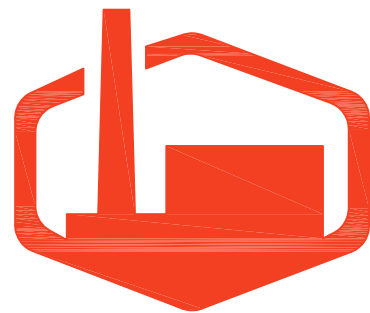




**DULUTH ENERGY
SYSTEMS**

ONE LAKE PLACE DRIVE
DULUTH, MN 55802-1189

BURNER MANAGEMENT SYSTEM DULUTH STEAM BOILER #3

REV A

JOB# 424997

CONTROL SYSTEM DESIGNED AND BUILT BY



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LIST OF DRAWINGS		
SHT	REVISION	DRAWING DESCRIPTIONS
01	A	ELECTRICAL SCHEMATIC
02	A	ELECTRICAL SCHEMATIC
03	A	ELECTRICAL SCHEMATIC
04	A	ELECTRICAL SCHEMATIC
05	A	SAFETY CIRCUIT SCHEMATIC
06	A	SAFETY CIRCUIT SCHEMATIC & PLC IO MODULE
07	A	PLC IO MODULES
08	A	ELECTRICAL SCHEMATIC
09	A	CONTROL PANEL LAYOUT
10	A	BACKPANEL LAYOUT
11	A	PANELVIEW ENCLOSURE

SYMBOL LEGEND	
■	FIELD
▲	FUEL TRAIN
M	MOTOR CONTROL
B	BMS PANEL
R	REMOTE PANEL
⊙	TERMINAL
◇	REFERENCE TO EXPANSION MODULE
----	FIELD WIRING
*	WIRING BY FIELD ELECTRICAL CONTRACTOR

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LEGEND	
—————	PANEL WIRING
-----	FIELD WIRING
⊗	PANEL TERMINAL
⊠	FIELD DEVICE TERMINAL



Dwg#: 424997 Egan #: 424997
Voltage 120V Ph: 1 Hz: 60
Total FLA: 8.8
Largest Motor FLA: N/A
SCCR: 5 KA
Enclosure type: 12

Enclosure openings must be filled by equipment marked with the same Type rating as enclosure. Use 75° deg. C copper wire minimum.

Fuse Chart:	
DESCRIPTION	AMPERAGE (A.)
105F	2A
106F	6A
702F	3A
803F	2A
806F	6A



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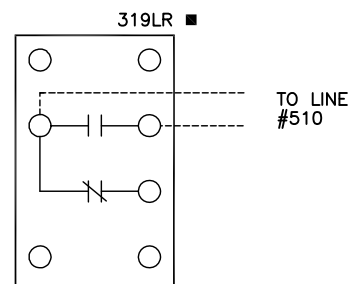


DULUTH ENERGY
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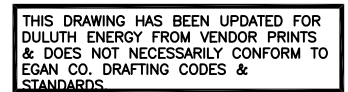
ONE LAKE PLACE DRIVE
DULUTH, MN 55802-1189

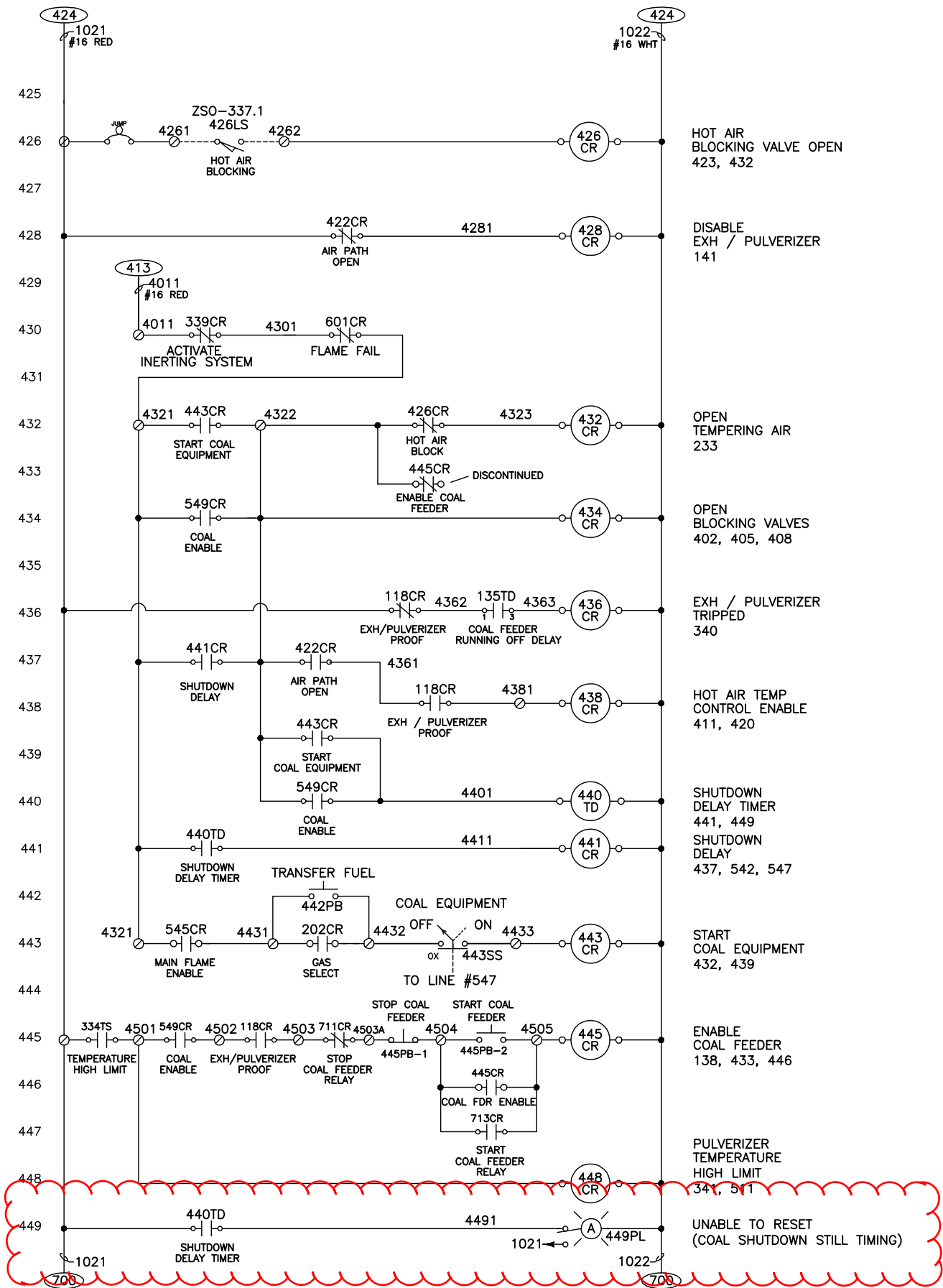
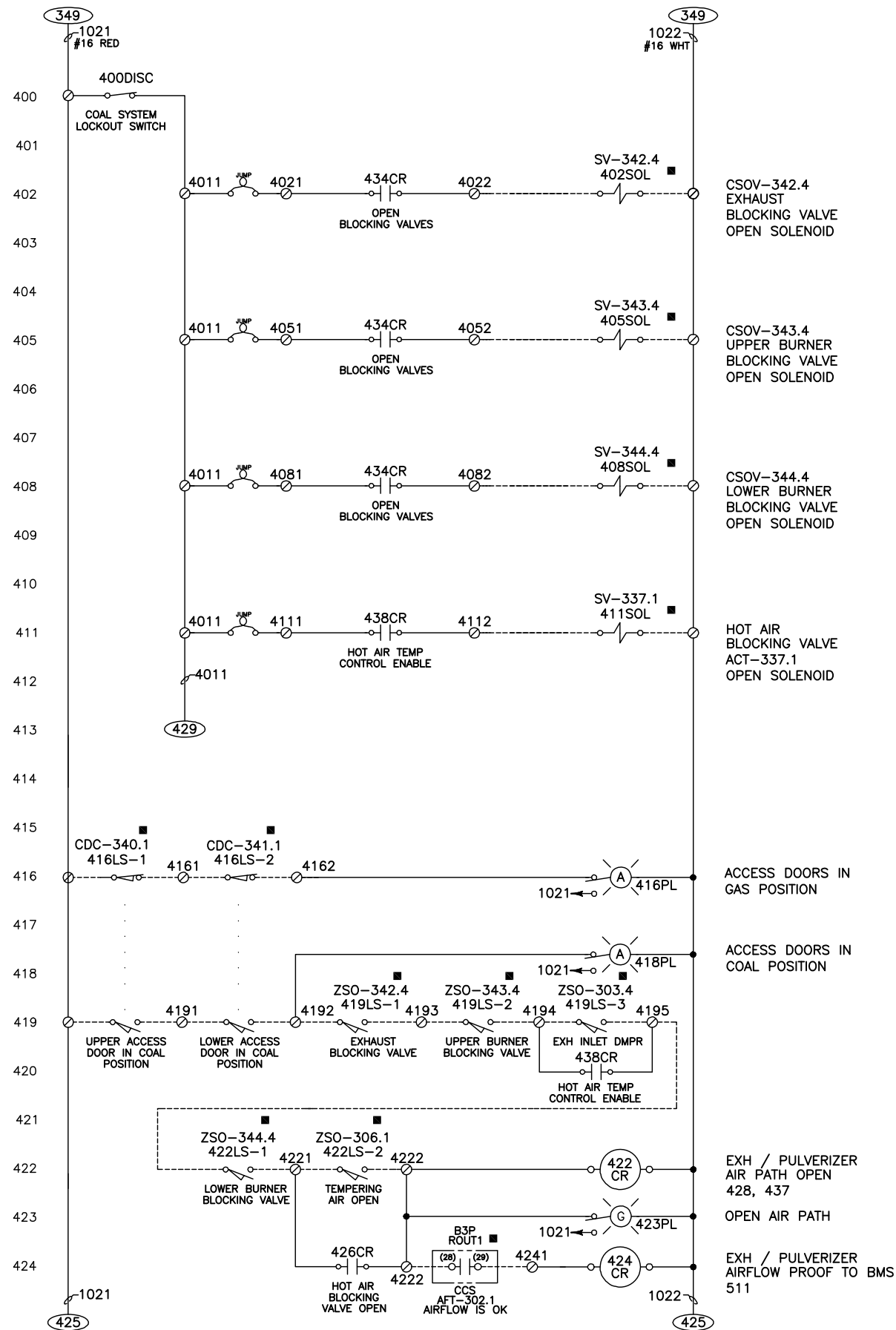
INDEX SHEET		MAIN PANEL	JOB NO. : 424997	
			DRAWN BY : MDT	
BURNER MANAGEMENT SYSTEM			APPROVED : M. THOMAS	
DULUTH STEAM BOILER #3				
REV				
A				

