

PENDANT *AUTOMATION*

CONTROL DRAWINGS FOR:

HOWARD UNIVERSITY TRASH CONVEYOR
CAPITOL HEIGHTS, MD






























ISSUED FOR: INSTALLATION

REV.	DATE:	DRAWN BY:	DESCRIPTION:	REV.	DATE:	DRAWN BY:	DESCRIPTION:
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-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
A	2-1-2018	MJC	AS BUILT	-	-	-	-
0	12-18-2017	MJC	INITIAL RELEASE	-	-	-	-

ABBREVIATIONS

AH AUDIBLE/ALARM HORN	OL OVERLOAD
AR ALTERNATION RELAY	PB PUSHBUTTON
BB BUS BAR	PCS PULL CORD SWITCH
BR BRAKING RESISTOR	PDB POWER DISTRIBUTION BLOCK
C CONTACTOR	PE PHOTO EYE
CB CIRCUIT BREAKER	PLC PROGRAMMABLE LOGIC CONTROLLER
CCT CONTROL CIRCUIT TRANSFORMER	PRS PROXIMITY SWITCH
CF COOLING FAN	PS PRESSURE SWITCH
CR CONTROL RELAY	PSU POWER SUPPLY
CS CURRENT SWITCH	PT PRESSURE TRANSMITTER
CT CURRENT TRANSFORMER	RECEPT RECEPTACLE
DD DIGITAL DISPLAY	RTD RESISTIVE TEMPERATURE DEVICE
DS DISCONNECT SWITCH	RVS SOFT STARTER
ES ETHERNET SWITCH	SCR SILICON CONTROL RECTIFIER
ESR EMERGENCY STOP SENSITIVITY RELAY	SD SERVO DRIVE
FLT LEVEL SWITCH	SOL SOLENOID
FS FLOW SWITCH	SS SELECTOR SWITCH
FU FUSE	TAS TEMPERATURE SWITCH
GL GROUND LUG	TB TERMINAL BLOCK
IFM INTERFACE MODULE	TC THERMOCOUPLE
ISB INTRINSICALLY SAFE BARRIER	TD TIME DELAY RELAY
LCT LOAD CELL TRANSMITTER	TG TOGGLE SWITCH
LF LINE FILTER	TSP TWISTED SHIELDED PAIR
LR LINE REACTOR	TVSS SURGE SUPPRESSOR
LS LEVEL SWITCH	UPS UNINTERRUPTIBLE POWER SUPPLY
LT PILOT LIGHT	US ULTRA SONIC SENSOR
LTR LEVEL TRANSMITTER	VFD VARIABLE FREQUENCY DRIVE
MC MOTOR CONTROLLER	VPN VIRTUAL PRIVATE NETWORK
MCC MOTOR CONTROL CENTER	XFR TRANSFORMER
MMP MANUAL MOTOR PROTECTOR	ZL ZIP LINK MODULE
MS MOTOR STARTER	ZS LIMIT SWITCH


SYMBOLS

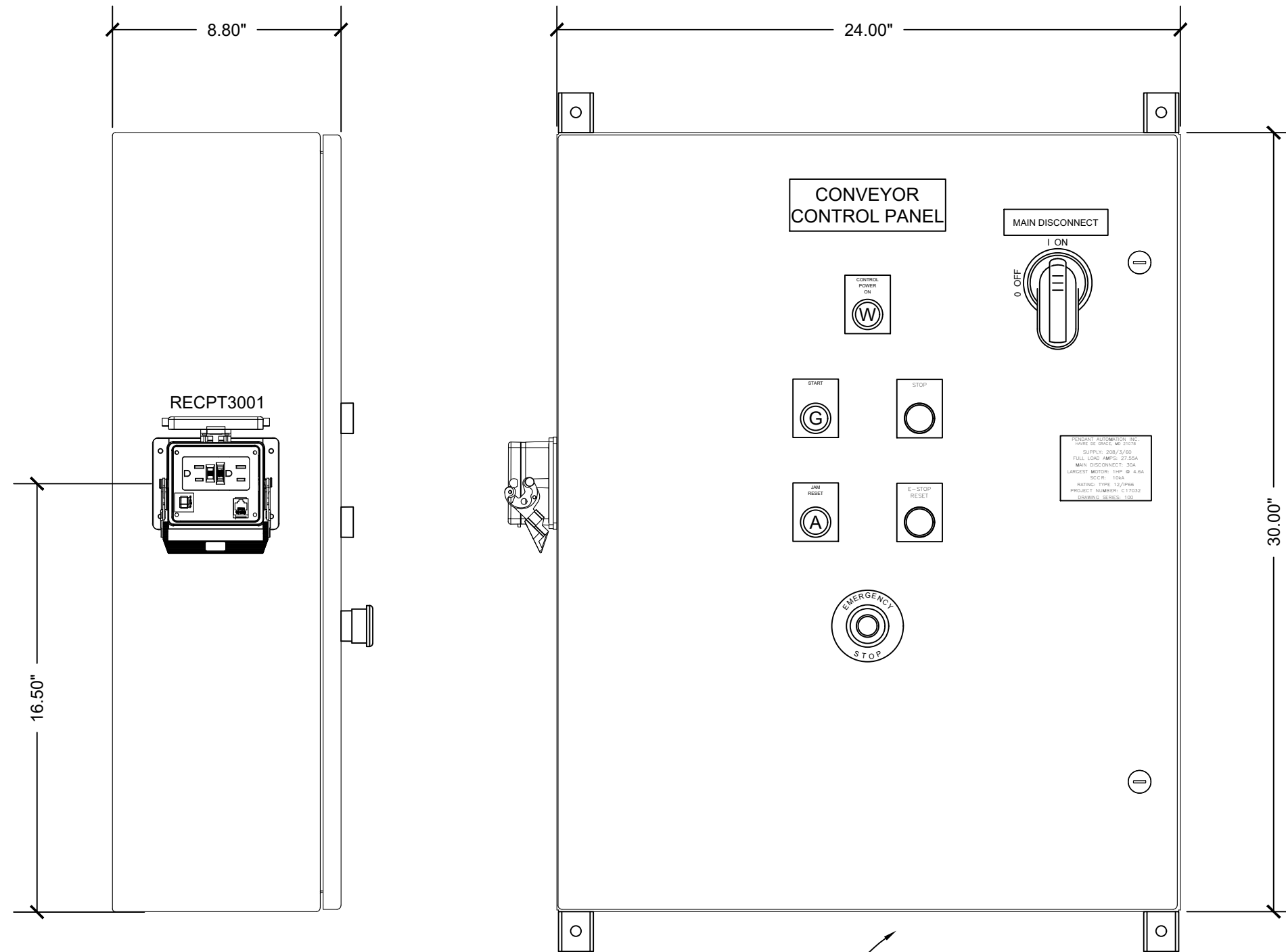
	PUSHBUTTON		LIMIT SWITCH
	MUSHROOMHEAD PUSHBUTTON		PRESSURE SWITCH
	SELECTOR SWITCH		TEMPERATURE SWITCH
	FUSE		FLOW SWITCH
	TRANSFORMER (IRON CORE TYPE)		LEVEL SWITCH
	CIRCUIT BREAKER		PROXIMITY SWITCH
	DISCONNECT SWITCH		TOGGLE SWITCH
	RELAY COIL		SOLENOID VALVE
	MOTOR STARTER COIL		AUDIBLE HORN
	NORMALLY OPEN CONTACTS		CONDUCTIVITY PROBE
	NORMALLY CLOSED CONTACTS		RESISTANCE HEATER
	TIME DELAY CONTACTS		MOTOR
	PILOT LIGHT		THERMAL OVERLOADS
	TERMINAL BLOCK LOCAL		FACTORY WIRING
	TERMINAL BLOCK REMOTE LOCATION		FIELD WIRING
	TERMINAL BLOCK COMPONENT		

