RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS

Electrical Addendum

Project: **Nanoose Bay Water Treatment Plant**
Generator
Nanoose, BC
18-2990

Addendum: **E1**

Date: **April 12, 2019**

This Addendum forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts. The cost of all work contained herein shall be included in the Contract Sum. The following revisions supersede the information contained in the original drawings and specifications issued for the above named project to the extent referenced and shall become part thereof.

The following are questions received from Bidders:

Q) The ATS specifications call for NEMA 1 Enclosure and drawing E-1 states NEMA 3R. Please Clarify.
A) ATS to be provided with NEMA 3R enclosure for installation on exterior of building.

Q) Specifications call for 11ga satin-coated steel enclosure for generator. Is 14ga steel acceptable?
A) 14ga is acceptable.

Q) Specified sound level is 72dBA @ 7m while running at 75% loading. Is 73dBA at full load (71dBA at no load) acceptable?
A) Sound rating is to be 72dBA @ 7m while running at **full** load.

The following were noted at the site visit:

1) All penetrations through the wall structure surrounding the washroom and electrical room are to be completely sealed to prevent the ingress of air from the main treatment area. Sealing can be obtained by appropriate fire blocking compounds.
2) There is insufficient space in the existing cable tray to run the new wiring. Contractor to install Unistrut bracing above or below the cable tray and fasten the new cables to the Unistrut with appropriate fasteners.
3) The shop drawing for the existing MCC is attached to this addendum for information only. The Contractor is responsible for reviewing the installation prior to completing any modifications and no allowance will be given for additional work based on discovered site condition after the fact.

REV	DESCRIPTION	BY	DATE								
A	REVISED & RESUBMITTED FOR APPROVAL	KP	12/08/2011	B	REVISED & RELEASED TO MANUFACTURING	KP	01/10/2012	–	----	--	--/--/--
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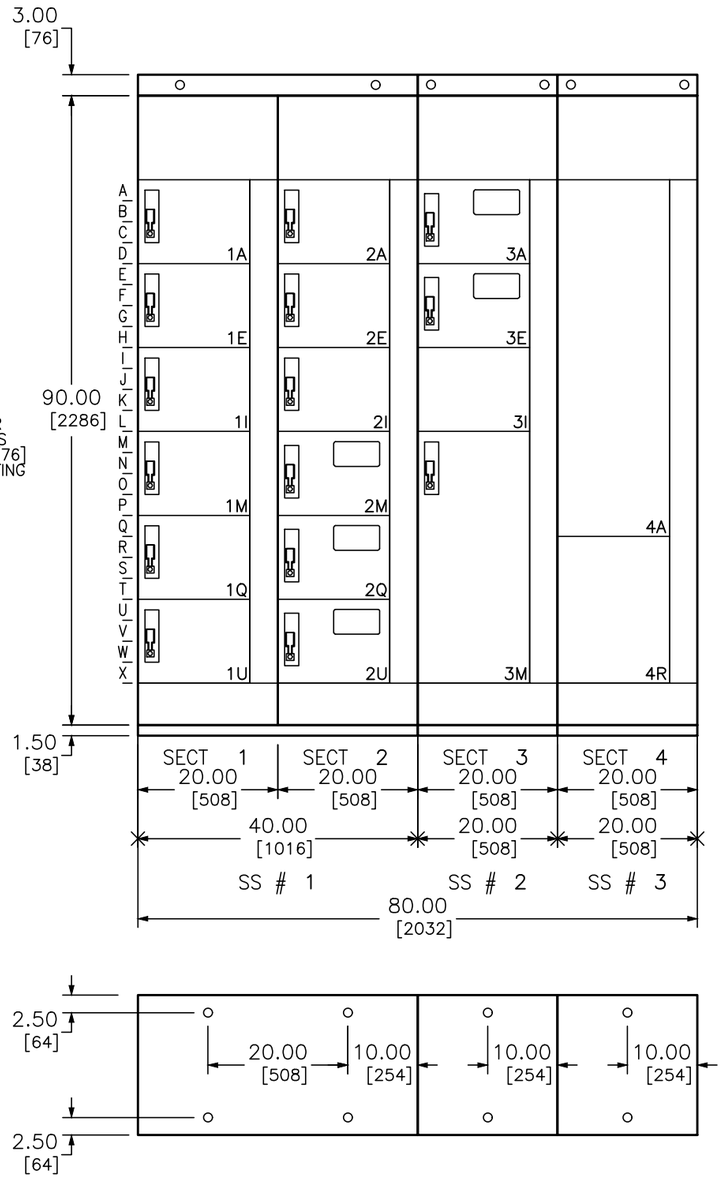

ANCHOR DETAIL

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	NANOOSE BAY PENINSULA WTP MCC	EQUIPMENT DESIGNATION:	15-MCC-950
JOB LOCATION:	NANAIMO, BC	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	CAD	DRAWING TYPE:	ELEVATION
ENGR:	DU		
DATE:	SEPTEMBER 14, 2011		
DRAWING STATUS:	RECORD	DWG# F30057286-001-01	PG 1 OF 3 REV B

REV	DESCRIPTION	BY	DATE							
A	REVISED & RESUBMITTED FOR APPROVAL	KP	12/08/2011	B	REVISED & RELEASED TO MANUFACTURING	KP	01/10/2012	–	----	--	--/--/--
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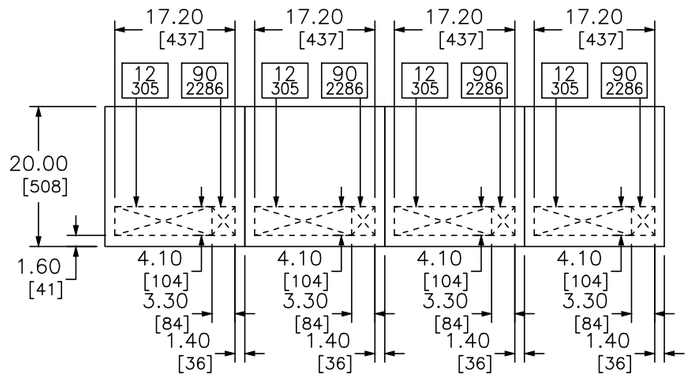
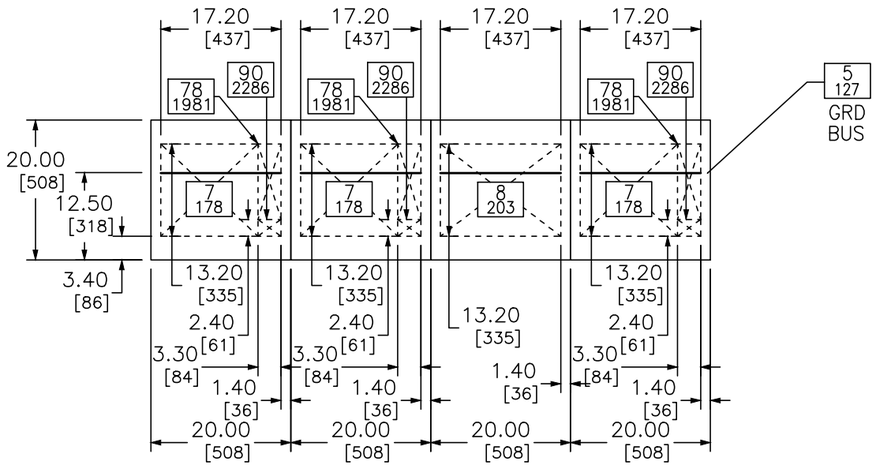


TOP VIEW



FLOOR VIEW

CROSSED AREA REPRESENTS CONDUIT ENTRY AREA. NUMBERS IN BOXES INDICATE VERTICAL CLEARANCE TO NEAREST OBSTRUCTION.

