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New 125,000 pph Low NOx, 350 psig Skid-Mounted Package Boiler

Nationwide Boiler's low NOx 125,000 pph, 350 psig design (150 - 300 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: 151,850 SCFH

Connection Sizes:

Main Steam: 10"-300# FLG
 Natural Gas: 6"-150# FLG
 Feedwater: 4"-600# FLG
 Bottom Blowdown: 1½"-600# FLG
 Continuous Blowdown: 1" NPT
 Chemical Feed: ½" NPT
 Instrument Air: ½" NPT
 Water Column Drain: ¾" NPT

Electrical Power Service Requirements:

460 VAC, 3 ph, 60 hz, 300 AMPS

Boiler Base Dimensions & Weights:

Length / Width / Height: 52' 6" / 26' 8" / 11' 11"
 Shipping Weight: 123,550 lbs
 Operating Weight: 151,100 lbs

Emissions Data (natural gas):

NOx (corr. to 3% O₂): 30 ppm
 CO (corr. to 3% O₂): 50 ppm

Ask About Our **Green Solutions**



42400 Christy Street / Fremont, CA 94538 / (510) 490-7100 / www.nationwideboiler.com / 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

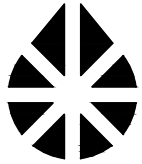
NATURAL GAS FIRING

NBI MODEL NO	125-B&W-D-350 SAT	
BOILER MFG AND MODEL	BABCOCK & WILCOX FM117-88	
BURNER MFG AND MODEL	TBD	
BOILER CAPACITY	125,000	
DESIGN PRESSURE, PSIG	350	
OPERATING PRESURE, PSIG	325	
FUEL HEAT INPUT, MMBTU	151.4	
FUEL FLOW, SCFH	151,850	
FLUE GAS OUTLET TEMP, DEG F	300	
FLUE GAS FLOW, LB/HR	134,430	
FLUE GAS SPECIFIC VOLUME, CF/LB	20.0	
STACK OUTLET DIA., IN	60	
STACK OUTLET FLOW AREA, SQ FT	19.6	
STACK GAS EXIT VELOCITY, FPM	2,278	
STACK GAS EXIT FLOW, ACFM	45,050	
	PPMVD	#/MMBTU
NO _x @ 3% O ₂	30	0.036
CO @ 3% O ₂	50	0.037
VOC @ 3% O ₂	10	0.004
PM10 @ 3% O ₂	-	0.010
EXCESS AIR, %	15	15

