



The Way

Corporation

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Disclaimer

THESE DRAWINGS ARE ASSEMBLED AS A GENERIC SET TO BE USED FOR THE OBSERVATION OF LAYOUT AND CONTENT ONLY. THEY WILL VARY DEPENDING ON CONTROL OPTIONS AND MACHINE CONFIGURATIONS. THEY ARE NOT INTENDED TO BE USED BY PERSONS UNFAMILIAR WITH THE SYSTEMS FOR WHICH THEY ARE DESIGNED. THE WAY CORPORATION WILL NOT BE HELD RESPONSIBLE FOR DAMAGES OR INJURY CAUSED BY THEIR IMPROPER USE.

The following drawings were for a European Grinder Application using a Siemens 840D Control.

840D CNC CONTROLLER SYSTEM
ELECTRICAL DRAWING PACKAGE

DRAWING INDEX	
DWG	PAGE TITLE
00	COVER SHEET DRAWING INDEX
01	400 VAC POWER DISTRIBUTION
02	VARIABLE FREQUENCY DRIVES
03	230 VAC & 24 VDC POWER DISTRIBUTION
04	CONTROL WIRING (24VDC STARTUP CIRCUIT)
05	E--STOP RELAY
06	840D CABLE CONNECTION & LAYOUT
07	840D POWER SUPPLY & NCU
08	840D X1 & X2 AXIS SERVO AMPLIFIERS
09	I/O MODULE LAYOUT & MPG PLUG CONNECTION
10	S7-300 GROUP 1 INPUT MODULES 1 & 2 (SLOTS 3 & 4)
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13	S7-300 GROUP 1 OUTPUT MODULE 6 (SLOT 8)
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15	MINI HAND HELD UNIT LAYOUT
16	OPERATORS CONSOLE ENCLOSURE ASSEMBLY
17	MAIN PANEL LAYOUT
18	STOCKLIST
19	



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DESCRIPTIONDRAWING INDEX

DATE6/2008SCALE

DWN BYWAY CORP.SHEET0 OF

JOB NO. SAMPLE

02
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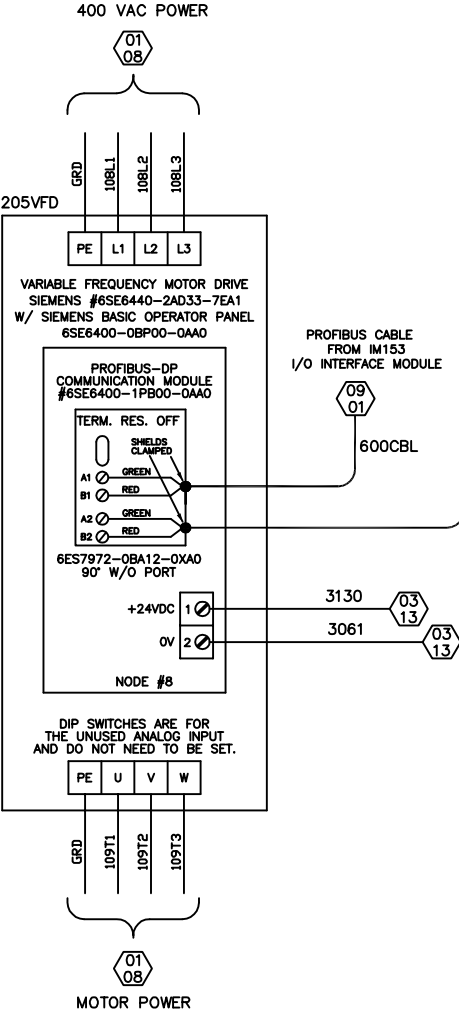
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PROFIBUS CABLE
FROM IM153
I/O INTERFACE MODULE

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01

600CBL

601CBL

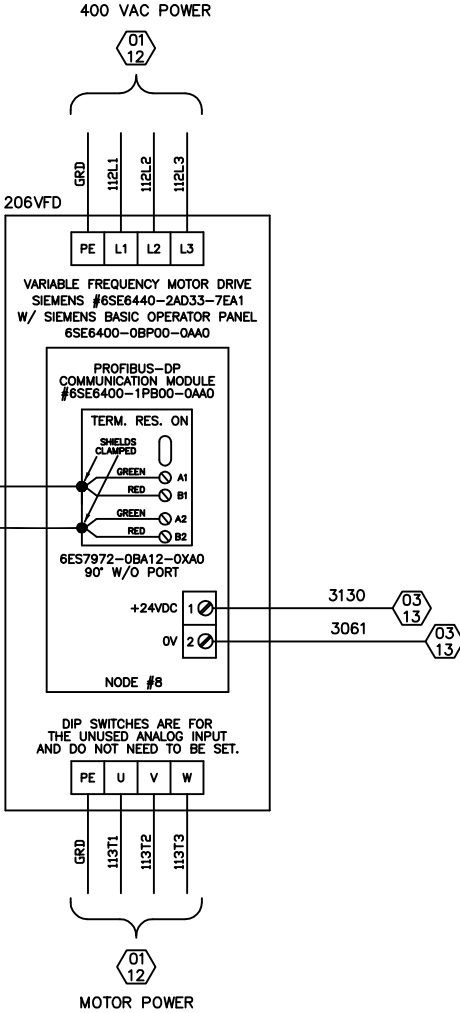
NOTE: DRIVE COMMANDS & STATUS ARE
COMMUNICATED WITH THE PLC CONTROL
VIA THE PROFIBUS LINK.

DRIVE PARAMETER SETTINGS
50HZ = xx TABLE RPM

FOLLOWING PARAMETERS ARE TO BE CHANGED
FROM FACTORY DEFAULT SETTINGS.

P1120	RAMP UP TIME	X
P1121	RAMP DOWN TIME	X
P1082	MAX. FREQUENCY	X
P1080	MIN. FREQUENCY	X
P332	MTR POWER FACTOR	X
P310	MTR RATED FREQ.	50 HZ
P311	MTR RATED SPEED	1500 RPM
P305	MTR RATED CURRENT	X
P304	MTR RATED VOLTAGE	400 VOLTZ
P307	MTR RATED POWER	50 HP
P1202	MTR CURRENT LIMIT	100 %

R965	PROFIBUS PROFILE	X
P101	OPERATION	X
P918	PROFIBUS ADDRESS	X
R967	PARAMETER CONTROL	X
R968	STATUS WORD	X



09
14

PROFIBUS CABLE
TO DP COUPLER

NOTE: DRIVE COMMANDS & STATUS ARE
COMMUNICATED WITH THE PLC CONTROL
VIA THE PROFIBUS LINK.

DRIVE PARAMETER SETTINGS
50HZ = xx TABLE RPM

FOLLOWING PARAMETERS ARE TO BE CHANGED
FROM FACTORY DEFAULT SETTINGS.

P1120	RAMP UP TIME	X
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P1082	MAX. FREQUENCY	X
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P332	MTR POWER FACTOR	X
P310	MTR RATED FREQ.	50 HZ
P311	MTR RATED SPEED	1500 RPM
P305	MTR RATED CURRENT	X
P304	MTR RATED VOLTAGE	400 VOLTZ
P307	MTR RATED POWER	50 HP
P1202	MTR CURRENT LIMIT	100 %

