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**24/7 • (800) 227-1966**

## **New 75,000 pph Low NOx, 350 psig Skid-Mounted Package Boiler**

Nationwide Boiler's low NOx 75,000 pph, 350 psig design (150 - 350 psig operating), saturated steam, skid-mounted D type package Babcock & Wilcox watertube boiler is set to burn natural gas or #2 oil. It is piped and wired and includes the following components:

- Low NOx Burner
- EconoStak Economizer
- Burner Management System
- Parallel Positioning Combustion Controls
- Forced Draft Fan & Motor
- Complete Fuel Train & Pilot Ignition System
- Water Column & Site Glass
- Steam Pressure Gauge
- Low-water Cutoffs
- Safety Valves
- Feedwater Control, Stop & Check Valves
- Blowdown Valves
- Continuous Blowdown Metering Valve
- Chemical Feed Valve
- Flues & Ducts
- Steam Non-return Valve (loose)
- Stack (loose)
- NEMA 4 Electrical Enclosure
- Low NOx CataStak™ SCR System (**optional**)
- Weatherproofed (except for freezing)
- Meets FM, NFPA 85 & IRI Insurance Standards
- Operating Manuals with Drawings



### **Fuel Consumption:**

Natural Gas: 91,115 SCFH

### **Connection Sizes:**

Main Steam: 8"-300# FLG  
 Natural Gas: 4"-150# FLG  
 Feedwater: 3"-300# FLG  
 Bottom Blowdown: 1½"-300# FLG  
 Continuous Blowdown: 1" NPT  
 Chemical Feed: 1" NPT  
 Instrument Air: ¾" NPT  
 Water Column Drain: 2" NPT

### **Electrical Power Service Requirements:**

460 VAC, 3 ph, 60 Hz, 200 AMPS

### **Boiler Base Dimensions & Weights:**

Length / Width / Height: 26' 6" / 11' 4" / 13' 7"  
 Shipping Weight: 90,931 lbs  
 Operating Weight: 104,534 lbs

### **Emissions Data (natural gas):**

NOx (corr. to 3% O<sub>2</sub>): 30 ppm  
 CO (corr. to 3% O<sub>2</sub>): 50 ppm

Ask About Our **Green Solutions**



42400 Christy Street / Fremont, CA 94538 / (510) 490-7100 / [www.nationwideboiler.com](http://www.nationwideboiler.com) / [info@nationwideboiler.com](mailto:info@nationwideboiler.com)

*True Nationwide Coverage & Beyond. Representatives Located Worldwide.*

\* Actual Equipment may differ from listed specification. Please consult Nationwide Boiler Inc. for additional details.

## PREDICTED BOILER EMISSION DATA

### NATURAL GAS FIRING

NBI MODEL NO	75-B&W-D-350 SAT	
BOILER MFG AND MODEL	BABCOCK & WILCOX FM103-79	
BURNER MFG AND MODEL	TBD	
BOILER CAPACITY	75,000	
DESIGN PRESSURE, PSIG	350	
OPERATING PRESURE, PSIG	325	
FUEL HEAT INPUT, MMBTU	91.1	
FUEL FLOW, SCFH	91,115	
FLUE GAS OUTLET TEMP, DEG F	300	
FLUE GAS FLOW, LB/HR	80,665	
FLUE GAS SPECIFIC VOLUME, CF/LB	20.0	
STACK OUTLET DIA., IN	48	
STACK OUTLET FLOW AREA, SQ FT	12.6	
STACK GAS EXIT VELOCITY, FPM	2,136	
STACK GAS EXIT FLOW, ACFM	27,035	
	<b>PPMVD</b>	<b>#/MMBTU</b>
NO <sub>x</sub> @ 3% O <sub>2</sub>	30	0.036
CO @ 3% O <sub>2</sub>	50	0.037
VOC @ 3% O <sub>2</sub>	10	0.004
PM10 @ 3% O <sub>2</sub>	-	0.010
EXCESS AIR, %	15	15

