SQUARE D

by Schneider Electric

Job Name:	CUMMINS ARECIBO	Square D Quotation #:	27086157
Job Location:	FRIDLEY MN	Quotation Revision #:	
		Sales Contact:	CARY ANDERSON
		Sales Contact Location:	382
Purchaser:	CUMMINS POWER GENERATION	Customer:	CUMMINS POWER GENERATION / ONAN
Purchaser PO #:	364618917-26	Customer PO #:	
User:	CUMMINS POWER GENERATION / ONAN	Architect:	CUMMINS POWER GENERATION / ONAN
User Location:		Cons. Engineer:	
Drawing Status:	RECORD		

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		ENGRAVED NAMEPLATES	T27086157-001-EP	1	-
		ELEVATION	F27086157-001-01	1	-
		TOP VIEW/FLOOR PLAN	F27086157-001-02	1	-
		GENERAL NOTES	F27086157-001-03	1	-
		DETAIL VIEW	F27086157-001-51	1	-
		SECTION VIEW	S27086157-001-01	1	-
		DOOR DETAIL VIEWS	D27086157-001-01	1	-
		ONE LINE DIAGRAM	O27086157-001-01	1	-
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			C27086157-001-02	1	-
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			C27086157-001-03	2	-
		DC BUS SCHEMATIC	C27086157-001-AL	1	-
		ELEMENTARY DIAGRAMS	E27086157-001-01	1	-
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			W27086157-001-03	1	A
			W27086157-001-04	1	-
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		BREAKER INTERNAL SCHEMATIC	R27086157-001-01	1	-

These products are manufactured in a facility which is quality systems registered by Underwriters Laboratories to ISO 9000

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SQUARE D FACTORY ORDER NUMBER: 27086157-001

Equipment Designation	Equipment Type	Drawing Type	Drawing Number	Page	Revision Level
		RATING NAMEPLATE	N27086157-001-01	1	-

These products are manufactured in a facility which is quality systems registered by Underwriters Laboratories to ISO 9000

Summary Bill of Material

Printed 08/06/10 12:10:14 by MSMD46

Find #	Part Number	Qty Per	Total Qty	Function	Supplier	Description	Rev
001	46008-695-01	2.00	2.00	LABEL	SQUARE D COMPANY	DOOR LABEL	
002	1342-004002	8.00	8.00	WIRE	SQUARE D COMPANY	CABLE, #4 Cu WIRE, BRAID.	
003	YA2CL4	16.00	16.00	LUG	BURNDY	LUG, CRIMP, #2 CU, (1) 3/8" HOLE, BROWN.	
004	9L11XPM006S	12.00	12.00	LA	GENERAL ELECTRIC	SURGE ARRESTER, STATION CLASS, TYPE XEP, 6KV, 5.1KV MCOV.	
005	PTG3160422FGC1	3.00	3.00	VT	INSTRUMENT TRANSFORMERS	VOLTAGE TRANSFORMER, 1 FUSE, 35:1 (4200:120V), 60kV BIL, 750VA, TYPE PTG-3, WITH 1E FUSE (FERRAZ-SHAWMUT #A500T1E1).	
006	785R201	24.00	24.00	CT	SQUARE D COMPANY	CURRENT TRANSFORMER, SINGLE RATIO, MODEL 785R, 200:5, C50.	1
007	780R102	6.00	6.00	CT	SQUARE D COMPANY	CURRENT TRANSFORMER, SINGLE RATIO, MODEL 780R, 1000:5, C100.	
008	KUXSC6S2093	10.00	10.00	SCTB	BUSSMANN	TERMINAL BLOCK, BUSSMANN, SHORTING TYPE, BINDER HEAD SCREW LUG (#10-32), 6 POINT, #18-#10 WIRE, 30A, 600V.	
009	9080LBA262101	2.00	2.00	TB	SQUARE D COMPANY	TERMINAL BLOCK, POWER DISTRIBUTION, ALUMINUM, 2 POLE, (1)-#14-2/0, (1)-#14-2/0 AL/CU.	
010	9080LBA262104	8.00	8.00	TB	SQUARE D COMPANY	TERMINAL BLOCK, POWER DISTRIBUTION, ALUMINUM, 2 POLE, 1-#14-2/0, 4-#14-4 AL/CU.	
011	BAF5	6.00	6.00	FU-5A	BUSSMANN	FUSE, ONE TIME, 5 AMPERES, 1.5", 250VAC.	
012	A500T1E1	3.00	3.00	FU	Ferraz	FUSE, CURRENT LIMITING, 1E, 5KV.	
013	LA250	12.00	12.00	LUG	CONNECTOR MFG INC.	LUG, SET SCREW, ALUMINUM, TYPE LA, 1 #6-250MCM CU/AL, 1 HOLE PAD.	
014	DLA350	2.00	2.00	LUG	CONNECTOR MFG INC.	LUG, SET SCREW, ALUMINUM, TYPE DLA, (2) #6-350 MCM AL/CU, 1 HOLE (1/2") PAD.	

Job Name:	**CUMMINS ARECIBO**			Engineer:	TDA
Order Qty:	1	Rev:	2	Order:	**017-27086157-001-00-01-E**
Status:	SH	Catalog No:	Fully-Assembled MV MetalClad Swgr	Doc Nbr:	T27086157-001-BM

Summary Bill of Material

Printed 08/06/10 12:10:14 by MSMD46

Find #	Part Number	Qty Per	Total Qty	Function	Supplier	Description	Rev
015	46007-380-51	6.00	6.00	52S (5a&5b)	SQUARE D COMPANY	MOC (MECH. OPER. CONTACT) SW., 5a, 5b, MASTERCLAD SWGR., STATIONARY MTD., OPERATES IN TEST AND CONN.	
016	46007-381-51	6.00	6.00	52H (5a&5b)	SQUARE D COMPANY	TOC (TRUCK OPER. CONTACT) SWITCH, 5a, 5b, MASTERCLAD SWITCHGEAR, CELL MOUNTED.	
017	V5D3133Y000	6.00	6.00	52	SQUARE D COMPANY	CIRCUIT BREAKER, VR, VACUUM, 4.76KV, 40KA,1200A, 125VDC CLOSE, 125VDC TRIP, MOC (VR-05025-12).	
018	46007-489-50	1.00	1.00	TEST JUMPER	SQUARE D COMPANY	TEST JUMPER, 14 FEET LONG FOR VR CIRCUIT BREAKERS.	
019	46007-382-50	1.00	1.00	RACK HNDL	SQUARE D COMPANY	CIRCUIT BREAKER RACKING HANDLE, MASTER CLAD SWITCHGEAR.	
020	46007-383-50	1.00	1.00	LIFT TRUCK	SQUARE D COMPANY	CIRCUIT BREAKER LIFT TRUCK, IN/OUTDOOR, MASTER CLAD SWGR.	
021	46008-880-50	1.00	1.00	CRTN PACK	SQUARE D COMPANY	CARTON PACKING, SER 5 INDOOR, CONSISTING OF: 6055-31 & 6055-30 MANUALS AND LOOSE PARTS TAG.	

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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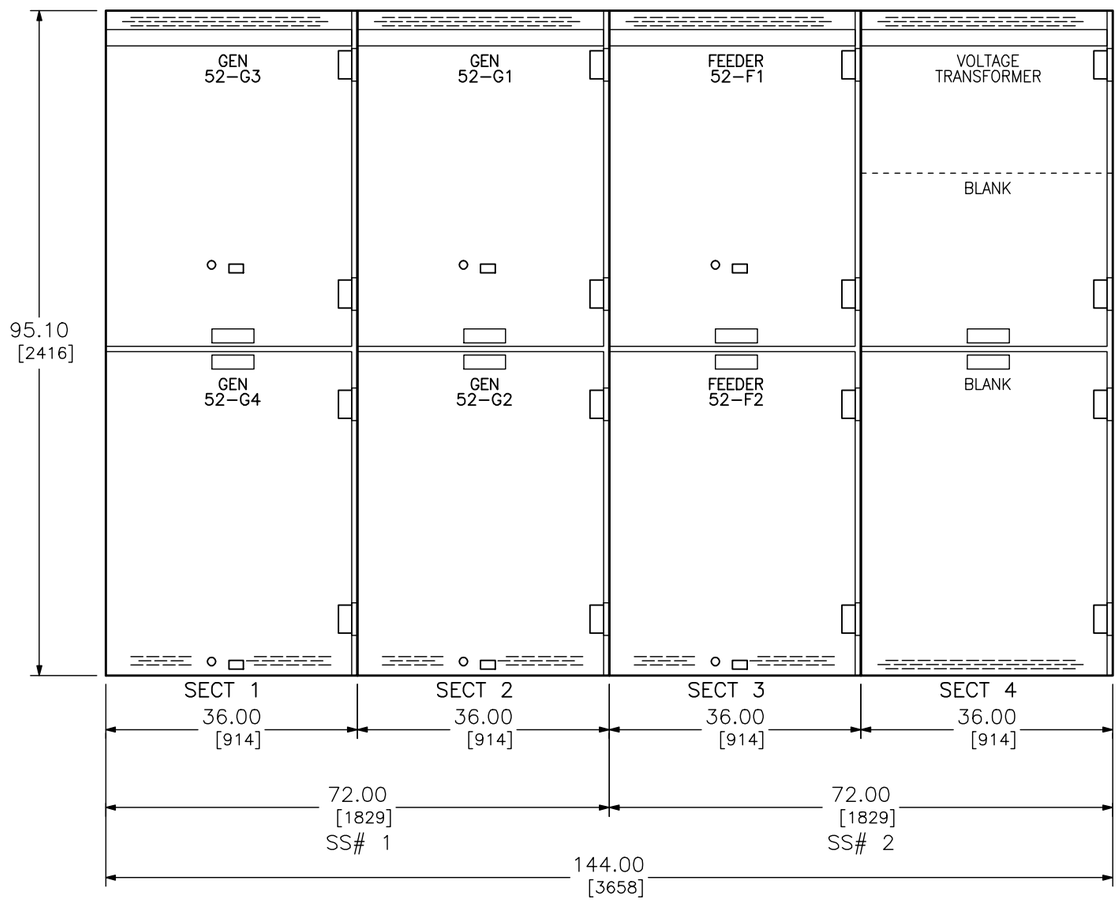

FRONT ELEVATION

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	ELEVATION
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# F27086157–001–01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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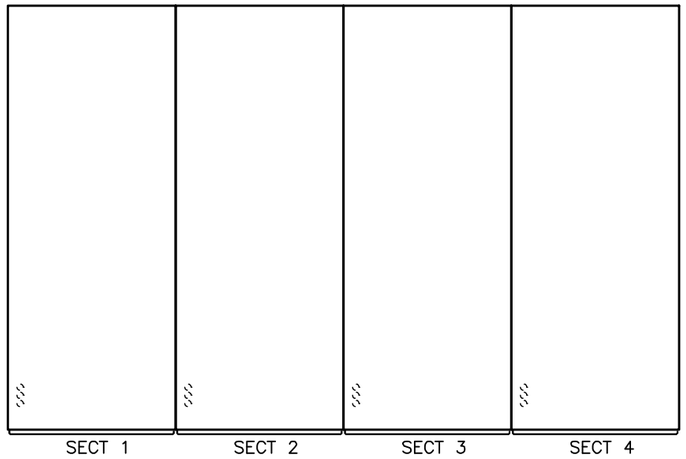
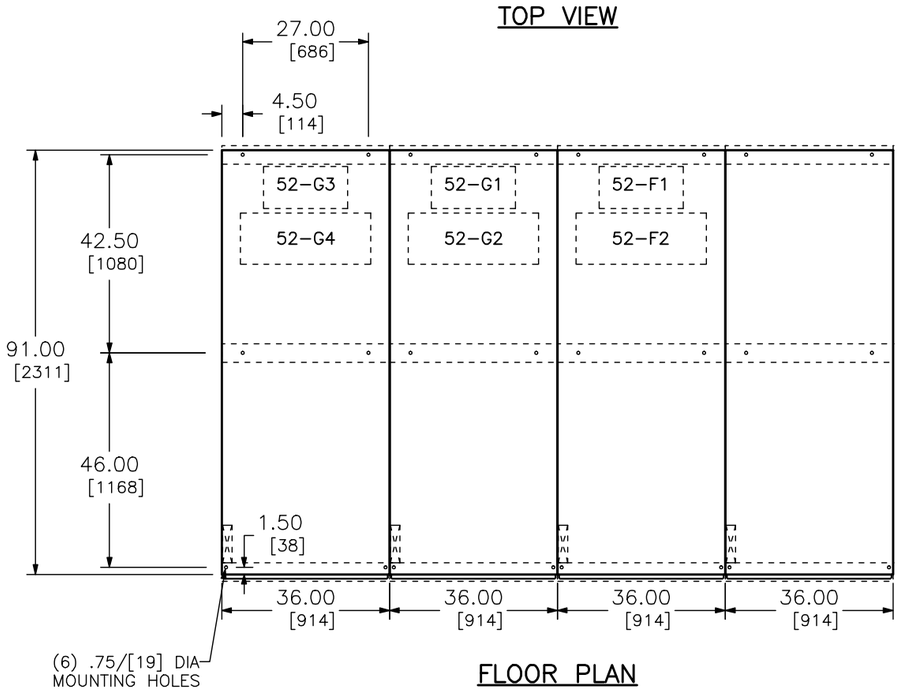


TOP VIEW



FLOOR PLAN

SEE DRAWING –51 FOR INSTALLATION–FOUNDATION REQUIREMENTS

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	TOP VIEW/FLOOR PLAN
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# F27086157–001–02	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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GENERAL NOTES:

PRODUCT DESCRIPTION AND RATINGS:

POWER SYSTEM DATA:

4160 VOLTS, 3 PHASE, 3 WIRE WYE SOLIDLY GROUNDED
60 KV BIL, 60 HERTZ FREQUENCY

BUS SYSTEM DATA:

1200 AMPERES, SILVER PLATED COPPER, EPOXY INSULATED
MAIN BUS BRACED FOR 50KA RMS SYMMETRICAL.
EPOXY STAND–OFF INSULATORS
GLASS POLYESTER BETWEEN SECTION BUS BARRIER
BREAKER BUSHINGS IN CELL ARE POLYESTER
BARE COPPER GROUND BUS

ENCLOSURE DATA:

TYPE 1 INDOOR CONSTRUCTION
ANSI #61 FINISH, PROCEDURES: ZINC PHOSPHATE WITH NON–CHROMIC SEAL, RUST INHIBITED TREATMENT WITH BAKED POLYESTER COATING.
REAR ACCESS BY BOLTED PANELS
WHITE INTERIOR LOW VOLTAGE PANELS

HANDLING:

SWITCHGEAR SECTIONS ARE FURNISHED WITH FOUR LIFTING LUGS AND ARE SHIPPED ON SKIDS. ROLLERS SHALL ONLY BE USED WITH SKID IN PLACE.