R965	PROFIBUS PROFILE	X
P101	OPERATION	X
P918	PROFIBUS ADDRESS	X
R967	PARAMETER CONTROL	X
R968	STATUS WORD	X

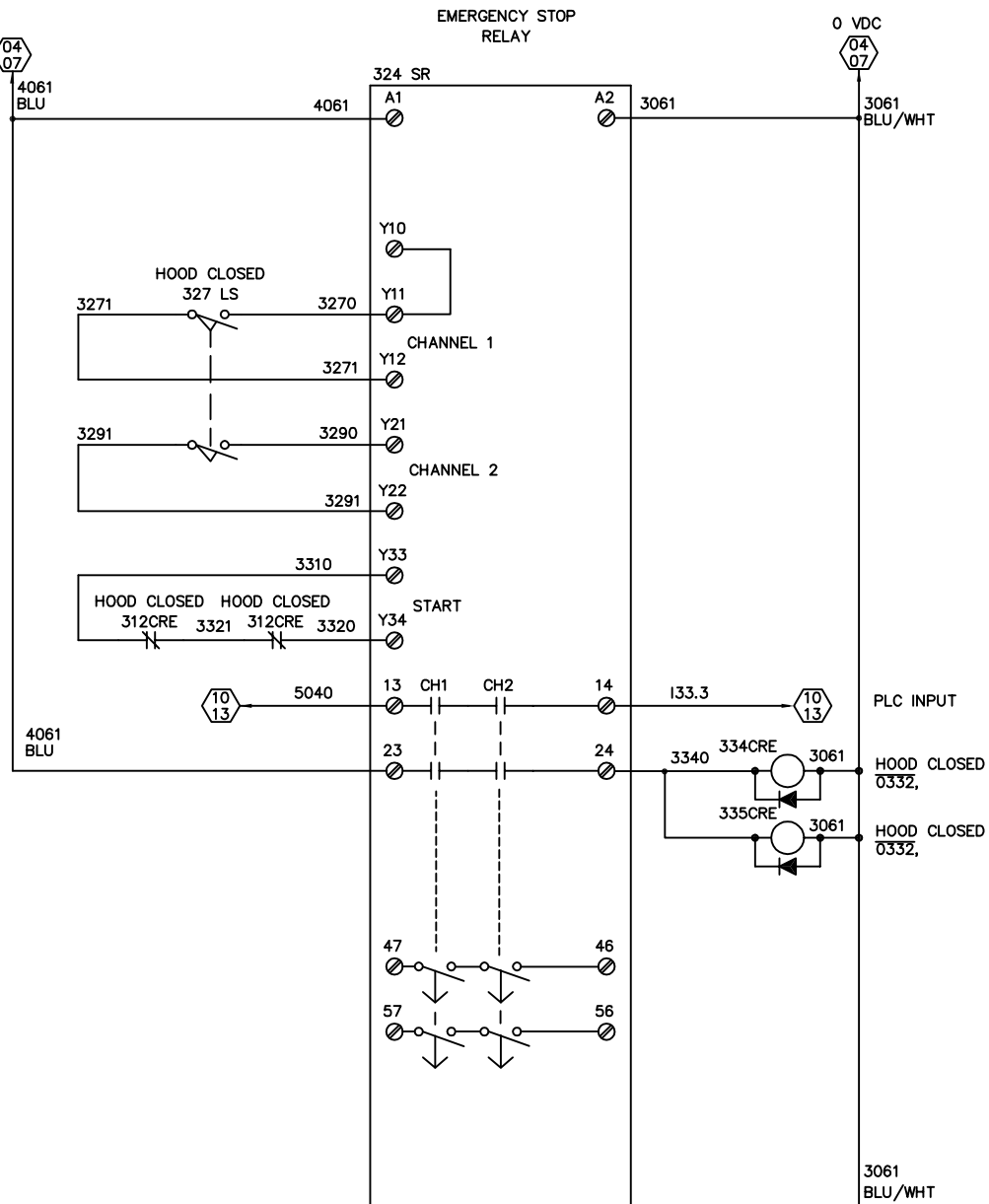
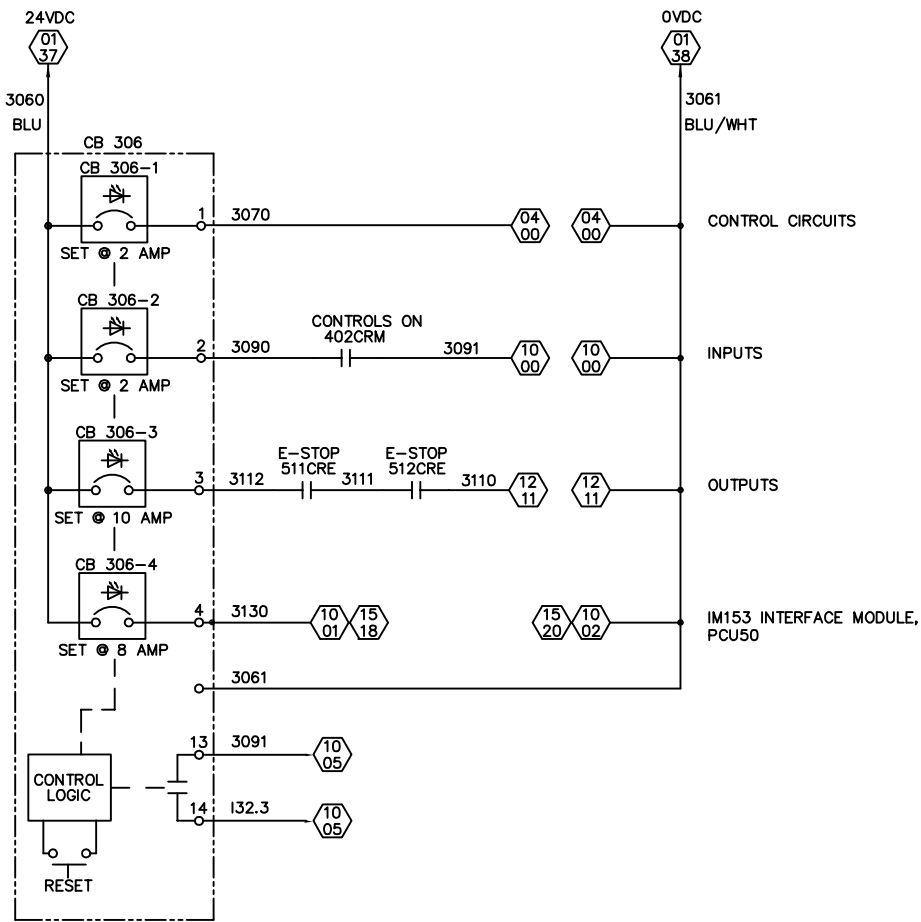


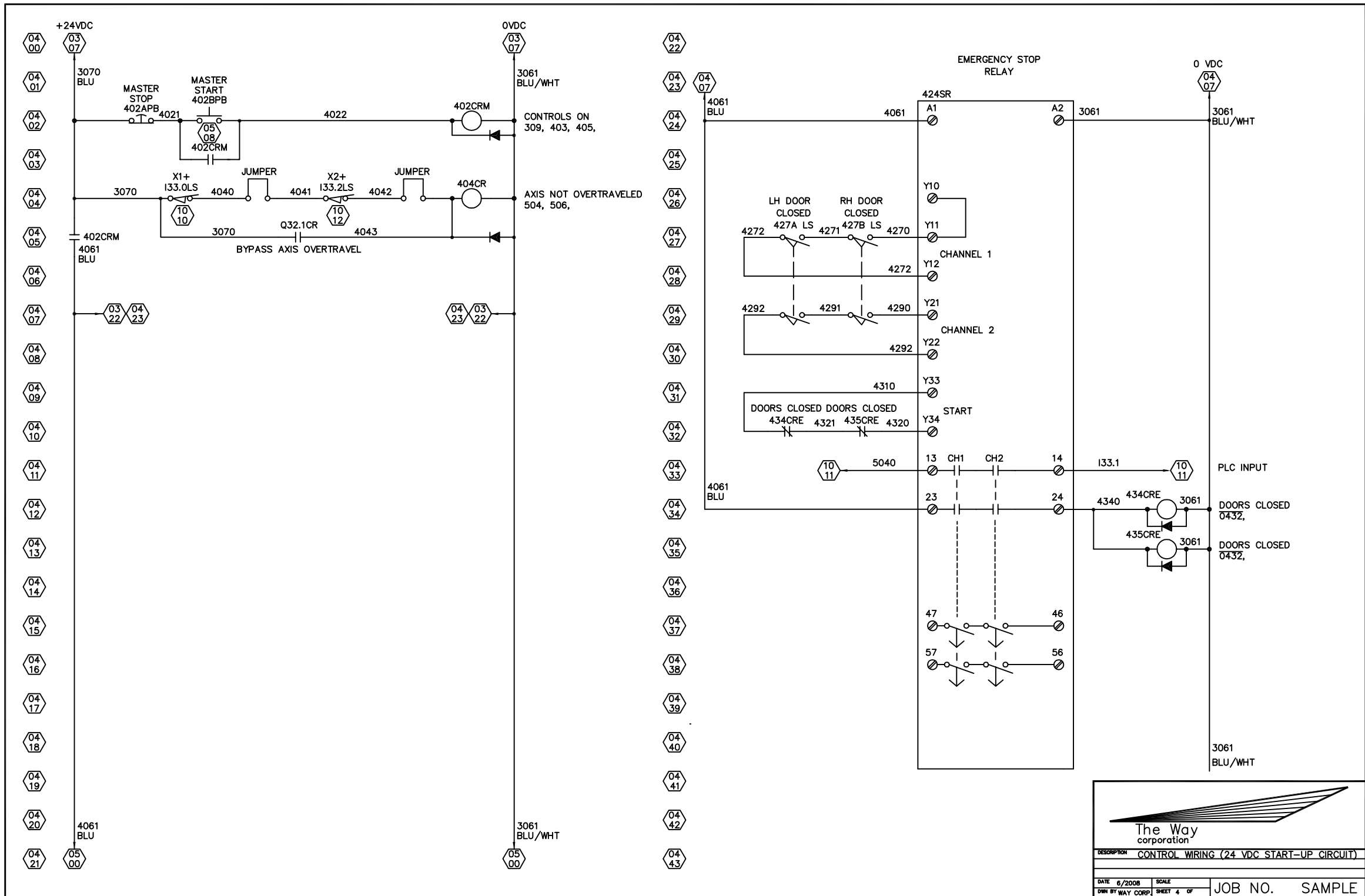
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DESCRIPTION VARIABLE FREQUENCY DRIVES

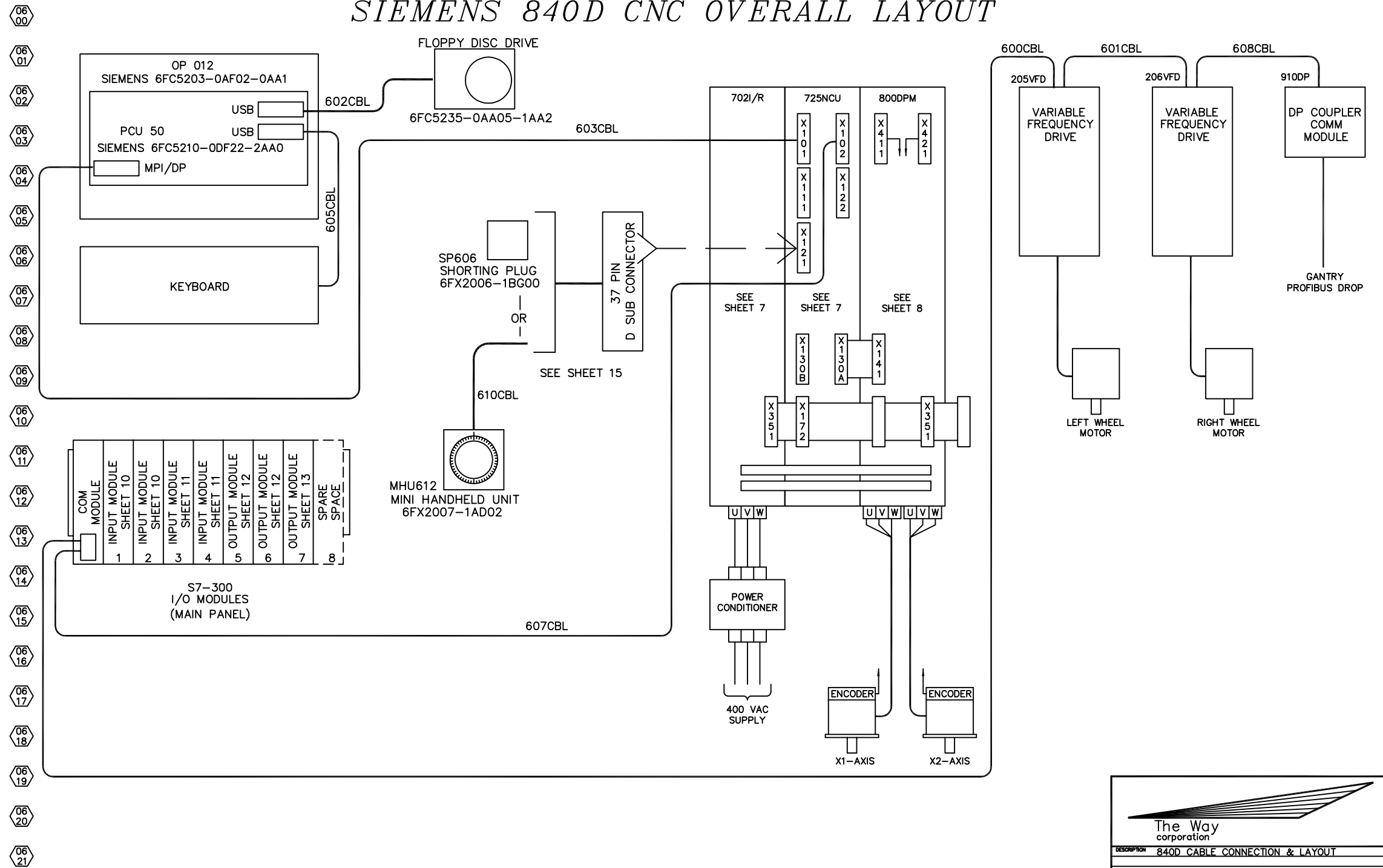
DATE 6/2008 SCALE
OWN BY WAY CORP. SHEET 2 OF

