EVERY 15 METERS. JOINTS TO BE BONDED WITH BONDING JUMPER. ALL TRAYS TO CONTAIN GROUND CONDUCTOR. MULTIPLE TRAY RUNS REQUIRE ONLY ONE GROUND CONDUCTOR, WITH BONDS TO THE OTHER TRAYS EVERY 15 METERS.
- 4.8 RECEPTACLES SHALL BE 20 AMP, 3 WIRE, 2 POLE RATED FOR CLASS I, ZONE 1, GROUP IIA LOCATIONS.
- 4.9 CONTROL DEVICES SHALL BE INSTALLED PER COMPANY BILL OF MATERIALS AND DETAILS.
- 4.10 ALL MATERIAL CATALOG NUMBERS ARE SHOWN AS A GUIDE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL CATALOG NUMBERS BEFORE ORDERING MATERIAL.

5.0 INSPECTION, TESTING AND COMMISSIONING

- 5.1 THE OWNER RESERVES THE RIGHT TO INSPECT THE WORK DURING NORMAL WORKING HOURS, TO ENSURE COMPLIANCE TO THE DRAWINGS.
- 5.2 THE CONTRACTOR SHALL MEGGAR TEST ALL POWER WIRING. MOTOR MEGGAR TESTS TO BE MEASURED, RECORDED, AND SUBMITTED TO OWNER.
- 5.3 THE CONTRACTOR SHALL CONTINUITY TEST ALL INSTRUMENT WIRING, RECORD READINGS, AND SUBMIT TO OWNER.
- 5.4 ALL EQUIPMENT SHALL BE CSA OR IULC APPROVED AND SHALL BE SUITABLE FOR HAZARDOUS LOCATIONS WHERE INDICATED ON THE AREA CLASSIFICATION DRAWINGS.
- 5.5 THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER FINAL ACCEPTANCE.
- 5.6 OUTDOOR DEVICES SHALL BE EEMAC (NEMA) TYPE 4 OR 4X RATED, APPROVED FOR THE LOCATION, OR PROVIDED WITH WEATHERPROOF SHROUDS, WHEN IN HAZARDOUS AREA.
- 5.7 CONTRACTOR SHALL FUNCTION TEST ALL WIRING, USING THE PROPER VOLTAGE AND CURRENT, ALL INTENDED MODES IN SEQUENCE OF THE CONTROL CIRCUITS AND ALL INTERLOCKING, PRIOR TO OWNER COMMISSIONING OF PLANT.
- 5.8 THE OPERATION OF ALL SWITCHES, CONTACTORS, INDICATING LIGHTS, ETC. SHALL BE FUNCTION CHECKED TO PROVE THEIR OPERATION, EXCEPT FOR THE 3 PHASE DEVICES.
- 5.9 CONTRACTOR TO RETAIN ALL DATA, INFORMATION MANUALS, INSTALLATION INSTRUCTIONS, ETC. FOR DATA BOOKS. CONTRACTOR SHALL SUPPLY FOUR COPIES OF DATA BOOK INFORMATION FOR EQUIPMENT SUPPLIED BY CONTRACTOR, COLLATED IN BINDERS, AT END OF PROJECT, TO THE ENGINEER.
- 5.10 CONTRACTOR SHALL MAINTAIN TWO SETS OF REDLINE AS BUILT DRAWINGS DURING CONSTRUCTION. ONE SET TO REMAIN ON SITE AT PROJECT COMPLETION, AND ONE SET SHALL BE FORWARDED TO ENGINEER WITHIN TWO WEEKS OF PROJECT COMPLETION.
- 5.11 CONTRACTOR SHALL SUPPLY AND INSTALL ALL BRACING FOR EQUIPMENT SUBJECT TO TRANSPORT.

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

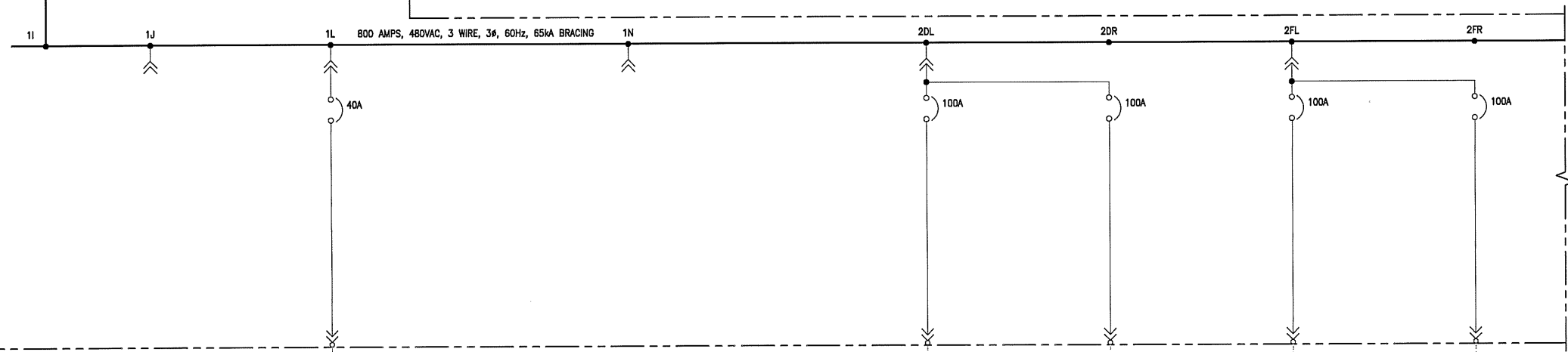
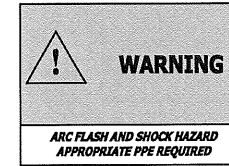
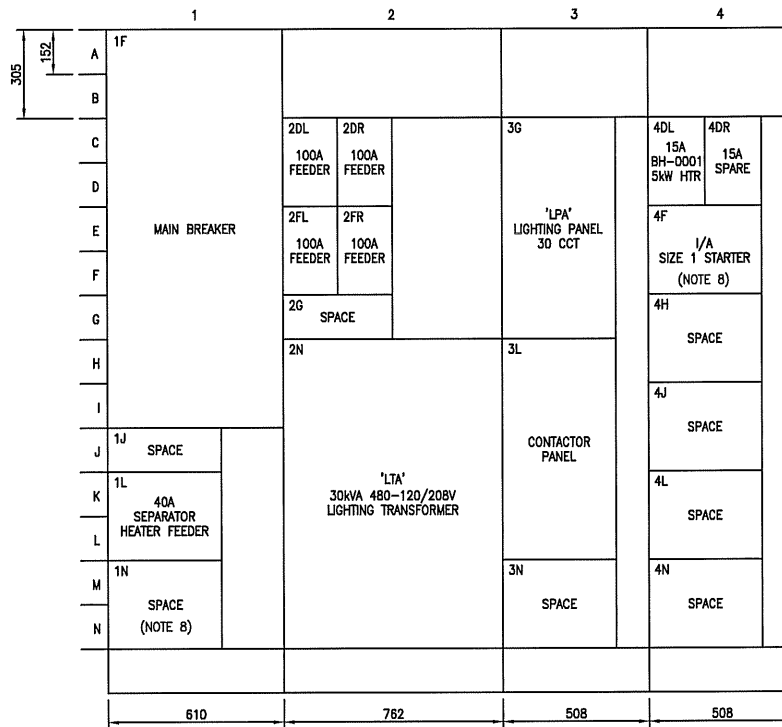
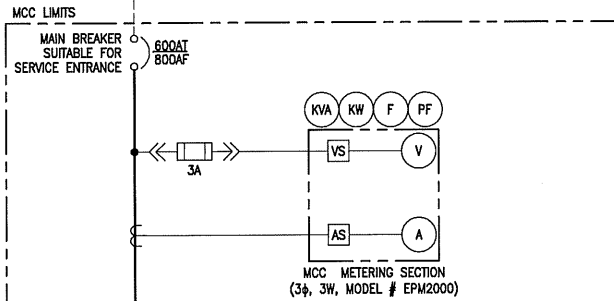
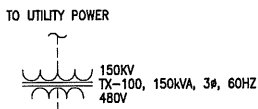
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SCALE: N.T.S. SIZE: D
 EPCM PROJECT#: VARIOUS

PennWest Exploration

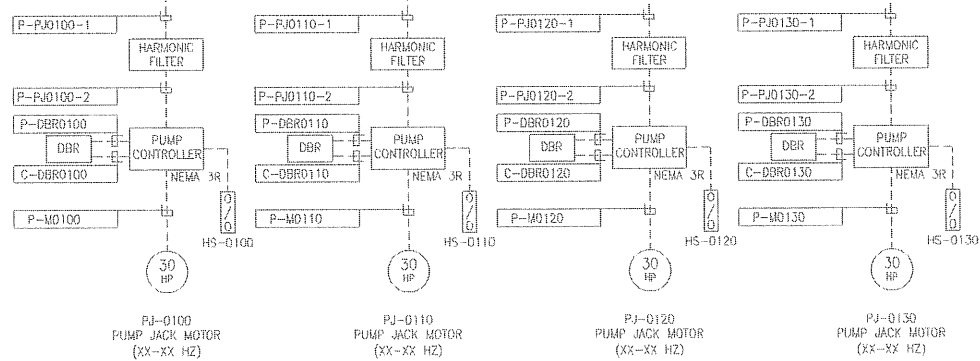
MCC PACKAGE
 LSD: VARIOUS
 STANDARD SATELLITE WELLPAD MCC DESIGN
 ELECTRICAL CONSTRUCTION NOTES

SCALE: N.T.S. SIZE: D
 EPCM PROJECT#: VARIOUS
 DWG# TYPICAL-ELC-0006 SHT 1 OF 1 REV 0



SPACE 6" BUCKET
BH-1050 BUILDING HEATER INLET SEPARATOR BUILDING BU-100

SPACE 12" BUCKET



CONTINUED ON DWG. ELC-2001

ITEM	DESCRIPTION
2.	TIME-DELAY STARTING OR CLOSING RELAY.
5.	STOPPING DEVICE.
14.	SPEED DEVICE.
20.	ELECTRICALLY OPERATED VALVE.
24.	VOLTS-HERTZ RELAY.
25.	SYNCHRONIZING-SYNCHRONISM CHECK DEVICE.
26.	APPARATUS THERMAL DEVICE.
27.	UNDERVOLTAGE RELAY.
30.	ANNUNCIATOR.
32.	DIRECTIONAL POWER RELAY.
33.	POSITION SWITCH.
34.	MASTER SEQUENCE DEVICE.
37.	UNDERCURRENT-MINIMUM LOAD.
38.	MOTOR-LOAD BEARING OVERTEMPERATURE.
39.	MECHANICAL CONDITION MONITOR.
40.	LOSS OF FIELD (REVERSE VAR) RELAY.
42.	RUNNING CIRCUIT BREAKER.
43.	MANUAL TRANSFER OR SELECTOR SWITCH. NEGATIVE PHASE.
46.	SEQUENCE RELAY.
47.	PHASE-SEQUENCE VOLTAGE RELAY.
48.	MULTIPLE START-LOCKED ROTOR.
49.	STATOR WINDING OVER TEMPERATURE.
50N.	GROUND SENSING RELAY.
50/51.	INSTANTANEOUS-TIME OVERCURRENT RELAY.
51G.	TIME GROUND OVERCURRENT RELAY.
51S.	A-C TIMED STALL OVERCURRENT RELAY.
52CS.	BREAKER CONTROL SWITCH.
52.	CIRCUIT BREAKER.
55.	POWER FACTOR RELAY.
59.	OVERVOLTAGE RELAY.
60.	VOLTAGE BALANCE RELAY.
62.	TIME DELAY STOPPING RELAY.
63.	PRESSURE SWITCH.
64.	GROUND PROTECTIVE RELAY.
65.	TURBINE GOVERNOR CONTROL.
67.	A-C DIRECTIONAL OVERCURRENT RELAY.
67N.	DIRECTIONAL OVERCURRENT GROUND RELAY.
69.	GENERATOR BREAKER CLOSING RELAY.
70.	POTENTIOMETER.
74.	ALARM RELAY.
78.	PHASE ANGLE MEASURING OR OUT-OF-STEP PROTECTIVE.
79.	RELAY. A-C RELAYING RELAY.
81.	FREQUENCY RELAY.
83.	AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY.
85.	CARRIER OR PILOT WIRE RECEIVER RELAY.
86.	LOCKOUT RELAY.
87G.	GENERATOR DIFFERENTIAL PROTECTION RELAY.
89.	LINE SWITCH.
90.	GENERATOR AUTOMATIC VOLTAGE REGULATOR.
4.	GENERATOR BREAKER TRIPPING RELAY.
a.	AMMETER.
af.	NORMALLY OPEN AUXILIARY CONTACT.
AS.	AMMETER SELECTION SWITCH.
AT.	AMP TRIP.
b.	NORMALLY CLOSED AUXILIARY CONTACT.
CT.	CURRENT TRANSFORMER.
CTU.	CAPACITOR TRIP UNIT.
ETM.	ELAPSED TIME METER.
F.	FREQUENCY METER.
G.	GROUND DETECTOR.
GD.	GROUND DETECTOR.
HP.	HORSEPOWER.
HR.	MOTOR RUNNING HOURS.
HTR.	SPACE HEATER.
I.	INDICATION LAMP.
KVA.	KILOVOLT AMPERE.
KVA/RPF CONT.	KILOVAR-POWER FACTOR CONTROLLER.
KW/KVAR.	KILOWATT-KILOVAR METER.
LA.	LIGHTING ARRESTOR.
MCP.	MOTOR CIRCUIT PROTECTOR.
NGR.	NEUTRAL GROUND RESISTOR.
PF.	POWER FACTOR METER.
PFC.	POWER FACTOR CONTROLLER.
PLC.	PROGRAMMABLE LOGIC CONTROLLER.
PMG.	PERMANENT MAGNET GENERATOR.
PT.	POTENTIAL TRANSFORMER.
RTD.	RESISTANCE TEMPERATURE DETECTOR.
SYN.	SYNCHROSCOPE.
TC.	TRIP COIL.
I.	TEMPERATURE INDICATOR.
V.	VOLTMETER.
VAM.	VOLT-AMP METER.
VIB.	VIBRATION.
VS.	VOLTMETER SELECTION SWITCH.
WHM.	WATT HOUR METER.

NOTES

- EQUIPMENT SHALL CONFORM TO APPLICABLE CSA AND IEC STANDARDS.
- EQUIPMENT WILL BE HOUSED INDOORS IN A GENERAL PURPOSE AREA.
- ALL CONTROL WIRING SHALL BE TIN PLATED COPPER AND LABELED ON BOTH ENDS.
- MAIN CABLES MUST HAVE A MINIMUM SPACING OF 100X.
- FIELD CONTRACTOR SHALL SUPPLY LAMACOID WARNING SIGNS, AS REQUIRED BY C.E.C. RULE 10-1106, AND INSTALLED AT:
 - TRANSFORMER OR SECONDARY COMPARTMENT AND;
 - CONSUMER'S SERVICE SWITCH GEAR OR EQUIVALENT.
- FIELD CONTRACTOR SHALL APPLY LABEL TO MAIN INCOMING SECTION REGARDING ARC FLASH PROTECTION, AS REQUIRED BY C.E.C. RULE 2-306. LAMACOID SHALL HAVE BLACK TEXT ON ORANGE BACKGROUND.
- UTILITY TRANSFORMER LOCATION AND DISTANCE TO BE FIELD CONFIRMED.
- CONTRACTOR TO RELOCATE MCC CUBICLE FROM 1N TO 4F.
- MOTOR OVERLOADS SHALL BE EQUIPPED WITH PHASE PROTECTION.

