

Earl
Bail Out?

(#1) 155 DL


Silica is removed
by a demineralizer
2) Chemical treatment
3) Sulfite treatment

SWE Ben Guies
recommends

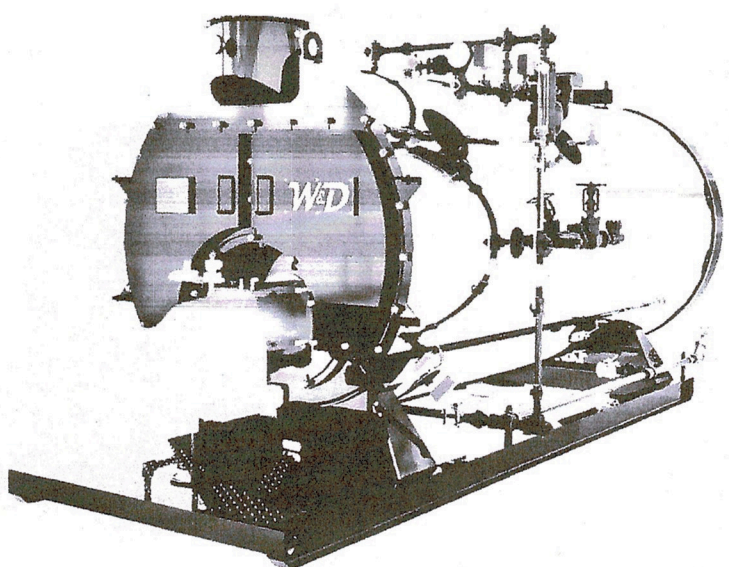
Earl

Conductivity Meter (Hand Held)

- ① Continuous Bleeddown
- ② Sample Point



4080D-150S



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PREPARED BY: HC DATE: 03/01/2021 RELEASE DURATION: _____

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TRACKING NUMBER: 2459247.45236.12

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NAME/TITLE: _____ SIGNATURE: _____ DATE: _____

DESIGN INFORMATION

CERTIFIED BY W&D TYPE: FIRE TUBE MAX TEMP: 400°F
YEAR BUILT: 2021 SIZE: 60 HP HS: 400 84 FT
MAWP: 150 PSI # OF PASSES: _____
MDSC: 2,760 LB/MH CORROSION ALLOWANCE: _____

US CUSTOMARY UNITS
UNLESS OTHERWISE NOTED

TOLERANCE: ± 0.005

FRACTION: 1/16
DEC: 0.12
DEC: 0.125
ANGLE: 81.00°

Williams & Davis Boilers
TEL: 972.275.2500 FAX: 972.255.9789
WWW.WD&D.COM

APPROVAL (SIGN & DATE): _____ MFG APPROVED BY: _____ PROJECT NO: 81778

DATE APPROVED: _____ SCALE: _____ PART DESCRIPTION: _____

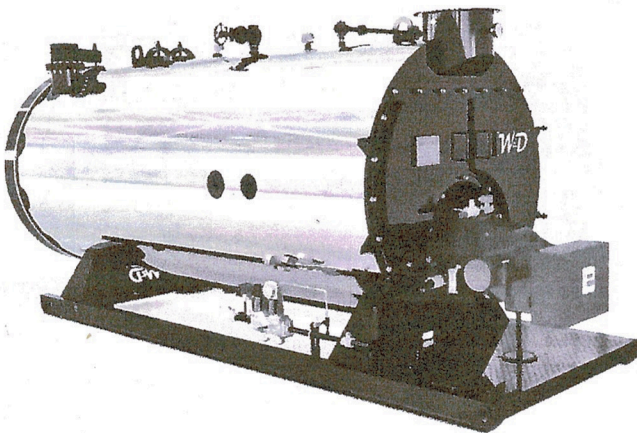
DWG. NO.: 4080D-150S-81770-SUB REVISION: A DWG DATE: 2/1/2021 CHECKED BY: HC

TIME DESCRIPTION: 4-PASS 60 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12