JOB NO. SAMPLE

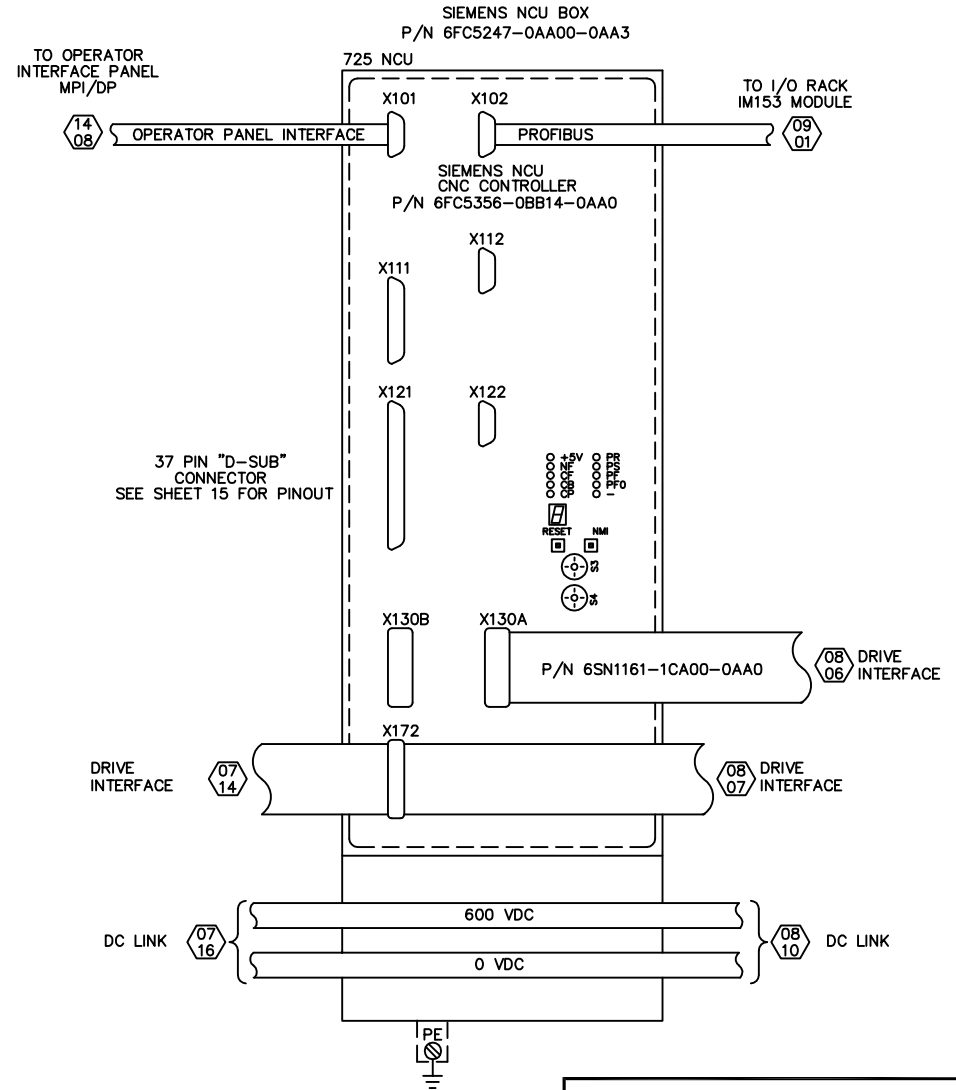
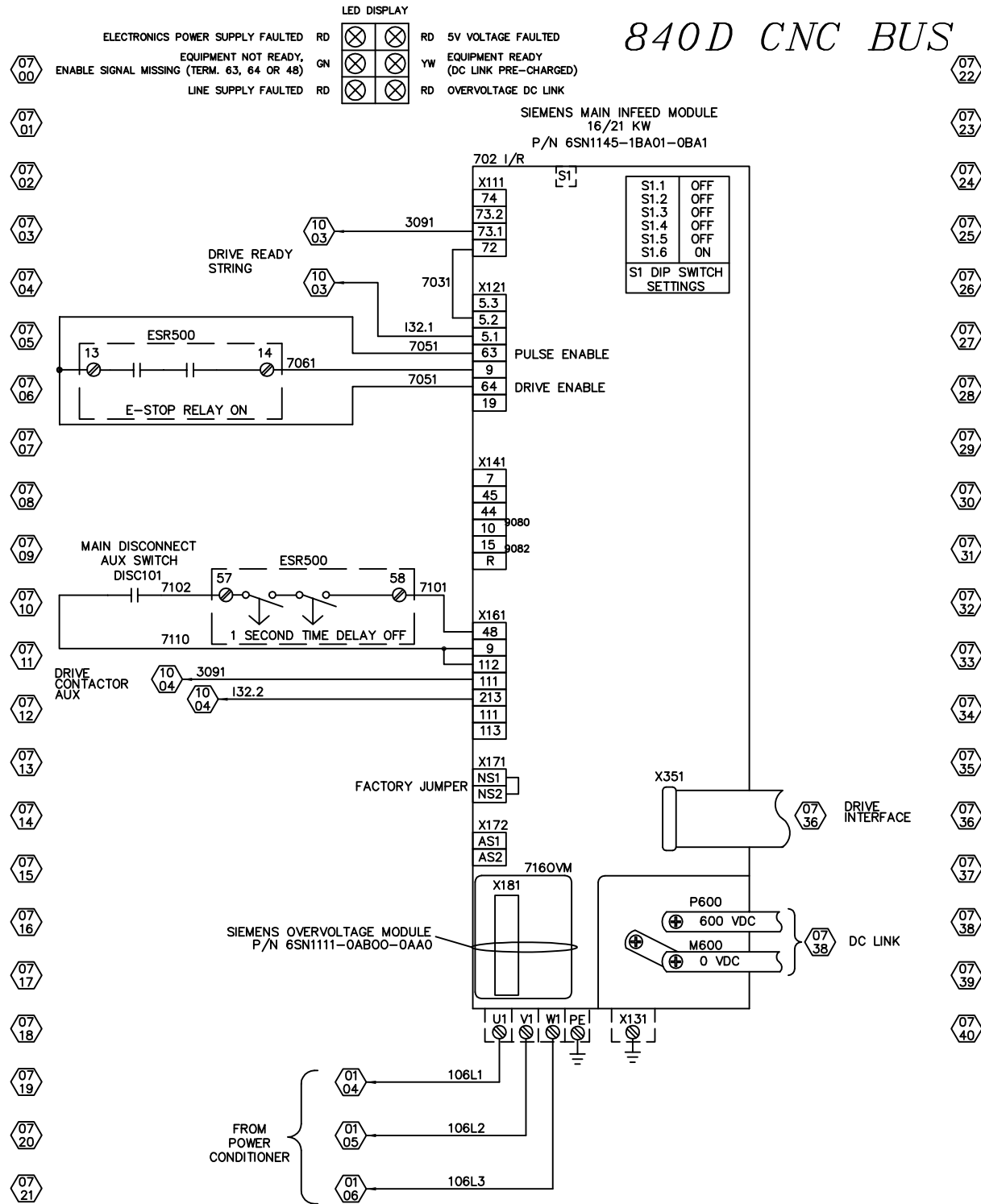