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

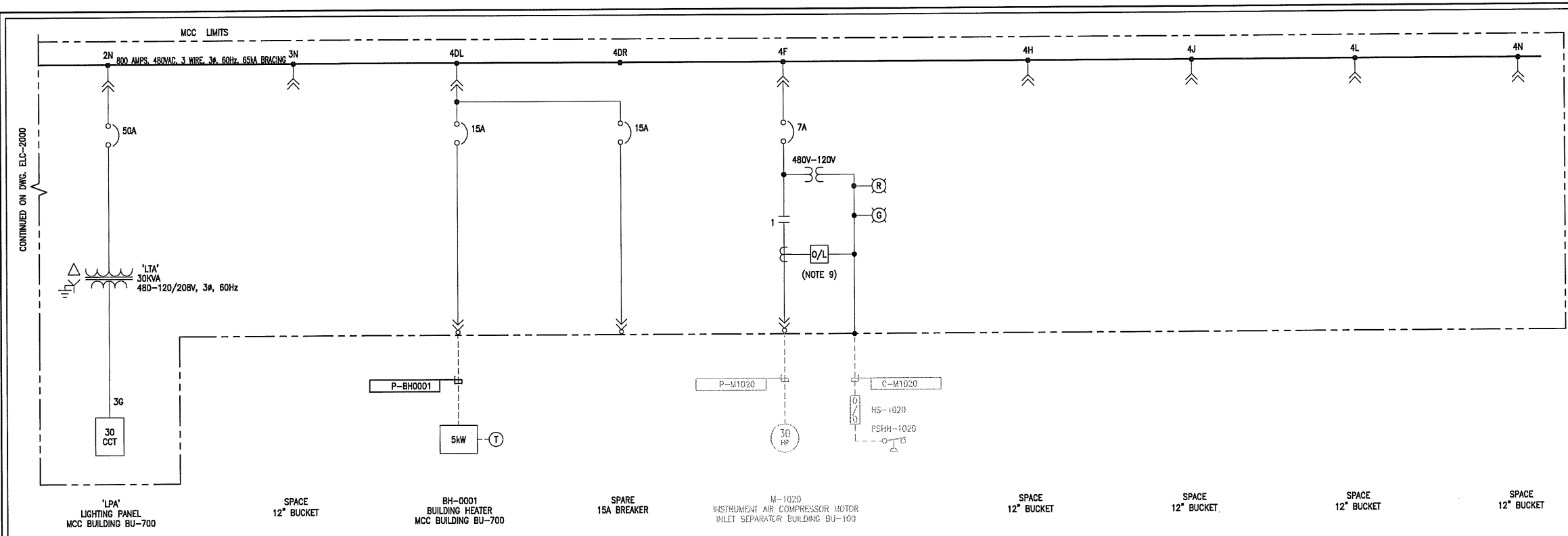
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SCALE	NTS	SIZE	D
EPCM PROJECT#:	VARIOUS		

PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
480VAC SINGLE LINE DIAGRAM

DWG# TYPICAL-ELC-2000 SHT 1 OF 1 REV 0



ITEM	DESCRIPTION
2.	TIME-DELAY STARTING OR CLOSING RELAY.
5.	STOPPING DEVICE.
14.	SPEED DEVICE.
20.	ELECTRICALLY OPERATED VALVE.
24.	VOLTS - HERTZ RELAY.
25.	SYNCHRONIZING - SYNCHRONISM CHECK DEVICE.
26.	APPARATUS THERMAL DEVICE.
27.	UNDERVOLTAGE RELAY.
30.	ANNUNCIATOR.
32.	DIRECTIONAL POWER RELAY.
33.	POSITION SWITCH.
34.	MASTER SEQUENCE DEVICE.
37.	UNDERCURRENT - MINIMUM LOAD.
38.	MOTOR - LOAD BEARING OVERTEMPERATURE.
39.	MECHANICAL CONDITION MONITOR.
40.	LOSS OF FIELD (REVERSE VAR) RELAY.
42.	RUNNING CIRCUIT BREAKER.
43.	MANUAL TRANSFER OR SELECTOR SWITCH, NEGATIVE PHASE.
46.	SEQUENCE RELAY.
47.	PHASE - SEQUENCE VOLTAGE RELAY.
48.	MULTIPLE START - LOCKED ROTOR.
49.	STATOR WINDING OVER TEMPERATURE.
50N.	GROUND SENSING RELAY.
50/51.	INSTANTANEOUS - TIME OVERCURRENT RELAY.
51G.	TIME GROUND OVERCURRENT RELAY.
51S.	A - C TIMED STALL OVERCURRENT RELAY.
52CS.	BREAKER CONTROL SWITCH.
52.	CIRCUIT BREAKER.
55.	POWER FACTOR RELAY.
59.	OVERVOLTAGE RELAY.
60.	VOLTAGE BALANCE RELAY.
62.	TIME DELAY STOPPING RELAY.
63.	PRESSURE SWITCH.
64.	GROUND PROTECTIVE RELAY.
65.	TURBINE GOVERNOR CONTROL.
67.	A - C DIRECTIONAL OVERCURRENT RELAY.
67N.	DIRECTIONAL OVERCURRENT GROUND RELAY.
69.	GENERATOR BREAKER CLOSING RELAY.
70.	POTENTIOMETER.
74.	ALARM RELAY.
76.	PHASE ANGLE MEASURING OR OUT - OF - STEP PROTECTIVE RELAY.
78.	RELAY, A - C RECLOSING RELAY.
79.	FREQUENCY RELAY.
81.	FREQUENCY RELAY.
83.	AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY.
85.	CARRIER OR PILOT WIRE RECEIVER RELAY.
86.	LOCKOUT RELAY.
87G.	GENERATOR DIFFERENTIAL PROTECTION RELAY.
89.	LINE SWITCH.
90.	GENERATOR AUTOMATIC VOLTAGE REGULATOR.
4.	GENERATOR BREAKER TRIPPING RELAY.
A.	AMMETER.
a.	NORMALLY OPEN AUXILIARY CONTACT.
AF.	AMP FAIL.
AS.	AMMETER SELECTION SWITCH.
AT.	AMP TRIP.
b.	NORMALLY CLOSED AUXILIARY CONTACT.
CT.	CURRENT TRANSFORMER.
CTU.	CAPACITOR TRIP UNIT.
ETM.	ELAPSED TIME METER.
F.	FREQUENCY METER.
G.	GROUND.
GD.	GROUND DETECTOR.
HP.	HORSEPOWER.
HR.	MOTOR RUNNING HOURS.
HTR.	SPACE HEATER.
I.	INDICATION LAMP.
KVA.	KILOVOLT AMPERE.
KVA/RPF CONT.	KILOVAR - POWER FACTOR CONTROLLER.
KW/KVAR.	KILOWATT - KILOVAR METER.
LA.	LIGHTING ARRESTOR.
MCP.	MOTOR CIRCUIT PROTECTOR.
NGR.	NEUTRAL GROUND RESISTOR.
PF.	POWER FACTOR METER.
PFC.	POWER FACTOR CONTROLLER.
PLC.	PROGRAMMABLE LOGIC CONTROLLER.
PMG.	PERMANENT MAGNET GENERATOR.
PT.	POTENTIAL TRANSFORMER.
RTD.	RESISTANCE TEMPERATURE DETECTOR.
SYN.	SYNCHROSCOPE.
TC.	TRIP COIL.
I.	TEMPERATURE INDICATOR.
V.	VOLTMETER.
VAM.	VOLT - AMP METER.
VIB.	VIBRATION.
VS.	VOLTMETER SELECTION SWITCH.
WHM.	WATTHOUR METER.

- NOTES**
- EQUIPMENT SHALL CONFORM TO APPLICABLE CSA AND EEMAC STANDARDS.
 - EQUIPMENT WILL BE HOUSED INDOORS IN A GENERAL PURPOSE AREA.
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 - MAIN CABLES MUST HAVE A MINIMUM SPACING OF 100%.
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 - TRANSFORMER OR SECONDARY COMPARTMENT AND;
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 - CONTRACTOR TO RELOCATE MCC CUBICLE FROM 1N TO 4F.
 - MOTOR OVERLOADS SHALL BE EQUIPPED WITH PHASE PROTECTION.

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SCALE: NTS SIZE: D
EPCM PROJECT#: VARIOUS

PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
480VAC SINGLE LINE DIAGRAM

DWG# TYPICAL-ELC-2001 SHT 1 OF 1 REV 0

FEED		VOLTAGE		CIRCUITS	MAIN BREAKER	BUS	PANEL NO	FED FROM			LOCATION	INCOMING CABLE						
3 PH, 4W		120/208VAC		30	100A	225A	LPA	LTA			MCC BUILDING (BU-700)							
REV	DESCRIPTION	WATTS			BREAKER		CCT NO	BUS			CCT NO	BREAKER		WATTS			DESCRIPTION	REV
		A	B	C	TRIP (A)	POLE		A	B	C		POLE	TRIP (A)	A	B	C		
	UPS				20	2	1	●			2	1	15	125			BU-700 MCC BUILDING RECEPTACLE	
							3	●			4	1	15		250		BU-100 SEPARATOR BUILDING RECEPTACLE	
	BU-100 & BU-700 BUILDINGS - INTERIOR LIGHTS			680	15	1	5				6	1	15			375	CHEMICAL PUMP P-1030	
	BU-100 & BU-700 BUILDINGS - EXTERIOR LIGHTS	255			15	1	7	●			8	1	15	375			WELLHEAD CHEMICAL PUMP P-0200	
	HEAT TRACE CONTROLLER		50		15	1	9	●			10	1	15		375		WELLHEAD CHEMICAL PUMP P-0210	
	SPARE				15	1	11				12	1	15			375	WELLHEAD CHEMICAL PUMP P-0220	
	BU-100 & BU-700 BUILDINGS - EXHAUST FAN	373			15		13	●			14		15	375			WELLHEAD CHEMICAL PUMP P-0230	
	HEAT TRACE EHT-0100				30*	2	15	●			16	2	30*				HEAT TRACE EHT-1001	
							17	●			18							
	HEAT TRACE EHT-0110				30*	2	19	●			20	2	30*				HEAT TRACE EHT-1002	
							21	●			22							
	HEAT TRACE EHT-0120				30*	2	23				24	2	30*				HEAT TRACE EHT-1003	
							25	●			26							
	HEAT TRACE EHT-0130				30*	2	27	●			28	2	30*				SPARE HEAT TRACE	
							29	●			30							
SUB-TOTAL - LEFT		628	50	680				SUB-TOTAL - RIGHT			875	625	750					
TOTAL WATTS		PHASE A			PHASE B			PHASE C			FEEDER AMPS			* DENOTES GFCI BREAKER - CLASS B, 30mA SENSITIVITY AND SHALL BE 10KA INTERRUPTING CAPACITY				
3608		1503			675			1430										

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

SCALE	NTS	SIZE	D
EPCM PROJECT#:	VARIOUS		

PennWest
Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN

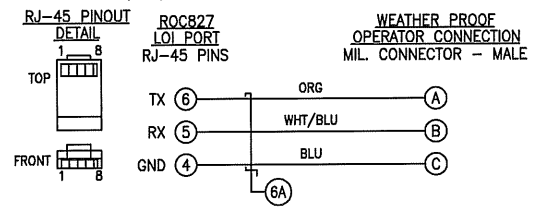
120/208VAC DISTRIBUTION PANEL SCHEDULE - LPA

DWG# TYPICAL-ELC-2500

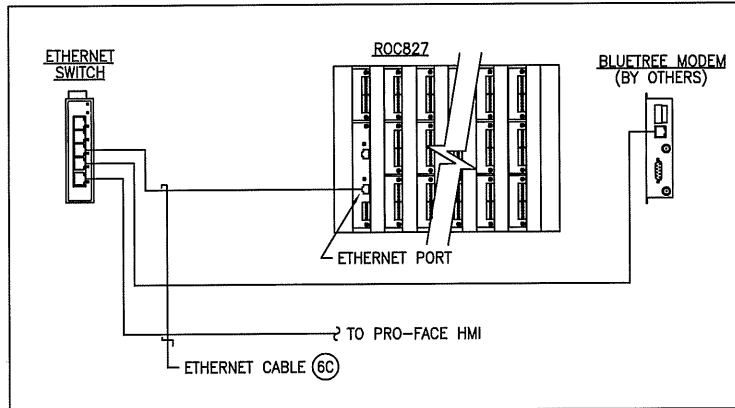
SHT 1 OF 1 REV 0

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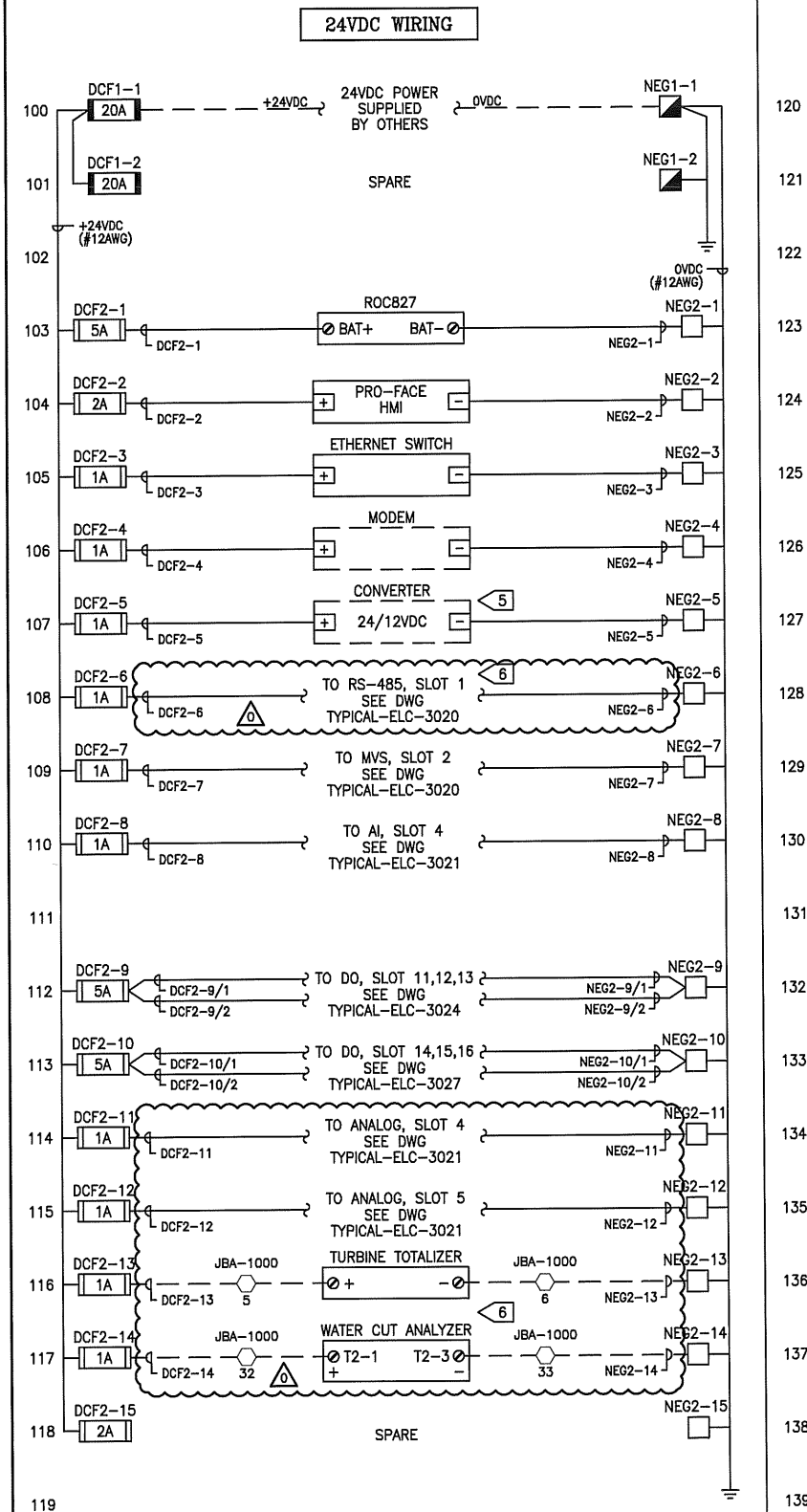
**CBL21-36
ROC827 (LOI) TO MILITARY CONNECTOR CABLE**



COMMUNICATIONS DETAIL



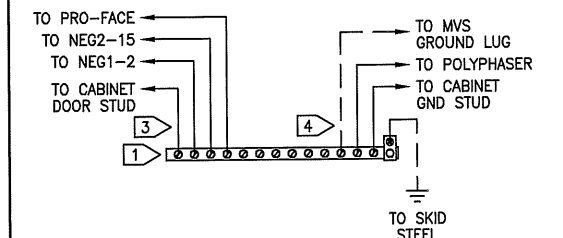
POWER DISTRIBUTION



NOTES:

- 1 GROUND BAR PROVIDED FOR FUTURE FIELD DEVICE SHIELDS.
- 2 POWER WIRING TO BE #16 AWG OR GREATER.
- 3 ALL WIRING FROM TERMINAL BLOCK TO GROUND BUS BAR IS TO BE #14 AWG GREEN WIRE.
- 4 MVS GROUND WIRE SIZE TO BE #12-18 AWG.
- 5 FIELD CONTRACTOR TO INSTALL CONVERTER IF CELL BOOSTER IS REQUIRED.
- 6 POWER WIRING TO ONLY ONE OF THE FOLLOWING METERING SYSTEMS IS REQUIRED.
DEPENDENT ON SITE INSTALLATIONS:
- CORIOLIS (MASS) FLOW METER.
- TURBINE METER (TOTALIZER) AND WATER CUT ANALYZER.

GROUND BUS BAR DETAIL



WIRING NOMENCLATURE

- - - INDICATES FIELD WIRING (FOR INFORMATION ONLY)
- INDICATES SHOP WIRING

COLOR CODE:

- | | |
|-------------------------|------------------------|
| DC: | AC: |
| +VDC - RED | HOT - BLACK (BLK) |
| -VDC - BLUE (BLU) | NEUTRAL - WHITE (WHT) |
| SWITCHED - ORANGE (ORG) | SWITCHED - BROWN (BRN) |
| GROUND - GREEN (GRN) | GROUND - GREEN (GRN) |

LEGEND:

- [Symbol] FERRAZ SHAWMUT USM1 FUSED TERMINAL BLOCK
- [Symbol] WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
- [Symbol] WEIDMULLER WDU 10 TERMINAL BLOCK
- [Symbol] WEIDMULLER WDU 4 TERMINAL BLOCK
- [Symbol] WEIDMULLER WDU 2.5 TERMINAL BLOCK

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-500-00	COMMUNICATION & 24VDC POWER DISTRIBUTION (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP	

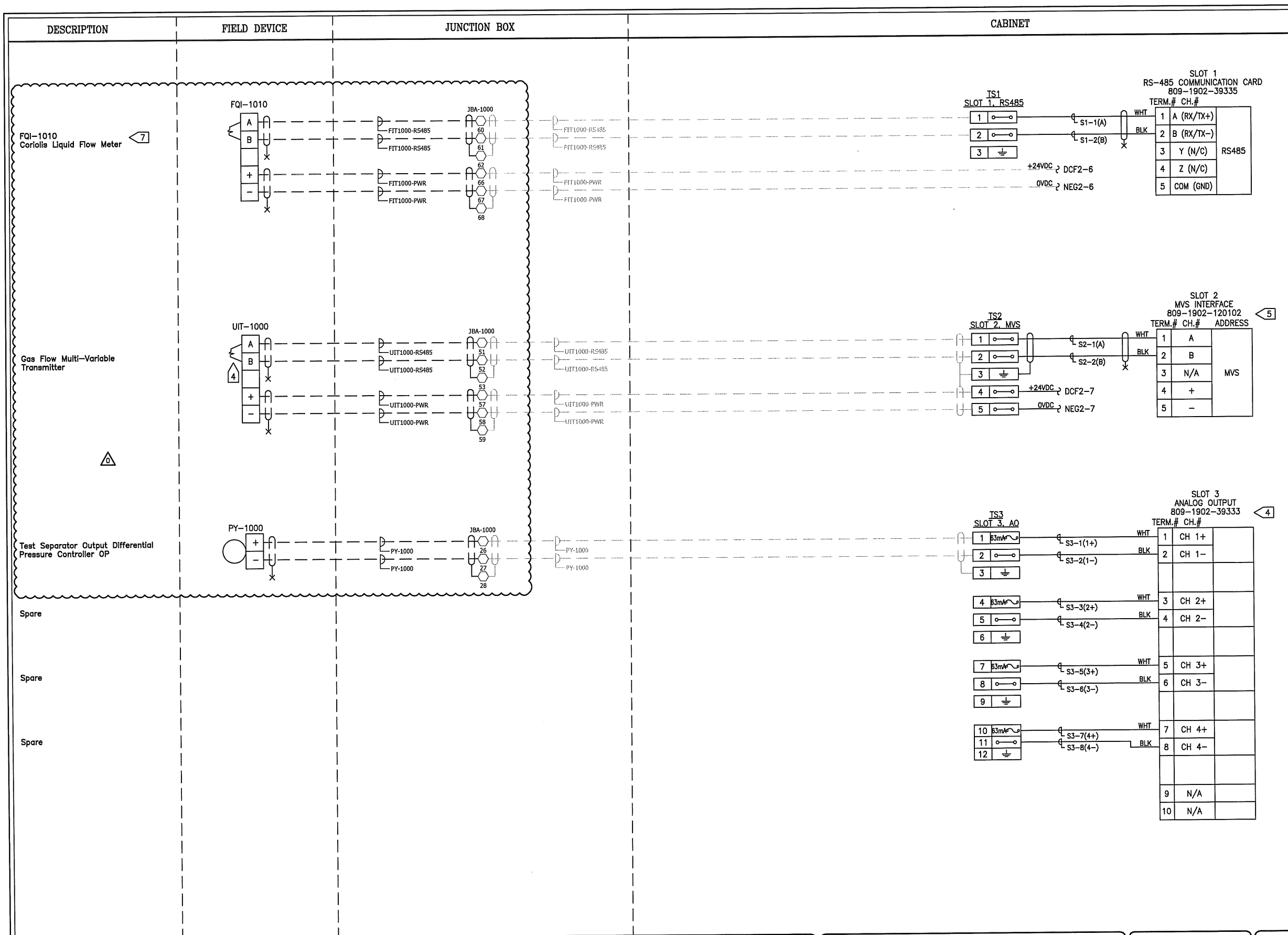
SCALE	N.T.S.	SIZE	D
EPCM PROJECT#:	VARIOUS		

