

US EPA ARCHIVE DOCUMENT

From: [REDACTED]
Sent: Tuesday, January 13, 2015 10:13 AM
To: HRobles@eagle.org; MAhmed@eagle.org
Cc: david.c.o'donnell@uscg.mil; Marine Shop; 'Robert Gamble'
Subject: Carferry S.S. Badger Ash retention Installation Electrical Upgrades

(Message 1 of 2)

Dear Henry & Mohammad,

Please find attached the Electrical drawings for the Combustion Control & Ash Retention Block Diagram for the subject vessels Electrical upgrades.

The drawings noted as "Reference" are being submitted by an accompanying e-mail due to the size of the Zip files. The preparation and submittal of the enclosed Electrical Block Diagram drawings is has been requested to bring all the pieces of the new electrical upgrades together.

I trust this submittal will be satisfactory for review and subsequent approval for the installation which is to be completed by April 2015. Due to the time constraints and necessity for a timely turn around, please do not hesitate to contact Mr. Chuck Cart at lake Michigan Car Ferry, Inc. or myself with any questions or concerns.

Mr. O'Donnell of USCG MSC has been copied on this submittal as it is my understanding each of your offices have been reviewing the referenced drawings for the new installation.

Best regards,

[REDACTED]

[REDACTED]

[REDACTED]

US EPA ARCHIVE DOCUMENT

[REDACTED]

January 13, 2015

ABS Americas – Houston
Ship Systems Group
Engineering Services Department
16855 Northchase Drive
Houston, TX 77060-6008
Attn: Mr. Henry Robles

Subject: Lake Michigan Carferry, Inc (LMC). Vessel: Carferry S.S. Badger
Christy Corporation Hull 370 / O.N. D265156, ABSID 5300348, LMC P.O. 18875

Reference : Ash Retention Installation Electrical Upgrades

Enclosure: (1) [REDACTED] drawing 310-01, Rev. B "Combustion Control
and Ash Retention Block Diagram" (4-Shts)
(2) Ref: [REDACTED] "Motor Interface PLC Wiring" (10-Shts)
(3) Ref: [REDACTED] "VFD Controller Installations" (5 Shts)
(4) Ref: [REDACTED] "353 Controller Logic" (50 Shts)
(5) Ref: [REDACTED] "353 Controller Wiring" (25 Shts)
(6) Ref: [REDACTED] H14789-IB (3 Shts)
(7) Ref: [REDACTED] H14789-IA & IC

Mr. Robles,

On behalf of the subject vessel owner, Lake Michigan Carferry Service, Inc. we request your review and subsequent approval of the attached drawings provided as enclosure (1). The reference drawings have been previously submitted for review and are attached for reference.

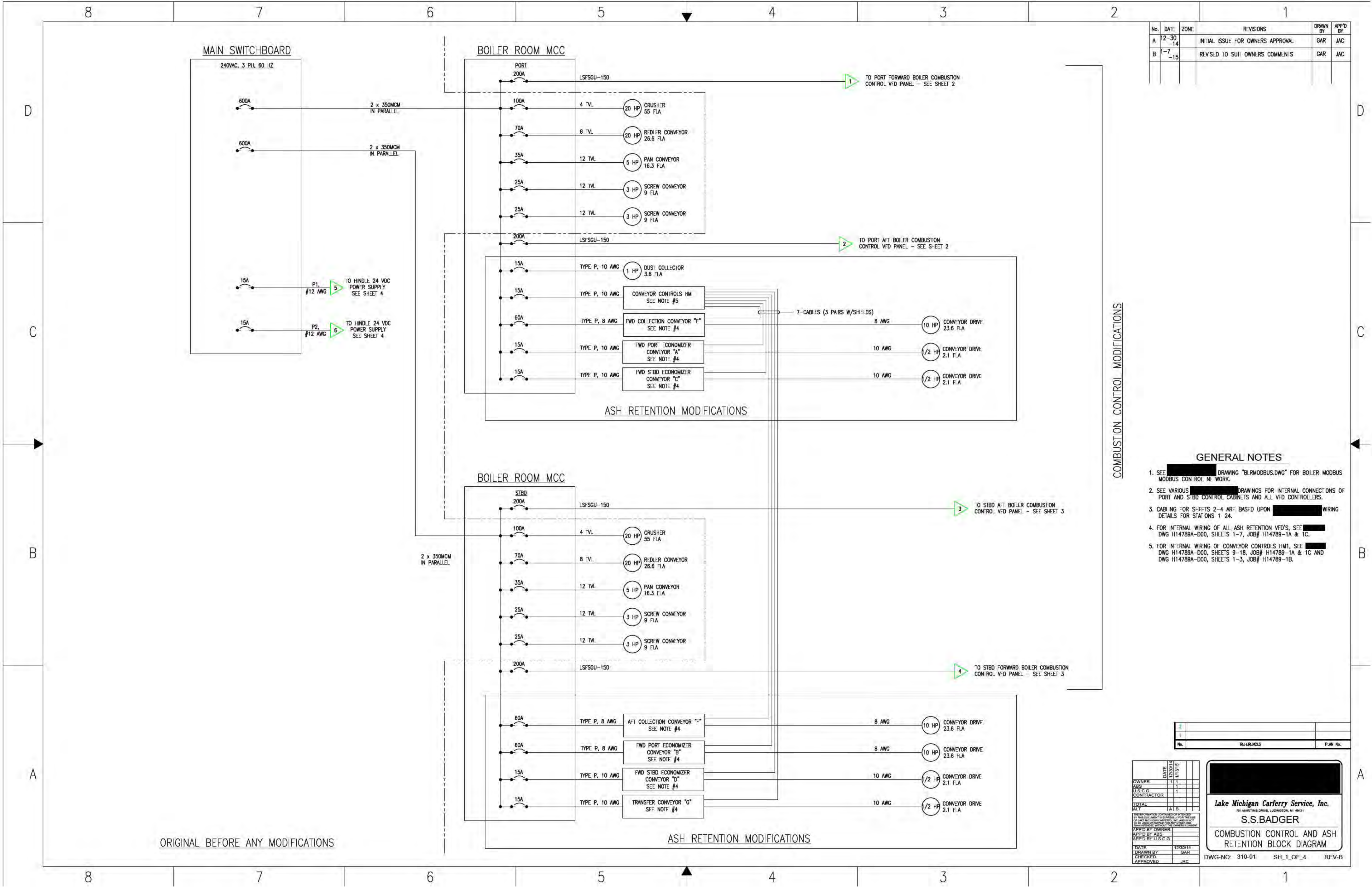
As previously noted by the [REDACTED] submittals, this installation is being conducted this winter and timeliness of review and approval are of the utmost importance.

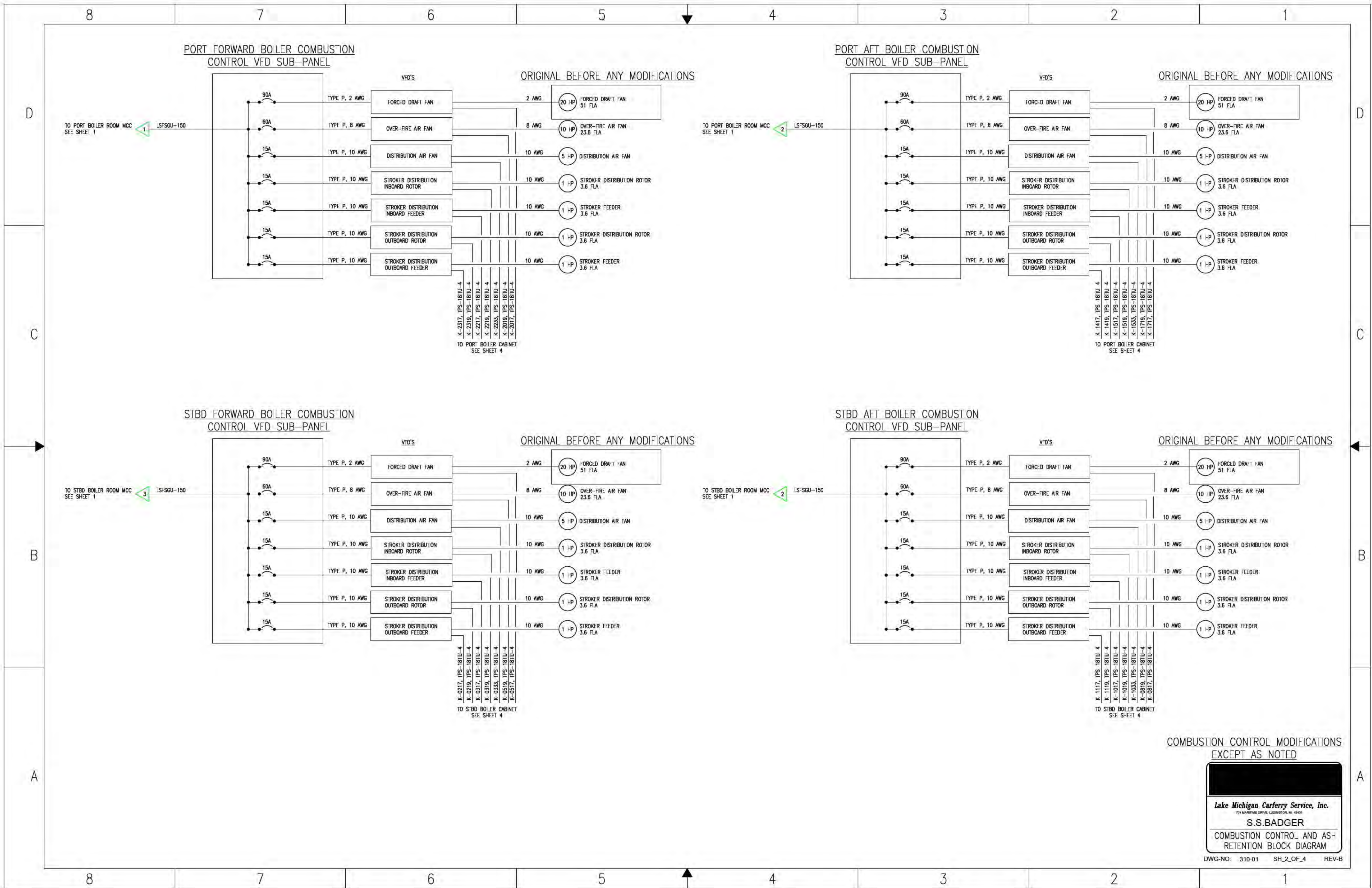
Fees for review are to be forwarded to Lake Michigan Carferry, Inc. Thank you in advance for your consideration and please contact me if you have any questions.