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GENERAL NOTES

Class 1 Type B Wiring

PRODUCT DESCRIPTION AND RATINGS

POWER SYSTEM DATA:

600V 3PH 3W 60Hz
SHORT CIRCUIT RATING: 42kA
POWER CONNECTS TO EXISTING
CONTROL POWER: 120Vac

BUS SYSTEM DATA:

MAIN HORIZONTAL BUS: 600 Amp Copper/Tin Plated / 1.5"
BUS BRACING: 42kA
VERTICAL BUS: 300 Amp Tin Plated Copper
HORIZONTAL GROUND BUS: .25" X 2.0" (6.35mm X 50.8mm) Tin Plated Copper
Units Securely Grounded To Structure

ENCLOSURE DATA:

ENCLOSURE TYPE: 20" DEEP Type 1A
EXTERIOR COLOR: Electrodeposition Finish ANSI 49 Medium Light Grey
INTERIOR COLOR: Electrodeposition Finish White

STRUCTURE MODIFICATIONS:

Ground Bus Lug
Rodent Barriers 1,4
Manual Bus Shutters 1,2,3,4
Fishtape Barriers 1,2,3,4
Copper Vertical Ground Bus 1,2,3,4
Splice to M6 L

EQUIPMENT WEIGHT:

SHIPPING SPLIT # 1: 1500.00 Lbs. (680.40 Kg.)
SHIPPING SPLIT # 2: 875.00 Lbs. (396.90 Kg.)
SHIPPING SPLIT # 3: 750.00 Lbs. (340.20 Kg.)
TOTAL LINEUP WEIGHT (APPROX): 3125.00 Lbs. (1417.50 Kg.)

PRODUCT ACCESSORIES:

See Unit Features
TeSys T Handheld Display
Power Suite Software Kit

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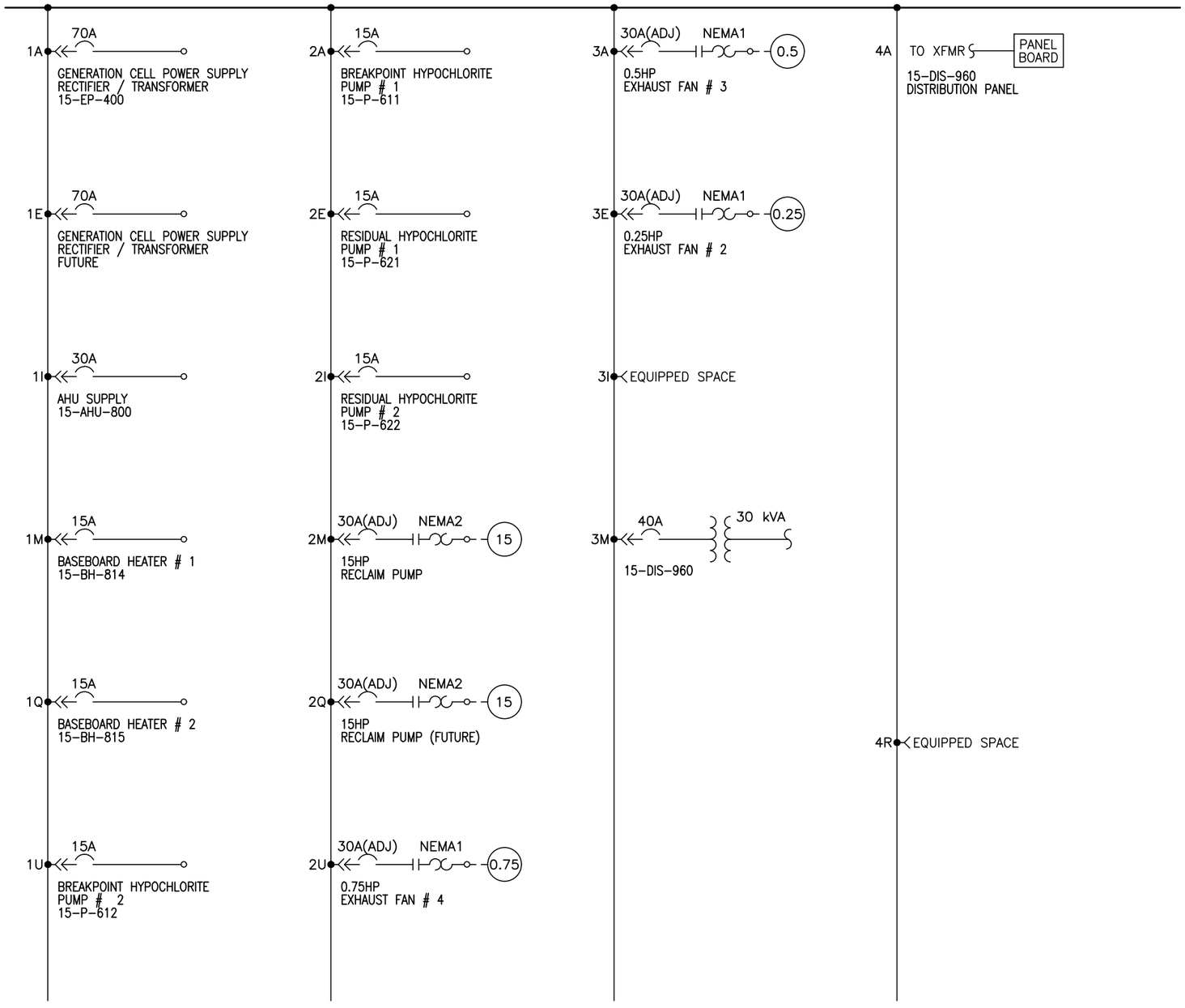