PART NO.: _____ REVISION: _____ DESIGN BY: _____ DESIGN DATE: _____ CHECKED BY: _____ DATE: _____

Cy M 2/9/21

DESIGN SPECIFICATIONS

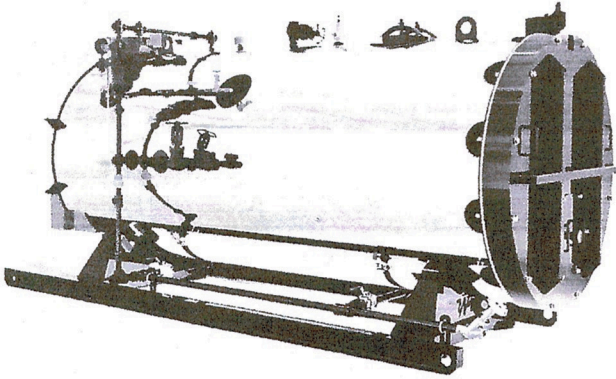


MODEL NUMBER	4080D-150S
DESCRIPTION	4 PASS 80 HP DRY BACK, 150 PSI STEAM
JOB NUMBER(S)	81770
ASME BPVC SECTION	I
ASME BPVC EDITION	2019
SITE ALTITUDE	10 FT. ASL
MAXIMUM VESSEL PRESSURE	150 PSI
MAXIMUM RECOMMENDED OPERATING PRESSURE	143 PSI
MAXIMUM DESIGNED STEAM CAPACITY	2,760 LBS/HR FROM AND AT 212°F
SAFETY RELIEF VALVE CAPACITY, TYP.	3,200 LB/HR
SAFETY RELIEF VALVE SET PRESSURE	150 PSI
BLOWDOWN VALVE	250 PSI SS BALL VALVE, 160 PSI Y BLOW-OFF VALVE
PRESSURE GAUGE MODEL	4-1/2, 0-300 PSI PRESSURE GAUGE
OUTPUT, BOILER HORSEPOWER	80 HP
OUTPUT, BOILER, BTU	2,678,000 BTU/HR
WATER CONSUMPTION, TYP.	5.5 GPM
HEATING SURFACE	400 SQ. FT.
EXHAUST TEMPERATURE	450°F, TYP. HIGH FIRE
EXHAUST FLOW, TYP.	485.8 ACFM
BURNER MODEL	VG-34/F
BURNER EMISSION STANDARD RATING	STANDARD
ENVIRONMENT RATING	NEMA 4
FLAME SAFEGUARD MODEL	SIEMENS LMV 52
FIRING RATE CONTROL	SIEMENS LMV 52
OPERATING RANGE CONTROL	INTERNAL ADJ., E/M, L404F

Williams & Davis Boilers 2445 S. 102 ND ST. BOULDER, CO 80501-7214 TEL: 303.440.2288 FAX: 303.440.2219 www.wdboilers.com		DWG. NO.: 4080D-150S-81770-SUB REVISION: A DWG. DATE: 07/20/21	CHECKED BY: _____ DATE: _____
SHEET 2 OF 9 PROJECT NO.: _____ PART NO.: _____		4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12 REVISION: _____ DESIGN BY: _____ DESIGN DATE: _____ CHECKED BY: _____ DATE: _____	
APPROVAL (SIGN & DATE): _____ INFO APPROVED DATE: _____	PER VIEW: _____ SCALE: _____	PART DESCRIPTION: _____	