**PennWest
Exploration**

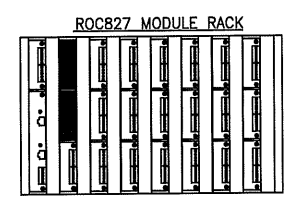
MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
COMMUNICATION & 24VDC POWER DISTRIBUTION

DWG# TYPICAL-ELC-3000 SHT 1 OF 1 REV 0

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- NOTES:**
- ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS.
 - ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - 120 OHM RESISTOR INSTALLED AT FARTHEST END OF MVS COMMUNICATION PATH. RESISTOR TO BE SUPPLIED BY SCL AND INSTALLED BY OTHERS.
 - JUMPER J4 SHOULD BE IN "IN TER" POSITION.
 - JUMPER J4 ON I/O MODULE TO BE SET TO +24VDC.
 - POWER WIRING TO ONLY ONE OF THE FOLLOWING METERING SYSTEMS IS REQUIRED, DEPENDING ON SITE INSTALLATIONS:
 - CORIOLIS (MASS) FLOW METER.
 - TURBINE METER (TOTALIZER) AND WATER CUT ANALYZER.



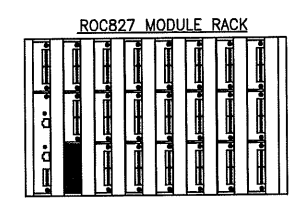
WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)

WIRE LEGEND

--- INDICATES FIELD WIRING (FOR INFORMATION ONLY)

— INDICATES SHOP WIRING



- LEGEND:**
- WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-00	ROC827 I/O SLOTS 1, 2, AND 3 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

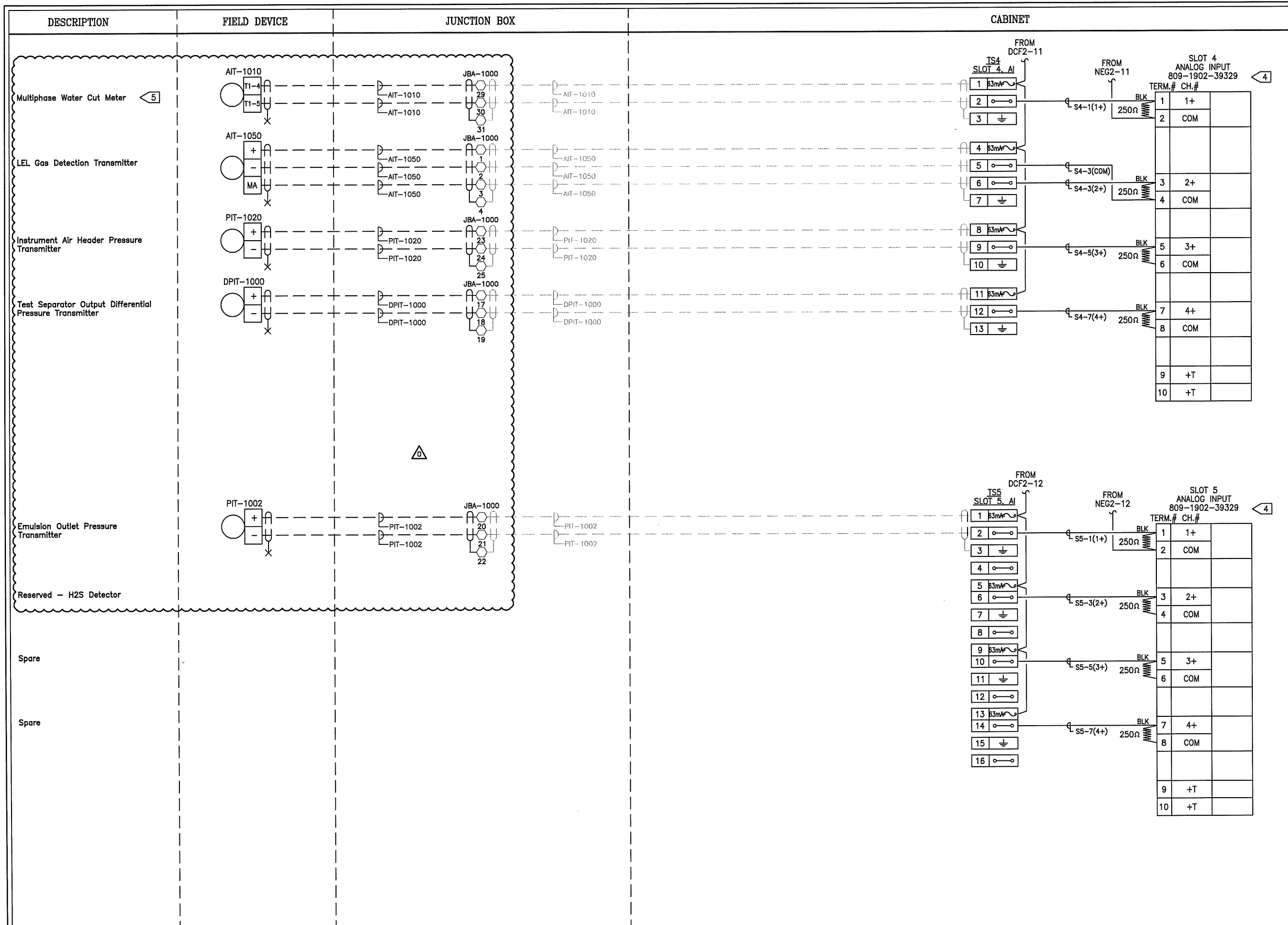
THIS DRAWING IS THE PROPERTY OF PENN WEST EXPLORATION AND ANY REPRODUCTION IN WHOLE OR PART WITHOUT EXPRESS WRITTEN PERMISSION IS PROHIBITED.

SCALE: N.T.S. SIZE: D
EPCM PROJECT#: VARIOUS

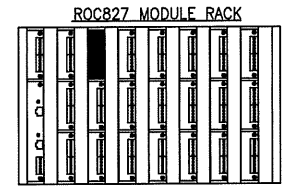
PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 1, 2, AND 3

DWG# TYPICAL-ELC-3020 SHT 1 OF 1 REV 0



- NOTES:**
- ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - JUMPER J4 ON I/O MODULE TO BE SET TO +24VDC.
 - POWER WIRING TO ONLY ONE OF THE FOLLOWING METERING SYSTEMS IS REQUIRED. DEPENDING ON SITE INSTALLATIONS:
 - CORIOLIS (MASS) FLOW METER.
 - TURBINE METER (TOTALIZER) AND WATER CUT ANALYZER.



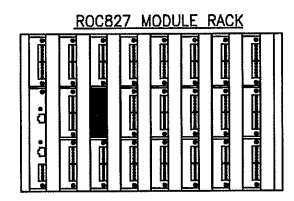
WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)

WIRE LEGEND

--- INDICATES FIELD WIRING (FOR INFORMATION ONLY)

— INDICATES SHOP WIRING



- LEGEND:**
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-01	ROC827 I/O SLOTS 4 AND 5 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

SCALE: N.T.S. SIZE: D

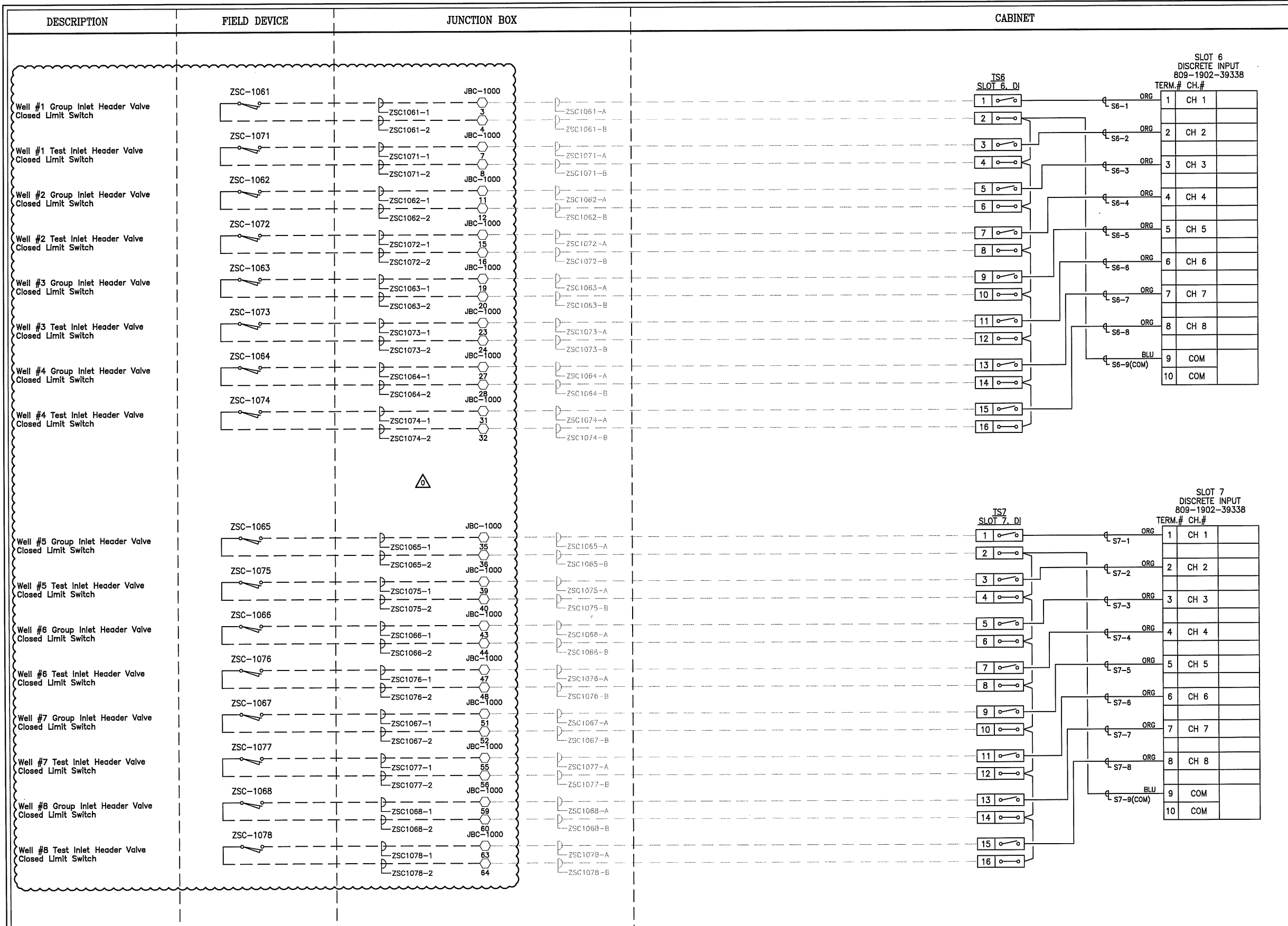
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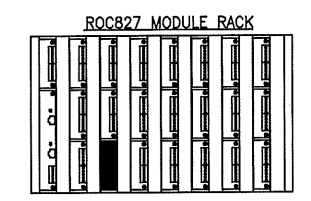
PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 4 AND 5

DWG# TYPICAL-ELC-3021 SHT 1 OF 1 REV 0

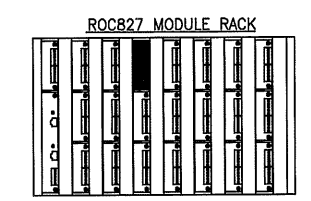
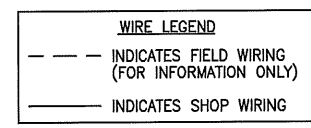


- NOTES:
- ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.



WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)



- LEGEND:
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-02	ROC827 I/O SLOTS 6 AND 7 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

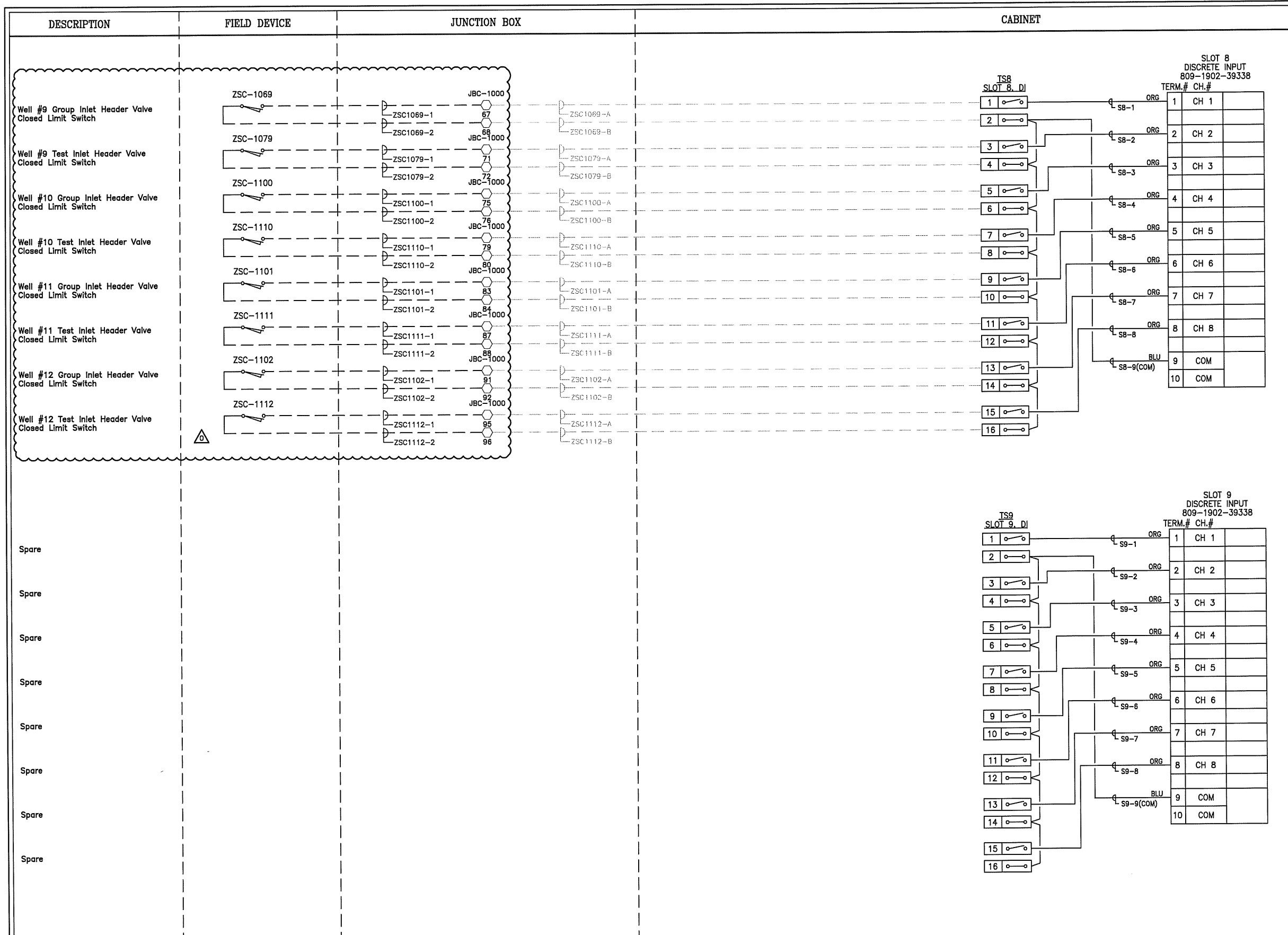
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SCALE	N.T.S.	SIZE:	D
EPCM PROJECT#:	VARIOUS		

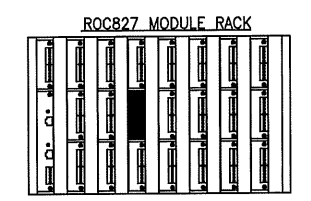
PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 6 AND 7

DWG# TYPICAL-ELC-3022 SHT 1 OF 1 REV 0

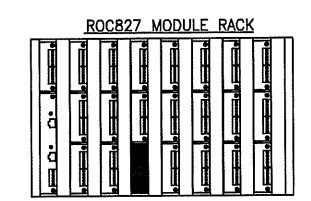
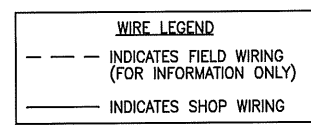


- NOTES:**
- 1 ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - 2 ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - 3 ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.



WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)



- LEGEND:**
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-800-03	ROC827 I/O SLOTS 8 AND 9 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

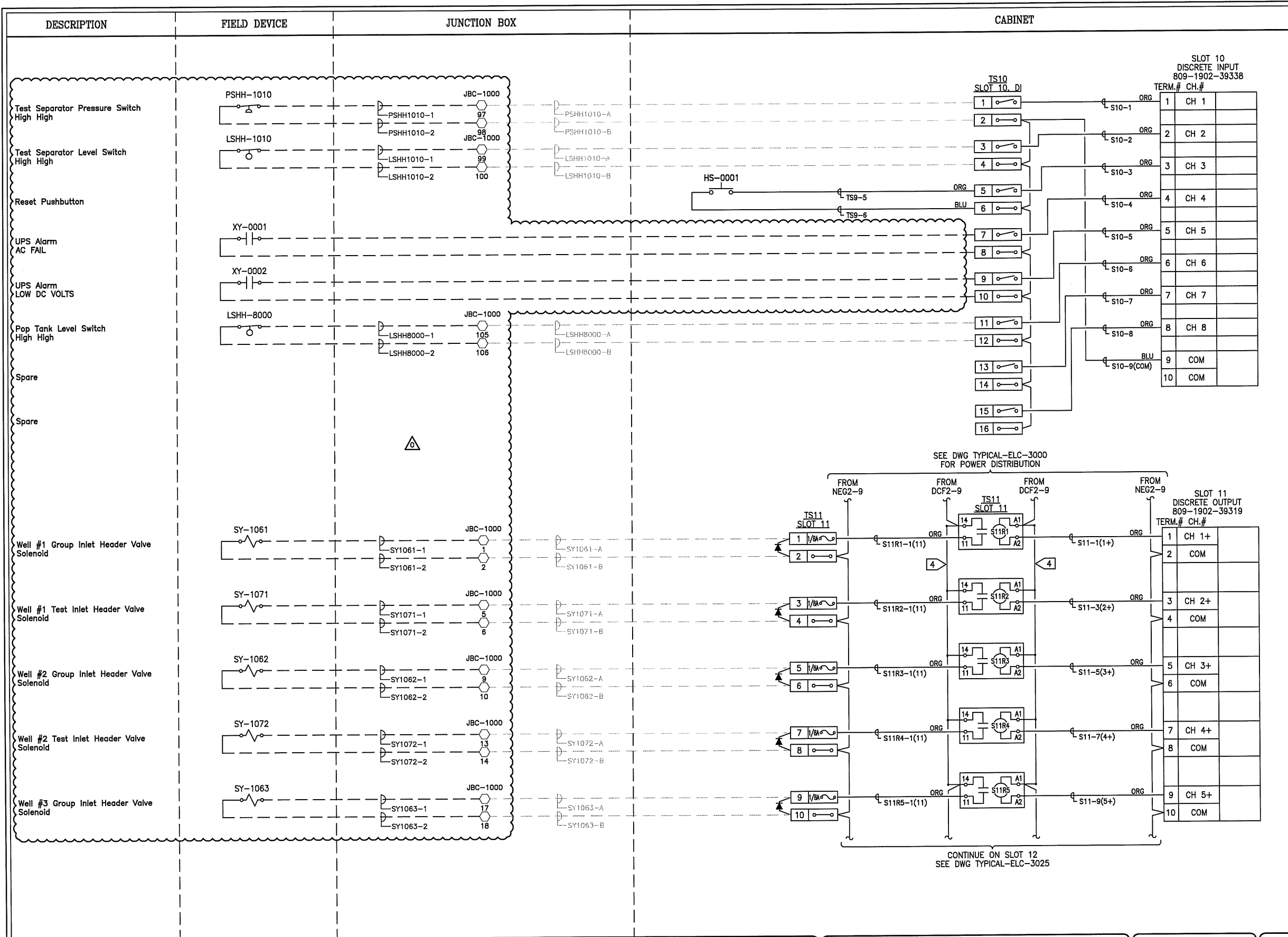
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EPCM PROJECT#:	VARIOUS		

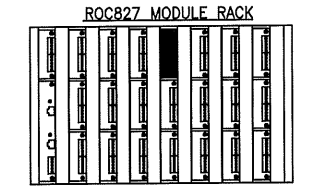
PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 8 AND 9

DWG# TYPICAL-ELC-3023 SHT 1 OF 1 REV 0



- NOTES:**
- ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - PHOENIX CONTACT BRIDGE (RED).



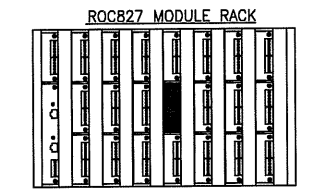
WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)

WIRE LEGEND

--- INDICATES FIELD WIRING (FOR INFORMATION ONLY)

— INDICATES SHOP WIRING



- LEGEND:**
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-800-04	ROC827 I/O SLOTS 10 AND 11 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

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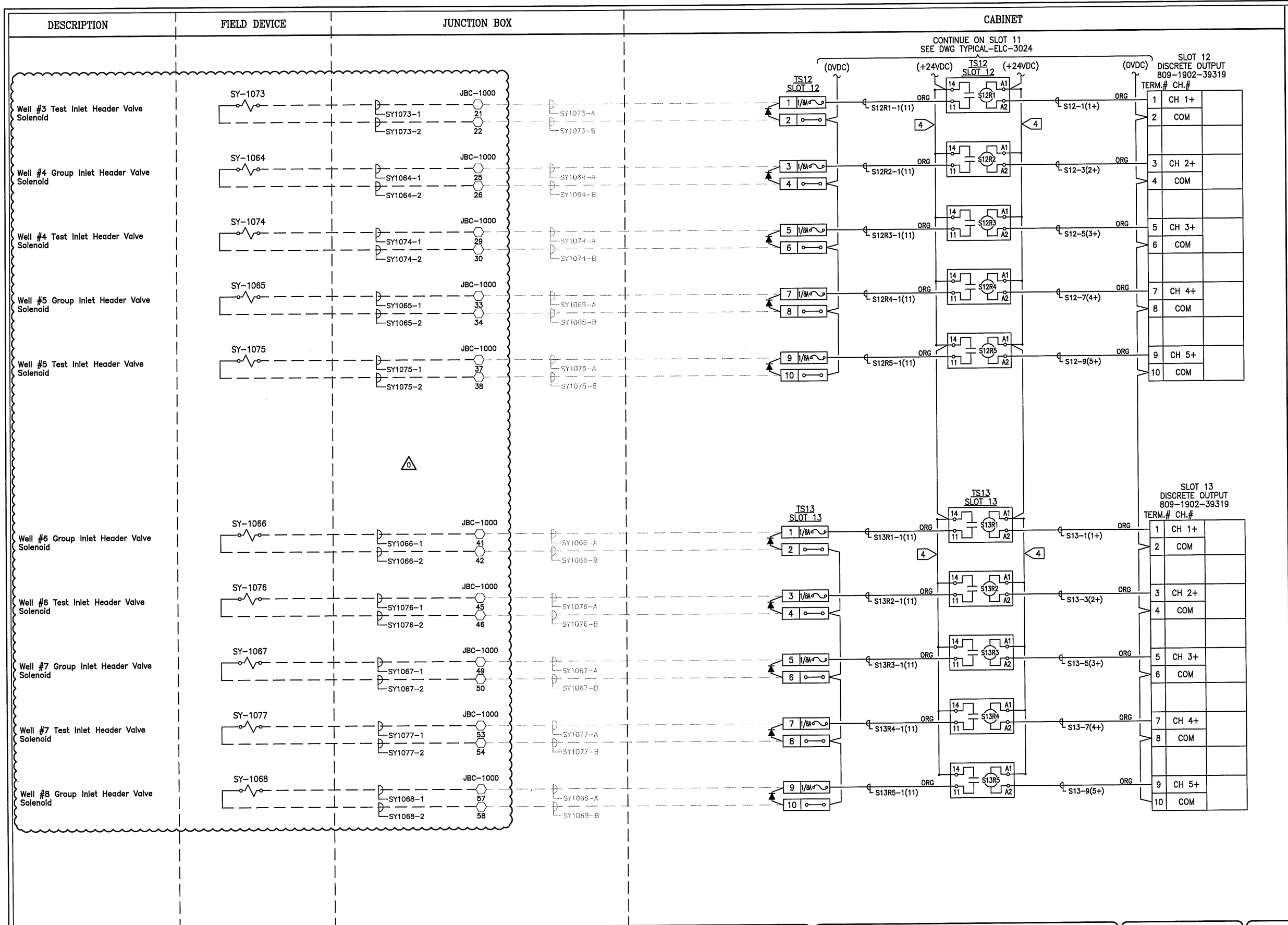
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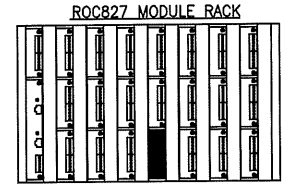
PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
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ROC827 I/O SLOTS 10 AND 11

DWG# TYPICAL-ELC-3024 SHT 1 OF 1 REV 0

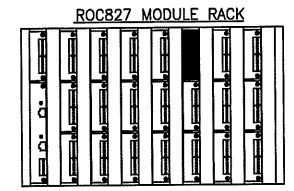
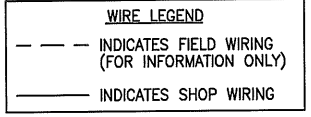


- NOTES:**
- ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - PHOENIX CONTACT BRIDGE (RED).



WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)



- LEGEND:**
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-05	ROC827 I/O SLOTS 12 AND 13 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

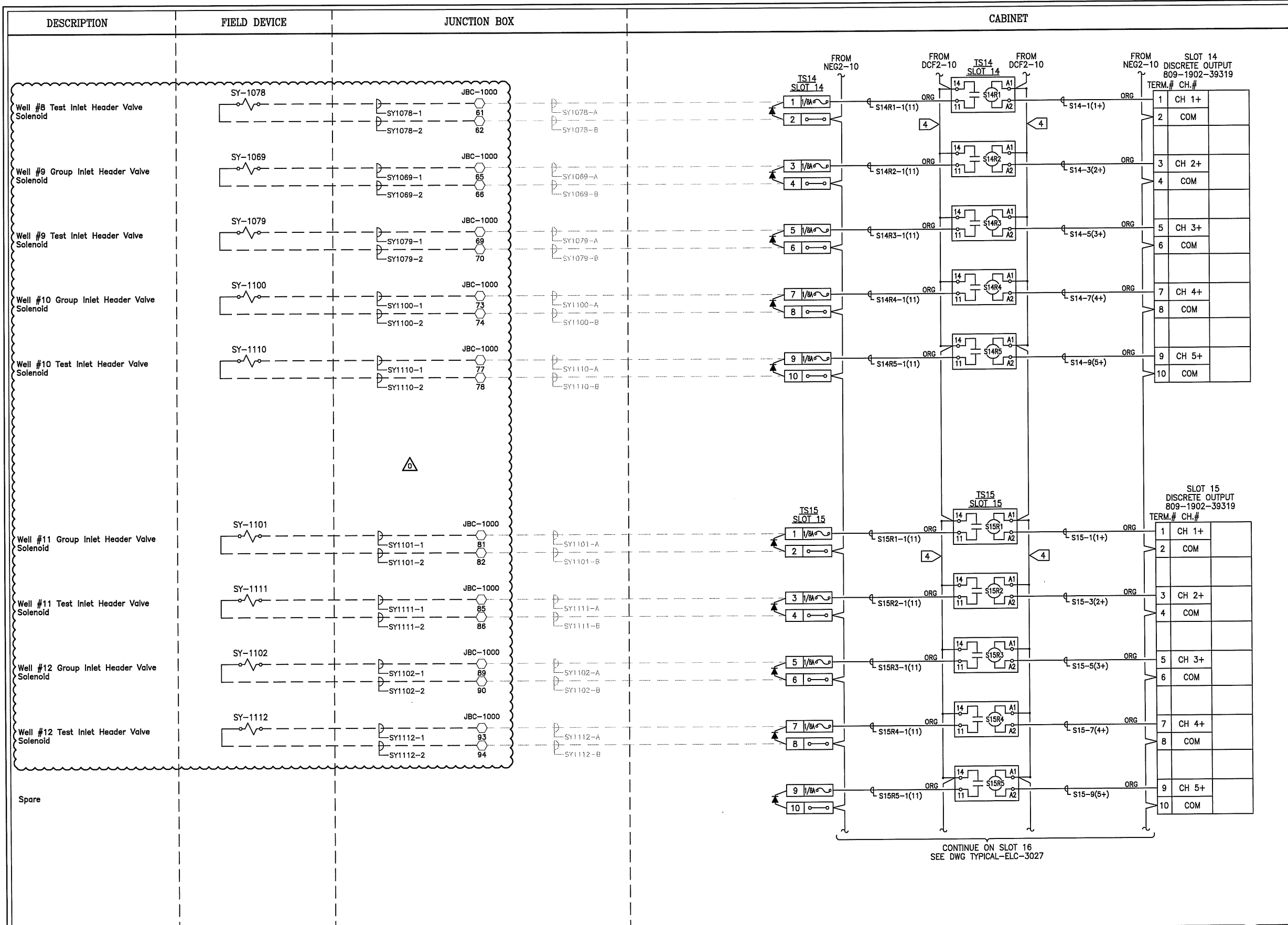
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PennWest Exploration

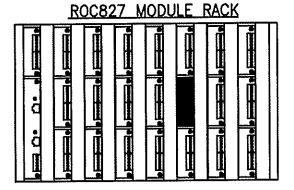
MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 12 AND 13

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DWG# TYPICAL-ELC-3025 SHT 1 OF 1 REV 0

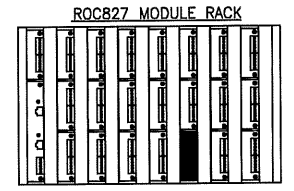
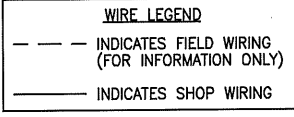


- NOTES:**
- ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - PHOENIX CONTACT BRIDGE (RED).



WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)



- LEGEND:**
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-06	ROC827 I/O SLOTS 14 AND 15 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

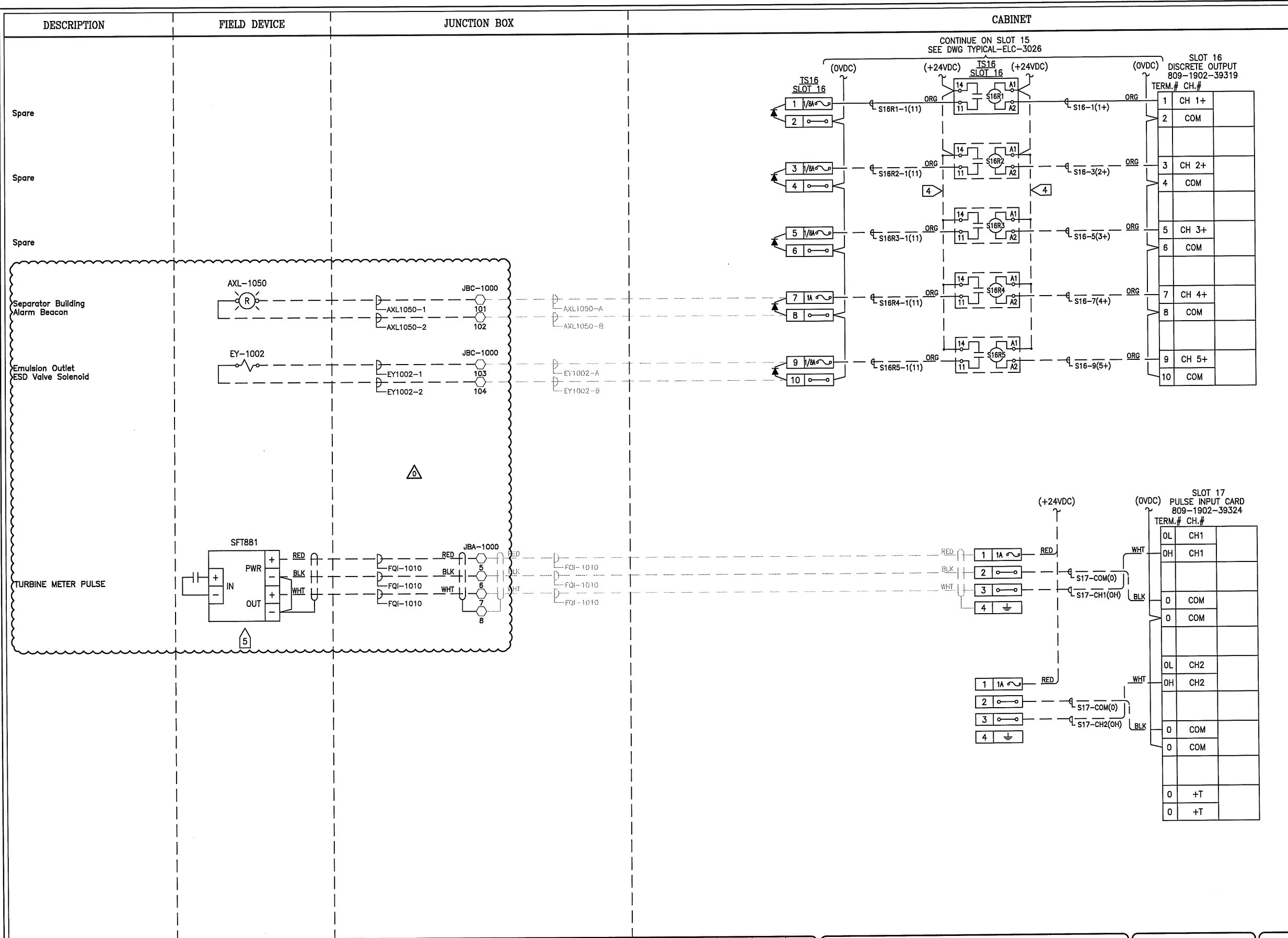
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SCALE: N.T.S. SIZE: D
EPCM PROJECT#: VARIOUS

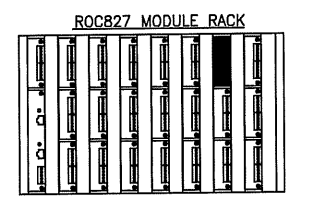
PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 14 AND 15

DWG# TYPICAL-ELC-3026 SHT 1 OF 1 REV 0

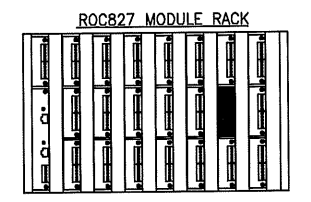
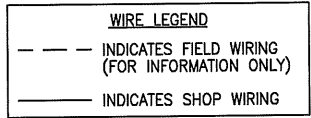


- NOTES:**
- 1 ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - 2 ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - 3 ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - 4 PHOENIX CONTACT BRIDGE (RED).
 - 5 POWER WIRING TO ONLY ONE OF THE FOLLOWING METERING SYSTEMS IS REQUIRED. DEPENDING ON SITE INSTALLATIONS:
 - CORIOLIS (MASS) FLOW METER.
 - TURBINE METER (TOTALIZER) AND WATER CUT ANALYZER.



WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)



- LEGEND:**
- WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-800-07	ROC827 I/O SLOTS 16 AND 17 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

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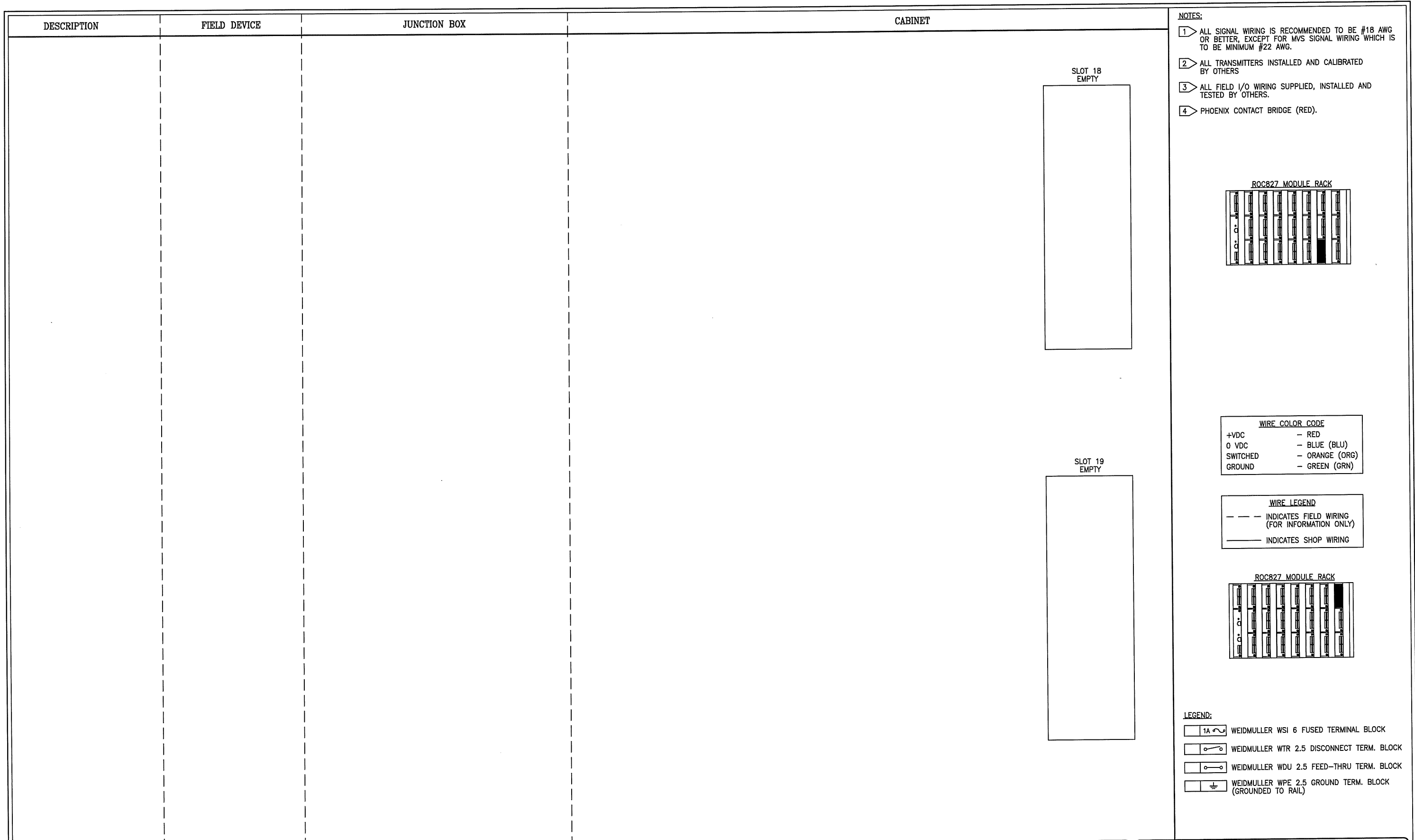
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EPCM PROJECT#:	VARI05		

PennWest Exploration

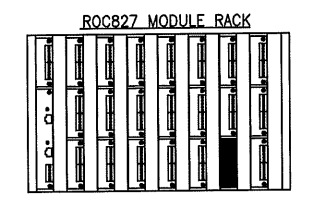
MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 16 AND 17

DWG# TYPICAL-ELC-3027

SHT 1 OF 1 REV 0



- NOTES:
- 1 > ALL SIGNAL WIRING IS RECOMMENDED TO BE #18 AWG OR BETTER, EXCEPT FOR MVS SIGNAL WIRING WHICH IS TO BE MINIMUM #22 AWG.
 - 2 > ALL TRANSMITTERS INSTALLED AND CALIBRATED BY OTHERS
 - 3 > ALL FIELD I/O WIRING SUPPLIED, INSTALLED AND TESTED BY OTHERS.
 - 4 > PHOENIX CONTACT BRIDGE (RED).

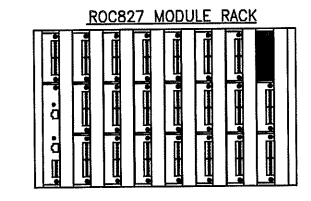


WIRE COLOR CODE

+VDC	- RED
0 VDC	- BLUE (BLU)
SWITCHED	- ORANGE (ORG)
GROUND	- GREEN (GRN)

WIRE LEGEND

- - -	INDICATES FIELD WIRING (FOR INFORMATION ONLY)
—	INDICATES SHOP WIRING



- LEGEND:
- 1A WEIDMULLER WSI 6 FUSED TERMINAL BLOCK
 - WEIDMULLER WTR 2.5 DISCONNECT TERM. BLOCK
 - WEIDMULLER WDU 2.5 FEED-THRU TERM. BLOCK
 - WEIDMULLER WPE 2.5 GROUND TERM. BLOCK (GROUNDED TO RAIL)

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-08	ROC827 I/O SLOTS 18 AND 19 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

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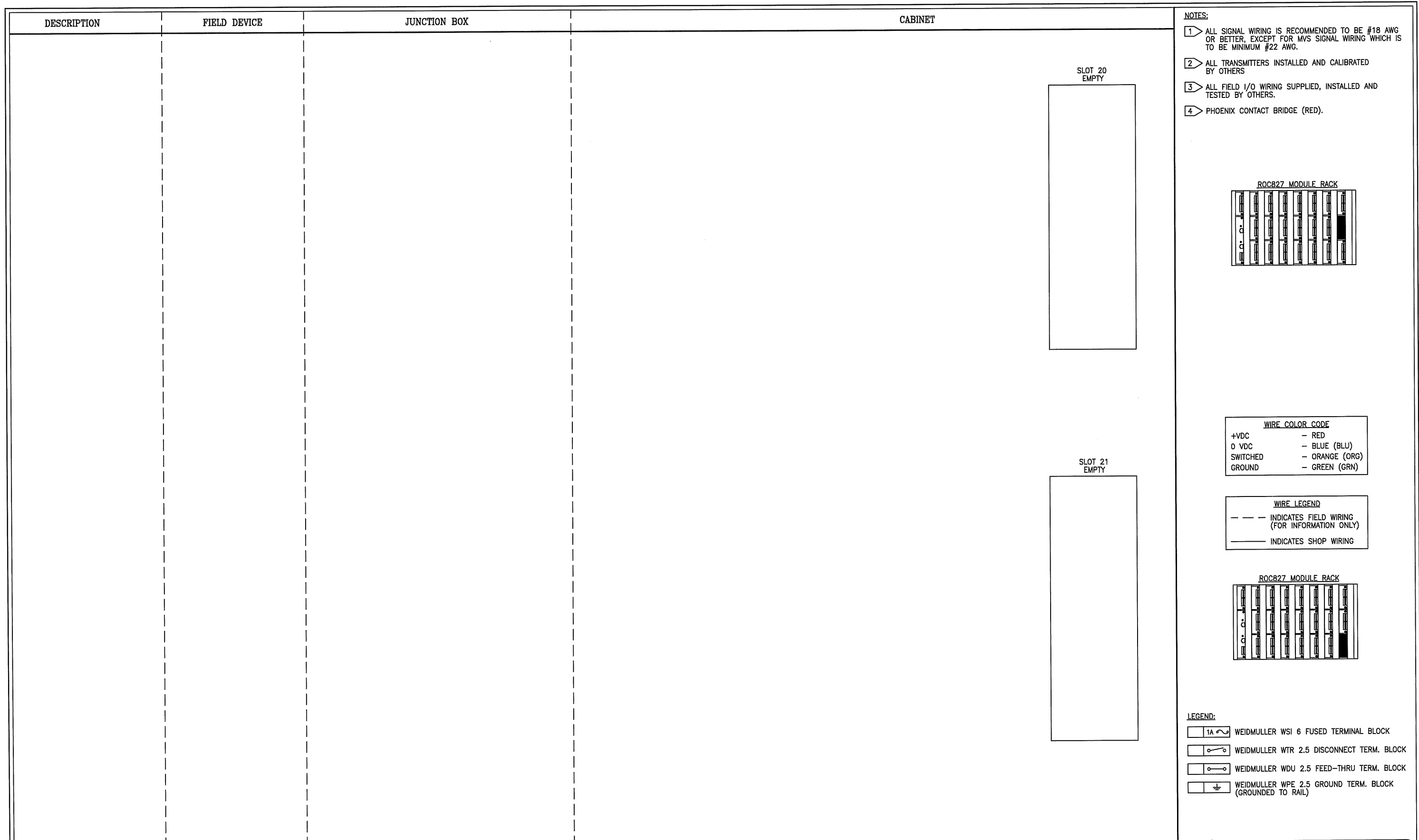
SCALE: N.T.S. SIZE: D

EPCM PROJECT#: VARIOUS

PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 18 AND 19

DWG# TYPICAL-ELC-302B SHT 1 OF 1 REV 0



DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-600-09	ROC827 I/O SLOTS 20 AND 21 (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

SCALE: N.T.S. SIZE: D

EPCM PROJECT#: VARIOUS

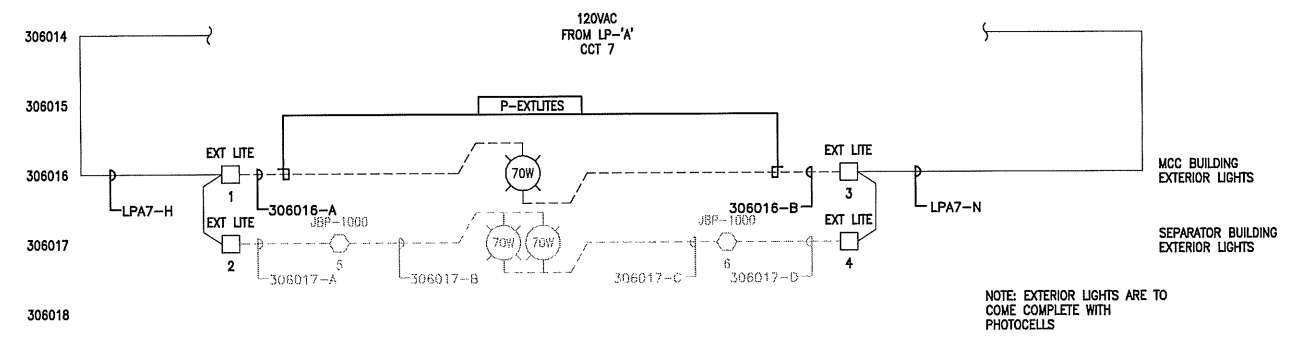
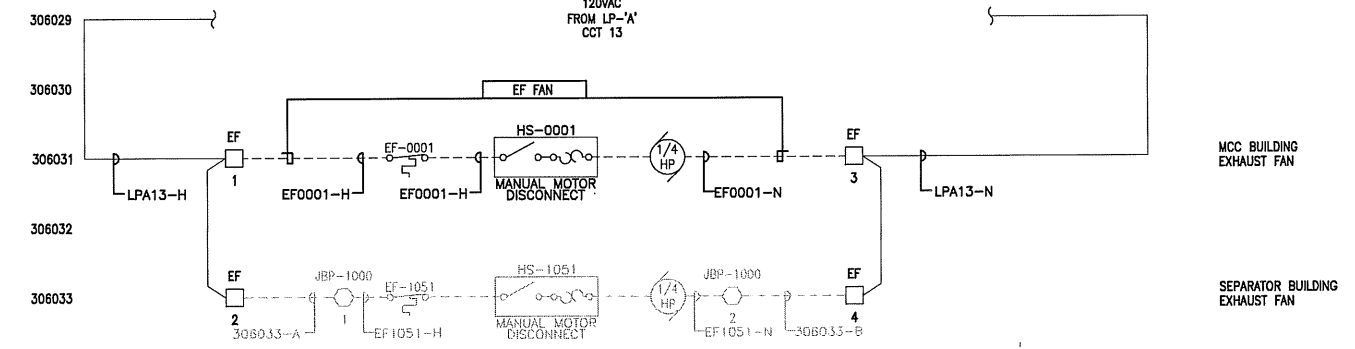
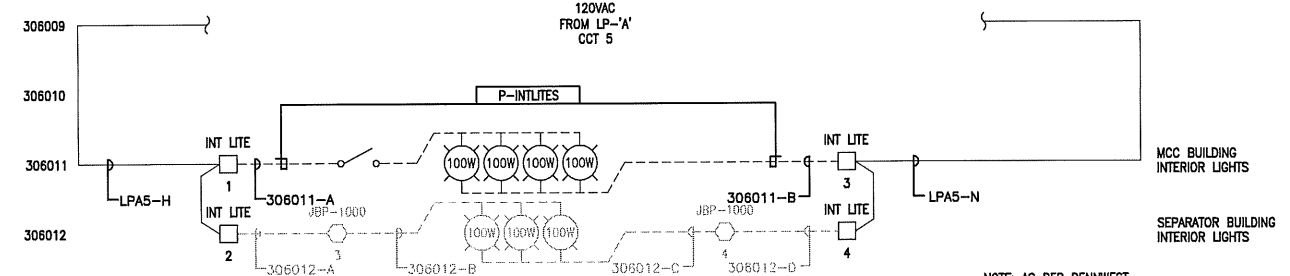
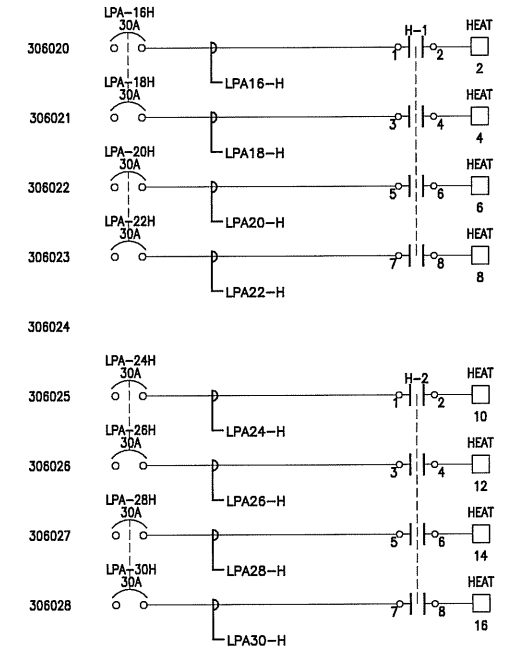
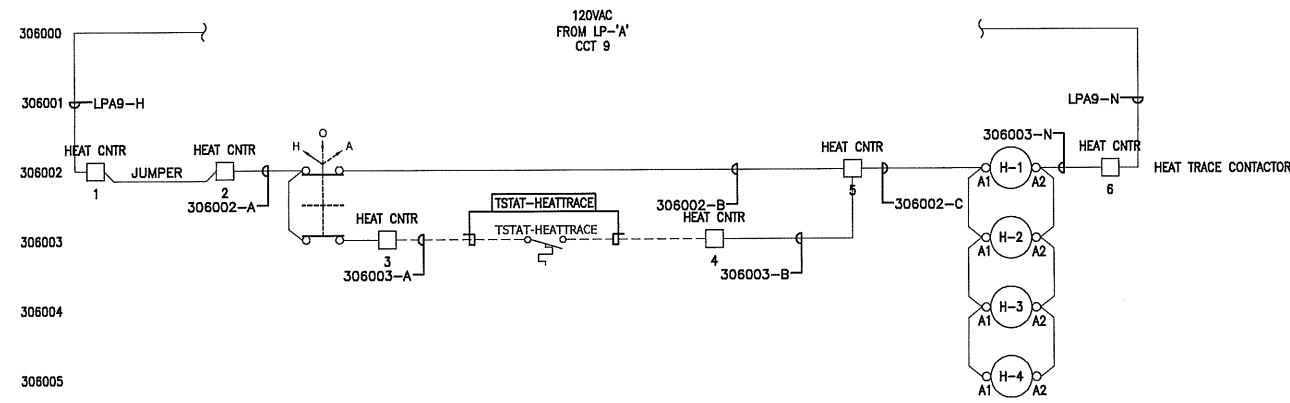
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PennWest Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
ROC827 I/O SLOTS 20 AND 21