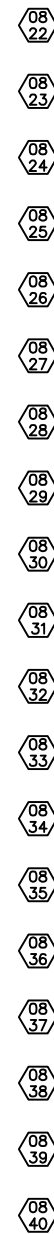
SIEMENS 840D CNC OVERALL LAYOUT



840D CNC BUS_WIRING

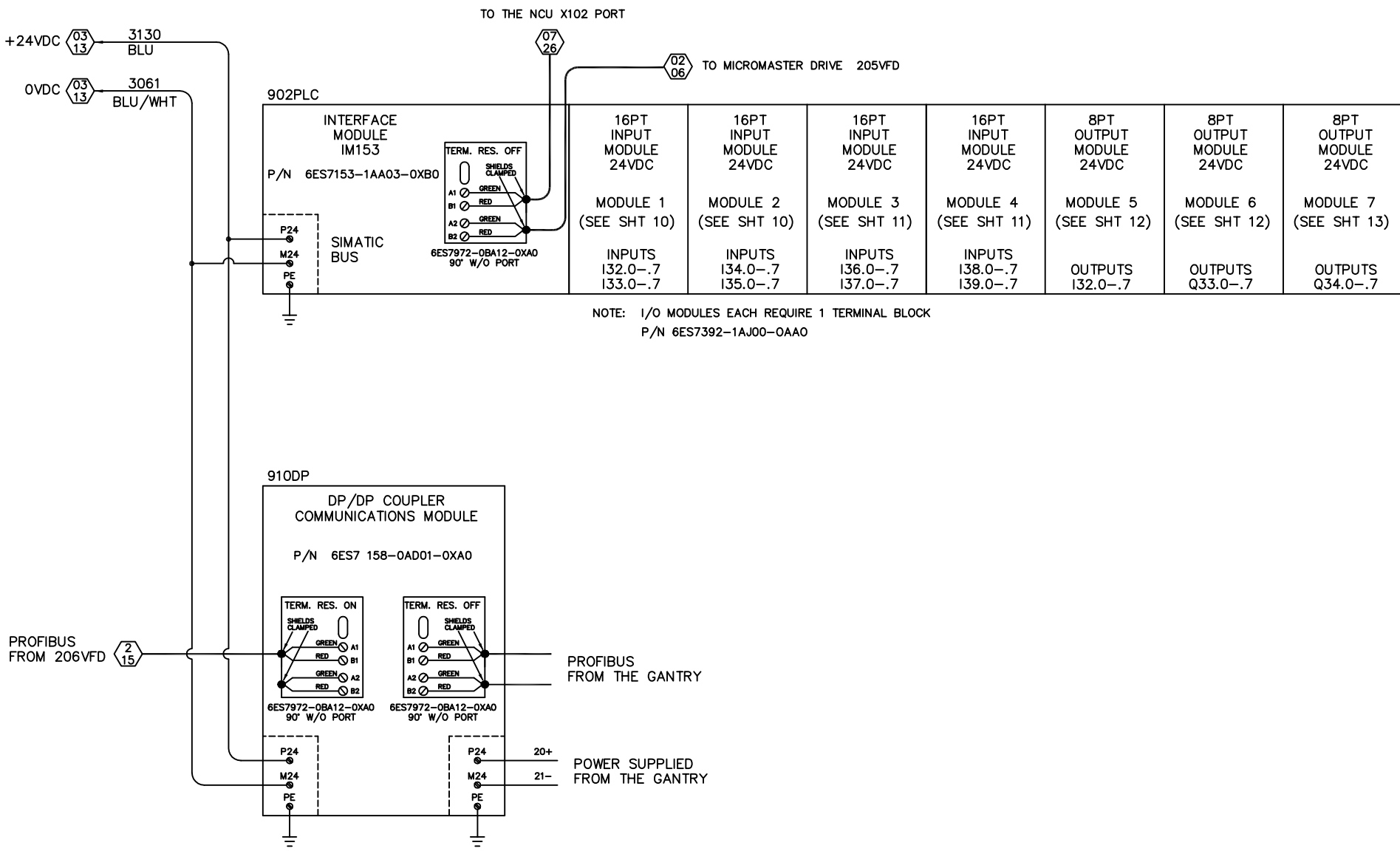


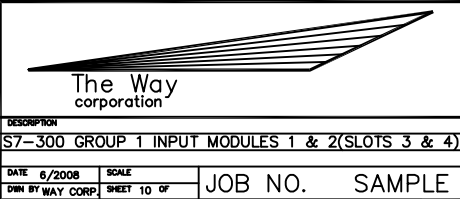
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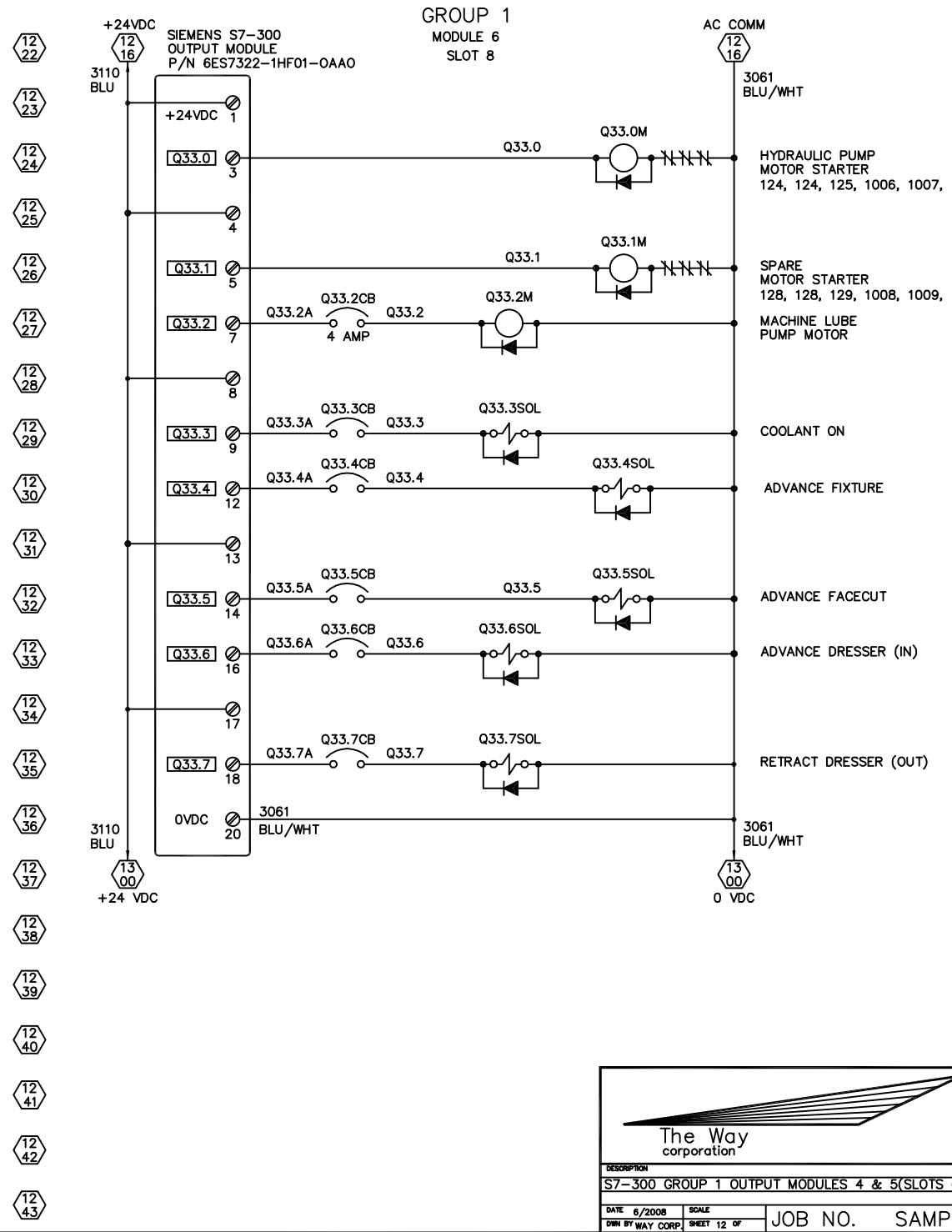
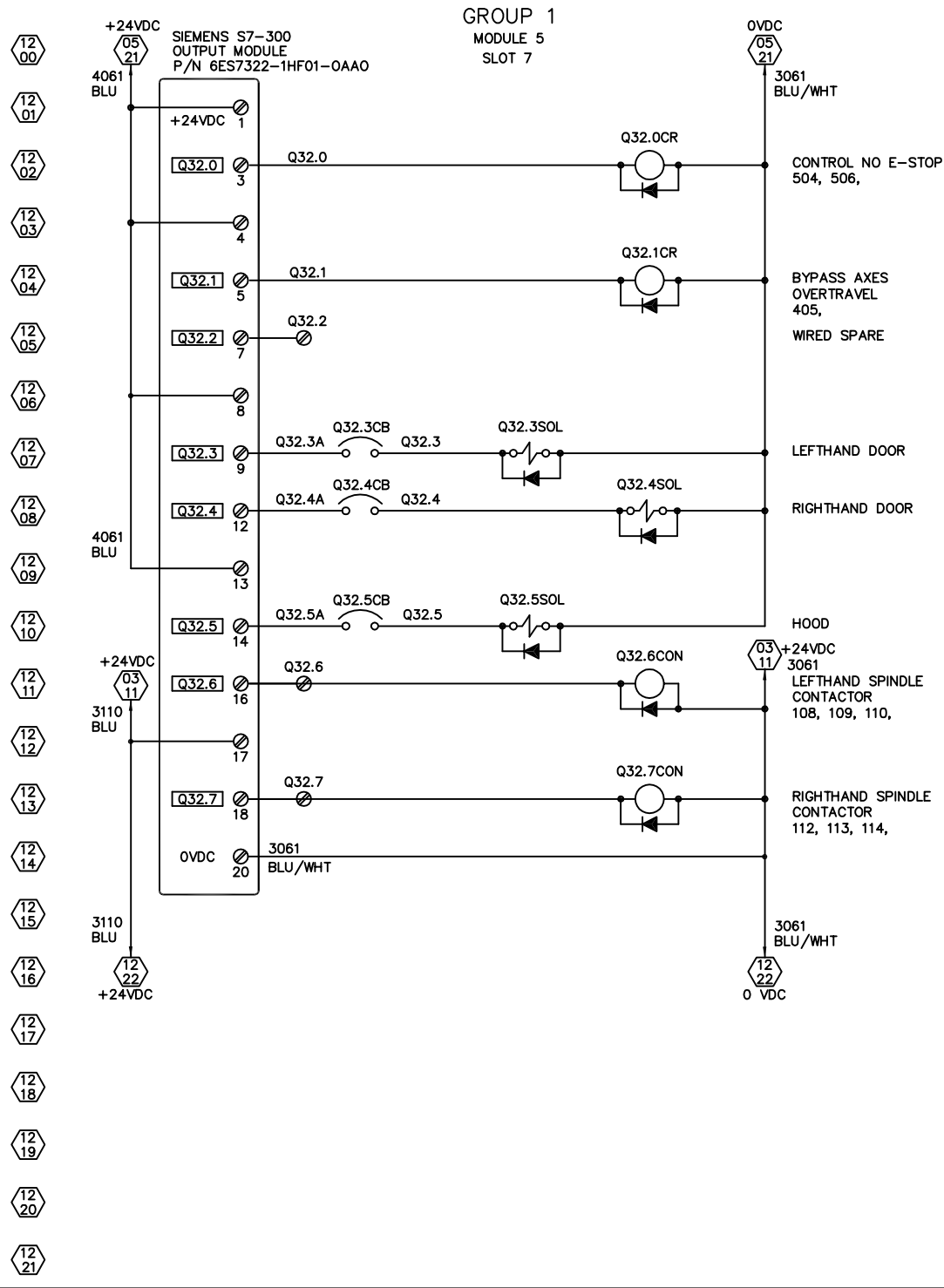