DATE: 3/31/15

# NATIONWIDE BOILER INCORPORATED

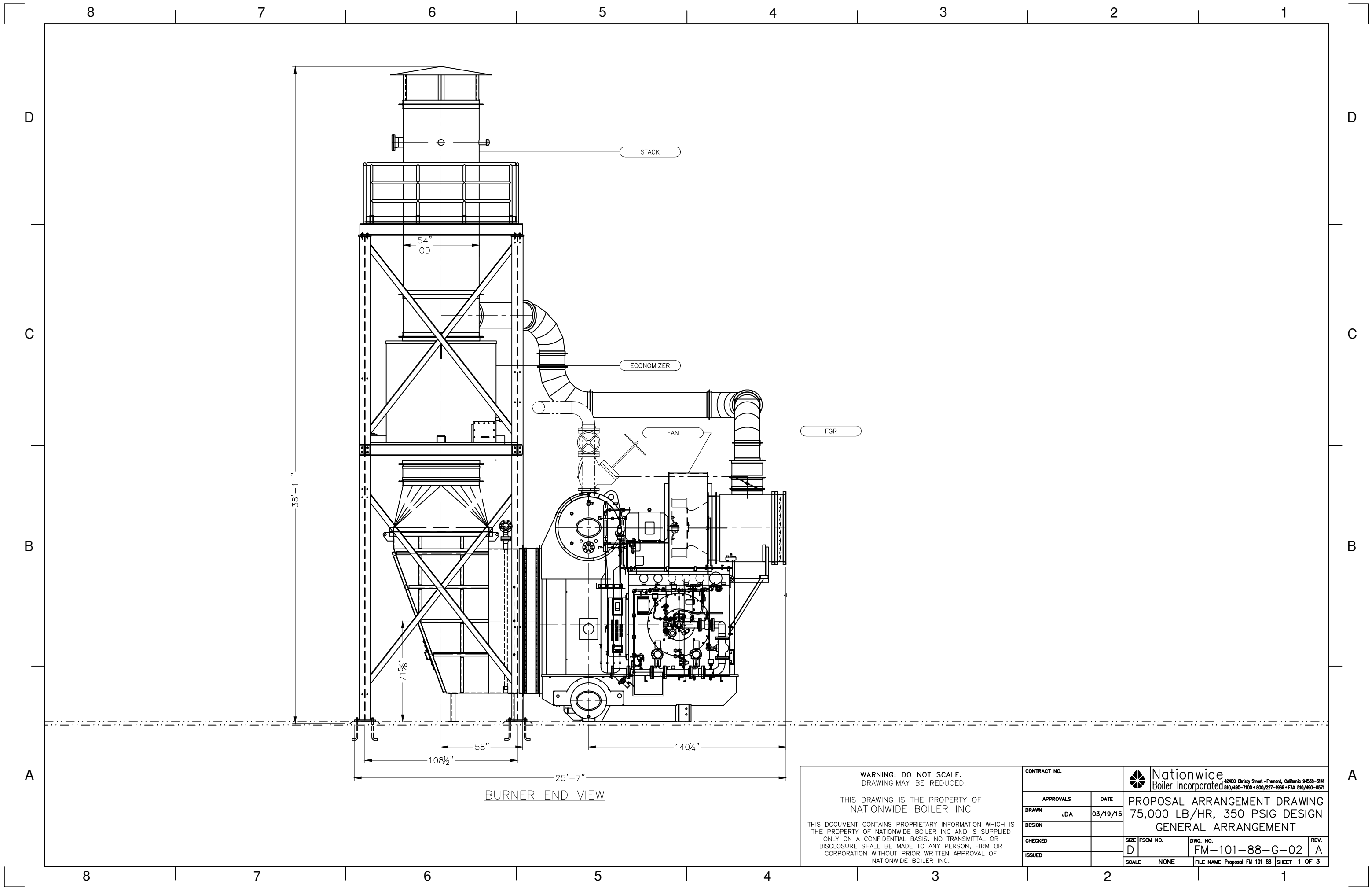
42400 CHRISTY STREET, FREMONT, CA 94538-3141



## PROPOSAL ARRANGEMENT 75,000 LB/HR, 350 PSIG DESIGN SATURATED

INDEX OF DRAWINGS		
FM-101-88-T-01	TITLE SHEET, INDEX OF DRAWINGS	REV. A
FM-101-88-G-02	GENERAL ARRANGEMENT, 3 SHEETS	REV. A
FM-101-88-L-03	MECHANICAL LEGENDS	REV. A
FM-101-88-F-04	PROCESS FLOW DIAGRAM	REV. A
FM-101-88-I-05	PIPING AND INSTRUMENT DIAGRAM	REV. A