Sincerely,

[REDACTED]
Marine Surveyor / Technical Representative

[REDACTED]



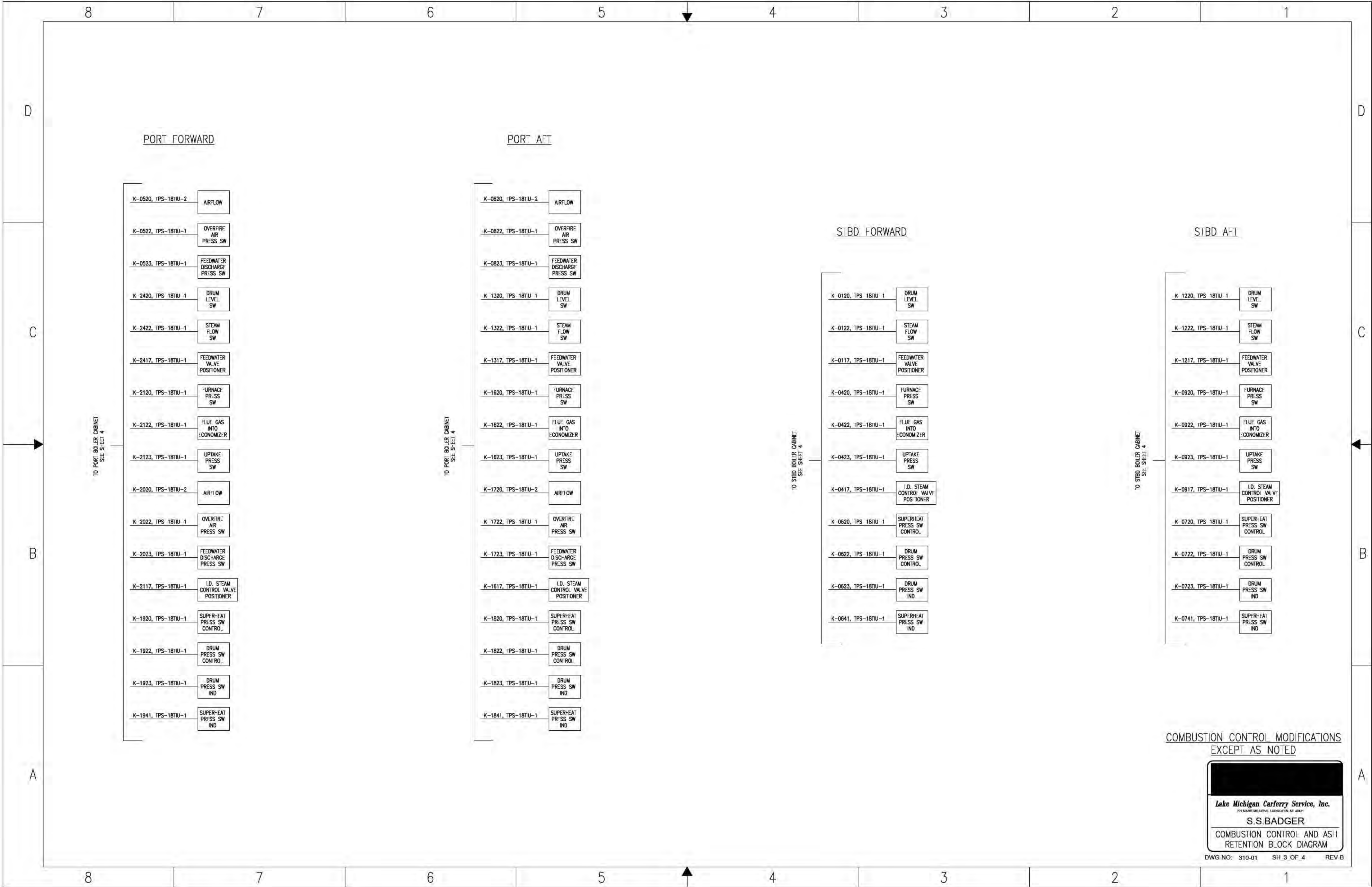


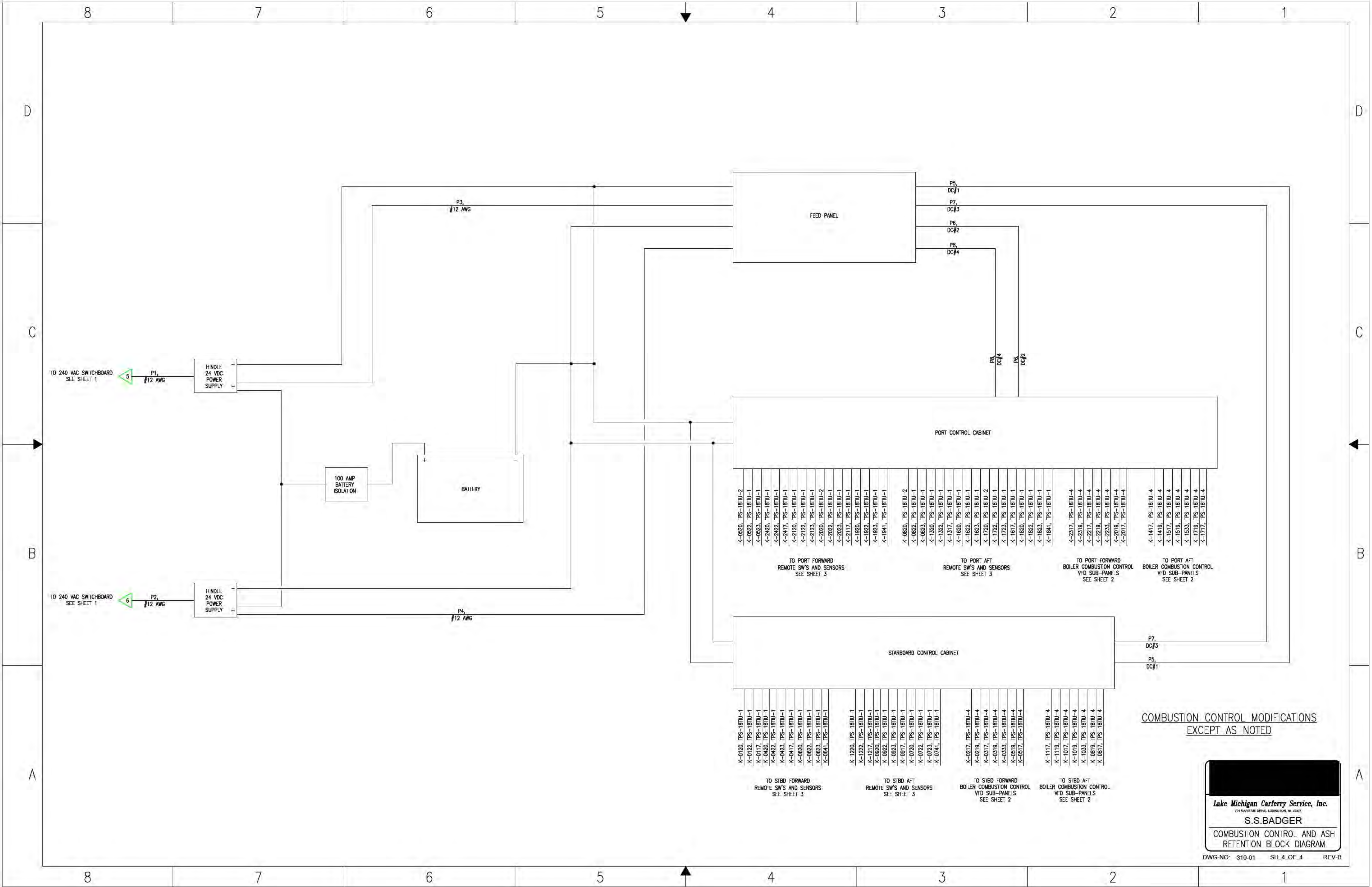
COMBUSTION CONTROL MODIFICATIONS
EXCEPT AS NOTED

Lake Michigan Carferry Service, Inc.
S.S. BADGER
COMBUSTION CONTROL AND ASH
RETENTION BLOCK DIAGRAM

DWG-NO: 310-01 SH.2 OF 4 REV-B

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[REDACTED]

[REDACTED]

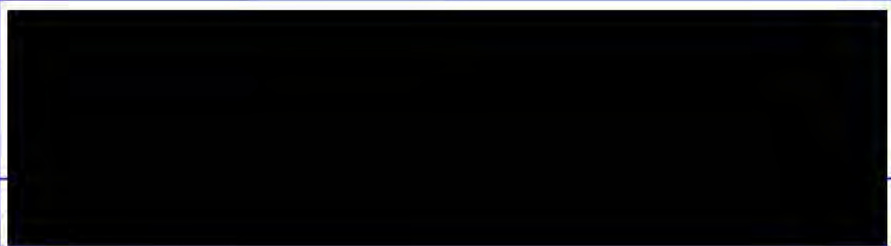
[REDACTED]

US EPA ARCHIVE DOCUMENT

REV.

