

Canadian Natural

KARR OIL BATTERY
01-34-065-03 W6M
IFC-HP FKOD SKID PRE-WIRE
NOVEMBER 27, 2024



CANDOR PROJECT #2024-004
AFE #FC230544

Prepared By:



ELECTRICAL DRAWING INDEX

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ELECTRICAL CONSTRUCTION NOTES

1.0 CODES & STANDARDS

- 1.1) THE WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL AND PROVINCIAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
- NATIONAL BUILDING CODE
PROVINCIAL BUILDING CODES
CANADIAN ELECTRICAL CODE
PROVINCIAL ELECTRICAL SAFETY CODES AND REGULATIONS
PROVINCIAL ELECTRICAL UTILITIES CODES
PROVINCIAL CODE FOR ELECTRICAL INSTALLATIONS AT OIL & GAS FACILITIES
OCCUPATIONAL HEALTH AND SAFETY CODES AND REGULATIONS
- IN CASE A DISCREPANCY ARISES OR EXISTS BETWEEN CODES, STANDARDS OR DRAWINGS, THE MORE STRINGENT CODE OR STANDARD SHALL APPLY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ELECTRICAL PERMITS TO COMPLETE THE WORK PRIOR TO COMMENCEMENT OF WORK AND SHALL PAY ALL FEES FOR SUCH PERMITS. CONTRACTOR'S PERMITS SHALL COVER THE ENTIRE SCOPE OF WORK. CONTRACTOR TO CONFIRM IF PERMIT IS REQUIRED FOR ACCREDITED ORGANIZATIONS.
- 1.2) THE CONTRACTOR SHALL PROVIDE A COPY OF THE PERMIT AND THE FINAL APPROVAL CERTIFICATE UPON COMPLETION OF THE WORK.
- 1.3) THE CONTRACTOR SHALL AFFIX A BUILDING NAMEPLATE OUTSIDE OF THE MAIN DOOR OF RELOCATABLE BUILDINGS, OUTLINING THE BUILDING AREA CLASSIFICATION, THE PERMIT NUMBER (IF REQUIRED), THE CONTRACTOR NAME AND ADDRESS.

2.0 GENERAL

- 2.1) THE WORK SHALL CONSIST OF ALL ELECTRICAL REQUIREMENTS AS PER THE ATTACHED DRAWINGS AND SCOPE OF WORK.
- 2.2) THE WORK SHALL INCLUDE ALL REQUIRED LABOUR, CONSTRUCTION EQUIPMENT, SUPERVISION, CONSUMABLES, TOOLS, 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 ARISE TO CANDOR ENGINEERING PRIOR TO THE COMMENCEMENT OF WORK. 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) CONTRACTOR TO NOTIFY CANDOR ENGINEERING OF ANY CHANGES TO THE SCOPE. WRITTEN APPROVAL FROM CANDOR ENGINEERING MUST BE RECEIVED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK INCLUDED IN THE REVISED SCOPE.
- 2.6) 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.