Coy Mc 2/9/21

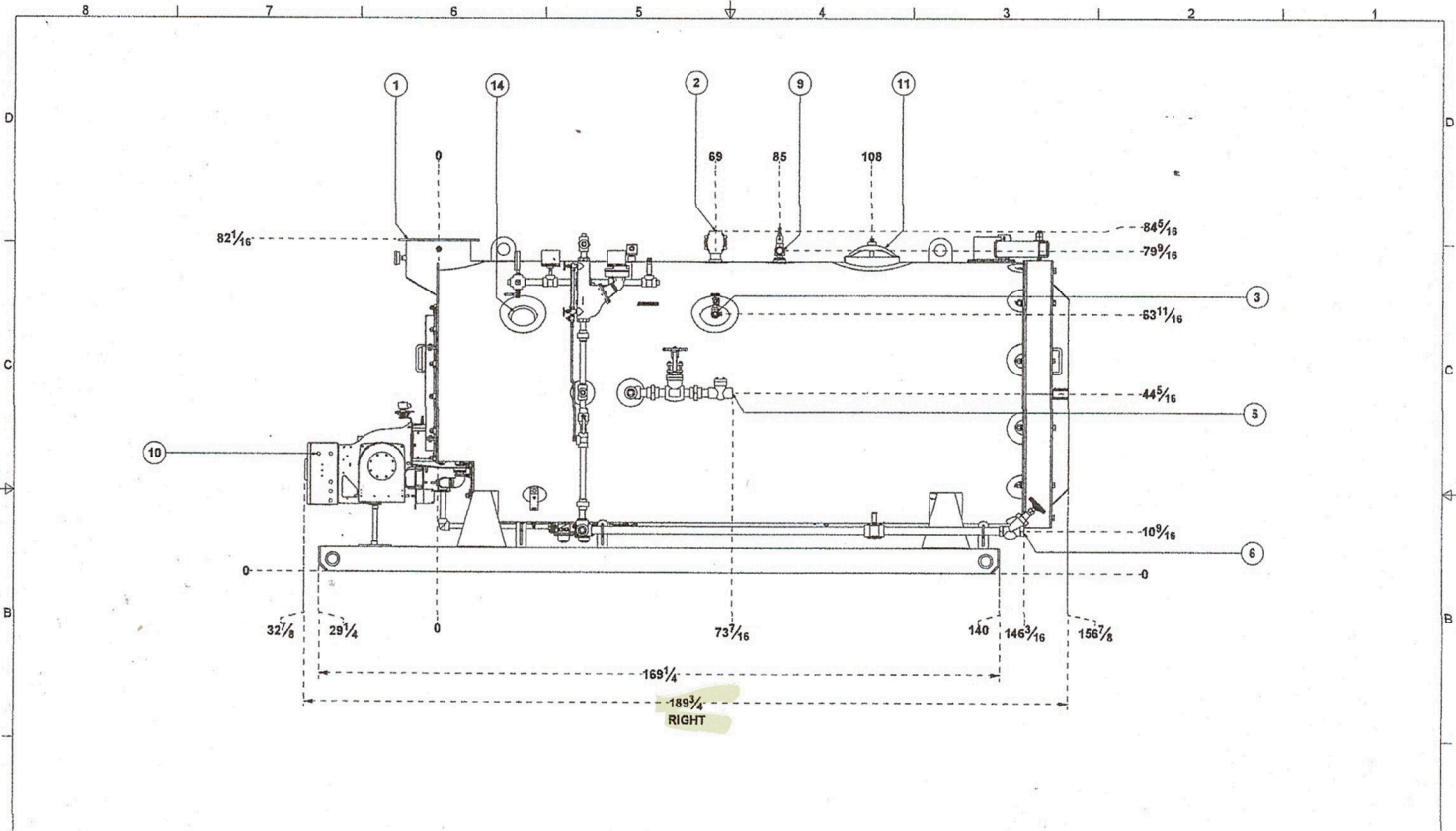
DESIGN SPECIFICATIONS



HIGH STEAM PRESSURE LIMIT CONTROL	INTERNAL ADJ., E/M, L4079
PRIMARY LOW WATER CUT OFF	FLOAT TYPE, E/M, 157S
SECONDARY LOW WATER CUT OFF	PROBE TYPE, MANUAL RESET, 26M
PUMP CONTROL	FLOAT TYPE, E/M, 1 EXTERNAL SYS CONTACT, 157S
SUPPLY VOLTAGE	480VAC / 3PH / 60HZ
MAX CONTINUOUS AMPERAGE	4.5 FLA
LOCKED ROTOR AMPERAGE	10 AMPS
PRIMARY FUEL TYPE	LP GAS
SECONDARY FUEL TYPE	-
IGNITION FUEL TYPE	LP GAS
PRIMARY FUEL MAXIMUM DESIGN PRESSURE	5 PSI
PRIMARY FUEL MINIMUM SUPPLY PRESSURE	1 PSI
PRIMARY FUEL MAXIMUM SUPPLY RATE	1,291 SCFH
SECONDARY FUEL SYSTEM OPERATING PRESSURE, TYP.	-
SECONDARY FUEL SYSTEM MAXIMUM INLET PRESSURE	-
SECONDARY FUEL FLOW MAXIMUM RATE	-
SECONDARY FUEL SYSTEM BYPASS RETURN PRESSURE	-
JACKET MATERIAL	STAINLESS STEEL, 304L
JACKET FINISH	2B
NOMINAL WATER CAPACITY	4,027 GAL
FLOODED WATER CAPACITY	4,806 GAL
SHIPPING WEIGHT	14,639 LBS
NOMINAL OPERATING WEIGHT	48,278 LBS
FLOODED WEIGHT	54,724 LBS
CERTIFICATIONS, BOILER AND/OR BURNER	ASME, NATIONAL BOARD, UL