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<p>APPROVALS</p>	<p>DATE</p>	<p>PROPOSAL ARRANGEMENT DRAWING 75,000 LB/HR, 350 PSIG DESIGN TITLE SHEET/INDEX OF DRAWINGS</p>	
<p>DRAWN JDA</p>	<p>03/19/15</p>	<p>SIZE FSCM NO.</p>	<p>DWG. NO.</p>
<p>DESIGN</p>		<p>D</p>	<p>FM-101-88-T-01</p>
<p>CHECKED</p>		<p>REV.</p>	<p>A</p>
<p>ISSUED</p>		<p>SCALE NONE</p>	<p>FILE NAME Proposal-FM-101-88 SHEET 1 OF 1</p>



STACK

54"  
OD

ECONOMIZER

FAN

FGR

38'-11"

71 5/8"

108 1/2"

58"

140 1/4"


25'-7"

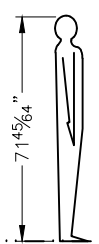
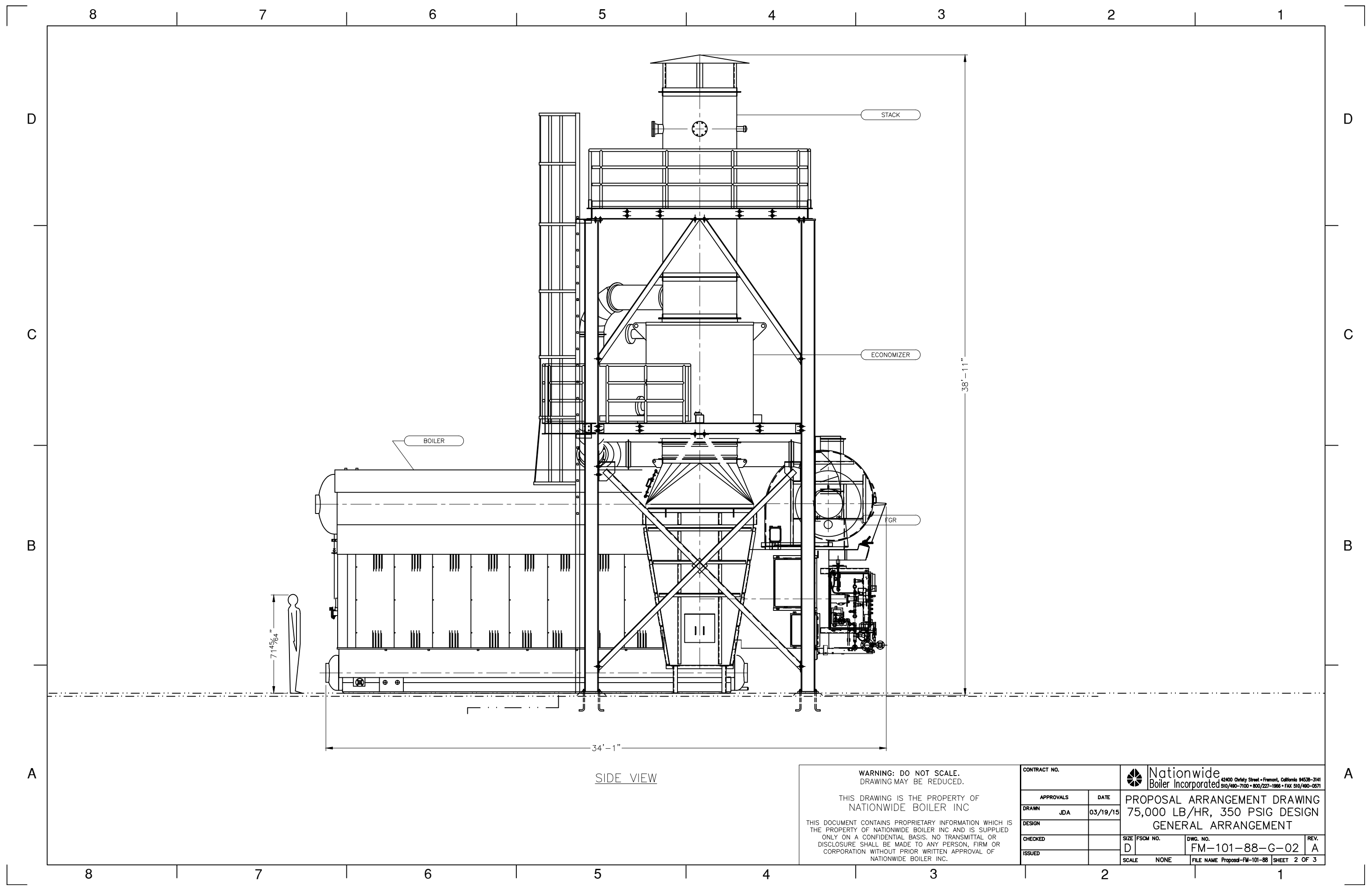
BURNER END VIEW