DATE: 3/31/15


NATIONWIDE BOILER INCORPORATED

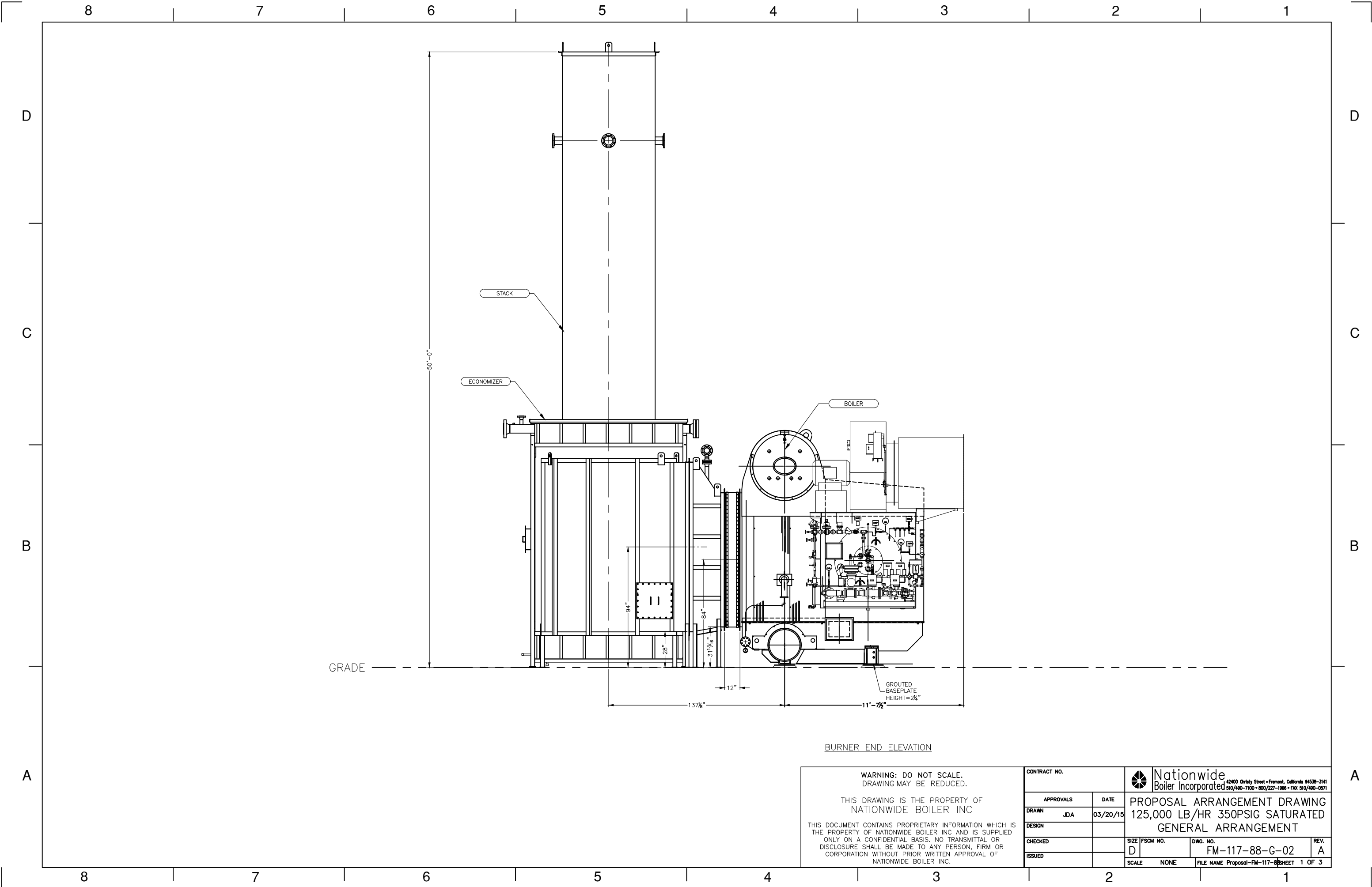
42400 CHRISTY STREET, FREMONT, CA 94538-3141



PROPOSAL ARRANGEMENT 125,000 LB/HR 350 PSIG DESIGN SATURATED

INDEX OF DRAWINGS		
Proposal-FM-117-88-T-01	TITLE SHEET, INDEX OF DRAWINGS	REV. A
Proposal-FM-117-88-G-02	GENERAL ARRANGEMENT, 3 SHEETS	REV. A
Proposal-FM-117-88-L-03	MECHANICAL LEGENDS	REV. A
Proposal-FM-117-88-F-04	PROCESS FLOW DIAGRAM	REV. A
Proposal-FM-117-88-I-05	PIPING AND INSTRUMENT DIAGRAM	REV. A

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<p>APPROVALS</p>	<p>DATE</p>	<p>PROPOSAL ARRANGEMENT DRAWING 125,000 LB/HR 350PSIG SATURATED TITLE SHEET/INDEX OF DRAWINGS</p>	
<p>DRAWN JDA</p>	<p>03/20/15</p>	<p>SIZE FSCM NO.</p>	<p>DWG. NO.</p>
<p>DESIGN</p>		<p>D</p>	<p>FM-117-88-T-01</p>
<p>CHECKED</p>		<p>REV.</p>	<p>A</p>
<p>ISSUED</p>		<p>SCALE NONE</p>	<p>FILE NAME Proposal-FM-117-88-T-01 SHEET 1 OF 1</p>




