

VVTA RFP 2023-06 BARSTOW CNG STATION BACKUP GENERATOR ADDENDUM NO. 1

Thursday, March 2, 2023

This addendum is provided to all known prospective proposers for clarification of the subject Request for Proposal (RFP).

The purpose of this addendum is to address questions that have been posed on during the job walk on February 14, 2023 and prior to the deadline for questions on Friday, February 24, 2023:

Q1: "I'd like to verify that the Contractor is responsible to pay for the building permit (City of Barstow) and AQMD permit. Please confirm.

A1: The proposer will be responsible for permit application and obtaining the permits, but not the cost of required permits. VVTA will pay for the initial permitting, do not include the estimate for these permits in your proposal.

Q2: "What is the engineer's estimate for this project?"

A2: Approximately \$350,000.00

Q3: "What is the duration for this project? Generators are taking 40 weeks after approved submittals to procure."

A3: VVTA understands that there is a long lead time for generators. VVTA will work with the awarded contractor for the term of the contract to allow for time to complete.

Q4: "There are no drawings or specifications in public purchase. Is this a design build project or do you have designs and specifications?"

A4: This should be considered as a "Design/Build" project. The As-Builds from the CNG Station Upgrade were attached to the RFP.

Q5: "Has Southwest Gas been contacted regarding this project?"

A5: Yes.

Q6: "What is the engineer's Estimate for this project?"

A6: Please see A2, above.

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Q7: "What is the maintenance period of the project? 1 year?"

A7: This RFP does not include a maintenance contract. Proposer shall provide OEM and installation warranty on parts and labor for a minimum of 1 year after commissioning the generator.

Q8: "What are the liquidated damages for this project?"

A8: Liquidated damages were not established for this project.

Q9: "Do you happen to have the original approved submittal for the switchgear?"

A9: The documents are included with this Addendum.

Q10: "Does the generator need to communicate with any Building Management System or require control wiring and programming? If so, which subcontractor performed the original controls work?"

A10: The generator will need to communicate with VVTA's LCNG monitoring system. Control wiring and programming recently performed by Chart Industries and RMS. The document is attached to this Addendum.

Q11: "Do you require a remote annunciator? If so where do you want it mounted? Is there a spare conduit to the location you want the annunciator?"

A11: A remote annunciator will not be necessary as the information must be viewable in VVTA's LCNG station monitoring system.

Q12: "Generators are taking 40 weeks to procure AFTER approved submittals. With a NTP of 4/23, we'll need to design the drawings, review and approve the submittals. It therefore looks like the start date sometime in January 2024 completing 5 weeks later. This exceeds the 180 days in the RFP. Can you modify the duration to reflect the design and procurement?"

A12: Please see A3

Q13: "I could not find in the bid documents whether or not a bid bond is required. Would you please clarify whether or not a bid bond is required?"

A13: This is a request for proposal – the basis of award it to the highest evaluation score, not the lowest price. Therefore, no bid bond is required.

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Q14: "Regarding the project... what is the estimated value/budget and projected start date for work to begin?"

A14: Please see A2 and A3 above

Q15: "Can you please provide me the plans and all other related construction documents for this project?"

A15: The "As Builds" are included in the RFP project. Because this a design/build project the design and specifications are up to the proposer.

Q16: "We are interested in submitting our bid for this request, but we would like to confirm if our C-10 license would be acceptable for the project requirements..."

A16: The rule is that if you are submitting a proposal as a C-10, you would need to be a subcontractor to a GC who has the Class B since this is in connection with a structure that is being built.

Q17: "...I was wondering if there are any construction drawings for this project..."

A17: Please see A-4 above

Q18: "Is there a geotechnical report available from the original construction?"

A18: This will be coordinated with the awarded contractor.

Q19: "Also on the bid schedule there is a line item for 'ALLOWANCE ITEMS AND VALUE \$150,000.00.' Do you want us to add \$150,000.00 for allowances? This seems excessive for a generator project. \$15,000.00 seems more in line.

A19: If you only require an allowance of \$15,000.00, then enter \$15,000.00.

Q20: Does VVTA require a temp generator, in order to power the site equipment, during cutover of the electrical system?

A20: VVTA requires minimum downtime with its station during this project. If at any time, power is anticipated or expected to be out longer than a half a day, then the awarded contractor will need to provide a means to power the station.

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- Q21: “The one line diagram sheet E-1 of 10 prepared by Weaver Inc. and dated 2/5/2005 indicates that the MCB is rated 200A and that Panel A is rated 200A. In Attachment A – Scope of Work under the ‘Construction’ heading there is a bullet about halfway down that reads, ‘Work shall include new electrical service from new ATS to existing 800-am SCE service.’ Would you please verify whether 200 amps or 800 amps is correct?”
- A21: 800 amps is correct for the new panel. Please review the As Builds included in the RFP.
- Q22: “The RFP indicates that the CGL should be \$2M per occurrence and \$4M aggregate. Additionally the auto is \$2M. These are unusually high for a \$350k generator project...”
- A22: The insurance limits will be negotiated with the awarded contractor.
- Q23: “The sample contract included within the RFP section 5.c reads, “VVTA shall remit within forty-five (45) calendar dates of approval of the invoices...” California Civil Code 3260.1(b) reads, “the owner shall pay to the contractor, within 30 days following receipt...”
- A23: The Civil Code referenced no longer exists. The payment terms will be Net 30 upon approval of the invoices – to comply with Federal Law.
- Q24: “There was no mention of testing in the scope of work. Will VVTA hire and independent testing agency for the concrete or any other items that need to be tested?”
- A24: Due to the size of this project, it will be the responsibility of the awarded contractor.
- Q25: “The scope of work reads, ‘Work shall include coordination with Southwest Gas for plumbing from Southwest Gas new meter set assembly to generator fuel inlet.’ Does this mean that the underground piping and connection to the generator fuel inlet is by others? Or Contractor shall install plumbing from existing meter assembly to generator fuel inlet including coordination with SWG?”
- A25: Contractor shall install plumbing from existing meter assembly to generator fuel inlet including coordination with SWG.
- Q26: “Is the intent to monitor gas consumption by the generator with the new meter?”
- A26: Yes. However, VVTA has reconsidered and decided it best to utilize existing service.

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As stated in the RFP, all addenda must be acknowledged. Please use Attachment E included in the RFP package to acknowledge receipt of this addendum. Failure to acknowledge any addenda to this RFP may be a cause to deem Potential Proposer as "Non-Responsive."

End of Addendum No. 1

ACCESS TO: Front Only	PHASE: 3P4W	SO. CALIF. EDISON CA.
CLASS: 2	AMPERE: 800A	CODE: SE PT COMPT
LABEL: U/L SE	BUS MTL: Cu 1000A/in ²	UTILITY PER EUSERC PG. 320
VOLTAGE: 480/277V	PLATE: Silver Plate	METER PER EUSERC PG. 325
STYLE: ReliaGear	RATING: Fully Rated	UGPS PER PG 345
BUS BRACING (RMS SYM): 65000A		LUG LANDING PER 347
DEV.MIN.INT.RATING (RMS SYM): 65000A		

SwitchBoard / Device Information

Circuit No.	Device	Trip Amps	Sensor Amps	Poles	Nameplates	Lugs/Cable Size	Notes
1	XT5H	600	-	3		(2) - 2/0 - 500 MCM CU - Mech. AL	14,15
2	XT4H	200	-	3		(1) - #4 - 300 MCM CU - Mech. AL	14,15
Main	SKLA8	800		3			13

- NOTES:**
- Switchboard furnished with a rainproof TYPE 3R (non-walk-in) enclosure.
NOTE: See plan view for details. Need additional 1 inch space clearance on top and 1.5 inch clearance on the rear of the swbd.
 - Equipment ground bus furnished with lugs.
 - Copper ground bus furnished.
 - Switchboard qualified for Seismic Ratings per publication DET-463 and OSP-0044-10.
 - Switchboard furnished with Nameplates.
 - All Nameplates to be fastened with screws.
 - Switchboard furnished with hinged gutter covers.
 - Switchboard furnished with full height vertical bus for distribution sections.
 - Switchboard furnished with fully rated panel.
 - EUSERC utility section(s) furnished with handles and sealing provisions per EUSERC specifications.
 - INSTALLATION NOTE: Caution: If switchboard is installed on a housekeeping slab greater than 2-1/2" the meter may be over the 6'3" maximum allowable meter height. Consult Utility if you need more information.
 - Shipping splits as indicated, ship sections separated and joined as indicated.
 - Device furnished with padlocking provisions.
 - Device Furnished with PII Fixed Padlock - Open
 - Device Furnished with Thermo Magnetic Adjustable Trip.
 - Estimated total factory connected wiring points for the lineup 0.
 - Estimated shipping weight for the lineup is 1966 lbs.

PROJECT NAME :
WTA Barstow

CUSTOMER:
GEXPRO, BAKERSFIELD



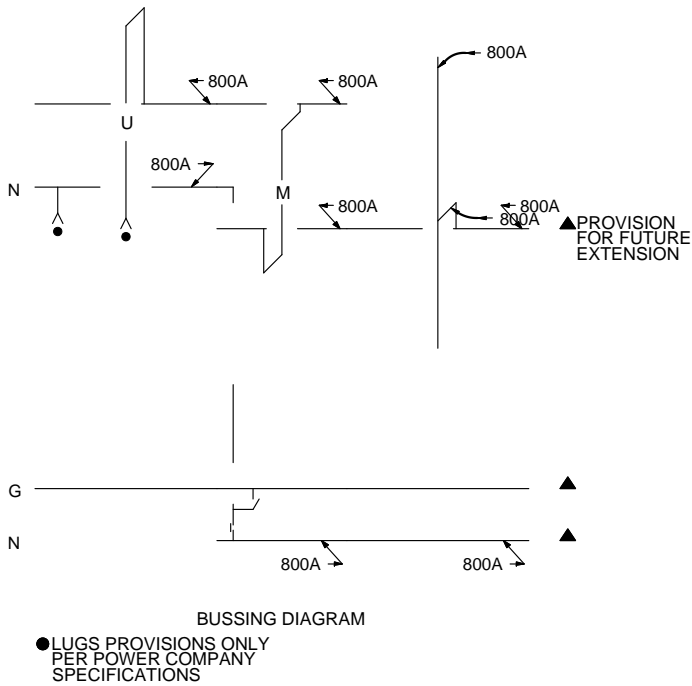
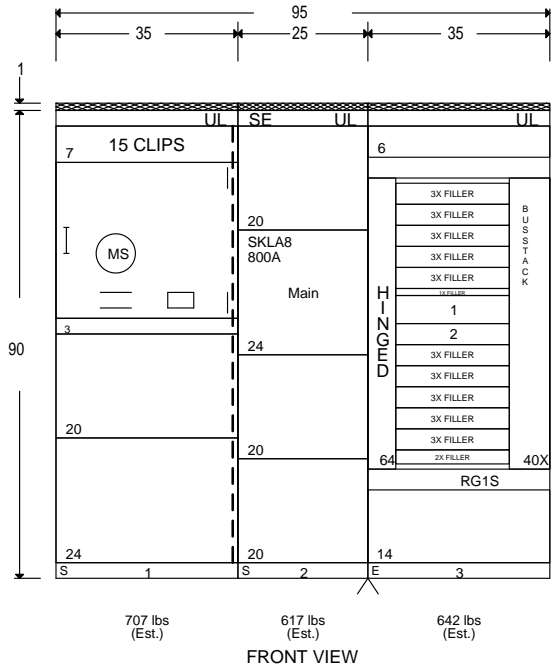
**Industrial
Solutions by ABB**

DRAWING TITLE: Device Information
 CREATED BY: Geer, Clinton
 DATE: 5/28/2021
 REVISION NO.:

PRODUCT NAME:
**ReliaGear
Switchboard**

DRAWING NO:
ITEM NO: 1
MARKS: MS
QUOTE NO: UL6-00002933
SHEET: 1 of 3

ACCESS TO: Front Only	PHASE: 3P4W	SO. CALIF. EDISON CA.
CLASS: 2	AMPERE: 800A	CODE: SE PT COMPT
LABEL: U/L SE	BUS MTL: Cu 1000A/in ²	UTILITY PER EUSERC PG. 320
VOLTAGE: 480/277V	PLATE: Silver Plate	METER PER EUSERC PG. 325
STYLE: ReliaGear	RATING: Fully Rated	UGPS PER PG 347
BUS BRACING (RMS SYM): 65000A		LUG LANDING PER
DEV.MIN.INT.RATING (RMS SYM): 65000A		



PROJECT NAME :
WTA Barstow

CUSTOMER:
GEXPRO, BAKERSFIELD



Industrial
Solutions by ABB

DRAWING TITLE: Front View/
Bussing

CREATED BY: Geer, Clinton

DATE: 5/28/2021

REVISION NO.:

PRODUCT NAME:

ReliaGear
Switchboard

DRAWING NO:

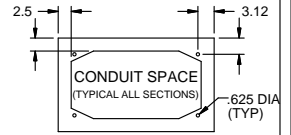
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MARKS: MS

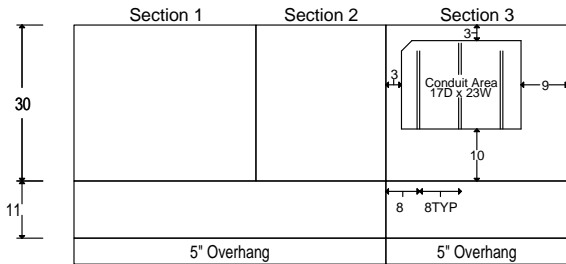
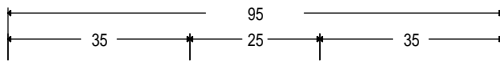
QUOTE NO: UL6-00002933

SHEET: 2 of 3

ACCESS TO: Front Only	PHASE: 3P4W	SO. CALIF. EDISON CA.
CLASS: 2	AMPERE: 800A	CODE: SE PT COMPT
LABEL: U/L SE	BUS MTL: Cu 1000A/in ²	UTILITY PER EUSERC PG. 320
VOLTAGE: 480/277V	PLATE: Silver Plate	METER PER EUSERC PG. 325
STYLE: ReliaGear	RATING: Fully Rated	UGPS PER PG 345
BUS BRACING (RMS SYM): 65000A		LUG LANDING PER 347
DEV.MIN.INT.RATING (RMS SYM): 65000A		

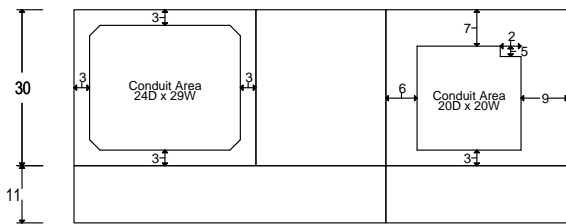
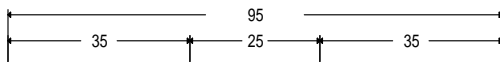