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DRAWN BY:	CAD	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:	DU		
DATE:	SEPTEMBER 14, 2011		
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	UNIT 2M	UNIT 2Q	UNIT 2U	UNIT 3A
FIRMWARE	2.1.0/2.2.0	2.1.0/2.2.0	2.1.0/2.2.0	2.1.0/2.2.0
CURRENT RANGE	5–100A	5–100A	0.4–8A	0.4–8A
NETWORK	MODBUS	MODBUS	MODBUS	MODBUS
CONTROL VOLTAGE	100–240VAC	100–240VAC	100–240VAC	100–240VAC
└> INPUT CONFIGURATION	<170V 60HZ	<170V 60HZ	<170V 60HZ	<170V 60HZ
NOMINAL VOLTAGE	600V	600V	600V	600V
LOAD CT PRIMARY TURNS*	1	1	1	1
LOAD CT SECONDARY TURNS*	1	1	1	1
LOAD CT NUMBER OF PASSES*	1	1	1	1
GROUND CURRENT MODE*	INTERNAL	INTERNAL	INTERNAL	INTERNAL
GROUND CURRENT FAULT*	NO	NO	NO	NO
GROUND CT PRIMARY TURNS*	1	1	1	1
GROUND CT SECONDARY TURNS*	1	1	1	1
TRIP TYPE*	INVERSE THERMAL	INVERSE THERMAL	INVERSE THERMAL	INVERSE THERMAL
└> TRIP CLASS	20	20	20	20
CURRENT PHASE IMBALANCE FAULT ENABLE	NO	NO	NO	NO
CURRENT PHASE IMBALANCE WARNING ENABLE	YES	YES	YES	YES
LONG START	YES	YES	YES	YES
JAM	YES	YES	YES	YES
VOLTAGE PHASE IMBALANCE WARNING ENABLE	NO	NO	NO	NO
VOLTAGE PHASE LOSS FAULT ENABLE	NO	NO	NO	NO
VOLTAGE PHASE LOSS WARNING ENABLE	NO	NO	NO	NO
VOLTAGE PHASE REVERSAL FAULT ENABLE	NO	NO	NO	NO
UNDER VOLTAGE FAULT ENABLE	NO	NO	NO	NO
UNDER VOLTAGE WARNING ENABLE	NO	NO	NO	NO
OVER VOLTAGE FAULT ENABLE	NO	NO	NO	NO
OVER VOLTAGE WARNING ENABLE	NO	NO	NO	NO
LOCAL CONTROL CHANNEL	TERMINAL STRIP	TERMINAL STRIP	TERMINAL STRIP	TERMINAL STRIP
ON–OFF DIAGNOSTIC FAULT ENABLE	NO	NO	NO	NO
WIRING ERROR FAULT ENABLE	NO	NO	NO	NO
RESET MODE	REMOTE	REMOTE	REMOTE	REMOTE
OPERATING MODE*	2 Wire Overload	2 Wire Overload	2 Wire Overload	2 Wire Overload
STAR–DELTA*	NO	NO	NO	NO
CONTACTOR RATING*	45	45	27	27
HMI MODBUS ADDRESS	1	1	1	1
HMI COMM LOSS WARNING ENABLE	NO	NO	NO	NO
DISPLAY SETTINGS –> DISPLAY ALL	YES	YES	YES	YES
MODBUS ADDRESS	1	1	1	1
MODBUS BAUD RATE	19200	19200	19200	19200
MODBUS COMM LOSS WARNING ENABLE	YES	YES	YES	YES

* CAN BE SET ONLY IN CONFIGURATION MODE

NOTE: REFER TO 'APPENDIX B: CONFIGURABLE PARAMETERS' IN TESYS T USER'S MANUAL FOR ADDITIONAL INFORMATION.
ALSO, IF THERE IS AN HMI IN THE SYSTEM, PLEASE REFER TO THE TESYS T LTM CU CONTROL OPERATOR UNIT USER'S MANUAL.

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EQUIPMENT DESIGNATION: 15–MCC–950
EQUIPMENT TYPE: MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE: PARAMETER SETTINGS
by Schneider Electric
DWG# P30057286–001–01 PG 1 OF 1 REV B

REV	DESCRIPTION	BY	DATE
B	REVISED & RELEASED TO MANUFACTURING	KP	01/10/2012
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UNIT LOC	NAMEPLATE DESIGNATION (WHITE SURFACE/BLACK LETTERS)	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICE FEATURES 22 mm– XB5 ON LIGHT	PILOT DEVICE FEATURES 22 mm– XB5 OFF LIGHT	PILOT DEVICE FEATURES 22 mm– XB5 ADDL P/L	PILOT DEVICE FEATURES 22 mm– XB5 SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
1A	GENERATION CELL POWER SUPPLY RECTIFIER / TRANSFORMER 15–EP–400	BRANCH BKR			HL 150	**70**											14–3/0AWG 1 LUG/PH	E30057286–001–01
1E	GENERATION CELL POWER SUPPLY RECTIFIER / TRANSFORMER FUTURE	BRANCH BKR			HL 150	**70**											14–3/0AWG 1 LUG/PH	E30057286–001–01
1I	AHU SUPPLY 15–AHU–800	BRANCH BKR			HL 150	**30**											14–3/0AWG 1 LUG/PH	E30057286–001–02
1M	BASEBOARD HEATER # 1 15–BH–814	BRANCH BKR			HL 150	**15**											14–3/0AWG 1 LUG/PH	E30057286–001–03
1Q	BASEBOARD HEATER # 2 15–BH–815	BRANCH BKR			HL 150	**15**											14–3/0AWG 1 LUG/PH	E30057286–001–03
1U	BREAKPOINT HYPOCHLORITE PUMP # 2 15–P–612	BRANCH BKR			HL 150	**15**											14–3/0AWG 1 LUG/PH	E30057286–001–03
2A	BREAKPOINT HYPOCHLORITE PUMP # 1 15–P–611	BRANCH BKR			HL 150	**15**											14–3/0AWG 1 LUG/PH	E30057286–001–03
2E	RESIDUAL HYPOCHLORITE PUMP # 1 15–P–621	BRANCH BKR			HL 150	**15**											14–3/0AWG 1 LUG/PH	E30057286–001–03
2I	RESIDUAL HYPOCHLORITE PUMP # 2 15–P–622	BRANCH BKR			HL 150	**15**											14–3/0AWG 1 LUG/PH	E30057286–001–03
2M	15HP RECLAIM PUMP	FVNR	NEMA 2	15	HL 150	**ADJ 30**	CONTROL TRANSFORMER	100	.50	1.00	2	2	GREEN		RED		#16 AWG MTW CONTROL WIRE, 600V SYSTEM, CNTRL TRANSFORMER TAPS, MODBUS 2–WIRE, MOTOR CIRCUIT PROTECTOR, RESET PB,	E30057286–001–04
																	RJ45 PORT, Tesys T OL, TRANSIENT SUPPRESSION, WIRED RELAY	
2Q	15HP RECLAIM PUMP (FUTURE)	FVNR	NEMA 2	15	HL 150	**ADJ 30**	CONTROL TRANSFORMER	100	.50	1.00	2	2	GREEN		RED		#16 AWG MTW CONTROL WIRE, 600V SYSTEM, CNTRL TRANSFORMER TAPS, MODBUS 2–WIRE, MOTOR CIRCUIT PROTECTOR, RESET PB,	E30057286–001–04
																	RJ45 PORT, Tesys T OL, TRANSIENT SUPPRESSION, WIRED RELAY	
2U	0.75HP EXHAUST FAN # 4	FVNR	NEMA 1	0.75	HL 150	**ADJ 30**	CONTROL TRANSFORMER	100	.50	1.00	2	2	GREEN		RED		#16 AWG MTW CONTROL WIRE, 600V SYSTEM, CNTRL TRANSFORMER TAPS, MODBUS 2–WIRE, MOTOR CIRCUIT PROTECTOR, RESET PB,	E30057286–001–05
																	RJ45 PORT, Tesys T OL, TRANSIENT SUPPRESSION, WIRED RELAY	
UNIT LOC	NAMEPLATE DESIGNATION	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICE FEATURES 22 mm– XB5					