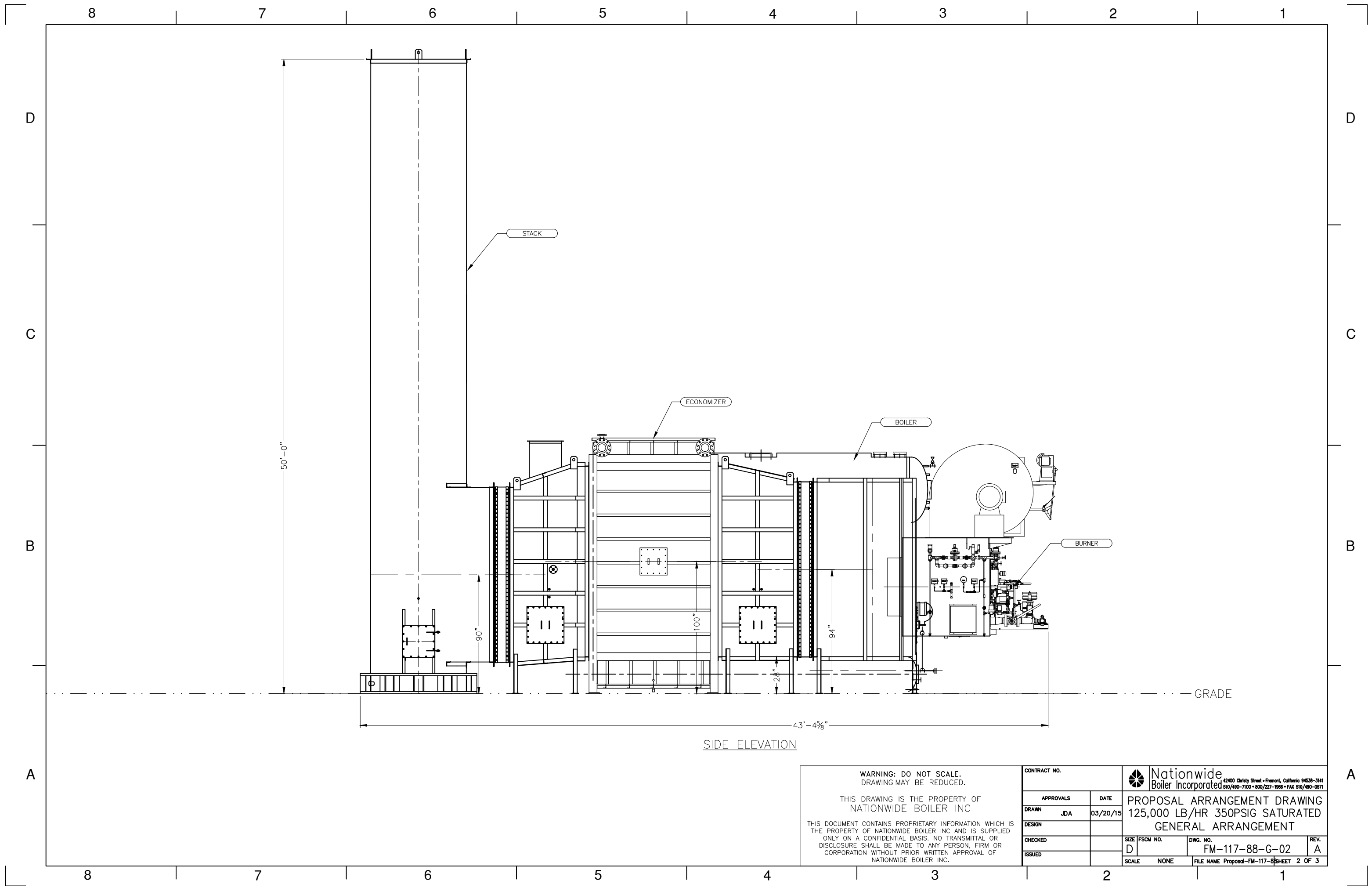
BURNER END ELEVATION

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DRAWN JDA	03/20/15	125,000 LB/HR 350PSIG SATURATED	
DESIGN		GENERAL ARRANGEMENT	
CHECKED		SIZE FSCM NO.	DWG. NO.
ISSUED		D	FM-117-88-G-02
		SCALE NONE	FILE NAME Proposal-FM-117-88 SHEET 1 OF 3
			REV. A