Top Conduit Area



Front Plan View

Bottom Conduit Area



Front Plan View

PROJECT NAME :
WTA Barstow

CUSTOMER:
GEXPRO, BAKERSFIELD



Industrial
Solutions by ABB

DRAWING TITLE: Conduit View

CREATED BY: Geer, Clinton

DATE: 5/28/2021

REVISION NO.:

PRODUCT NAME:

ReliaGear
Switchboard

DRAWING NO:

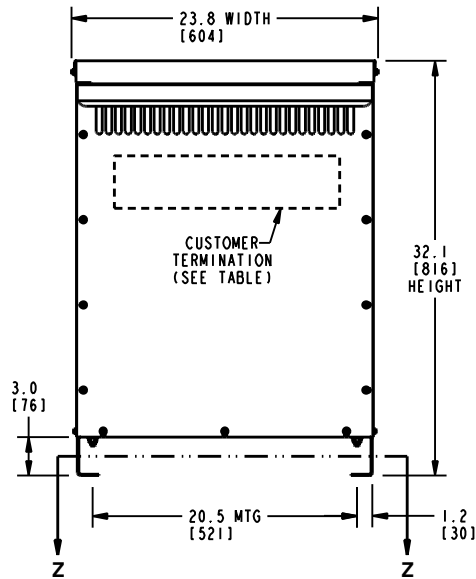
ITEM NO: 1

MARKS: MS

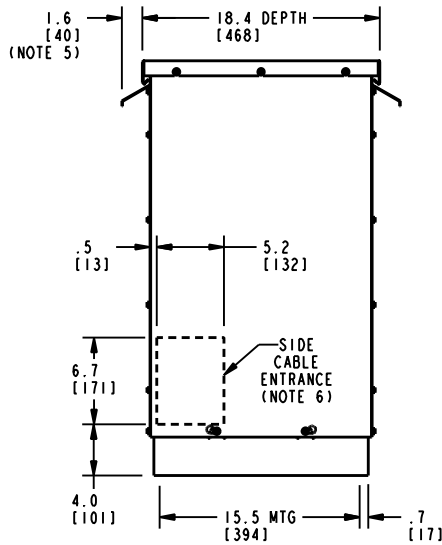
QUOTE NO: UL6-00002933

SHEET: 3 of 3

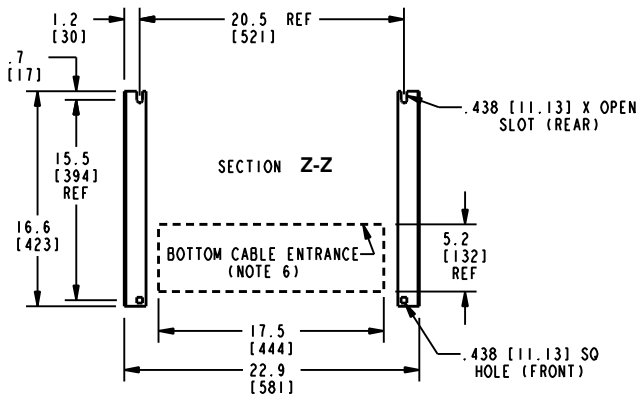
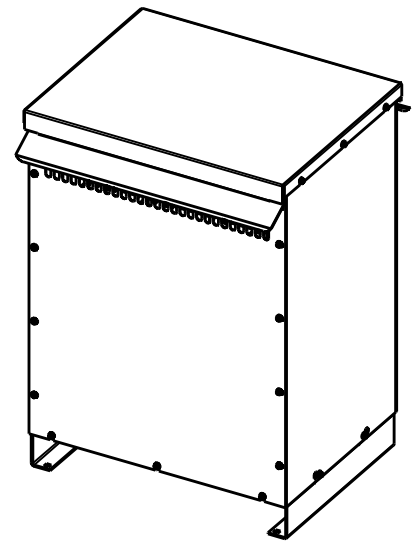
FRONT VIEW



SIDE VIEW



ISOMETRIC VIEW



CUSTOMER TERMINATION			
LOCATION	CONNECTION TYPE	HOLE SIZE	HOLE QTY
PRIMARY BUS BARS	STANDARD BUS BAR (LUGS ARE OPTIONAL)	.41 [10.3] DIA	1 PER BUS BAR
SECONDARY BUS BARS			

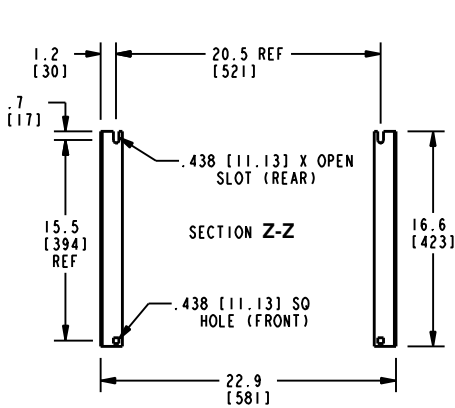
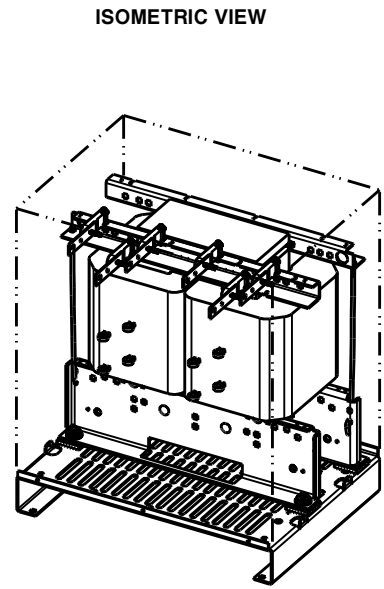
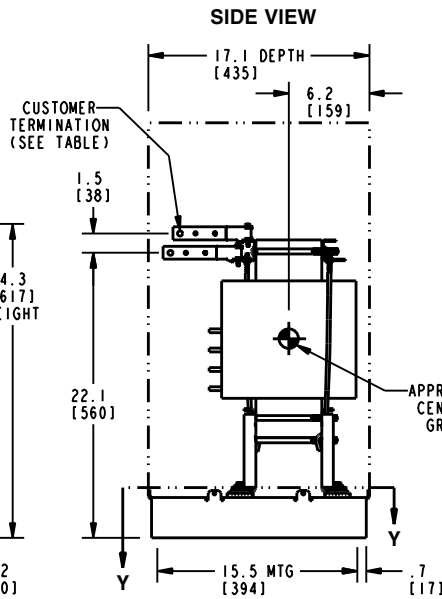
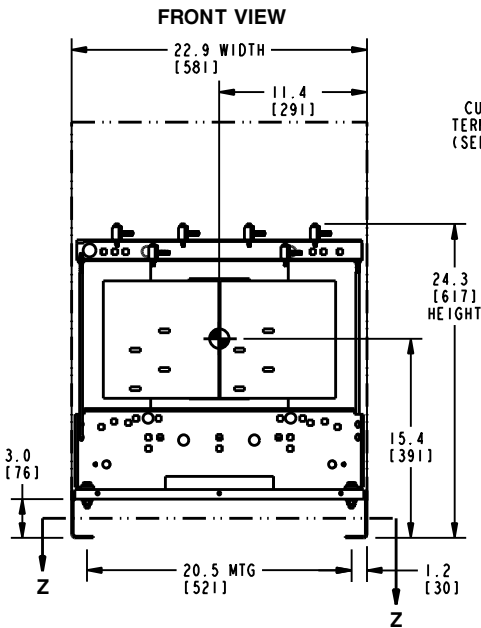
APPROX TOTAL WEIGHT LBS [KG]
 AL WINDINGS: 320 [145]
 CU WINDINGS: 350 [159]

kVA RATING:15
K-FACTOR:K1
PRI VOLTAGE:240X480
SEC VOLTAGE:120X240
FREQ (Hz):60 Hz
TEMP RISE:150C
WINDING MATL:Copper
ES SHIELD:YES
SOUND LVL (dB):Std (45)

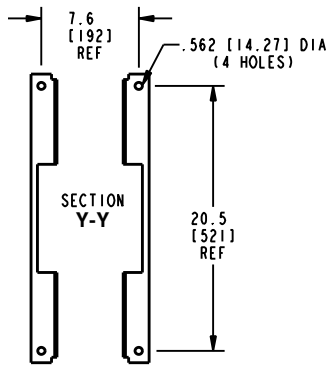
NOTES:

- 1) ALL UNITS ARE UL LISTED AND ARE DESIGNED PER NEMA ST-20 STANDARDS.
- 2) THE TEMPERATURE RISE LISTED IS DETERMINED WHEN THE TRANSFORMER IS MOUNTED IN A STANDARD NEMA 2 ENCLOSURE.
- 3) TRANSFORMER IS DESIGNED FOR FLOOR MOUNTING. OPTIONAL WALL MOUNTING BRACKETS ARE AVAILABLE.
- 4) TRANSFORMER IS DRY TYPE, CLASS AA, WITH VENTILATED ENCLOSURE FOR INDOOR USE. OPTIONAL RAINSHIELD KITS ARE AVAILABLE TO ADAPT UNIT FOR TYPE 3R OUTDOOR USE WITHOUT VOIDING THE WARRANTY.
- 5) APPLICABLE WHEN OPTIONAL RAINSHIELDS ARE INSTALLED. RAINSHIELDS ARE SHIPPED IN KITS FOR FIELD INSTALLATION.
- 6) CABLE ENTRANCE IS PERMITTED THROUGH THE LEFT SIDE, RIGHT SIDE AND/OR BOTTOM ENCLOSURE PANELS ONLY. CABLE ENTRANCE IS NOT PERMITTED THROUGH THE FRONT, REAR OR TOP PANELS.
- 7) FOR LIFTING OTHER THAN WITH A FORK TRUCK, REMOVE TOP COVER AND USE 1" [25 MM] DIAMETER HOLES IN THE TOP CORE CLAMPS.
- 8) ENCLOSURE PAINT COLOR IS ANSI #61 GRAY.
- 9) 6" [152 MM] MINIMUM CLEARANCE IS REQUIRED FROM ALL WALLS.

JOB NAME: SPEEDI PROP: electrification.us.abb.com	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE INCH [MM]	Transformers by ABB
	THIRD ANGLE PROJECTION 	
CAD DRAWING: 303B406AAP071	SHEET 1 OF 2	*CATALOG # 9T83C2570G03
		REV 11



BOTTOM VIEW OF MOUNTING HOLE PATTERN



BOTTOM VIEW OF MOUNTING HOLE PATTERN WITHOUT BASE ATTACHED


CUSTOMER TERMINATION			
LOCATION	CONNECTION TYPE	HOLE SIZE	HOLE QTY
PRIMARY BUS BARS	STANDARD BUS BAR (LUGS ARE OPTIONAL)	.41 [10.3] DIA	1 PER BUS BAR
SECONDARY BUS BARS			

APPROX TOTAL WEIGHT LBS [KG]
 AL WINDINGS: 280 [127]
 CU WINDINGS: 310 [141]

kVA RATING:15
K-FACTOR:K1
PRI VOLTAGE:240X480
SEC VOLTAGE:120X240
FREQ (Hz):60 Hz
TEMP RISE:150C
WINDING MATL:Copper
ES SHIELD:YES
SOUND LVL (dB):Std (45)

NOTES:

- 1) ALL UNITS ARE UL LISTED AND ARE DESIGNED PER NEMA ST-20 STANDARDS.
- 2) THE TEMPERATURE RISE LISTED IS DETERMINED WHEN THE TRANSFORMER IS MOUNTED IN A STANDARD NEMA 2 ENCLOSURE.
- 3) TRANSFORMER IS DRY TYPE, CLASS AA FOR INDOOR USE.
- 4) FOR LIFTING OTHER THAN WITH A FORK TRUCK, USE 1" [25 MM] DIAMETER HOLES IN THE TOP CORE CLAMPS.
- 5) BASE PAINT COLOR IS ANSI #61 GRAY.
- 6) 6" [152 MM] MINIMUM CLEARANCE IS REQUIRED FROM ALL WALLS.

JOB NAME: SPEEDI PROP:	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE INCH [MM]	 Transformers by ABB
	THIRD ANGLE PROJECTION	
electrification.us.abb.com		DRY TYPE TRANSFORMER OUTLINE DRAWING
CAD DRAWING: 303B406AAP071	SHEET 2 OF 2	TYPE QL, 1-PHASE, DOE 2016 EFFICIENCY (CORE & COIL UNIT)
		CATALOG # 9T83C2570G03
		REV 11



Transformer

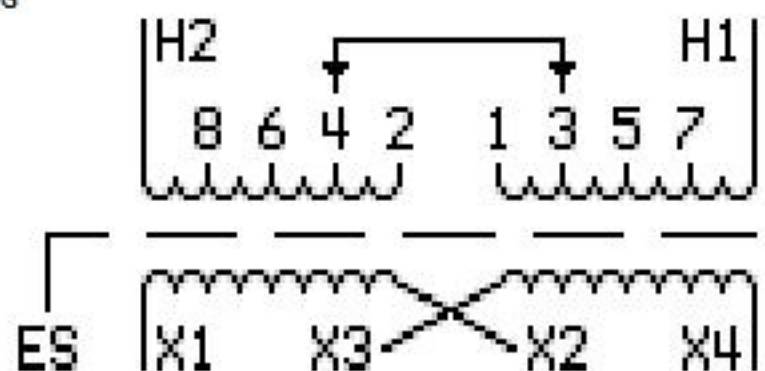


Catalog Number **9T83C2570G03** Type **QL**

15.0 KVA **60 HZ** **1 PH** **3 % IMP**

40 C AMB. 150 C RISE 220 C SYSTEM IS-19C

NOG



ELECTROSTATIC GROUND SHIELD IN EACH PHASE

PRIMARY				SECONDARY	
LINES ON H1-H2		LINES ON X1-X4			
VOLTS	CONNECT	VOLTS	CONNECT	VOLTS	CONNECT
216	8-H1,7-H2	432	8-7	120	X1-X3,X2-X4
228	6-H1,5-H2	444	7-6	240	X2-X3
240	4-H1,3-H2	456	6-5		
252	2-H1,1-H2	468	5-4		
		480	4-3		
		492	3-2		

NET WGT
350 LB
158.8 Kg
50123
070115

INSPECTION & FINAL TEST
N5271

COIL TAP ARRANGEMENT



LISTED 769G

ENCLOSURE TYPE 2 (IP30). RAINPROOF TYPE 3R ENCLOSURE (IP32) WHEN PROVIDED SHIELD 9T18Y4317G05

Outline: 303B406AAP071 Assembled in Mexico

BEFORE HANDLING, INSTALLING AND OPERATING, SEE INSTRUCTION 475A667AAP001
COPPER CONDUCTOR PRIMARY: 10 KV BIL SECONDARY: 10 KV BIL