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JOB LOCATION:	NANAIMO, BC
DRAWN BY:	CAD
ENGR:	DU
DATE:	SEPTEMBER 14, 2011
DRAWING STATUS:	RECORD

EQUIPMENT DESIGNATION:	15–MCC–950
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	UNIT INFORMATION

by Schneider Electric

DWG# I30057286–001–01 | PG 1 OF 2 | REV B

REV	DESCRIPTION	BY	DATE
B	REVISED & RELEASED TO MANUFACTURING	KP	01/10/2012
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UNIT LOC	NAMEPLATE DESIGNATION	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICE FEATURES 22 mm– XB5 ON LIGHT	PILOT DEVICE FEATURES 22 mm– XB5 OFF LIGHT	PILOT DEVICE FEATURES 22 mm– XB5 ADDL P/L	PILOT DEVICE FEATURES 22 mm– XB5 SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
3A	0.5HP EXHAUST FAN # 3	FVNR	NEMA 1	0.5	HL 150	**ADJ 30**	CONTROL TRANSFORMER	100	.50	1.00	2	2	GREEN		RED		#16 AWG MTW CONTROL WIRE, 600V SYSTEM, CNTRL TRANSFORMER TAPS, MODBUS 2–WIRE, MOTOR CIRCUIT PROTECTOR, RESET PB,	E30057286–001–05
																	RJ45 PORT, Tesys T OL, TRANSIENT SUPPRESSION, WIRED RELAY	
3E	0.25HP EXHAUST FAN # 2	FVNR	NEMA 1	0.25	HL 150	**ADJ 30**	CONTROL TRANSFORMER	100	.50	1.00	2	2	GREEN		RED		#14 AWG MTW CONTROL WIRE, 600V SYSTEM, CNTRL TRANSFORMER TAPS, FACTORY PROVIDED THERM UNIT,	E30057286–001–06
																	MELTING ALLOY O/L, MOTOR CIRCUIT PROTECTOR, TRANSIENT SUPPRESSION, WIRED RELAY	
3I		SPACE																
3M	15–DIS–960	3PH DIST XFMR	30 kVA		HL 150	**40**											SECONDARY WIRE TO PANELBOARD	E30057286–001–07
4A	15–DIS–960 DISTRIBUTION PANEL	PANEL BOARD	225A		QB												42 CIRCUITS, FULLY RATED, NQ, (1) QOB230, (20) QOB115, (2) QOB115GFI,	E30057286–001–08
4R		SPACE																
UNIT LOC	NAMEPLATE DESIGNATION	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICE FEATURES 22 mm– XB5					

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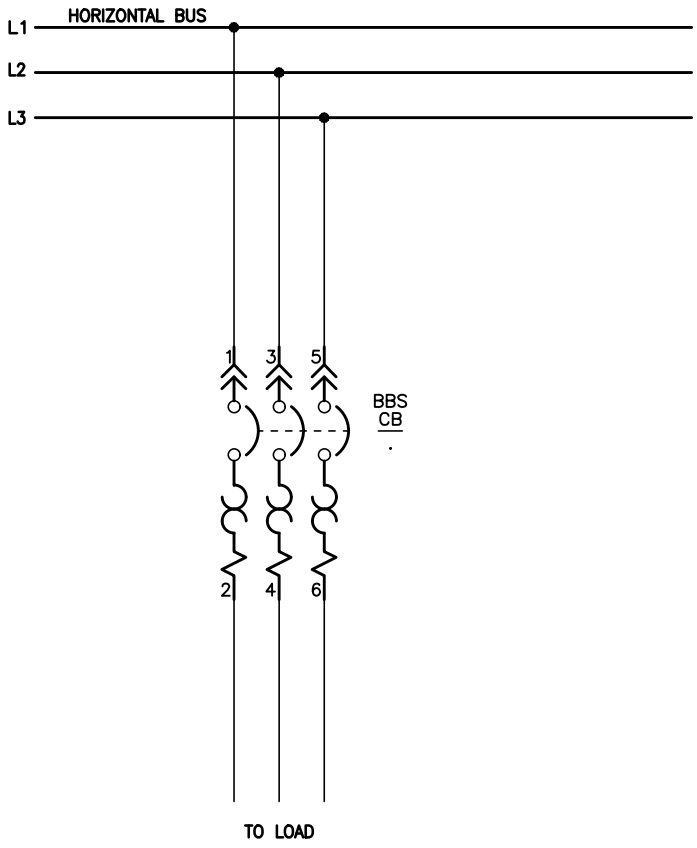

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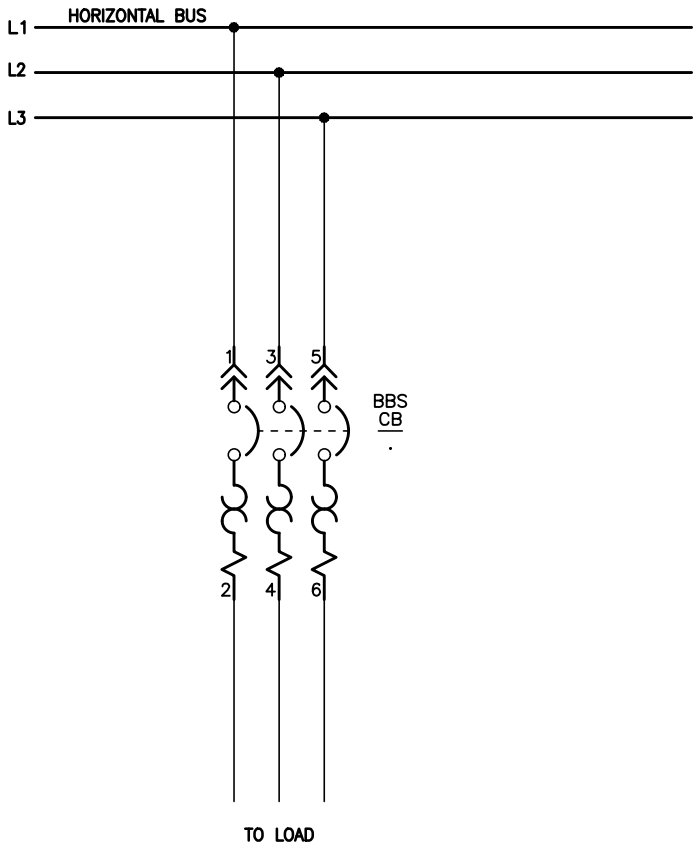

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DRAWING STATUS:	RECORD	DWG# E30057286-001-02	PG 1 OF 1 REV B