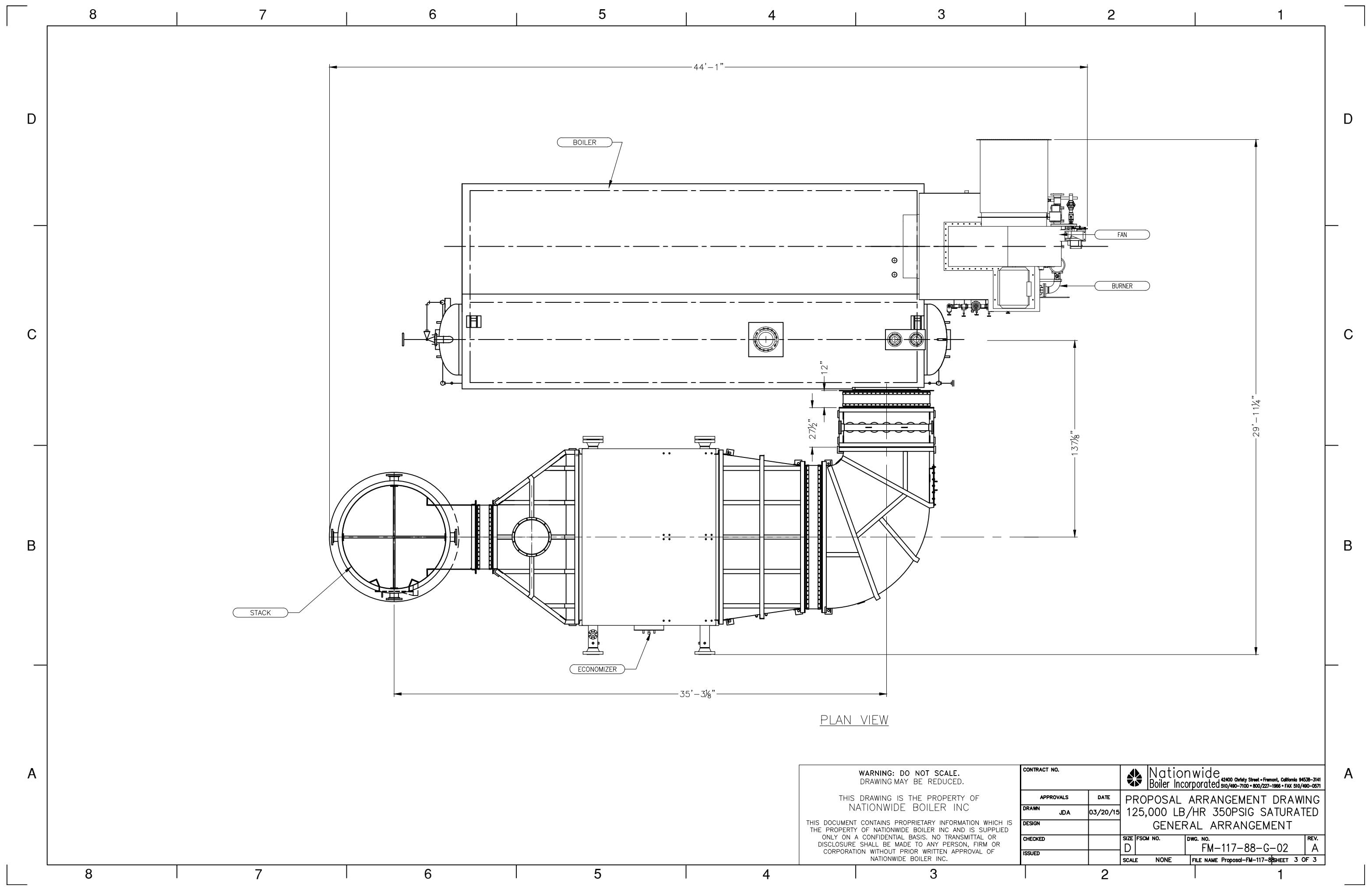
SIDE ELEVATION

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ISSUED		D	FM-117-88-G-02
		SCALE NONE	REV. A
		FILE NAME Proposal-FM-117-88 SHEET 2 OF 3	




PLAN VIEW

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ISSUED		DWG. NO. FM-117-88-G-02	REV. A
SCALE NONE		FILE NAME Proposal-FM-117-88 SHEET 3 OF 3	