DWG. NO.
424997-3_100IDX
SHEET NO.
00



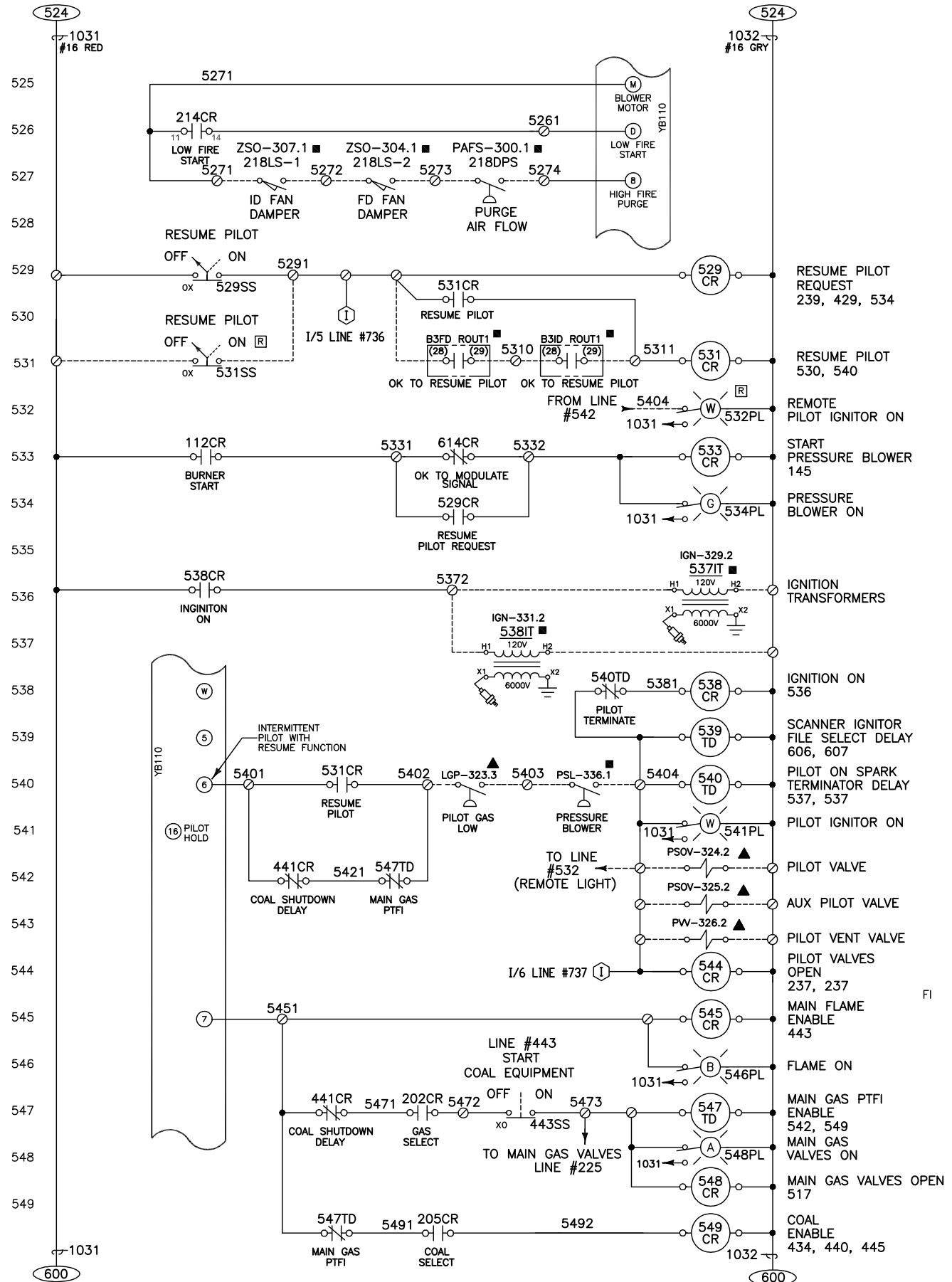
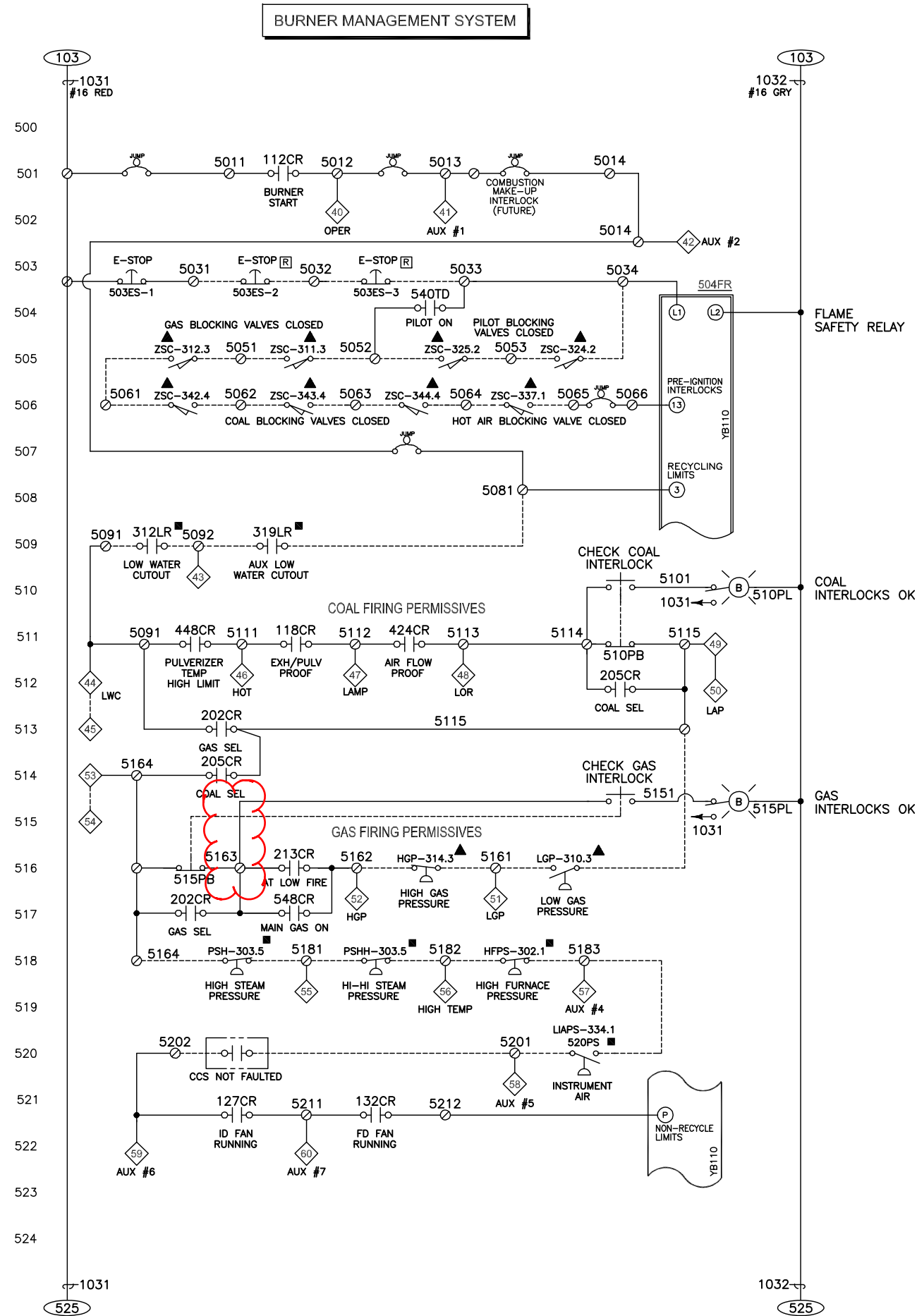
ALWC-301.5
AUX LOW WATER CUTOUT RELAY
509