SWITCHGEAR SHIPPING WEIGHT WITH BREAKERS INSTALLED:

SHIPPING SPLIT 1 WEIGHT: 6500 LBS 2955 KG
SHIPPING SPLIT 2 WEIGHT: 5815 LBS 2643 KG

BREAKER WEIGHT:

1200A, 380 LBS 173KG

CODE STANDARDS:

ANSI, NEMA, UR

PRODUCT INFORMATION:

WIRING:

CONTROL WIRING IS # 14 AWG, TYPE SIS
CURRENT CIRCUIT WIRING IS # 10 AWG, TYPE SIS

WIRE LABELING:

WIRES SHALL BE LABELED WITH DESTINATION MARKING. (POINT TO POINT)

TERMINATIONS:

INSULATED RING TYPE LUGS SHALL BE USED ON ALL LOW VOLTAGE SCREW/STUD TERMINALS.
TERMINAL BLOCKS ARE SCREW TYPE LUGS (TYPE GR6).
SQUARE D COMPRESSION BOX LUGS (TYPE 9080GR6) TERMINAL BLOCKS FOR ALL COMMUNICATIONS TERMINATIONS WHEN REQUIRED.

BREAKER SPECIFICATION:

BREAKER TYPE IS SERIES 5 – VACUUM
BREAKER RATING: 4.76KV/40KA
CLOSE CONTROL POWER IS 125VDC BY CUSTOMER
TRIP CONTROL POWER IS 125VDC BY CUSTOMER
MOC & TOC PROVIDED

GENERAL OPTIONS:

TRACEABILITY LABEL REQUIRED

LIST OF MISC. ACCESSORIES:

SHORTING TERMINAL BLOCKS FOR ALL CT CIRCUITS
ALL FRONT DEVICE DOORS TO HAVE GROUNDING STRAPS.
LIFT TRUCK NEEDED FOR REMOVAL OF BREAKER FROM THE CELL.
BREAKER TEST JUMPER (14FT)

LIST OF MISC. STRUCTURE OPTIONS:

SPECIAL FEATURES–(OVERAL DIMENSIONS ARE SUBJECT TO CHANGE.)

IF SPECIAL FEATURES ARE INCLUDED IN THIS BILL OF MATERIAL, THEY WILL NOT APPEAR ON THE FRONT– ELEV OR ONE– LINE DRAWING AND MAY ALTER THE FINAL LAYOUT AND DIMENSIONS.

GENERAL RECORD

ONAN HEAVY DUTY SHIPPING PALLETS
CARTONPACK WARNING STICKERS FOR NON BREAKER DOORS
SPARE FUSES FOR VT
WELDMENT STUDS ON ALL DOORS
DO NOT PROVIDE BLACK STRIP ACROSS TOP OF THE DOOR
CARTONPACK WARNING STICKER ON INTERCONNECT PAN ON SECT 1

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	GENERAL NOTES
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# F27086157–001–03	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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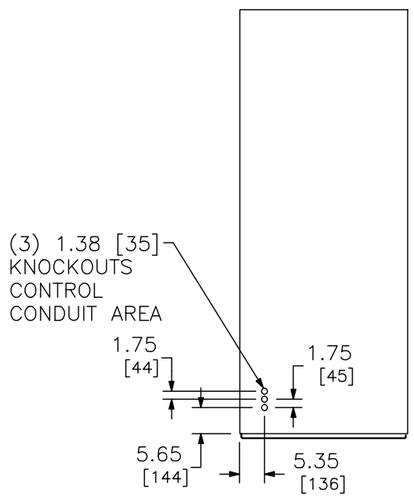
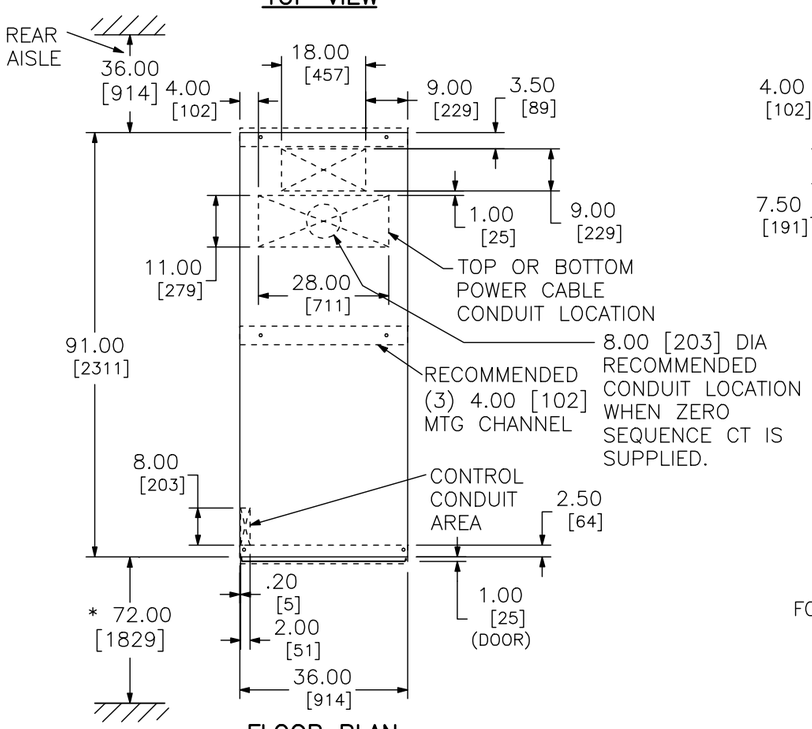
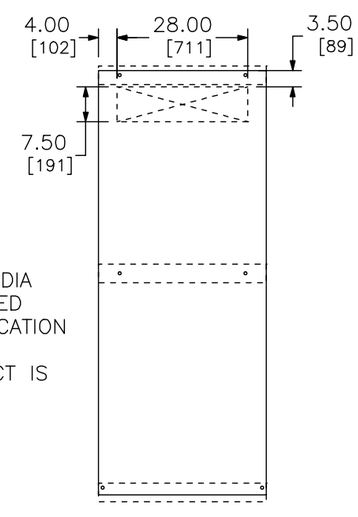


TOP VIEW



FLOOR PLAN



FOR TIE AND 36.00 [914]
METERING SECTION

INSTALLATION–FOUNDATION REQUIREMENTS

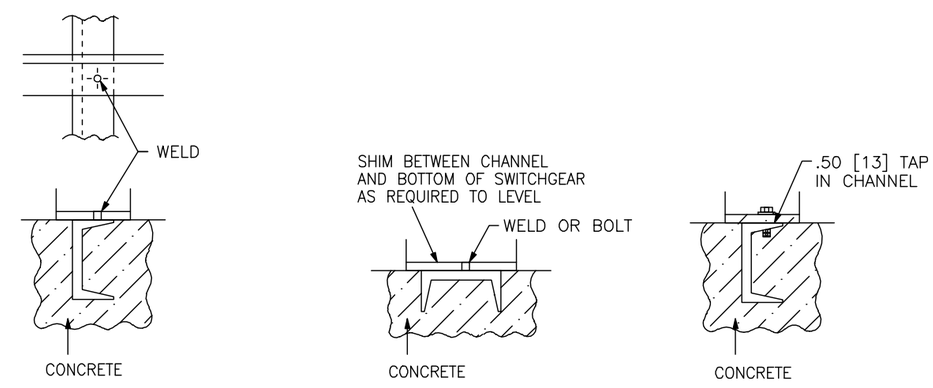
* WHEN LIFT TRUCK IS REQUIRED, RECOMMENDED 72.00 [1829] FRONT AISLE, 64.00 [1626] MINIMUM.

THE SWITCHGEAR MUST BE INSTALLED ON A FLAT, LEVEL SURFACE. SQUARE D RECOMMENDS INSTALLING THE SWITCHGEAR ON A CONCRETE PAD LEVELED TO .0625 IN ANY SQUARE YARD, WITH STEEL CHANNELS INSTALLED IN THE PAD FOR ANCHORING THE SWITCHGEAR.

POUR A 72.00 [1829] WIDE AISLE SPACE IN FRONT OF THE MOUNTING PAD, FLUSH WITH AND FINISHED WITH THE SAME TOLERANCE AS THE MOUNTING PAD. THIS LEVEL SURFACE IS NECESSARY FOR THE CIRCUIT BREAKER LIFT TRUCK AND FOR INSERTING THE CIRCUIT BREAKERS INTO THE BOTTOM COMPARTMENT.

A MINIMUM OF 36.00 [914] IS NECESSARY ON THE RIGHT END FACING THE FRONT OF THE LINE–UP. THIS SPACE IS NECESSARY FOR DOOR CLEARANCE WHEN REMOVING THE CIRCUIT BREAKERS.

RECOMMENDED BASE CHANNEL MOUNTING



DUAL DIMENSIONS: INCHES / MILLIMETERS

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	DETAIL VIEW
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# F27086157–001–51	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--	-	----	--	--/--/--
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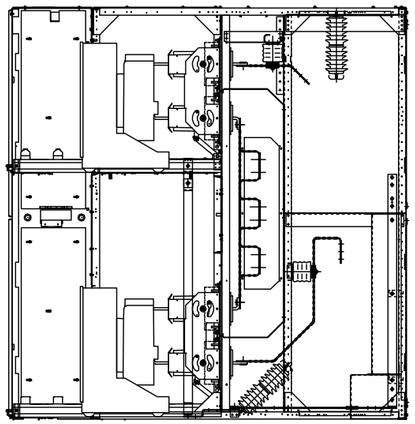
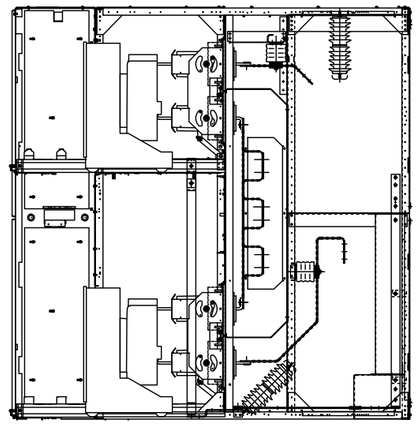
RIGHT SIDE SECTION VIEWS

SECT 1



SECT 2



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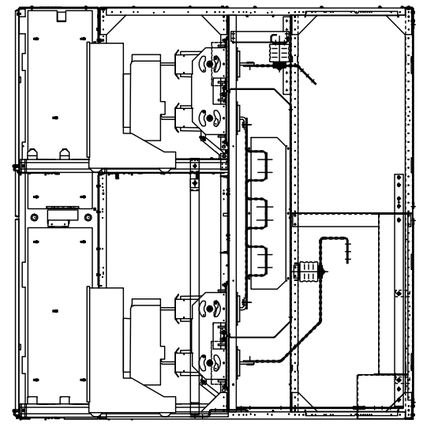

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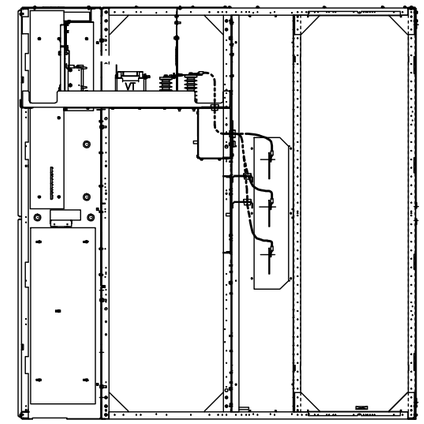