Williams & Davis Boilers <small>3842 JEFFERSON AVE. JACKSONVILLE, FL 32216 TEL: 904.226.2789 FAX: 904.226.2728 www.WDBoiler.com</small>		DWG. NO.: 4080D-150S-81770-SUB REV. NO.: A DWG. DATE: 2/11/2021 DWG. DESCRIPTION: 4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12	DESIGNED BY: [blank] CHECKED BY: [blank] DATE: [blank]
APPROVAL: (SIGN & DATE) INFO APPROVED BY: [blank] INFO APPROVED DATE: [blank]	SHEET 3 OF 9 PROJECT NO.: [blank] SIZE: [blank] SCALE: [blank] PER VIEW: [blank]	PART NO.: [blank] PART DESCRIPTION: [blank]	REVIEWED BY: [blank] DESIGN BY: [blank] CHECKED BY: [blank] DATE: [blank]

Coy Pru 2/9/21



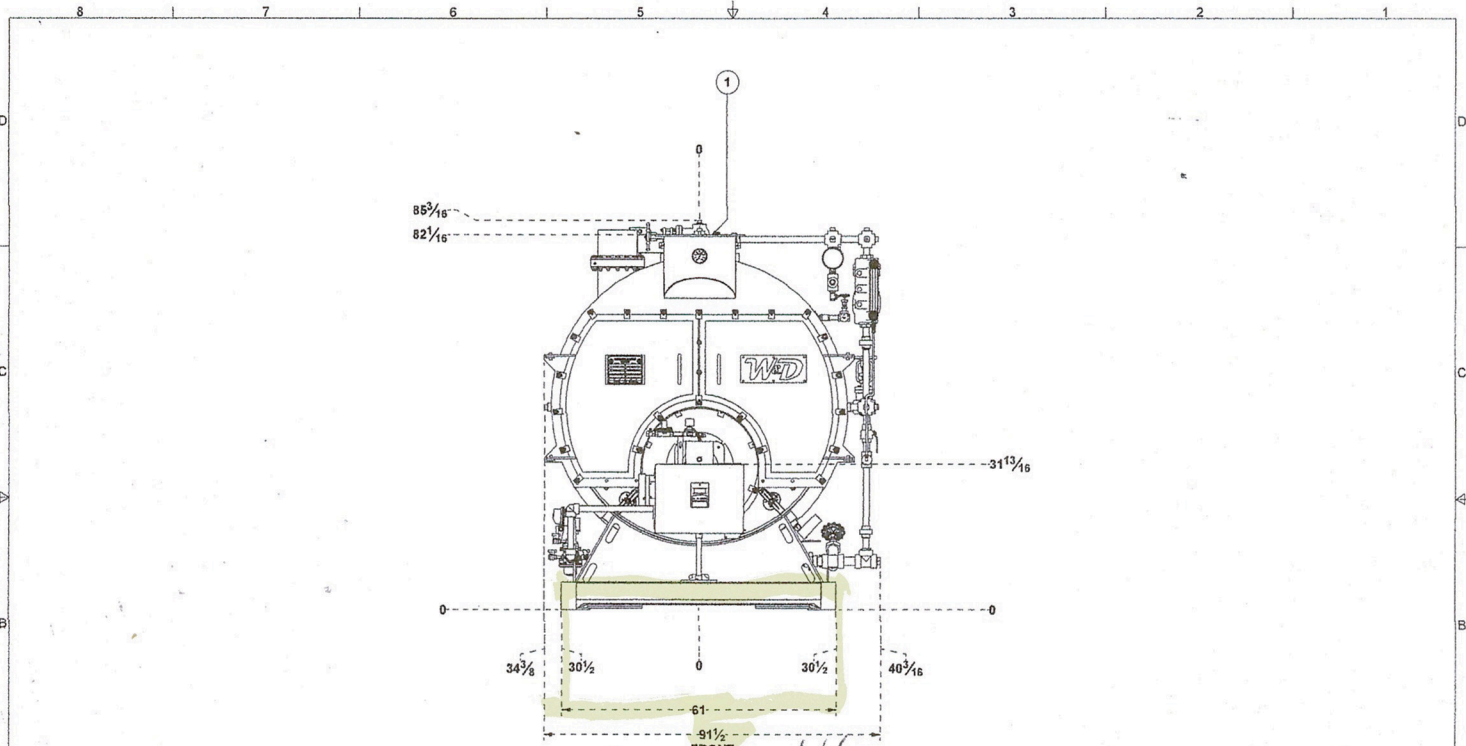
ITEM	DESCRIPTION	CONNECTION LIST	SIZE	TYPE	QTY
1	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
2	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
3	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
4	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
5	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
6	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
7	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
8	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
9	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
10	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
11	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
12	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
13	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	
14	STEAM INLET TO CONDENSATE ATM		1/2"	CONDENSATE	