DRAWN BY: MJC	DATE: 12.18.17	PENDANT <i>AUTOMATION</i> <small>518 B YOUNG ST. HAVRE DE GRACE, MD 21078</small>	DATE: —
CHECKED BY: RJW	DATE: 01.02.18		DATE: —
APPROVED BY:	DATE:		PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.
TITLE: CONVEYOR CONTROL PANEL SYMBOLS AND ABBREVIATIONS		DRAWING NO. C 17032-100	REV. A
			DATE: [A] 2.1.18 MJC

GENERAL NOTES:

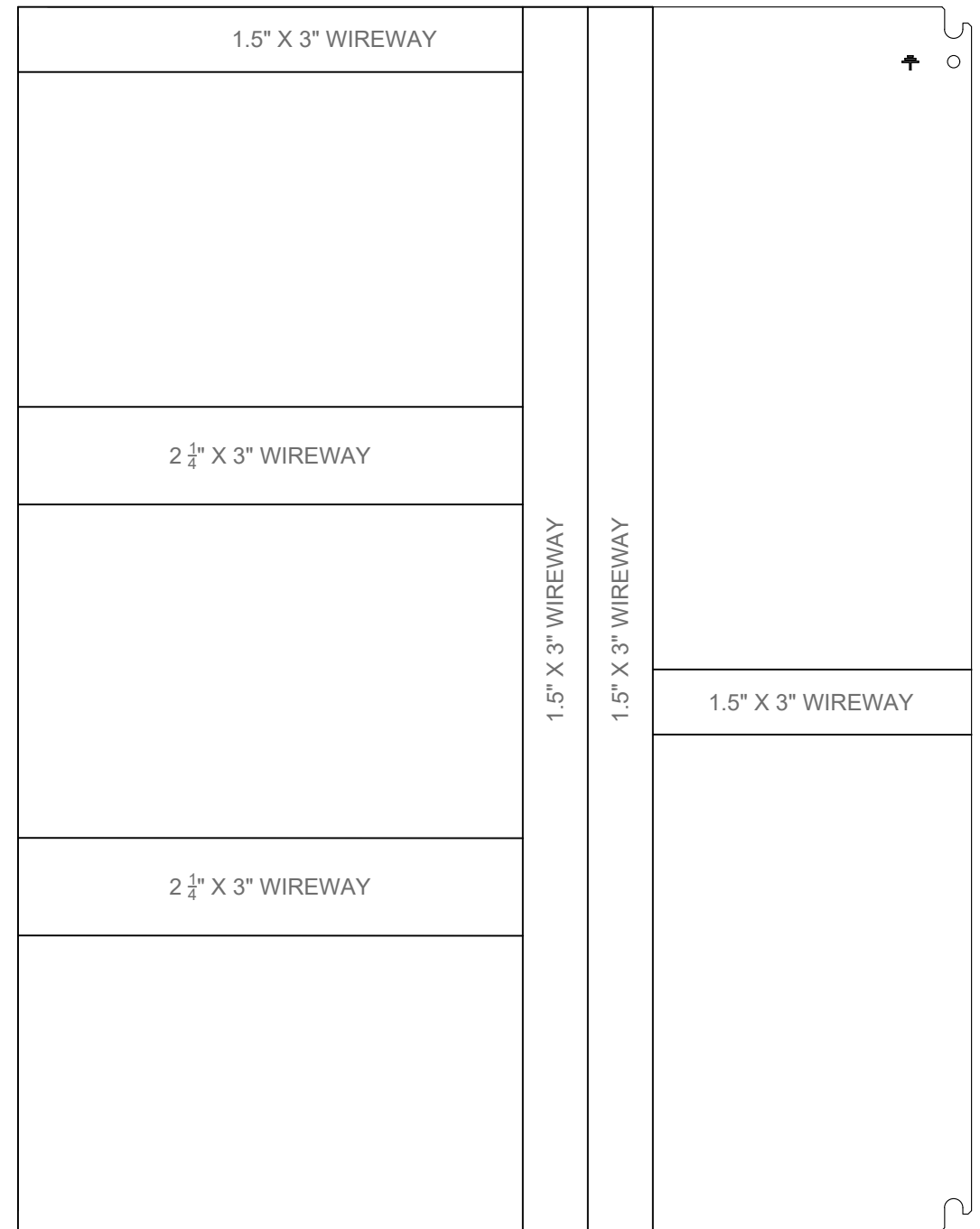
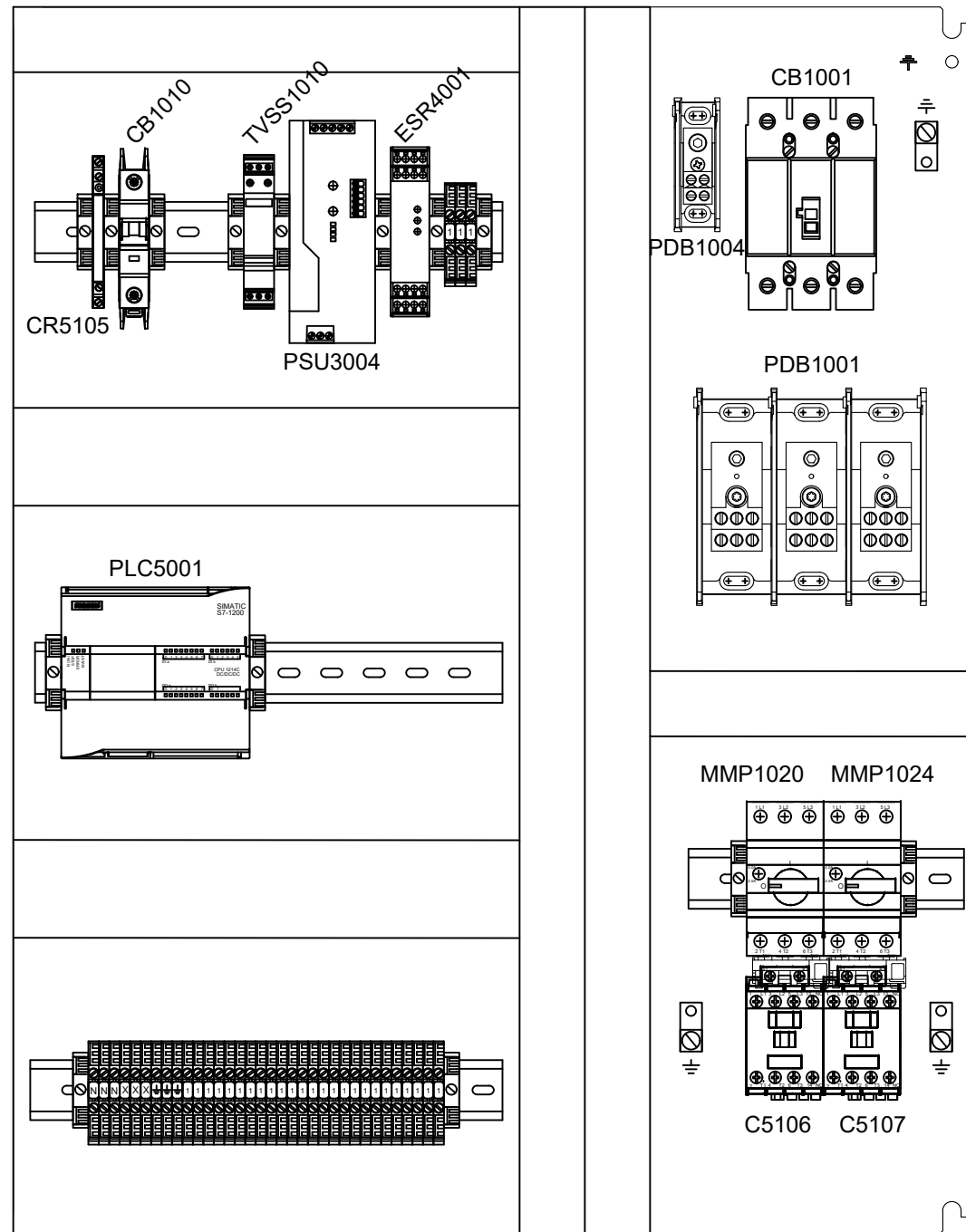
- 1) ALL WIRING SUPPLIED BY PANEL MANUFACTURER TO BE TYPE MTW.
- 2) ALL WIRING INSTALLED BY FIELD ELECTRICIANS TO BE TYPE THHN; UNLESS OTHERWISE NOTED.
- 3) FIELD INSTALLATION TO COMPLY WITH NFPA 70 (NATIONAL ELECTRICAL CODE) AND LOCAL AHJ.
- 4) ALL COMMUNICATIONS CABLES, ETHERNET & SERIAL, SHALL ENTER/EXIT THE ENCLOSURE IN CONDUIT OR BY USING A LISTED PASS-THROUGH MEANS SUPPLIED BY INSTALLER.
- 5) ENCLOSURE TO BE RATED NEMA 12. ELECTRICAL PENETRATIONS SHALL BE RATED NEMA 12 MINIMUM, OR HAVE A LISTING THAT SUPERCEDES NEMA 12.
- 6) CONTROL CIRCUITS, ESPECIALLY ANALOG SIGNALS, SHALL BE RUN IN SEPARATE CONDUITS.