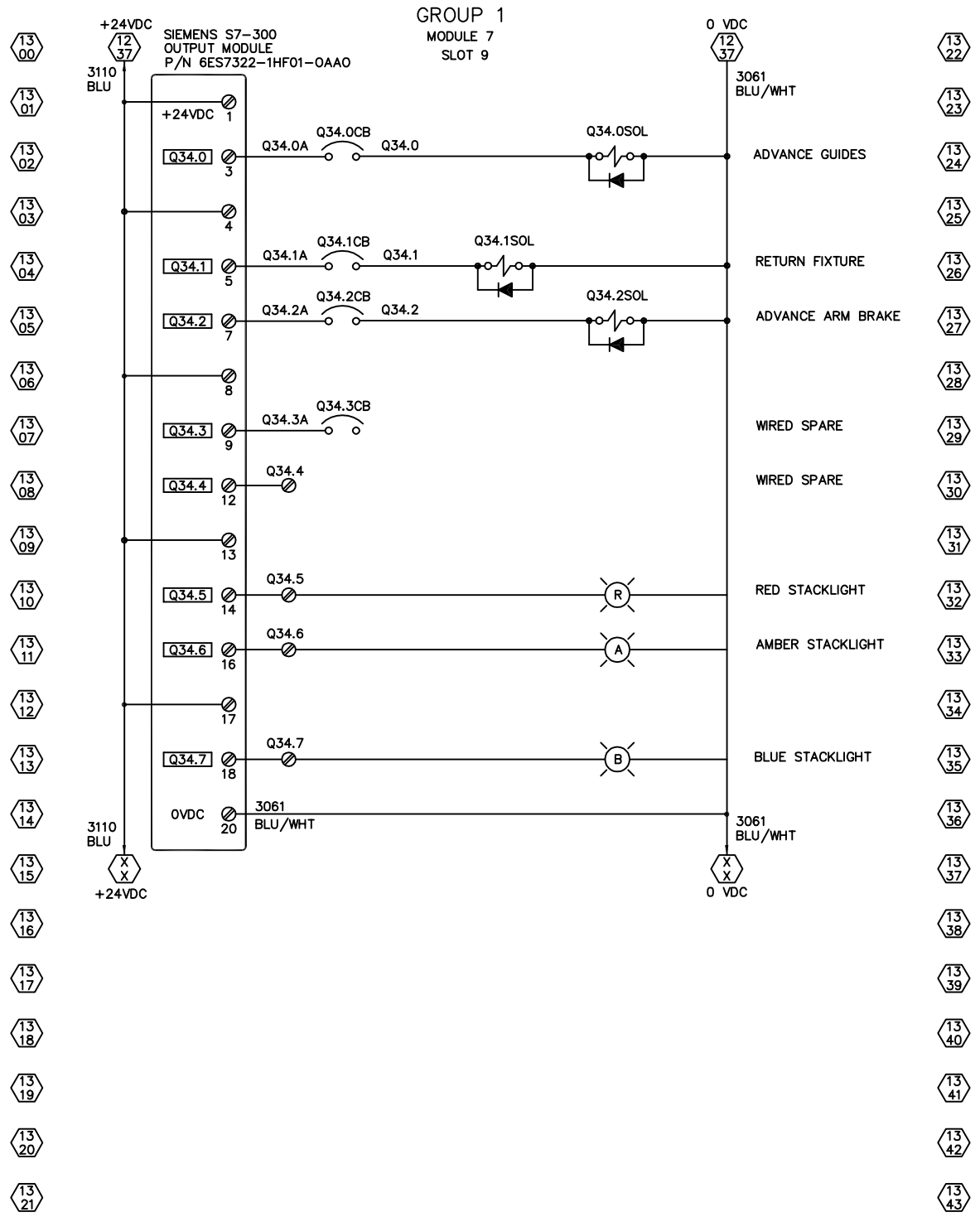
 The Way corporation			
DESCRIPTION			
840D X1 & X2 AXIS SERVO AMPLIFIERS			
DATE 6/2008	SCALE	JOB NO. SAMPLE	
OWN BY WAY CORP.		SHEET 8 OF	

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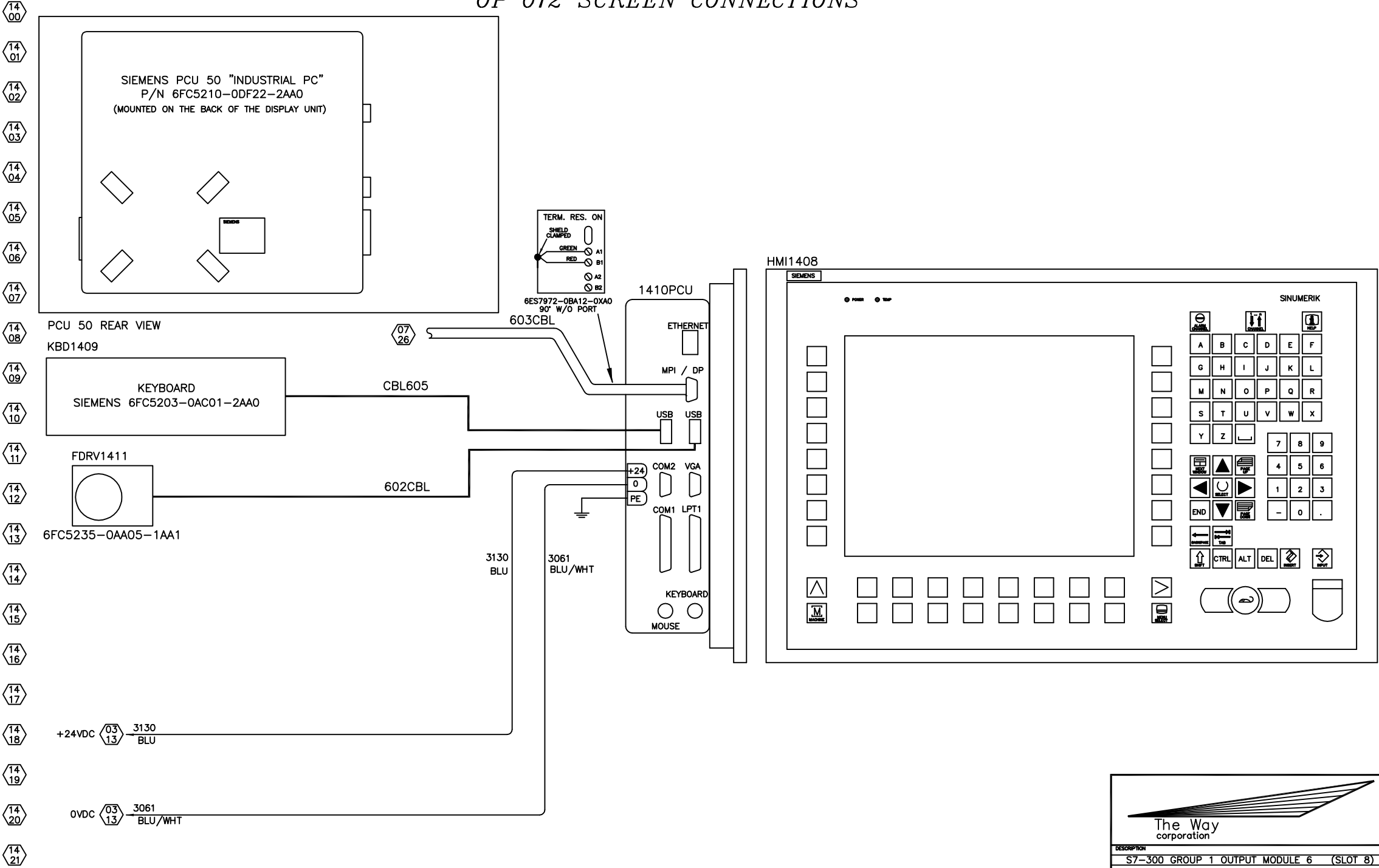