	+		FROM PORT1 TS – (FUSE F19)
CH0	2	FDFPVFDON	FWD PORT F.D. MOTOR RUNNING
CH1	3	FDAPVFDON	AFT PORT F.D. MOTOR RUNNING
CH2	4	OFAFPVFDON	FWD PORT OFA MOTOR RUNNING
CH3	5	OFAFPVFDON	AFT PORT OFA MOTOR RUNNING
CH4	6	IFFPVFDON	FWD PORT INBD FEEDER RUNNING
CH5	7	OFFPVFDON	FWD PORT OTBD FEEDER RUNNING
CH6	8	IFAPVFDON	AFT PORT INBD FEEDER RUNNING
CH7	9	OFAPVFDON	AFT PORT OTBD FEEDER RUNNING
CH8	12	IRFPVFDON	FWD PORT INBD ROTOR RUNNING
CH9	13	ORFPVFDON	FWD PORT OTBD ROTOR RUNNING
CH10	14	IRAPVFDON	AFT PORT INBD ROTOR RUNNING
CH11	15	ORAPVFDON	AFT PORT OTBD ROTOR RUNNING
CH12	16	ADAPVFDON	AFT PORT AIR DISTRIB RUNNING
CH13	17	ADFPVFDON	FWD PORT AIR DISTRIB RUNNING
CH14	18	FDFPVDFLT	FWD PORT F.D. FAULT
CH15	19	FDAPVDFLT	AFT PORT F.D. FAULT
	20		24VDC–

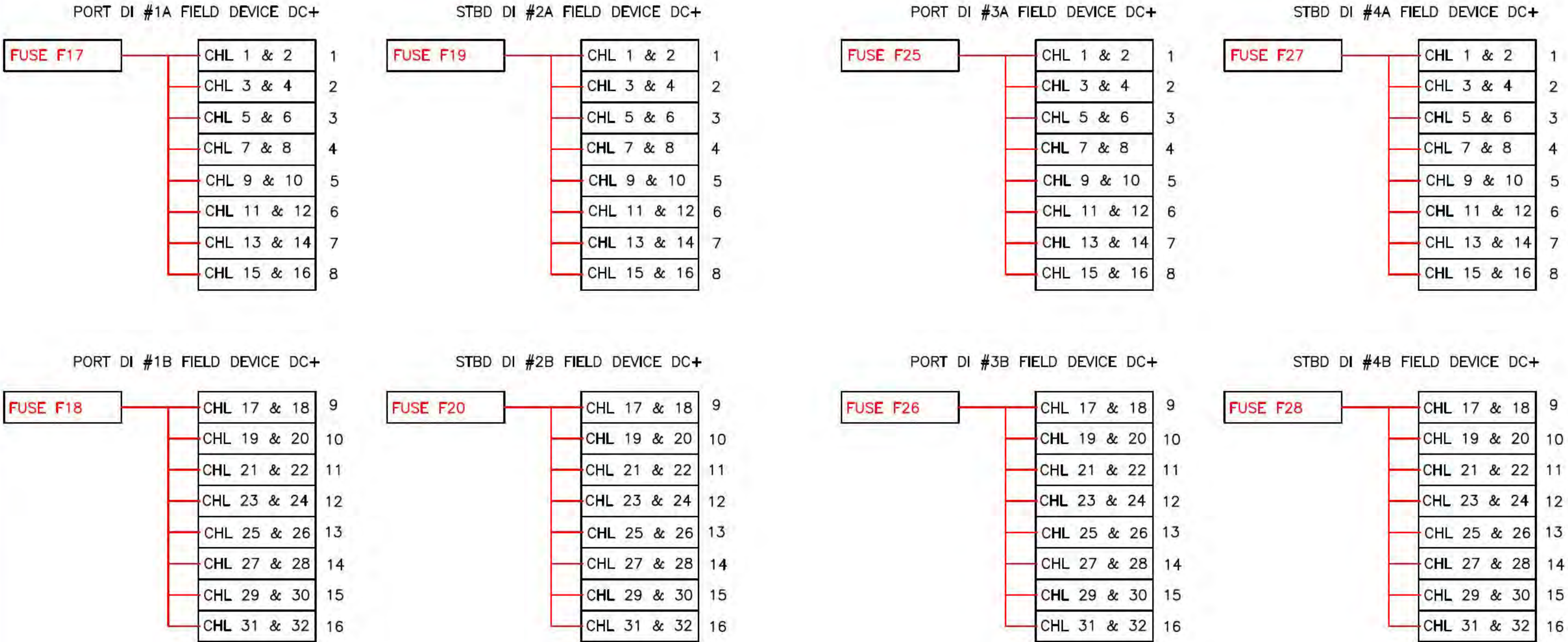
	+		FROM PORT1 TS – (FUSE F20)
CH16	22	OFAFPVDFLT	FWD PORT OFA FAULT
CH17	23	OFAAPVDFLT	AFT PORT OFA FAULT
CH18	24	IFFPVDFLT	FWD PORT INBD FEEDER FAULT
CH19	25	OFFPVDFLT	FWD PORT OTBD FEEDER FAULT
CH20	26	IFAPVDFLT	AFT PORT INBD FEEDER FAULT
CH21	27	OFAPVDFLT	AFT PORT OTBD FEEDER FAULT
CH22	28	IRFPVDFLT	FWD PORT INBD ROTOR FAULT
CH23	29	ORFPVDFLT	FWD PORT OTBD ROTOR FAULT
CH24	32	IRAPVDFLT	AFT PORT INBD ROTOR FAULT
CH25	33	ORAPVDFLT	AFT PORT OTBD ROTOR FAULT
CH26	34	ADAPVDFLT	AFT PORT AIR DISTRIB FAULT
CH27	35	ADFPVDFLT	FWD PORT AIR DISTRIB FAULT
CH28	36	PORTALMS	PORT ALARMS
CH29	37	PPLACE2	PORT PLACEHOLDER 2
CH30	38	PPLACE3	PORT PLACEHOLDER 3
CH31	39	PPLACE4	PORT PLACEHOLDER 4
	40		24VDC–



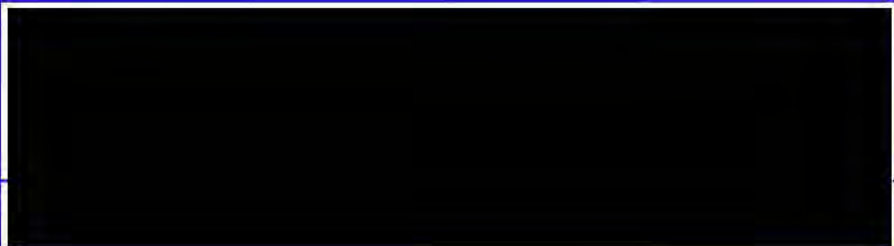
BADGER PLC MODULE PORT DISCRETE INPUT SLOT 5 PROJECT NO. 8819–580		
DRAWING NAME: PLCSLOT5.DWG	DRAWING NO:	
BY: JCHLLC	DATE: 1/31/14	SHEET ____ OF ____

REV.

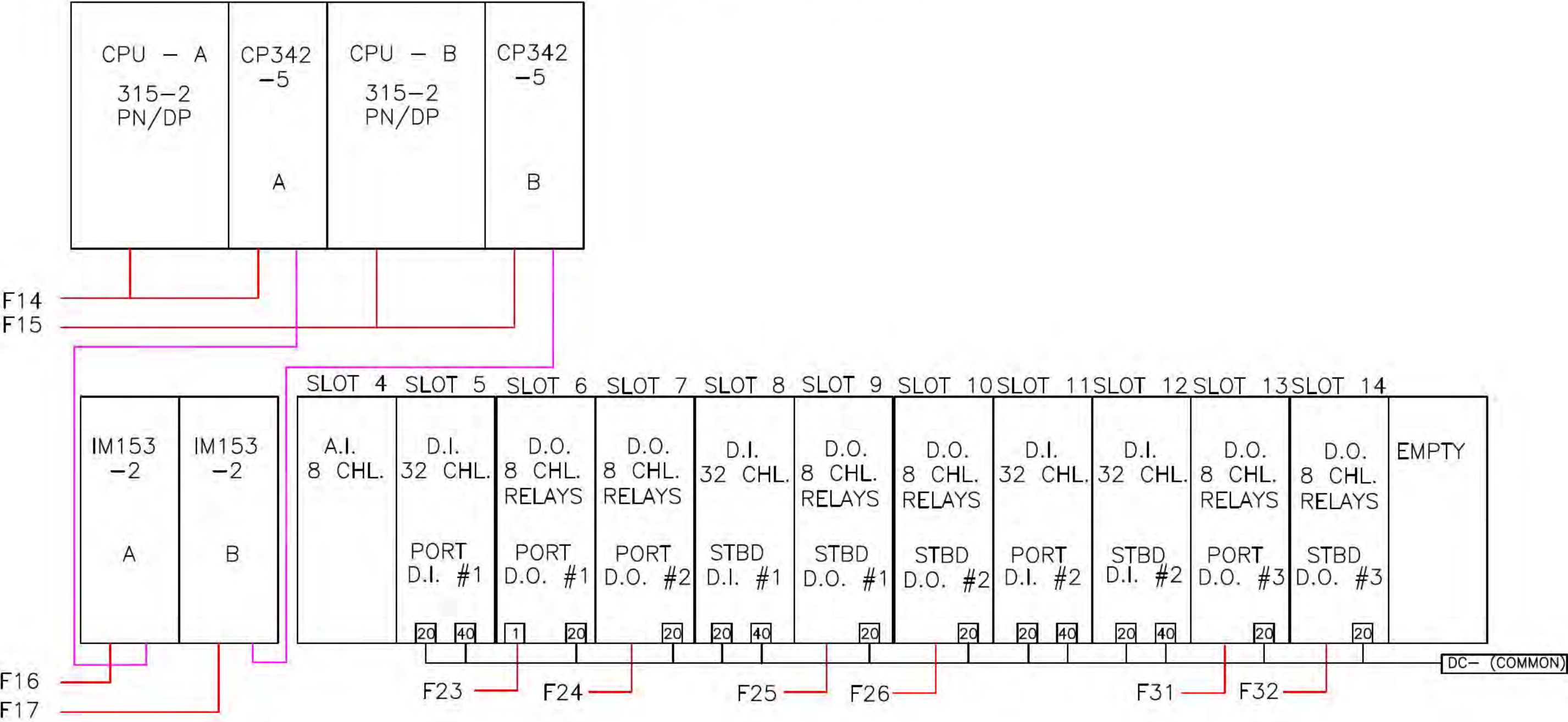
PLC DISCRETE INPUT FIELD DEVICE DC+ TERMINALS