- 7) CAT5e CABLES SHALL BE SHIELDED WHERE POSSIBLE.
- 8) ALL COMMUNICATION CABLES, ETHERNET AND SERIAL, SHALL BE INSTALLED IN CONDUITS SEPARATE FROM NON-COMMUNICATION TYPE WIRING.
- 9) ALL FIELD WIRING TO MATCH WIRING NUMBERING FOUND IN PANEL AT POINT OF FIELD WIRE ORIGINATION.
- 10) ALL FIELD MOTORS, DEVICES, AND OTHER ELECTRICAL APPARATUSES ASSOCIATED WITH THIS PANEL SHALL HAVE NAMEPLATE TAGS MOUNTED/ATTACHED TO THE DEVICE IN THE FIELD.
- 11) PANEL WIRING AS FOLLOWS:
 480 VOLT FEEDERS : BROWN, ORANGE, YELLOW
 120VAC : BLACK
 NEUTRAL : WHITE
 120V CONTROL : RED
 24V DC CONTROL : BLUE
 DC+ : BLUE
 DC- : BLUE W/WHITE STRIPE
 EXTERNAL SOURCE : ORANGE & ORANGE W/ WHITE STRIPE
- 12) FIELD WIRING AS FOLLOWS:
 FEEDERS : BROWN, ORANGE, YELLOW
 120VAC : BLACK
 NEUTRAL : WHITE
 120V CONTROL : RED
 24V DC CONTROL : BLUE
 DC+ : PURPLE
 DC- : GREY
 EXTERNAL SOURCE : ORANGE & ORANGE W/ WHITE STRIPE
- 13) ALL ELECTRICAL EQUIPMENT AND MATERIAL TO BE APPROVED, LISTED, LABELED AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING LABORATORY.