X3 - X4 - X2 - X1

- H2 - H1 - -

Note: Standard

X1 - - -
 X2 - - -
 X3 - - -
 X4 - - -
 H1 - - -
 H2 - - -

X1 - - -
 X2 - - -
 X3 - - -
 X4 - - -
 H1 - - -
 H2 - - -

2M000000
 3M000000



Catalog No. 9T83C2570G03

Description: CU 1P 15KVA 240X480-120X240

UPC No 783173198056

Home > Transformers > Dry Type Vented > Electrostatic Shield

1P 15KVA 240x480-120/240 150C K1 CU 2570G03



Representative Image

Descriptors

Category	Electrostatic Shield
GO Schedule	TM

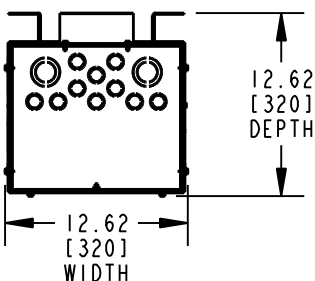
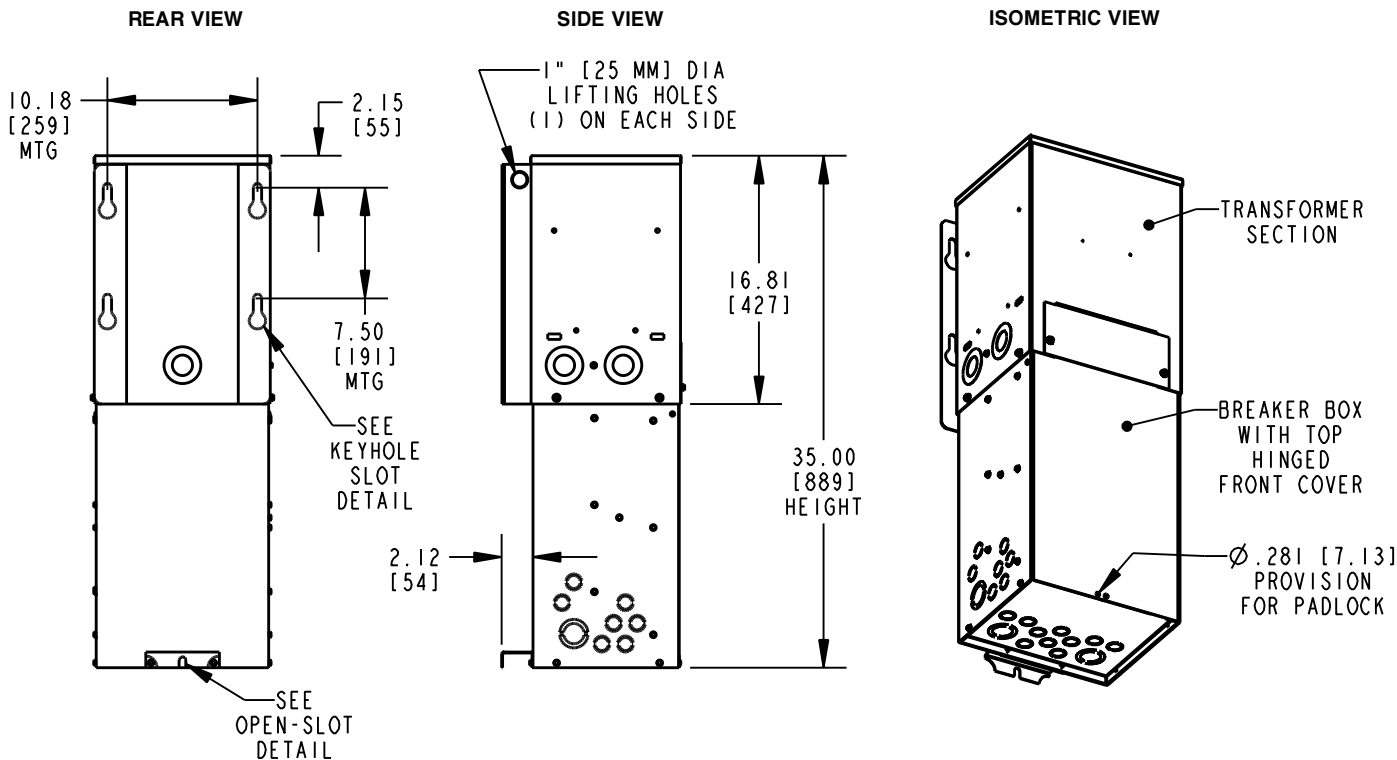
Specifications

TransType	QL-TP1
Phase	1
PriVoltage	240x480
SecVoltage	120x240
KVA	15.0 KVA
Coil Material	CU
TempRise	150.0 °C
ElecShield	Y
Frequency	60 Hz
FrameSize	E171
AmbTemp	40.0 °C
EnergyEfficiency	NEMA TP 1
KFactor	K1
Enclosure Type	NEMA 2
Sound	Std
GSA Compliance	No

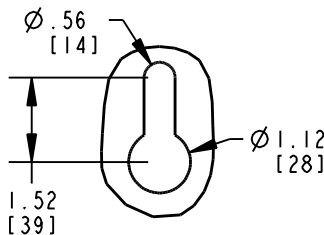
Classifications

cUL	No
CE	No

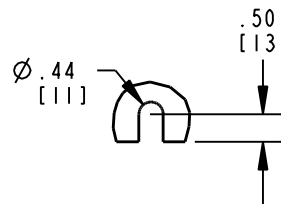




BOTTOM VIEW



KEYHOLE SLOT DETAIL



OPEN-SLOT DETAIL

APPROX TOTAL WEIGHT LBS [KG]
PAINTED: 230 [104]

kVA RATING:10
K-FACTOR:
PRI VOLTAGE:480
SEC VOLTAGE:120/240
FREQ (Hz):60 Hz
TEMP RISE:115C
WINDING MATL:Aluminum
ES SHIELD:NO
SOUND LVL (dB):Std (45)

KNOCKOUTS	CONDUIT SIZE	QUANTITY	
		EACH SIDE	REAR/BOTTOM
TRANSFORMER	1" OR 2" [27 OR 53]	2	1
BREAKER BOX	1/2" OR 3/4" [16 OR 21]	7	10
	1" OR 1-1/2" [27 OR 41]	1	2

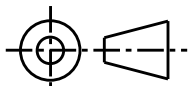
JOB NAME:
SPEEDI PROP:

electrification.us.abb.com

CAD DRAWING: 303B915AAP010

UNLESS OTHERWISE SPECIFIED
 ALL DIMENSIONS ARE INCH [MM]

THIRD ANGLE PROJECTION



SHEET 1 OF 1



Transformers

by **ABB**

DRY TYPE TRANSFORMER OUTLINE DRAWING
TYPE QMS/SERVICENTER, 1-PHASE
(INDOOR/OUTDOOR MINI-UNIT SUBSTATION)

CATALOG # 9T21S1100

REV 6



Model Number

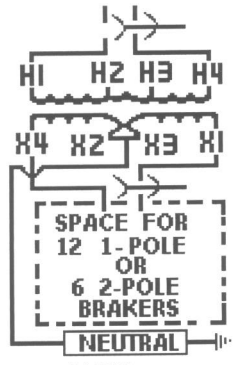
MINI - UNIT SUBSTATION

9T21S1100

TYPE SC 10.00 KVA 60 Hz 1PH 233 LB
40 115C RISE CLASS180 IS-12 AL

WDG	VOLTS	LINES
PRI	480	H1-H4
	456	H1-H3
	432	H1-H2
SEC	240	X1-X4
	240/120	X1-X3-X4

CIR. BRKR TRIP
PRI MAIN 50 AMPS
SEC MAIN 50 AMPS



INSPECTION & FINAL TEST N51!

01G716

FIELD CLEARANCE SIDE AND TOP 1 INCH MIN

LISTED UNIT RAINPROOF TYPE
SUBSTATION 3R ENCLOSURE

GE Energy Industrial Solutions

Assembled in Mexico





Representative Image

Catalog No. 9T21S1100

Description: "1A,10kVA,480-120/240,115C,3R,K1,SC12,QMS"

UPC No 783173012123

Home > Transformers > Dry Type Vented > Transformer & Load Center Combo

This easily installed and serviceable unit incorporates a Type QMS transformer (single-phase) or a Type QL transformer (three-phase), a primary main circuit breaker, a secondary main circuit breaker, and a load-center-design breaker panel. Since these components don't have to be installed and interconnected separately, the contractor or user can reduce installation time and costs. Because of the single-unit concept, only one, handy Service center needs to be mounted. Keyhole mounting flange facilitates easy Mounting-Indoor and outdoor Use-Front - accessible, hinged or removable panel door-Heat barrier under core and coil provides added electrical and thermal isolation for wiring compartment-High-efficiency core construction-Factory installed and wired GE main and secondary main circuit breakers-Transformer, distribution panel and breakers are all designed, built and assembled by GE 21S1100

Descriptors

Category	Transformer & Load Center Combo
GO Schedule	TF

Specifications

TransType	QMS
Phase	1
PriVoltage	480
SecVoltage	120/240
KVA	10.0 KVA
Coil Material	AL
TempRise	115.0 °C
ElecShield	N
SubType	Servicenter (NEMA 3R)
Frequency	60 Hz
TempClass	180.0 °C
AmbTemp	40.0 °C
InsulSys	IS-12
EnergyEfficiency	None
KFactor	K1
Enclosure Type	NEMA 3R
Net Weight	198
Fan Cooled	No
GSA Compliance	No
Outline	303B915AAP010

Classifications

UL	Yes
cUL	No
CE	No



Classifications

UL	Yes
cUL	No
CE	No

Date: June 3, 2022

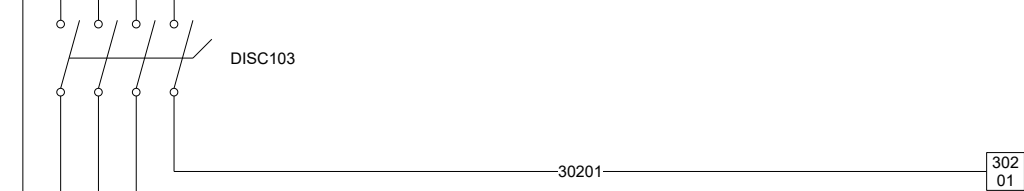


Victor Valley Transit Authority
Barstow CNG Upgrade

LCNG PLC Controller
Wiring Schematic

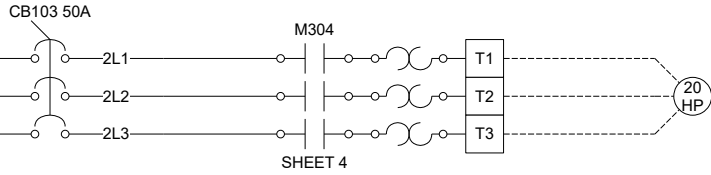
GND L1 L2 L3 L1

480VAC 125A 3PH
FROM LOAD CENTER

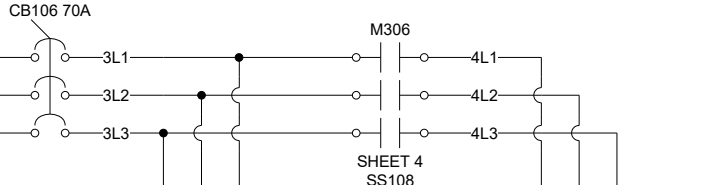


120VAC
CONTROL POWER

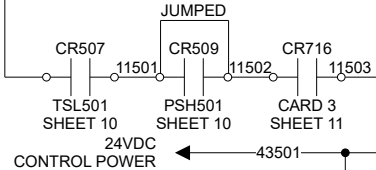
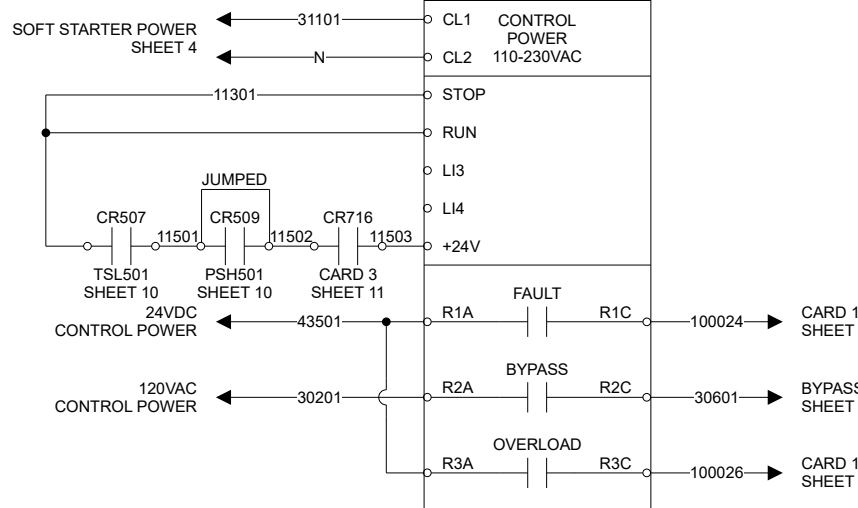
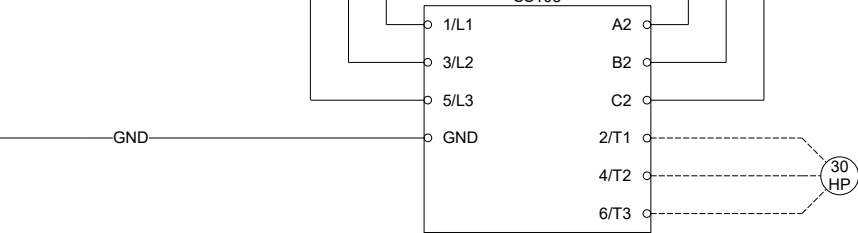
POWER
DISTRIBUTION
BLOCK