TERMINAL STRIPS TO BE LOCATED ADJACENT TO PLC I/O



PORT BOILER CABINET – MAIN PLC LAYOUT

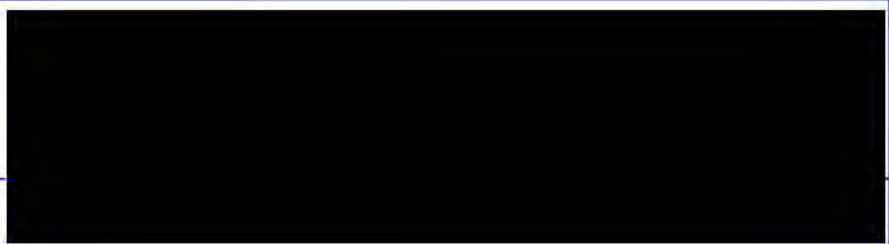
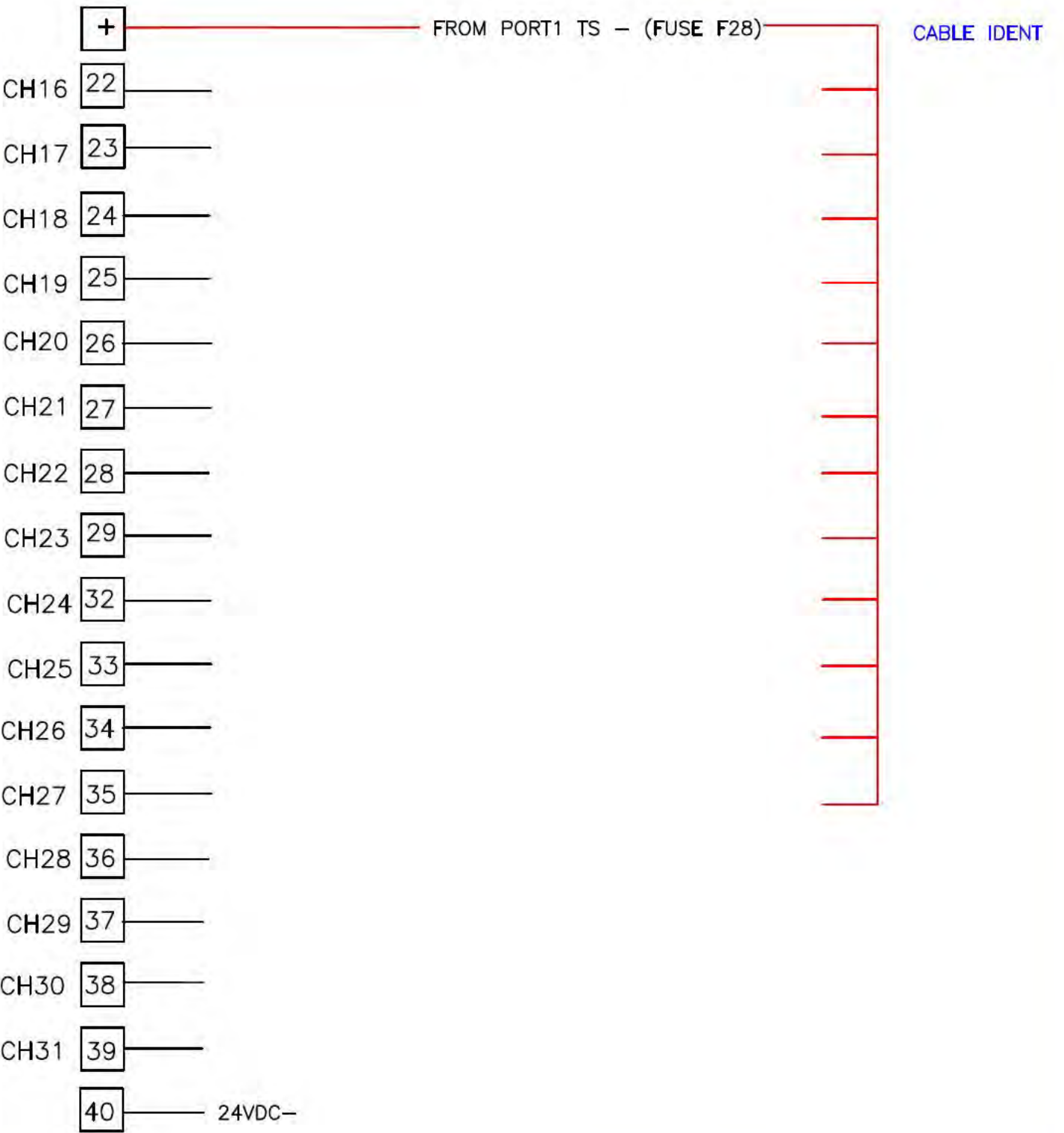


NOTE: DC+ SUPPLY FOR DISCRETE FIELD INPUTS SHOWN ON PLC D.I. POWER TERMINALS DRAWING.

US EPA ARCHIVE DOCUMENT



REV.



REV.

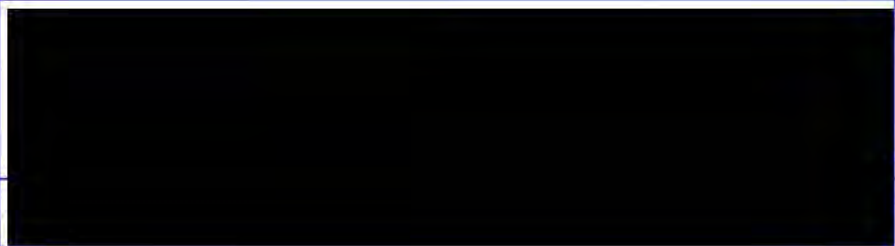
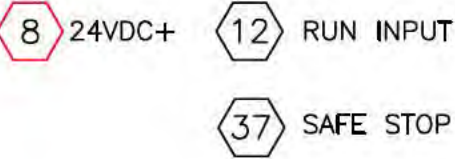


BADGER PLC MODULE
PORT RELAY OUTPUT MODULE #1

REV.



VFD INPUT TERMINALS (TYPICAL)



BADGER PLC MODULE
PORT RELAY OUTPUT MODULE #2

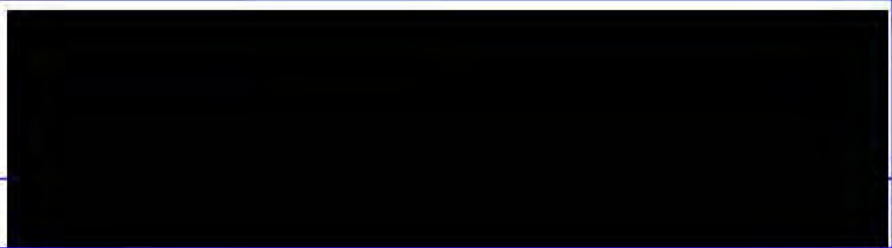
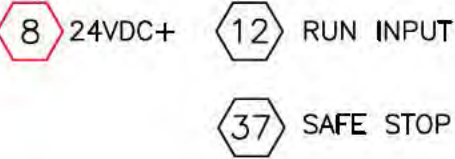


DRAWING NAME: PLCSLOT8.DWG	DRAWING NO:
BY: JCHLLC 	DATE: 2/7/14
SHEET ___ OF ___	

REV.