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CHECKED		SIZE D	FSCM NO.
ISSUED		SCALE NONE	DWG. NO. FM-101-88-G-02
		FILE NAME	Proposed-FM-101-88 SHEET 1 OF 3
		REV. A	



BOILER

STACK

ECONOMIZER

FGR

34'-1"


38'-11"

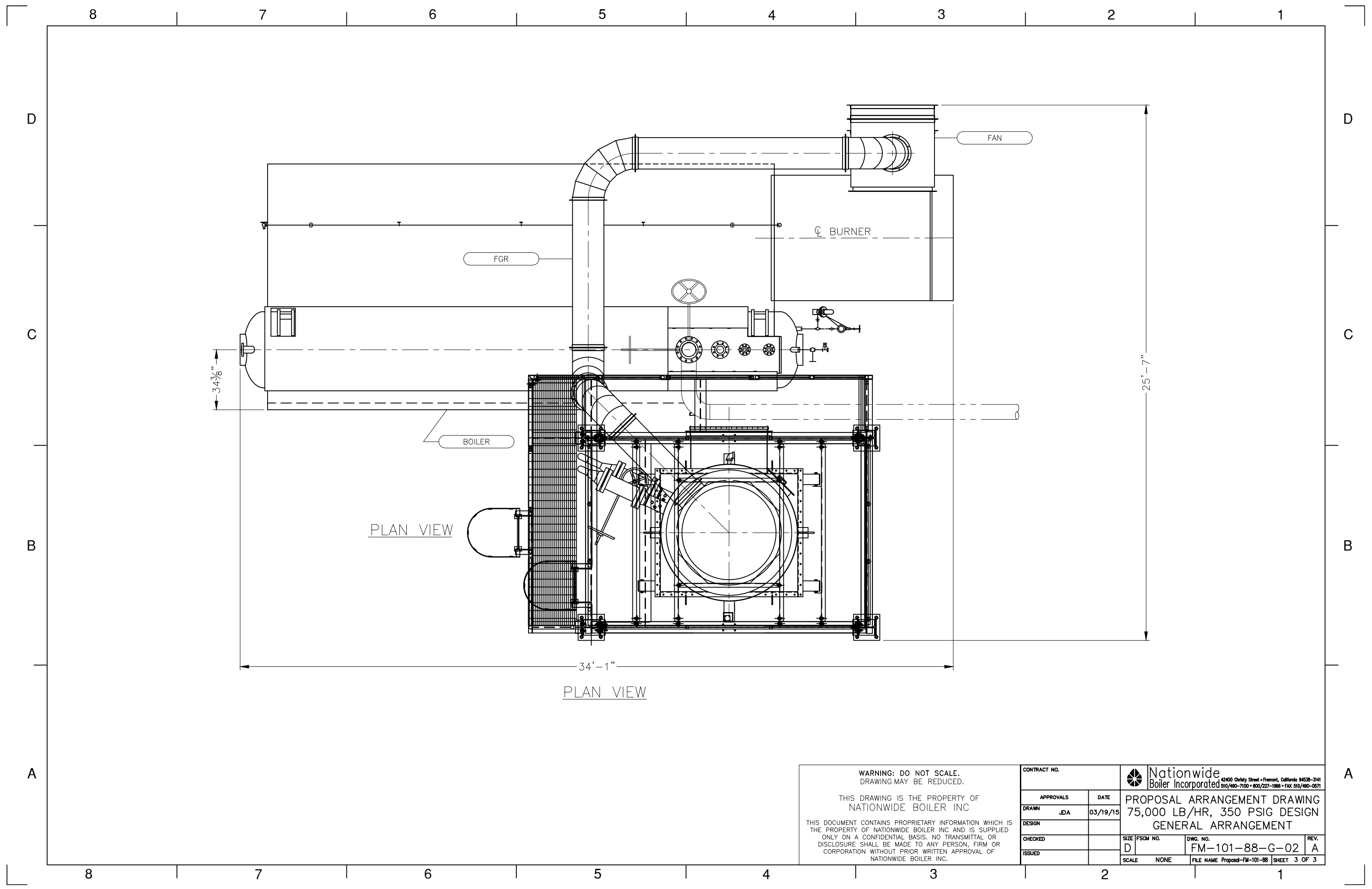
SIDE VIEW

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
PLAN VIEW

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SCALE NONE		FILE NAME Proposal-FM-101-88 SHEET 3 OF 3	

L E G E N D

SYMBOL	IDENTIFICATION	SYMBOL	IDENTIFICATION	SYMBOL	IDENTIFICATION	INSTRUMENT DESIGNATION
	<b>GENERAL SYMBOLS</b> CONTINUATION FLAG; M-2-DRAWING NUMBER		<b>SELF-ACTUATED REGULATOR SYMBOLS</b> CONTROL VALVE (GENERAL SYMBOL)		AIR ACTUATED SAFETY SHUTOFF VALVE	INSTRUMENT SHALL BE IDENTIFIED BY A SYSTEM OF LETTERS AND NUMBERS AS FOLLOWS: A. IDENTIFICATION LETTERS SHALL BE PER TABLE SHOWN BELOW B. ID NUMBER SHALL BE UNIQUE THE INSTRUMENT DESIGNATIONS SHALL BE: 
	EQUIPMENT IDENTIFICATION EQUIPMENT NUMBER		PRESSURE REDUCING REGULATOR, SELF-CONTAINED		AIR ACTUATED FLOW CONTROL VALVE	
	BREAK POINT INTERFACE BETWEEN VENDOR SKID MOUNTED SCOPE OF SUPPLY AND INTERCONNECTING PIPING		PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP			
	<b>INSTRUMENT FOR SINGLE MEASURED VARIABLE SYMBOLS</b> (SYMBOL SIZE MAY VARY ACCORDING TO SIZE AND TYPE OF DOCUMENT)		<b>ACTUATOR SYMBOLS</b> ELECTRIC MOTOR			
	LOCALLY MOUNTED		MODULATING ELECTRIC MOTOR			
	PANEL MOUNTED IN PANEL		SOLENOID			
	MOUNTED INTERNAL TO CONTROL PANEL					
	<b>RELATED ELECTRICAL AND CONTROL SYMBOLS</b> INTERLOCK LOGIC		<b>PRIMARY ELEMENT SYMBOLS</b> ORIFICE PLATE			