Williams & Davis Boilers
 1882 1517 G. BOX 150 HITCHCOCK, TX 75450
 TEL: 409.225.2248 FAX: 409.225.2218
 www.wdboiler.com

DRWG NO:	4080D-150S-81770-SUB	REVISED:	A	DRWG BY:	PHC	DRWG DATE:	2/1/2021	CHECKED BY:		DATE:
DRWG DESCRIPTION:	4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12				PART NO:		REVISED:		DESIGN BY:	
APPROVED:	(SIGN & DATE)	MFG APPROVED BY:		SHEET 5 OF 9	PROJECT NO:	8179	PART DESCRIPTION:		CHECKED BY:	
MFG APPROVED DATE:		SCALE:	PER VIEW							

Coy Bran 2/9/21



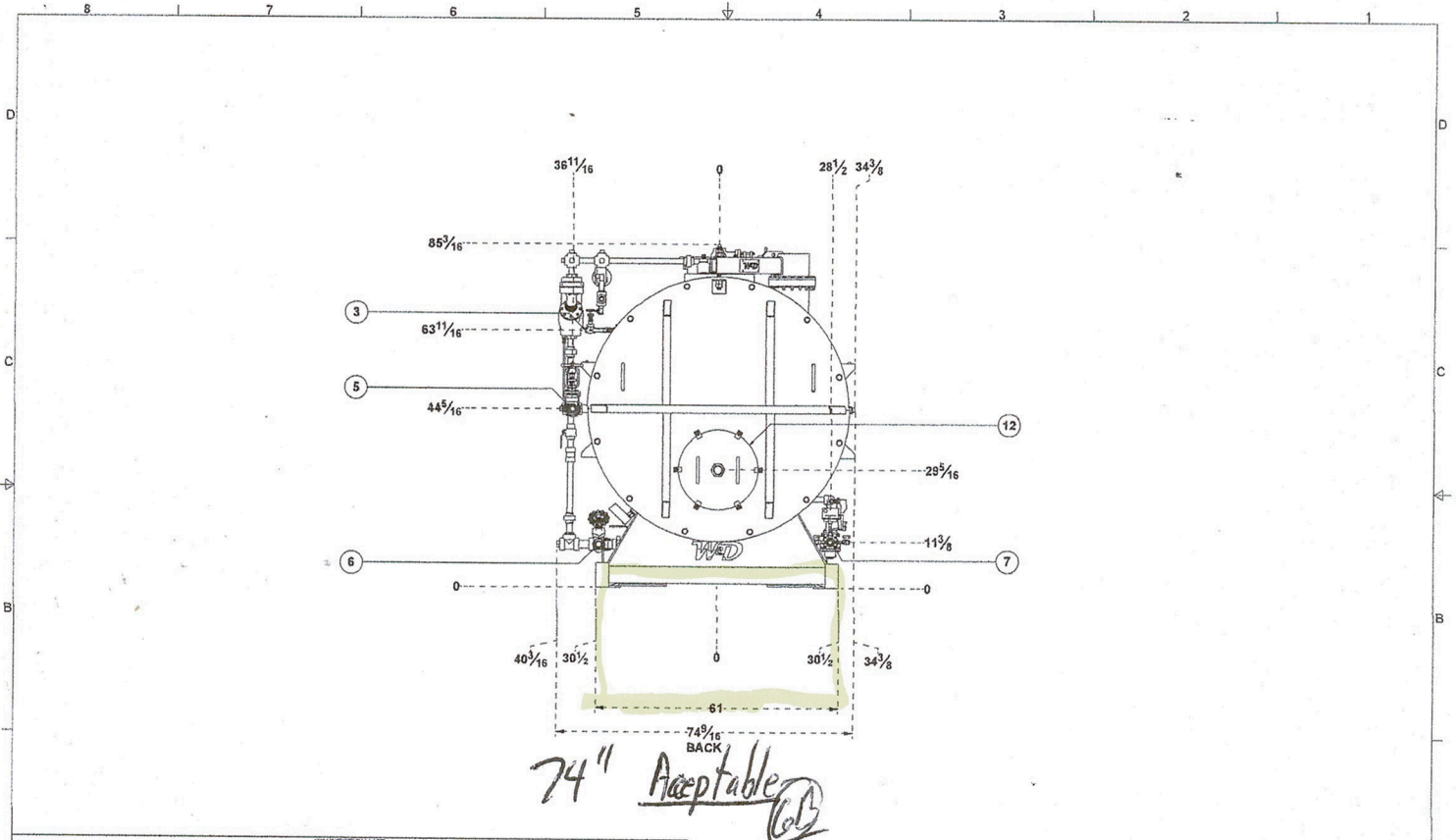
91" Not Acceptable
 Confirm 74" — Pump electrical enclosure has been approved
 GB

