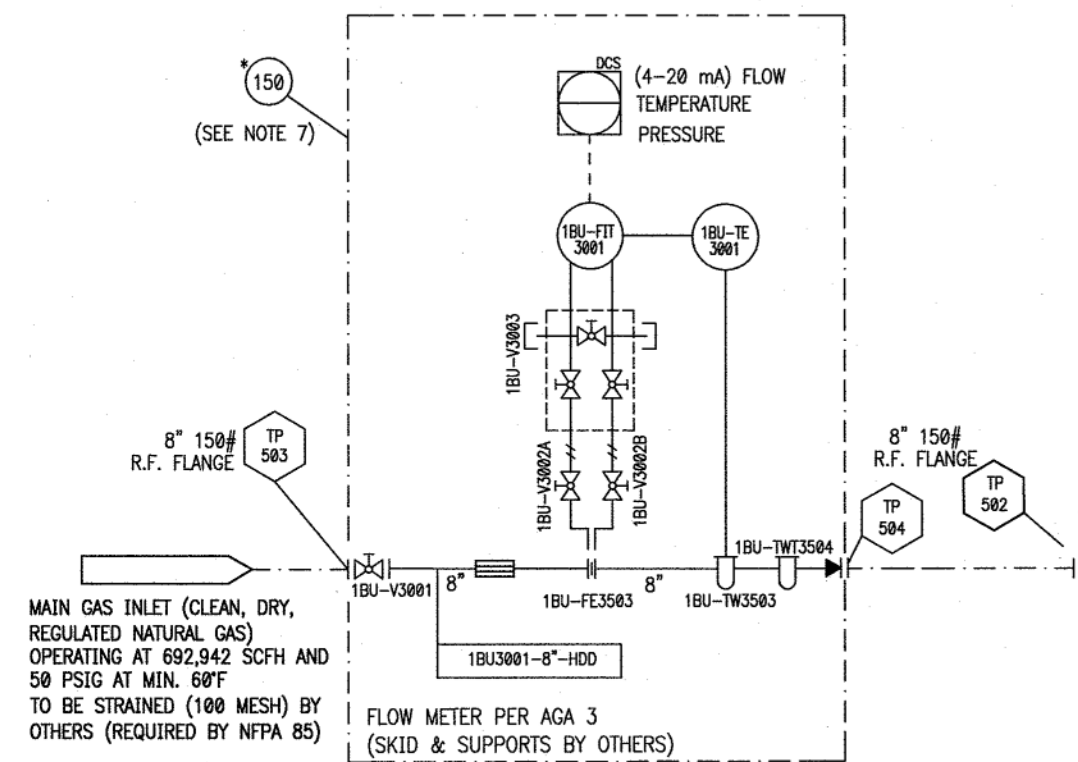


TABLE 1

INSTRUMENT	RANGE (SETPOINTS)
1BU-PSL3506A 1BU-PSL3506B 1BU-PSL3506C	7-30 PSIG (15 PSIG DECREASING)
1BU-PSH3511A 1BU-PSH3511B 1BU-PSH3511C	3-50 PSIG (26 PSIG INCREASING)
1BU-PRV3311	5-20 PSIG (15 PSIG)
11A-PSL3536A 11A-PSL3536B 11A-PSL3536C	12-100 PSIG (50 PSIG DECREASING)
1BU-PSL3542A 1BU-PSL3542B 1BU-PSL3547	0-60 IN W.C. (24 IN W.C. DECREASING)
11A-PRV3020 11A-PRV3040	70-150 PSIG (82 PSIG)
1BU-PIT3500 1BU-PIT3510	0-100 PSIG
1BU-PDIT3510 11A-PSL3521	-20 TO 100 PSID (0-8.15 IN W.C.)
1BU-PSV3545	(65 IN W.C.)