OFFLOAD PUMP P-202
FLA 27.00

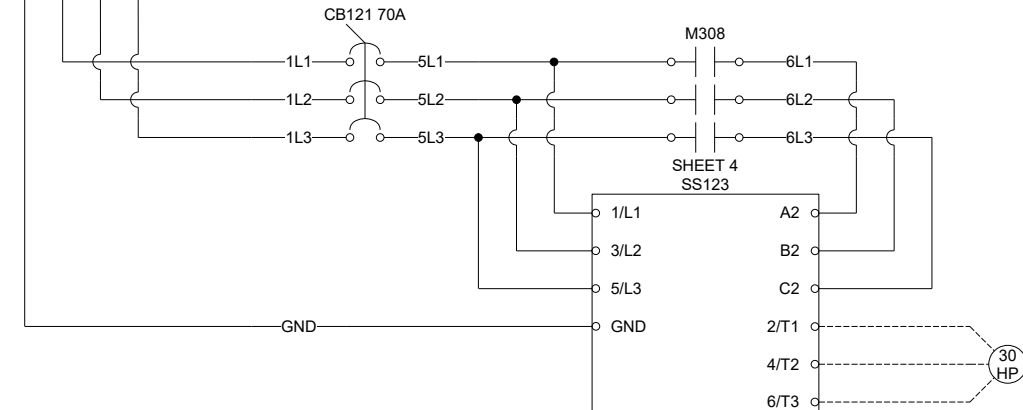


LCNG PUMP 1 P-501A
FLA 40.00

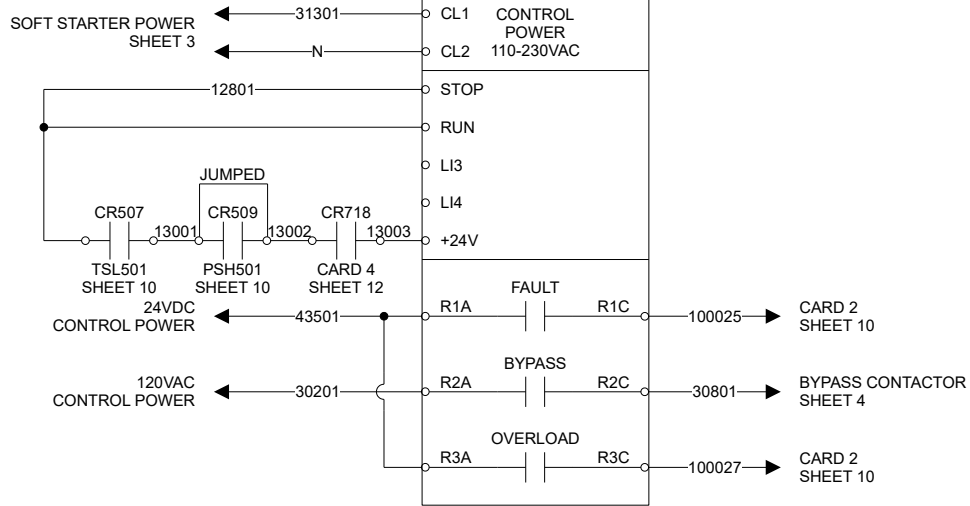


RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	2 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

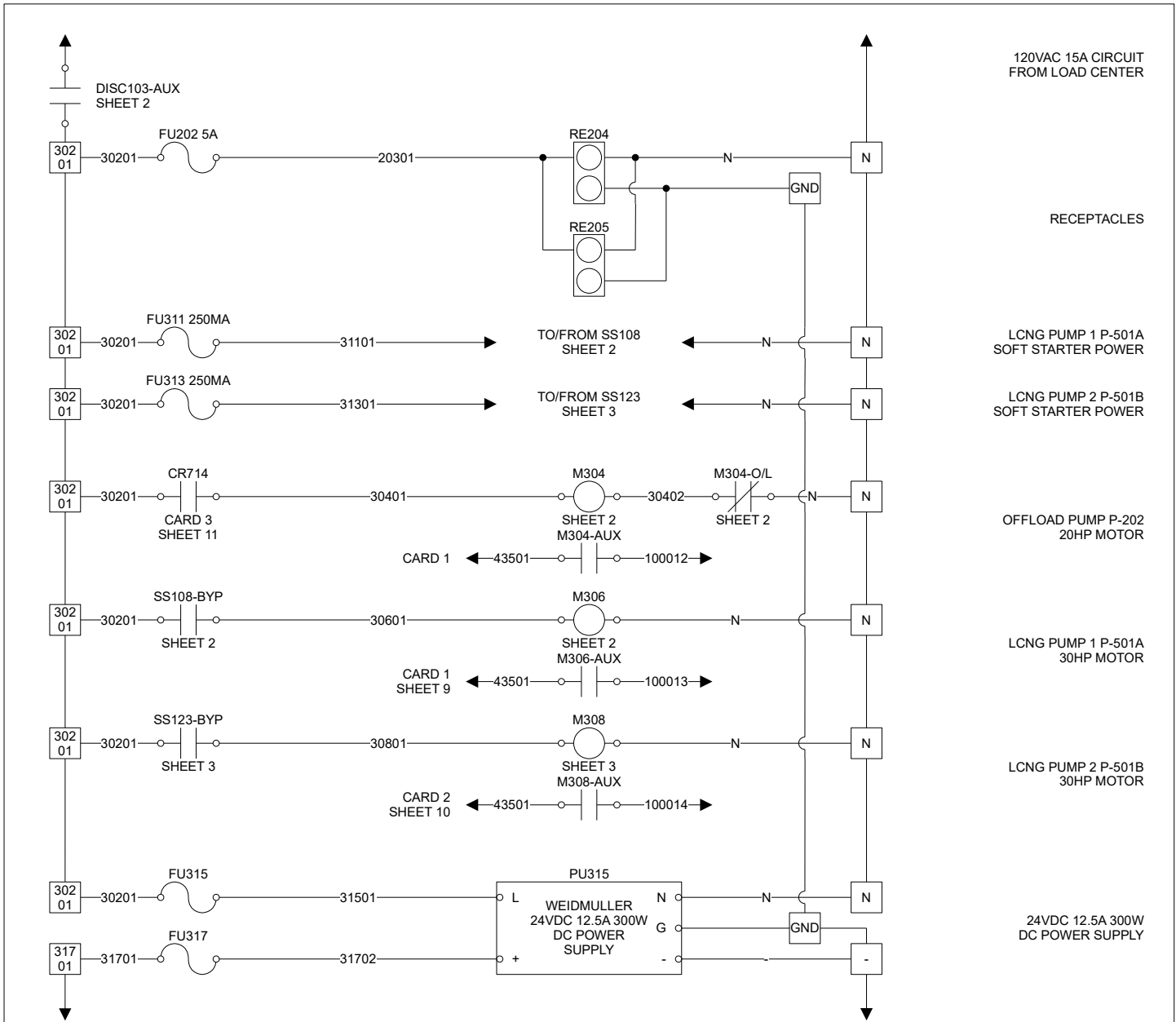
GND 1L1 1L2 1L3



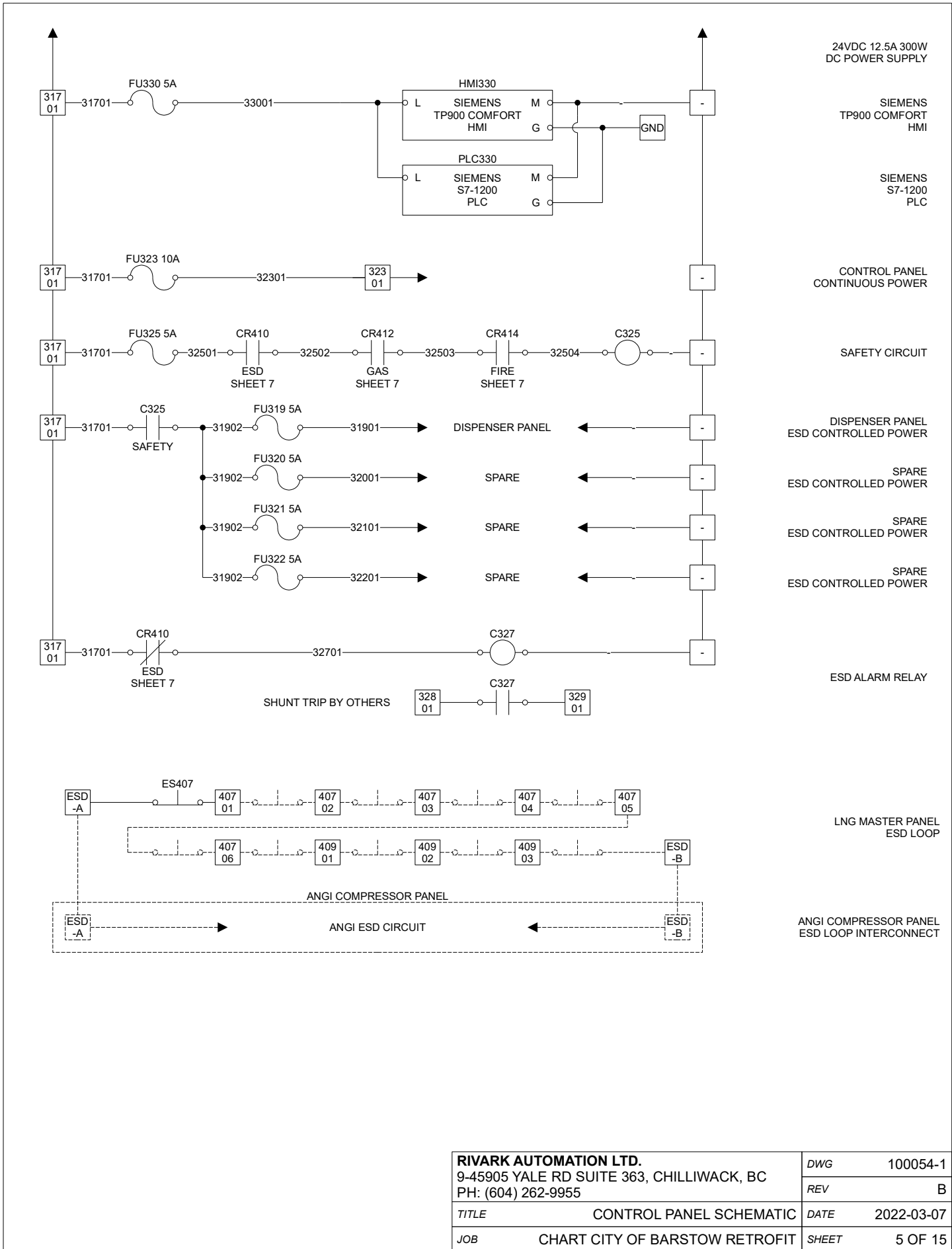
LCNG PUMP 2 P-501B
FLA 40.00



RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	3 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		



RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	4 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		



RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	5 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

PLC
SIEMENS
215-1HG40-0XB0
CPU 1215C DC/DC/RLY

CARD 1
SIEMENS
221-1BF32-0XB0
SM 1221
DI8x24VDC

CARD 2
SIEMENS
221-1BF32-0XB0
SM 1221
DI8x24VDC

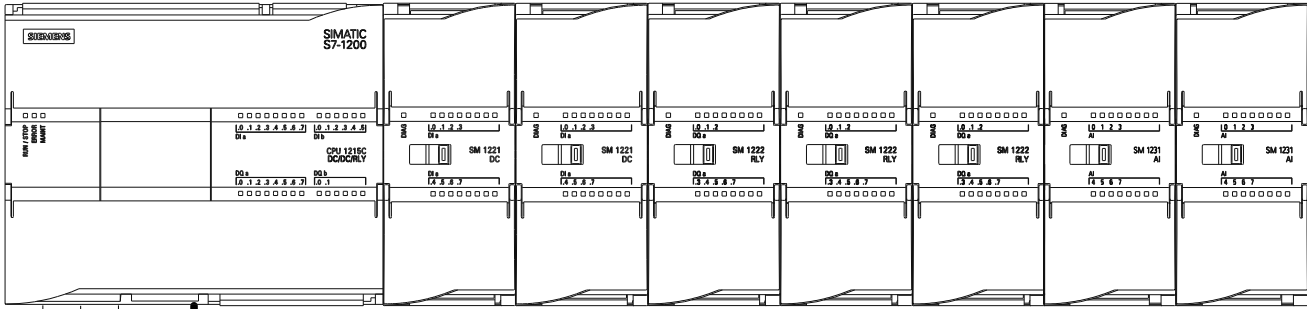
CARD 3
SIEMENS
222-1HF32-0XB0
SM 1222
DQ8xRLY

CARD 4
SIEMENS
222-1HF32-0XB0
SM 1222
DQ8xRLY

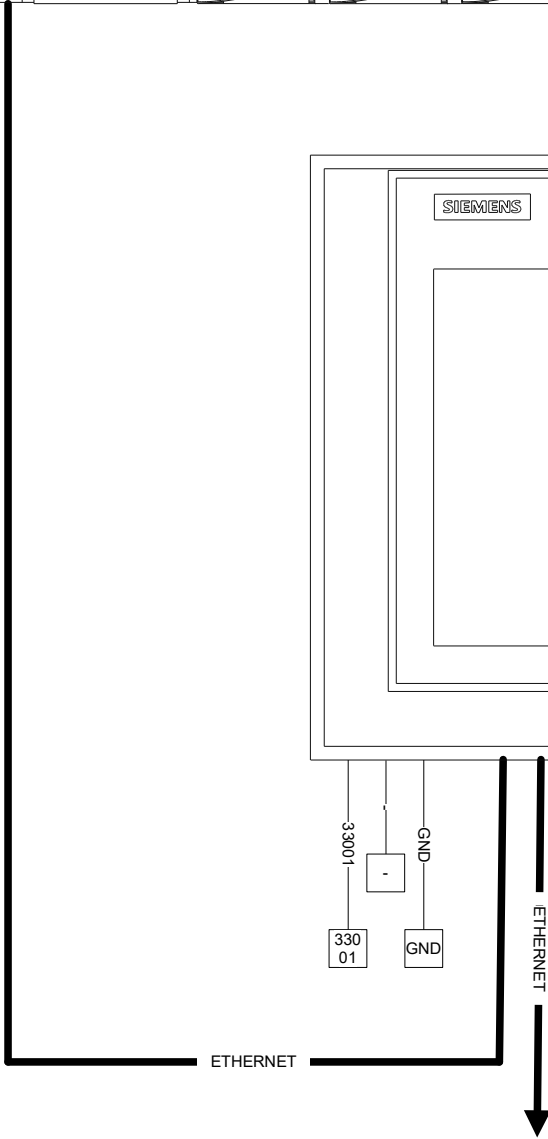
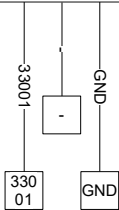
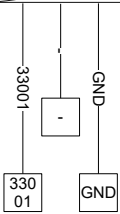
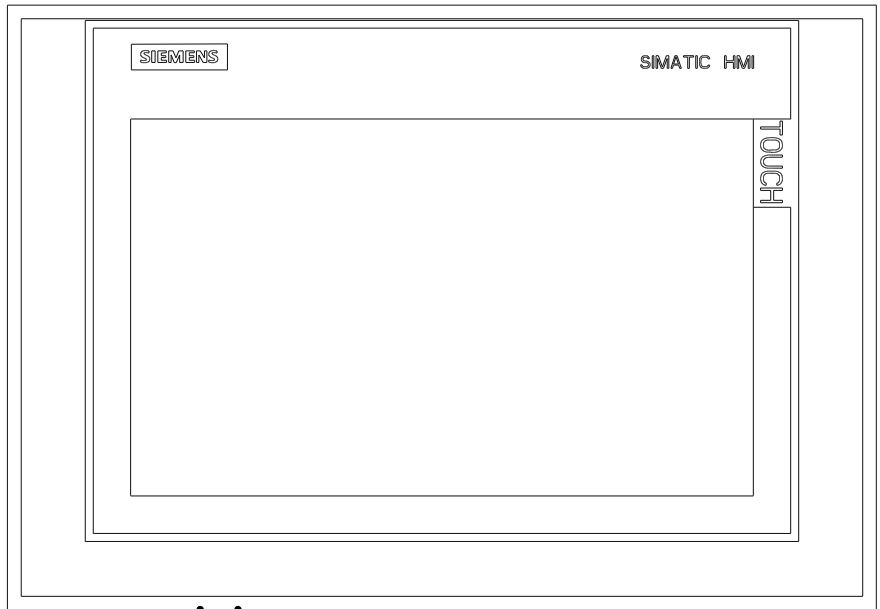
CARD 5
SIEMENS
222-1HF32-0XB0
SM 1222
DQ8xRLY