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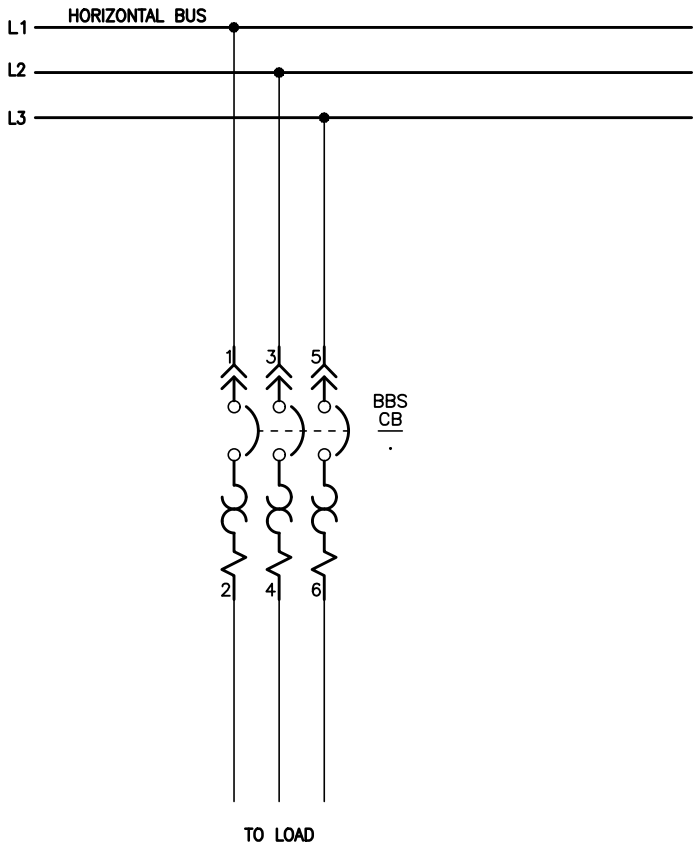

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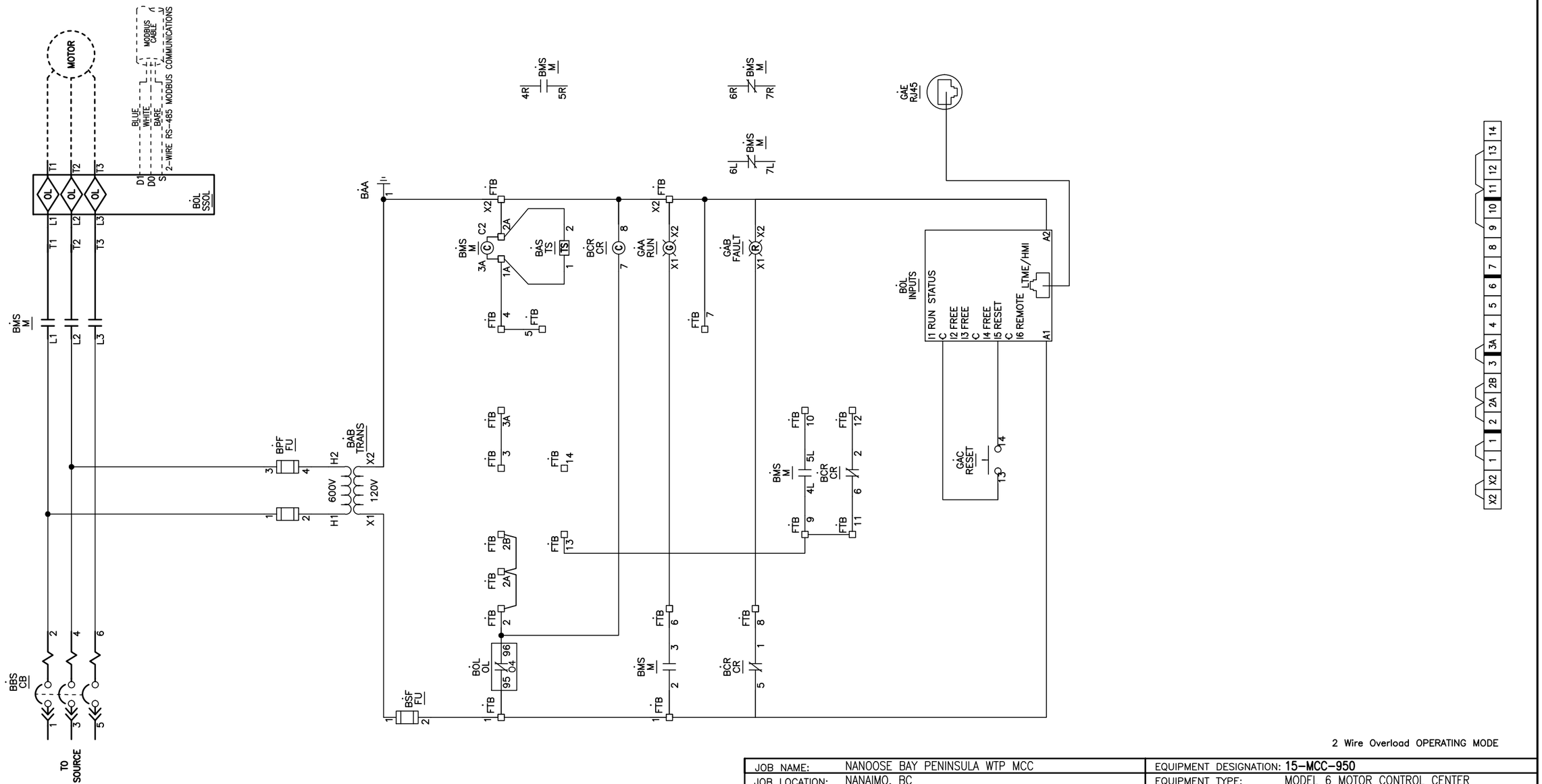