VFD INPUT TERMINALS (TYPICAL)

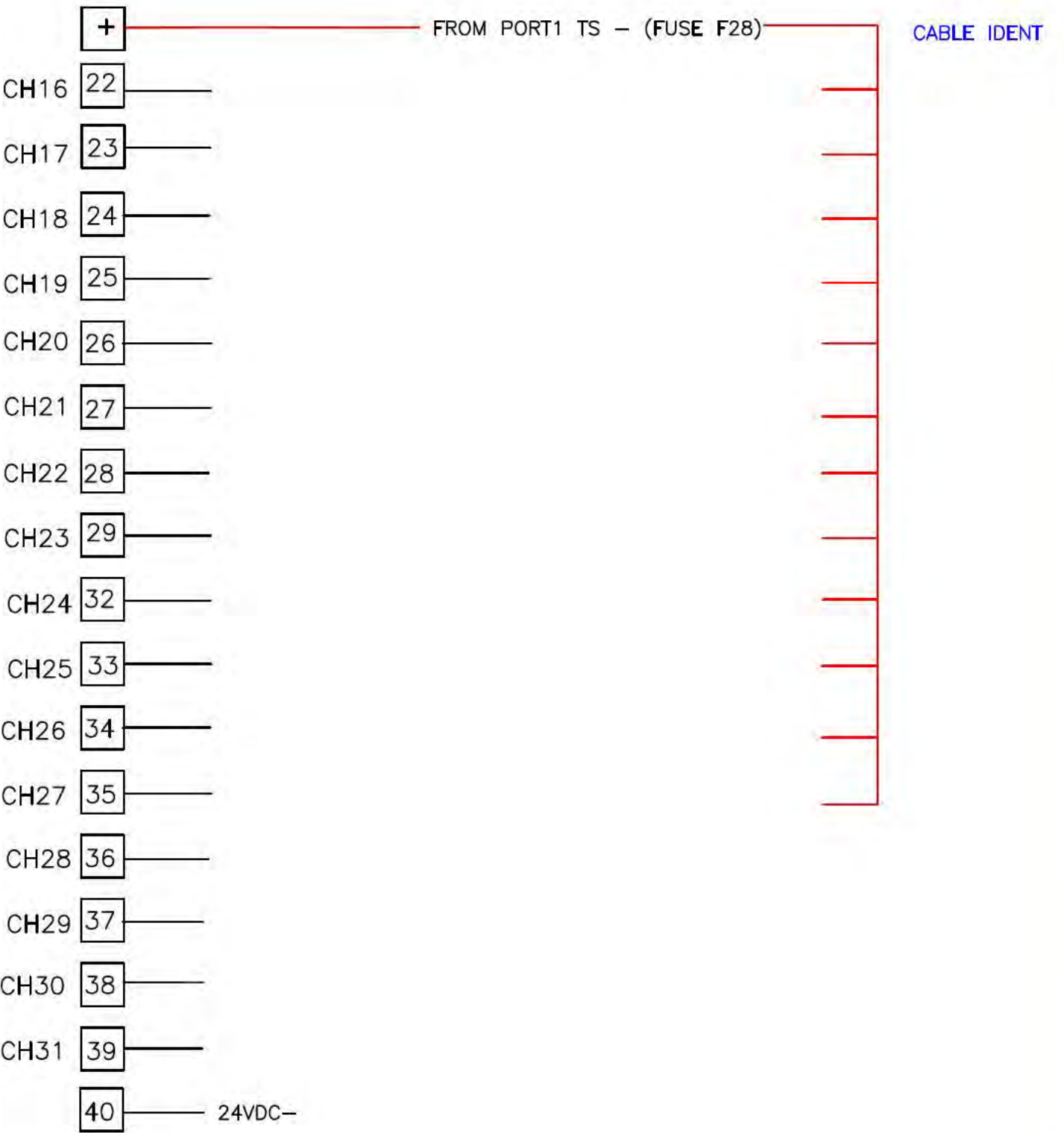
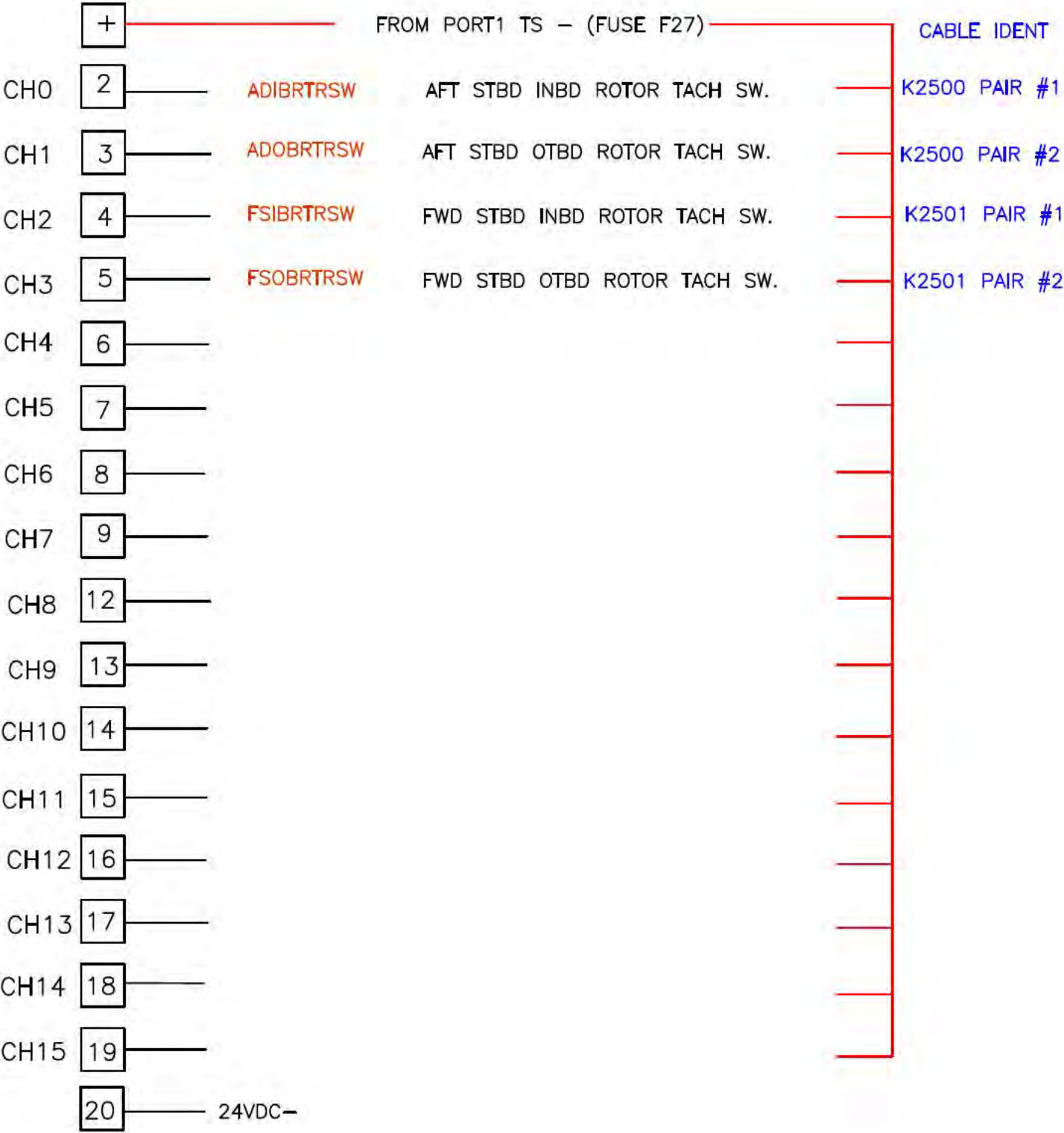