DRAWN BY: MJC	DATE: 12.18.17	<div style="text-align: center;">  <p>518 B YOUNG ST. HAVRE DE GRACE, MD 21078</p> </div>		DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:			PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.
TITLE: CONVEYOR CONTROL PANEL NOTES		DRAWING NO. C 17032-101	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC



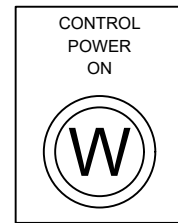
TYPE 12

DRAWN BY: MJC	DATE: 12.18.17	PENDANT AUTOMATION	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL ENCLOSURE DETAILS		DRAWING NO. C 17032-102	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC

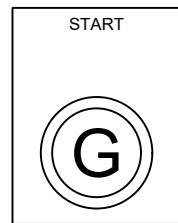


DRAWN BY: MJC	DATE: 12.18.17	PENDANT AUTOMATION	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL INNER PANEL LAYOUT		DRAWING NO. C 17032-103	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC

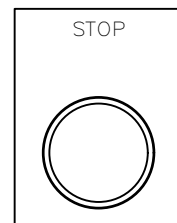
CONVEYOR CONTROL PANEL



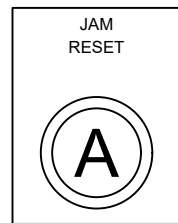
LT4009



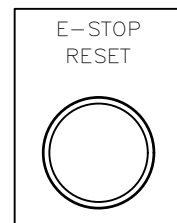
PBLT5009



PB5008



PBLT5010

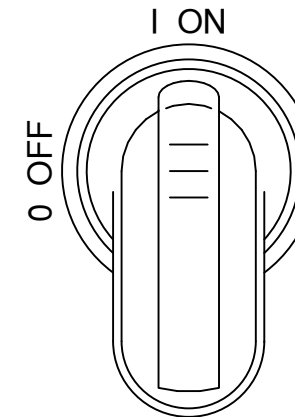


PB4003



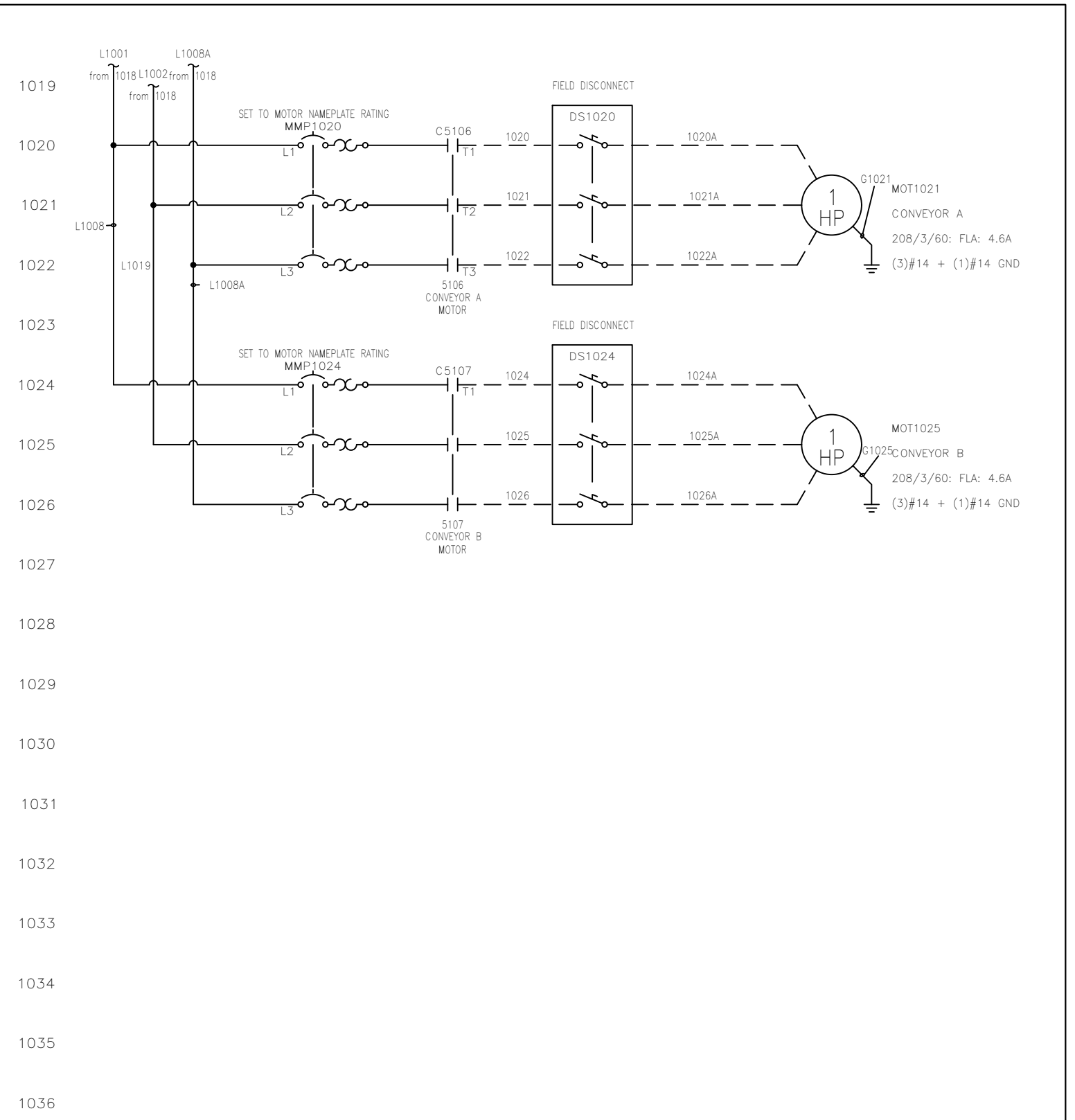
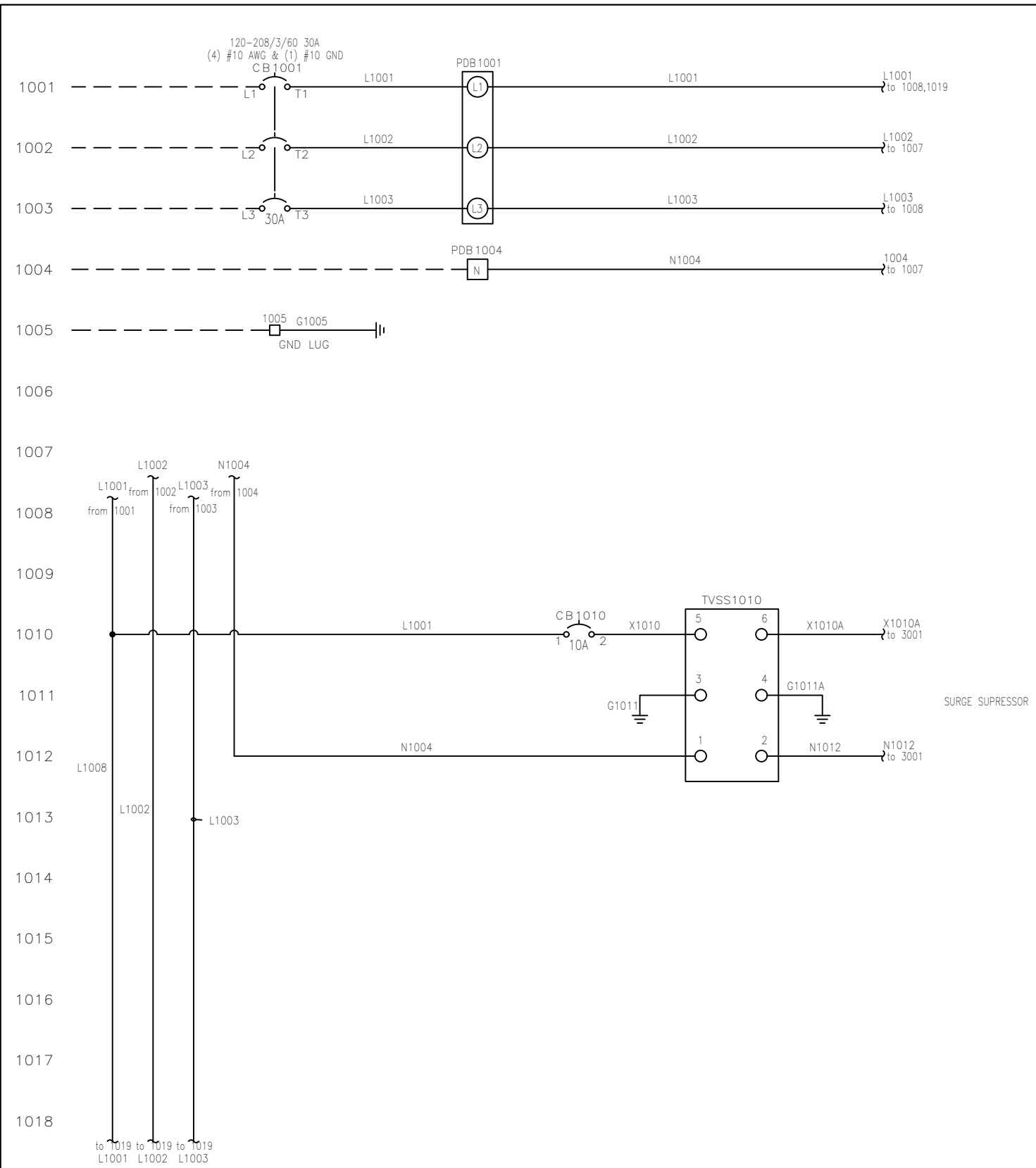
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MAIN DISCONNECT