L E G E N D

SYMBOL	IDENTIFICATION	SYMBOL	IDENTIFICATION	SYMBOL	IDENTIFICATION
GENERAL SYMBOLS					
	CONTINUATION FLAG; M-2-DRAWING NUMBER		CONTROL VALVE (GENERAL SYMBOL)		AIR ACTUATED SAFETY SHUTOFF VALVE
	EQUIPMENT IDENTIFICATION EQUIPMENT NUMBER		PRESSURE REDUCING REGULATOR, SELF-CONTAINED PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP		AIR ACTUATED FLOW CONTROL VALVE
	BREAK POINT INTERFACE BETWEEN VENDOR SKID MOUNTED SCOPE OF SUPPLY AND INTERCONNECTING PIPING	ACTUATOR SYMBOLS			
INSTRUMENT FOR SINGLE MEASURED VARIABLE SYMBOLS (SYMBOL SIZE MAY VARY ACCORDING TO SIZE AND TYPE OF DOCUMENT)			ELECTRIC MOTOR		
	LOCALLY MOUNTED		MODULATING ELECTRIC MOTOR		
	PANEL MOUNTED IN PANEL		SOLENOID		
	MOUNTED INTERNAL TO CONTROL PANEL	PRIMARY ELEMENT SYMBOLS			
	DCS INDICATION		ORIFICE PLATE		
RELATED ELECTRICAL AND CONTROL SYMBOLS			PROPELLER METER		
	INTERLOCK LOGIC	ABBREVIATION EQUIPMENT IDENTIFICATION			
	ELECTRIC MOTOR DRIVE	A	AGITATOR		
	POWER CORD TO 110V AC RECEPTACLE	B	BOILER		
INSTRUMENT LINE SYMBOLS		BNR	BURNER		
	INSTRUMENT AIR (PNEUMATIC)	BT	BRINE TANK		
	MECHANICAL LINK	CIP	CHEMICAL INJECTION PUMP		
	ELECTRIC SIGNAL	F	FAN		
	CAPILLARY TUBE	FI	FILTER/AIR INLET		
	HYDRAULIC (WATER OR OIL) BY N.B.I.	FS	DEAERATOR OR FEEDWATER SYSTEM		
VALVE SYMBOLS		M	MOTOR		
	SWING CHECK VALVE	P	PUMP		
	STOP CHECK ANGLE VALVE (NON-RETURN)	S	SOFTENER		
	ANGLE VALVE	SC	SAMPLE COOLER		
	MAKE-UP LEVEL CONTROL OR FLOAT VALVE	SP	BLOWDOWN TANK		
	PRESSURE SAFETY, RELIEF OR SAFETY-RELIEF VALVE	T	TANK		
	GATE VALVE	ABBREVIATION PROCESS PIPING DESIGNATION			
	GLOBE VALVE	BFW	BOILER FEEDWATER		
	PLUG VALVE	CBD	CONTINUOUS BLOWDOWN		
	NEEDLE VALVE	CF	CHEMICAL FEED		
	BALL VALVE	COND	CONDENSATE		
	NORMALLY CLOSED VALVE	CW	CITY WATER		
	MANUAL OPERATED FUEL CONTROL VALVE	D	DRAIN		
	COUPLING	DG	DIGESTER GAS		
	DIAPHRAGM VALVE	FW	FEEDWATER		
	BUTTERFLY VALVE	IA	INSTRUMENT AIR		
		NG	NATURAL GAS		
		PROP	PROPANE		
		STM	STEAM		
		V	VENT		

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:
 PROCESS VARIABLE (FIRST LETTER) READOUT OR PASSIVE FUNCTION (SUCCEEDING LETTER)
 OUTPUT FUNCTION (SUCCEEDING LETTER)
 ID NUMBER