3.0 CONSTRUCTION & INSTALLATION

- 3.1) ALL WORK SHALL BE CONDUCTED IN A SAFE MANNER.
- 3.2) ALL MOTORS, PANELS, VESSELS, AND OTHER EQUIPMENT TO BE BONDED TO THE SKID.
- 3.3) CONTRACTOR TO SUPPLY AND INSTALL ALL WIRE/CABLE TO CONNECT ALL END DEVICES TO JUNCTION BOXES.
- 3.4) THE WORK SHALL INCLUDE SUPPLY AND INSTALLATION OF ALL OF THE ITEMS SHOWN ON THE BILL OF MATERIALS AND LAYOUT DRAWINGS.
- 3.5) ANY DEVIATION FROM THE SPECIFIED BILL OF MATERIALS AND DESIGN REQUIRES APPROVAL FROM CANDOR ENGINEERING.
- 3.6) EXPLOSION PROOF FLEXIBLE CONDUITS TO BE COVERED WITH GLYPHTAL AND HEAT SHRINK OR THREE LAYERS OF ELECTRICAL TAPE. RELOCATE FACTORY NAME TAG TO CONDUIT EXTERIOR, ABOVE FINAL COVERING.
- 3.7) PACKING AND POURING OF ALL TECK CONNECTORS AND CONDUIT SEALS TO BE COMPLETED AT SITE. TECK CONNECTORS AND CONDUIT SEALS TO BE POURED AFTER PRECOMMISSIONING AND BEFORE START-UP.
- 3.8) BOXES MOUNTED ON BUILDING WALLS TO HAVE ALUMINUM PLATES OR UNISTRUT INSTALLED BEHIND IT TO PROVIDE ADEQUATE MOUNTING STRENGTH. PLATES TO BE AFFIXED TO STUDS OR TO BE LONG ENOUGH TO SPAN TWO STUDS.
- 3.9) ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A LAMACOID NAMEPLATE.
- 3.10) ALL WIRING TO BE IDENTIFIED AT ALL TERMINALS, SPLICES OR JOINTS WITH PERMANENT LEGIBLE HEAT SHRUNK WIRE MARKERS.
- 3.11) EMPTY CONDUITS TO BE CAPPED OFF FOR TRANSPORT.
- 3.12) SILICONE SEAL SHALL BE APPLIED AROUND ALL CONDUITS PENETRATING THE BUILDING EXTERIOR.
- 3.13) BARE COPPER CONNECTIONS SHALL BE COATED WITH GLYPHTAL.
- 3.14) AC POWER CIRCUITS SHALL BE COLORED AS PER THE CANADIAN ELECTRICAL CODE AND SIZED #12 AWG MINIMUM.
- 3.15) AC CONTROL CIRCUITS SHALL BE BLACK, SIZED #14 AWG MINIMUM.
- 3.16) DISCRETE CONDUCTORS - RED/WHITE - POSITIVE/SOURCE
BLACK - NEGATIVE/SINK
- ANALOG CONDUCTORS - WHITE - POSITIVE/SOURCE
RED - SIGNAL
BLACK - NEGATIVE/SINK
- 3.17) DISCRETE INSTRUMENT WIRING FOR FIELD OR SKID SHALL BE #14 AWG MINIMUM.
- 3.18) ANALOG INSTRUMENT WIRING FOR FIELD OR SKID SHALL BE TWISTED SHIELDED #16 AWG MINIMUM.
- 3.19) SPADE AND RING LUGS TO BE UTILIZED WHERE SCREW TERMINALS ARE AVAILABLE. WIRE CONNECTORS TO BE UTILIZED ON SPLICES ONLY.
- 3.20) ALL LIGHTS AND DEVICES TO BE MOUNTED FOR FINAL INSPECTION PURPOSES. UPON ACCEPTANCE, LIGHTS TO BE REMOVED, REPACKAGED IN THEIR ORIGINAL PACKAGING AND SECURED TO AVOID DAMAGE IN TRANSPORT FOR PREWIRED UNITS.
- 3.21) MOTOR STARTERS TO BE COMPLETE WITH PROPERLY SIZED OVERLOADS. OVERLOADS TO BE SIZED PER THE MOTORS FULL LOAD AMPACITY AND SERVICE FACTOR.
- 3.22) FIELD ELECTRICAL CONTRACTOR TO COMPLETE INSTALLATION OF SHIP LOOSE ITEMS.
- 3.23) CONDUIT SYSTEMS TO BE CLEANED OUT PRIOR TO WIRE INSTALLATION.
- 3.24) CARE SHALL BE TAKEN IN PULLING CONDUCTORS TO PREVENT DAMAGE TO THE INSULATION. DAMAGED CONDUCTORS SHALL BE REPLACED AT THE ELECTRICAL CONTRACTORS COST.
- 3.25) APPROVED WIRE PULLING COMPOUND MAY BE USED DURING CONDUCTOR PULLING. ALL EXCESS COMPOUND SHALL BE REMOVED FROM WIRE UPON COMPLETION OF WIRE PULLING.
- 3.26) SHIELDS OF INSTRUMENT CABLES SHALL BE GROUNDED ONLY AT ONE END (TYPICALLY THE SUPPLY END). THE FIELD END OF THE SHIELD SHALL BE CUT AND ISOLATED BY THE USE OF HEAT SHRINK.
- 3.27) UNIONS SHALL BE INSTALLED WHERE REQUIRED TO FACILITATE EASY REMOVAL OF EQUIPMENT. WHERE SEALS ARE INSTALLED, THE UNION SHALL BE INSTALLED ADJACENT TO THE FIELD DEVICE, TO FACILITATE REMOVAL OF THE EQUIPMENT WITHOUT BREAKAGE OF THE SEAL.
- 3.28) 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.
- 3.29) ALL FIELD ENTRIES TO TERMINATION/JUNCTION BOXES TO BE BOTTOM ENTRY ONLY.
- 3.30) LIGHTING SHALL BE INSTALLED AS A COMPLETE SYSTEM OF FIXTURES, LAMPS, BALLAST'S, DRIVERS, SUPPORTS, AND CONTROL DEVICES.
- 3.31) TERMINATION/JUNCTION BOXES TO BE LOCATED A MINIMUM OF 1500mm AWAY FROM EXHAUST VENTS, LOUVERS AND INSTRUMENT VENTS ON CLASS I, ZONE I ENCLOSURES.
- 3.32) UNLESS OTHERWISE SPECIFIED ALL DEVICE CONNECTIONS TO BE MADE USING TECK90 CABLE, ACIC OR RIGID ALUMINUM CONDUIT.
- 3.33) WHERE REQUIRED, CONTRACTOR SHALL SUPPLY AND INSTALL HEAT TRACING BELOW GRADE. HEAT TRACING TO FOLLOW PIPE TO BOTTOM OF TRENCH AND RETURN ABOVE GRADE TO TOP OF HORIZONTAL PIPE FOR END KIT PLACEMENT.
- 3.34) CONTRACTOR TO TEST HEAT TRACE CABLES UPON RECEIPT, AFTER INSTALLATION, AFTER INSULATION, AND PRIOR TO ENERGIZATION. DEFECTIVE TRACERS TO BE REPLACED. REPLACEMENT CABLES TO BE RETESTED AS ABOVE. CONTRACTOR TO SUBMIT TEST REPORTS TO CANDOR ENGINEERING.
- 3.35) ALL HEAT TRACED PIPE CLADDING TO BE IDENTIFIED WITH WARNING LABELS AT THE BEGINNING AND END OF THE RUN, AND EVERY 6m IN BETWEEN.
- 3.36) ELECTRICAL EQUIPMENT SHALL BE APPROVED FOR THE SPECIFIC PURPOSE FOR WHICH IT IS TO BE EMPLOYED.
- 3.37) LIQUID-TIGHT FLEXIBLE CONDUIT AND CONNECTORS SHALL BE USED WHEN CONNECTING TO VIBRATING ELECTRICAL EQUIPMENT (AIR COMPRESSORS, MOTORS, ETC.)