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	**A030R458**
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	SECTION VIEW
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# **S27086157-001-01**	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--	-	----	--	--/--/--
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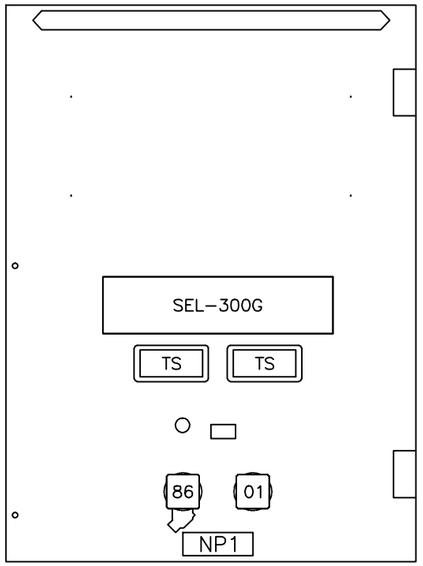
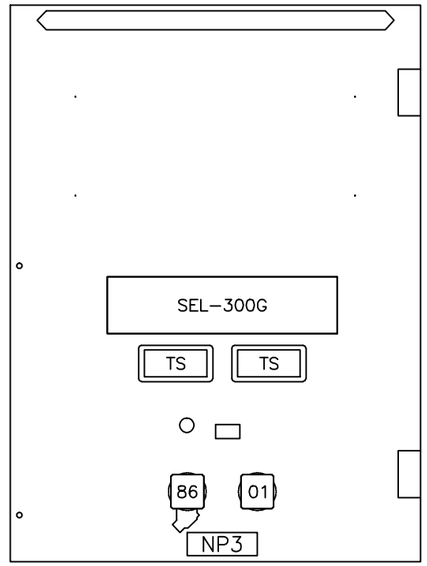
SECT 1



UPPER DOOR DETAIL DRS-00000-04712

SECT 2



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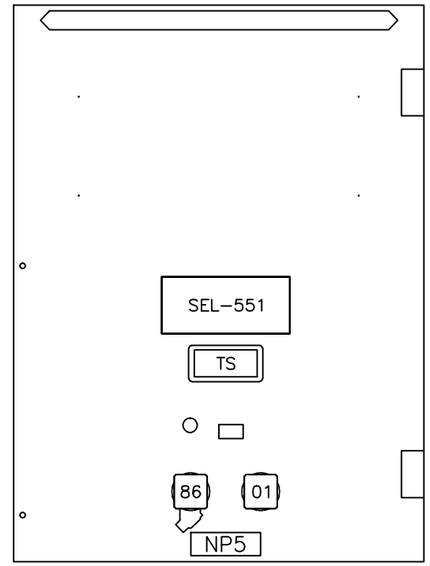

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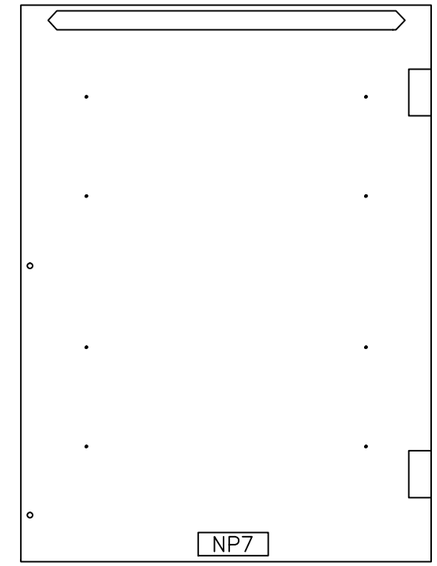
SECT 4



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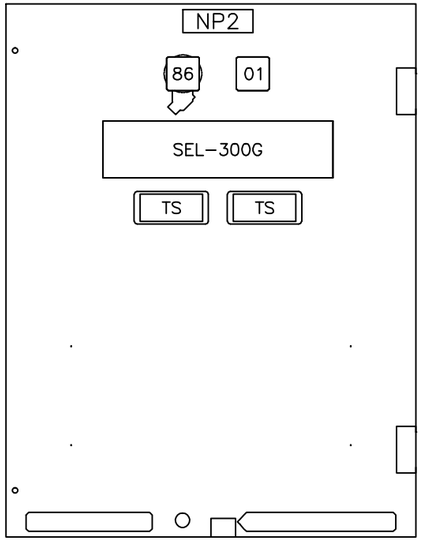
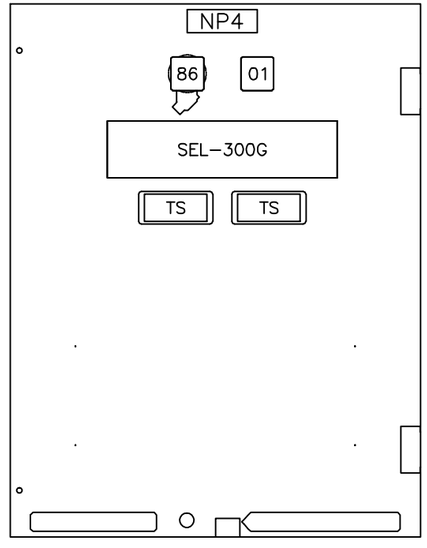
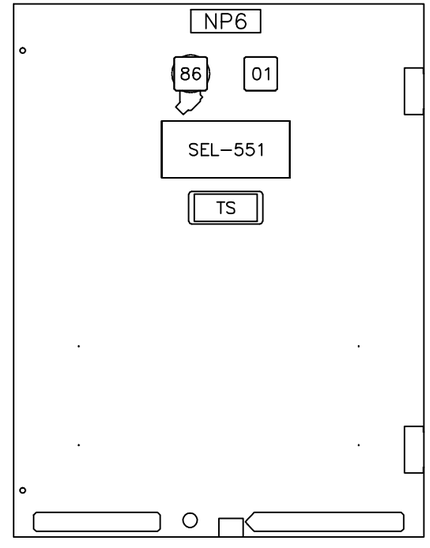


LOWER DOOR DETAIL DRS-00000-04718



LOWER DOOR DETAIL DRS-00000-04718



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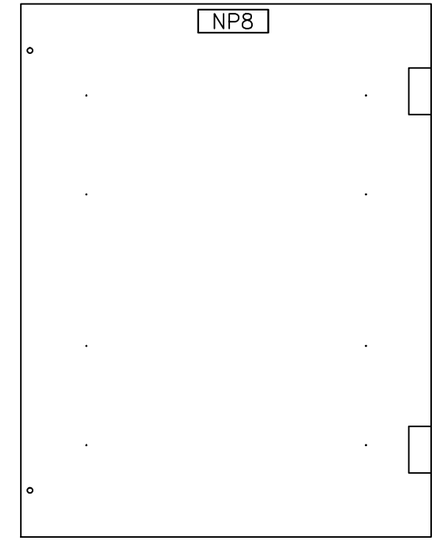

LOWER DOOR DETAIL DRS-00000-00128

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	DOOR DETAIL VIEWS
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# D27086157-001-01	PG 1 OF 1 REV -

REV	DESCRIPTION	BY	DATE								
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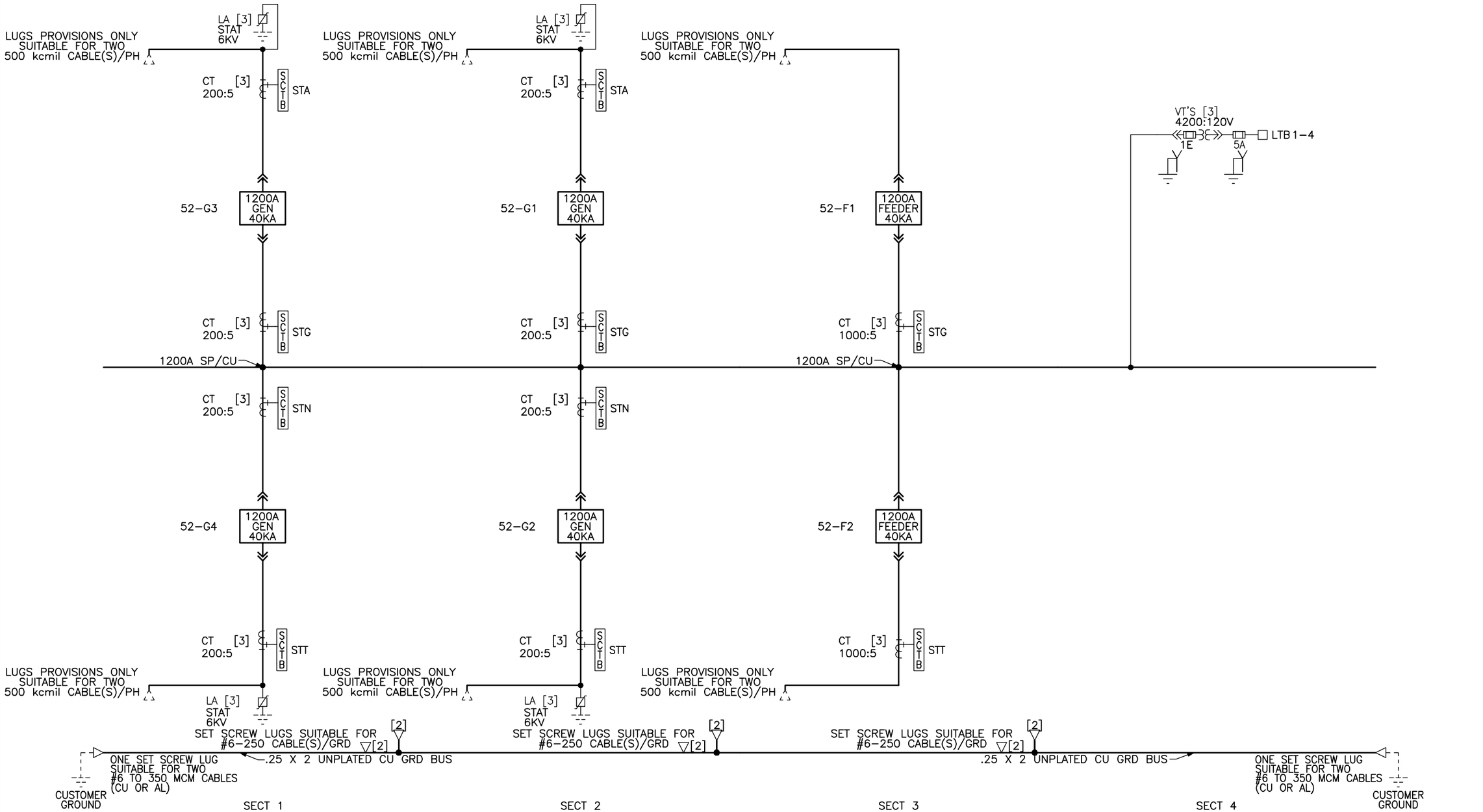

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# 027086157–001–01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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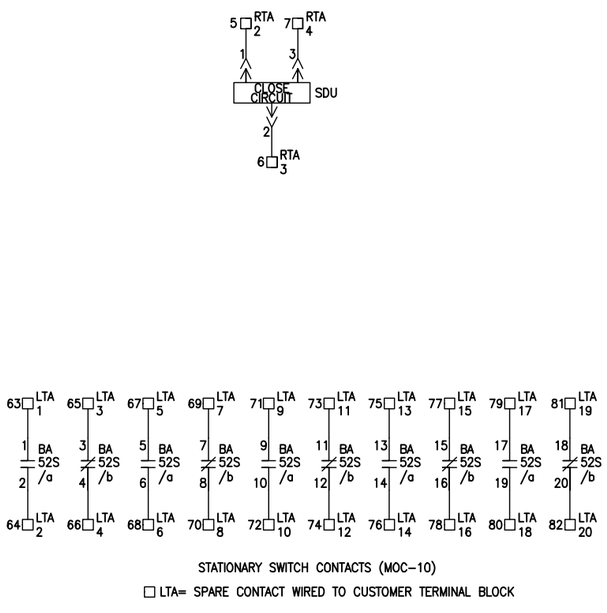
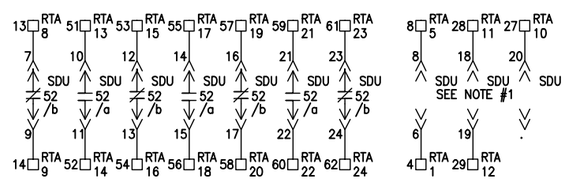


STATIONARY SWITCH CONTACTS (MOC–10)

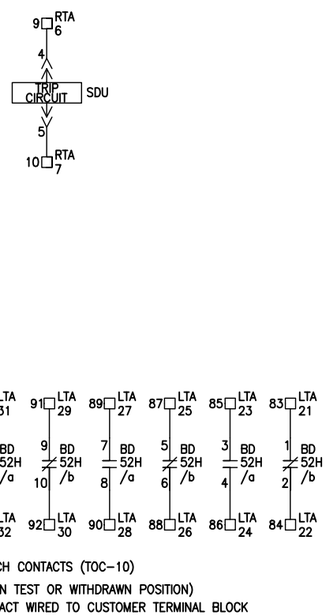
☐ LTA= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK



AUXILIARY CONTACTS

* = USED CONTACT

NOTE 1 = OPTIONAL CIRCUITS NOT SUPPLIED WITH BREAKER



HOUSING SWITCH CONTACTS (TOC–10)

(SHOWN WITH BREAKER IN TEST OR WITHDRAWN POSITION)

☐ LTA= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

SECT 1 UPPER

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	CONTROL SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-01	PG 1 OF 2 REV –