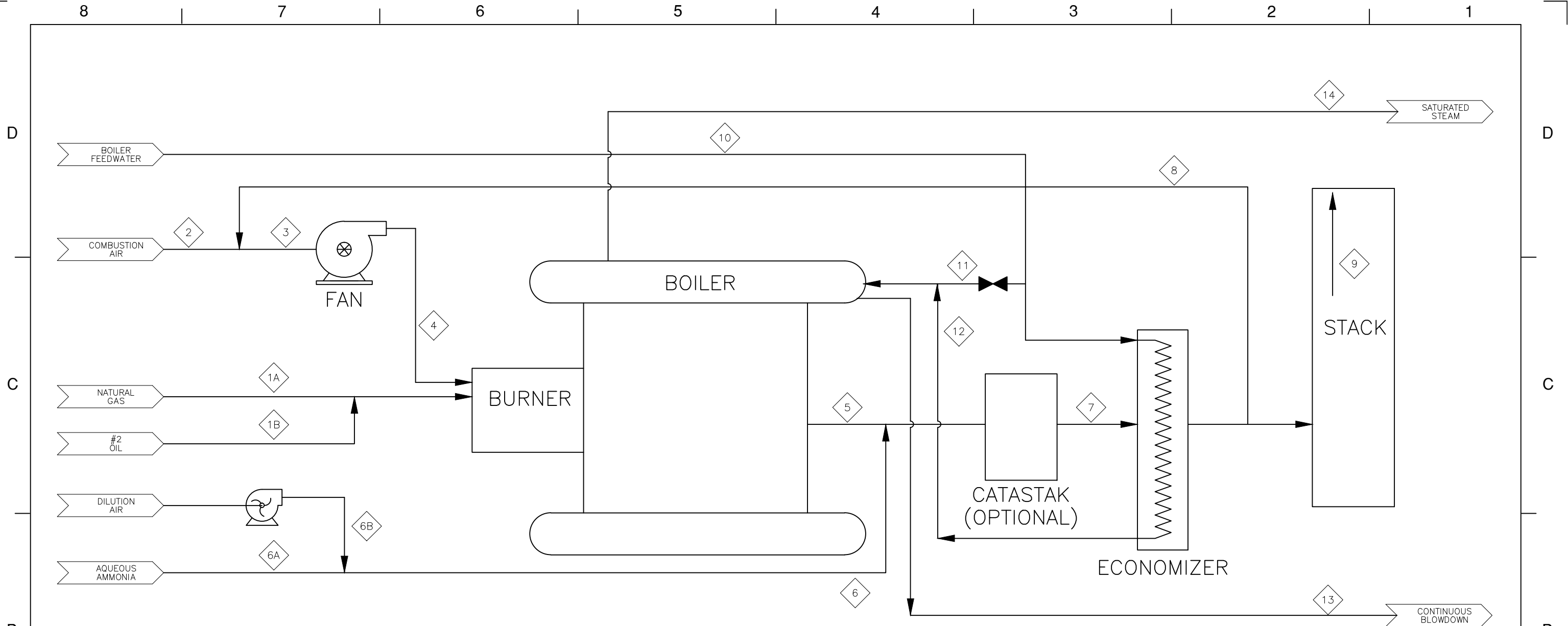
IDENTIFICATION LETTERS PER ISA STANDARD ISA-5.1-1984 (R 1992)				
FIRST-LETTER		SUCCEEDING-LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL
D	DENSITY, (MASS)	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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APPROVALS	DATE	PROPOSAL ARRANGEMENT DRAWING	
DRAWN JDA	03/20/15	125,000 LB/HR 350PSIG SATURATED	
DESIGN		MECHANICAL LEGENDS	
CHECKED		SIZE FSCM NO.	DWG. NO.
ISSUED		D	FM-117-88-L-03
		SCALE NONE	FILE NAME Proposal-FM-117-88-SHEET 1 OF 1



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

ITEM		1A	1B	2	3	4	5	6A	6B	6 (OPTIONAL)	7	8	9	10	11	12	13	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	151,638	-	29,112	33,866	31,501	66,849	---	-	-	67,431	4,490	45,017	268.9	0	282.2	9.1	---
MASS FLOW	LB/HR	6,935	7,538	127,195	140,609	140,609	147,544	9.0	191	200	147,744	13,414	134,330	128,866	0	128,866	3,866	125,000
TEMPERATURE	*F	70	70	80	103	103	580	80	80	80	580	300	300	227	227	314	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 ALTERNATE FUEL
- 2 FLOW DEPENDS ON WATER QUALITY

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DRAWN	JDA	03/20/15
DESIGN		
CHECKED		
ISSUED		
SIZE	FSCM NO.	DWG. NO.
D		FM-117-88-F-04
SCALE	NONE	FILE NAME Proposal-FM-117-88-SHEET 1 OF 1