4.0 EQUIPMENT & MATERIALS

- 4.1) THE CONTRACTOR SHALL INSTALL NEW EQUIPMENT AND MATERIALS TO COMPLETE THE WORK UNLESS OTHERWISE SPECIFIED.
- 4.2) THE CONTRACTOR SHALL BE RESPONSIBLE TO ACCEPT, OFFLOAD AND INSTALL ALL ELECTRICAL EQUIPMENT AS REQUIRED. CONTRACTOR SHALL PROVIDE CANDOR ENGINEERING WITH SIGNED PACKING SLIPS CONFIRMING RECEIPT OF THE OWNER SUPPLIED 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 THEIR COST.
- 4.4) VENDOR TO PROVIDE A COMPLETE PART DESCRIPTION FOR ANY "EQUALS" THEY MAY PROVIDE. CANDOR ENGINEERING TO APPROVE EQUALS PRIOR TO INSTALLATION.
- 4.5) CABLE TRAY SHALL BE ALUMINUM CLASS E LADDER TYPE, 150mm DEEP. TRAY COVERS TO BE INSTALLED WHERE SUBJECT TO MECHANICAL DAMAGE WHERE APPLICABLE. TRAY SHALL BE A MINIMUM OF 300mm BELOW ANY TERMINATION/JUNCTION BOX. TRAYS TO HAVE END PLATES AND CABLE DROP OUT PLATES. TRAYS TO HAVE EXPANSION JOINTS AS PER THE MANUFACTURERS REQUIREMENTS. JOINTS TO BE BONDED WITH BONDING JUMPER.
- 4.6) A PERMANENT, LEGIBLE WARNING NOTICE CARRYING THE WORDING "DANGER - HIGH VOLTAGE" SHALL BE PLACED IN A CONSPICUOUS POSITION ON ALL CABLE TRAYS CONTAINING HIGH VOLTAGE CONDUCTORS (GREATER THAN 750V) WITH MAXIMUM SPACING OF WARNING NOTICES NOT TO EXCEED 10m.
- 4.7) CONTROL DEVICES SHALL BE INSTALLED AS PER THE SUPPLIED BILL OF MATERIALS.

5.0 INSPECTION, TESTING & 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 CONDUCTORS OPERATING IN EXCESS OF 240VAC. MOTORS OPERATING IN EXCESS OF 240VAC TO BE MEGGAR TESTED. TESTS TO BE RECORDED AND SUBMITTED TO CANDOR ENGINEERING.
- 5.3) THE CONTRACTOR SHALL PERFORM A CONTINUITY TEST ON ALL WIRING, RECORD THE READINGS, AND SUBMIT THE REPORT TO CANDOR ENGINEERING.
- 5.4) ALL EQUIPMENT SHALL BE APPROVED FOR THE LOCATION AND HAZARDOUS AREA IN WHICH IT IS INSTALLED.
- 5.5) THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNERS FINAL ACCEPTANCE.
- 5.6) CONTRACTOR SHALL FUNCTION TEST ALL WIRING AND CONNECTED EQUIPMENT, USING THE PROPER VOLTAGE AND CURRENT, PRIOR TO OWNER COMMISSIONING OF PLANT.
- 5.7) ALL MOTORS SHALL BE CHECKED FOR PROPER LUBRICATION AS PER MANUFACTURERS SPECIFICATIONS.
- 5.8) ALL ELECTRICAL ROTATING EQUIPMENT SHALL BE ENERGIZED PRIOR TO COMMISSIONING TO ENSURE CORRECT ROTATION.
- 5.9) CONTRACTOR SHALL SUPPLY THREE SETS OF AS BUILT DRAWINGS AFTER CONSTRUCTION. THE CONTRACTOR SHALL USE RED INK FOR ANY ADDITIONS OR MODIFICATIONS, GREEN HIGHLIGHTER FOR ANY DELETIONS, AND BLUE INK FOR ANY NOTES TO THE DESIGNER/DRAFTER. ONE SET OF AS-BUILT DRAWINGS TO REMAIN ON SITE. ONE SET SHALL BE FORWARDED TO CANDOR ENGINEERING WITHIN TWO WEEKS OF THE PROJECT COMPLETION, AND ONE SET TO REMAIN WITH THE CONTRACTOR.
- 5.10) CONTRACTOR TO RETAIN ALL DATA, INFORMATION MANUALS, INSTALLATION INSTRUCTIONS, ETC. FOR DATA BOOKS. CONTRACTOR SHALL SUPPLY THREE COPIES OF DATA BOOK INFORMATION FOR EQUIPMENT SUPPLIED BY CONTRACTOR, COLLATED IN BINDERS, AT THE END OF THE PROJECT TO CANDOR ENGINEERING.



STAMPS/SEALS, IF SIGNED AND DATED APPLY TO CURRENT REVISION ONLY

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ISSUED FOR CONSTRUCTION (CANDOR #2024-004, AFE #FC230544)

JB

2024-11-27 SY GC

DRAWN BY:

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DATE:

2024-11-27

DESIGNED BY:

JB

DATE:

2024-11-27

CHECKED BY:

SY

DATE:

2024-11-27

APPROVED BY:

GC

DATE:

2024-11-27

CLIENT BY:

DATE:



TITLE: KARR OIL BATTERY
LSD 01-34-065-03 W6M
ELECTRICAL CONSTRUCTION NOTES

SCALE: N.T.S.

JOB NO.

2024-004

DRAWING NO.

KAR-0134-GN-EL-000001

REV.

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DRAWING NO.

REFERENCE DRAWINGS

ENGINEER STAMP

PERMIT STAMP

REV.

DESCRIPTION

BY

DATE

CHK

APP.

ENG.