REV	DESCRIPTION	BY	DATE								
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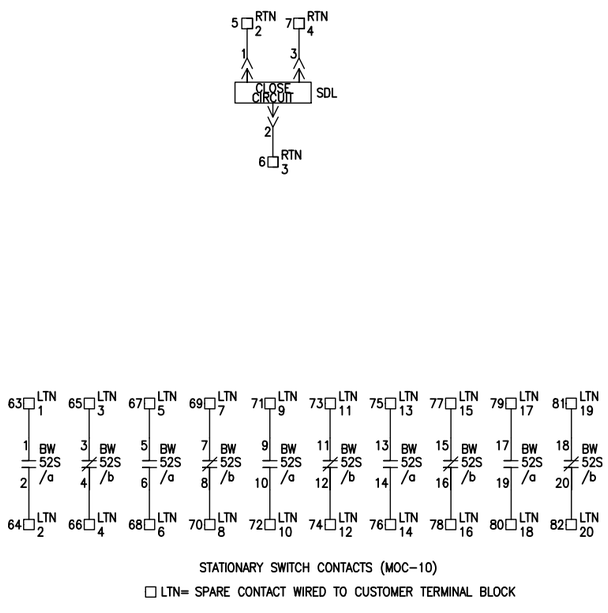
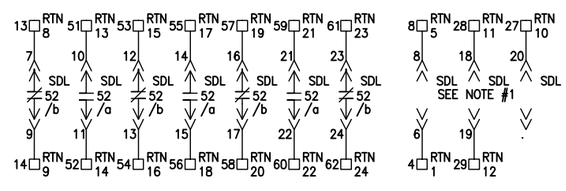


STATIONARY SWITCH CONTACTS (MOC–10)

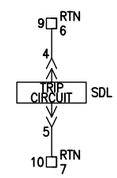
☐ LTN= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

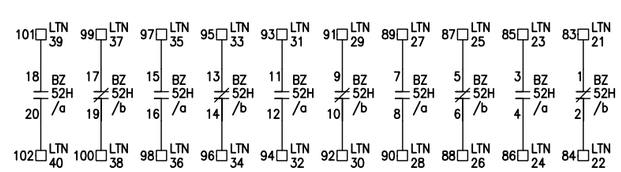


AUXILIARY CONTACTS

* = USED CONTACT

NOTE 1 = OPTIONAL CIRCUITS NOT SUPPLIED WITH BREAKER





HOUSING SWITCH CONTACTS (TOC–10)

(SHOWN WITH BREAKER IN TEST OR WITHDRAWN POSITION)

☐ LTN= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

SECT 1 LOWER

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	CONTROL SCHEMATIC
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-01	PG 2 OF 2 REV –

REV	DESCRIPTION	BY	DATE								
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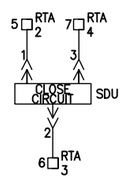
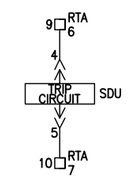
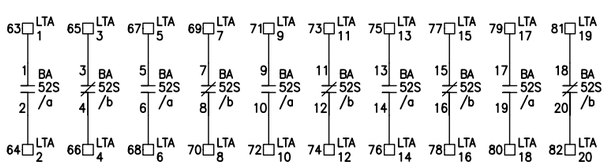
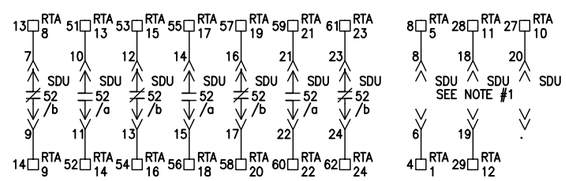






STATIONARY SWITCH CONTACTS (MOC–10)

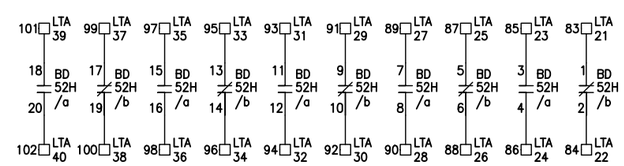
☐ LTA= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK



AUXILIARY CONTACTS

* = USED CONTACT

NOTE 1 = OPTIONAL CIRCUITS NOT SUPPLIED WITH BREAKER



HOUSING SWITCH CONTACTS (TOC–10)

(SHOWN WITH BREAKER IN TEST OR WITHDRAWN POSITION)

☐ LTA= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

SECT 2 UPPER

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	CONTROL SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-02	PG 1 OF 2 REV –

REV	DESCRIPTION	BY	DATE								
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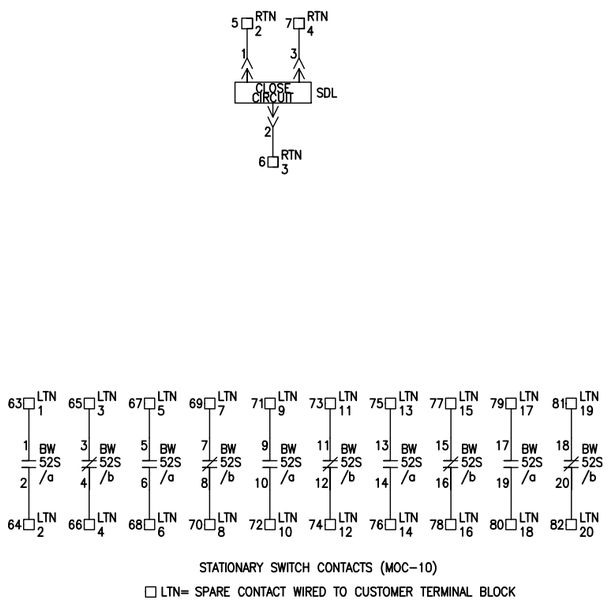
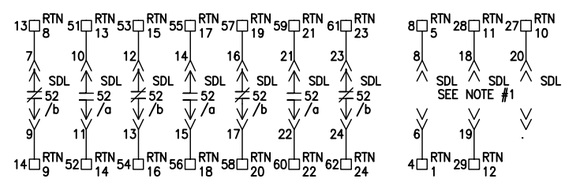


STATIONARY SWITCH CONTACTS (MOC–10)

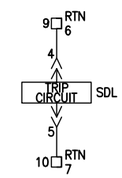
☐ LTN= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

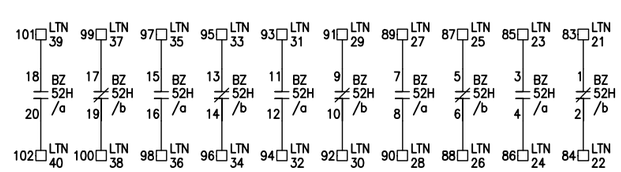


AUXILIARY CONTACTS

* = USED CONTACT

NOTE 1 = OPTIONAL CIRCUITS NOT SUPPLIED WITH BREAKER





HOUSING SWITCH CONTACTS (TOC–10)

(SHOWN WITH BREAKER IN TEST OR WITHDRAWN POSITION)

☐ LTN= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

SECT 2 LOWER

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	CONTROL SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-02	PG 2 OF 2 REV –

REV	DESCRIPTION	BY	DATE								
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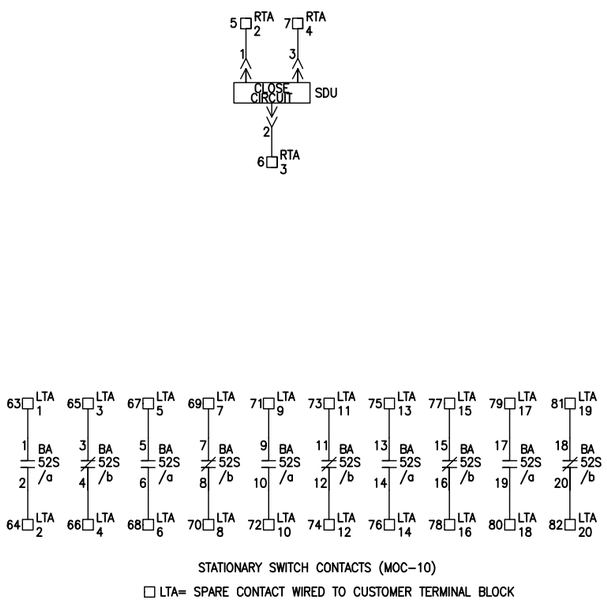
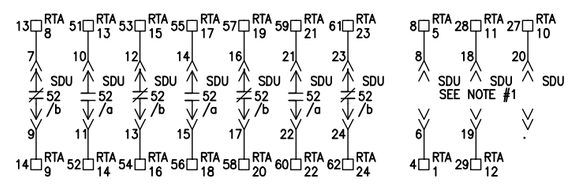


STATIONARY SWITCH CONTACTS (MOC–10)

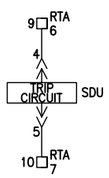
☐ LTA= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

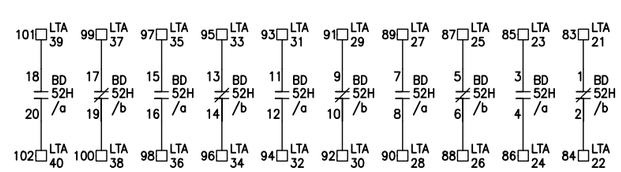


AUXILIARY CONTACTS

* = USED CONTACT

NOTE 1 = OPTIONAL CIRCUITS NOT SUPPLIED WITH BREAKER





HOUSING SWITCH CONTACTS (TOC–10)

(SHOWN WITH BREAKER IN TEST OR WITHDRAWN POSITION)

☐ LTA= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

SECT 3 UPPER

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	CONTROL SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-03	PG 1 OF 2 REV –

REV	DESCRIPTION	BY	DATE								
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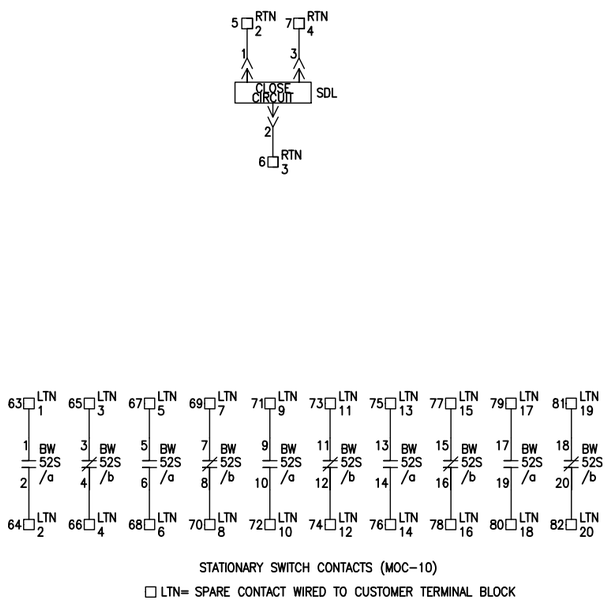
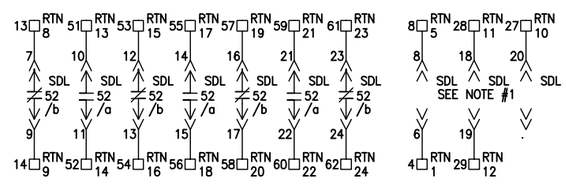


STATIONARY SWITCH CONTACTS (MOC–10)

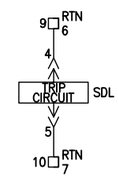
☐ LTN= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

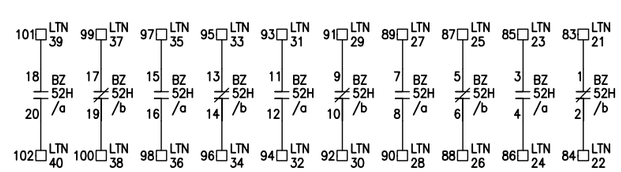


AUXILIARY CONTACTS

* = USED CONTACT

NOTE 1 = OPTIONAL CIRCUITS NOT SUPPLIED WITH BREAKER





HOUSING SWITCH CONTACTS (TOC–10)

(SHOWN WITH BREAKER IN TEST OR WITHDRAWN POSITION)

☐ LTN= SPARE CONTACT WIRED TO CUSTOMER TERMINAL BLOCK

SECT 3 LOWER

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	CONTROL SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-03	PG 2 OF 2 REV –

REV	DESCRIPTION	BY	DATE								
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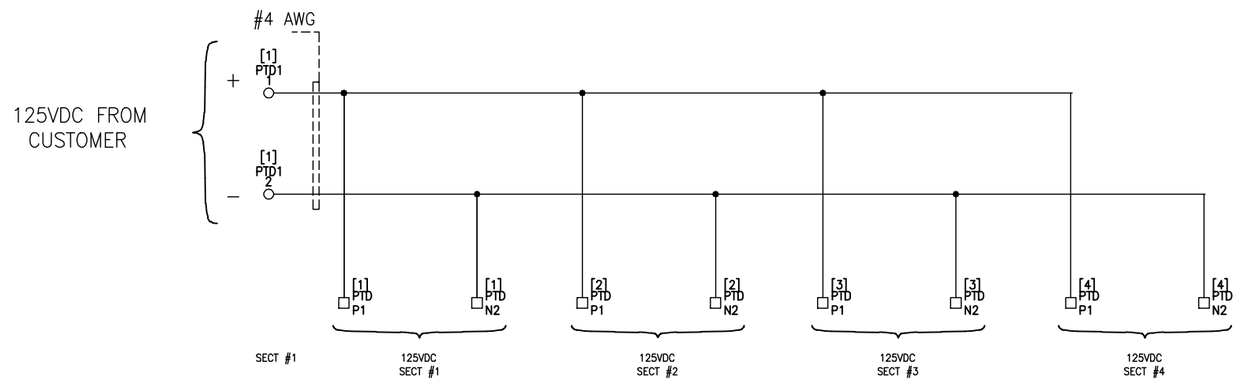