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SYSTEMS**



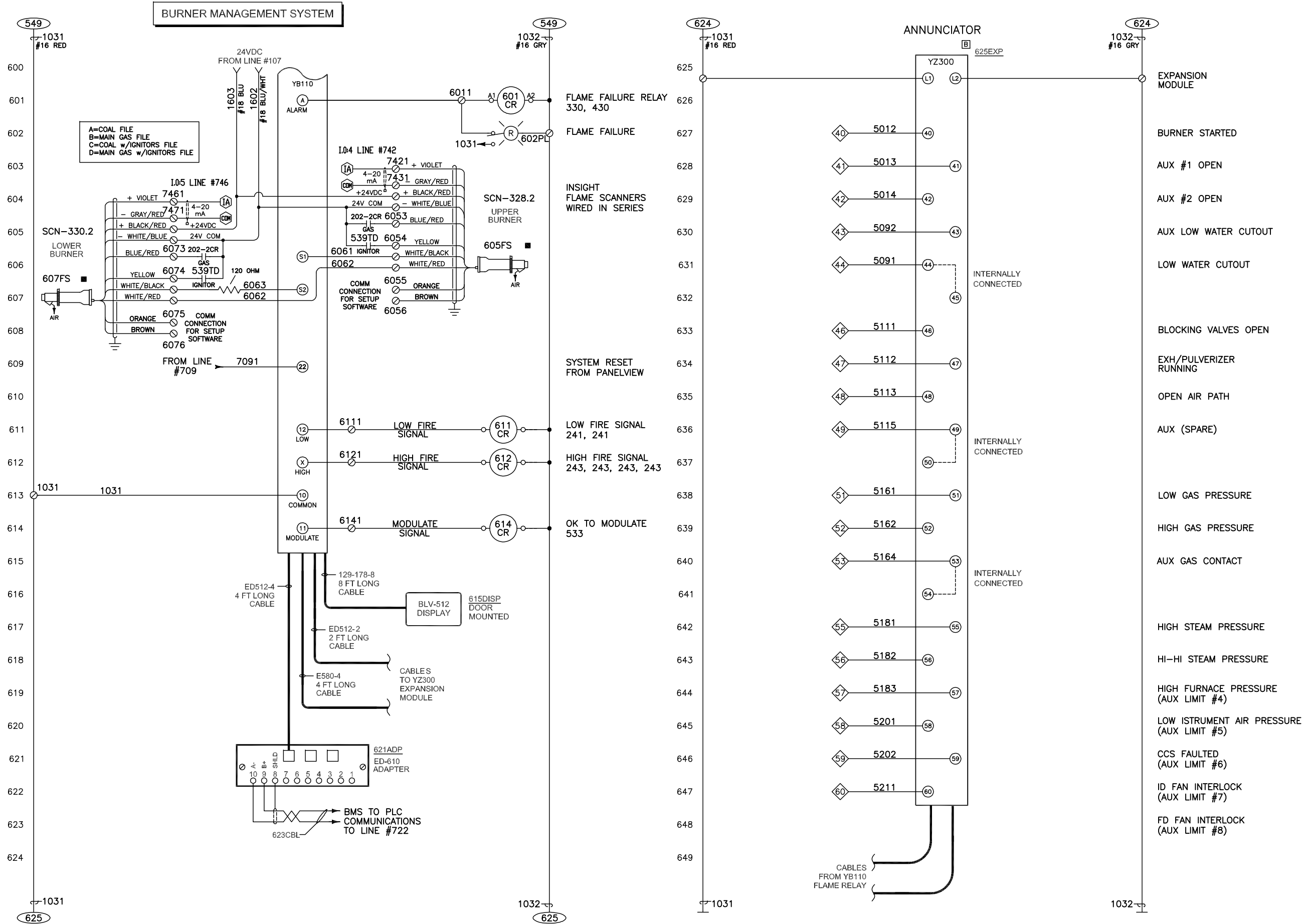
ONE LAKE PLACE DRIVE
DULUTH, MN 55802-1189
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JOB NO.: 424997
DRAWN BY: MDT
APPROVED: M. THOMAS

REV	DESCRIPTION	DATE	APPROVED
C	PUSHBUTTON WIRE MOVED TO 5163	01/19/17	MDT
B	ASBUILT	01/04/17	MDT
A	BURNER PANEL UPGRADE	11/14/16	MDT
REV	DESCRIPTION	DATE	APPROVED