SINGLE LINE DIAGRAM SYMBOLOGY		WIRING DIAGRAM SYMBOLOGY		LAYOUT SYMBOLOGY	
A		POWER GRID		BUILDING LAYOUTS	
		RATIO CURRENT TRANSFORMER			ESD PUSHBUTTON
		POTENTIAL TRANSFORMER			DATA OUTLET (RJ-45)
		LIGHTNING ARRESTOR			TELEPHONE OUTLET (RJ-11)
		SURGE CAPACITOR			PHOTO-ELECTRIC CELL
		POWER CAPACITOR			RECEPTACLE-SINGLE
		AUTO TRANSFORMER			RECEPTACLE-DUPLEX
		NEUTRAL GROUND RESISTOR			SMOKE DETECTOR
		DISCONNECT DEVICE DRAW-OUT, STAB			HEAT RISE DETECTOR
		FUSED DISCONNECT			INSTRUMENT IDENTIFIER
B		POWER CONSUMPTION METER		GROUNDING	
		SURGE SUPPRESSOR			GROUND ROD
		PLC/DCS/RTU/SCP			GROUND ROD
		CONTROL INTERLOCK			GROUND CONNECTION BOLTED OR CLAMPED
		X PILOT LIGHT			GROUND CONNECTION COMPRESSION TYPE
		X POWER SYSTEM DEVICE FUNCTION NUMBERS		LIGHTING	
		CIRCUIT BREAKER			EMERGENCY LIGHTING POWER PACK UNIT
		MAGNETIC ONLY BREAKER			REMOTE DOUBLE HEAD
		MV/HV CIRCUIT BREAKER			EXIT LIGHT
		COMBINATION STARTER			SWITCH SINGLE-POLE
C		THERMAL OVERLOAD			SWITCH DOUBLE-POLE
		CONTACTOR			SWITCH THREE-WAY
		X DEVICE TYPE			SWITCH FOUR-WAY
		AM AMMETER		HEAT TRACE	
		ETM ELAPSED TIME METER			END KIT
		FM FREQUENCY METER			END KIT C/W LED
		GD GROUND DETECTOR		LINE TYPE LEGEND	
		PFM POWER FACTOR METER			PANEL WIRING
		SYN SYNCHROSCOPE			FIELD WIRING
		TI TEMPERATURE INDICATOR			SKID WIRING
D		VAM VOLT-AMP METER			OVERHEAD ELECTRICAL
		VM VOLT METER			UNDERGROUND ELECTRICAL
		WHM WATT-HOUR METER			HEAT TRACE CABLE
		KWH KILOWATT HOUR METER			MAIN GROUND GRID CONDUCTOR
		KVAR KILOVAR METER			GROUNDING CONDUCTOR
		X CONTROL STATION TYPE		TERMINAL BLOCK SYMBOLOGY	
		O/O ON OFF			CONTROLLER TERMINAL
		S/S STOP START			CONTROL PANEL FUSED TERMINAL
		A/O AUTO OFF			CONTROL PANEL DISCONNECT TERMINAL
		H/A HAND AUTO			CONTROL PANEL FEEDTHROUGH TERMINAL
E		HOA HAND OFF AUTO			CONTROL PANEL PE TERMINAL
		FSS FAST SLOW STOP			FIELD JUNCTION BOX TERMINAL
		FSR FORWARD STOP REVERSE			VENDOR PANEL OR EQUIPMENT TERMINAL
		L/R LOCAL REMOTE			MCC TERMINAL
		JOA JOG OFF AUTO			CONTACTOR PANEL TERMINAL
		S SPECIAL			MARSHALLING TERMINAL
		T THERMOSTAT			LIGHTING PANEL NEUTRAL BUS
		TS TIMER SWITCH			WIRE NUT (FIELD WIRING CONNECTION)
		X UNIT HEATER/HVAC		BUILDING LAYOUTS	
		X DISTRIBUTION PANEL			EXHAUST FAN
F		X VFD			CLAMPS
		X SOFT STARTER			ANTENNA
		X MOTOR C/W HP RATING			FIRE EYE
		X GENERATOR			X CONTROL STATION TYPE
		X ON OFF			O/O ON OFF
		X STOP START			S/S STOP START
		X AUTO OFF			A/O AUTO OFF
		X HAND AUTO			H/A HAND AUTO
		X HAND OFF AUTO			HOA HAND OFF AUTO
		X FAST SLOW STOP			FSS FAST SLOW STOP
G		X FORWARD STOP REVERSE			FSR FORWARD STOP REVERSE
		X LOCAL REMOTE			L/R LOCAL REMOTE
		X JOG OFF AUTO			JOA JOG OFF AUTO
		X SPECIAL			S SPECIAL
		X THERMOSTAT			T THERMOSTAT
		X TIMER SWITCH			TS TIMER SWITCH
		X UNIT HEATER/HVAC			X UNIT HEATER/HVAC
		X DISTRIBUTION PANEL			X DISTRIBUTION PANEL
		X VFD			X VFD
		X SOFT STARTER			X SOFT STARTER

DRAWING NO.	REFERENCE DRAWINGS	ENGINEER STAMP	PERMIT STAMP	REV.	DESCRIPTION	BY	DATE	CHK	APP.	ENG.	DRAWN BY:	DATE:	DESIGNED BY:	DATE:	CHECKED BY:	DATE:	APPROVED BY:	DATE:	CLIENT BY:	DATE:	SCALE:	JOB NO.	DRAWING NO.	REV.
				0	ISSUED FOR CONSTRUCTION (CANDOR #2024-004, AFE #FC230544)	JB	2024-11-27	SY	GC		HT	2024-11-27	JB	2024-11-27	SY	2024-11-27	GC	2024-11-27			N.T.S.	2024-004	KAR-0134-GN-EL-000002	0

TITLE: KARR OIL BATTERY
LSD 01-34-065-03 W6M
ELECTRICAL SYMBOL LEGEND

SCALE: N.T.S.