CARD 6
SIEMENS
231-4HF32-0XB0
SM 1231
AI8

CARD 7
SIEMENS
231-4HF32-0XB0
SM 1231
AI8

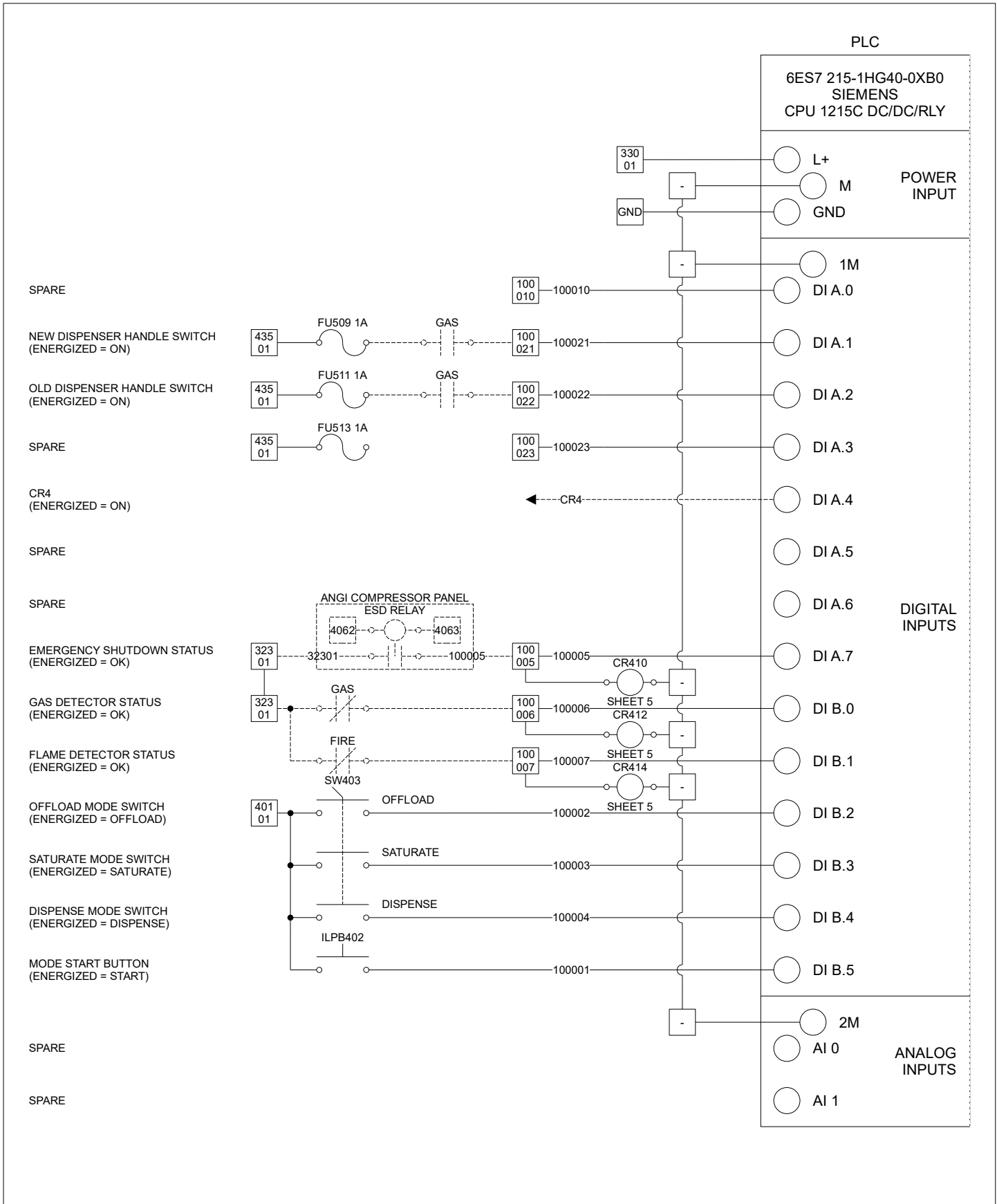


HMI
SIEMENS
6AV2124-0JC01-0AX0
TP900 Comfort



ETHERNET TO
CELL MODEM

RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	6 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		



RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	7 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

PLC

6ES7 215-1HG40-0XB0
SIEMENS
CPU 1215C DC/DC/RLY

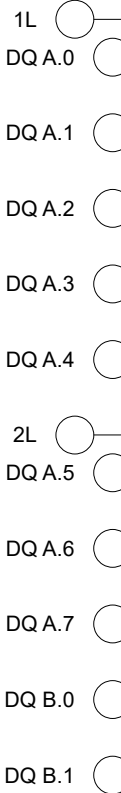
POWER OUTPUT



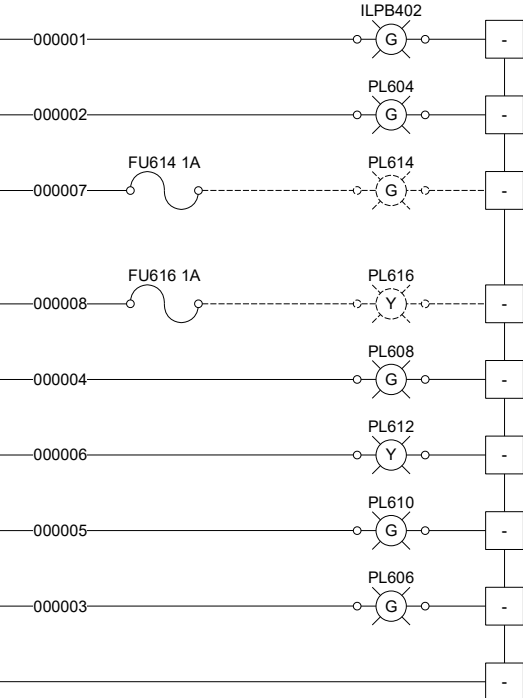
PLC-L+ →
PLC-M →

TO CARD 3

DIGITAL OUTPUTS



103
201



SPARE

SPARE

MODE ACTIVE LIGHT
(ENERGIZED = ON)

OFFLOAD PUMP
READY LIGHT
(ENERGIZED = ON)

OFFLOAD PUMP
ENABLED LIGHT
(ENERGIZED = ON)

OFFLOAD PUMP
TEMPERATURE OK LIGHT
(ENERGIZED = ON)

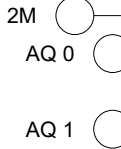
OFFLOAD PUMP
RUNNING LIGHT
(ENERGIZED = ON)

LNG PUMP
LOSS OF PRIME LIGHT
(ENERGIZED = ON)

LNG PUMP
SATURATING LIGHT
(ENERGIZED = ON)

LCNG PUMPS
RUNNING LIGHT
(ENERGIZED = ON)

ANALOG OUTPUTS



SPARE

SPARE

RIVARK AUTOMATION LTD.
9-45905 YALE RD SUITE 363, CHILLIWACK, BC
PH: (604) 262-9955

DWG 100054-1

REV B

TITLE CONTROL PANEL SCHEMATIC

DATE 2022-03-07

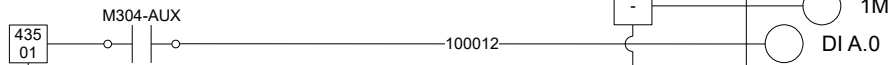
JOB CHART CITY OF BARSTOW RETROFIT

SHEET 8 OF 15

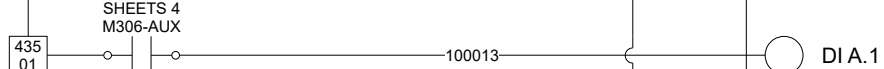
CARD 1

6ES7 221-1BF32-0XB0
SIEMENS
SM 1221 DI8 24VDC

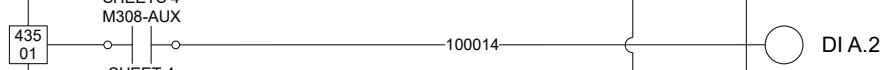
OFFLOAD PUMP
RUN STATUS
(ENERGIZED = RUNNING)



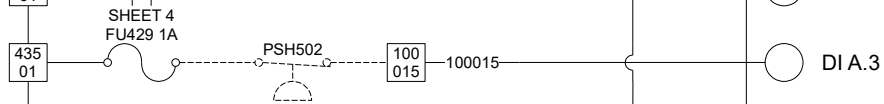
LCNG PUMP 1
RUN STATUS
(ENERGIZED = RUNNING)



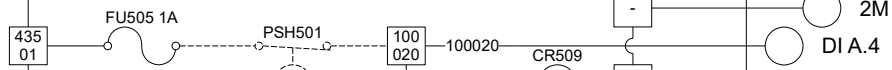
LCNG PUMP 2
RUN STATUS
(ENERGIZED = RUNNING)



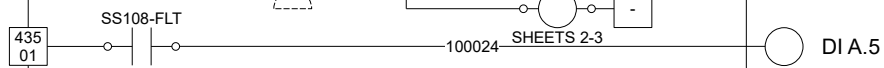
PRIORITY PANEL
ODORIZER LEVEL LOW SWITCH 1
(ENERGIZED = OK)



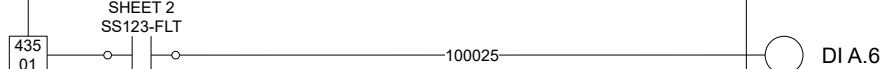
PRIORITY PANEL
PRESSURE HIGH SWITCH
(ENERGIZED = OK)



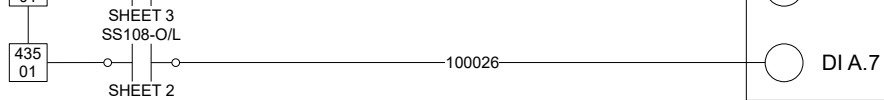
LCNG PUMP 1
FAULT STATUS
(ENERGIZED = OK)



LCNG PUMP 2
FAULT STATUS
(ENERGIZED = OK)



LCNG PUMP 1
OVERLOAD STATUS
(ENERGIZED = OK)



DIGITAL INPUTS

RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	9 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

CARD 2

6ES7 221-1BF32-0XB0
SIEMENS
SM 1221 DI8 24VDC

PRIORITY PANEL
ODORIZER LEVEL LOW SWITCH 2
(ENERGIZED = OK)

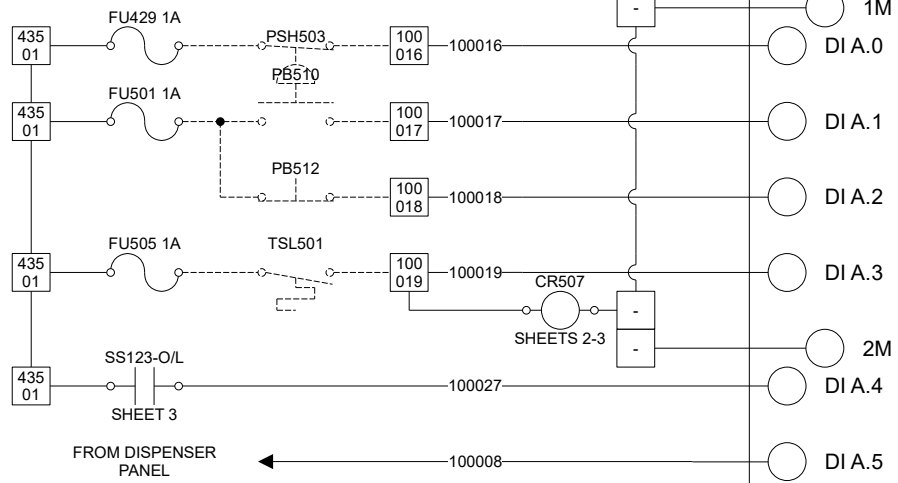
OFFLOAD PUMP
START BUTTON
(ENERGIZED = START)

OFFLOAD PUMP
STOP BUTTON
(ENERGIZED = RUN)

PRIORITY PANEL
TEMPERATURE LOW SWITCH
(ENERGIZED = OK)

LCNG PUMP 2
OVERLOAD STATUS
(ENERGIZED = OK)

LNG PUMP
PRIME STATUS
(ENERGIZED = PRIMED)

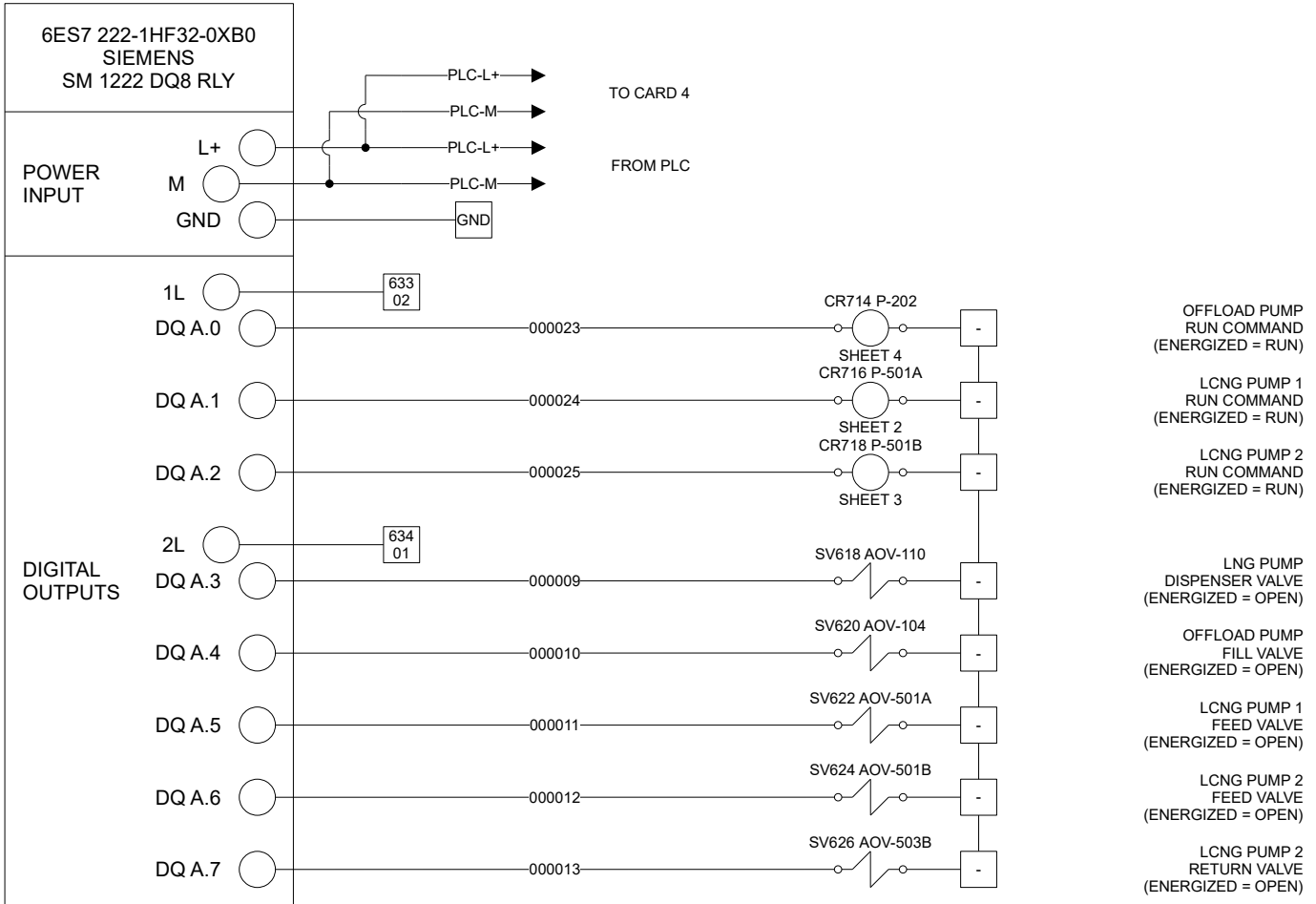


DIGITAL
INPUTS

- 1M
- DI A.0
- DI A.1
- DI A.2
- DI A.3
- DI A.4
- 2M
- DI A.5
- DI A.6
- DI A.7

RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	10 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