DWG# TYPICAL-ELC-3029 SHT 1 OF 1 REV 0



NOTE: AS PER PENNWEST STANDARD, SEPARATOR BUILDING INTERIOR LIGHTS TO BE ON AT ALL TIMES

NOTE: EXTERIOR LIGHTS ARE TO COME COMPLETE WITH PHOTOCELLS

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

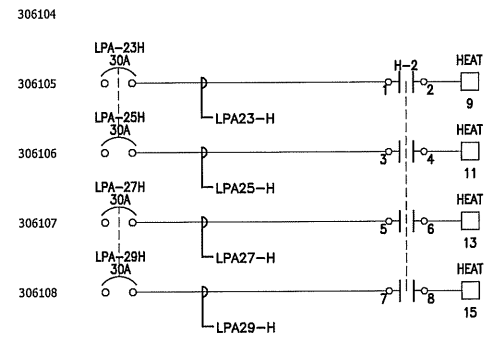
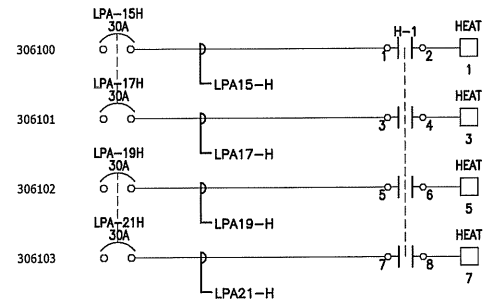
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SCALE	NTS	SIZE	D
EPCM PROJECT#	VARIOUS		

PennWest Exploration

MCC PACKAGE
 LSD: VARIOUS
 STANDARD SATELLITE WELLPAD MCC DESIGN
 120VAC SCHEMATICS

DWG# TYPICAL-ELC-3060 SHT 1 OF 1 REV 0



306104
306105
306106
306107
306108
306109
306110
306111
306112
306113
306114
306115
306116
306117
306118
306119

HEAT TRACE CIRCUIT 306120
HEAT TRACE CIRCUIT 306121
HEAT TRACE CIRCUIT 306122
HEAT TRACE CIRCUIT 306123
306124
HEAT TRACE CIRCUIT 306125
HEAT TRACE CIRCUIT 306126
HEAT TRACE CIRCUIT 306127
HEAT TRACE CIRCUIT 306128
306129
306130
306131
306132
306133
306134
306135
306136
306137
306138
306139

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

SCALE	NTS	SIZE: D
EPCM PROJECT#:	VARIOUS	

PennWest
Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
120VAC SCHEMATICS

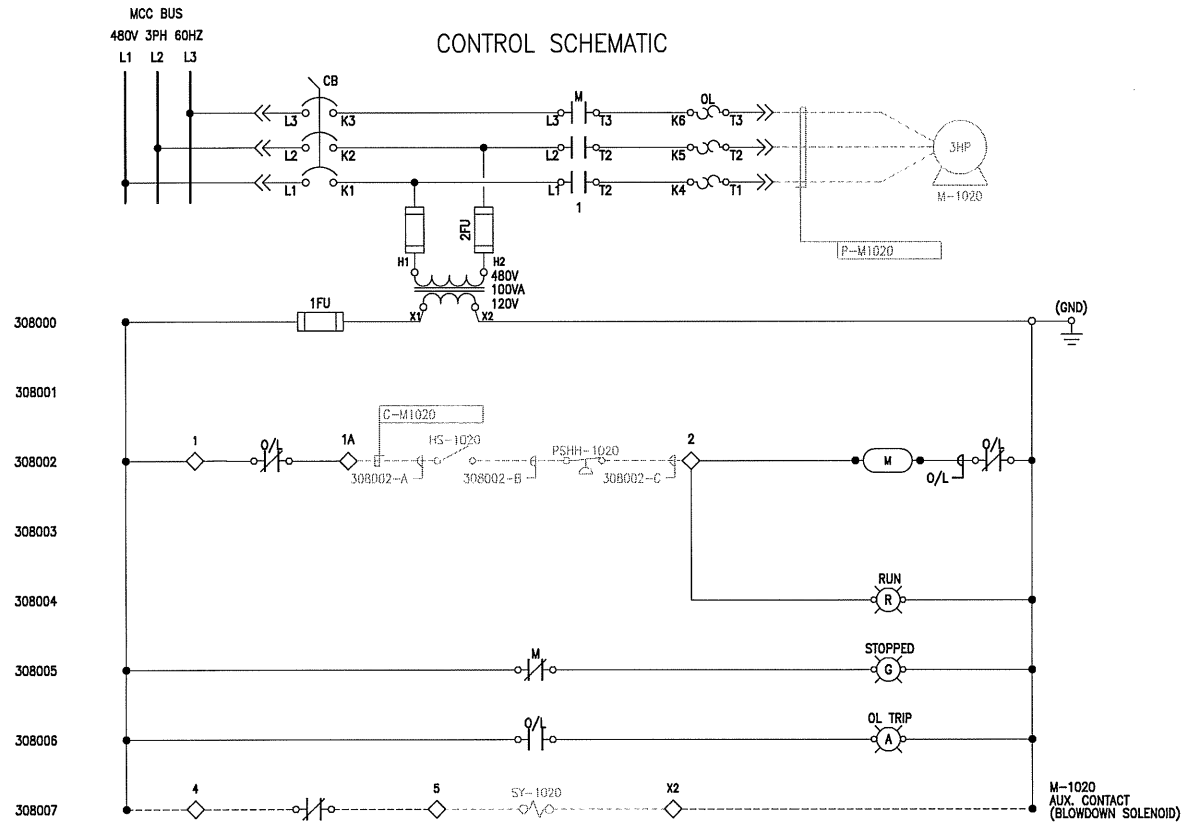
DWG# TYPICAL-ELC-3061

SHT 1 OF 1 | REV 0

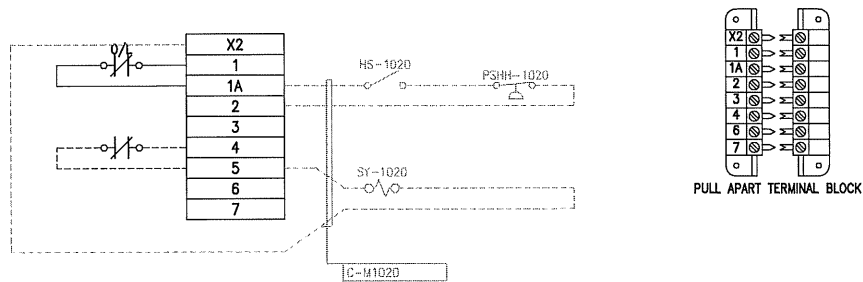
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M-1020 INSTRUMENT AIR COMPRESSOR MOTOR

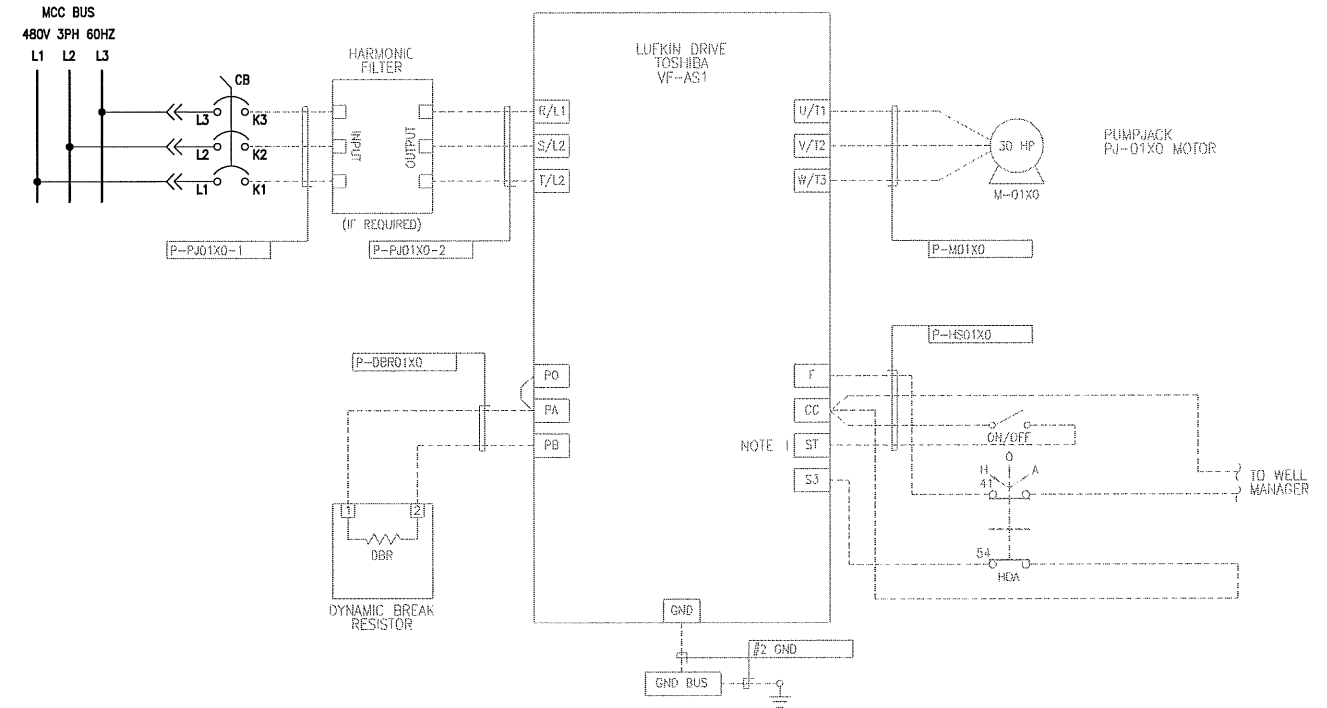
MCC BUCKET 1L



INTERCONNECTION DIAGRAM



PJ-01X0 PUMPJACK CONTROLLER/MOTOR



NOTES:

1. FIELD CONTRACTOR TO REMOVE JUMPER BETWEEN TERMINALS CC & ST (TERMINALS 5 & 6 ON TA STRIP).

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

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SCALE: NTS SIZE: D

EPCM PROJECT#: VARIOUS

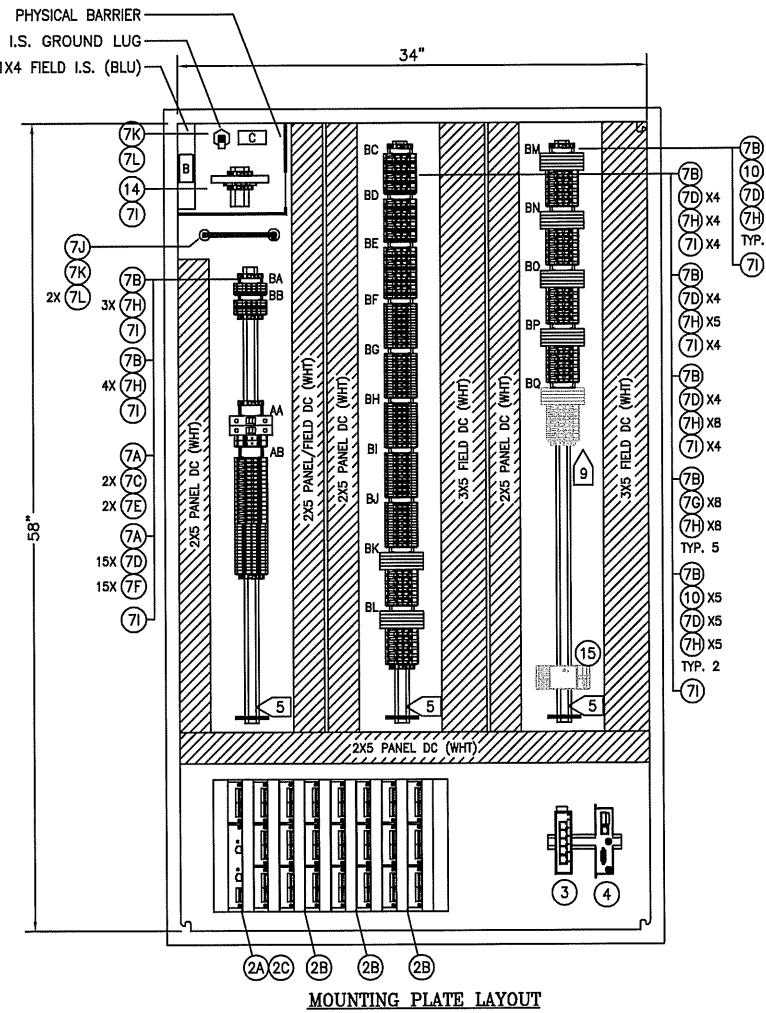
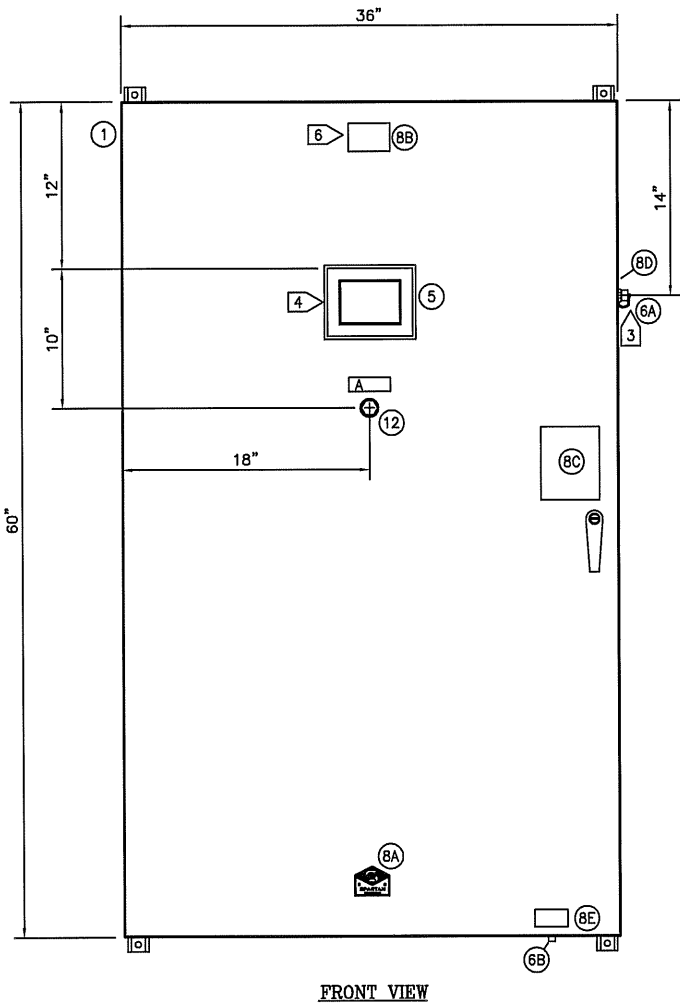
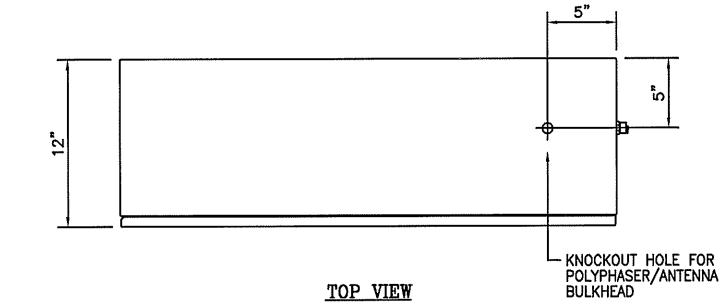
PennWest
Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
480VAC SCHEMATICS

DWG# TYPICAL-ELC-3080 SHT 1 OF 1 REV 0

LAMACOID TABLE			
ITEM	SIZE (W X H)	COLOR	DESCRIPTION
A	1" X 3"	BLK/WHT	RESET
B	1" X 3"	WHT/BLU	I.S. WIREWAY ONLY
C	1" X 3"	WHT/BLU	I.S. GROUND ONLY

TAG IDENTIFIER TABLE		
ITEM	QTY	DESCRIPTION
AA	1	24VDC INPUT
AB	1	24VDC POWER DIST.
BA	1	TS1; SLOT 1, RS485
BB	1	TS2; SLOT 2, MVS
BC	1	TS3; SLOT 3, AO
BD	1	TS4; SLOT 4, AI
BE	1	TS5; SLOT 5, AI
BF	1	TS6; SLOT 6, DI
BG	1	TS7; SLOT 7, DI
BH	1	TS8; SLOT 8, DI
BI	1	TS9; SLOT 9, DI
BJ	1	TS10; SLOT 10, DI
BK	1	TS11; SLOT 11, DO
BL	1	TS12; SLOT 12, DO
BM	1	TS13; SLOT 13, DO
BN	1	TS14; SLOT 14, DO
BO	1	TS15; SLOT 15, DO
BP	1	TS16; SLOT 16, DO
BQ	1	TS17; SLOT 17, PI



PENN WEST PETROLEUM (BB)

ROC SERIAL #19053566
 PANEL SERIAL #SC-29535-AA

- NOTES:
- ENCLOSURE DERATED TO NEMA 3 AFTER ASSEMBLY.
 - ELECTRICAL AREA CLASSIFICATION: CL. I, DIV. 2, GROUP C & D, TEMP. CODE T3C.
 - 3-PIN WEATHER PROOF CONNECTOR (OPERATOR INTERFACE), KEY SLOT FACING BOTTOM.
 - PRO-FACE OPERATOR INTERFACE CUTOUT HOLE: 156.0mm [6.14"] x 123.5mm [4.86"] SHOP TO VERIFY SIZE UPON FABRICATION.
 - DIN-RAIL IS ISOLATED AND CONNECTED TO GROUND BAR.
 - REFER TO DWG SC-29535-AA-301-00 FOR RTU IDENTIFICATION LAMACOID DETAIL.
 - FIELD ENTRY FROM TOP OF CABINET.
 - EITHER ITEM 2M OR 15 SHALL BE INSTALLED DEPENDING UPON METERING SYSTEM CHOSEN.
 - FIELD CONTRACTOR TO SUPPLY AN INSTALL IF REQUIRED.