2 Wire Overload OPERATING MODE

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PG 1 OF 1 REV C

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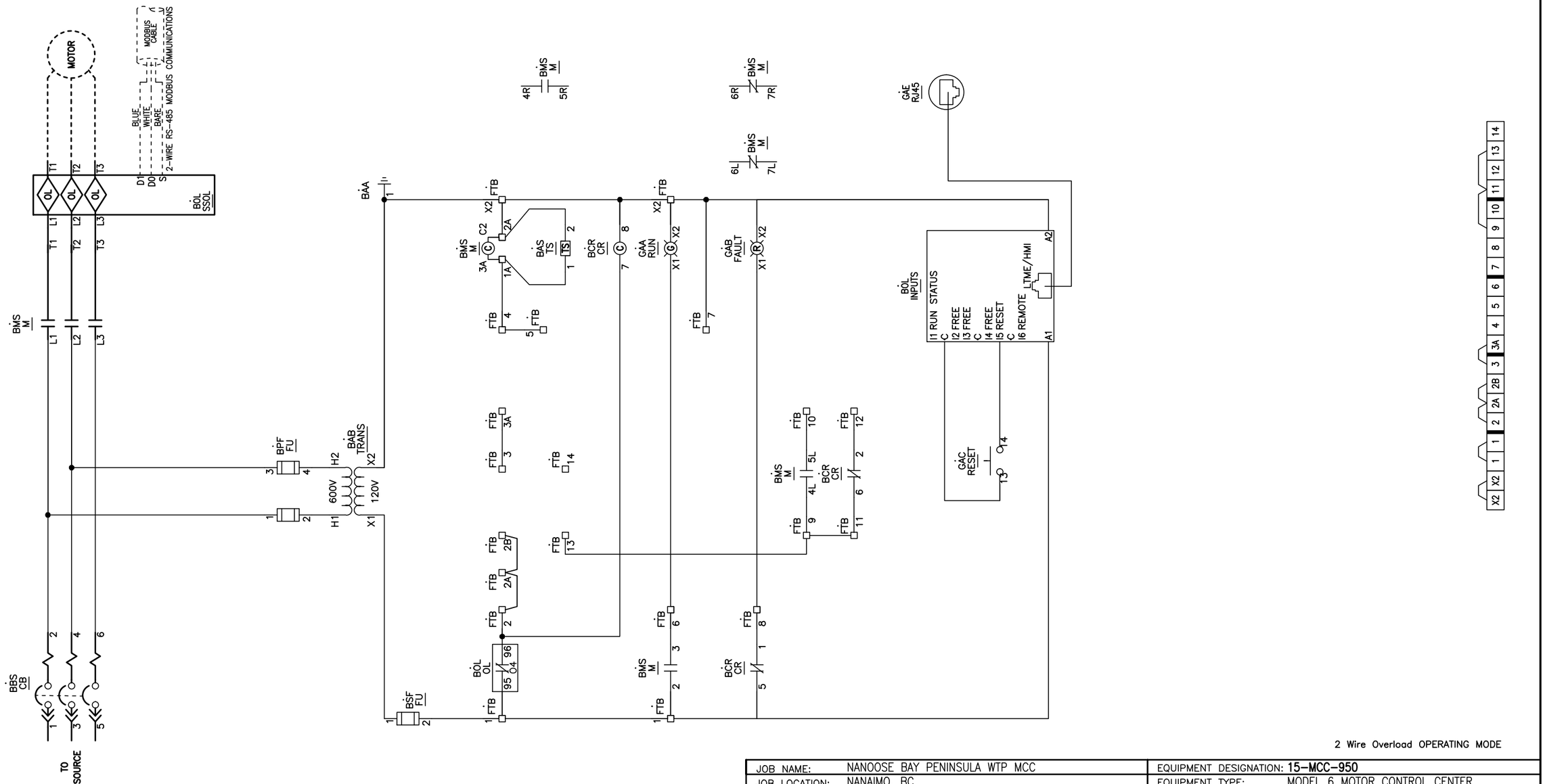

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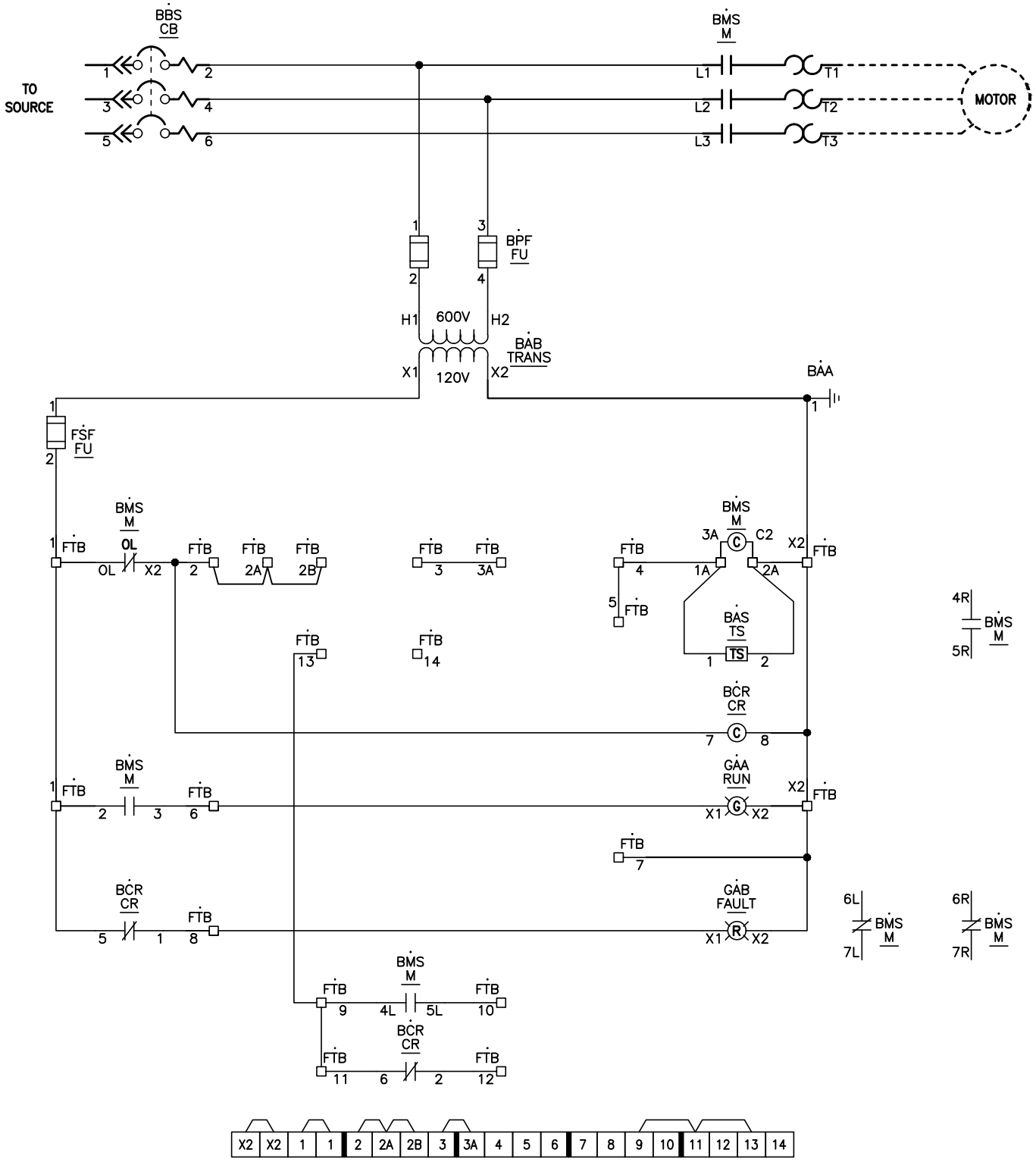
14M