CARD 3

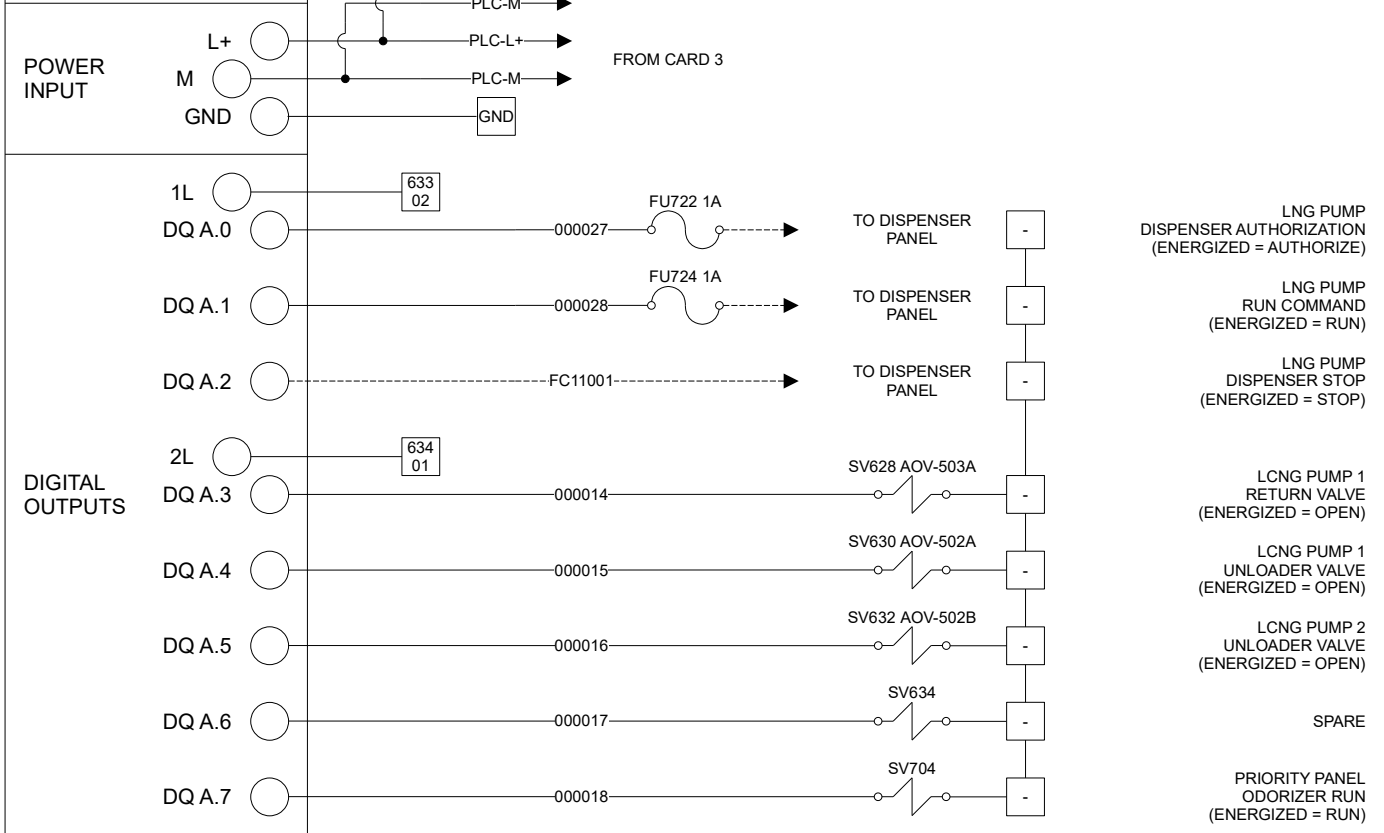


- OFFLOAD PUMP RUN COMMAND (ENERGIZED = RUN)
- LCNG PUMP 1 RUN COMMAND (ENERGIZED = RUN)
- LCNG PUMP 2 RUN COMMAND (ENERGIZED = RUN)
- LNG PUMP DISPENSER VALVE (ENERGIZED = OPEN)
- OFFLOAD PUMP FILL VALVE (ENERGIZED = OPEN)
- LCNG PUMP 1 FEED VALVE (ENERGIZED = OPEN)
- LCNG PUMP 2 FEED VALVE (ENERGIZED = OPEN)
- LCNG PUMP 2 RETURN VALVE (ENERGIZED = OPEN)

RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	11 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

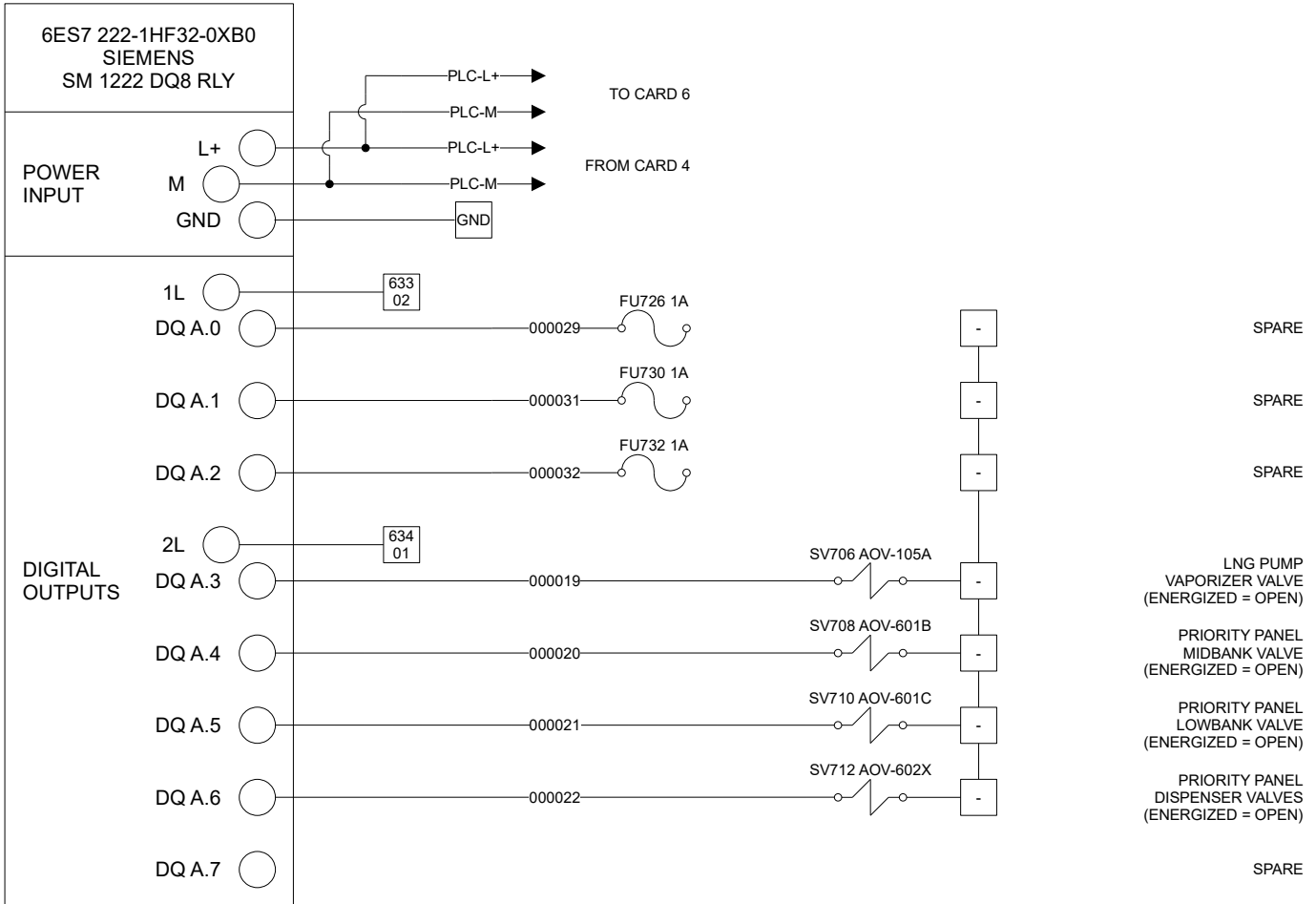
CARD 4

6ES7 222-1HF32-0XB0
SIEMENS
SM 1222 DQ8 RLY



RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	12 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

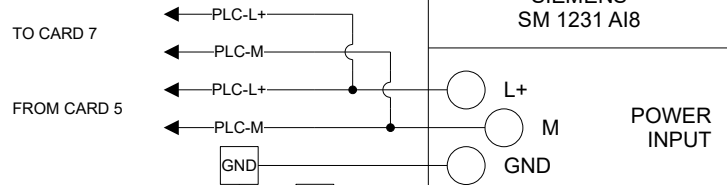
CARD 5



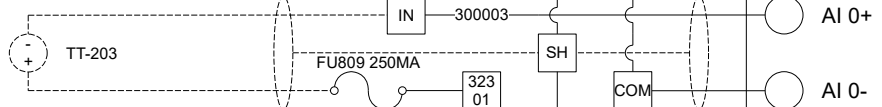
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9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	13 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

CARD 6

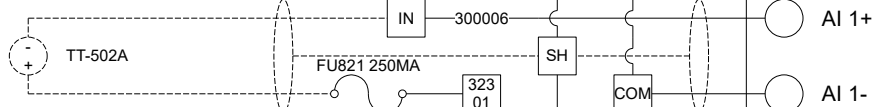
6ES7 231-4HF32-0XB0
SIEMENS
SM 1231 AI8



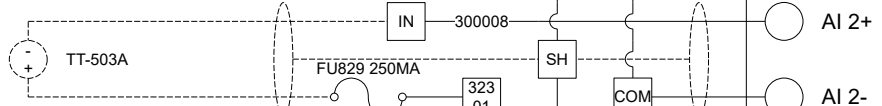
OFFLOAD PUMP
SUMP TEMPERATURE
(4-20MA = -320-100°F)



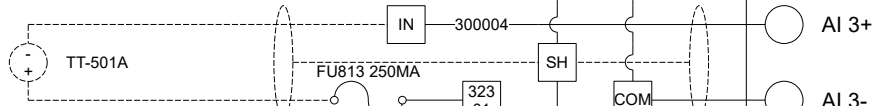
LCNG PUMP 1
SUMP TEMPERATURE
(4-20MA = -320-100°F)



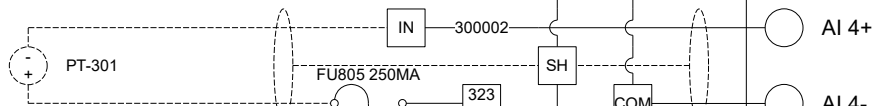
LCNG PUMP 1
DISCHARGE TEMPERATURE
(4-20MA = -320-100°F)



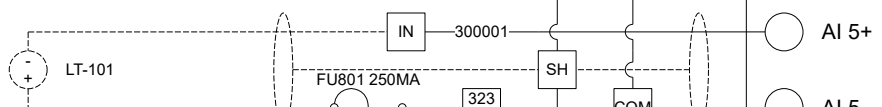
LCNG PUMP 1
RETURN TEMPERATURE
(4-20MA = -320-100°F)



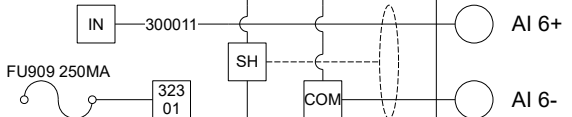
TANK
HEAD PRESSURE
(4-20MA = 0-232PSI)



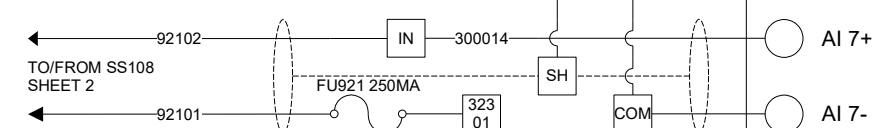
TANK
LIQUID LEVEL
(4-20MA = 0-175"WC)



SPARE



LCNG PUMP 1
MOTOR AMPERAGE
(4-20MA = 0-80A)