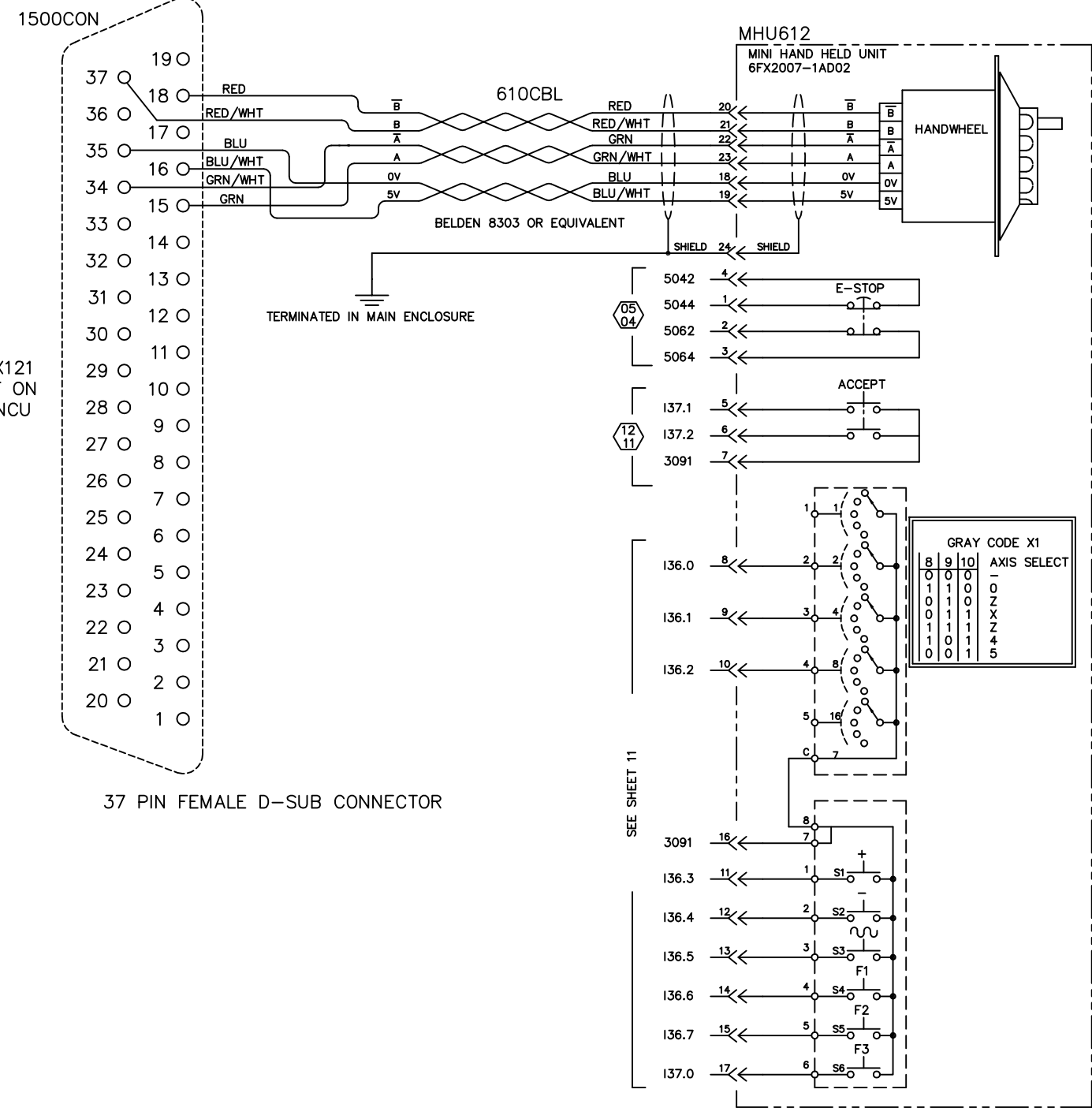


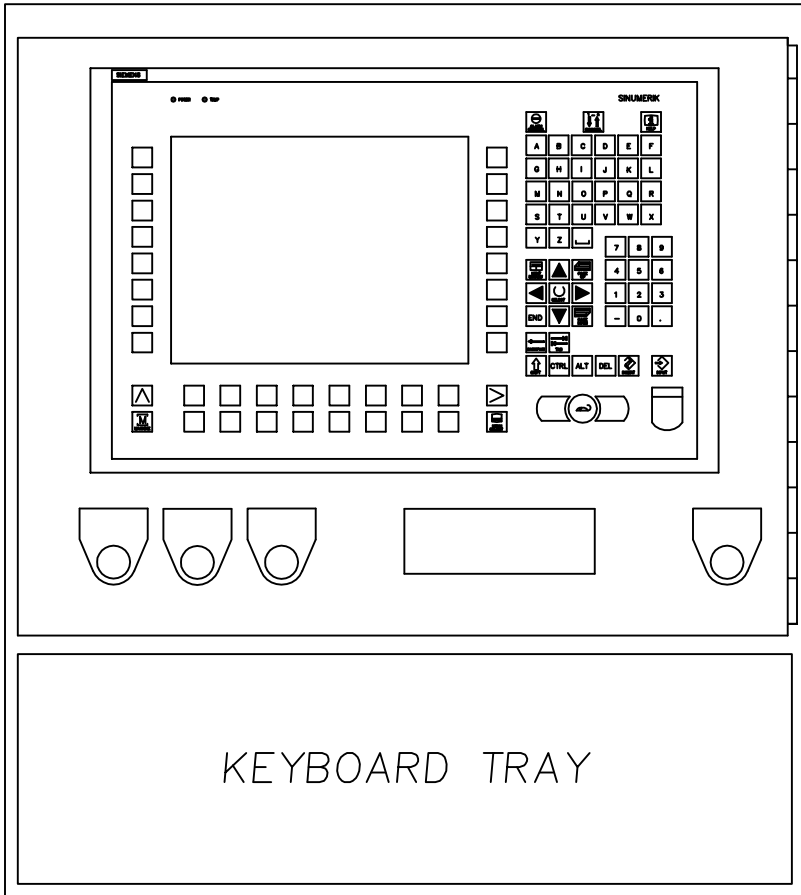
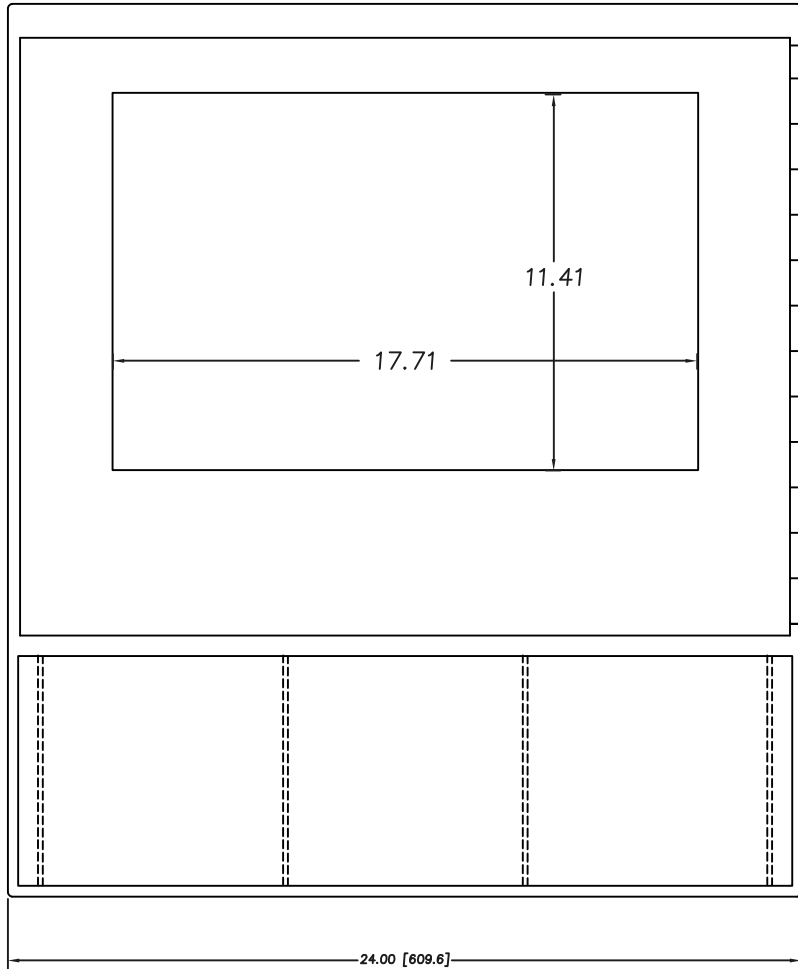
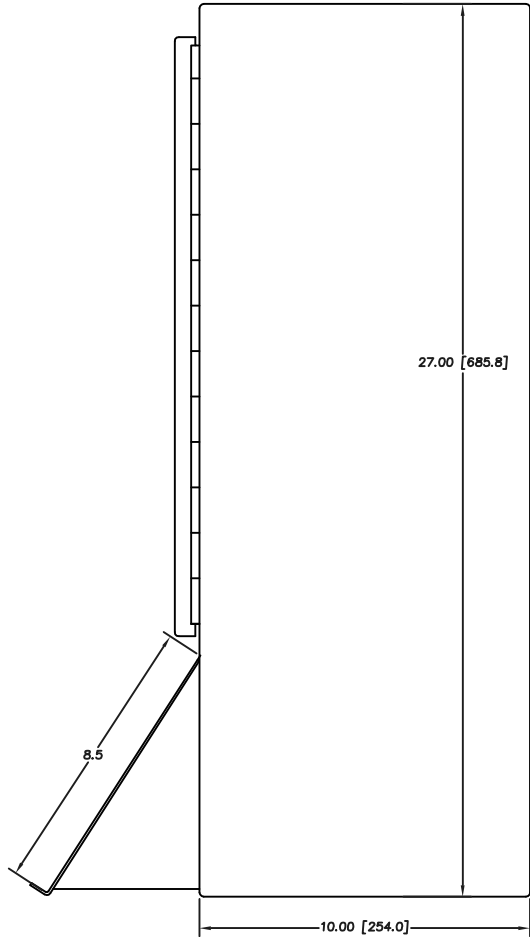
OP 012 SCREEN CONNECTIONS