CABLE & CONDUIT SCHEDULE

[illegible]

CABLE/CONDUIT IDENTIFIERS

MF	-	MAIN FEEDER
F	-	FEEDER
NGR	-	NEUTRAL GROUND RESISTOR
PC	-	POWER/CONTROL
C	-	POWER
AS	-	CONTROL
TX	-	DISCRETE
	-	ANALOG
RTD	-	RESISTANCE TEMP. DEVICE
TC	-	THERMOCOUPLE
COM	-	COMMUNICATIONS
CB	-	CABLE BUS
DUCT	-	DUCT

TRAY	-	CABLE TRAY
SURFACE	-	SURFACE
U/G	-	UNDERGROUND
O/H	-	OVERHEAD

EMT — ELECTRICAL METALLIC TUBING
RAC — RIGID ALUMINUM CONDUIT
RSC — RIGID STEEL CONDUIT
RGSC — RIGID GALVANIZED STEEL CONDUIT
DB2 — DIRECT BURIAL PVC CONDUIT
PVC — POLYVINYL CHLORIDE CONDUIT
HDPE — HIGH DENSITY POLYETHYLENE CONDUIT

CU — COPPER
AL — ALUMINUM

C	- CONDUCTORS
PR	- PAIR
TR	- TRIADS

TC	-	TRAY CABLE
RW90	-	RUBBER (THERMOSET)
TECK90	-	HL TECK CABLE
CXC	-	COAXIAL CABLE
NMD90	-	NONMETALLIC SHEATHED CABLE
TEW	-	THERMOPLASTIC
CIC	-	CONTROL INSTRUMENTATION CABLE
ACIC	-	ARMORED CONTROL INSTRUMENTATION CABLE
AWJL	-	ARMORED CABLE W/ET RATED DIRECT BURIAL
CAT5E	-	ETHERNET COMMUNICATION CABLE
CAT6	-	ETHERNET COMMUNICATION CABLE
FIBER	-	FIBER-OPTIC CABLE