FACTORY PROVIDED THERMAL UNITS

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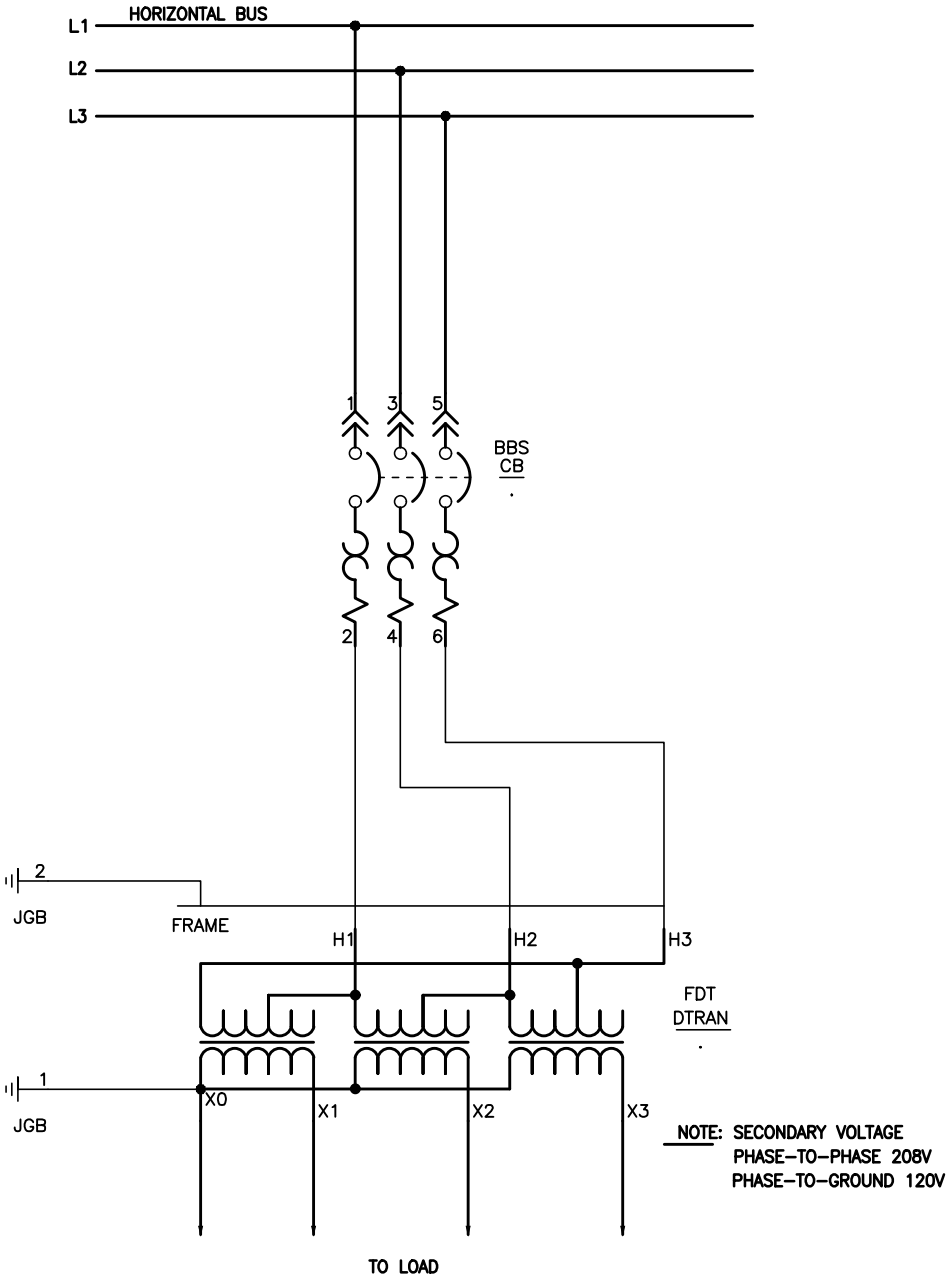
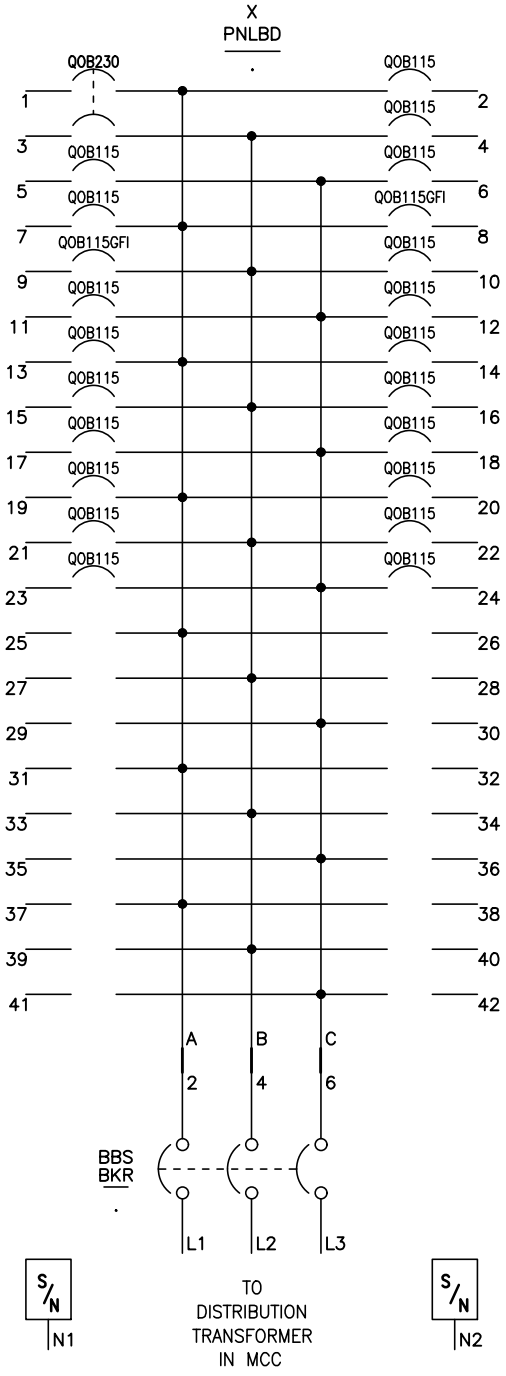
ENGR:	DU		
DATE:	SEPTEMBER 14, 2011		
DRAWING STATUS:	RECORD	DWG# E30057286-001-06	PG 1 OF 1 REV C

REV	DESCRIPTION	BY	DATE	B	REVISED & RELEASED TO MANUFACTURING	KP	01/10/2012
A	REVISED & RESUBMITTED FOR APPROVAL	KP	12/08/2011	–	----	--	--/--/--



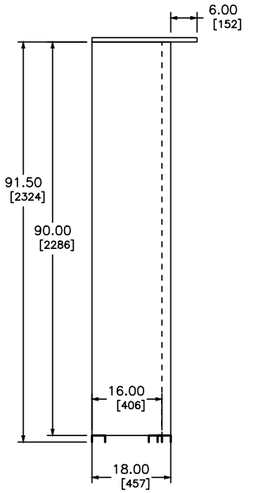
JOB NAME:	NANOOSE BAY PENINSULA WTP MCC	EQUIPMENT DESIGNATION:	15–MCC–950
JOB LOCATION:	NANAIMO, BC	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	CAD	DRAWING TYPE:	ELEMENTARY
ENGR:	DU		
DATE:	SEPTEMBER 14, 2011		
DRAWING STATUS:	RECORD	DWG# E30057286–001–07	PG 1 OF 1 REV B

REV	DESCRIPTION	BY	DATE	B	REVISED & RELEASED TO MANUFACTURING	KP	01/10/2012
A	REVISED & RESUBMITTED FOR APPROVAL	KP	12/08/2011	–	----	--	--/--/--