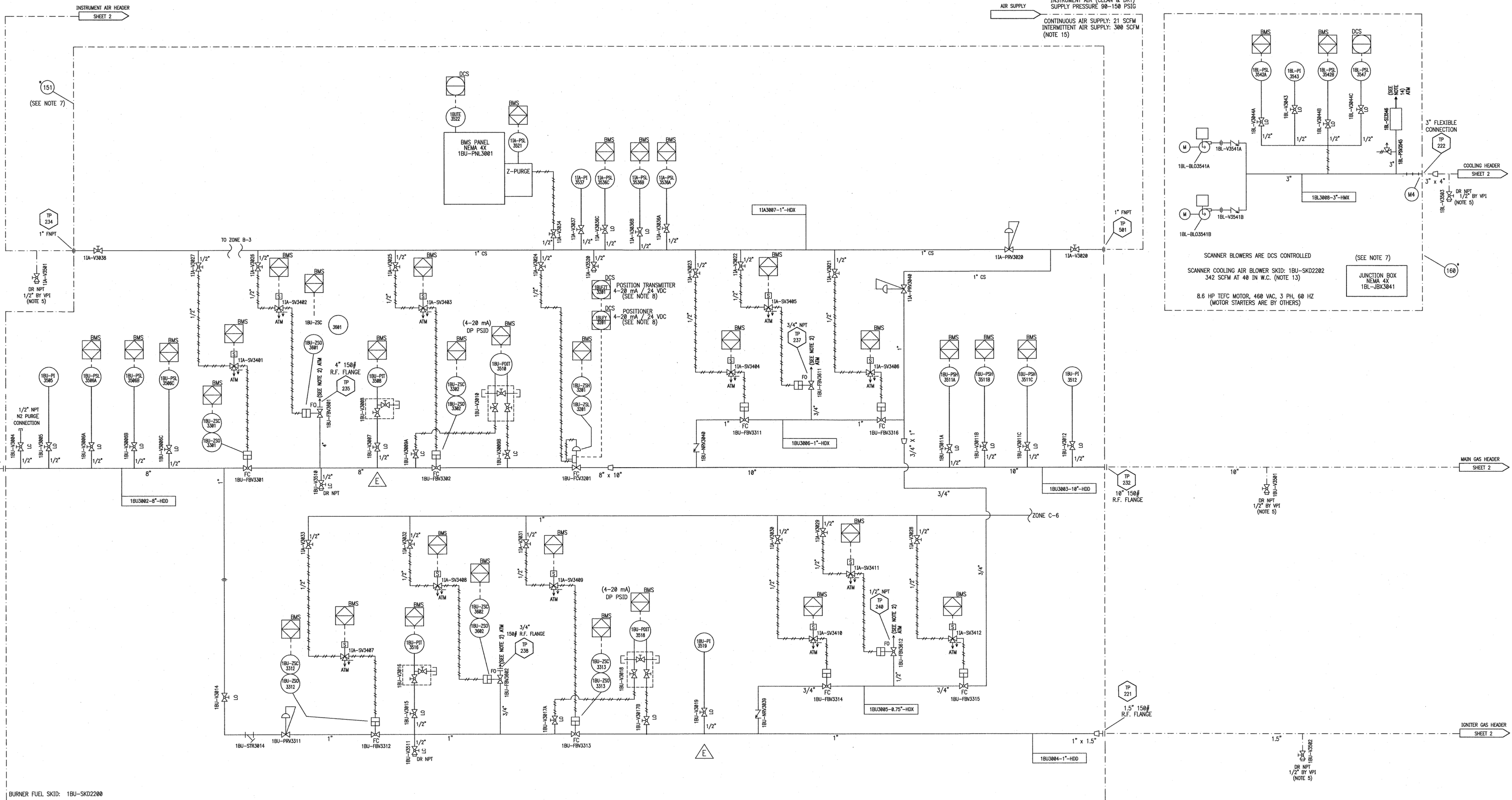
TABLE 2

LINE	DESIGN PRESSURE PIPING ONLY	TEST PRESSURE PIPING ONLY	DESIGN TEMPERATURE PIPING ONLY
MAIN GAS TRAIN	150 PSIG	225 PSIG	150°F
IGNITER GAS TRAIN	150 PSIG	225 PSIG	150°F
INSTRUMENT AIR TRAIN	150 PSIG	225 PSIG	150°F
INSTRUMENT AIR HEADER	150 PSIG	225 PSIG	150°F
MAIN GAS HEADER	150 PSIG	225 PSIG	150°F
IGNITER GAS HEADER	150 PSIG	225 PSIG	150°F
COOLING AIR HEADER	20 PSIG	30 PSIG	150°F