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TO X121
PORT ON
725NCU



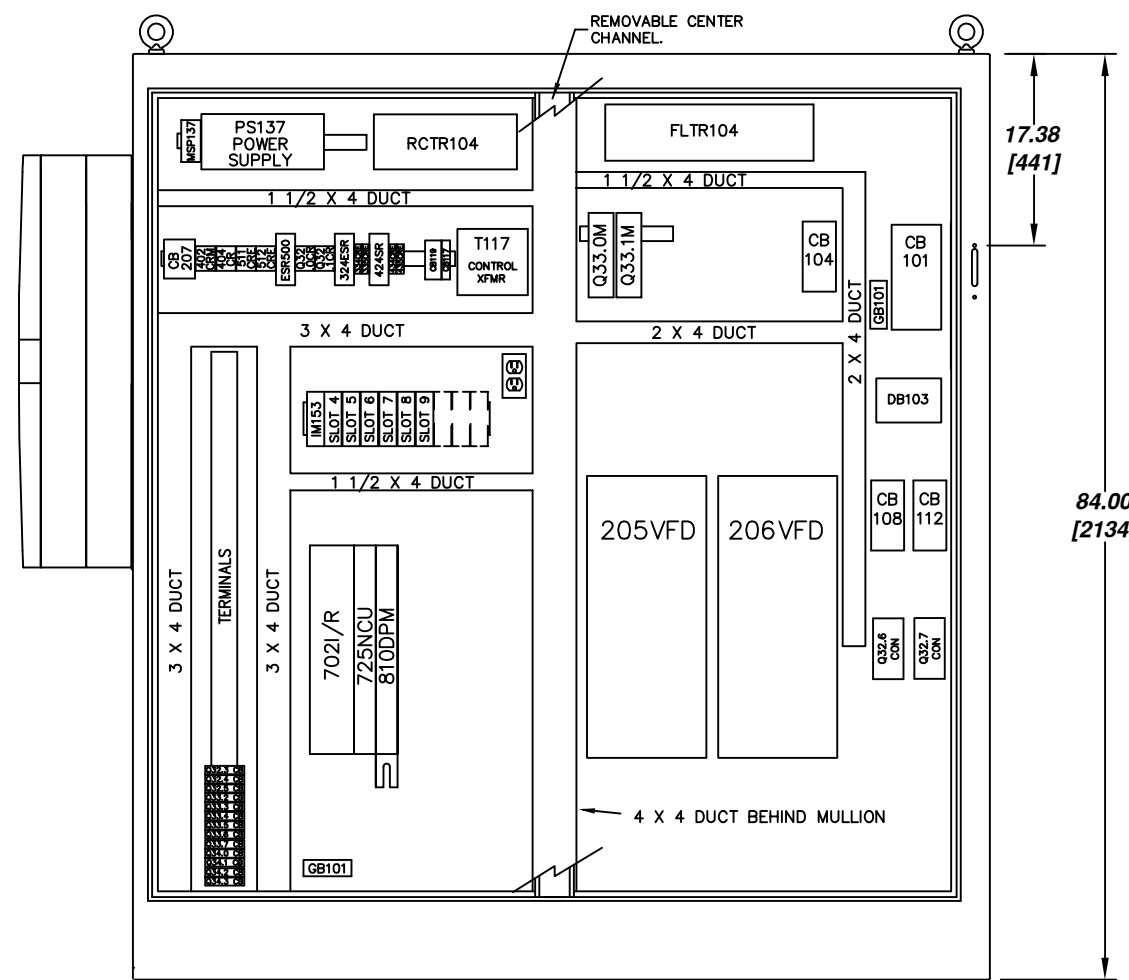
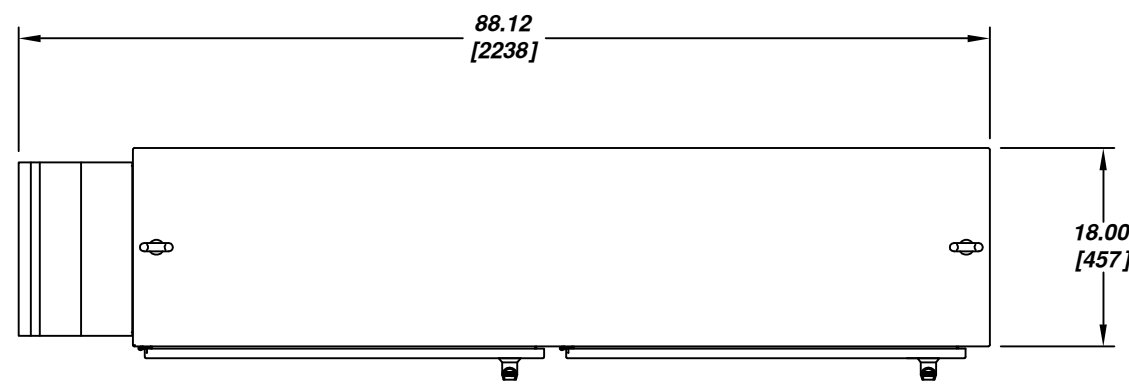
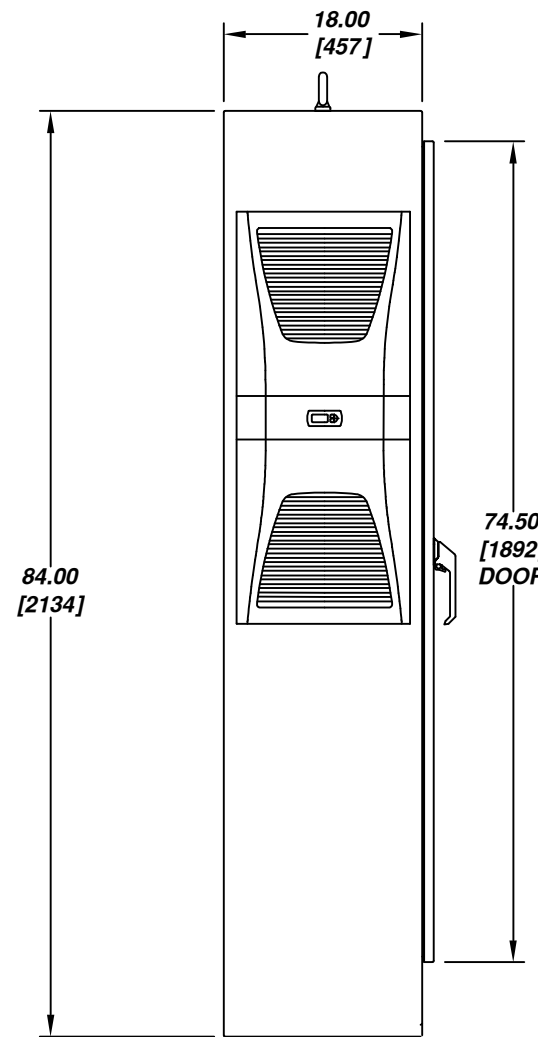


CONSTRUCTION NOTES
NEMA 12 RATING
NO MOUNTING TABS
DOOR HINGED ON THE RIGHT
STANDARD GRAY PAINT
CUT OUTS AS SHOWN
OTHER COMPONENT HOLES BY WAY CORP.



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DESCRIPTION		
OPERATORS CONSOLE ENCLOSURE ASSEMBLY		
DATE 6/2008	SCALE	JOB NO. SAMPLE
OWN BY WAY CORP.	SHEET 16 OF	



BACKPLATE LAYOUT
 PANEL SIZE 72" HIGH x 72" WIDE
 SAGINAW CONTROL & ENG'G NO. SCE-72P72
 SAGINAW CONTROL & ENG'G ENCLOSURE NO. SCE-84XM7818



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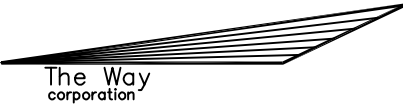
DESCRIPTION		
MAIN PANEL LAYOUT		
DATE 6/2008	SCALE	JOB NO. SAMPLE
OWN BY WAY CORP.	SHEET 17 OF	

STOCKLIST

I/D	QTY	MANUFACTURER	DESCRIPTION	CATALOG NUMBER
	1	SAGINAW CONTROL & ENGINEERING	2 DOOR NEMA 12 ENCLOSURE W / BACKPLATE	SCE-84XM7818
101GB	1	BURNDY	GROUND LUG	KA25
101GB	1	NSI	GROUND BUS	1030M
CB101	1	SIEMENS	250 AMP 3 POLE 600 VOLT CIRCUIT BREAKER W/ LUGS	FXD63B250L
CB101	1	SIEMENS	DISCONNECT OPERATOR & CABLE ASSEMBLY	FHOF036
CB101	1	SIEMENS	AUXILIARY SWITCH FOR MAIN DISCONNECT	HAS1
DB103	1	MARATHON	3 POLE 600 VOLT DISTRIBUTION BLOCK	1433551
DB103	1	MARATHON	DISTRIBUTION BLOCK COVER	CC1433
CB104	1	SIEMENS	35 AMP 3 POLE 600 VOLT CIRCUIT BREAKER W/LUGS	ED63B035L
FLTR104	1	SIEMENS	16KW LINE FILTER	6SL3000-0BE21-6AA0
RCTR104	1	SIEMENS	16KW LINE REACTOR	6SN11110AA00-0BA1
CB108	1	SIEMENS	125 AMP 3 POLE 600 VOLT CIRCUIT BREAKER W/LUGS	ED63B125L
M109	1	SIEMENS	50 HP, 1500 RPM, 225S FR, 400 V- 3 PH- 50 HZ MOTOR	1LG6220-4AA61
CB112	1	SIEMENS	125 AMP 3 POLE 600 VOLT CIRCUIT BREAKER W/LUGS	ED63B125L
M113	1	SIEMENS	50 HP, 1500 RPM, 225S FR, 400 V- 3 PH- 50 HZ MOTOR	1LG6220-4AA61
CB119	1	SIEMENS	2 AMP 2 POLE 480 VOLT D CURVE CIRCUIT BREAKER	5SX2202-8
CB117	1	SIEMENS	3 AMP 1 POLE 480 VOLT C CURVE CIRCUIT BREAKER	5SX2103-7
T117	1	DONGAN	750 VA TRANSFORMER 400 V PRI/ 120-230 SEC	ES-10190.376
REC118	1	HUBBELL	DUPLEX OUTLET	CR5262
REC118	1	APPLETON	HANDY BOX	4CS-1/2
REC118	1	APPLETON	DUPLEX OUTLET COVER	2510
CB131	1	SIEMENS	10 AMP 3 POLE 480 VOLT D CURVE CIRCUIT BREAKER	5SX2310-8
AC132	1	RITTAL	400 VOLT 3 PHASE 50 HZ 8000 BTU	3328140
MSP137	1	SIEMENS	2.2 - 3.2 MOTOR PROTECTOR & MANUAL STARTER	3RV1021-1DA10
PS137	1	SIEMENS	400 VOLT 3 PHASE / 24VDC-20 AMP POWER SUPPLY	6EP1436-3BA00
205VFD	1	SIEMENS	37 KVA VARIABLE FREQUENCY MOTOR DRIVE	6SE6440-2AD33-7EA
205VFD	1	SIEMENS	BASIC OPERATOR PANEL	6SE6400-0BP00-0AA0
205VFD	1	SIEMENS	PROFIBUS CONNECTOR W/O PORT 90 DEG.	6ES7972--0BA12-0XA0
205VFD	1	SIEMENS	PROFIBUS COMMUNICATION MODULE	6SE6400-1PB00-0AA0
206VFD	1	SIEMENS	37 KVA VARIABLE FREQUENCY MOTOR DRIVE	6SE6440-2AD33-7EA
206VFD	1	SIEMENS	BASIC OPERATOR PANEL	6SE6400-0BP00-0AA0
206VFD	1	SIEMENS	PROFIBUS CONNECTOR W/O PORT 90 DEG.	6ES7972--0BA12-0XA0
206VFD	1	SIEMENS	PROFIBUS COMMUNICATION MODULE	6SE6400-1PB00-0AA0
CB306	1	SIEMENS	4 CIRCUIT BREAKER DIAGNOSTIC MODULE	6EP1961-2BA00
402CRM	1	SIEMENS	4 POLE 4 NO 24VDC COIL RELAY SCREW	3RH1140-1BB40
402APB	1	SIEMENS	RED EXTENDED NON ILLUM METAL	3SB3500-0BB61
402APB	1	SIEMENS	CONTACT BLOCK 1 NC	3SB3400-0C
402BPB	1	SIEMENS	GREEN FLUSH ILLUM METAL	3SB3501-0AB71
402BPB	1	SIEMENS	CONTACT BLOCK 2 NO	3SB3400-0D
402BPB	1	SIEMENS	CONTACT BLOCK 1 NO	3SB3400-0B
404CR	1	SIEMENS	4 POLE 4 NO 24VDC COIL RELAY SCREW	3RH1140-1BB40
500ESR	1	SIEMENS	SIEMENS SAFETY RELAY	3TK2827-1BB40
5041PB	1	SIEMENS	60MM RED MUSHROOM LATCHING OPERATOR	3SB3500-1AF20
5041PB	1	SIEMENS	CONTACT BLOCK 2 NC	3SB3400-0E
511CRE	1	SIEMENS	4 POLE 3 NO 1 NC 24VDC COIL SCREW	3RH1113-1BB40
512CRE	1	SIEMENS	4 POLE 3 NO 1 NC 24VDC COIL SCREW	3RH1113-1BB40
MHU612	1	SIEMENS	MINI HANDHELD CONTROL UNIT	6FX2007-1AD02
SP606	1	SIEMENS	SHORTING PLUG	6FX2006-1BG00
702I/R	1	SIEMENS	16/21 KW INFEED/REGEN MODULE	6SN1145-1BA01-0BA1
716OVM	1	SIEMENS	OVERVOLTAGE MONITOR	6SN1111-0AB00-0AA0
725NCU	1	SIEMENS	NCU BOX TO HOLD PROCESSOR	6FC5247-0AA00-0AA3
725NCU	1	SIEMENS	840DE NCU 561.4, 400MHZ, 64MB	6FC5356-0BB14-0AA0
725NCU	1	SIEMENS	50MM DRIVE INTERFACE CABLE	6SN1161-1CA00-0AA0
725NCU	2	SIEMENS	PROFIBUS CONNECTOR W/ PORT 90 DEG.	6ES7972--0BB12-0XA0
801DPM	1	SIEMENS	25 AMP 2 AXIS POWER MODULE	6SN1123-1AB00-0BA1
803DCM	1	SIEMENS	2 AXIS SERVO CONTROL MODULE	6SN1118-0DK21-0AA1
802CBL	1	SIEMENS	10 M SIGNAL CABLE	6FX8002-2EQ10-1BA0
803CBL	1	SIEMENS	10 M SIGNAL CABLE	6FX8002-2EQ10-1BA0
813CBL	1	SIEMENS	10 M MOTOR POWER CABLE	6FX8002-5CA01-1BA0
TP813	1	SIEMENS	SHIELD TERMINAL LATE	6SN1162-0EA00-0AA0
814CBL	1	SIEMENS	10 M MOTOR POWER CABLE	6FX8002-5CA01-1BA0
815M	1	SIEMENS	3000 RPM 6.4 NM ABSOLUTE ENC W/O BRAKE	1FK7063-5AF71-1EG2
816M	1	SIEMENS	3000 RPM 6.4 NM ABSOLUTE ENC W/O BRAKE	1FK7063-5AF71-1EG2
902PLC	1	SIEMENS	S7-300 I/O MOUNTING RAIL 19"	6ES7390-1AE80-0AA0
902PLC	1	SIEMENS	I/O INTERFACE MODULE	6ES7153-1AA03-0XB0
902PLC	1	SIEMENS	PROFIBUS CONNECTOR W/O PORT 90 DEG.	6ES7972--0BA12-0XA0
MODULE 1	1	SIEMENS	16PT DIGITAL INPUT 24VDC	6ES7321-1BH02-0AA0
MODULE 1	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0
MODULE 2	1	SIEMENS	16PT DIGITAL INPUT 24VDC	6ES7321-1BH02-0AA0
MODULE 2	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0
MODULE 3	1	SIEMENS	16PT DIGITAL INPUT 24VDC	6ES7321-1BH02-0AA0
MODULE 3	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0
MODULE 4	1	SIEMENS	16PT DIGITAL INPUT 24VDC	6ES7321-1BH02-0AA0
MODULE 4	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0