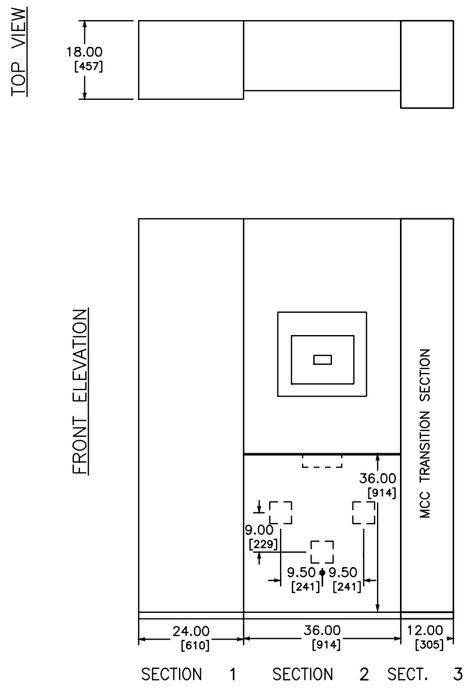


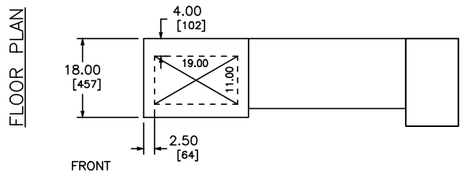
JOB NAME:	NANOOSE BAY PENINSULA WTP MCC	EQUIPMENT DESIGNATION:	15-MCC-950
JOB LOCATION:	NANAIMO, BC	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	CAD	DRAWING TYPE:	ELEMENTARY
ENGR:	DU		
DATE:	SEPTEMBER 14, 2011		
DRAWING STATUS:	RECORD	DWG# E30057286-001-08	PG 1 OF 1 REV B

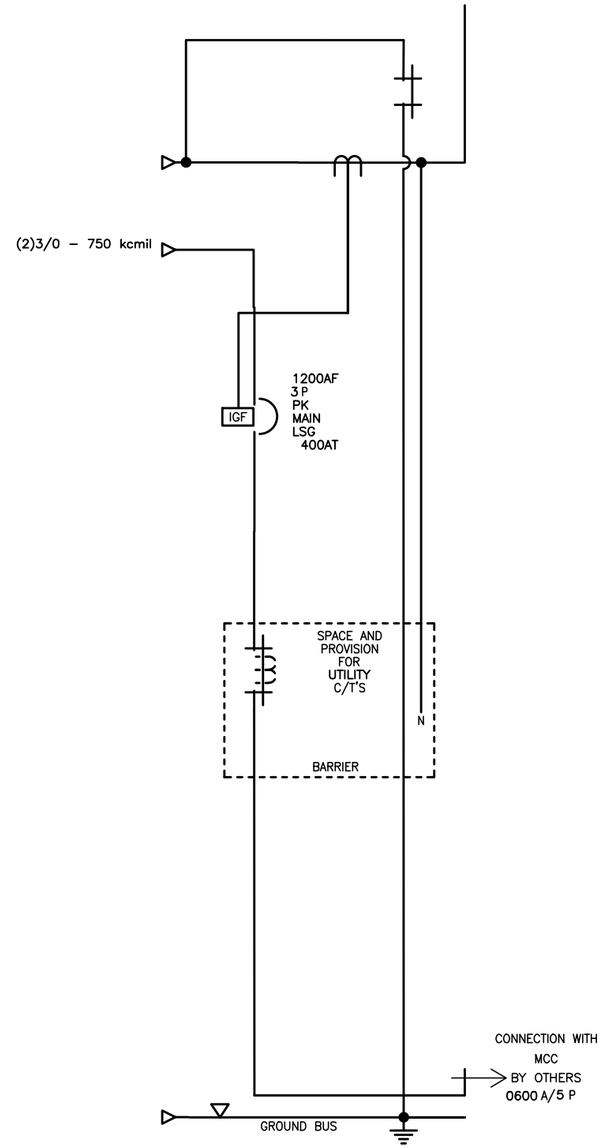
REV	DESCRIPTION	BY	DATE								
A	REVISED & RESUBMITTED FOR APPROVAL	KP	10/05/2011	B	REVISED & RESUBMITTED FOR APPROVAL	KP	10/14/2011	–	----	--	--/--/--
				C	RELEASED TO MANUFACTURING	KP	01/10/2012	–	----	--	--/--/--



LEFT SIDE VIEW







GENERAL NOTES

INCOMING FEED: BUSSED BC WIREWAY BOTTOM LEFT
SYSTEM VOLTAGE: 347/600 3–PH 4–W
MAX. AVAILABLE SHORT CIRCUIT CAPACITY
OF SYSTEM: 42,000 A RMS SYM
SYSTEM AMPERAGE: 0600 AMPS
BUS MATERIAL: COPPER
ACCESSIBILITY: FRONT
ENCLOSURE: TYPE 1 C/W DRIPHOOD
COLOUR: ANSI 49
SERVICE ENTRANCE
NOT SUITABLE FOR MOUNTING,
ON COMBUSTIBLE FLOOR
SWBD MK: MAIN 400AT

JOB NAME:	NANOOSE BAY PENINSULA WTP MCC	EQUIPMENT DESIGNATION:	**MAIN 400AT**
JOB LOCATION:	NANAIMO, BC	EQUIPMENT TYPE:	MS16 SWITCHBOARD
DRAWN BY:	CAD	DRAWING TYPE:	ELEVATION
ENGR:	DU		SQUARE D Schneider Electric
DATE:	SEPTEMBER 14, 2011		
DRAWING STATUS:	RECORD	DWG# **F30057286–002–01**	PG 1 OF 1 REV C

REV	DESCRIPTION	BY	DATE								
A	REVISED & RESUBMITTED FOR APPROVAL	KP	10/05/2011	B	REVISED & RESUBMITTED FOR APPROVAL	KP	10/14/2011	–	----	--	--/--/--
				C	RELEASED TO MANUFACTURING	KP	01/10/2012	–	----	--	--/--/--

DEVICE DATA TABLE

SECT NO	CKT NO	GMD HEIGHT	DEVICE TYPE	POLE QTY	MAXIMUM TRIP/FUSE AMPACITY	FUSE CLIP	MAX kA @ SYSTEM VOLTAGE	MICROLOGIC TRIP UNIT DETAILS					FEEDER LUG DETAILS			LOAD EXIT LOCATION	ACCESSORIES
								TRIP UNIT TYPE	TRIP SYSTEM	RATING PLUG	TRIP SETTING	MODEL REF	WIRE RANGE AL/CU	PHASE QTY	NEUT QTY		
2	SM	–	PK	3	400A	–	50kA	AMMETER	LSIG	PLUG–A	400A	6.0A	–	–	–	–	Q3,RA

ACCESSORIES LEGEND	
Q3	HANDLE PADLOCK BRACKET
RA	NCT

JOB NAME:	NANOOSE BAY PENINSULA WTP MCC	EQUIPMENT DESIGNATION:	**MAIN 400AT**
JOB LOCATION:	NANAIMO, BC	EQUIPMENT TYPE:	MS16 SWITCHBOARD
DRAWN BY:	CAD	DRAWING TYPE:	DEVICE DATA
ENGR:	DU		SQUARE D Schneider Electric
DATE:	SEPTEMBER 14, 2011		
DRAWING STATUS:	RECORD	DWG# **F30057286–002–01**	PG 1 OF 1 REV C