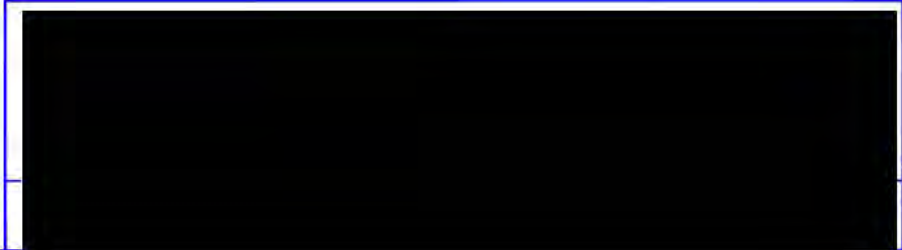
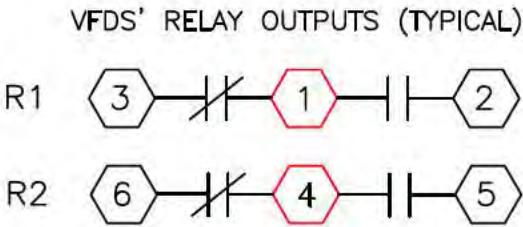
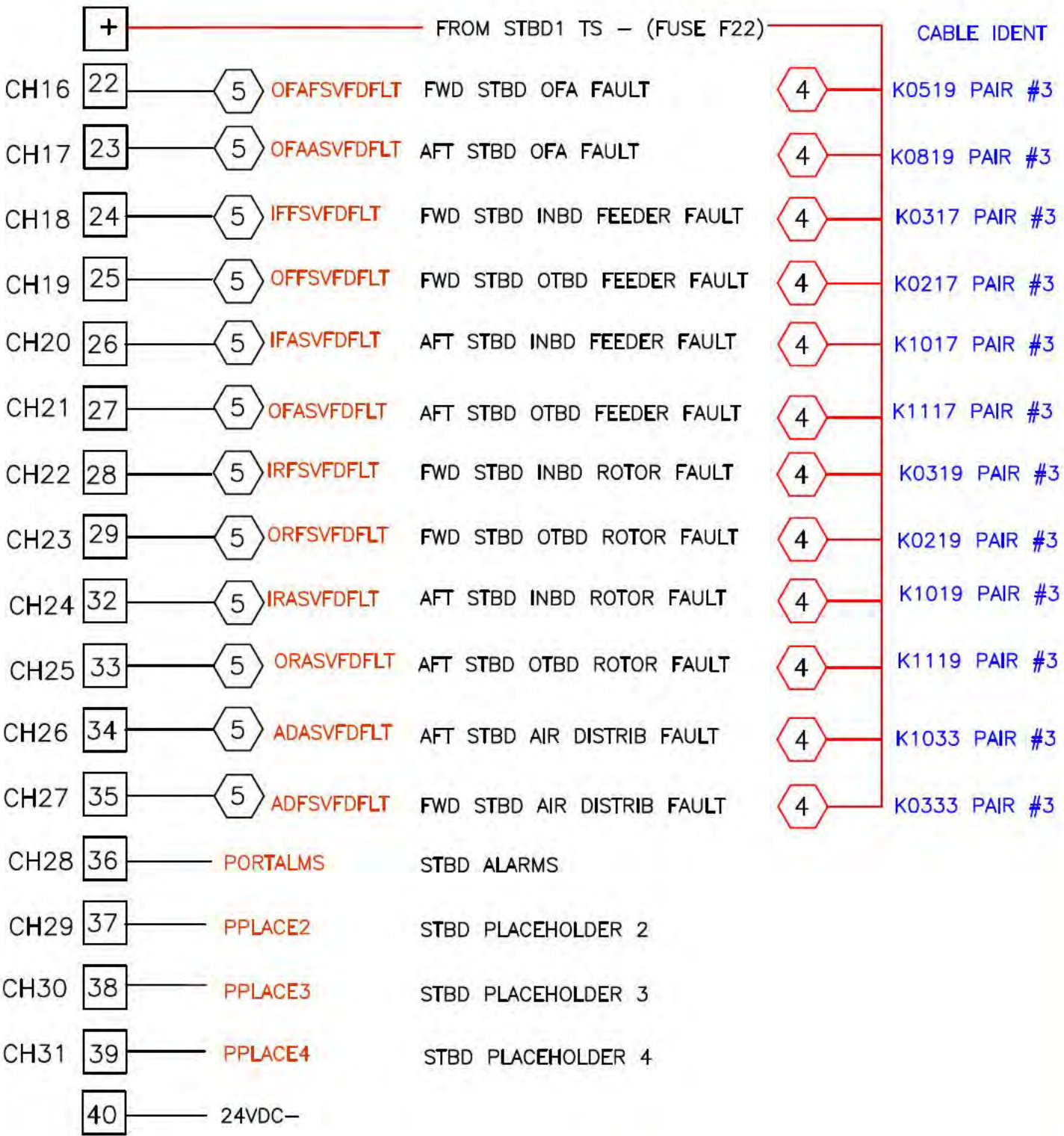
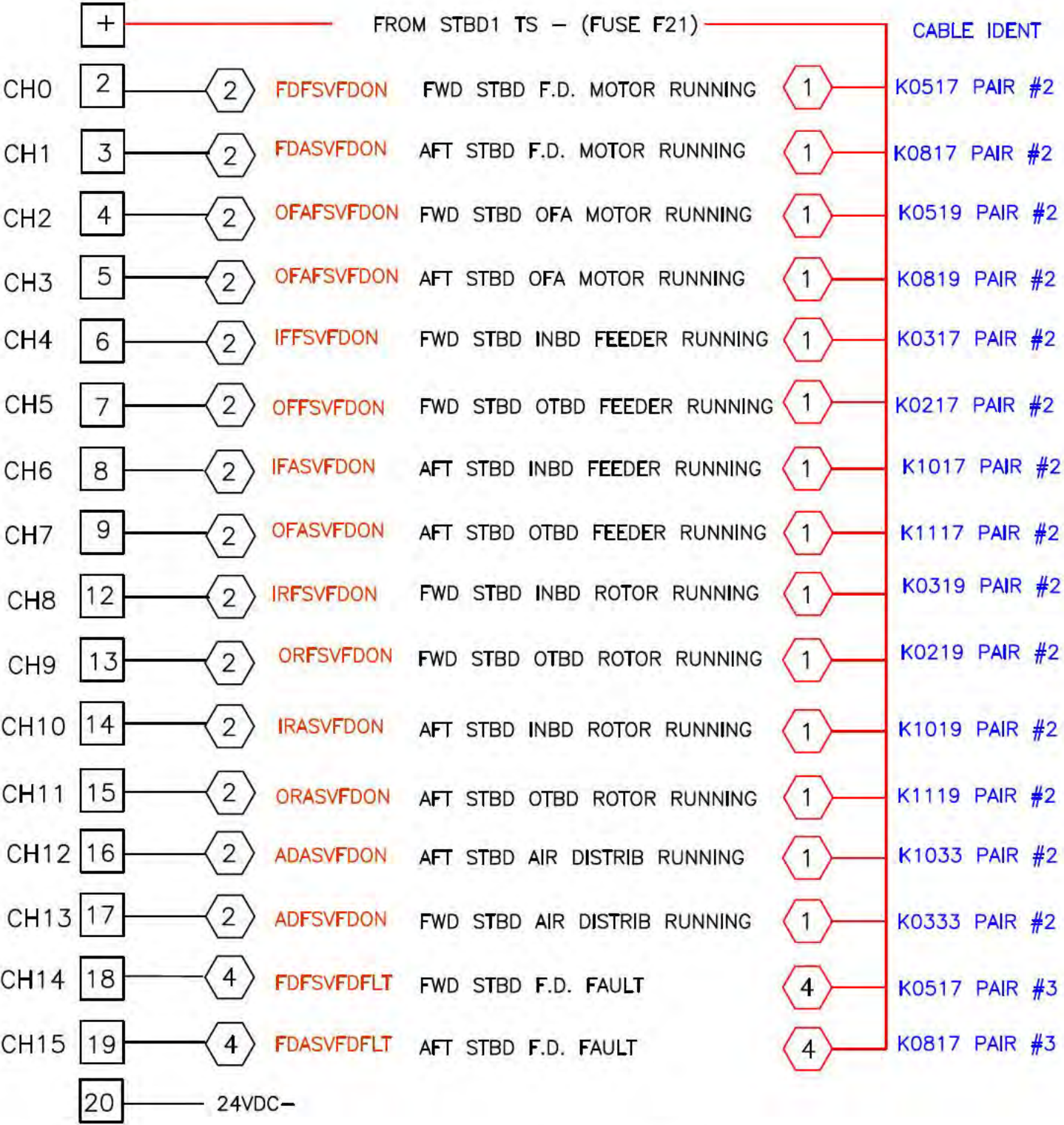
BADGER PLC MODULE
STBD RELAY OUTPUT MODULE #2



DRAWING NAME: PLCSLOT10.DWG	DRAWING NO:
BY: JCHLLC 	DATE: 2/11/14
SHEET ___ OF ___	

REV.

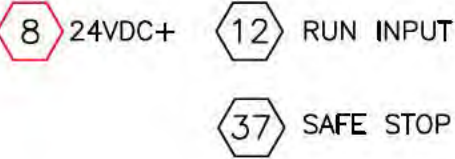




REV.



VFD INPUT TERMINALS (TYPICAL)

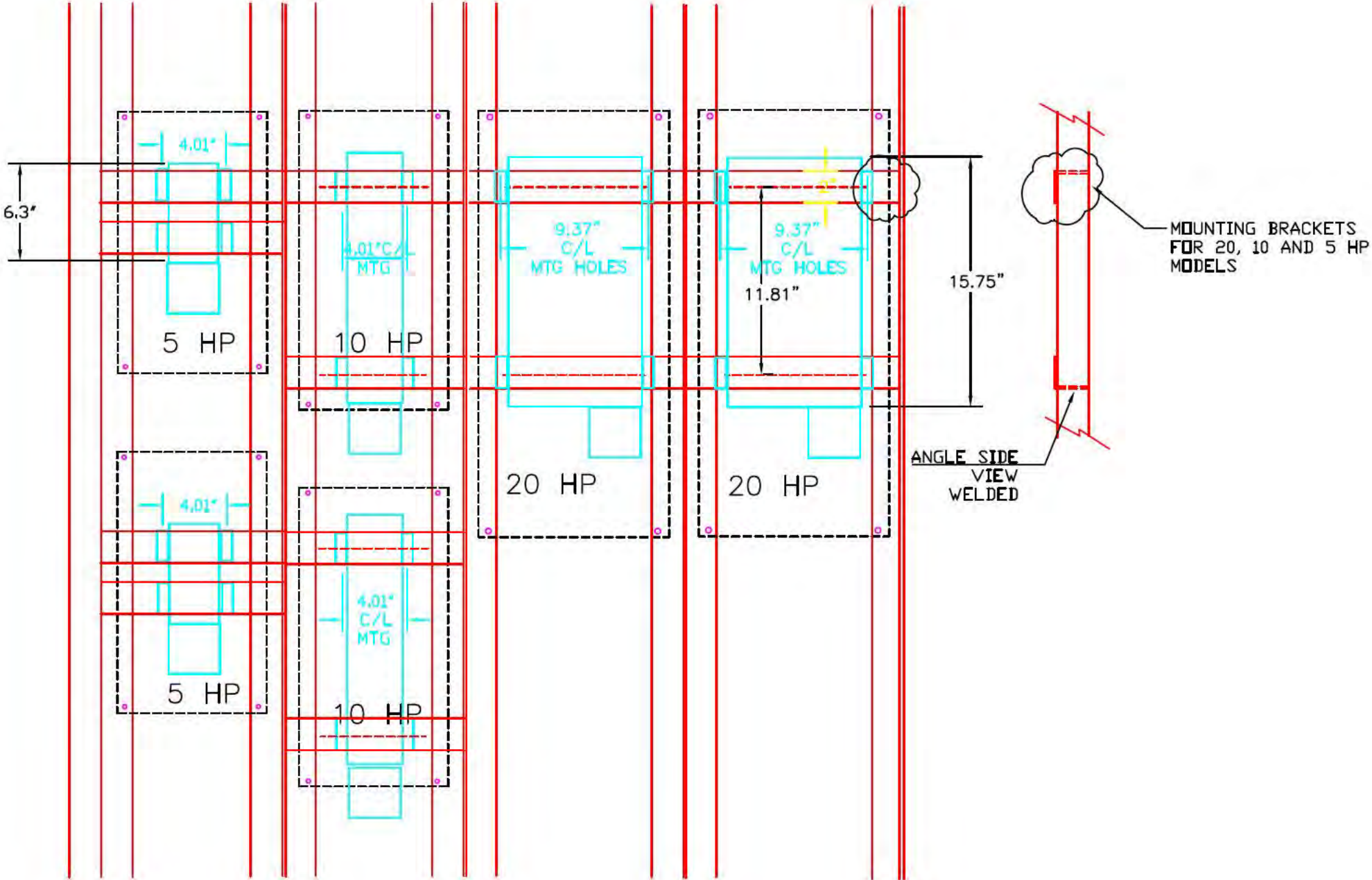


BADGER PLC MODULE STBD RELAY OUTPUT MODULE #1		
DRAWING NAME: PLCSLOT9.DWG DRAWING NO:		
BY: JCHLLC DATE: 2/11/14 SHEET ____ OF ____		