PROPOSAL ARRANGEMENT DRAWING
 125,000 LB/HR 350PSIG SATURATED
 PROCESS FLOW DIAGRAM

D

D

C

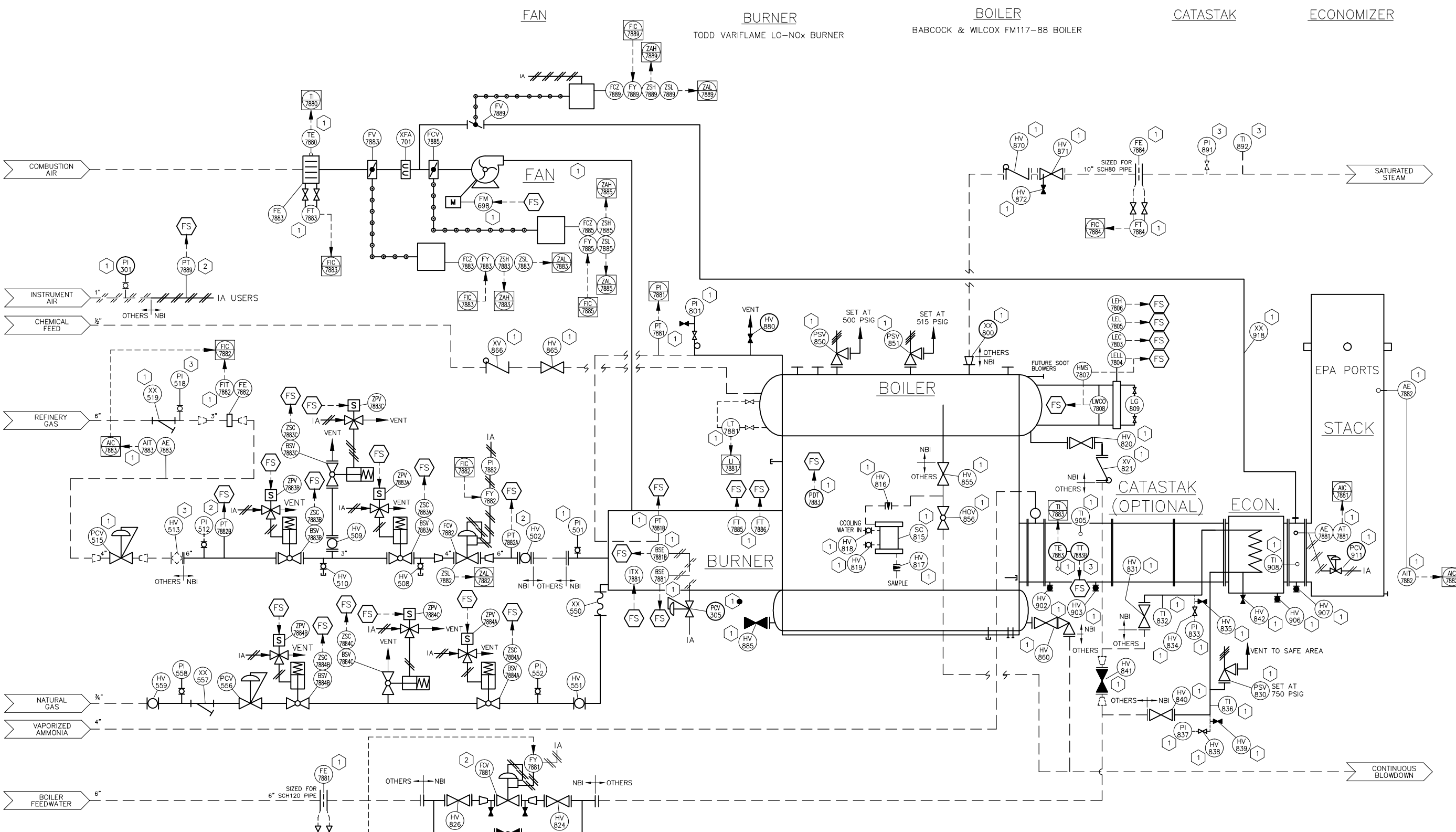
C

B

B

A

A



- DCS - CUSTOMER DCS
- FS - FLAME SAFETY SYSTEM CONNECTION (BMS)
- 1 - COMPONENT SHIPPED LOOSE TO BE MOUNTED AND/OR WIRED TO CONTROL PANEL BY OTHERS.
- 2 - COMPONENT MOUNTED ON SEPARATE SKID AND WIRED TO CONTROL PANEL BY OTHERS.
- 3 - SUPPLIED BY OTHERS.

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DRAWN JDA	03/20/15	125,000 LB/HR 350PSIG SATURATED PIPING AND INSTRUMENT DIAGRAM	
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