BILL OF MATERIALS				
ITEM	QTY	PART No.	DESCRIPTION	INSTRUCTIONS
1A	1	CSD603612	HOFFMAN CSA, NEMA 4 WALLMOUNT CABINET 60"H X 36"W X 12"D c/w LHS HINGED DOOR, 3 PT. LATCH AND MTG PLATE (C-P6036)	-
1B	1	C-WHK	HOFFMAN KEYLOCK HANDLE	-
1C	1	C-MFK	HOFFMAN MOUNTING FEET (PACKAGE OF 4)	-
2A	1	827-1903-39369	ROC827 CONTROL UNIT (CLASS I DIV 2) c/w LOI ETHERNET RS232	-
2B	3	8EXP-1904-41629	ROC827 EXPANSION RING WITH BACKPLANE, 6 SLOTS	-
2C	1	809-1902-39326	ROC809/827 24VDC POWER SUPPLY	-
2D	1	8KEY-1906-41653	ROC809/827 LICENSE KEY, 6 METER RUN SET	-
2E	1	8KEY-1906-41654	ROC809/827 DS800 RUNTIME LICENSE KEY	-
2F	1	-	ROC809/827 ROCNOC SOFTWARE / LICENSING	-
2G	1	809-1902-39335	ROC809/827 COMMUNICATIONS CARD, RS485	-
2H	1	809-1902-120102	ROC809/827 MVS INTERFACE CARD (UP TO 6 MVS SENSORS)	-
2I	2	809-1902-39329	ROC809/827 ANALOG INPUT CARD, 4 CHANNEL, 12 BIT	-
2J	1	809-1902-39333	ROC809/827 ANALOG OUTPUT CARD, 4 CHANNEL, 16 BIT	-
2K	5	809-1902-39338	ROC809/827 DISCRETE INPUT CARD, 8 CHANNEL	-
2L	6	809-1902-39319	ROC809/827 DISCRETE OUTPUT CARD, ISOLATED, 5 CHANNEL	-
2M	1	809-1902-39324	ROC809/827 PULSE INPUT CARD (IF REQUIRED)	-
3	1	1240840000	WEIDMULLER IE-SW-BL05-STX UNMANAGED ETHERNET SWITCH, 24VDC	-
4	1	-	BLUETREE MODEM, 24VDC	BY OTHERS
5	1	10-0620	PRO-FACE OPERATOR INTERFACE, 5.7" TOUCH SCREEN, 24VDC (AGP3300-T1-D24)	-
6A	1	CBL21-36	ROC809/827 USER INTERFACE CABLE	-
6B	1	900001	POLYPHASER ANTENNA LIGHTNING ARRESTOR (IS-B50LN-C2)	-
6C	3	-	ETHERNET CABLE, 48"	BY MFG
7A	2	2924.6	WEIDMULLER SHT5S TAG CARRIER	-
7B	16	16319.3	WEIDMULLER SHT5S TAG CARRIER	-
7C	2	USM1	FERRAZ SHARMUT FUSED TERMINAL BLOCK	-
7D	4	KTK 20A	BUSSMANN KTK 20 AMP LIMITRON FAST ACTING FUSE (QTY. 2 SPARES)	-
7E	57	10110.0	WEIDMULLER WSI 6 FUSED TERMINAL BLOCK	-
7F	4	GDA 5A	BUSSMANN GDA 5 AMP CERAMIC FUSE (QTY. 2 SPARES)	-
7G	6	GDA 2A	BUSSMANN GDA 2 AMP CERAMIC FUSE (QTY. 2 SPARES)	-
7H	11	GDA 1A	BUSSMANN GDA 1 AMP CERAMIC FUSE (QTY. 2 SPARES)	-
7I	35	GDA 1/8A	BUSSMANN GDA 125m AMP CERAMIC FUSE (QTY. 5 SPARES)	-
7J	14	GDA 63MA	BUSSMANN GDA 63m AMP CERAMIC FUSE (QTY. 2 SPARES)	-
7K	2	10203.0	WEIDMULLER WDU 10 FEED-THROUGH TERMINAL BLOCK	-
7L	15	10201.0	WEIDMULLER WDU 4 FEED-THROUGH TERMINAL BLOCK	-
7M	40	1855610000	WEIDMULLER WTR 2.5 DISCONNECT TERMINAL BLOCK	-
7N	95	10200.0	WEIDMULLER WDU 2.5 FEED-THROUGH TERMINAL BLOCK	-
7O	17	10100.0	WEIDMULLER WPE 2.5 GROUND TERMINAL BLOCK	-
7P	7J	0000083	GROUND BUS BAR	-
7Q	2	GROUND LUG SMALL	GROUND STUD 2-14 Ga.	-
7R	19	GL 2165-1A	1" GLASTIC INSULATOR	-
7S	8A	0000094	SPARTAN LOGO c/w QTY 2 SCREWS	-
7T	8B	1	LAMACOID TAG - FOR RTU IDENTIFICATION	BY MFG.
7U	8C	1	WARNING LAMACOID, RED BACKGROUND/WHT LETTERS, 5.25"H X 4.25"W (WARNING MORE THAN ONE LIVE CIRCUIT (see wiring diagram). ENSURE THERE IS NO GAS PRESENT AND DISCONNECT POWER BEFORE SERVICING, OPERATING DISCONNECT TERMINALS, TEST JUMPERS AND/OR REMOVING FUSES. USE OF CERAMIC OR SAND FILLED FUSES IS RECOMMENDED. DO NOT EXCEED FUSE RATINGS. ALL EQUIPMENT INSTALLED IN THIS PANEL MUST BE SUITABLE FOR CL. I DIV. 2. SUBSTITUTION OF EQUIPMENT MAY IMPAIR SUITABILITY FOR CL. I DIV. 2 HAZARDOUS LOCATIONS AUTHORIZED PERSONNEL ONLY)	BY MFG.
7V	8D	1	WARNING LAMACOID - RED BACKGROUND, WHT LETTERS: "WARNING - EXPLOSION HAZARD DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS"	BY MFG.
7W	8E	1	WARNING LAMACOID - RED BACKGROUND, WHT LETTERS: "WARNING - DO NOT REMOVE ANTENNA WHILE CIRCUIT IS LIVE"	BY MFG.
7X	10	30	PHOENIX CONTACT RELAY, 24VDC, 6A, SPDT, CL. I DIV. 2	-
7Y	11	30	SHUBBER DIODE	-
7Z	12	1	ALLEN-BRADLEY PUSHBUTTON 2N.O./FLUSH/GREEN/HERM. SEALED	-
7AA	13A	1	MVS205E REMOTE SENSOR (0.1%) 0-250DP, 0-800PSIG, 316 SST SENSOR	SHIP LOOSE
7AB	13B	1	RTD-1.5 RTD ELEMENT, -100 TO 260°C w/ 1.5" THERMOWELL, 3-WIRE, 316 STAINLESS, 3/4" PROCESS CONNECTION	SHIP LOOSE
7AC	13C	1	5 WAY MANIFOLD, FLANGE X 1/2"FNPT NACE	SHIP LOOSE
7AD	13D	1	MOUNTING BRACKET FOR M673 MANIFOLDS, C.S. c/w BOLTS	SHIP LOOSE
7AE	14	1	MTL I.S. SAFETY BARRIER	-
7AF	15	1	MICROMOTION 2500 TRANSMITTER (IF REQUIRED)	BY OTHERS

CLASS I, DIVISION 2 ENCLOSURE

DRAWING#	REFERENCE DRAWING TITLE
SC-27575-AA-300-00	RTU PANEL LAYOUT AND BILL OF MATERIALS (SPARTAN)

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

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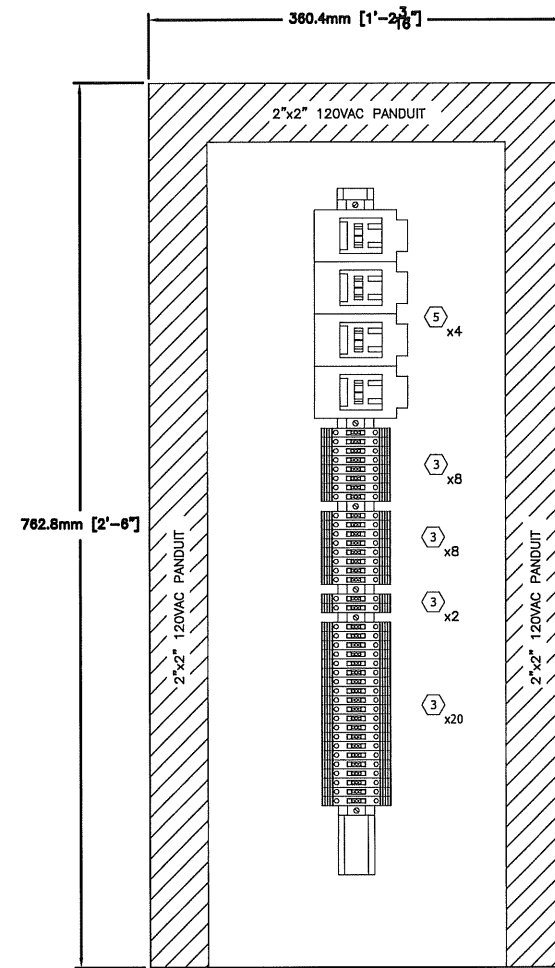
SCALE: N.T.S. SIZE: D

EPCM PROJECT#: VARIOUS

PennWest Exploration

MCC PACKAGE
 LSD: VARIOUS
 STANDARD SATELLITE WELLPAD MCC DESIGN
 RTU PANEL LAYOUT AND BILL OF MATERIALS

DWG# TYPICAL-ELC-5000 SHT 1 OF 1 REV 0



PANDUIT LEGEND
 24VDC PANDUIT
 120VAC PANDUIT

MATERIAL LIST						
ITEM#	QTY	DESCRIPTION	MANUFACTURER	CATALOGUE NO.	SIZE	SUPPLIER
1	AS REQ'D	MOUNTING RAIL	WEIDMULLER	TS-35		OWNER
2	6	TAG HOLDERS	WEIDMULLER	SCHT 5		OWNER
3	38	FEED THROUGH TERMINALS	WEIDMULLER	WDU 2.5		OWNER
4	0	MRS 120VAC 1CO RELAY CLASS 1 DIV 2	WEIDMULLER	MRS		OWNER
5	4	4-POLE CONTACTOR	GENERAL ELECTRIC	CL04A400M		OWNER
6	AS REQ'D	GROUND BUS	OPEN	-	SEE LAYOUT	OWNER
7	AS REQ'D	TERMINAL END PLATE	WEIDMULLER	WAP		OWNER
8	AS REQ'D	WIRE WAY COMPLETE WITH LID (WH)	PANDUIT			OWNER
9	LOT	WIRE	TEW			OWNER
10	LOT	NAME TAGS	LAMACOID			OWNER
11	1	3 POSITION SWITCH (LOCATED ON DOOR)				OWNER

NOTE:
 PANDUIT LAYOUT AND TERMINALS MOUNTED IN MCC BUCKET.

2 BILL OF MATERIALS
 ~ SCALE:N.T.S.

1 CONTACTOR TERMINAL LAYOUT
 ~ SCALE:N.T.S.

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

ENGINEER STAMP

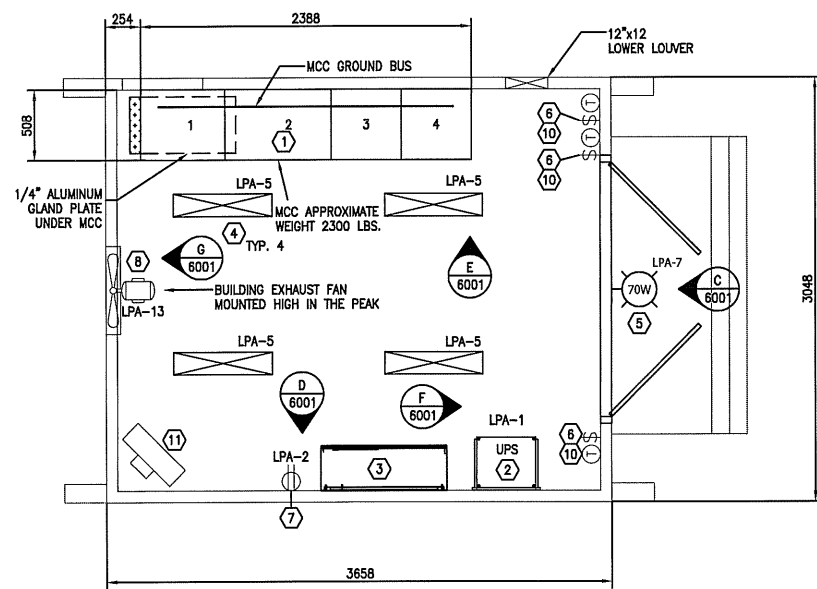
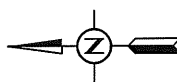
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 EPCM PROJECT#: VARIOUS

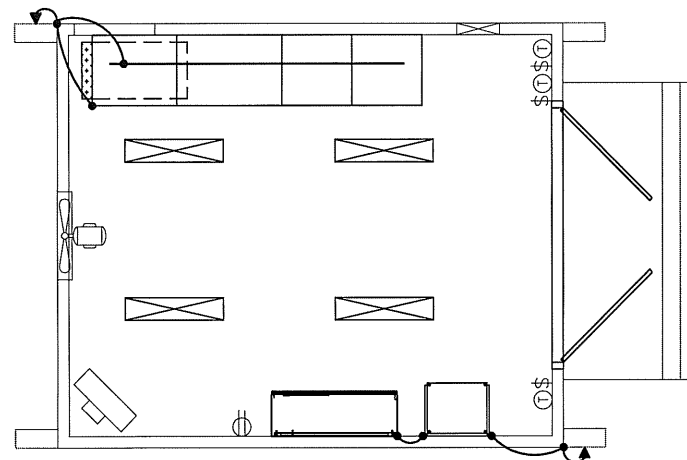
PennWest Exploration

MCC PACKAGE
 LSD: VARIOUS
 STANDARD SATELLITE WELLPAD MCC DESIGN
 CONTACTOR PANEL LAYOUT

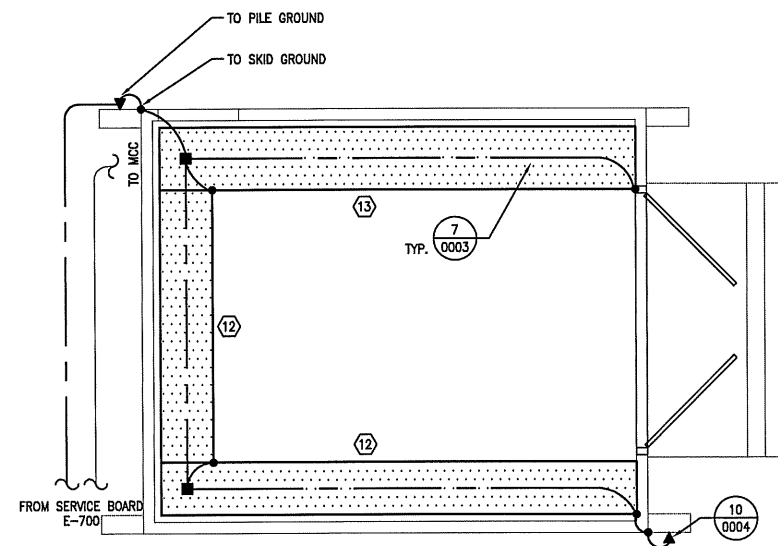
DWG# TYPICAL-ELC-5060 SHT 1 OF 1 REV 0



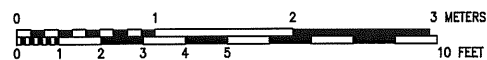
A MCC BUILDING (BU-700)-EQUIPMENT LAYOUT
SCALE: 1:25



C MCC BUILDING (BU-700)-EQUIPMENT BOUNDING & GROUNDING LAYOUT
SCALE: 1:25



B MCC BUILDING (BU-700)-CABLE TRAY BOUNDING & GROUNDING LAYOUT
SCALE: 1:25



MATERIAL LIST

ITEM	QTY	DESCRIPTION
①	1	MCC AS PER SINGLE LINE (OWNER SUPPLIED)
②	1	HAYLEY UPS ,20AMP, 24VDC. MANUFACTURER: HAYLEY (VENDOR SUPPLIED)
③	1	RTU PANEL (OWNER SUPPLIED)
④	4	120VAC, DOUBLE TUBE CEILING MOUNT, FLUORESCENT LUMINARIES c/w HOUSING & 3/4" HUB, TUBES AND GUARDS, GENERAL PURPOSE. MANUFACTURER: OPEN, (VENDOR SUPPLIED)
⑤	1	120VAC, 70W HPS WALL MOUNT FIXTURE, c/w LAMP, GLOBE, GUARD, c/w PHOTOCELL MANUFACTURER: CROUSE-HINDS, P/N: CPMS2W070/120V2PC20
⑥	3	GENERAL PURPOSE, 115AMP, SINGLE THROW SWITCH. MANUFACTURER: OPEN (VENDOR SUPPLIED)
⑦	1	115VAC, 20A, DUPLEX RECEPTACLE, GENERAL PURPOSE. MANUFACTURER: OPEN (VENDOR SUPPLIED)
⑧	1	12" EXHAUST FANS WITH BACK GUARD, SHUTTER AND STORM HOOD 120VAC, 1/4HP, 1φ, 60Hz MANUFACTURER: OPEN (VENDOR SUPPLIED)
⑨	-	ALLEN-BRADLEY MANUAL MOTOR SWITCH P/N: ALB800-TOX4 C/W ALB800N1 LOCKING NAMEPLATE AND ALBP17 HEATER ELEMENT. (VENDOR SUPPLIED)
⑩	3	THERMOSTAT MANUFACTURER: OPEN (VENDOR SUPPLIED)
⑪	1	5KW, 480VAC, 3φ CALORITECH HEATER P/N: GE057CT c/w SWITCH, THERMOSTAT AND CONTACTOR (VENDOR SUPPLIED)
⑫	AS REQ'D	300mm WIDE, ALUMINUM LADDER TRAY. 150mm HIGH, 228mm RUNG SPACING, TYPE 'H', CSA CLASS E. MANUFACTURER: T&B OR EQUAL (FIELD CONTRACTOR SUPPLIED)
⑬	AS REQ'D	450mm WIDE, ALUMINUM LADDER TRAY. 150mm HIGH, 228mm RUNG SPACING, TYPE 'H', CSA CLASS E. MANUFACTURER: T&B OR EQUAL (FIELD CONTRACTOR SUPPLIED)

NOTES

- BUILDING TO BE WIRED GENERAL PURPOSE INSTALLATION AS PER CEC 22.1-09.
- BUILDING DESIGN AND MANUFACTURING TO CONFORM WITH NATIONAL BUILDING CODE 2005.
- MCC AND PLC TO BE TOP ENTRY.
- ALL BUILDING CONDUIT TO BE MINIMUM 3/4" EMT.
- ALL CONDUIT AND END DEVICES TO BE SUPPORTED OFF ALL BUILDING WALLS AND STEEL USING UNISTRUT & STRAPS. DISTANCE BETWEEN SUPPORTS 1.5 METERS.
- BILL OF MATERIALS TO BE USED AS A GUIDE, CONTRACTORS RESPONSIBILITY TO VERIFY PART NUMBERS BEFORE ORDERING MATERIALS. SUBSTITUTION OF MATERIAL MUST BE APPROVED BEFORE INSTALLATION.
- #18 AWG FOR BELDEN, UNLESS OVER 100' THAN #16 AWG. #14 AWG FOR CONTROL. #12 AWG FOR SKID 120VAC.
- DOORS TO BE EQUIPPED WITH A 1' (304.8mm) REMOVABLE PANEL SECTION.
- EAVE HEIGHT 10' (3048mm).
- FIELD CONTRACTOR IS RESPONSIBLE FOR ALL CABLE TRAY WALL PENETRATIONS FOR OUTGOING CABLES. FIELD CONFIRM CABLE TRAY ROUTING INSIDE MCC BUILDING AND TO SATELLITE BUILDING. ALL CABLE TRAY SUPPORTS BY FIELD CONTRACTOR.