☐ NO CHANGES

☒ CHANGES


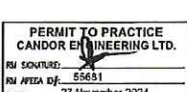
PTW

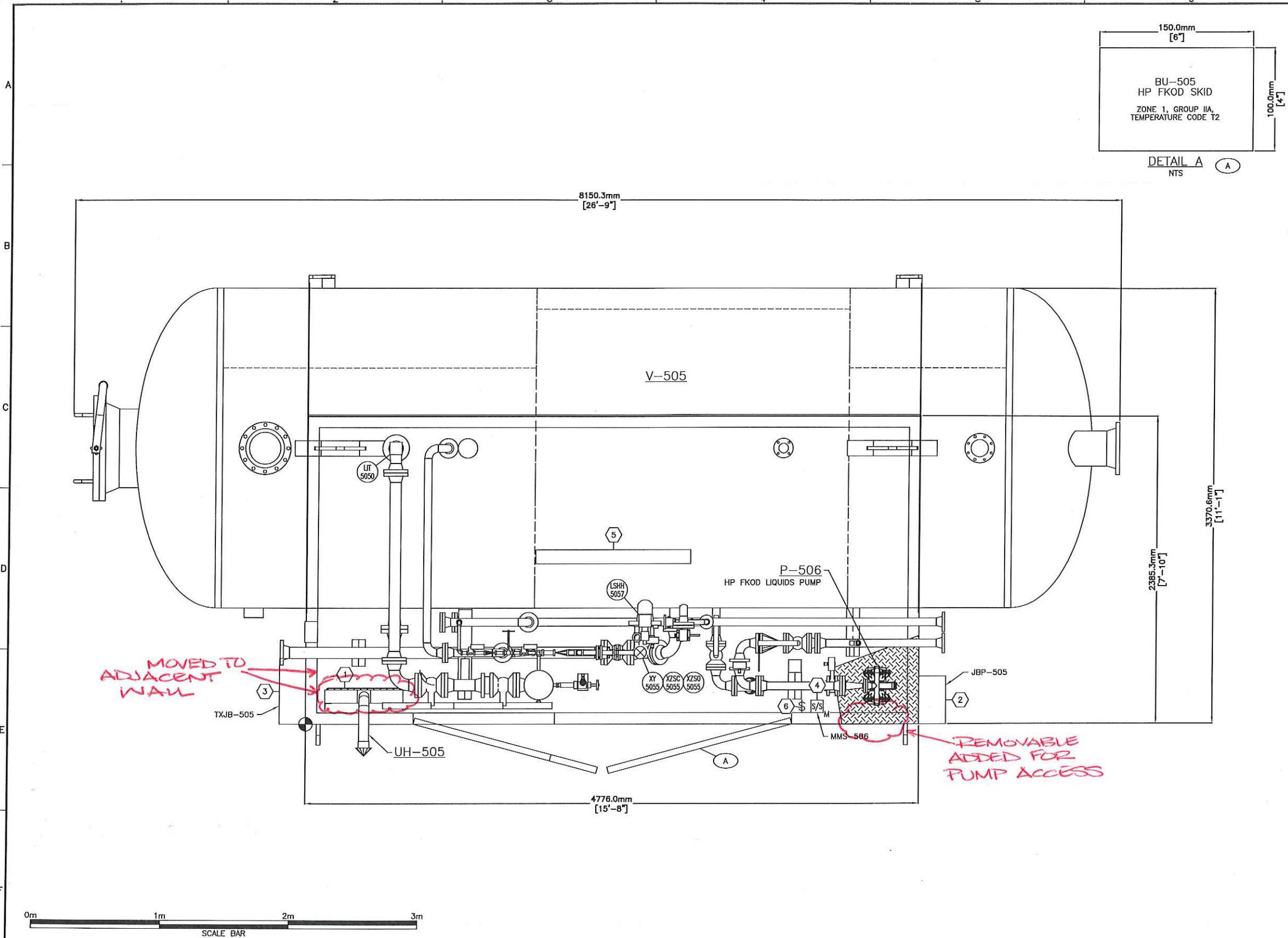
AS BUILT DRAWING

DATE 09/09/2025

STEVEN CHAPMAN

NAME / SIGNATURE

G			 November 27 2024																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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MATERIAL LIST (x)					
ITEM	QTY	DESCRIPTION	MANUFACTURER	PART No.	SUPPLIER
1	1	EXPLOSION PROOF HEATER C/W 12V PREHEAT ELEMENTS & THERMOCOUPLE	CATADYNE	W2430-111112	SKID VENDOR
2	1	POWER JUNCTION BOX	HOFFMAN	A-14128CHQRF6	SKID ELECTRICAL CONTRACTOR
3	1	CONTROL JUNCTION BOX	HOFFMAN	A-20H2008GQRLP	SKID ELECTRICAL CONTRACTOR
4	1	MANUAL MOTOR STARTER, 120VAC, 1HP RATED, 1Ø C/W OVERLOAD	OPEN	OPEN	SKID ELECTRICAL CONTRACTOR
5	1	INTERIOR LIGHT, 120VAC C/W MOUNTING BRACKET	DIALIGHT (OR EQUAL)	LSC3C4M3GEX C/W LSXW5 (OR EQUAL)	SKID ELECTRICAL CONTRACTOR
6	1	LIGHT SWITCH, 120VAC	OPEN	OPEN	SKID ELECTRICAL CONTRACTOR

LAMACOID SCHEDULE (x)				
ITEM	QTY	LAMACOID DESCRIPTION	COLOUR	SIZE (mm)
A	1	SEE DETAIL A	BLACK ON WHITE	150x100

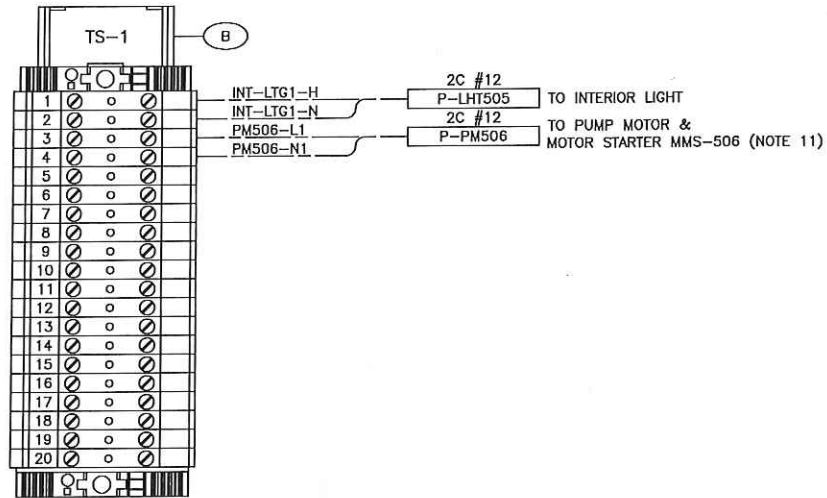
NOTES:
1. THIS BUILDING SHALL BE CLASSIFIED AS ZONE 1, TEMPERATURE CODE T2 AND GAS GROUP IIA. ALL EQUIPMENT INSTALLED ON THIS BUILDING MUST CONFORM TO THOSE CLASSIFICATIONS.

☐ NO CHANGES ☒ CHANGES


AS BUILT DRAWING
DATE 09/09/2025
STEVEN CANDOR
NAME / SIGNATURE

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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JUNCTION BOX: JBP-505
POWER JUNCTION BOX
LOCATION: V-505 HP FLARE KNOCKOUT DRUM

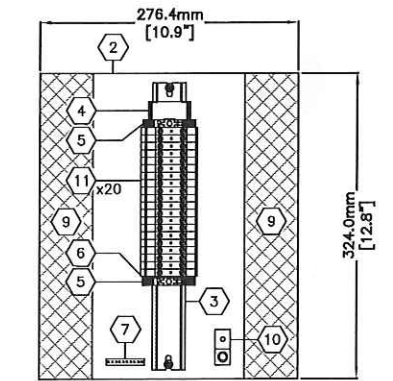
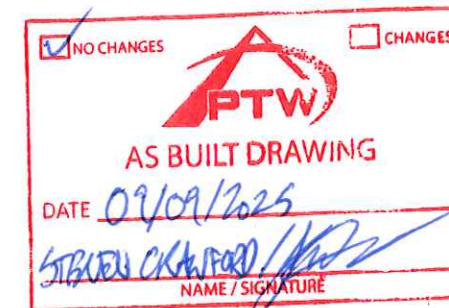


MATERIAL LIST (X)					
ITEM	QTY	DESCRIPTION	MANUFACTURER	PART No.	SUPPLIER
1	1	FIBERGLASS JUNCTION BOX TYPE 4X	HOFFMAN	A-14128CHQRF	CONTRACTOR
2	1	JUNCTION BOX BACK PAN	HOFFMAN	A-14P12	CONTRACTOR
3	A/R	TERMINAL MOUNTING RAIL, TS 35	WEIDMULLER	0514510000	CONTRACTOR
4	1	LABEL DESCRIPTION HOLDER, SHT 5	WEIDMULLER	0292460000	CONTRACTOR
5	2	TERMINAL END BRACKET, EW 35	WEIDMULLER	0383560000	CONTRACTOR
6	1	TERMINAL END PLATE, WAP 2.5-10	WEIDMULLER	1050000000	CONTRACTOR
7	1	GROUNDING BAR C/W SCREWS	ILSCO	N-174 C/W E-153	CONTRACTOR
8	1	BREATHING KIT	HAMMOND	SDA412	CONTRACTOR
9	A/R	WIREWAY C/W COVER	PANDUIT	F2X2LG6 C/W C2LG6	CONTRACTOR
10	1	GROUND LUG	BURNDY	KA2U	CONTRACTOR
11	20	FEED THROUGH TERMINAL, WDU 6 (POWER)	WEIDMULLER	1020200000	CONTRACTOR