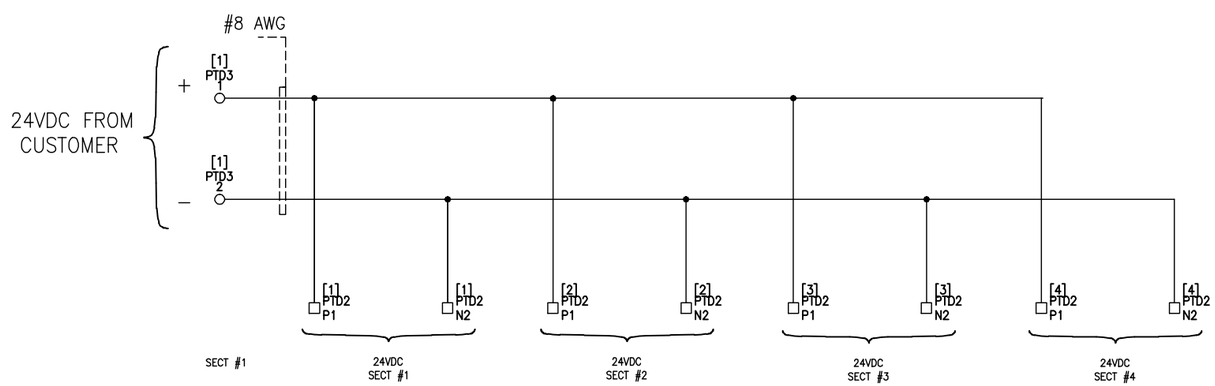

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	DC BUS SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# C27086157-001-AL	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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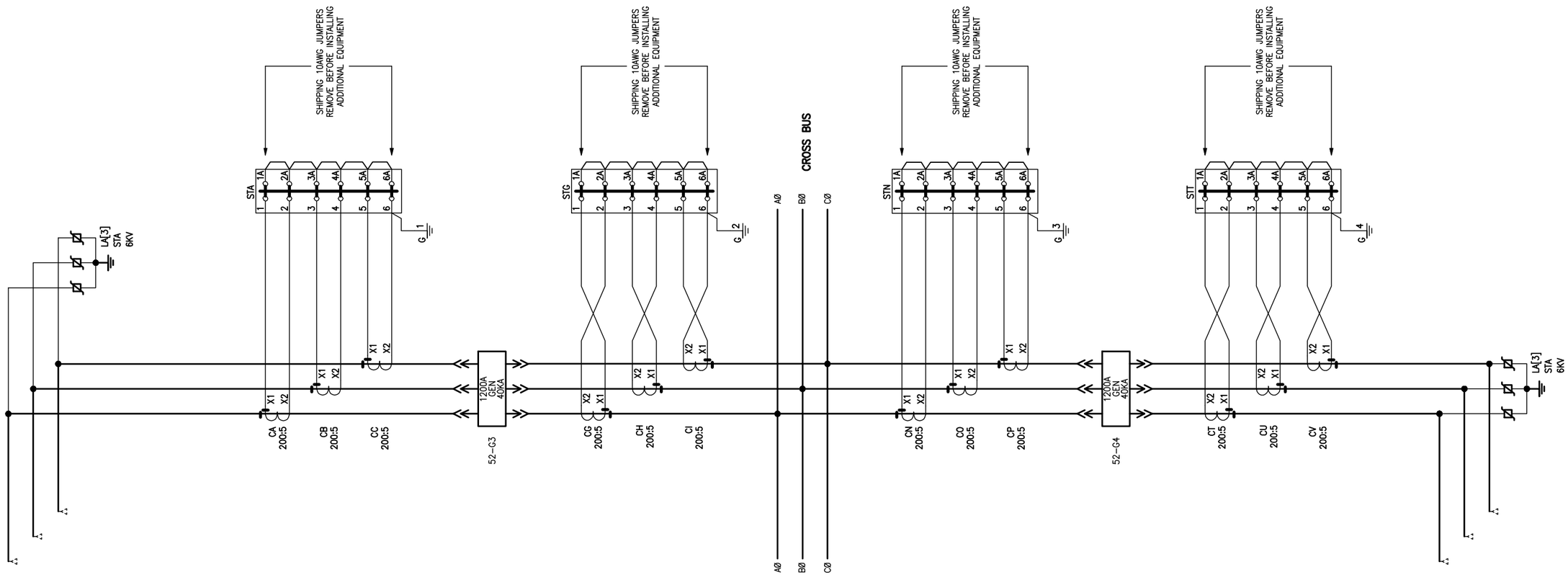
SECTION 1



JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	KAI BUI	DRAWING TYPE:	ELEMENTARY DIAGRAMS
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 14, 2010		
DRAWING STATUS:	RECORD	DWG# E27086157-001-01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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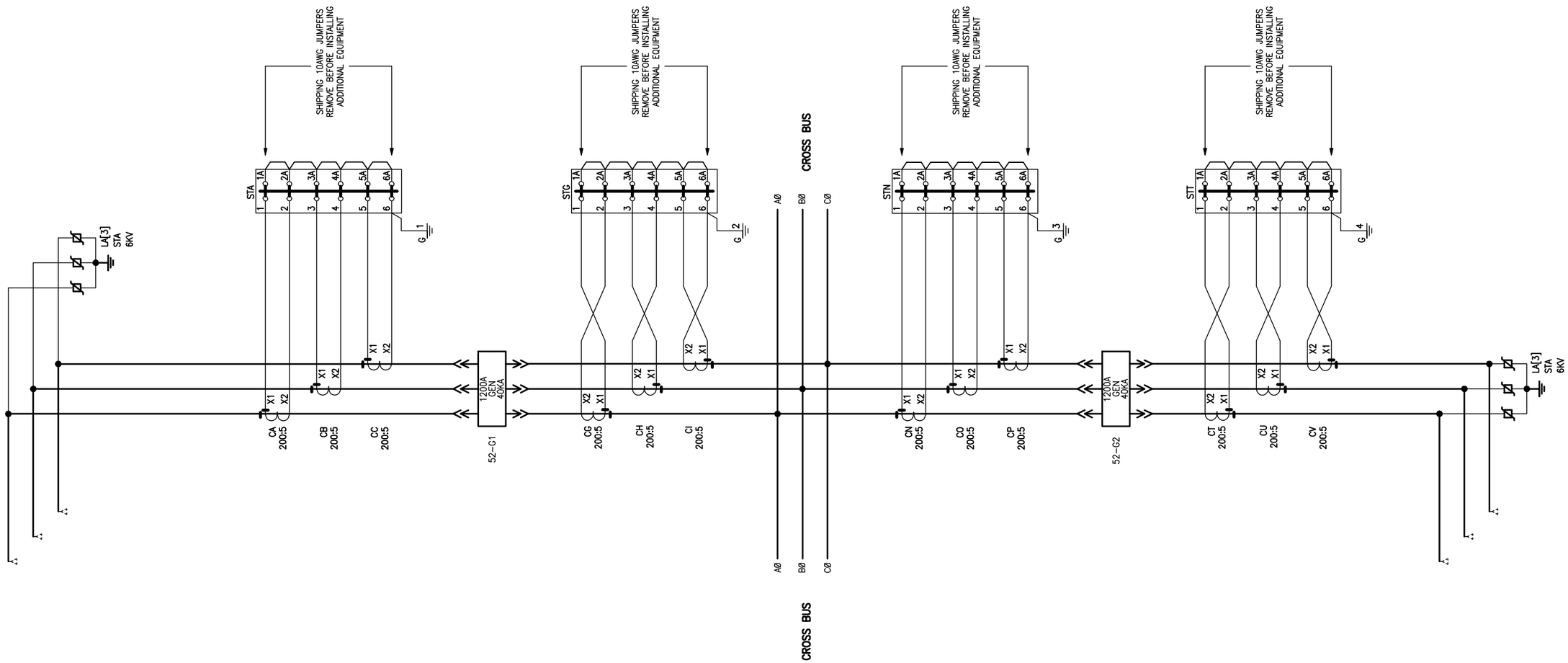
SECTION 2



JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	KAI BUI	DRAWING TYPE:	ELEMENTARY DIAGRAMS
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 14, 2010		
DRAWING STATUS:	RECORD	DWG# E27086157-001-02	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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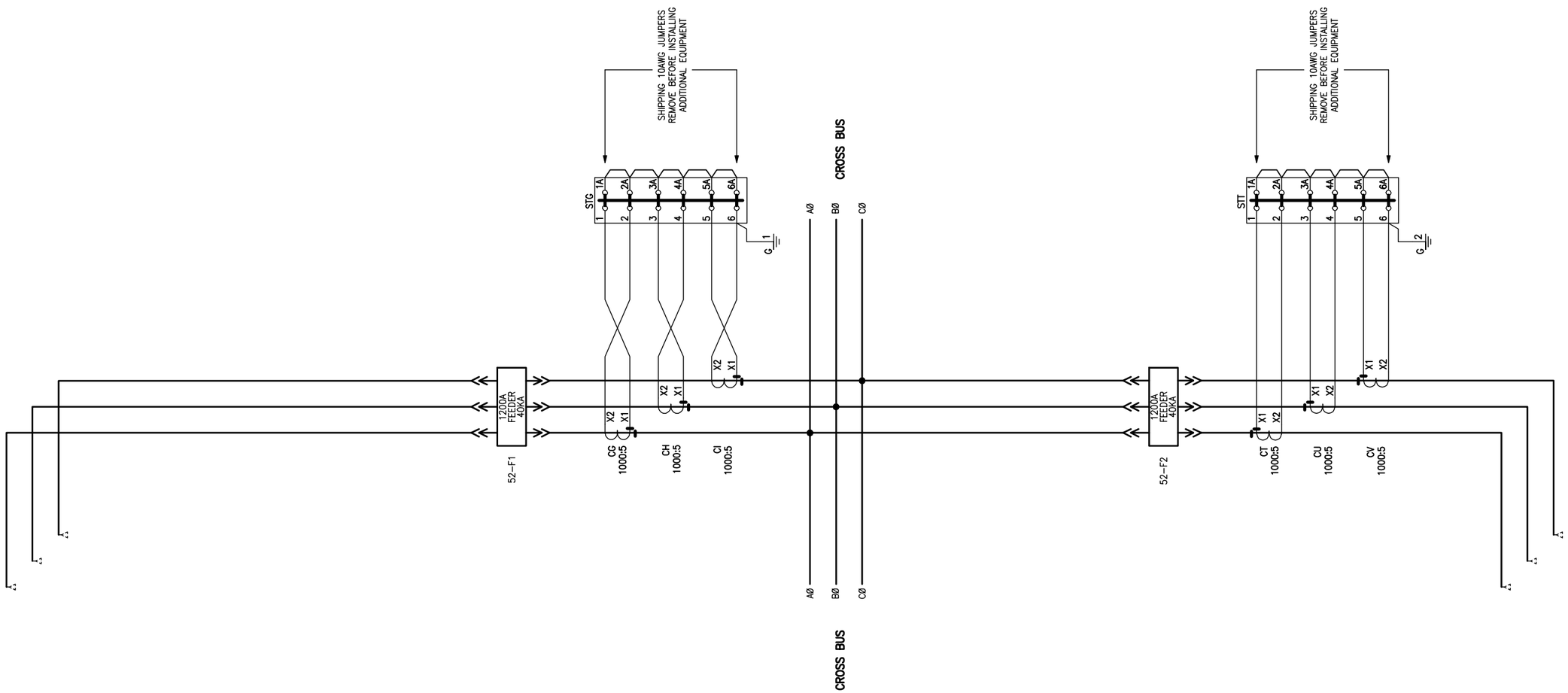
SECTION 3



JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	KAI BUI	DRAWING TYPE:	ELEMENTARY DIAGRAMS
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 14, 2010		
DRAWING STATUS:	RECORD	DWG# E27086157-001-03	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--	-	----	--	--/--/--
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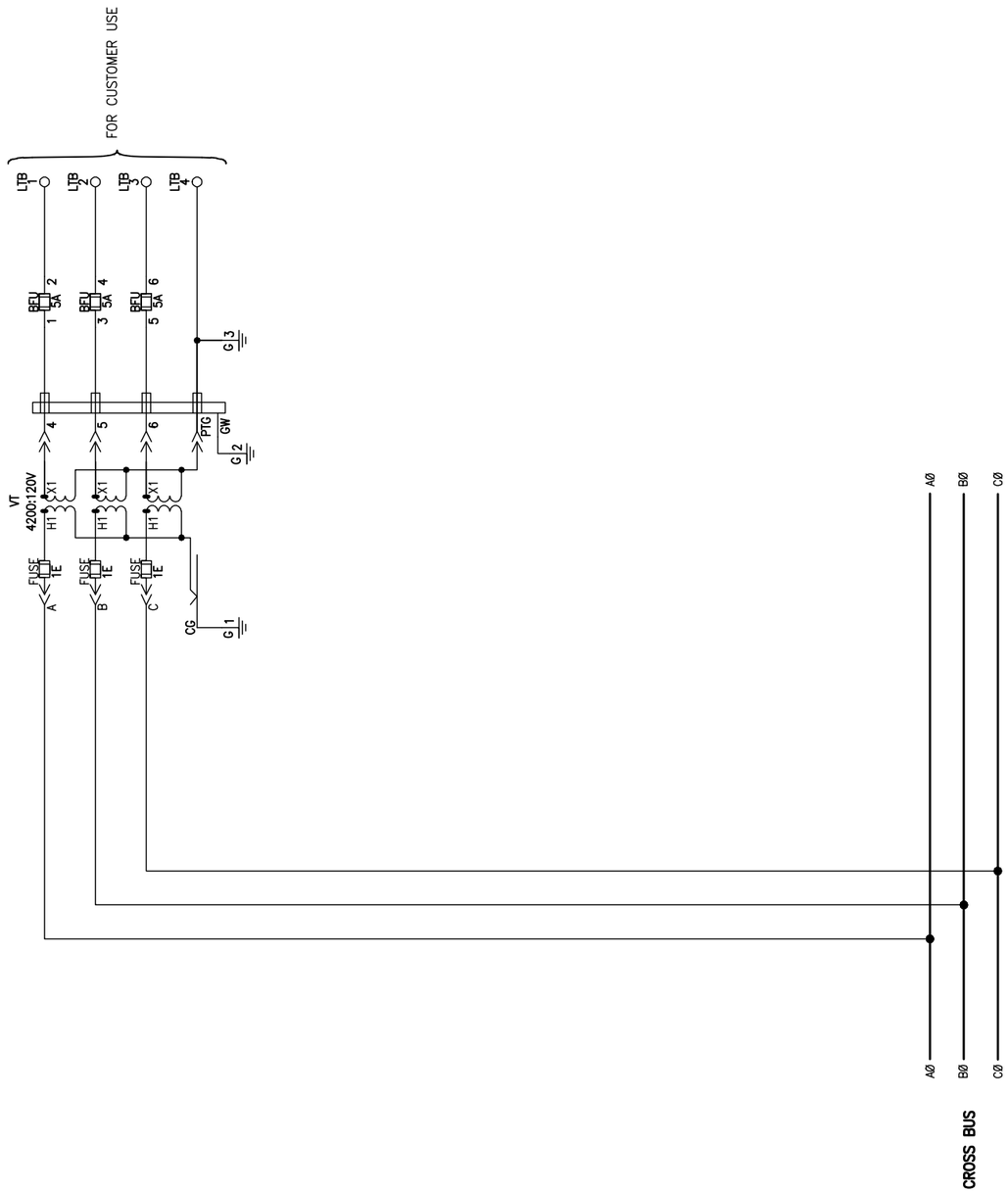


SECTION 4

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	KAI BUI	DRAWING TYPE:	ELEMENTARY DIAGRAMS
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 14, 2010		
DRAWING STATUS:	RECORD	DWG# E27086157-001-04	PG 1 OF 1 REV —

WIRE ROUTING EXAMPLE

1=BA-1,BD-2#SIZE

- NON-STANDARD WIRE SIZE
- DESTINATION PIN NUMBER
- SECOND DESTINATION
- DESTINATION PIN NUMBER
- FIRST DESTINATION
- DEVICE TERMINAL NUMBER

(ITEM NUMBER) ITEM NUMBER-SEE ELECTRICAL BILL OF MATERIAL

LEFT SIDE PANEL

TB'S MOUNTED 2ND HOLE DOWN FROM TOP OF PANEL

LTA — CUSTOMER CONNECTIONS

BA-1	1	63
BA-2	2	64
BA-3	3	65
BA-4	4	66
BA-5	5	67
BA-6	6	68
BA-7	7	69
BA-8	8	70
BA-9	9	71
BA-10	10	72
BA-11	11	73
BA-12	12	74
BA-13	13	75
BA-14	14	76
BA-15	15	77
BA-16	16	78
BA-17	17	79
BA-19	18	80
BA-18	19	81
BA-20	20	82
BD-1	21	83
BD-2	22	84
BD-3	23	85
BD-4	24	86
BD-5	25	87
BD-6	26	88
BD-7	27	89
BD-8	28	90
BD-9	29	91
BD-10	30	92
BD-11	31	93
BD-12	32	94
BD-13	33	95
BD-14	34	96
BD-15	35	97
BD-16	36	98
BD-17	37	99
BD-19	38	100
BD-18	39	101
BD-20	40	102

TB MOUNTED 23RD HOLE DOWN ON PANEL

PTD (10)

PTD1-1#4	P1	P(+)	1
INTERCONNECT			2
PTD1-2#4	N2	N(-)	3
			4
			5
			6
			7
			8

DC CUSTOMER CONNECTIONS

TB MOUNTED BELOW OF PTD

PTD1 (9)

1	P(+)	PTD-P1#4
2	N(-)	PTD-N2#4

TB MOUNTED BELOW OF PTD1

PTD2 (10)

PTD3-1#8	P1	P(+)	1
INTERCONNECT			2
PTD3-2#8	N2	N(-)	3
			4
			5
			6
			7
			8

DC CUSTOMER CONNECTIONS

TB MOUNTED BELOW OF PTD2

PTD3 (9)

1	P(+)	PTD2-P1#8
2	N(-)	PTD2-N2#8

SWITCH MOUNTING PANEL

BA

1=LTA-1	11=LTA-11
2=LTA-2	12=LTA-12
3=LTA-3	13=LTA-13
4=LTA-4	14=LTA-14
5=LTA-5	15=LTA-15
6=LTA-6	16=LTA-16
7=LTA-7	17=LTA-17
8=LTA-8	18=LTA-19
9=LTA-9	19=LTA-18
10=LTA-10	20=LTA-20

(15) 52S

BD

1=LTA-21	11=LTA-31
2=LTA-22	12=LTA-32
3=LTA-23	13=LTA-33
4=LTA-24	14=LTA-34
5=LTA-25	15=LTA-35
6=LTA-26	16=LTA-36
7=LTA-27	17=LTA-37
8=LTA-28	18=LTA-39
9=LTA-29	19=LTA-38
10=LTA-30	20=LTA-40

(16) 52H

(6) A X1 X2 — CA — X1=STA-1#10, X2=STA-2#10

(6) B X1 X2 — CB — X1=STA-3#10, X2=STA-4#10

(6) C X1 X2 — CC — X1=STA-5#10, X2=STA-6#10

(6) A X2 X1 — CG — X1=STG-1#10, X2=STG-2#10

(6) B X2 X1 — CH — X1=STG-3#10, X2=STG-4#10

(6) C X2 X1 — CI — X1=STG-5#10, X2=STG-6#10

SDU

1=RTA-2	13=RTA-16
2=RTA-3	14=RTA-17
3=RTA-4	15=RTA-18
4=RTA-6	16=RTA-19
5=RTA-7	17=RTA-20
6=RTA-1	18=RTA-11
7=RTA-8	19=RTA-12
8=RTA-5	20=RTA-10
9=RTA-9	21=RTA-21
10=RTA-13	22=RTA-22
11=RTA-14	23=RTA-23
12=RTA-15	24=RTA-24

SDU — 12 11 10 9 8 7 6 5 4 3 2 1 / 24 23 22 21 20 19 18 17 16 15 14 13

REAR VIEW OF SECONDARY DISCONNECT

RIGHT SIDE PANEL

RTA — CUSTOMER CONNECTIONS

TB'S MOUNTED 2ND HOLE DOWN FROM TOP OF PANEL

SDU-6	1	4
SDU-1	2	5
SDU-2	3	6
SDU-3	4	7
SDU-8	5	8
SDU-4	6	9
SDU-5	7	10
SDU-7	8	13
SDU-9	9	14
SDU-20	10	27
SDU-18	11	28
SDU-19	12	29
SDU-10	13	51
SDU-11	14	52
SDU-12	15	53
SDU-13	16	54
SDU-14	17	55
SDU-15	18	56
SDU-16	19	57
SDU-17	20	58
SDU-21	21	59
SDU-22	22	60
SDU-23	23	61
SDU-24	24	62

ALL JUMPER WIRES ARE 10AWG

14TH HOLE — STA (8)

CA-X1#10	1	1A
CA-X2#10	2	2A
CB-X1#10	3	3A
CB-X2#10	4	4A
CC-X1#10	5	5A
CC-X2,G-1#10	6	6A

19TH HOLE — STG (8)

CG-X1#10	1	1A
CG-X2#10	2	2A
CH-X1#10	3	3A
CH-X2#10	4	4A
CI-X1#10	5	5A
CI-X2,G-2#10	6	6A

CUSTOMER CT CONNECTIONS REMOVE 10AWG JUMPERS AFTER MAKING CONNECTIONS

G
1=STA-6#10
2=STG-6#10
3=STN-6#10
4=STT-6#10

GRD — 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

TERMINALS 8, 12 & 19 WILL ACCEPT UP 1/0 SIZE WIRE

DEVICE MOUNTING PANEL

LTN — CUSTOMER CONNECTIONS

TB MOUNTED 2ND HOLE DOWN LEFT SIDE ROW OF HOLES

BW-1	1	63
BW-2	2	64
BW-3	3	65
BW-4	4	66
BW-5	5	67
BW-6	6	68
BW-7	7	69
BW-8	8	70
BW-9	9	71
BW-10	10	72
BW-11	11	73
BW-12	12	74
BW-13	13	75
BW-14	14	76
BW-15	15	77
BW-16	16	78
BW-17	17	79
BW-19	18	80
BW-18	19	81
BW-20	20	82
BZ-1	21	83
BZ-2	22	84
BZ-3	23	85
BZ-4	24	86
BZ-5	25	87
BZ-6	26	88
BZ-7	27	89
BZ-8	28	90
BZ-9	29	91
BZ-10	30	92
BZ-11	31	93
BZ-12	32	94
BZ-13	33	95
BZ-14	34	96
BZ-15	35	97
BZ-16	36	98
BZ-17	37	99
BZ-19	38	100
BZ-18	39	101
BZ-20	40	102

BW

1=LTN-1	11=LTN-11
2=LTN-2	12=LTN-12
3=LTN-3	13=LTN-13
4=LTN-4	14=LTN-14
5=LTN-5	15=LTN-15
6=LTN-6	16=LTN-16
7=LTN-7	17=LTN-17
8=LTN-8	18=LTN-19
9=LTN-9	19=LTN-18
10=LTN-10	20=LTN-20

(15) 52S

BZ

1=LTN-21	11=LTN-31
2=LTN-22	12=LTN-32
3=LTN-23	13=LTN-33
4=LTN-24	14=LTN-34
5=LTN-25	15=LTN-35
6=LTN-26	16=LTN-36
7=LTN-27	17=LTN-37
8=LTN-28	18=LTN-39
9=LTN-29	19=LTN-38
10=LTN-30	20=LTN-40

(16) 52H

(6) A X1 X2 — CN — X1=STN-1#10, X2=STN-2#10

(6) B X1 X2 — CO — X1=STN-3#10, X2=STN-4#10

(6) C X1 X2 — CP — X1=STN-5#10, X2=STN-6#10

(6) A X2 X1 — CT — X1=STT-1#10, X2=STT-2#10

(6) B X2 X1 — CU — X1=STT-3#10, X2=STT-4#10

(6) C X2 X1 — CV — X1=STT-5#10, X2=STT-6#10

SDL

1=RTN-2	13=RTN-16
2=RTN-3	14=RTN-17
3=RTN-4	15=RTN-18
4=RTN-6	16=RTN-19
5=RTN-7	17=RTN-20
6=RTN-1	18=RTN-11
7=RTN-8	19=RTN-12
8=RTN-5	20=RTN-10
9=RTN-9	21=RTN-21
10=RTN-13	22=RTN-22
11=RTN-14	23=RTN-23
12=RTN-15	24=RTN-24

SDL — 12 11 10 9 8 7 6 5 4 3 2 1 / 24 23 22 21 20 19 18 17 16 15 14 13

REAR VIEW OF SECONDARY DISCONNECT

ALL JUMPER WIRES ARE 10AWG

2ND HOLE — STN (8)

CN-X1#10	1	1A
CN-X2#10	2	2A
CO-X1#10	3	3A
CO-X2#10	4	4A
CP-X1#10	5	5A
CP-X2,G-3#10	6	6A

7TH HOLE — STT (8)

CT-X1#10	1	1A
CT-X2#10	2	2A
CU-X1#10	3	3A
CU-X2#10	4	4A
CV-X1#10	5	5A
CV-X2,G-4#10	6	6A

CUSTOMER CT CONNECTIONS REMOVE 10AWG JUMPERS AFTER MAKING CONNECTIONS

RTN — CUSTOMER CONNECTIONS

TB MOUNTED 18TH HOLE DOWN LEFT SIDE ROW OF HOLES

SDL-6	1	4
SDL-1	2	5
SDL-2	3	6
SDL-3	4	7
SDL-8	5	8
SDL-4	6	9
SDL-5	7	10
SDL-7	8	13
SDL-9	9	14
SDL-20	10	27
SDL-18	11	28
SDL-19	12	29
SDL-10	13	51
SDL-11	14	52
SDL-12	15	53
SDL-13	16	54
SDL-14	17	55
SDL-15	18	56
SDL-16	19	57
SDL-17	20	58
SDL-21	21	59
SDL-22	22	60
SDL-23	23	61
SDL-24	24	62

JOB NAME:	CUMMINS ARECIBO
JOB LOCATION:	FRIDLEY MN
DRAWN BY:	KAI BUI
ENGR:	TREVOR ADAMS
DATE:	MAY 14, 2010
DRAWING STATUS:	RECORD
EQUIPMENT DESIGNATION:	A030R458
EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWING TYPE:	WIRING DIAGRAMS
DWG#	W270861 57-001-01
	CUMMINS POWER GENERATION
PG 1 OF 1	REV –