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	12/06/18	ISSUED FOR INFORMATION	SZ		

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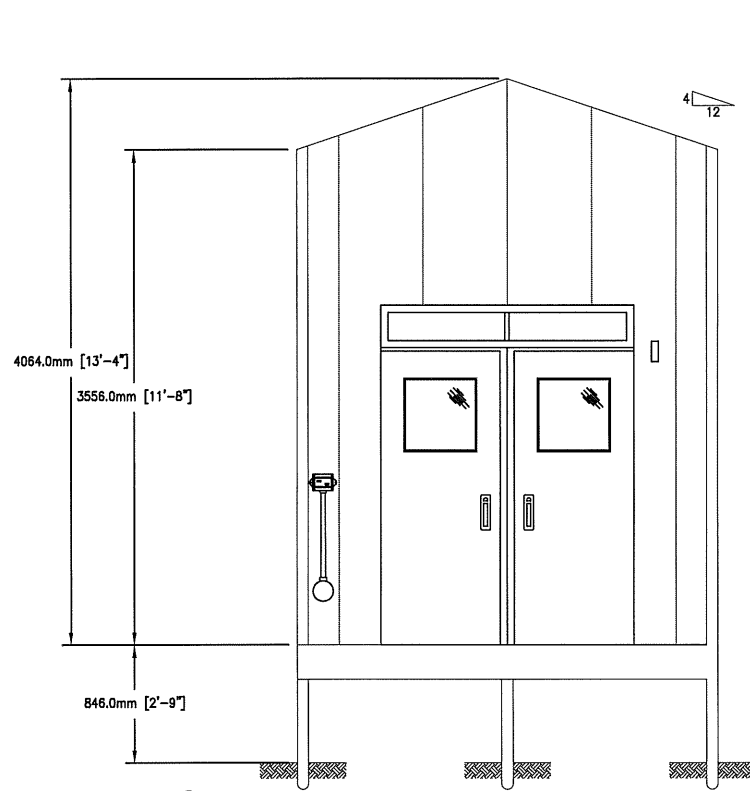
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EPCM PROJECT#:	VARIOUS	

PennWest

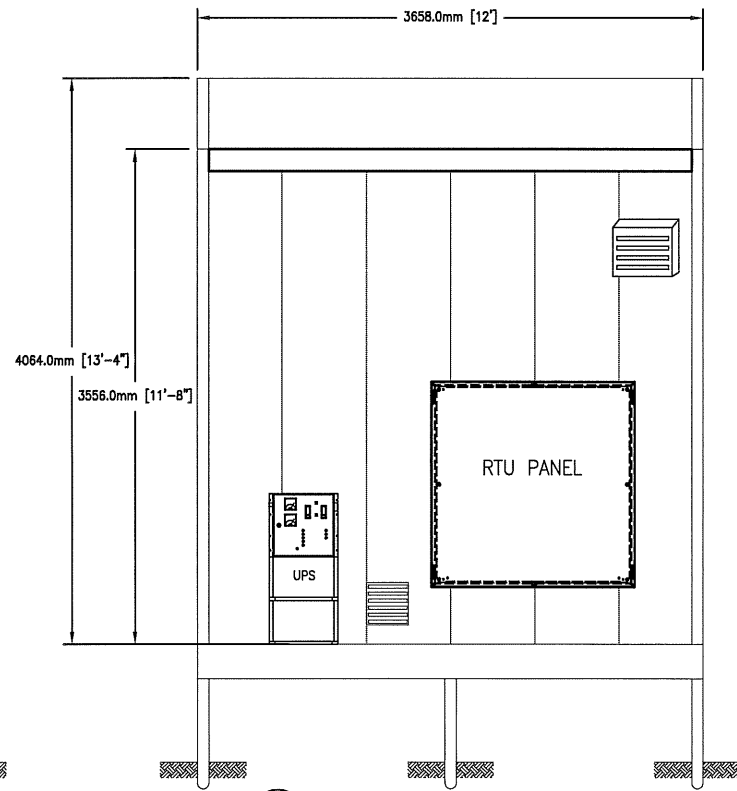
Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
MCC BUILDING (BU-700) LAYOUT

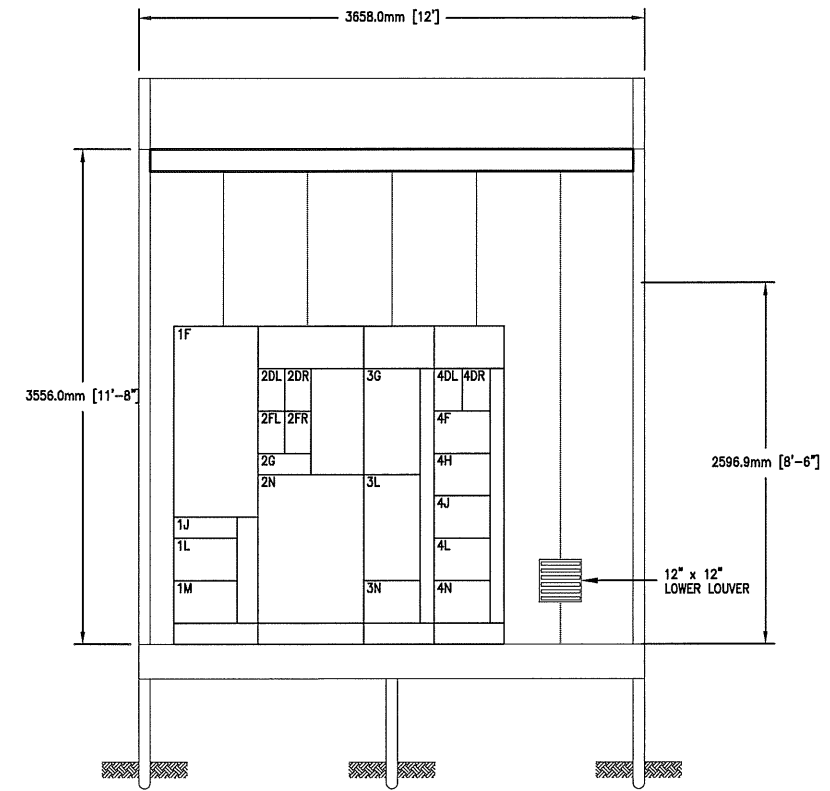
DWG#	TYPICAL-ELC-6000	SHT 1 OF 1	REV 0
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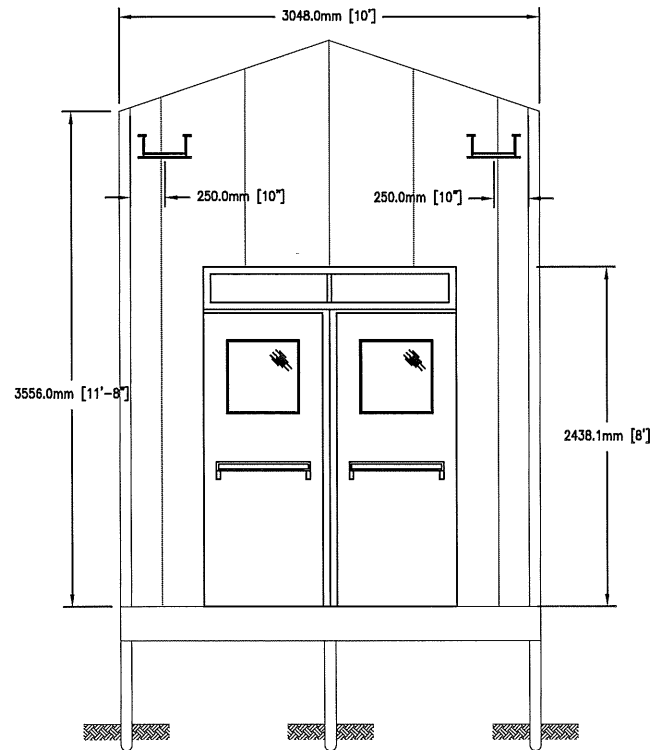
C MCC BUILDING EXTERIOR FRONT VIEW
SCALE: NTS



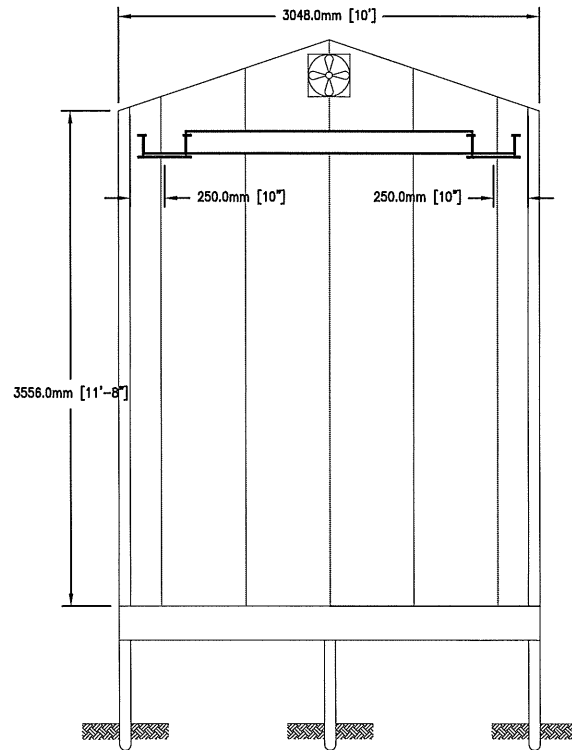
D MCC BUILDING INTERIOR LEFT-SIDE VIEW
SCALE: NTS



E MCC BUILDING INTERIOR RIGHT-SIDE VIEW
SCALE: NTS



F MCC BUILDING INTERIOR FRONT VIEW
SCALE: NTS



G MCC BUILDING INTERIOR REAR VIEW
SCALE: NTS

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
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SCALE	1:25	SIZE	D
EPCM PROJECT#:	VARIOUS		

PennWest
Exploration

MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
MCC BUILDING (BU-700) ELEVATIONS

DWG# TYPICAL-ELC-8001 SHT 1 OF 1 REV 0

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REV	CONDUIT/ CABLE #	APPLICATION	LOAD		ROUTING			WIRE						NOTES		
			HP/KVA	VOLTAGE	FROM	VIA	TO	NO OF COND.	SIZE AWG	CABLE TYPE	INSUL.	VOLT RATING	EST. LENGTH (m)		SUPPLIED / INSTALLED BY	
MF-001		POWER		480VAC	UTILITY TRANSFORMER	UG	MAIN DISCONNECT (SERVICE BOARD)	4C	#3/0	TECK90	XLPE	1000	-	-	-	
MF-002		POWER		480VAC	MAIN DISCONNECT (SERVICE BOARD)		CABLE	METER BASE (SERVICE BOARD)	4C	#3/0	TECK90	XLPE	1000	-	-	-
MF-003		POWER		480VAC	METER BASE (SERVICE BOARD)		TRAY/UG	480V MCC MAIN BREAKER (MCC BUILDING)	4C	#3/0	TECK90	XLPE	1000	-	-	-
P-BH0001		POWER	5 KW	480VAC	480V MCC BUCKET 1JL		CONDUIT	MCC BUILDING HEATER	3C	#12	RW90	XLPE	600	-	-	-
P-SH1050		POWER	15 KW	480VAC	480V MCC BUCKET 1H		TRAY	SEPARATOR BUILDING HEATER	3C	#8	TECK90	XLPE	600	-	-	-
TSTAT-HEATRACE		POWER		120VAC	480V MCC BUCKET 3G - CONTACTOR PANEL		CONDUIT	HEAT TRACE THERMOSTAT	2C	#12	RW90	XLPE	600	-	-	-
P-EF0001		POWER		120VAC	LIGHTING PANEL 'A'		CONDUIT	MCC BUILDING EXHAUST FAN	2C	#12	RW90	XLPE	600	-	-	-
P-INTLITES		POWER		120VAC	LIGHTING PANEL 'A'		CONDUIT	MCC BUILDING INTERIOR LIGHTS	2C	#12	RW90	XLPE	600	-	-	-
P-EXTLITES		POWER		120VAC	LIGHTING PANEL 'A'		CONDUIT	MCC BUILDING EXTERIOR LIGHTS	2C	#12	RW90	XLPE	600	-	-	-
P-UPS		POWER		120VAC	LIGHTING PANEL 'A'		CONDUIT	HAYLEY 20 AMP UPS	2C	#12	RW90	XLPE	600	-	-	-
P-RTU		POWER		24VDC	HAYLEY 20 AMP UPS		CONDUIT	RTU PANEL	2C	#10	RW90	XLPE	600	-	-	-
C-UPSALARM		CONTROL		24VDC	HAYLEY 20 AMP UPS		CONDUIT	RTU PANEL	4C	#14	RW90	XLPE	600	-	-	-
C-INRTU120		CONTROL		120VAC	RTU PANEL I/O		CONDUIT	480V MCC VARIOUS SECTIONS - STARTER PERMISSIVES	4C	#12	RW90	XLPE	600	-	-	-
C-INRTU24		CONTROL		24VDC	RTU PANEL I/O		CONDUIT	480V MCC VARIOUS SECTIONS - STARTER STATUS	4C	#14	RW90	XLPE	600	-	-	-
P-1000		POWER		120VAC	LIGHTING PANEL 'A'		TRAY	SEPARATOR BUILDING JBP-1000	20C	#10	TECK90	XLPE	600	-	-	-
P-EHT1001		POWER		120VAC	SEPARATOR BUILDING, JBP-1000		TRAY	POWER KIT, EHT-1001	2C	#10	TECK90	XLPE	600	-	-	-
P-EHT1002		POWER		120VAC	SEPARATOR BUILDING, JBP-1000		TRAY	POWER KIT, EHT-1002	2C	#10	TECK90	XLPE	600	-	-	-
P-EHT1003		POWER		120VAC	SEPARATOR BUILDING, JBP-1000		TRAY	POWER KIT, EHT-1003	2C	#10	TECK90	XLPE	600	-	-	-
P-M1020		POWER	3 HP	480VAC	480V MCC BUCKET 1L		TRAY	SEPARATOR BUILDING, INSTRUMENT AIR COMPRESSOR	3C	#10	TECK90	XLPE	600	-	-	-
C-M1020		CONTROL		120VAC	480V MCC BUCKET 1L		TRAY	SEPARATOR BUILDING, INSTRUMENT AIR COMPRESSOR	4C	#14	TECK90	XLPE	600	-	-	HS-1020 & PSHH-1020
C-1000		CONTROL		24VDC	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBC-1000	30C	#14	TECK90	XLPE	600	-	-	-
C-1001		CONTROL		24VDC	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBC-1000	30C	#14	TECK90	XLPE	600	-	-	-
C-1002		CONTROL		24VDC	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBC-1000	30C	#14	TECK90	XLPE	600	-	-	-
C-1003		CONTROL		24VDC	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBC-1000	30C	#14	TECK90	XLPE	600	-	-	-
C-1004		CONTROL		24VDC	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBC-1000	30C	#14	TECK90	XLPE	600	-	-	-
C-LSHH-5000		CONTROL		24VDC	SEPARATOR BUILDING, JBC-1000		TRAY	POP TANK TK-2000, LEVEL SWITCH LSHH-5000	2C	#14	TECK90	XLPE	600	-	-	-
A-1000		ANALOG		4-20mA	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBA-1000	4TRI	#16	ACIC	PVC	300	-	-	-
A-1001		ANALOG		4-20mA	RTU PANEL I/O		TRAY	SEPARATOR BUILDING, JBA-1000	12PR	#16	ACIC	PVC	300	-	-	-
ENET-01		COMM		5VDC	RTU PANEL - BLUE TREE MODEM		PANDUIT	RTU PANEL ETHERNET SWITCH	4PR	#24	-	CAT5e	300	-	-	-
ENET-02		COMM		5VDC	RTU PANEL - ROCK27		PANDUIT	RTU PANEL ETHERNET SWITCH	4PR	#24	-	CAT5e	300	-	-	-
ENET-03		COMM		5VDC	RTU PANEL - HMI		PANDUIT	RTU PANEL ETHERNET SWITCH	4PR	#24	-	CAT5e	300	-	-	-

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SCALE: NTS SIZE: D
EPCM PROJECT#: VARIOUS

PennWest
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MCC PACKAGE
LSD: VARIOUS
STANDARD SATELLITE WELLPAD MCC DESIGN
CABEL AND CONDUIT SCHEDULE

DWG# TYPICAL-ELC-7000 SHT 1 OF 1 REV 0