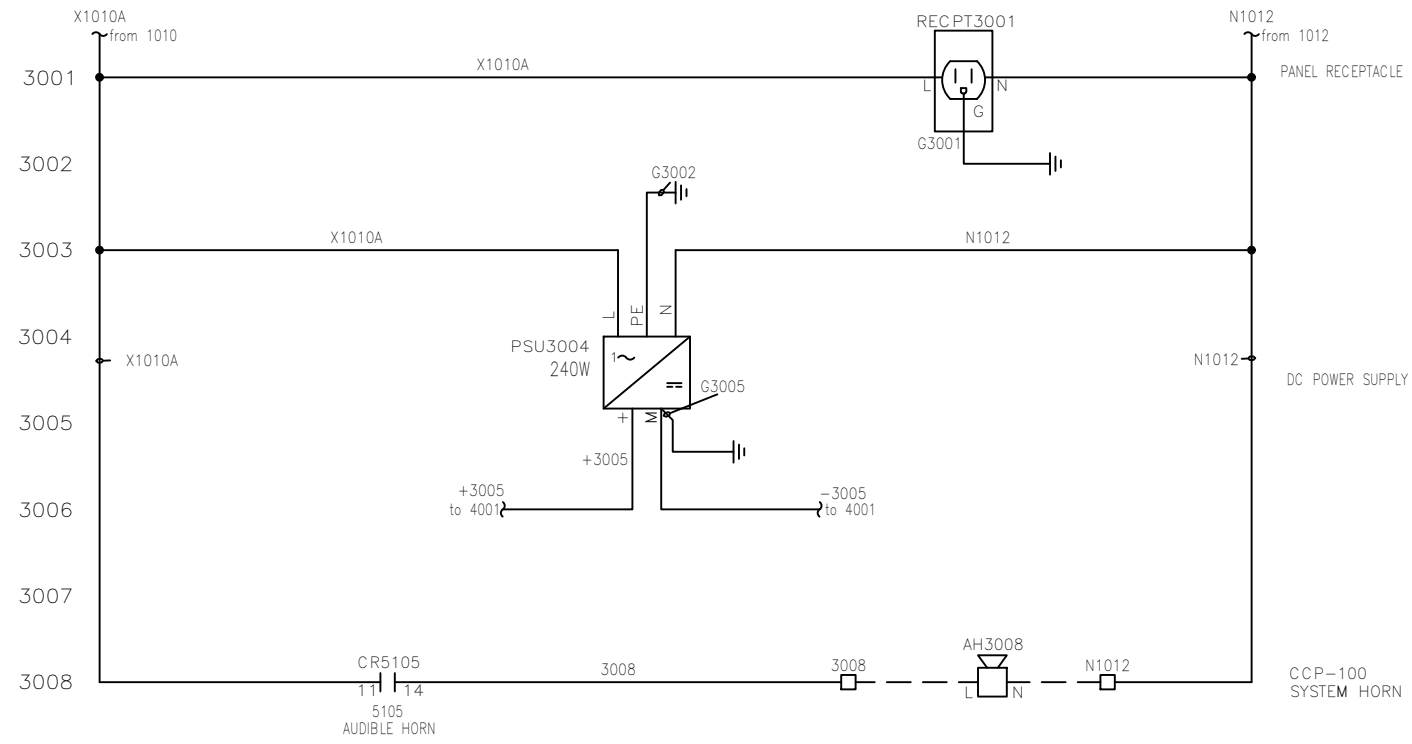


PENDANT AUTOMATION INC.
 HAVRE DE GRACE, MD 21078
 SUPPLY: 208/3/60
 FULL LOAD AMPS: 27.55A
 MAIN DISCONNECT: 30A
 LARGEST MOTOR: 1HP @ 4.6A
 SCCR: 10kA
 RATING: TYPE 12/IP66
 PROJECT NUMBER: C17032
 DRAWING SERIES: 100

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APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032
TITLE: CONVEYOR CONTROL PANEL NAMEPLATE DETAIL		DRAWING NO. C 17032-104	REV. A
			DATE: [A] 2.1.18 MJC

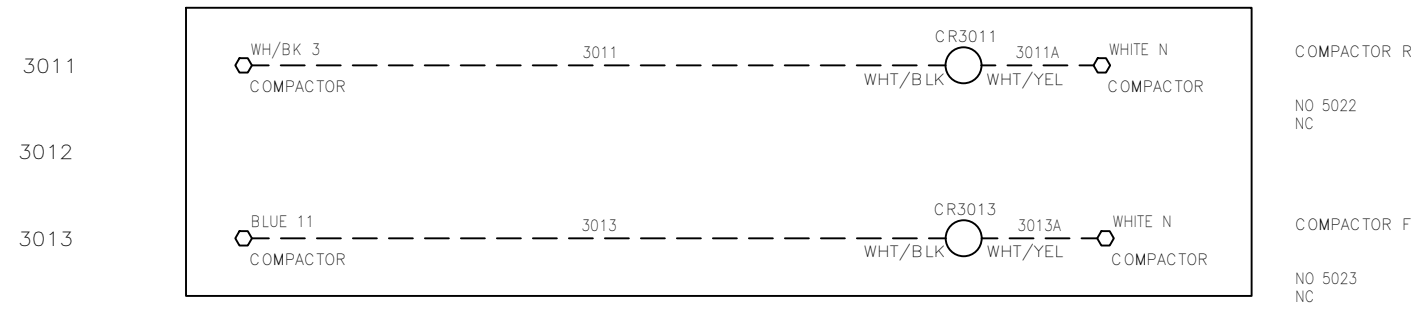


DRAWN BY: MJC	DATE: 12.18.17	PENDANT <i>AUTOMATION</i>	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL 208 POWER LADDER DIAGRAM		DRAWING NO. C 17032-105	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC



3009

3010 COMPACTOR



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3015

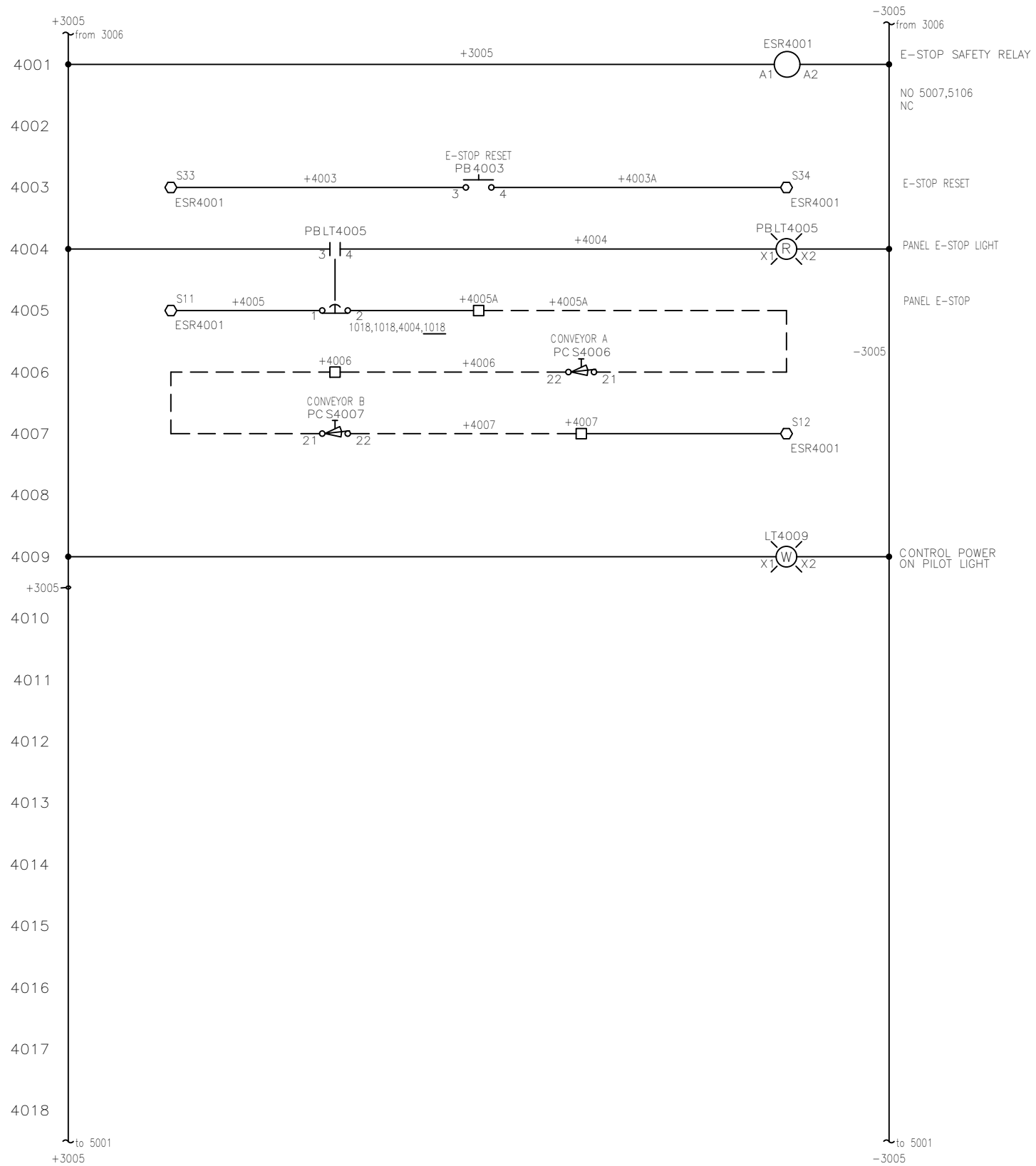
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RESERVED FOR FUTURE USE