VFD TAGNAMES

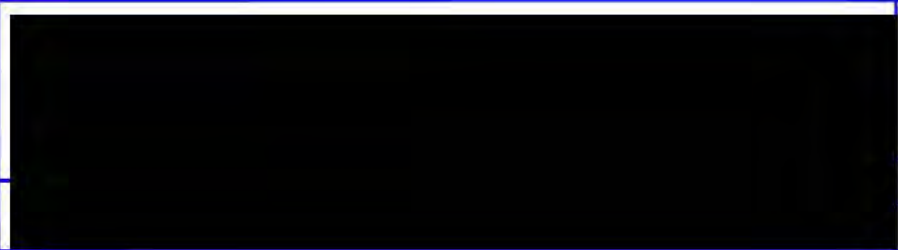
TAGNAME	DESCRIPTOR
FPFDFAN	FWD PORT F.D. FAN
APFDFAN	AFT PORT F.D. FAN
FPOFA	FWD PORT OVERFIRE AIR
APOFA	AFT PORT OVERFIRE AIR
FPIBFEDR	FWD PORT INBD FEEDER
FPOBFEDR	FWD PORT OTBD FEEDER
APIBFEDR	AFT PORT INBD FEEDER
APOBFEDR	AFT PORT OTBD FEEDER
FPIBROTR	FWD PORT INBD ROTOR
FPOBROTR	FWD PORT OTBD ROTOR
APIBROTR	AFT PORT INBD ROTOR
APOBROTR	AFT PORT OTBD ROTOR
APAIRDIST	AFT PORT AIR DISTRIB
FPAIRDIST	FWD PORT AIR DISTRIB
FSFDFAN	FWD STBD F.D. FAN
ASFDFAN	AFT STBD F.D. FAN
FSOFA	FWD STBD OVERFIRE AIR
ASOFA	AFT STBD OVERFIRE AIR
FSIBFEDR	FWD STBD INBD FEEDER
FSOBFEDR	FWD STBD OTBD FEEDER
ASIBFEDR	AFT STBD INBD FEEDER
ASOBFEDR	AFT STBD OTBD FEEDER
FSIBROTR	FWD STBD INBD ROTOR
FSOBROTR	FWD STBD OTBD ROTOR
ASIBROTR	AFT STBD INBD ROTOR
ASOBROTR	AFT STBD OTBD ROTOR
ASAIRDIST	AFT STBD AIR DISTRIB
FSAIRDIST	FWD STBD AIR DISTRIB