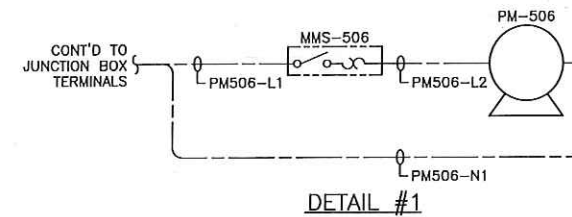
LAMACOID SCHEDULE (X)				
ITEM	QTY	LAMACOID DESCRIPTION	COLOUR	SIZE (mm)
A	1	JBP-505	BLACK ON WHITE	100x50
B	1	TS-1	BLACK ON WHITE	17x35

NOTES:

- LAMACOID ITEM 'A' INSTALLED ON THE FRONT OF THE JUNCTION BOX.
- ALL WIRING TO BE TAKEN FROM THE SIDE OF THE TERMINALS INDICATED IN THE JB LAYOUTS.
- WIRING FOR ALL DEVICES TAGGED AS PER JB LAYOUTS.
- ENSURE ALL CABLES AND CONDUITS EXCEPT GROUNDING/BONDING CABLES ARE COMPLETE WITH GROUND BUSHINGS.
- ALL CABLE AND CONDUIT SHALL ENTER/EXIT THE BOTTOM OF JUNCTION BOX.
- TERMINAL RAILS EXTENDED THE FULL LENGTH OF THE JUNCTION BOX BACKPAN.
- ITEM '8' (BREATHING KIT) INSTALLED IN THE BOTTOM OF THE JUNCTION BOX.
- ENSURE ALL CABLE GROUND WIRES ARE TERMINATED TO THE GROUND BAR.
- ENSURE ALL INCOMING/EXISTING CABLES ARE COMPLETE WITH STRAIN RELIEF CONNECTORS.
- TO ENSURE CONTINUITY, THE PAINT SHALL BE SCRAPED OFF UNDERSIDE OF GROUND BUS BAR.
- SEE DETAIL 1 FOR PUMP MOTOR AND MOTOR STARTER WIRING.



BACKPAN LAYOUT
1:4



DETAIL #1

WIREWAY LEGEND

- DC WIRING (WHITE)
- AC WIRING (GREY)

LEGEND

- PANEL WIRING
- FIELD WIRING
- SKID WIRING
- ENCLOSURE LIMIT



DRAWING NO.		REFERENCE DRAWINGS		ENGINEER STAMP		PERMIT STAMP		REV.		DESCRIPTION		BY	DATE	CHK	APP.	ENG.	DRAWN BY:	DATE:	DESIGNED BY:	DATE:	CHECKED BY:	DATE:	APPROVED BY:	DATE:	CLIENT BY:	DATE:	SCALE:	JOB NO.	DRAWING NO.	REV.
								0		IFC-HP FKOD SKID PRE-WIRE (CANDOR #2024-004, AFE #FC230544)		JB	2024-11-27	SY	GC		HT	2024-11-27	JB	2024-11-27	SY	2024-11-27	GC	2024-11-27			N.T.S.	2024-004	KAR-0134-JB-EL-000009	0

TITLE:

KARR OIL BATTERY
LSD 01-34-065-03 W6M
JUNCTION BOX LAYOUT
JBP-505 - V-505 HP FKOD

SCALE:

N.T.S.

JOB NO.

2024-004

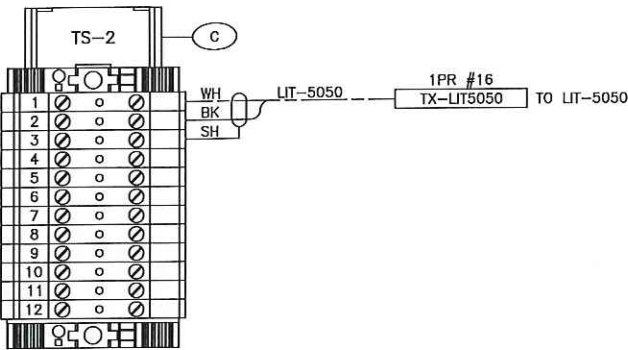
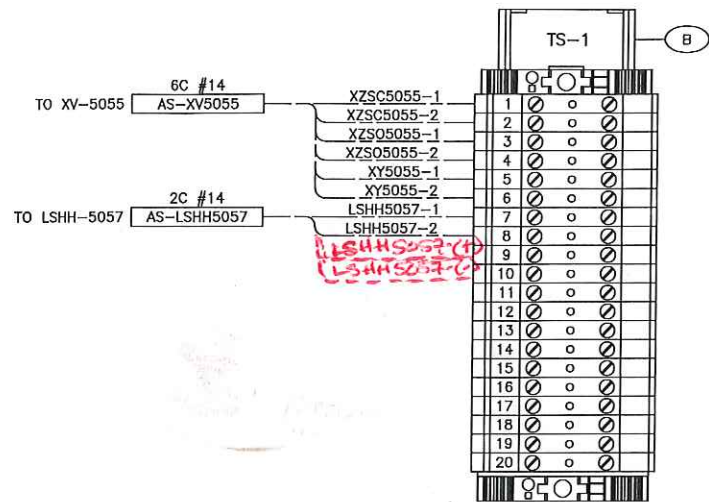
DRAWING NO.