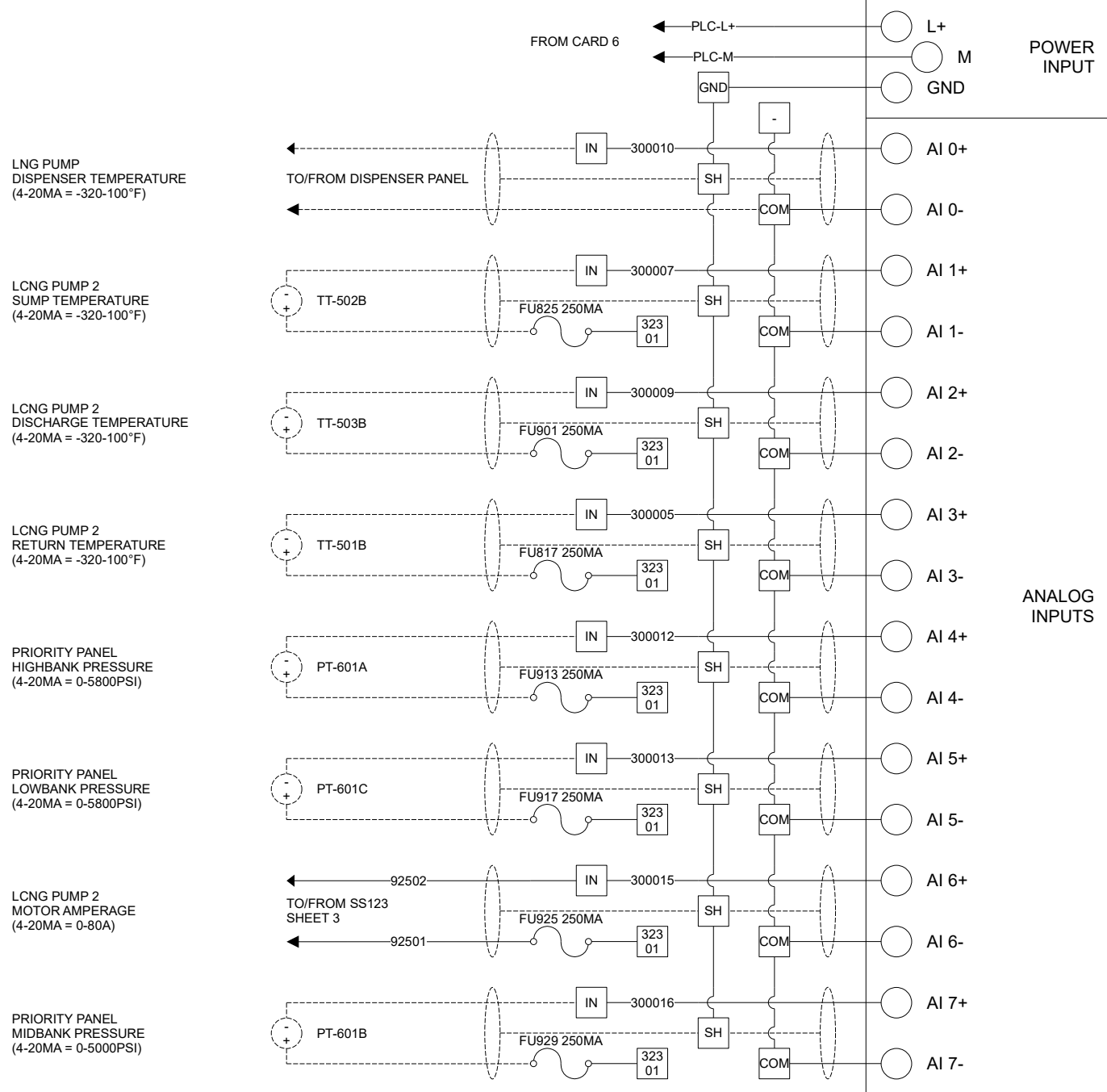


ANALOG
INPUTS

RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	14 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

CARD 7

6ES7 231-4HF32-0XB0
SIEMENS
SM 1231 AI8



RIVARK AUTOMATION LTD.		DWG	100054-1
9-45905 YALE RD SUITE 363, CHILLIWACK, BC		REV	B
PH: (604) 262-9955		DATE	2022-03-07
TITLE	CONTROL PANEL SCHEMATIC	SHEET	15 OF 15
JOB	CHART CITY OF BARSTOW RETROFIT		

PAD FOR SURFACE-MOUNTED TRANSFORMER
SEE UGS SS 504

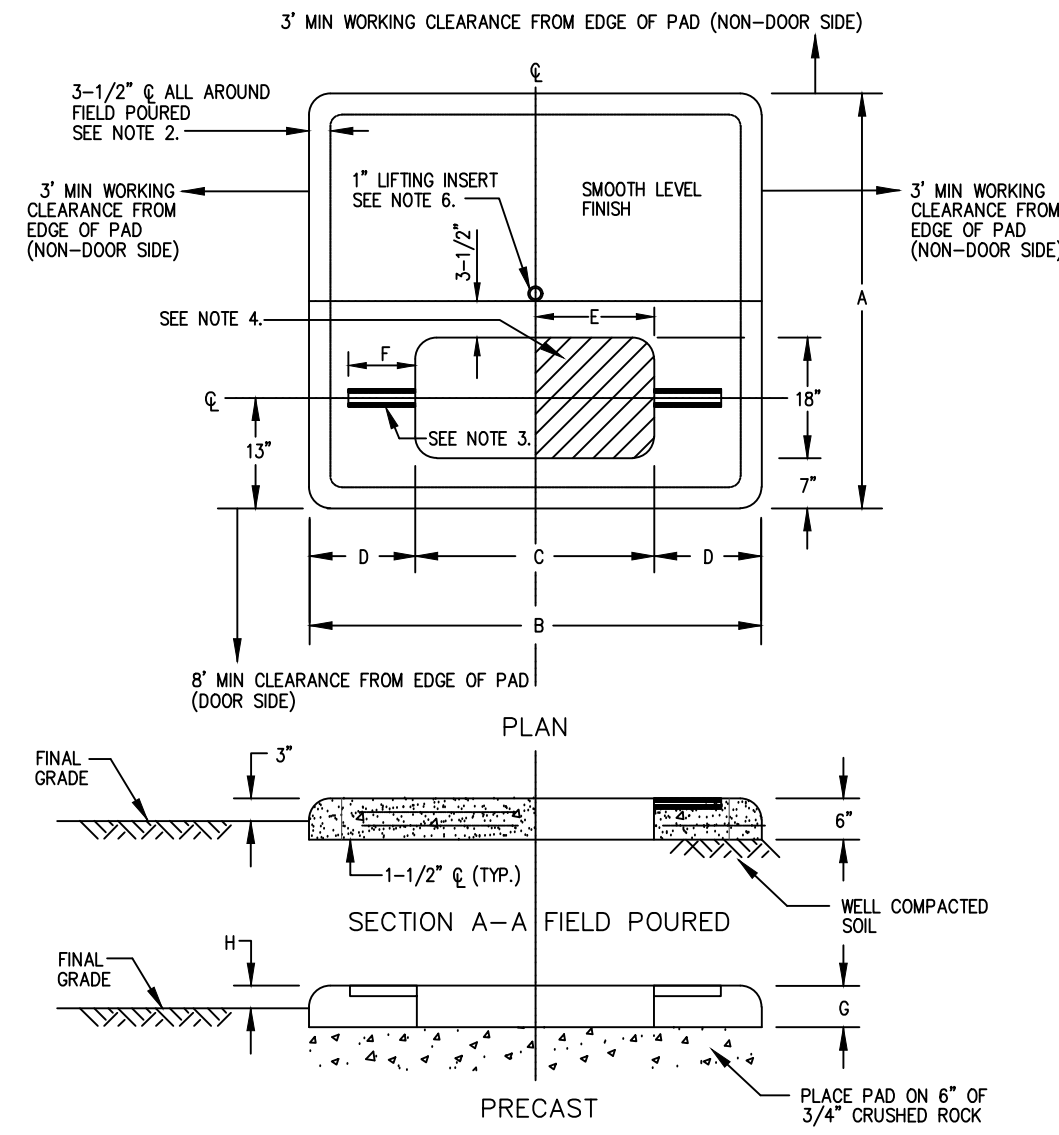
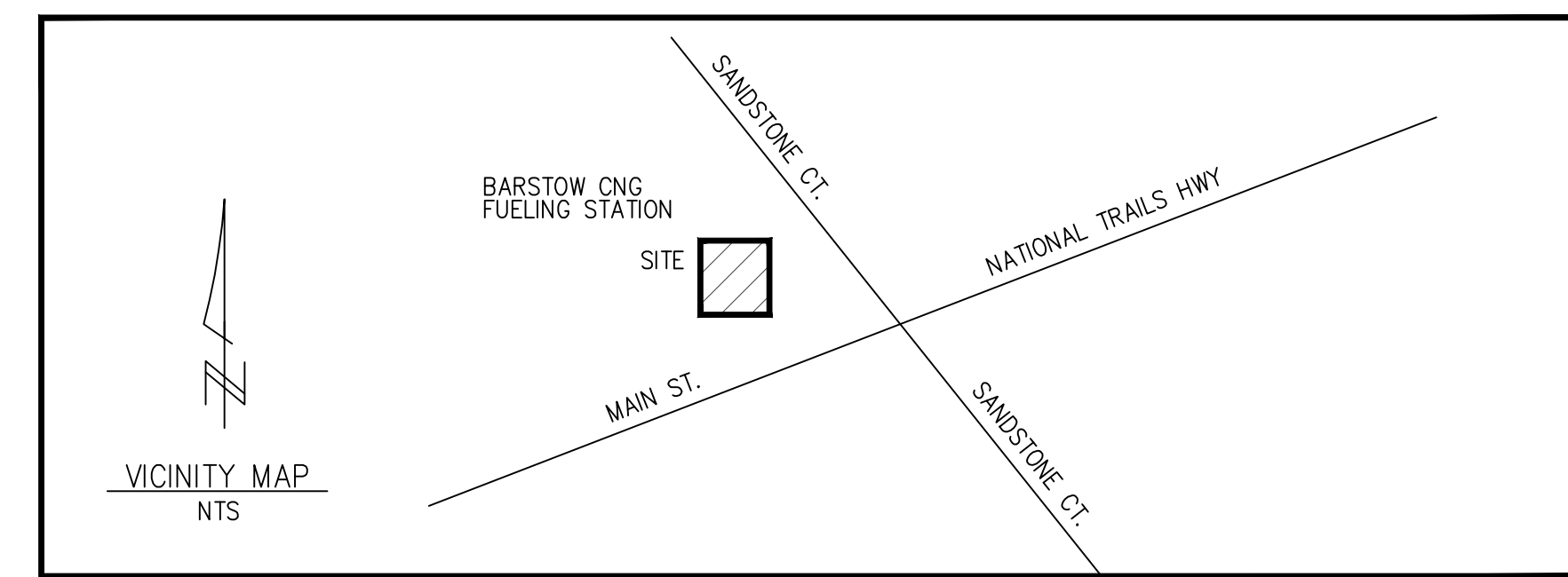
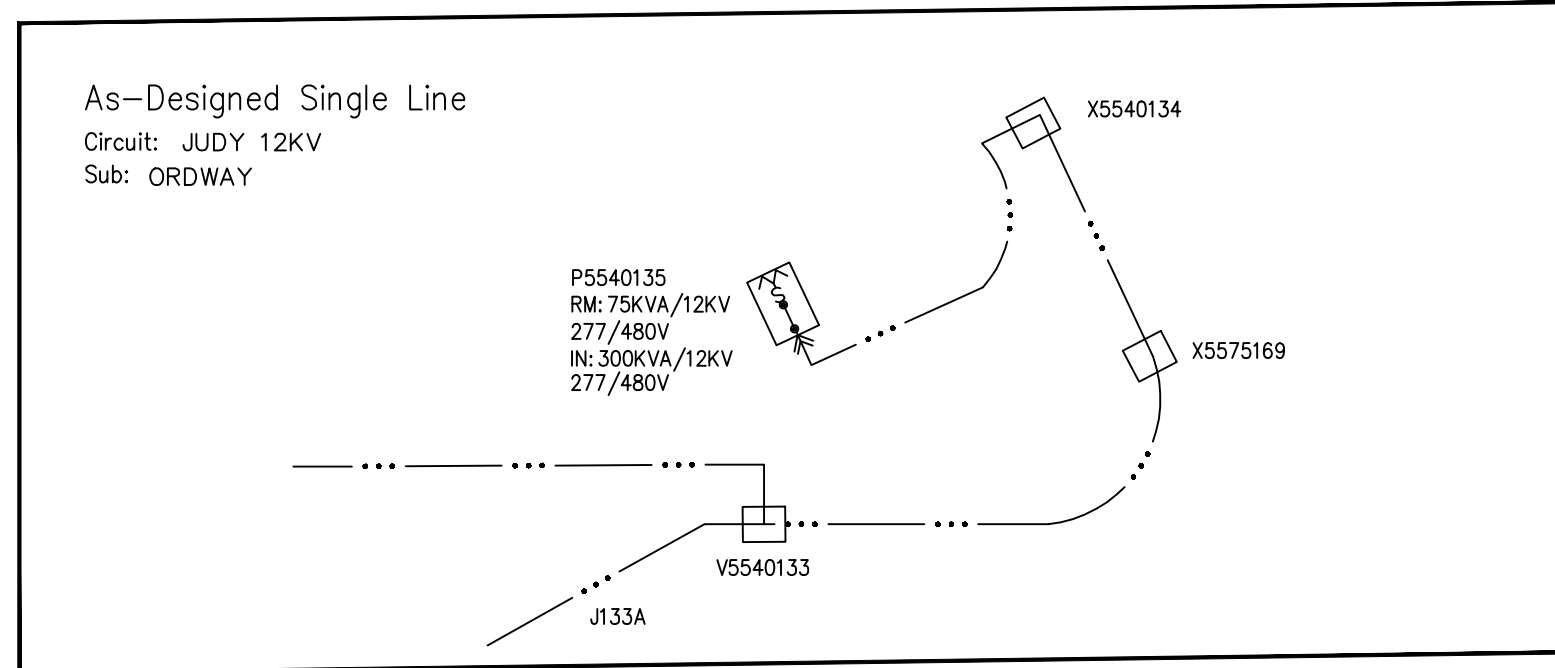


TABLE SS 504-1: Surface-Mounted Transformer Pads-Dimensions

Transformer	Pad Dimensions (in)								Weight (lb)	SAP
	A	B	C	D	E	F	G	H		
1φ 25 KVA-167 KVA	54	48	26	11	12	6	4	2	750	10118012
3φ 75 KVA-500 KVA SW and Fuse	72	94	50	22	22	14	6	3	3,200	10118013

- Note(s):
- Concrete to be 3,000 psi (minimum) at 28 days.
 - Reinforcing steel to be No. 4 bars installed in a double net. Perimeter bars to be continuous (8" minimum lap or weld).
 - Hold-down brackets to be D-3200 series unistrut (or equal).
 - Primary cables must be installed in shaded area of drawing above as far to the right as possible on single phase transformers only. On three-phase transformers primary cables must be installed in the unshaded area of drawing above as far left as possible.
 - See AC 701 for pad-mounted transformer/capacitor grounding requirements and AC 703 for approved grounding materials.
 - 1-inch listing insert to be located at center of gravity on precast pads.
 - See SS 500 for approved manufacturers.
 - The three-phase transformer shall only be used on a pad when four or fewer services are to be installed. A slab box should be used when more than four services will be installed.
 - Use a thin layer of red-crete (or equivalent) for rodent and weed control or where transformer does not fully cover opening in pad.
 - A 17" x 30" x 15" plastic handle (SAP 10117726) shall be inverted and installed under the cable opening of the pad.
 - This will provide adequate cable slack for operation of the load-break elbows on single phase transformers only.