DWG. NO.
424997-3_05
SHEET NO.
05

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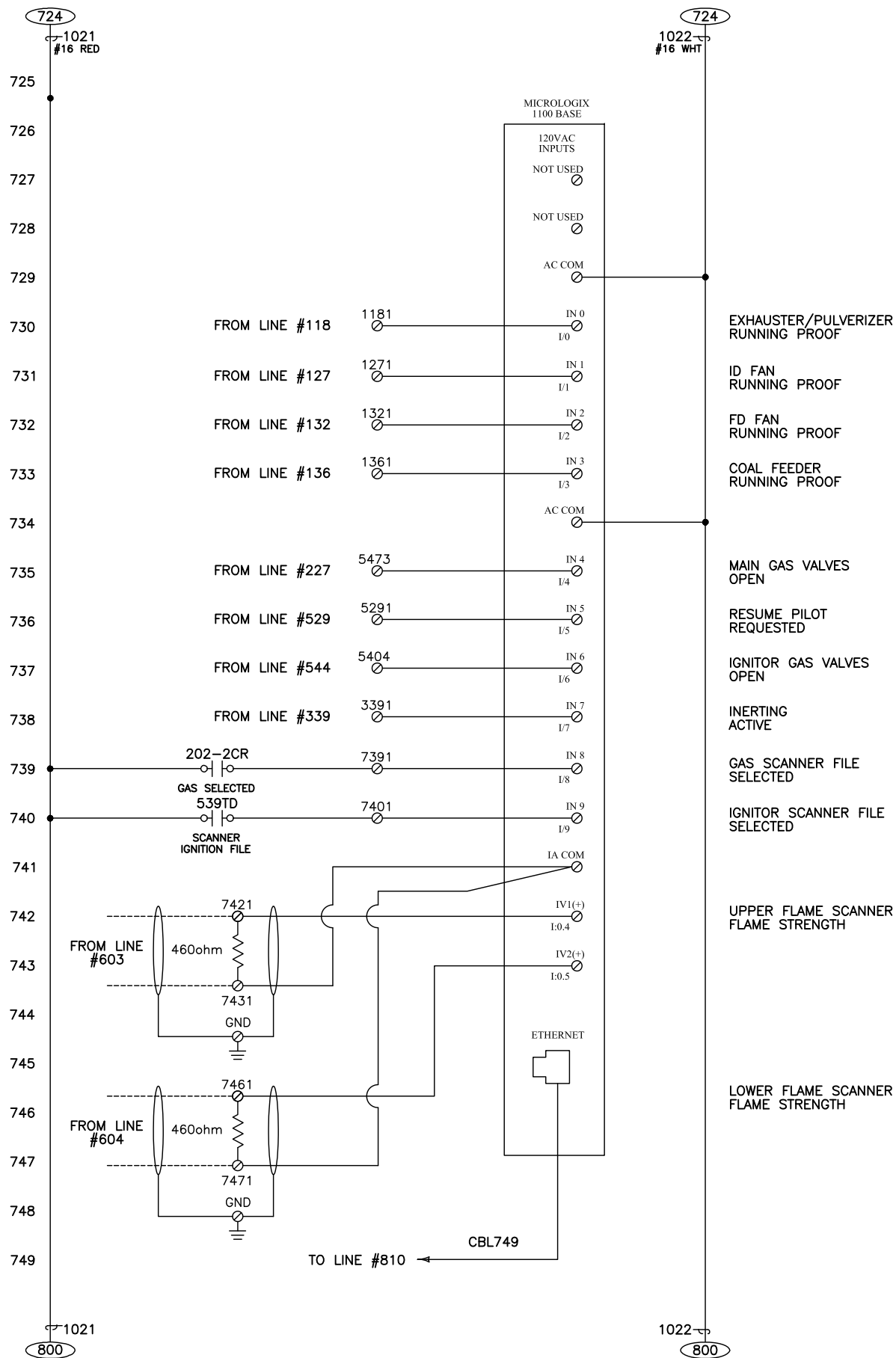
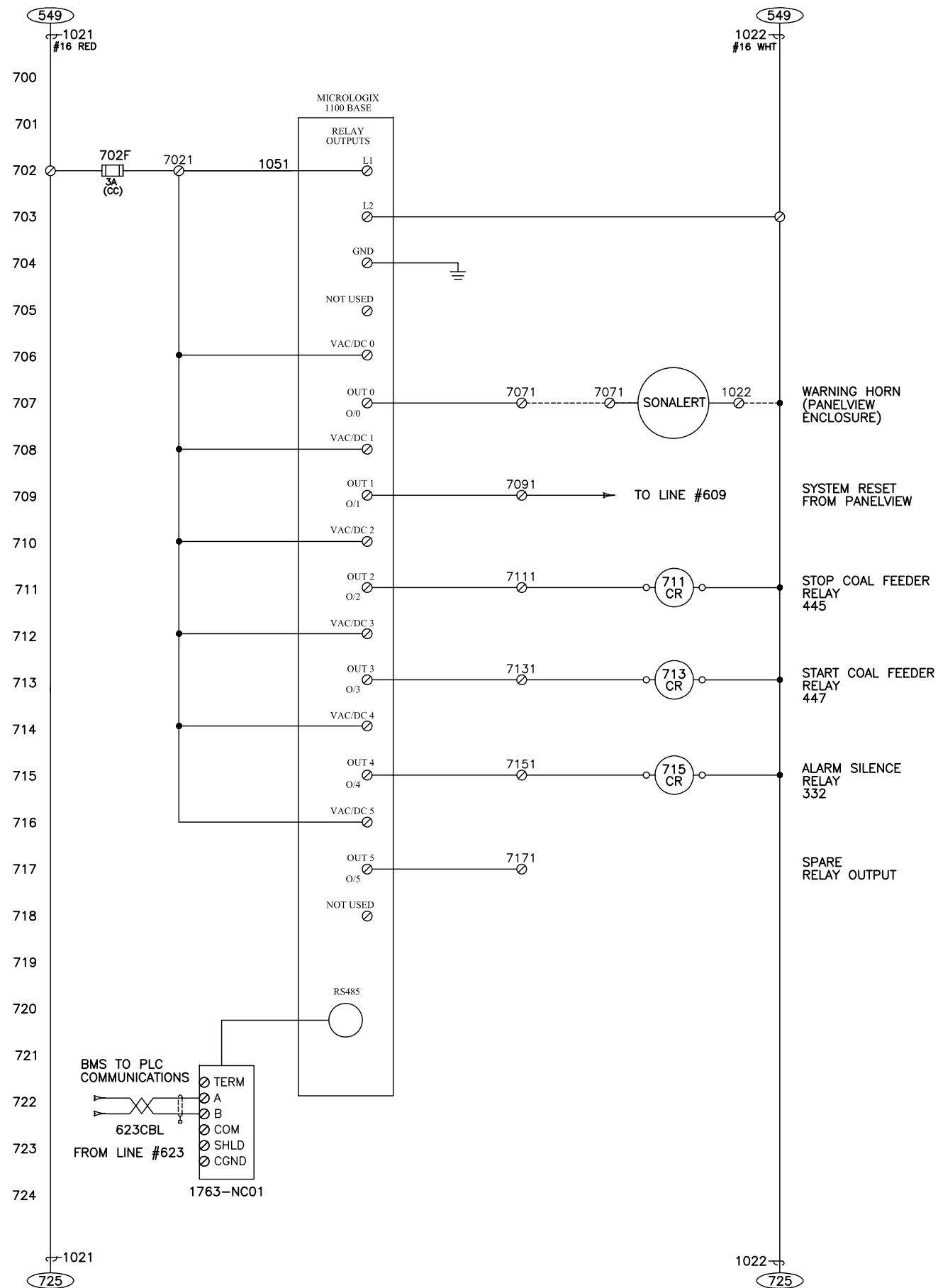


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DULUTH, MN 55802-1189

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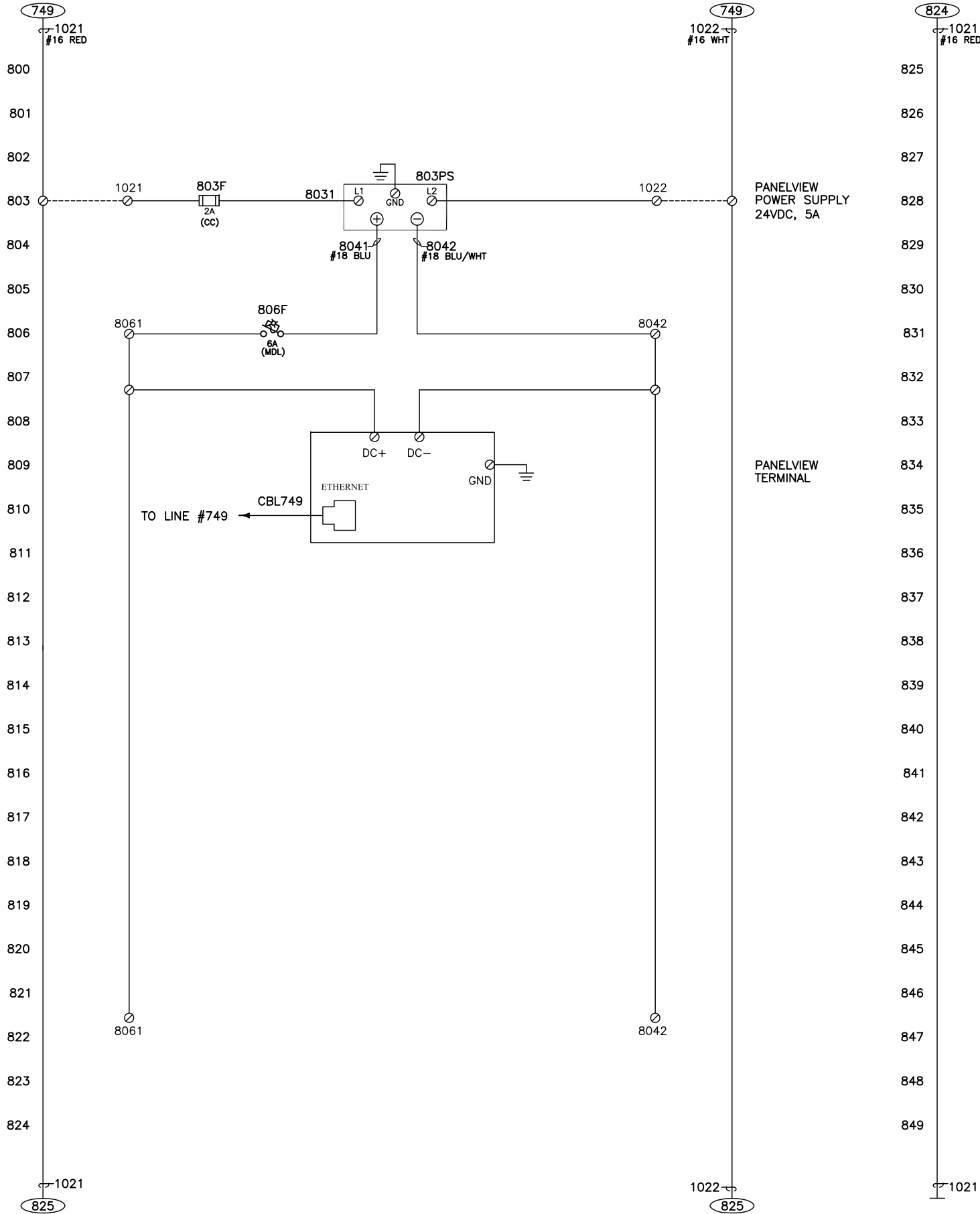
SAFETY CIRCUIT SCHEMATIC & PLC IO MODULE PANEL BURNER MANAGEMENT SYSTEM DULUTH STEAM BOILER #3	JOB NO. : 424997		DRAWN BY : MDT		APPROVED : M. THOMAS	
REV						
B		ASBUILT		MDT		01/04/17
A		BURNER PANEL UPGRADE		MDT		11/14/16
				DRWN		DATE
						APPROVED