	ELECTRIC MOTOR DRIVE		PROPELLER METER	<b>ABBREVIATION</b>	<b>EQUIPMENT IDENTIFICATION</b>	
	POWER CORD TO 110V AC RECEPTACLE			A	AGITATOR	
	<b>INSTRUMENT LINE SYMBOLS</b> INSTRUMENT AIR (PNEUMATIC)		<b>PIPING AND APPURTENANCE SYMBOLS</b> REDUCER	B	BOILER	
	MECHANICAL LINK		WYE STRAINER WITH BLOW-OFF VALVE AND PLUG	BNR	BURNER	
	ELECTRIC SIGNAL		STEAM OR LIQUID TRAP	BT	BRINE TANK	
	CAPILLARY TUBE		DAMPER OR LOUVER	CIP	CHEMICAL INJECTION PUMP	
	HYDRAULIC (WATER OR OIL) BY N.B.I.		PILOT	F	FAN	
	<b>VALVE SYMBOLS</b> SWING CHECK VALVE		INJECTOR OR EDUCTOR	FI	FILTER/AIR INLET	
	STOP CHECK ANGLE VALVE (NON-RETURN)		PIPING MATERIAL CLASS CHANGE	FS	DEAERATOR OR FEEDWATER SYSTEM	
	ANGLE VALVE		AIR DAMPER	M	MOTOR	
	MAKE-UP LEVEL CONTROL OR FLOAT VALVE		DESUPERHEATER	P	PUMP	
	PRESSURE SAFETY, RELIEF OR SAFETY-RELIEF VALVE			S	SOFTENER	
	GATE VALVE		<b>EQUIPMENT SYMBOLS</b> (VERTICAL)	SC	SAMPLE COOLER	
	GLOBE VALVE		FAN OR BLOWER	SP	BLOWDOWN TANK	
	PLUG VALVE		MIXER OR AGITATOR	T	TANK	
	NEEDLE VALVE		ACCUMULATORS, RECEIVERS, PRESSURE VESSELS ATMOSPHERIC TANK			
	BALL VALVE		CENTRIFUGAL PUMP	<b>ABBREVIATION</b>	<b>PROCESS PIPING DESIGNATION</b>	
	NORMALLY CLOSED VALVE		FILTER/SILENCER	BFW	BOILER FEEDWATER	
	MANUAL OPERATED FUEL CONTROL VALVE		METERING PUMP	CBD	CONTINUOUS BLOWDOWN	
	COUPLING		SAMPLE COOLER	CF	CHEMICAL FEED	
	DIAPHRAGM VALVE			COND	CONDENSATE	
	BUTTERFLY VALVE			CW	CITY WATER	
				D	DRAIN	
				DG	DIGESTER GAS	
				FW	FEEDWATER	
				IA	INSTRUMENT AIR	
				NG	NATURAL GAS	
				PROP	PROPANE	
				STM	STEAM	
				V	VENT	