DRAWN BY: MJC	DATE: 12.18.17	PENDANT <i>AUTOMATION</i>	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL 120 VAC POWER LADDER DIAGRAM		DRAWING NO. C 17032-106	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC

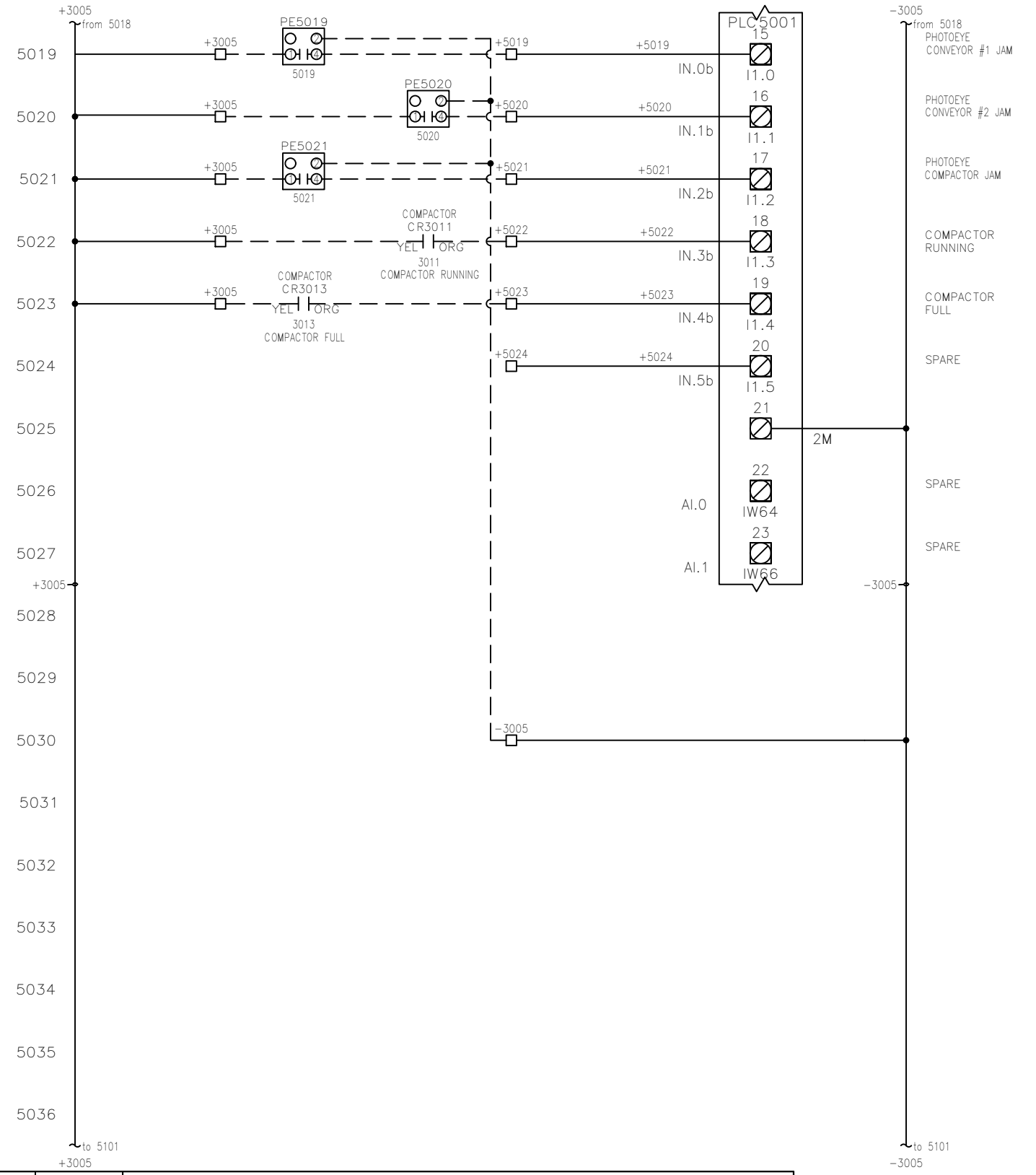
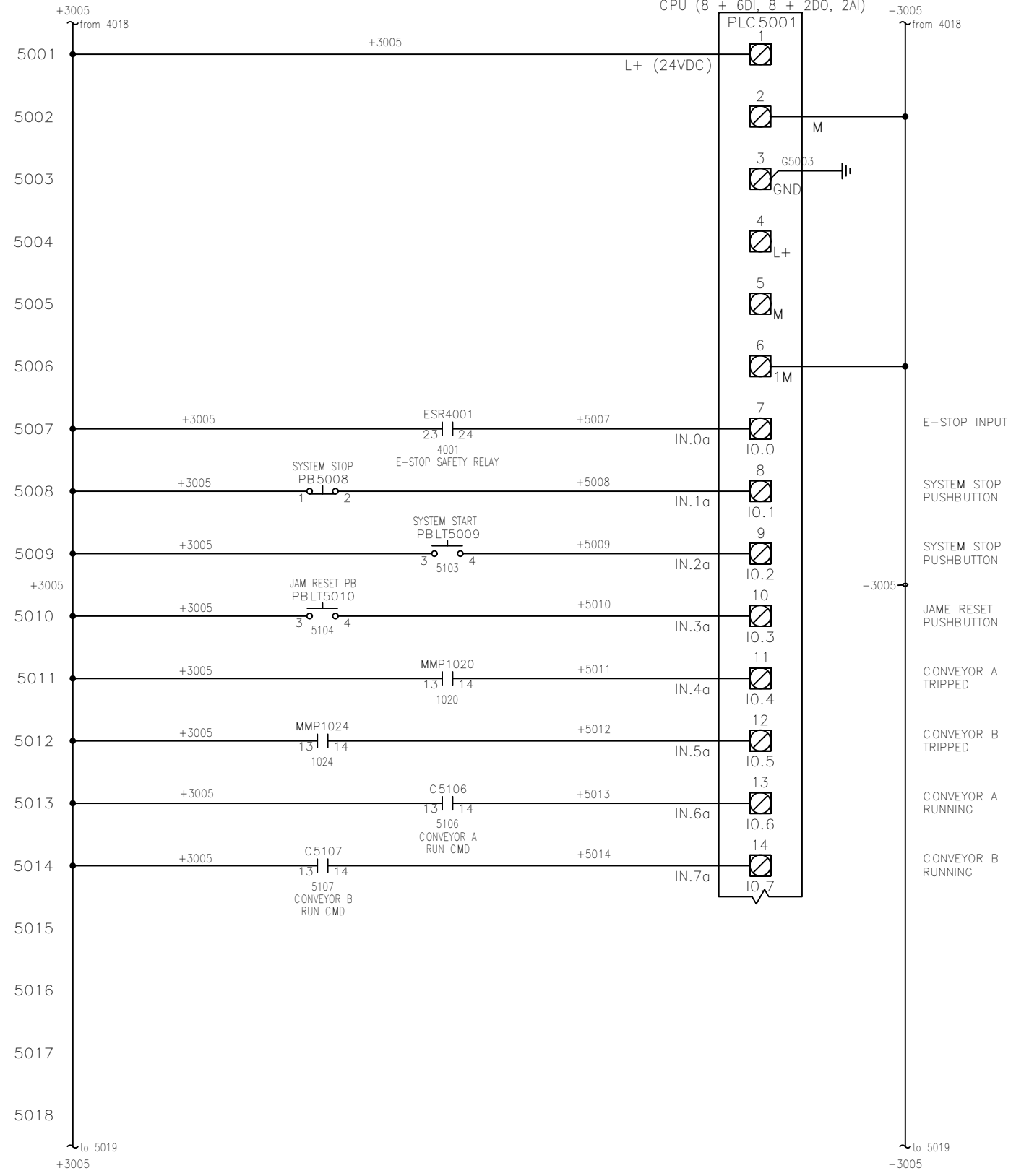