DWG. NO.	424997-3_06
SHEET NO.	06



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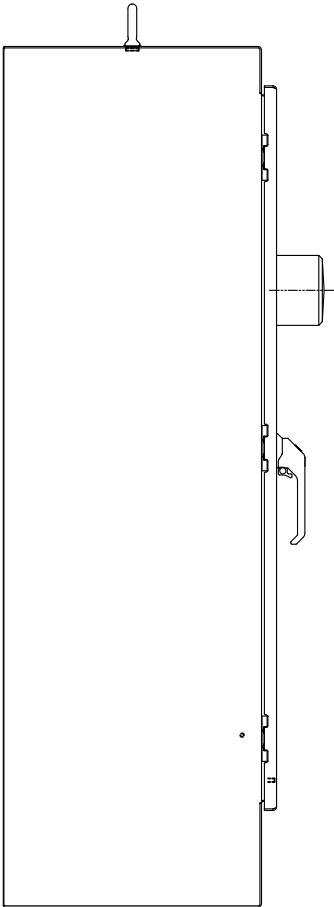
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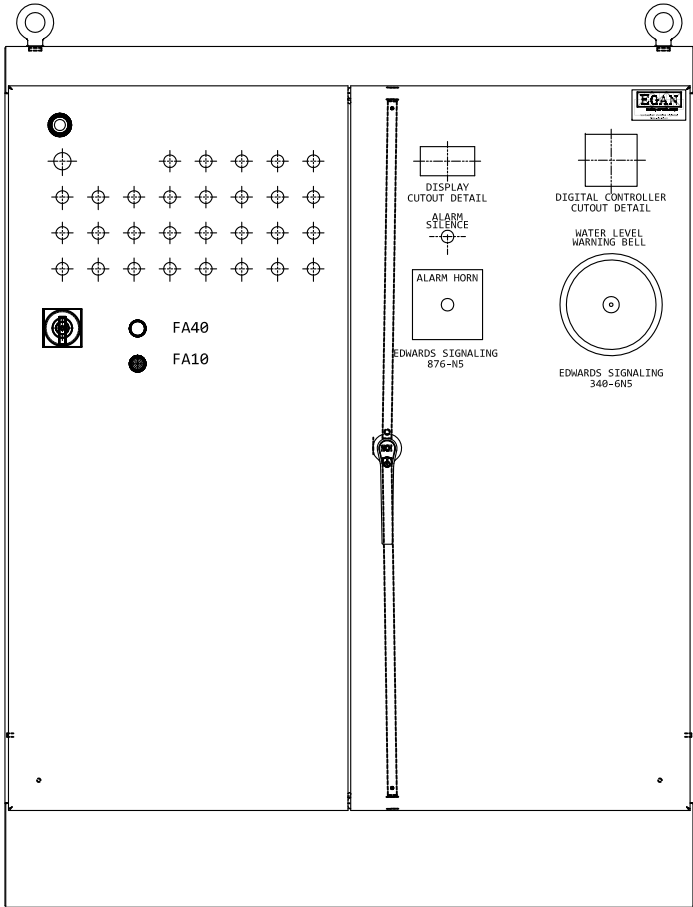
JOB NO. : 424997		DRAWN BY : MDT		APPROVED : M. THOMAS	
REV	B	ASBUILT	MDT	01/04/17	DATE
	A	BURNER PANEL UPGRADE	MDT	11/14/16	DATE
DESCRIPTION		APPROVED			

DWG. NO. 424997-3_08
SHEET NO. 08

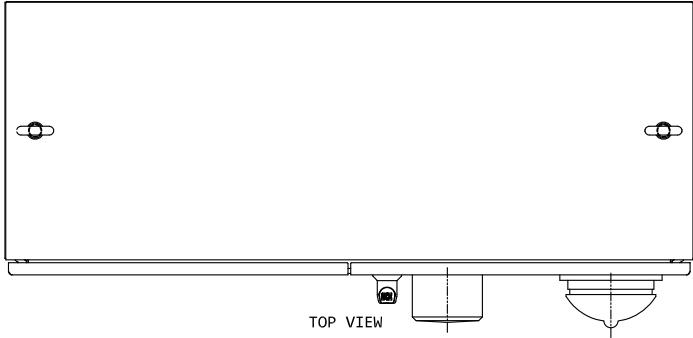
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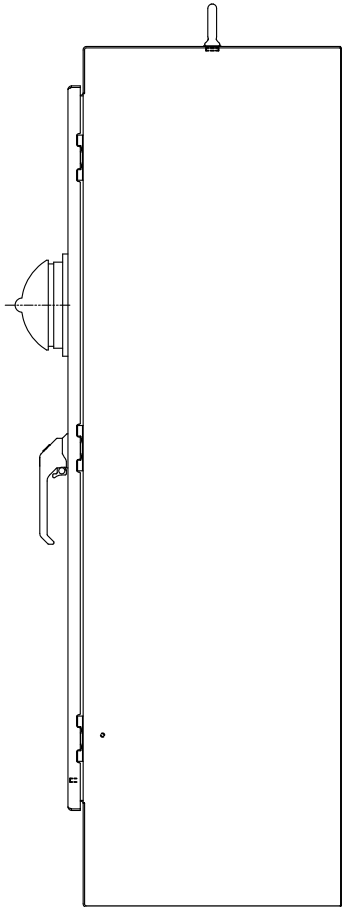
LEFT SIDE VIEW



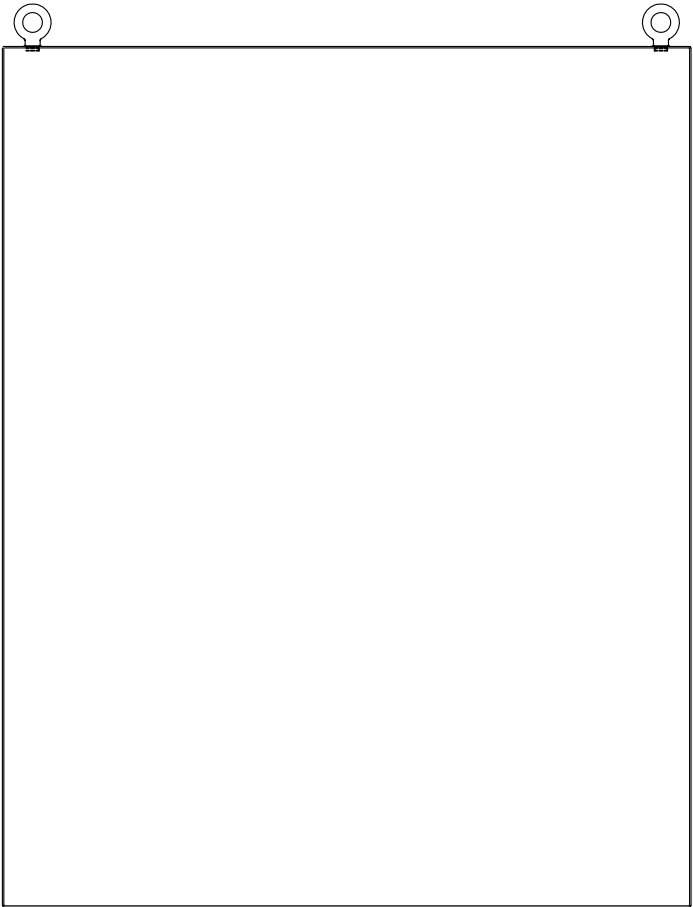
FRONT VIEW



TOP VIEW



RIGHT SIDE VIEW



BACK VIEW



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ONE LAKE PLACE DRIVE
DULUTH, MN 55802-1189