STOCKLIST

I/D	QTY	MANUFACTURER	DESCRIPTION	CATALOG NUMBER
MODULE 5	1	SIEMENS	8PT RELAY OUTPUT MODULE	6ES7322-1HF01-0AA0
MODULE 5	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0
MODULE 6	1	SIEMENS	8PT RELAY OUTPUT MODULE	6ES7322-1HF01-0AA0
MODULE 6	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0
MODULE 7	1	SIEMENS	8PT RELAY OUTPUT MODULE	6ES7322-1HF01-0AA0
MODULE 7	1	SIEMENS	20 PIN CONNECTOR	6ES7392-1AJ00-0AA0
I34.0PB	1	SIEMENS	40MM YELLOW MUSHROOM PUSHBUTTON OPERATOR	3SB3500-1GA31
I34.0PB	1	SIEMENS	1 NC CONTACT BLOCK	3SB3400-0C
I34.1PB	1	SIEMENS	40MM BLACK MUSHROOM PUSHBUTTON OPERATOR	3RV1901-1A
I34.1PB	1	SIEMENS	1NO CONTACT BLOCK	3SB3400-0B
I34.2PB	1	SIEMENS	40MM BLACK MUSHROOM PUSHBUTTON OPERATOR	3RV1901-1A
I34.2PB	1	SIEMENS	1NO CONTACT BLOCK	3SB3400-0B
Q32.0CR	1	SIEMENS	4 POLE 4 NO 24VDC COIL RELAY SCREW	3RH1140-1BB40
Q32.1CR	1	SIEMENS	4 POLE 4 NO 24VDC COIL RELAY SCREW	3RH1140-1BB40
Q32.6CON	1	SIEMENS	60HP 80 AMP CONTACTOR 24VDC COIL	3RT1045-1BB40
Q32.7CON	1	SIEMENS	60HP 80 AMP CONTACTOR 24VDC COIL	3RT1045-1BB40
Q33.0M	1	SIEMENS	5.5 - 8 AMP MOTOR PROTECTOR & STARTER 24VDC COIL	3RA1125-1HA23-1BB4
Q33.1M	1	SIEMENS	1.8 - 2.5 AMP MOTOR PROTECTOR & STARTER 24VDC COIL	3RA1125-1CA23-1BB4
Q33.2CB	1	SIEMENS	4 AMP 1 POLE 60 VDC D CURVE CIRCUIT BREAKER	5SX2104-8
Q33.3CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q33.4CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q33.5CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q33.6CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q33.7CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q34.0CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q34.1CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q34.2CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
Q34.3CB	1	SIEMENS	1 AMP 1 POLE 60 VDC C CURVE CIRCUIT BREAKER	5SX2101-7
KBD1409	1	SIEMENS	KEYBOARD W/USB CONNECTION	6FC5203-0AC01-2AA0
1410PCU	1	SIEMENS	PCU50 1.2GHZ, 256MB RAM, 24VDC, WINDOWS XP PRO.	6FC5210-0DF22-2AA0
1410PCU	1	SIEMENS	PCU MOUNTING BRACKETS	6FC5248-0AF20-2AA0
1410PCU	1	SIEMENS	PROFIBUS CONNECTOR W/O PORT 90 DEG.	6ES7972--0BA12-0XA0
FDRV1411	1	SIEMENS	3.5" DISC DRIVE W/USB CONNECTION	6FC5235-0AA05-1AA1
TSC1408	1	SIEMENS	TP 012 TOUCH SCREEN OPERATOR INTERFACE	6FC5203-0AF07-0AA0
1500CON	1	AMP	37 PIN RECEPTACLE D-SUB CONNECTOR	ALLIED NO. 512-0040
1500CON	10	AMP	SOCKET FOR D-SUB CONNECTOR (100 IN PACKAGE)	ALLIED NO. 512-9510
1500CON	1	AMP	37 PIN D-SUB CONNECTOR SHIELDED HOOD	ALLIED NO. 512-8753
	1	PANDUIT	4" X 4" BLACK ROUND HOLE DUCT	D4X4BL6
	2	PANDUIT	3" X 4" BLACK ROUND HOLE DUCT	D3X4BL6
	1	PANDUIT	2" X 4" BLACK ROUND HOLE DUCT	D2X4BL6
	2	PANDUIT	1 1/2" X 4" BLACK ROUND HOLE DUCT	D1.5X4BL6
	1	PANDUIT	4" BLACK COVER	C4BL6
	2	PANDUIT	3" BLACK COVER	C3BL6
	1	PANDUIT	2" BLACK COVER	C2BL6
	2	PANDUIT	1 1/2" BLACK COVER	C1.5BL6
	3	ALLEN-BRADLEY	DIN RAIL	199-DR1
	18	ALLEN-BRADLEY	BLACK TERMINAL (FOR MOTORS)	1492-J10-BL
	200	ALLEN-BRADLEY	BLUE TERMINAL (FOR CONTROL)	1492-J4-B
	10	ALLEN-BRADLEY	GRAY END BARRIER	1492-EBJ3
	16	ALLEN-BRADLEY	END ANCHOR (SCREW TYPE)	1492-EA35
	3	ALLEN-BRADLEY	TERMINAL JUMPER	149-CJ36-10
	6	ALLEN-BRADLEY	LABELS	1492-M6X12
	1	SIEMENS SOFTWARE	840D NCU SYSTEM SOFTWARE 2 AXIS EXPORT VERSION	6FC5250-0DY30-0AH0
	1	SIEMENS SOFTWARE	810D/840D I/O LINK VIA PROFIBUS DP LICENSE	6FC5252-0AD00-0AA0
	1	SIEMENS SOFTWARE	ADDITIONAL AXIS/SPINDLE FOR NCU 561.2 LICENSE	6FC5251-0AD08-0AA0
	1	SIEMENS SOFTWARE	840D TOOLBOX & LICENSE CD-ROM	6FC5252-0AX21-0AB0
	1	SIEMENS SOFTWARE	HMI ADVANCED FOR PCU 50	6FC5253-0BX10-0AG0
	1	SIEMENS SOFTWARE	HMI COPY LICENSE	6FC5253-0AF00-0AA0



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