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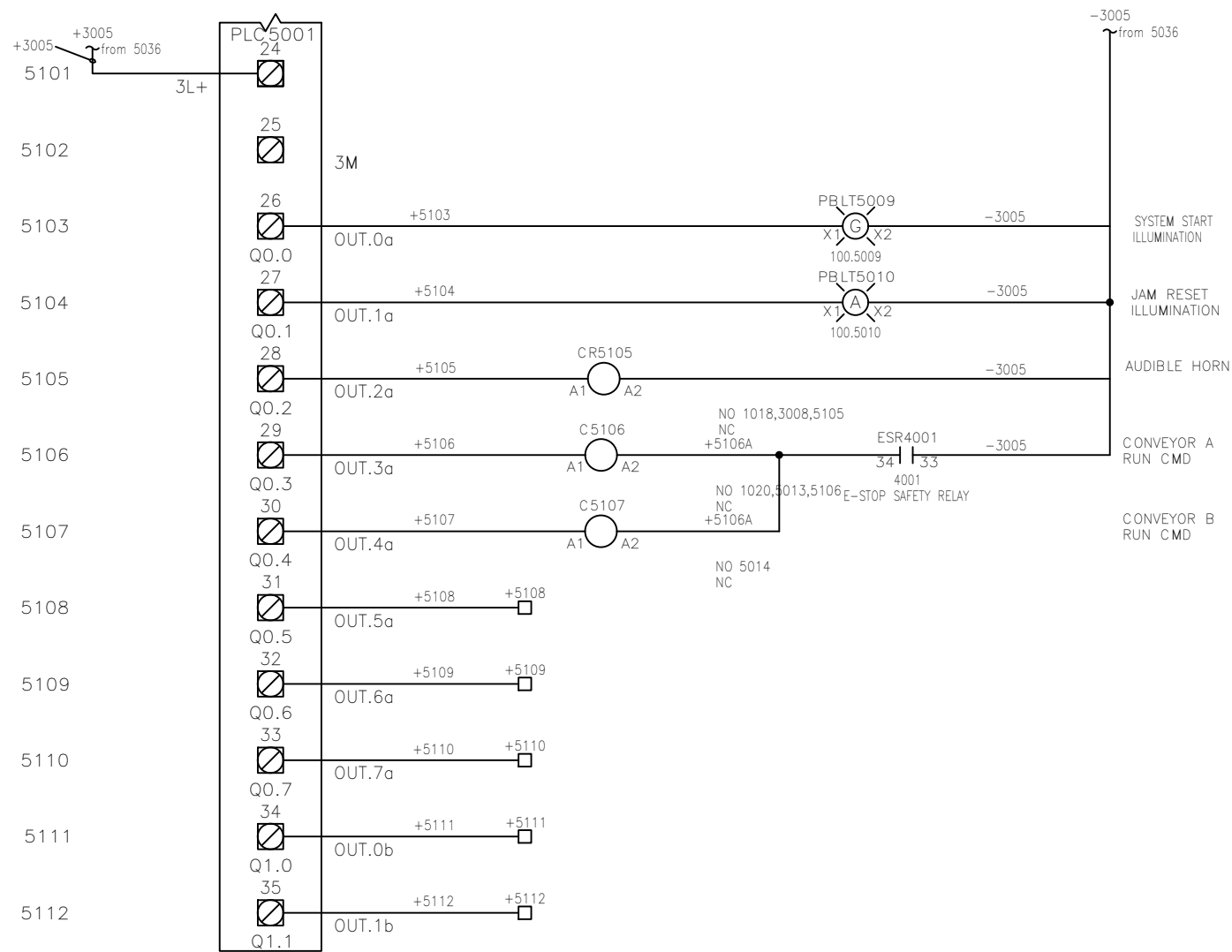
RESERVED FOR FUTURE USE

DRAWN BY: MJC	DATE: 12.18.17	PENDANT AUTOMATION	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL 24 VDC LADDER DIAGRAM		DRAWING NO. C 17032-107	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC

SIEMENS
6ES7 214-1AG31-0XB0
RACK 0 SLOT 1
CPU (8 + 6DI, 8 + 2DO, 2AI)