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CONTROL PANEL LAYOUT		MAIN PANEL		JOB NO. : 424997	
BURNER MANAGEMENT SYSTEM				DRAWN BY : DJN	
DULUTH STEAM BOILER #3				APPROVED : M. THOMAS	
REV	A				
					</

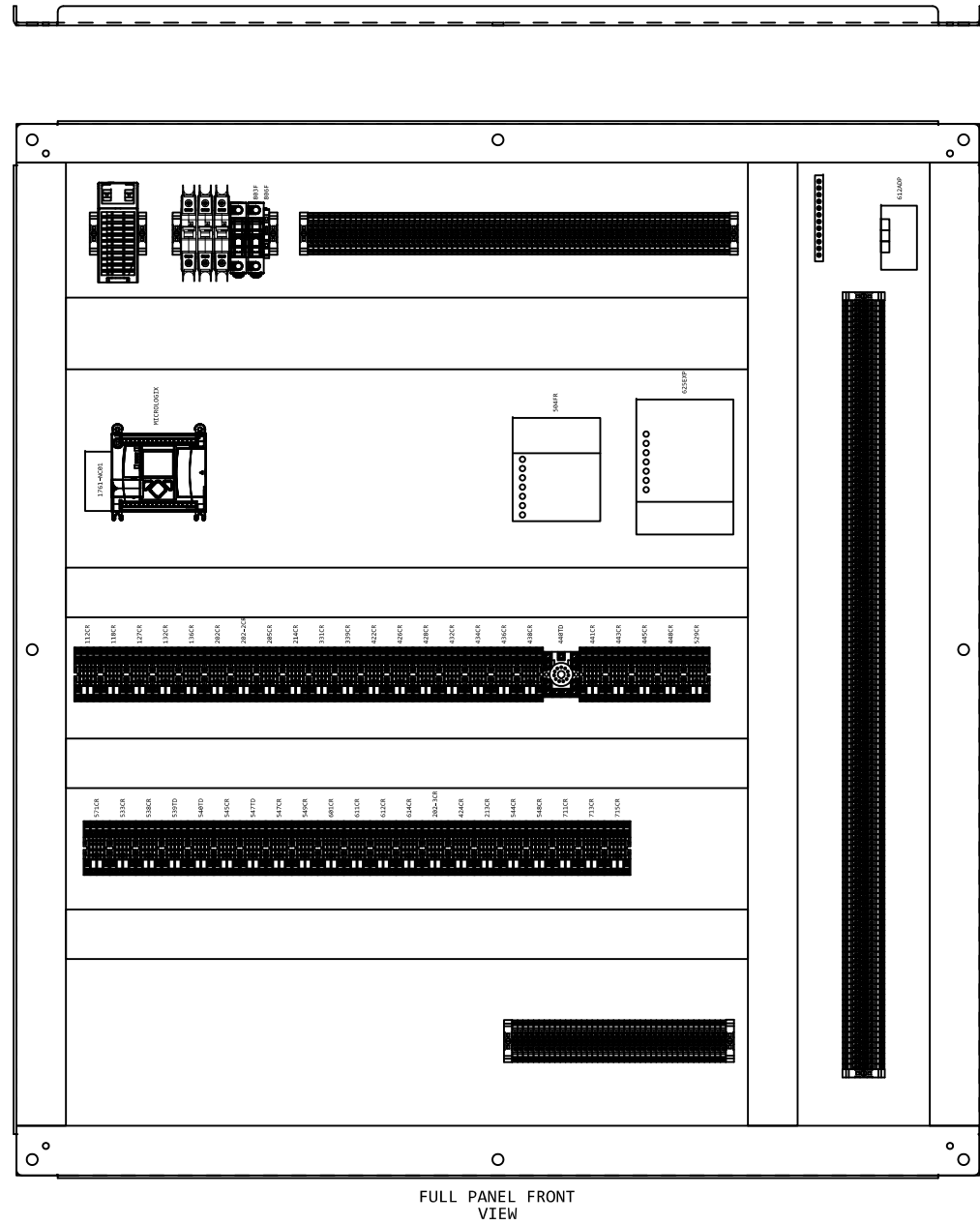
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SHEET NO.	09

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SCE-60P48F1



BACKPANEL LAYOUT		MAIN PANEL		JOB NO. : 424997	
BURNER MANAGEMENT SYSTEM				DRAWN BY : DJN	
DULUTH STEAM BOILER #3				APPROVED : M. THOMAS	
REV					
A	BURNER PANEL UPGRADE		DJN	MDT	11/14/16
REV	DESCRIPTION		DJN	APPROVED	DATE

DWG. NO.	424997-3_10
SHEET NO.	10



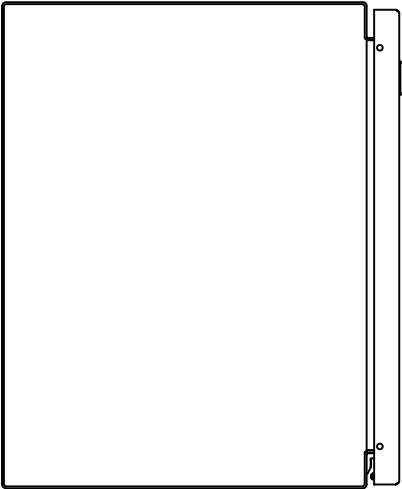
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ONE LAKE PLACE DRIVE
DULUTH, MN 55802-1189

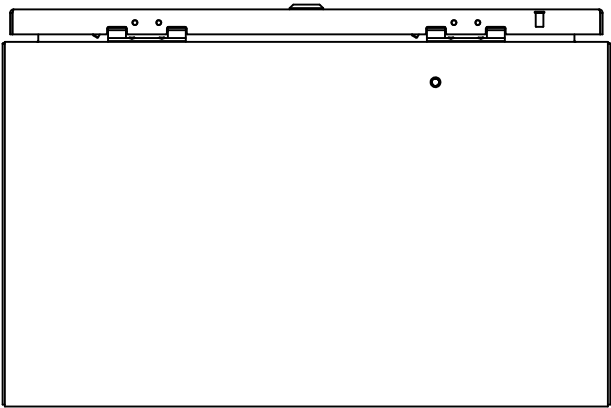
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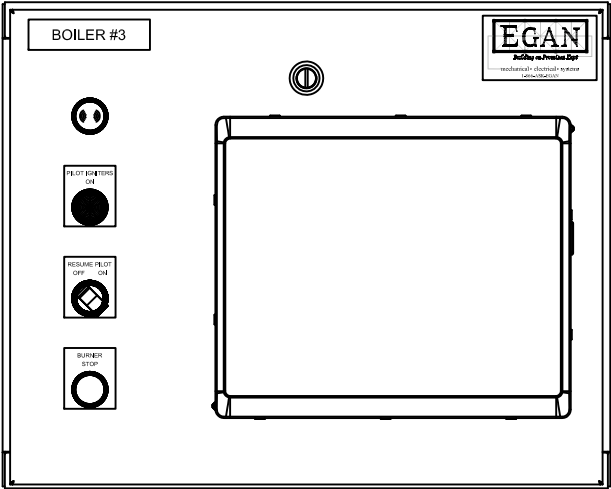
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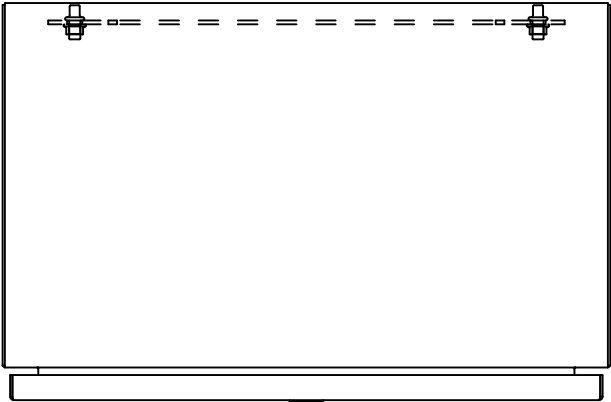
LEFT SIDE VIEW