SECTION 1

SERIES 5

REV	DESCRIPTION	BY	DATE
–			

WIRE ROUTING EXAMPLE

1=BA-1,BD-2#SIZE

- NON-STANDARD WIRE SIZE
- DESTINATION PIN NUMBER
- SECOND DESTINATION
- DESTINATION PIN NUMBER
- FIRST DESTINATION
- DEVICE TERMINAL NUMBER

(ITEM NUMBER) ITEM NUMBER-SEE ELECTRICAL BILL OF MATERIAL

LEFT SIDE PANEL

TB'S MOUNTED 2ND HOLE DOWN FROM TOP OF PANEL

LTA — CUSTOMER CONNECTIONS

BA-1	1	63
BA-2	2	64
BA-3	3	65
BA-4	4	66
BA-5	5	67
BA-6	6	68
BA-7	7	69
BA-8	8	70
BA-9	9	71
BA-10	10	72
BA-11	11	73
BA-12	12	74
BA-13	13	75
BA-14	14	76
BA-15	15	77
BA-16	16	78
BA-17	17	79
BA-18	18	80
BA-19	19	81
BA-20	20	82
BD-1	21	83
BD-2	22	84
BD-3	23	85
BD-4	24	86
BD-5	25	87
BD-6	26	88
BD-7	27	89
BD-8	28	90
BD-9	29	91
BD-10	30	92
BD-11	31	93
BD-12	32	94
BD-13	33	95
BD-14	34	96
BD-15	35	97
BD-16	36	98
BD-17	37	99
BD-19	38	100
BD-18	39	101
BD-20	40	102

TB MOUNTED 23RD HOLE DOWN ON PANEL

PTD (10)

INTERCONNECT: P1 P(+), N2 N(-) — DC CUSTOMER CONNECTIONS

TB MOUNTED BELOW OF PTD1

PTD2 (10)

INTERCONNECT: P1 P(+), N2 N(-) — DC CUSTOMER CONNECTIONS

SWITCH MOUNTING PANEL

BA

1=LTA-1 11=LTA-11
2=LTA-2 12=LTA-12
3=LTA-3 13=LTA-13
4=LTA-4 14=LTA-14
5=LTA-5 15=LTA-15
6=LTA-6 16=LTA-16
7=LTA-7 17=LTA-17
8=LTA-8 18=LTA-19
9=LTA-9 19=LTA-18
10=LTA-10 20=LTA-20

(15) 52S

BD

1=LTA-21 11=LTA-31
2=LTA-22 12=LTA-32
3=LTA-23 13=LTA-33
4=LTA-24 14=LTA-34
5=LTA-25 15=LTA-35
6=LTA-26 16=LTA-36
7=LTA-27 17=LTA-37
8=LTA-28 18=LTA-39
9=LTA-29 19=LTA-38
10=LTA-30 20=LTA-40

(16) 52H

(6) CA: X1=STA-1#10, X2=STA-2#10

(6) CB: X1=STA-3#10, X2=STA-4#10

(6) CC: X1=STA-5#10, X2=STA-6#10

(6) CG: X1=STG-1#10, X2=STG-2#10

(6) CH: X1=STG-3#10, X2=STG-4#10

(6) CI: X1=STG-5#10, X2=STG-6#10

SDU

1=RTA-2 13=RTA-16
2=RTA-3 14=RTA-17
3=RTA-4 15=RTA-18
4=RTA-6 16=RTA-19
5=RTA-7 17=RTA-20
6=RTA-1 18=RTA-11
7=RTA-8 19=RTA-12
8=RTA-5 20=RTA-10
9=RTA-9 21=RTA-21
10=RTA-13 22=RTA-22
11=RTA-14 23=RTA-23
12=RTA-15 24=RTA-24

SDU — REAR VIEW OF SECONDARY DISCONNECT

RIGHT SIDE PANEL

RTA — TB'S MOUNTED 2ND HOLE DOWN FROM TOP OF PANEL — CUSTOMER CONNECTIONS

SDU-6	1	4
SDU-1	2	5
SDU-2	3	6
SDU-3	4	7
SDU-8	5	8
SDU-4	6	9
SDU-5	7	10
SDU-7	8	13
SDU-9	9	14
SDU-20	10	27
SDU-18	11	28
SDU-19	12	29
SDU-10	13	51
SDU-11	14	52
SDU-12	15	53
SDU-13	16	54
SDU-14	17	55
SDU-15	18	56
SDU-16	19	57
SDU-17	20	58
SDU-21	21	59
SDU-22	22	60
SDU-23	23	61
SDU-24	24	62

ALL JUMPER WIRES ARE 10AWG

14TH HOLE — STA (8)

CA-X1#10	1	1A
CA-X2#10	2	2A
CB-X1#10	3	3A
CB-X2#10	4	4A
CC-X1#10	5	5A
CC-X2,G-1#10	6	6A

19TH HOLE — STG (8)

CG-X1#10	1	1A
CG-X2#10	2	2A
CH-X1#10	3	3A
CH-X2#10	4	4A
CI-X1#10	5	5A
CI-X2,G-2#10	6	6A

CUSTOMER CT CONNECTIONS REMOVE 10AWG JUMPERS AFTER MAKING CONNECTIONS

G
1=STA-6#10
2=STG-6#10
3=STN-6#10
4=STT-6#10

GRD — TERMINALS 8, 12 & 19 WILL ACCEPT UP 1/0 SIZE WIRE

DEVICE MOUNTING PANEL

TB MOUNTED 2ND HOLE DOWN LEFT SIDE ROW OF HOLES

LTN — CUSTOMER CONNECTIONS

BW-1	1	63
BW-2	2	64
BW-3	3	65
BW-4	4	66
BW-5	5	67
BW-6	6	68
BW-7	7	69
BW-8	8	70
BW-9	9	71
BW-10	10	72
BW-11	11	73
BW-12	12	74
BW-13	13	75
BW-14	14	76
BW-15	15	77
BW-16	16	78
BW-17	17	79
BW-19	18	80
BW-18	19	81
BW-20	20	82
BZ-1	21	83
BZ-2	22	84
BZ-3	23	85
BZ-4	24	86
BZ-5	25	87
BZ-6	26	88
BZ-7	27	89
BZ-8	28	90
BZ-9	29	91
BZ-10	30	92
BZ-11	31	93
BZ-12	32	94
BZ-13	33	95
BZ-14	34	96
BZ-15	35	97
BZ-16	36	98
BZ-17	37	99
BZ-19	38	100
BZ-18	39	101
BZ-20	40	102

BW

1=LTN-1 11=LTN-11
2=LTN-2 12=LTN-12
3=LTN-3 13=LTN-13
4=LTN-4 14=LTN-14
5=LTN-5 15=LTN-15
6=LTN-6 16=LTN-16
7=LTN-7 17=LTN-17
8=LTN-8 18=LTN-19
9=LTN-9 19=LTN-18
10=LTN-10 20=LTN-20

(15) 52S

BZ

1=LTN-21 11=LTN-31
2=LTN-22 12=LTN-32
3=LTN-23 13=LTN-33
4=LTN-24 14=LTN-34
5=LTN-25 15=LTN-35
6=LTN-26 16=LTN-36
7=LTN-27 17=LTN-37
8=LTN-28 18=LTN-39
9=LTN-29 19=LTN-38
10=LTN-30 20=LTN-40

(16) 52H

(6) CN: X1=STN-1#10, X2=STN-2#10

(6) CO: X1=STN-3#10, X2=STN-4#10

(6) CP: X1=STN-5#10, X2=STN-6#10

(6) CT: X1=STT-1#10, X2=STT-2#10

(6) CU: X1=STT-3#10, X2=STT-4#10

(6) CV: X1=STT-5#10, X2=STT-6#10

SDL

1=RTN-2 13=RTN-16
2=RTN-3 14=RTN-17
3=RTN-4 15=RTN-18
4=RTN-6 16=RTN-19
5=RTN-7 17=RTN-20
6=RTN-1 18=RTN-11
7=RTN-8 19=RTN-12
8=RTN-5 20=RTN-10
9=RTN-9 21=RTN-21
10=RTN-13 22=RTN-22
11=RTN-14 23=RTN-23
12=RTN-15 24=RTN-24

SDL — REAR VIEW OF SECONDARY DISCONNECT

RIGHT SIDE PANEL

ALL JUMPER WIRES ARE 10AWG

2ND HOLE — STN (8)

CN-X1#10	1	1A
CN-X2#10	2	2A
CO-X1#10	3	3A
CO-X2#10	4	4A
CP-X1#10	5	5A
CP-X2,G-3#10	6	6A

7TH HOLE — STT (8)

CT-X1#10	1	1A
CT-X2#10	2	2A
CU-X1#10	3	3A
CU-X2#10	4	4A
CV-X1#10	5	5A
CV-X2,G-4#10	6	6A

CUSTOMER CT CONNECTIONS REMOVE 10AWG JUMPERS AFTER MAKING CONNECTIONS

TB MOUNTED 18TH HOLE DOWN LEFT SIDE ROW OF HOLES

RTN — CUSTOMER CONNECTIONS

SDL-6	1	4
SDL-1	2	5
SDL-2	3	6
SDL-3	4	7
SDL-8	5	8
SDL-4	6	9
SDL-5	7	10
SDL-7	8	13
SDL-9	9	14
SDL-20	10	27
SDL-18	11	28
SDL-19	12	29
SDL-10	13	51
SDL-11	14	52
SDL-12	15	53
SDL-13	16	54
SDL-14	17	55
SDL-15	18	56
SDL-16	19	57
SDL-17	20	58
SDL-21	21	59
SDL-22	22	60
SDL-23	23	61
SDL-24	24	62

SECTION 2

SERIES 5

REV	DESCRIPTION	BY	DATE
–			

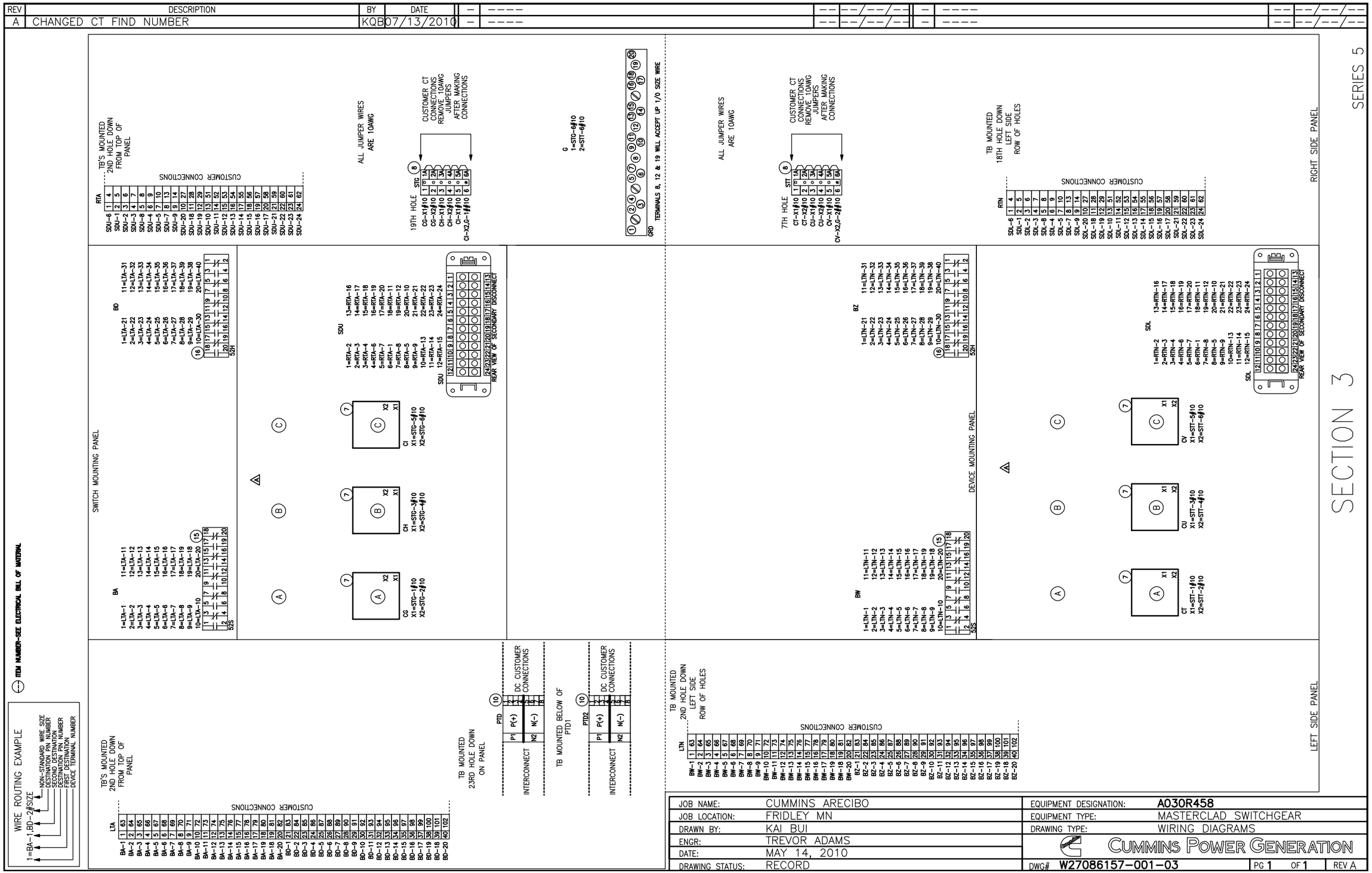
JOB NAME: CUMMINS ARECIBO
JOB LOCATION: FRIDLEY MN
DRAWN BY: KAI BUI
ENGR: TREVOR ADAMS
DATE: MAY 14, 2010
DRAWING STATUS: RECORD