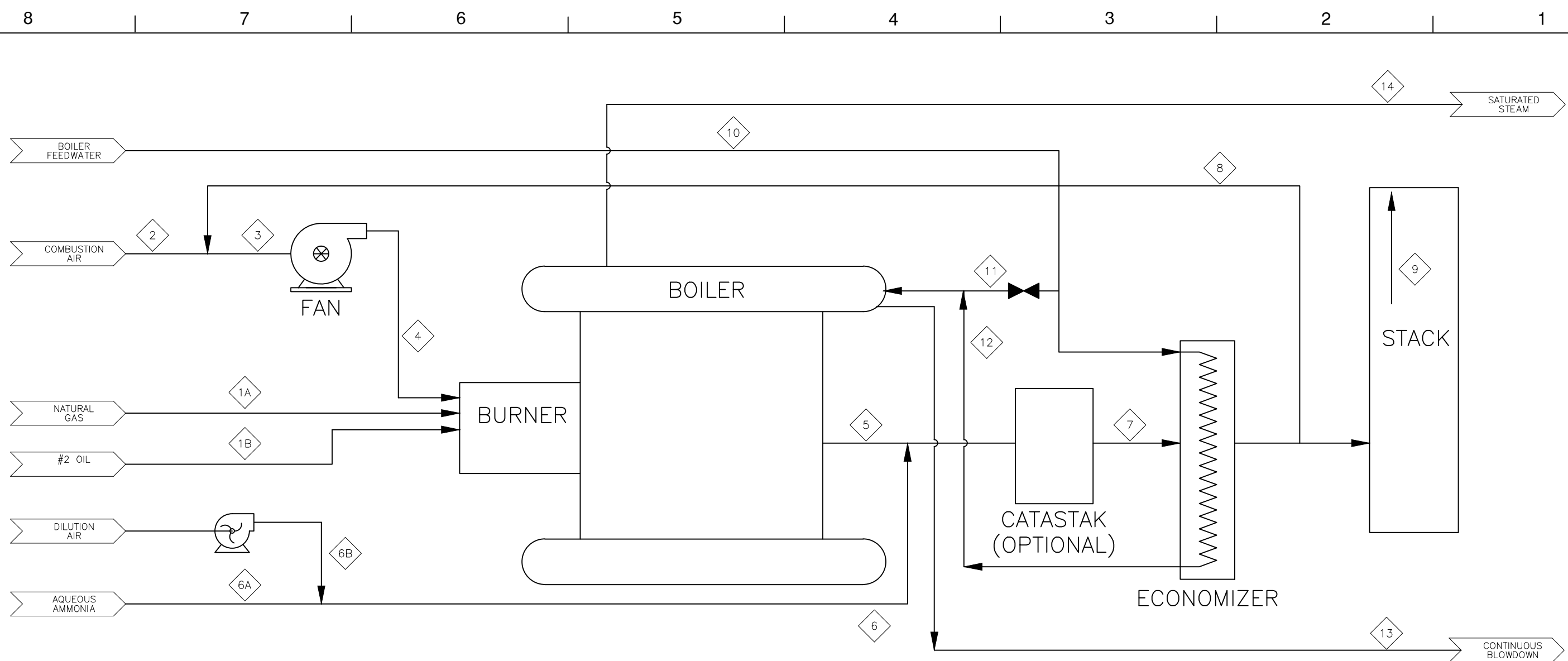
IDENTIFICATION LETTERS PER ISA STANDARD ISA-5.1-1984 (R 1992)				
FIRST-LETTER		SUCCEEDING-LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL
D	DENSITY, (MASS)	DIFFERENTIAL		
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)	
F	FLOW RATE	RATIO (FRACTION)		
G	GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE	
H	HAND (MANUALLY INITIATED)			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME, TIME SCHEDULE	TIME, RATE OF CHANGE		CONTROL STATION
L	LEVEL		LIGHT (PILOT)	LOW
M	MOISTURE, HUMIDITY	MOMENTARY		MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION	
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION	
Q	QUANTITY, EVENT	INTEGRATE, TOTALIZE	INTEGRATOR	INTEGRATOR
R	RADIATION		RECORD	
S	SPEED, FREQUENCY	SAFETY		SWITCH
T	TEMPERATURE			TRANSMIT
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER
W	WEIGHT, FORCE		WELL	
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT

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CHECKED		
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SCALE NONE	FILE NAME Proposed-FM-101-88	SIZE FSCM NO. DWG. NO. REV. D FM-101-88-L-03 A
	SHEET 1 OF 1	



NOTE: ASSUMED 15% EA, 3% BLOWDOWN, 10% FGR AND NEAR SEA LEVEL ELEVATION

ITEM		1A (1)	1B (2)	2	3	4	5	6A	6B	6 (OPTIONAL)	7	8	9	10	11	12	13 (3)	14
DESCRIPTION		NATURAL GAS	#2 OIL	COMBUSTION AIR	COMBUSTION MIX	COMBUSTION MIX	FLUE GAS	AMMONIA	DILUTION AIR	AMMONIA MIX	FLUE GAS	FLUE GAS RECIRCULATION	FLUE GAS	FEEDWATER	ECONOMIZER BYPASS	FEEDWATER	CONTINUOUS BLOWDOWN	SATURATED STEAM
UNITS	FLOW PRESSURE	SCFH PSIG	SCFH PSIG	ACFM IN WC	ACFM IN WC	ACFM IN WC	ACFM IN WC	ACFM PSIG	ACFM IN WC	ACFM IN WC	ACFM IN WC	ACFM IN WC	ACFM IN WC	GPM PSIG	GPM PSIG	GPM PSIG	GPM PSIG	PSIG
FLOW	SEE UNITS	90,983	-	17,467	20,320	18,901	38,566	---	-	-	38,849	2,694	27,039	161.3	0	168.1	5.5	---
MASS FLOW	LB/HR	4,161	4,523	76,317	84,365	84,365	88,526	5.0	195	200	88,726	8,048	80,678	77,320	0	77,320	2,320	75,000
TEMPERATURE	*F	70	70	80	103	103	540	80	80	80	540	300	300	227	227	301	422	422
PRESSURE	SEE UNITS	30	30	0	-0.5	30.0	5.0	80	45	20	2.0	0.5	0	360	-	340	300	300

REFERENCE NOTES

- (1) BASE FUEL
- (2) ALTERNATE FUEL
- (3) FLOW DEPENDS ON WATER QUALITY

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