## NOTES:

- LOCATE PIPING MODULE AND BLOWERS AS CLOSE AS POSSIBLE TO BURNER TO MINIMIZE VOLTAGE AND PRESSURE DROP.
- GAS VENTS AND DRAINS TO BE PIPED TO NON-HAZARDOUS LOCATION. (BY VPI)
- ONE SCANNER COOLING AIR BLOWER TO BE ON WHEN DUCT TEMPERATURE IS GREATER THAN 140° F.
- PROVISIONS MUST BE MADE TO AVOID STRESS DUE TO THERMAL EXPANSION OR VIBRATION; ANALYSIS BY VPI.
- INSTALL DRIPLETS AT LOWEST POINT IN ALL FIELD PIPING RUNS VALVES SUPPLY BY VPI; INSTALLATION BY OTHERS.
- ALL DEVICES MOUNTED ON THE FUEL SKID ARE PRE-WIRED TO THE LOCAL BMS.
- FIELD WIRING TO BMS/MCC/DCS BY OTHERS.
- 4-20 mA/24 VDC FIRING RATE FROM DCS. DCS TO DRIVE VALVE TO LIGHT-OFF POSITION UPON LOSS OF "RELEASE" TO MODULATE SIGNAL. (BY OTHERS)
- LINE, VALVES AND INSTRUMENTS ARE TAGGED IN ACCORDANCE WITH CUSTOMER TAGGING FORMAT.
- \* DENOTES THE ITEMS TO BE SHIPPED LOOSE.
- FUEL SKID AND BURNER FRONT COMPONENTS ARE LOCATED IN CLASS 1, DIV. 2, GROUP D HAZARDOUS ELECTRICAL AREA. BLOWER SKID TO BE LOCATED IN NON HAZARDOUS ELECTRICAL AREA.
- EQUIPMENT FOR ONE DUCT BURNER UNIT WILL BE PROVIDED.
- FORNEY HAS SIZED EACH COOLING AIR BLOWER TO DELIVER:  
7 FLAME SCANNER X 9 SCFM  
7 MAXIFIRE IGNITER X 12 SCFM  
12 VPI SUPPLIED VIEWPORT X 15 SCFM  
10% FLOW MARGIN (ON SCANNERS AND IGNITERS) = TOTAL 342 SCFM AT 40 IN W.C.  
THE PIPING BETWEEN FORNEY SUPPLIED COOLING AIR HEADERS TO VPI SUPPLIED VIEWPORTS SHOULD BE SIZED SUCH THAT EACH VIEW PORT RECEIVES 15 SCFM AT 6 IN W.C. ABOVE FURNACE PRESSURE. RECOMMENDED MINIMUM PIPE SIZE IS 3/4".
- BECAUSE OF STANDARD SIZE BLOWER, AN AUTOMATIC SAFETY RELIEF VALVE WITH SILENCER IS PROVIDED TO RELIEVE EXCESS AIR PRESSURE WHEN BLOWER SKID OUTLET PRESSURE EXCEEDS 65 IN W.C. THIS IS TO SAFEGUARD BLOWER AND MOTOR.
- FUEL PIPE SECTIONS TO BE PRESSURIZE AT 40 PSIG FOR NFPA SYSTEM B PURGE CREDIT.



**MEC/KMEC**  
**Duct Burner-P&ID**

VOGT POWER INTERNATIONAL

Released, Work May Proceed

Bell, Milton

Aug-08-2016

VOGT POWER INTERNATIONAL  
V17494-BUXD-5001-04  
25-Jul-2016

REV	DATE	DR	ENG	RWD
1	6/14/16	JK	MR	MM
2	10/10/15	TJH	WK	WM

REVISED PER CUSTOMER COMMENTS  
UPDATE INSTRUMENTATION LOCATION  
INITIAL SUBMITTAL

MIDDLETOWN PROJECT  
MIDDLETOWN, OH  
VPI PROJECT #: V17494  
VPI PO #: V0009467

KINGS MOUNTAIN PROJECT  
KINGS MOUNTAIN, NC  
VPI PROJECT #: V17495  
VPI PO #: TBD

USE ENGINEERING STANDARD 348304-01 FOR TOLERANCES  
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED  
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TITLE  
PIPING & INSTRUMENTATION  
DIAGRAM  
MULTIPLE GAS ELEMENT  
DUCT BURNER



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CONTRACT  
B10238  
SCALE  
NONE  
SHEET  
1 OF 3  
SIZE  
D  
DRAWING NUMBER  
B10238-005-01  
REV  
E