KAR-0134-JB-EL-000009

REV.

0

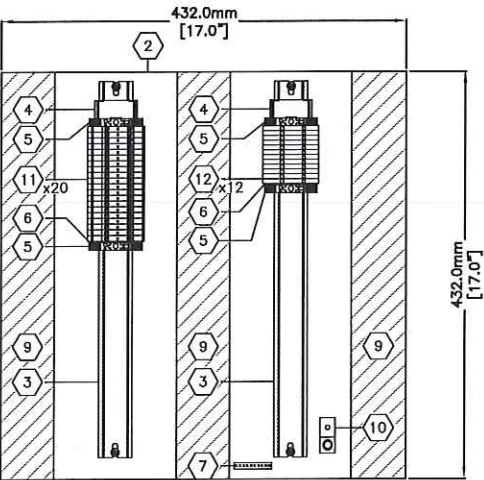
JUNCTION BOX: TXJB-505
CONTROL JUNCTION BOX
LOCATION: V-505 HP FLARE KNOCKOUT DRUM



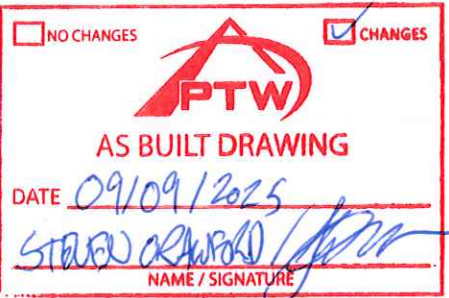
MATERIAL LIST (X)				
ITEM	QTY	DESCRIPTION	MANUFACTURER	PART No.
1	1	FIBERGLASS JUNCTION BOX TYPE 4X	HOFFMAN	A-20H2008GQRLP
2	1	JUNCTION BOX BACK PAN	HOFFMAN	A-20P20
3	A/R	TERMINAL MOUNTING RAIL, TS 35	WEIDMULLER	0514510000
4	2	LABEL DESCRIPTION HOLDER, SCHT 5	WEIDMULLER	0292460000
5	4	TERMINAL END BRACKET, EW 35	WEIDMULLER	0383560000
6	2	TERMINAL END PLATE, WAP 2.5-10	WEIDMULLER	1050000000
7	1	GROUNDING BAR C/W SCREWS	ILSCO	N-174 C/W E-153
8	1	BREATHING KIT	HAMMOND	SDA412
9	A/R	WIREWAY C/W COVER	PANDUIT	F2X2WH6 C/W C2WH6
10	1	GROUND LUG	BURNDY	KA2U
11	20	FEED THROUGH TERMINAL, WDU 4 (DISCRETE)	WEIDMULLER	1020100000
12	12	FEED THROUGH TERMINAL, WDU 2.5 (ANALOG)	WEIDMULLER	1020000000

LAMACOID SCHEDULE (X)			
ITEM	QTY	LAMACOID DESCRIPTION	COLOUR
A	1	TXJB-505	BLACK ON WHITE
B	1	TS-1	BLACK ON WHITE
C	1	TS-2	BLACK ON WHITE

- NOTES:
- LAMACOID ITEM 'A' INSTALLED ON THE FRONT OF THE JUNCTION BOX.
 - ALL WIRING TO BE TAKEN FROM THE SIDE OF THE TERMINALS INDICATED IN THE JB LAYOUTS.
 - WIRING FOR ALL DEVICES TAGGED AS PER JB LAYOUTS.
 - ENSURE ALL CABLES AND CONDUITS EXCEPT GROUNDING/BONDING CABLES ARE COMPLETE WITH GROUND BUSHINGS.
 - ALL CABLE AND CONDUIT SHALL ENTER/EXIT THE BOTTOM OF JUNCTION BOX.
 - TERMINAL RAILS EXTENDED THE FULL LENGTH OF THE JUNCTION BOX BACKPAN.
 - ITEM 'B' (BREATHING KIT) INSTALLED IN THE BOTTOM OF THE JUNCTION BOX.
 - ENSURE ALL CABLE GROUND WIRES ARE TERMINATED TO THE GROUND BAR.
 - ENSURE ALL INCOMING/EXISTING CABLES ARE COMPLETE WITH STRAIN RELIEF CONNECTORS.
 - TO ENSURE CONTINUITY, THE PAINT SHALL BE SCRAPED OFF UNDERSIDE OF GROUND BUS BAR.



BACKPAN LAYOUT
1:8



WIREWAY LEGEND		LEGEND	
	- DC WIRING (WHITE)		FIELD WIRING
	- AC WIRING (GREY)		SKID WIRING
			PANEL WIRING



STAMPS/SEALS, IF SIGNED AND DATED APPLY TO CURRENT REVISION ONLY

DRAWING NO.	REFERENCE DRAWINGS	ENGINEER STAMP	PERMIT STAMP	REV.	DESCRIPTION	BY	DATE	CHK	APP.	ENG.	DRAWN BY:	DATE:	DESIGNED BY:	DATE:	CHECKED BY:	DATE:	APPROVED BY:	DATE:	CLIENT BY:	DATE:	SCALE:	JOB NO.	DRAWING NO.	REV.
				0	IFC-HP FKOD SKID PRE-WIRE (CANDOR #2024-004, AFE #FC230544)	JB	2024-11-27	SY	GC		HT	2024-11-27	JB	2024-11-27	SY	2024-11-27	GC	2024-11-27			N.T.S.	2024-004	KAR-0134-JB-EL-000010	0