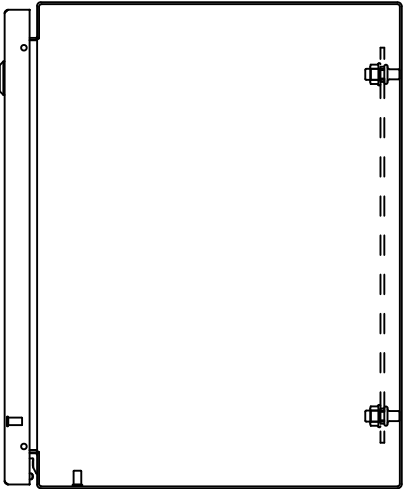
BOTTOM VIEW



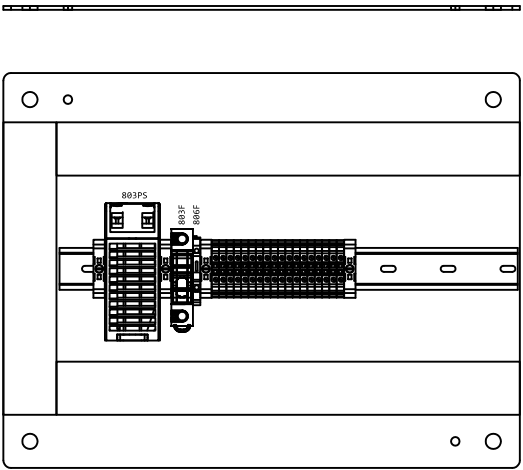
FRONT VIEW



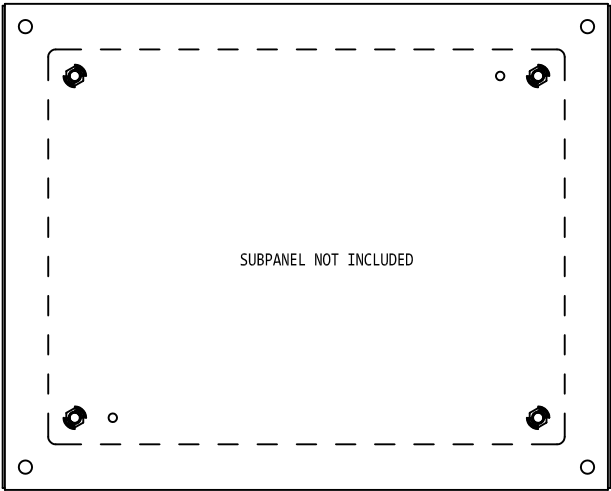
TOP VIEW



RIGHT SIDE VIEW



SUBPANEL FRONT VIEW



EXTERNAL REAR VIEW

SAGINAW CONTROL & ENGINEERING
SCE-20EL1612LP

HMI PANEL LAYOUT		HMI PANEL		JOB NO. : 424997	
BURNER MANAGEMENT SYSTEM				DRAWN BY : DJN	
DULUTH STEAM BOILER #3				APPROVED : M. THOMAS	
REV	DESCRIPTION	DATE	DATE	DATE	DATE
A	BURNER PANEL UPGRADE	11/14/16	MDT	11/14/16	MDT

**DULUTH ENERGY
SYSTEMS**

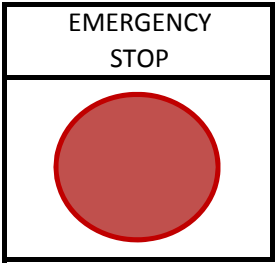
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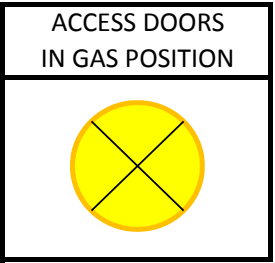
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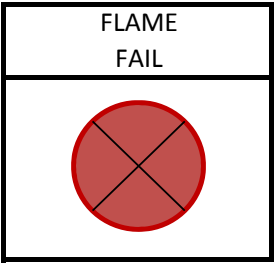
Main Panel Button Layout



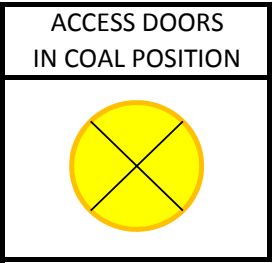
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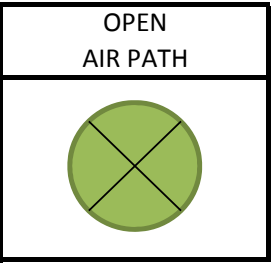
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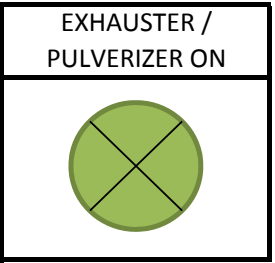
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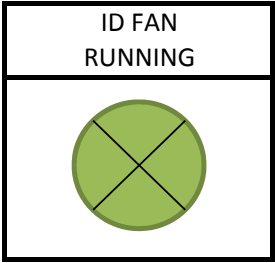
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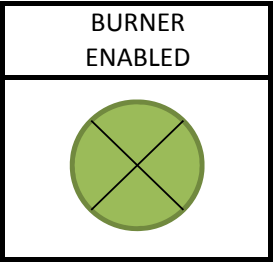
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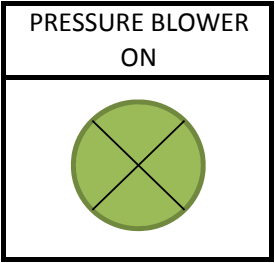
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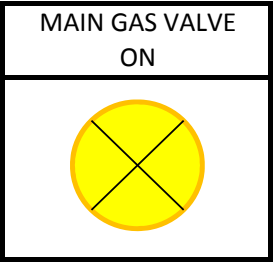
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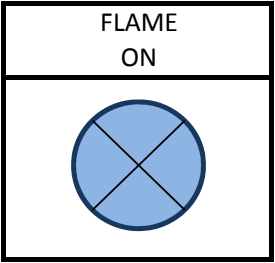
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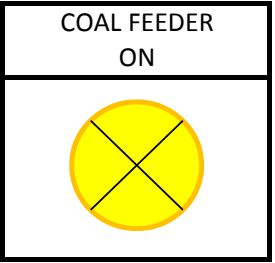
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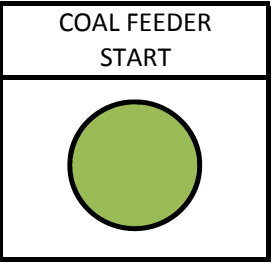
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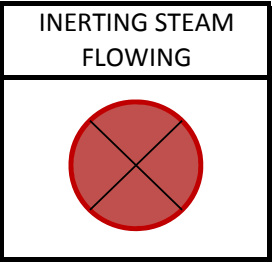
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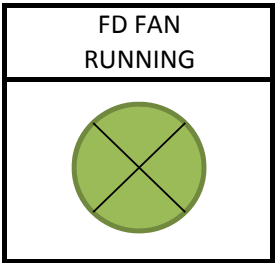
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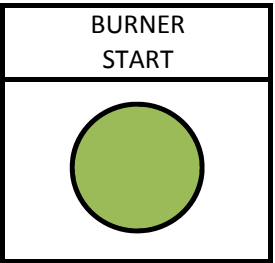
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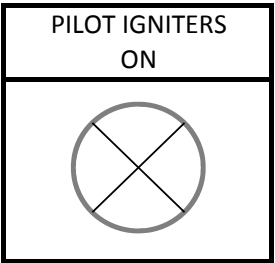
347PL