EQUIPMENT DESIGNATION: A030R458
EQUIPMENT TYPE: MASTERCLAD SWITCHGEAR
DRAWING TYPE: WIRING DIAGRAMS

CUMMINS POWER GENERATION

DWG# W270861157-001-02 | PG 1 OF 1 | REV –

REV	DESCRIPTION	BY	DATE
A	CHANGED CT FIND NUMBER	KQB	07/13/2010



JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	KAI BUI	DRAWING TYPE:	WIRING DIAGRAMS
ENGR:	TREVOR ADAMS		CUMMINS POWER GENERATION
DATE:	MAY 14, 2010		
DRAWING STATUS:	RECORD	DWG# W27086157-001-03	PG 1 OF 1 REV A

WIRE ROUTING EXAMPLE

1=BA-1,BD-2#SIZE

- NON-STANDARD WIRE SIZE
- DESTINATION PIN NUMBER
- SECOND DESTINATION
- DESTINATION PIN NUMBER
- FIRST DESTINATION
- DEVICE TERMINAL NUMBER

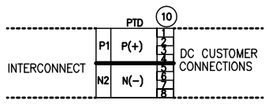
(-) ITEM NUMBER-SEE ELECTRICAL BILL OF MATERIAL

TB'S MOUNTED 2ND HOLE DOWN FROM TOP OF PANEL

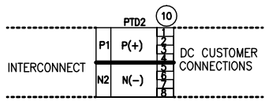
* – LTB ARE GC6

	LTB	
VT	1	1A BFU-2
	2	1B BFU-4
	3	1C BFU-6
	4	1N VT-PTG
	5	.
	6	.
	7	.
	8	.

TB MOUNTED 23RD HOLE DOWN ON PANEL



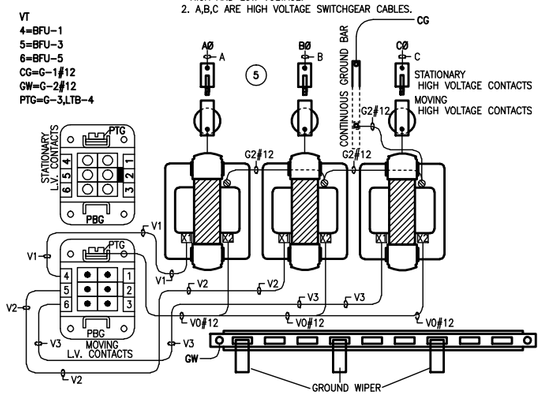
TB MOUNTED BELOW OF PTD1

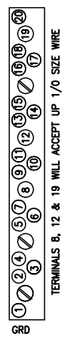


LEFT SIDE PANEL

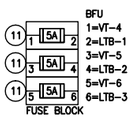
SWITCH MOUNTING PANEL

WIRING NOTE:
1.MAINTAIN PHASE TO GROUND CLEARANCES BETWEEN HIGH AND LOW VOLTAGE.
2. A,B,C ARE HIGH VOLTAGE SWITCHGEAR CABLES.





G
1=VT-CG#12
2=VT-GW#12
3=VT-PTG



BFU
1=VT-4
2=LTB-1
3=VT-5
4=LTB-2
5=VT-6
6=LTB-3

DEVICE MOUNTING PANEL

RIGHT SIDE PANEL

REV	DESCRIPTION	BY	DATE
-	----	--	--/--/--
-	----	--	--/--/--
-	----	--	--/--/--
-	----	--	--/--/--

JOB NAME: CUMMINS ARECIBO
JOB LOCATION: FRIDLEY MN
DRAWN BY: KAI BUI
ENGR: TREVOR ADAMS
DATE: MAY 14, 2010
DRAWING STATUS: RECORD

EQUIPMENT DESIGNATION: A030R458
EQUIPMENT TYPE: MASTERCLAD SWITCHGEAR
DRAWING TYPE: WIRING DIAGRAMS

CUMMINS POWER GENERATION

DWG# W27086157-001-04 | PG 1 OF 1 | REV -

SECTION 4

SERIES 5

REV	DESCRIPTION	BY	DATE								
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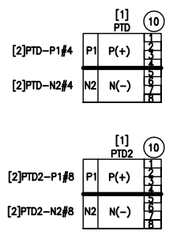
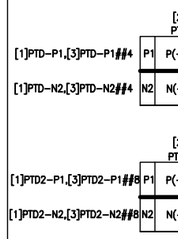
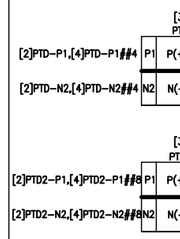
Section 1



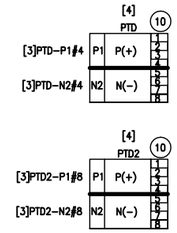
Section 2



Section 3



Section 4



INTERCONNECTION DIAGRAM

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	**A030R458**
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	KAI BUI	DRAWING TYPE:	WIRING DIAGRAMS
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 14, 2010		
DRAWING STATUS:	RECORD	DWG# **W27086157–001–IC**	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE								
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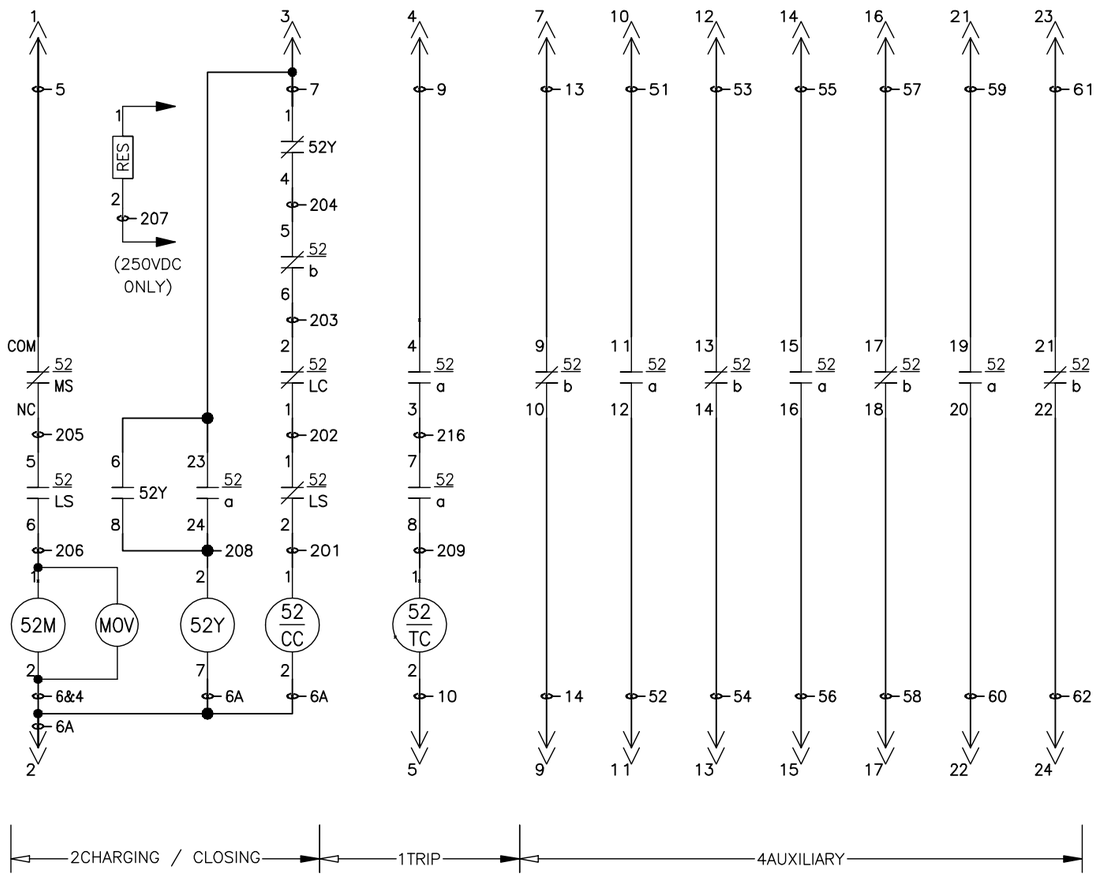

OPERATION OF BREAKER

1. THE BREAKER WILL CLOSE IF THE CLOSING SPRINGS HAVE BEEN CHARGED ELECTRICALLY OR MANUALLY. 52/MS ENSURES THAT THE CLOSING SPRINGS CAN ONLY BE CHARGED ELECTRICALLY WITH THE BREAKER IN THE CONNECTED AND TEST POSITIONS.

2. THE CLOSING CIRCUIT HAS CONTINUITY WHEN THE CLOSING SPRINGS ARE CHARGED AND THE BREAKER IS OPEN. APPLYING A CLOSE SIGNAL ENERGIZES THE CLOSE COIL, 52/CC. IT DISCHARGES THE CLOSING SPRINGS, CLOSING THE BREAKER AND CHARGING THE OPENING SPRINGS. WHEN THE BREAKER CLOSES, 52/a, 52/b AND 52/LS CHANGE STATE.

3. 52/a CLOSING ALLOWS CONTINUITY IN THE TRIP CIRCUIT AND PICKS UP THE ANTI–PUMP RELAY, 52Y. 52Y SEALS ITSELF IN, ENSURING THAT THE CLOSE SIGNAL MUST BE REMOVED AND REAPPLIED BEFORE THE BREAKER CAN BE CLOSED AGAIN. 52/b, 52/LS AND 52Y OPEN THE CLOSING CIRCUIT. 52/LS CHANGING STATE ALLOWS THE CLOSING SPRINGS TO BE CHARGED.

4. APPLYING A TRIP SIGNAL ENERGIZES THE TRIP COIL, 52/TC. IT DISCHARGES THE OPENING SPRINGS, OPENING THE BREAKER. WHEN THE BREAKER OPENS, 52/a AND 52/b CHANGE STATE.

5. SPARE 52/a AND 52/b CONTACTS INDICATE THE BREAKER STATE. 52/a CLOSES WHEN THE BREAKER CLOSES. 52/b CLOSES WHEN THE BREAKER OPENS.

LEGEND

52	CIRCUIT BREAKER
52M	SPRING CHARGING MOTOR
52Y	ANTI–PUMP RELAY
52/a	AUX. SWITCH CONTACTS, OPEN WHEN BREAKER IS OPEN
52/b	AUX. SWITCH CONTACTS, CLOSED WHEN BREAKER IS OPEN
52/CC	CLOSE COIL
52/LC	LATCH CHECK SWITCH
52/LS	SPRING CHARGING MOTOR LIMIT SWITCH
52/MS	MOTOR CUTOFF SWITCH
52/TC	TRIP COIL
RES	RESISTOR (250VDC CLOSING ONLY)

NOTES:

1. BREAKER SHOWN IN THE OPEN STATE WITH CLOSING SPRINGS CHARGED.
2. WHERE WIRE NUMBERS CHANGE ON A WIRE, THERE ARE INTERVENING TERMINAL BLOCKS NOT SHOWN.
3. BREAKER WIRING DIAGRAM IS 46040–652.

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	BREAKER INTERNAL SCHEMATIC
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# R27086157–001–01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
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METALCLAD SWITCHGEAR
SERIES 5

FACTORY ORDER NO.		F0
RATED MAXIMUM VOLTAGE	kV	4.76
IMPULSE WITHSTAND (BIL)	kV	60
FREQUENCY	HZ	60
CONTINUOUS CURRENT	A	1200
MAX SHORT CIRCUIT CUR.	kA SYM	40

SQUARE D COMPANY
SMYRNA, TN USA
46006-801-01

SHIP LOOSE
ATTACH ONTO SECT 1 INTERCONNECT PAN.

JOB NAME:	CUMMINS ARECIBO	EQUIPMENT DESIGNATION:	A030R458
JOB LOCATION:	FRIDLEY MN	EQUIPMENT TYPE:	MASTERCLAD SWITCHGEAR
DRAWN BY:	TDA	DRAWING TYPE:	RATING NAMEPLATE
ENGR:	TREVOR ADAMS	CUMMINS POWER GENERATION	
DATE:	MAY 12, 2010		
DRAWING STATUS:	RECORD	DWG# N27086157-001-01	PG 1 OF 1 REV –

Instruction Manuals

Printed 08/06/10 12:10:27 by MSMD46

Manual Quantity: 1

Part Number	Description	Supplier
6055-30	INSTRUCTION BULLETIN, INDOOR SWITCHGEAR,4.76-15.0KV METAL-CLAD SWITCHGEAR.	SQUARE D COMPANY
6055-31	INSTRUCTION BULLETIN, TYPE VR VACUUM CIRCUIT BREAKER, 4.76 KV, 8.25KV, AND 15KV, 1200 A AND 2000 A UP TO 41KA.	SQUARE D COMPANY

Job Name:	**CUMMINS ARECIBO**			Engineer:	TDA
Order Qty:	1	Rev:	2	Plant:	017
Status:	SH	Catalog No:	Fully-Assembled MV MetalClad Swgr	Order:	**017-27086157-001-00-01-E**