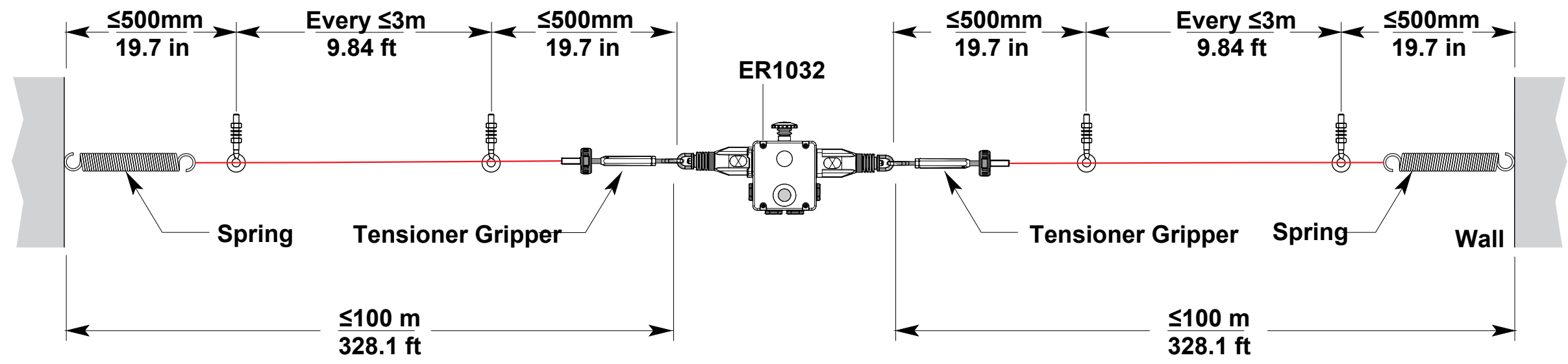
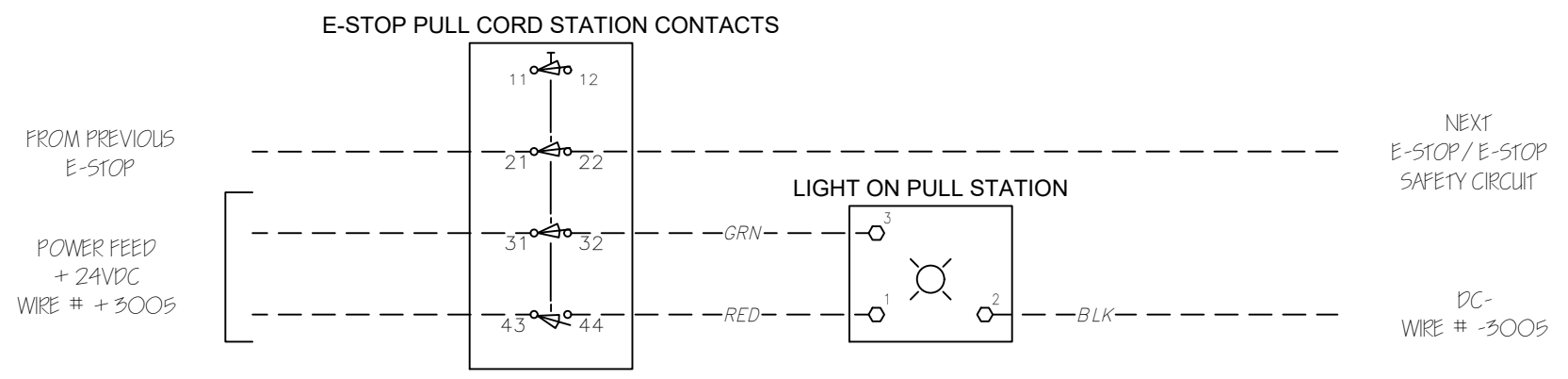
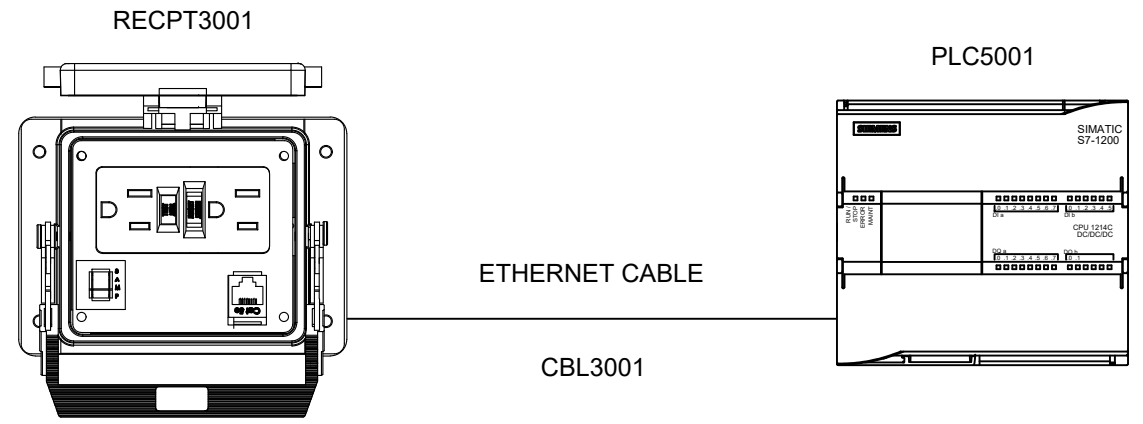
DRAWN BY: MJC	DATE: 12.18.17	PENDANT AUTOMATION	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL PLC5001 INPUTS		DRAWING NO. C 17032-108	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC



- 5119
- 5120
- 5121 SYSTEM START ILLUMINATION
- 5122 JAM RESET ILLUMINATION
- 5123 AUDIBLE HORN
- 5124 CONVEYOR A RUN CMD
- 5125 CONVEYOR B RUN CMD
- 5126
- 5127
- 5128
- 5129
- 5130
- 5131
- 5132
- 5133
- 5134
- 5135
- 5136

RESERVED FOR FUTURE USE

DRAWN BY:	DATE:	<h1 style="margin: 0;">PENDANT</h1> <h2 style="margin: 0;">AUTOMATION</h2> <p style="font-size: 8px; margin: 0;">518 B YOUNG ST. HAVRE DE GRACE, MD 21078</p>	DATE: —
CHECKED BY:	DATE:		DATE: —
APPROVED BY:	DATE:		DATE: —
		PROJECT NAME:	PROJECT NO.
		HOWARD UNIVERSITY TRASH CONV.	C 17032
TITLE: CONVEYOR CONTROL PANEL PLC5001 OUTPUTS		DRAWING NO.:	REV.:
		C 17032-109	A
			DATE: [A] 2.1.18 MJC



DRAWN BY: MJC	DATE: 12.18.17	PENDANT AUTOMATION	518 B YOUNG ST. HAVRE DE GRACE, MD 21078	DATE: —
CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL PCS & NETWORK WIRING		DRAWING NO. C 17032-110	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC

TAGS	QTY	CATALOG	MFG	ASSYCODE
AH3008	1	350-120-30	FEDERAL SIGNAL	
MMP1020 MMP1024	2	140M-C2E-B63	A-B	140M-C-AFA11, 140M-C-PEC23
CB1010	1	FAZ-C10-1-NA-SP	EATON	
CB1001	1	G3P-030	EATON	GHMVD12B
ENCLOSURE	1	CSD30248	HOFFMAN	CP3024, CMFK
C5106 C5107	2	100-C09UEJ10	A-B	
CR5105	1	700-HLT1Z24	A-B	
CR3011 CR3013	2	RIBU1C	FUNCTIONAL DEVICES	
ESR4001	1	2963802	PHOENIX	
DS1020 DS1024	2	3LD2064-1GP51-0US2	SIEMENS	
RECPT3001	1	ZP-PGA-32-201	ZIPPort	
PDB1001	1	MPDB67113	MERSEN	(3) MPDBC6667
PCS4006 PCS4007	2	44506-7420	STI	(2) 44506-2710
LT4009	1	800FP-P7PN3W	A-B	
PB5008	1	800FP-E4PX01	A-B	
PB4003	1	800FP-F2PX10	A-B	
PBLT5010	1	800FP-LF5PN3WX10	A-B	
PBLT4005	1	800FP-LMT44	A-B	800F-PN3R, 800F-X10, 800F-X01S
PBLT5009	1	800FP-LF3	AB	800F-PN3G, 800F-X10
CABLE	1	NK5EPC3BLY	PANDUIT	
PE BRACKET	3	PEBKT-21-000-21-00	PENDANT	
PENDANT BRACKET	4	2171469-1	PENDANT	
PULLEY	8	2171567-1	PENDANT	
PE5019 PE5020 PE5021	3	42EF-U2KBB-A2	A-B	92-39, 60-2649
PLC5001	1	6ES7 214-1AG31-0XB0	SIEMENS	
PSU3004	1	2904601	PHOENIX	
PDB1004	1	MPDB67110	MERSEN	MPDBC6667
TVSS1010	1	2905228	PHOENIX	

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CHECKED BY: RJW	DATE: 01.02.18			DATE: —
APPROVED BY:	DATE:	PROJECT NAME: HOWARD UNIVERSITY TRASH CONV.	PROJECT NO. C 17032	DATE: —
TITLE: CONVEYOR CONTROL PANEL BILL OF MATERIALS		DRAWING NO. C 17032-111	REV. A	DATE: —
				DATE: [A] 2.1.18 MJC