FORM 600086-20, REV E  
FILE DRAWING 397349-01, REV C



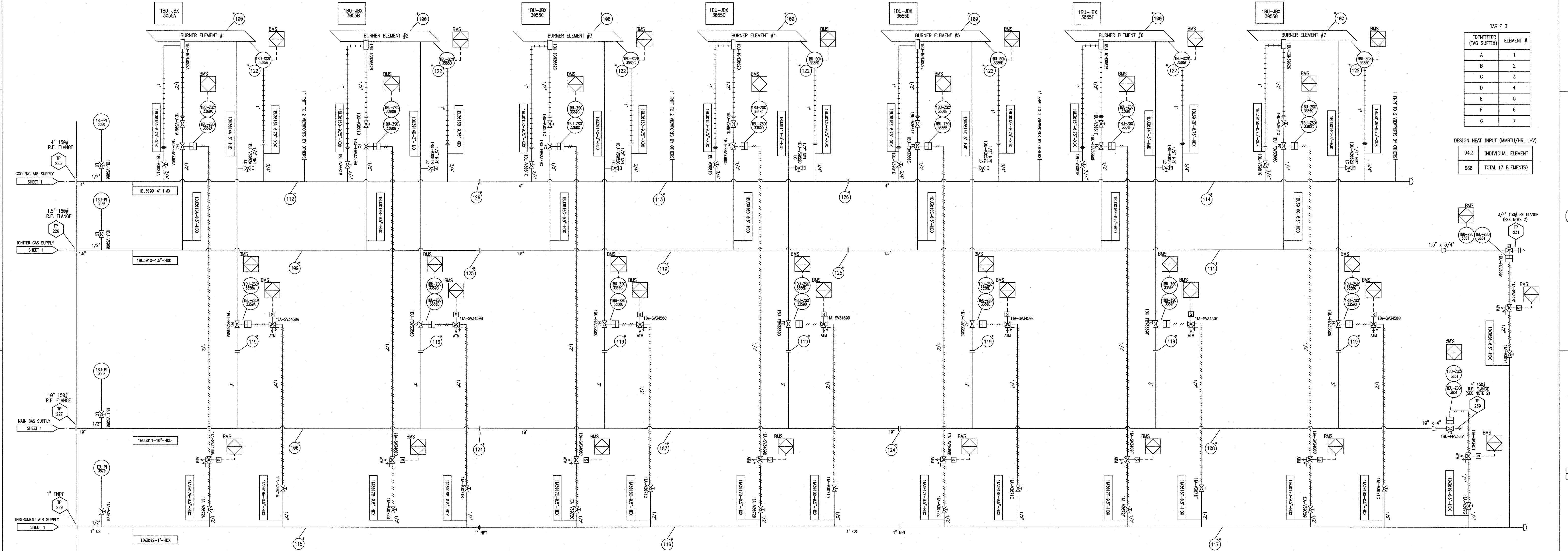


TABLE 3	
IDENTIFIER (TAG SUFFIX)	ELEMENT #
A	1
B	2
C	3
D	4
E	5
F	6
G	7

DESIGN HEAT INPUT (MMBTU/HR, LHV)	
94.3	INDIVIDUAL ELEMENT
660	TOTAL (7 ELEMENTS)

6/23/16	mk	WM	REVISED PER CUSTOMER COMMENTS UPDATE INSTRUMENTATION LOCATION	MIDDLETOWN PROJECT MIDDLETOWN, OH VPI PROJECT #: V17494 VPI PO #: V0009467	KINGS MOUNTAIN PROJECT KINGS MOUNTAIN, NC VPI PROJECT #: V17495 VPI PO #: TBD	USE ENGINEERING STANDARD 348384-01 FOR TOLERANCES ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED DO NOT SCALE THIS DRAWING CONFIDENTIAL - This drawing is the confidential and proprietary copyrighted property of Forney Corporation, 3405 Wiley Post Road, Carrollton, Texas USA 75006. All information contained herein is confidential and shall not be reproduced, copied, lent, or disclosed without the written permission of Forney Corporation.	PIPING & INSTRUMENTATION DIAGRAM MULTIPLE GAS ELEMENT DUCT BURNER	Forney Corporation Copyright © 2002 by Forney Corporation. All rights reserved. CONTRACT B10238 SCALE NONE SHEET 2 of 3 DRAWING NUMBER B10238-005-01 REV E
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