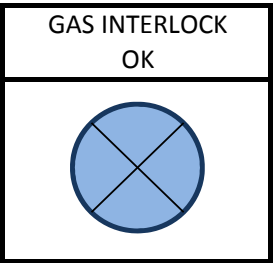
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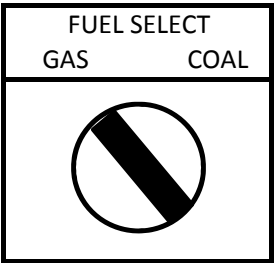
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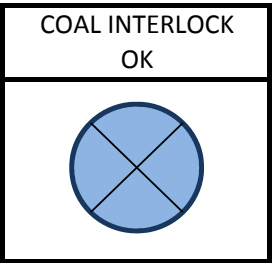
541PL



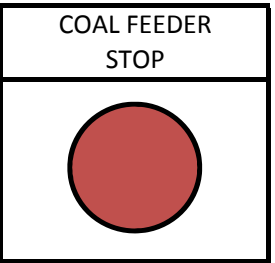
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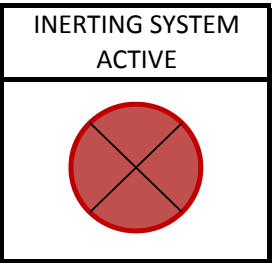
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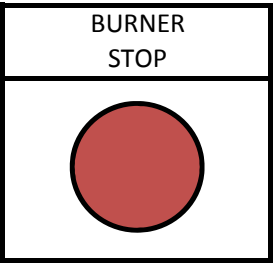
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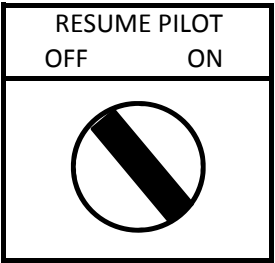
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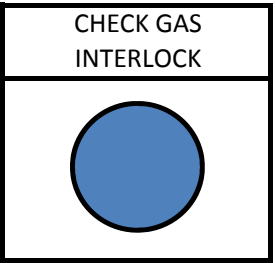
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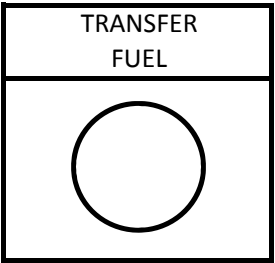
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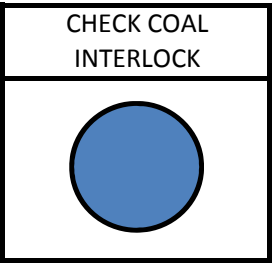
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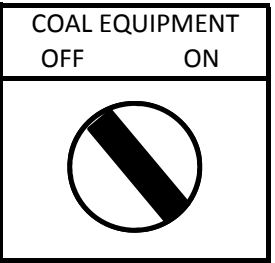
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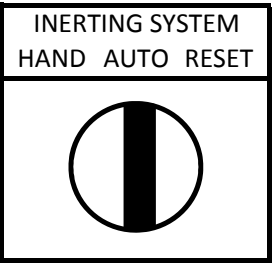
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510PB

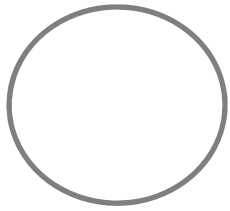


443SS

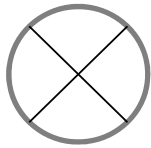


339SS

Sonalert



PILOT IGNITERS
ON



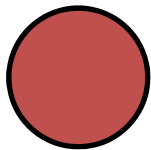
532PL

RESUME PILOT
OFF ON



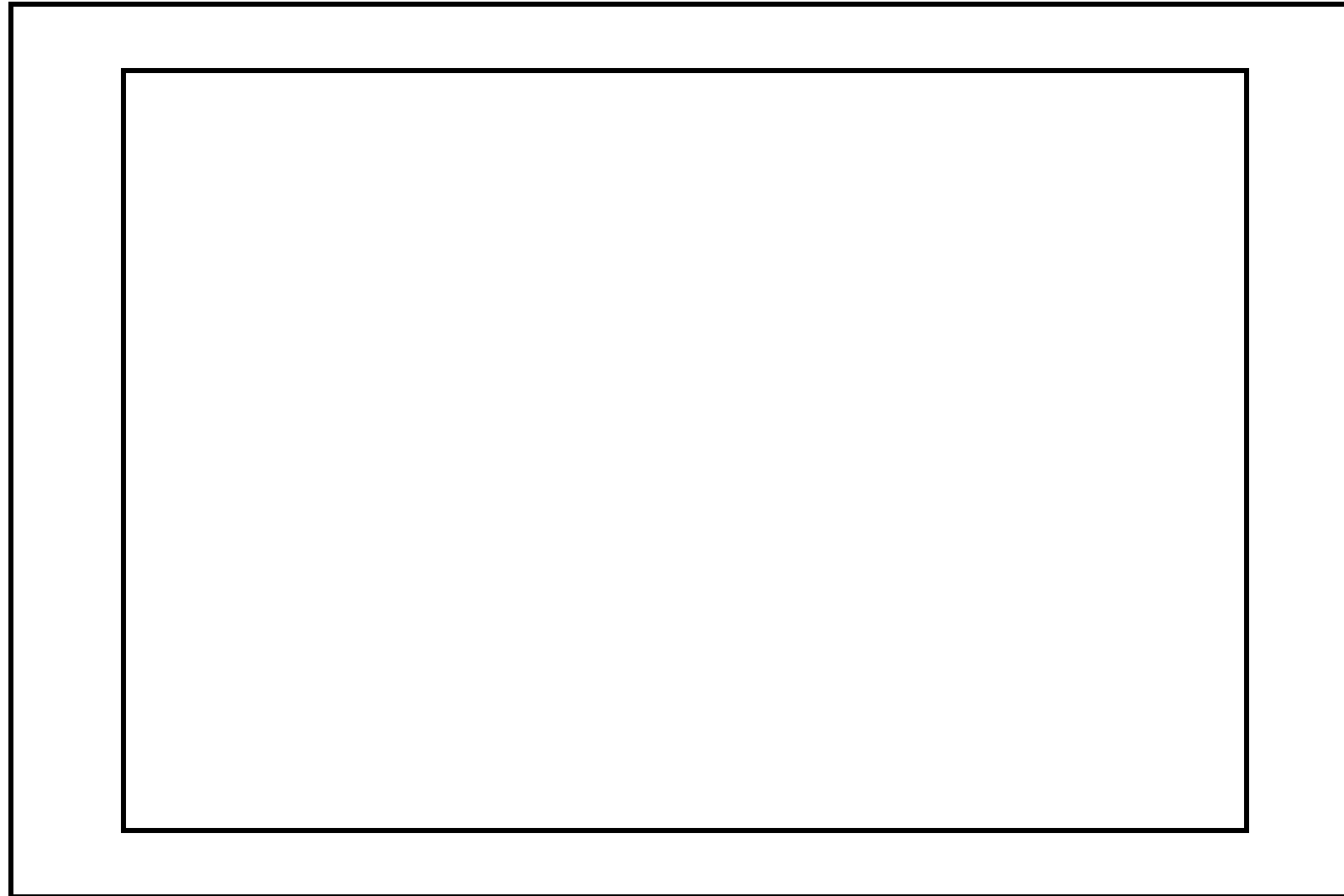
531SS

BURNER
STOP

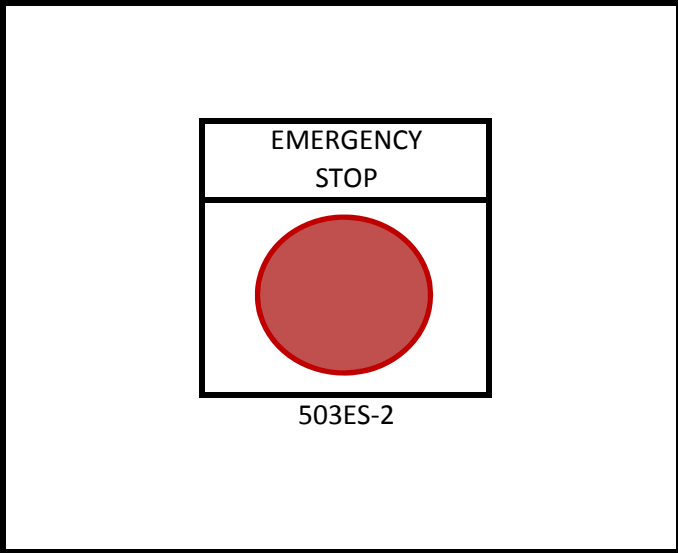


112PB-2

Panelview



Exit Door 1



Exit Door 2