REV.
1. 1/21/14 - CHG'D TO US DIMENSIONS

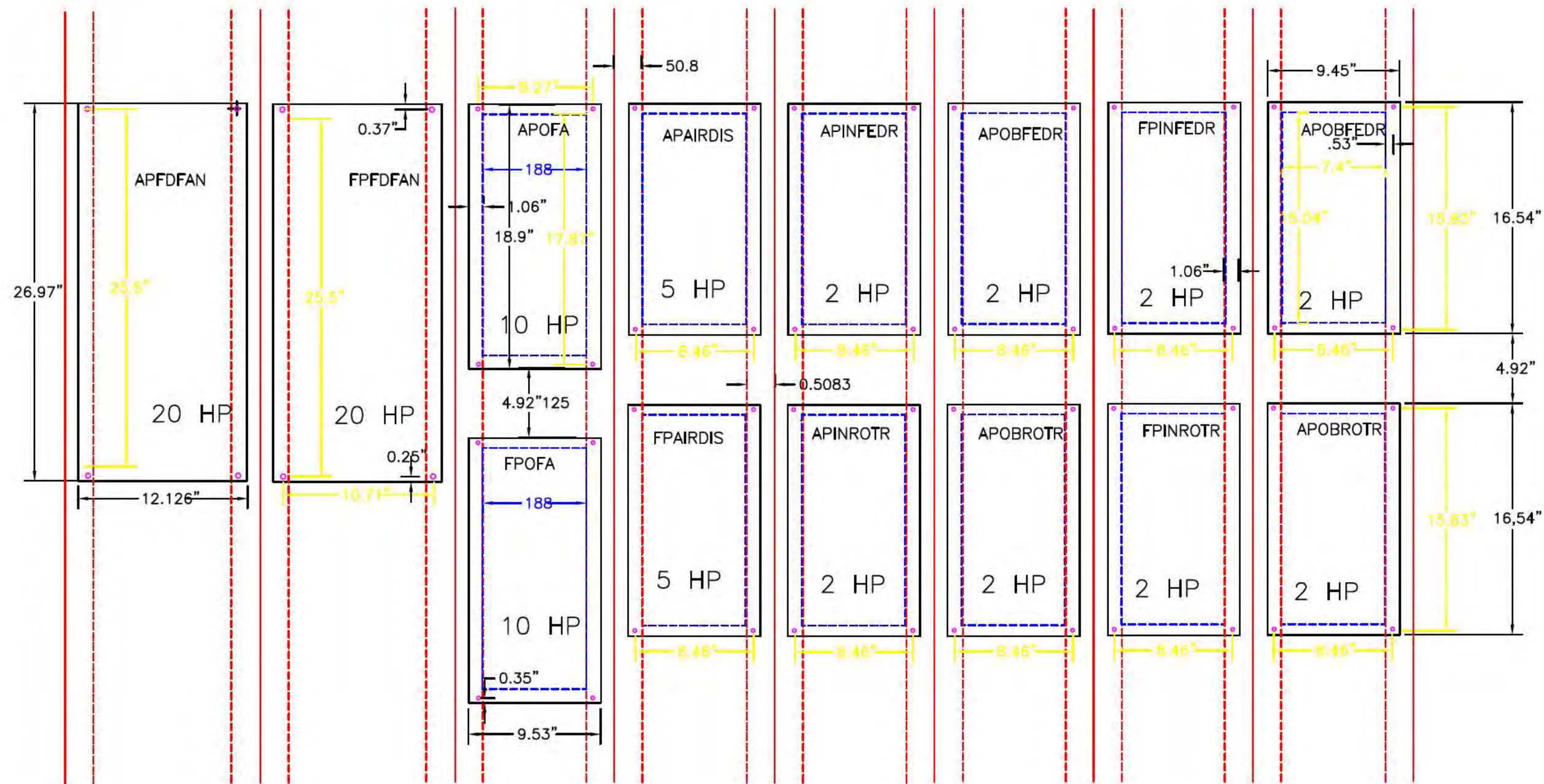


VIEW FROM REAR OF VFD MOUNTING RACK

US EPA ARCHIVE DOCUMENT



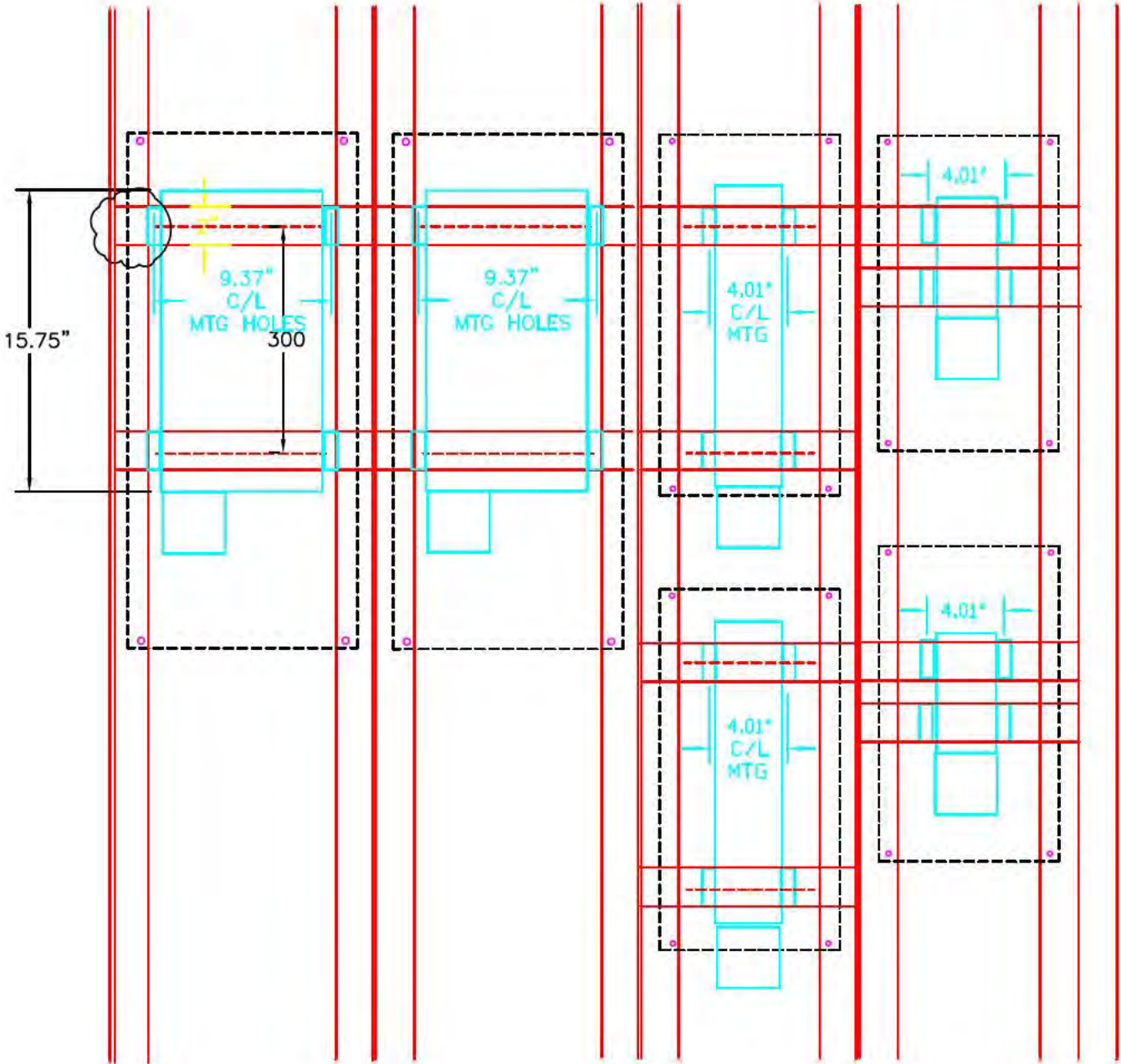
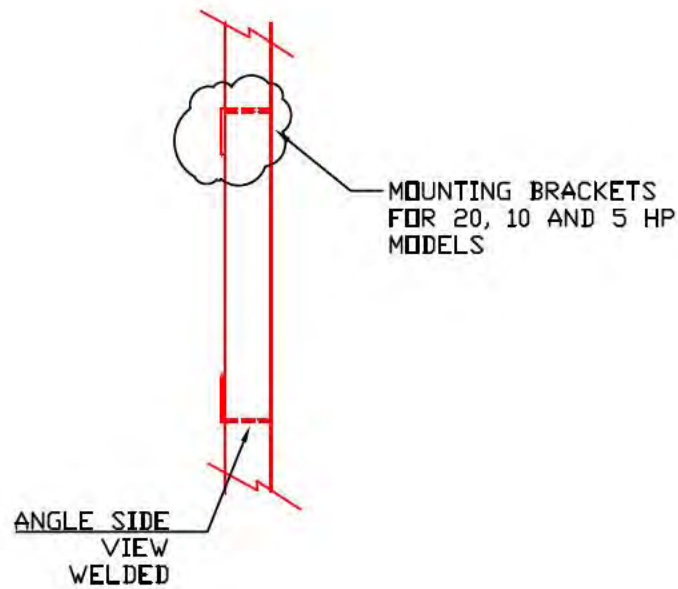
SS BADGER PORT VFD BRAKE RESISTOR MOUNTING		
DRAWING NAME: PORTVFD BRAKE.DWG	DRAWING NO:	
DRAWN BY: 	DATE: 1/7/2014	SHEET ____ OF ____



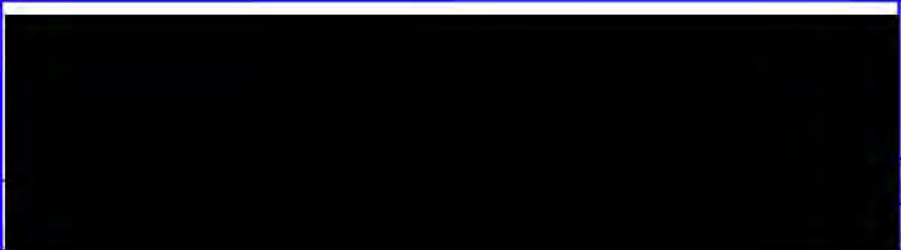
- NOTES:
- 1. ALL DIMENSIONS IN INCHES
 - 2. 2 HP AND 5 HP UNITS ARE THE SAME SIZE
 - 3. PLEASE IDENTIFY BACKING PLATES IN SHIPMENT OF DRIVES – USE PLATES AS TEMPLATES TO CONFIRM/ ASSIST WITH FRAME ASSY AND MOUNTING HOLE LOCATIONS.

SS BADGER PORT VFD RACK LAYOUT	
DRAWING NAME: PORTVFDPNL.DWG	DRAWING NO:
DRAWN BY: 	DATE: 1/7/2014
SHEET ___ OF ___	

REV.
1. 1/21/14 - CHG'D TO US DIMENSIONS



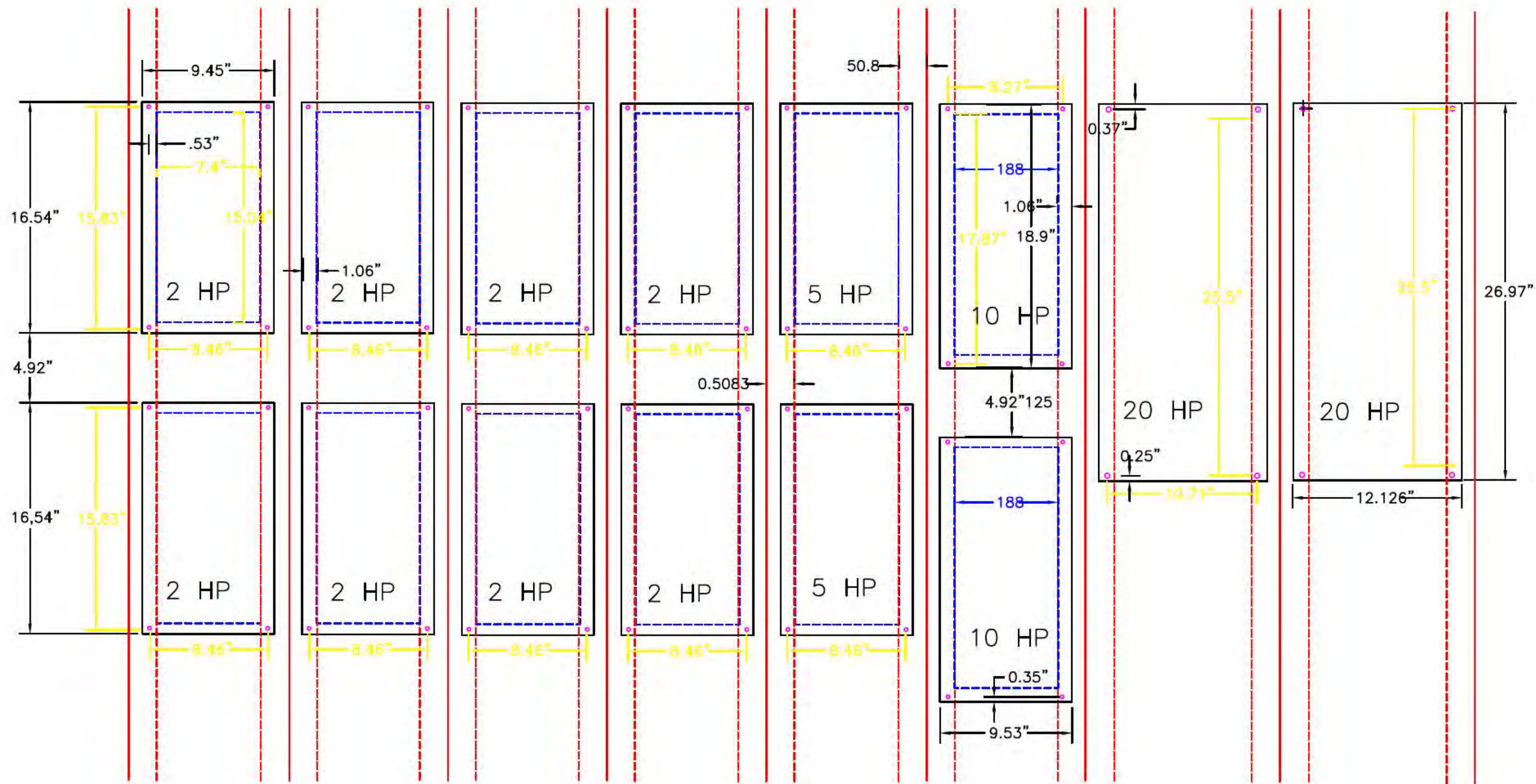
VIEW FROM REAR OF VFD MOUNTING RACK



SS BADGER
STBD VFD BRAKE RESISTOR MOUNTING

DRAWING NAME: STBDVFD BRAKE.DWG	DRAWING NO:
DRAWN BY: 	DATE: 1/7/2014
SHEET ____ OF ____	

REV.
1. 1/21/14 - CHG'D TO US DIMENSIONS



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SS BADGER STBD VFD RACK LAYOUT	
DRAWING NAME: STBDVFDPNL.DWG	DRAWING NO:
DRAWN BY: 	DATE: 1/7/2014
SHEET ___ OF ___	