D43: Rev. 10/26/20



CONSTRUCTION NOTES:

- Unless otherwise specified on the working drawing which forms a part of the specification, the Contractor/Developer shall furnish the following items at no cost to the Edison Company.
- Southern California Edison Company has attempted to correctly show all existing utilities and substructures in the vicinity of the work, but does not guarantee there are no other substructures in the area. Failure of SSE to show all substructures in their correct location will not be a basis for a claim for extra work, and the contractor shall be responsible for all damages to substructures whether shown or not.
- FOR GENERAL SPECIFICATIONS SEE UGS G 001.
 - CONDUIT:
 - Minimum cover in street or parkway is 30" below gutter grade, unless noted otherwise.
 - Minimum cover on private property is 30" below finished grade, unless noted otherwise.
 - Contractor to furnish and install approved conduit to Edison specifications per UGS CD 100.1, 110 AND 120.
 - For the type of conduit for this job, See UGS CD 110.1.
 - Install all risers per UGS CD 160, 161, 162 and 170.
 - Cap all mainline conduits per UGS CD 148 and service conduits per UGS CD 150.
 - Install all risers per UGS CD 160, 161, 162 and 170.
 - per UGS CD 180.1 & UGS CD 180.2.
 - Install pull rope in all conduit runs. Pull rope to be at least 3/8" polypropylene rope, braided or twisted. For specifications, approved makes, and suppliers, see UGS G 040.
 - All conduit must be marked with the approved method UGS CD 197.
 - CONDUIT RADIUS REQUIREMENTS:
 - The minimum radius for bends are:
 - 36" for conduits 3" in diameter or smaller
 - 48" for conduits 4" and 5" in diameter
 - 60" for 6" diameter conduit
 - The minimum radius for all sweeps of all mainline conduits is 12'-6" (unless noted otherwise).
 - EXCAVATION AND BACKFILL:
 - Work area shall be cleared and rough graded to within four inches of final grade prior to installation of Edison conduit or structures.
 - All excavations shall be in accordance with the California State Construction Safety Orders (when applicable), Edison specifications, and all governing local ordinances.
 - Each trench to be a uniform depth below final grade prior to installation of Edison conduit or structures.
 - Backfill shall be provided by the Contractor for all excavations and shall include crushed rock, concrete, and/or imported backfill, when required.
 - Backfill with a MINIMUM of one sack per yard sand cement slurry around and over vaults and manholes per UGS G 030, section 6-4 and around P&H's within one foot of finished grade, per UGS SS 560.1.
 - Backfill, per Edison specifications, shall immediately follow conduit or substructure installation. At no time shall conduit be left exposed over 24 hours.
 - No rocks are allowed within 12 inches of direct-buried cables or any conduit without concrete encasement. Native backfill capable of passing through a one-half inch mesh screen shall be considered to be "rock free". If existing backfill does not pass through a 1/2" screen, place imported sand 3" below and 12" above Edison cables. After this point, no rocks larger than 1 1/2" diameter are permitted.
 - All backfill shall be compacted to meet or exceed local ordinances or other requirements. It shall be placed in a manner that will not damage the conduit or substructure or allow future subsidence of the trench or structures.
 - PAVING:
 - Re-paving, where required, shall be placed in such a manner that interference with traffic, including pedestrian traffic, will be kept to a minimum. The Contractor shall establish a program of re-paving acceptable to the Municipality, County, or other authority having jurisdiction and which is acceptable to Edison.
 - STRUCTURES:
 - All substructures shall be constructed or installed to Edison specifications.
 - Install protection barriers per UGS WS 830 when required in areas exposed to traffic, per Edison Inspector.
 - All conduit lines and concrete floored substructures shall be water tight.
 - All grounding materials shall be furnished and installed by the Contractor.
 - RETAINING WALLS:
 - When required, retaining walls shall be provided by the Developer. Walls are required wherever grade rises more than 18 inches above the structures or 24" above the pad surface at a distance of 5 feet from the same, or in areas subject to erosion. Design and installation must comply with local building ordinances. Refer to Edison Inspector for typical space requirements.
 - PERMITS:
 - All permits necessary for excavation shall be provided by the Contractor/Developer.
 - ACCESS:
 - Heavy truck access shall be maintained to equipment locations. Structures must be clear of all appearances that would obstruct the loading or unloading of equipment.
 - SERVICES:
 - Meters and services shall comply with Edison Electrical Services Requirements.
 - Writing must be in accordance with applicable local ordinances and approved by local Inspection Authorities.
 - LOCATION:
 - The location of excavations and structures for Edison shall be as shown on the working drawing. No deviation from the planned locations will be permitted unless approved by the Edison Inspector. See UGS G 001, section 2.2.
 - Actual location of destinations, storm drains, and/or other foreign utilities to be the responsibility of the Contractor. See UGS G 001, section 2.3.
 - CONTRACTOR TO VERIFY LOCATION AND WIDTHS OF ALL SIDEWALKS AND DRIVEWAYS PRIOR TO STREET LIGHT INSTALLATION. See UGS CD 175.1, UGS CD 175.2 and UGS CD 175.3.
 - SURVEY:
 - Surveying of street improvements, property corners, lot lines, finished grade, etc., necessary for the installation of underground facilities must be completed and markers or stakes placed prior to the start of the installation. In addition, Developer shall maintain the markers during the installation and inspection by Edison. Grade and property line stakes must show any offset measurements.
 - COORDINATION AND SUPERVISION:
 - The Developer shall provide supervision over and coordination among the various contractors working within the development in order to prevent damage to Edison facilities. He is responsible for the cost of repairs, replacement, relocation, or other corrections to Edison facilities made necessary by his failure to provide supervision or to otherwise comply with these specifications.
 - TELEPHONE AND OTHER UTILITY REQUIREMENTS:
 - The drawing prepared for this job may also cover the facilities to be installed for the telephone company and/or other utility. Any questions concerning details of their installation should be referred to the company concerned.
 - OWNERSHIP:
 - Developer is to deed to the Edison Company all structures shown herein except those shown as customer owned.
 - WARRANTY:
 - Applicants expressly represent and warrant that all work performed and all material used in meeting Applicants' obligations herein are free from defects in workmanship and are in conformity with Southern California Edison Company's requirements. This warranty shall commence upon receipt by Applicants of Company's final acceptance and shall expire one year from that date. Applicants agree to promptly correct to the Company's satisfaction and that of any governmental agency having jurisdiction and at Applicant's expense any breach of this warranty which may become apparent through inspection or operation of underground electric system by Company during this warranty period.
 - INSPECTION:
 - Inspection is required during the construction period. A 48 hour advance notice of intent to start construction is required from the contractor to the Southern California Edison Company. Standards of Edison construction requirements are available upon request.

Duct and Structure Inspector: CHRIS CUMMINGS Phone: (442) 235-0040
Cabling Construction Coordinator: SERGIO LUPERCIO Phone: (626) 222-6130

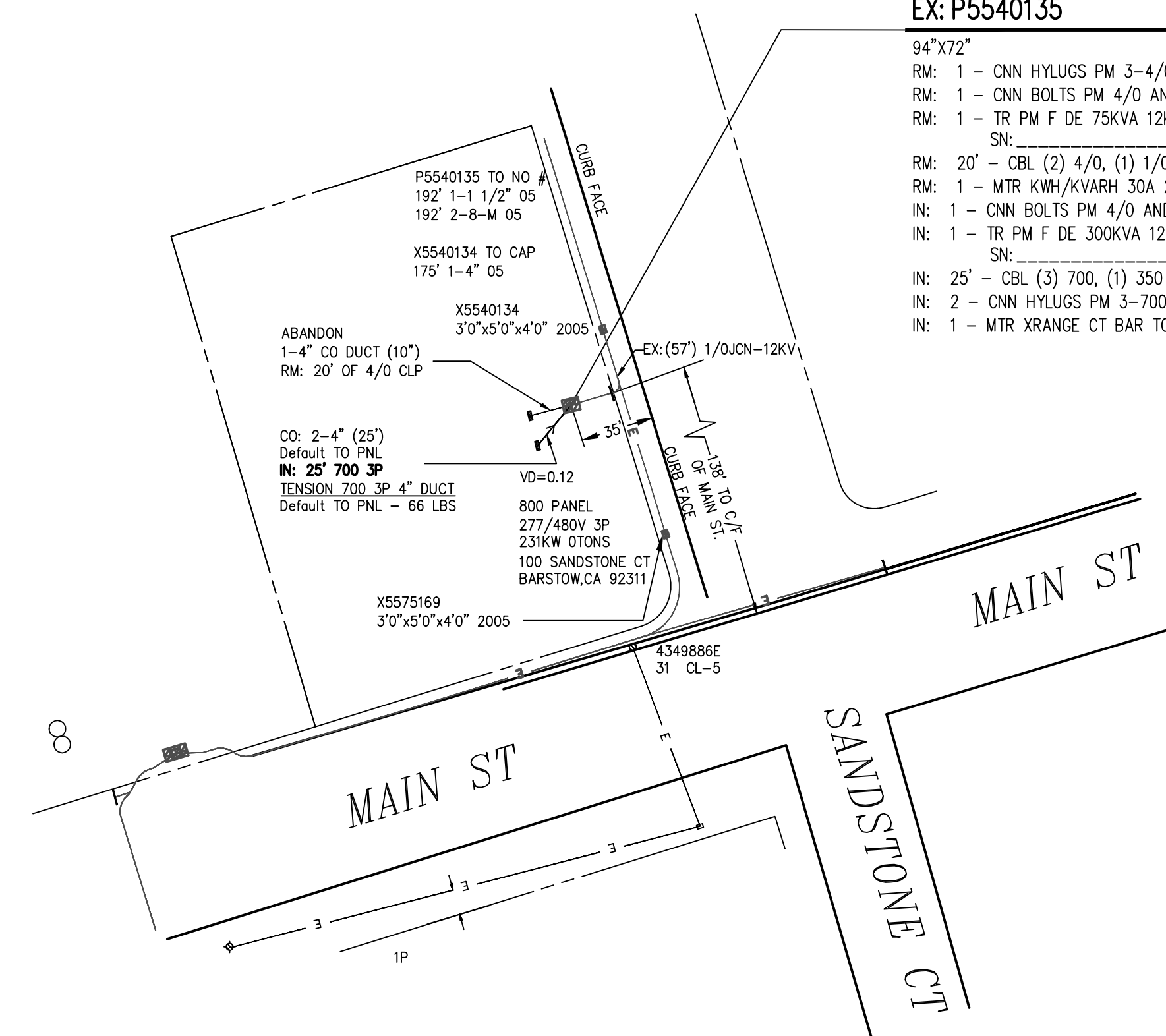
D05: Rev. 07/21/16

GPS COORDINATES:
N 34.886536
W -117.079141

TD1849749
EX: P5540135

PAD 1

- 94"x72" CONCRETE
RM: 1 - CNN HYLUGS PM 3-4/0 1-1/0 12/16KV 3P
RM: 1 - CNN BOLTS PM 4/0 AND UP 12/16KV 3P
RM: 1 - TR PM F DE 75KVA 12KV 277/480Y 3P+ SN:
RM: 20' - CBL (2) 4/0, (1) 1/0 600V CLP PLEX
RM: 1 - MTR KWH/KVARH 30A 277/480 3P 4W
IN: 1 - CNN BOLTS PM 4/0 AND UP 12/16KV 3P
IN: 1 - TR PM F DE 300KVA 12KV 277/480Y 3P+ SN:
IN: 25' - CBL (3) 700, (1) 350 600V CLP PLEX
IN: 2 - CNN HYLUGS PM 3-700 1-350 12/16KV 3P
IN: 1 - MTR X-RANGE CT BAR TO 600/5 277/480 3P 4W



NOTE TO CREW:

- CIVIL TO TIE IN 2-4" DUCTS FROM NEW 800 AMP SW GEAR. CIVIL TO ALSO REMOVE OLD 4" DUCT FROM PAD COMING FROM OLD 200 AMP PANEL.
- CREW TO REMOVE OLD 75KVA TRANSFORMER & INSTALL NEW 300KVA TRANSFORMER. CREW TO ALSO LEVEL EXISTING PAD.
- CIVIL NEEDED
- TRUCK ACCESS OK

UNDERGROUND SERVICE ALERT
Contact USA
Dial 811 or 800-422-4133
www.digalert.org/contact
For Underground Locating
Two Working Days Before You Dig

T.L.M. DATA:

SIZE	KVA	CUST	% LOAD
EXIST. 19	21.6	1	97.00%
PROP. 300	271	1	90.2%

VOLTAGE DROP: 0.12
FLICKER FACTOR: N/A
PRI. CIRCUIT: JUDY 12KV

PROJECT REQUIREMENTS (Y/N)

EDISON EASEMENT REQUIRED	<input type="checkbox"/>
PWRD 88 REQUIRED	<input type="checkbox"/>
UG CIVIL ONLY WORK ORDER	<input type="checkbox"/>
PERMIT REQUIRED	<input checked="" type="checkbox"/>
PERMIT TYPE: BLANKET	
OUTAGE REQUIRED	<input checked="" type="checkbox"/>
OUTAGE DATE: _____ TIME: _____	
TRAFFIC CONTROL REQUIRED	<input type="checkbox"/>
PED. TRAFFIC CONTROL REQ'D	<input type="checkbox"/>
CONVEYANCE LETTER REQ'D	<input type="checkbox"/>
ENVIRONMENTAL CLEARANCE REQ'D	<input checked="" type="checkbox"/>
CSD 140 (TLM) REQ'D	<input type="checkbox"/>

JUDY 12KV
ORDWAY SUB

A2

SCALE: 1" = 40'
0 40 80

DISTRICT	PROJ. MGR.	CUMMINGS, CHRISTOPHER	CUMMINGS, CHRISTOPHER	DARBY, SEAN THOMAS
72 - BARSTOW	PHONE (442) 235-0040	PHONE (442) 235-0040	PHONE (442) 235-0040	PHONE (442) 235-0040
PROJECT NO. 2182891	SERVICE REQUEST 200104945	PRODUCT-1 1849749-METER & SERVICE CHANGE	PRODUCT-2	ASSOC DESIGN
CIRCUIT / VOLTAGE JUDY 12KV	GPS	PRODUCT-2		ASSOC DESIGN
SUB / PG NO. ORDWAY SUB	CIRCUIT CODE 09385	PRODUCT-3		ASSOC DESIGN
INVENTORY MAP 505-2275-5	J.P.A. NO. N/A	PROPOSED CONSTRUCTION (LOCATION)	100 SANDSTONE CT BARSTOW CA 92311	
DATE 06/08/21	APPROVED BY G. HEREDIA	CHECKED BY C. CUMMINGS	DRAWN BY S. DARBY	PAX # N/A
TYPE	DATE	APPROVED BY	CHECKED BY	DRAWN BY
Southern California Edison Company				SHEET 1 of 1
				DESIGN/DRAWN NO. 1398359_0.01