ITEM	DESCRIPTION	CONNECTION LIST	SIZE	TYPE	QTY
1	EXHAUST OUTLET TO OUTSIDE ATM		10"	WELD FLANGE	
2	STEAM OUTLET TO CONDENSER FRAMES		10"	WELD FLANGE	
3	SUPPLY TO LOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQ'D		1 1/2"	PIPE	
4	STEAM OUTLET TO BLOWDOWN SYSTEM AS REQ'D		1 1/2"	PIPE	
5	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM		1 1/2"	PIPE	
6	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
7	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
8	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
9	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
10	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
11	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
12	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
13	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
14	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
15	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
16	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
17	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
18	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
19	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
20	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
21	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
22	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
23	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
24	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
25	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
26	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
27	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
28	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
29	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
30	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
31	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
32	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
33	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
34	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
35	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
36	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
37	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
38	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
39	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
40	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
41	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
42	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
43	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
44	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
45	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
46	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
47	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
48	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
49	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	
50	HEAT WATER INLET TO FRESH WATER SUPPLY SYSTEM AS REQ'D		1 1/2"	PIPE	

Williams & Davis Boilers
 4080D-150S-81770-SUB
 4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12

APPROVAL (SIGN & DATE): _____ MFG APPROVED BY: _____ PROJECT NO.: _____
 INFO APPROVED DATE: _____ SCALE: _____ PART DESCRIPTION: _____
 PER VIEW: _____

Cy R 2/9/21



ITEM	DESCRIPTION	CONNECTION LIST	SIZE	MATERIAL	TYPE	QTY
1	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
2	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
3	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
4	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
5	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
6	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
7	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
8	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
9	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
10	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
11	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
12	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
13	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1
14	STEAM INLET TO PROCESS BEGINS		12"	MS	FLANGE	1

Williams & Davis Boilers
 3813 151ST RD BOX 133 HUNTSVILLE TN 37411
 TEL: 912-222-2388 FAX: 912-222-2388
 www.wdboiler.com

APPROVAL: (SIGN & DATE) MFG APPROVED BY PROJECT NO. PART NO. SCALE PER VIEW

DATE: 2/1/2021

REVISED: A

DESIGNER: HC

DESIGN DATE: 2/1/2021

CHECKED BY: DATE:

PROJECT NO: 4080D-150S-81770-SUB

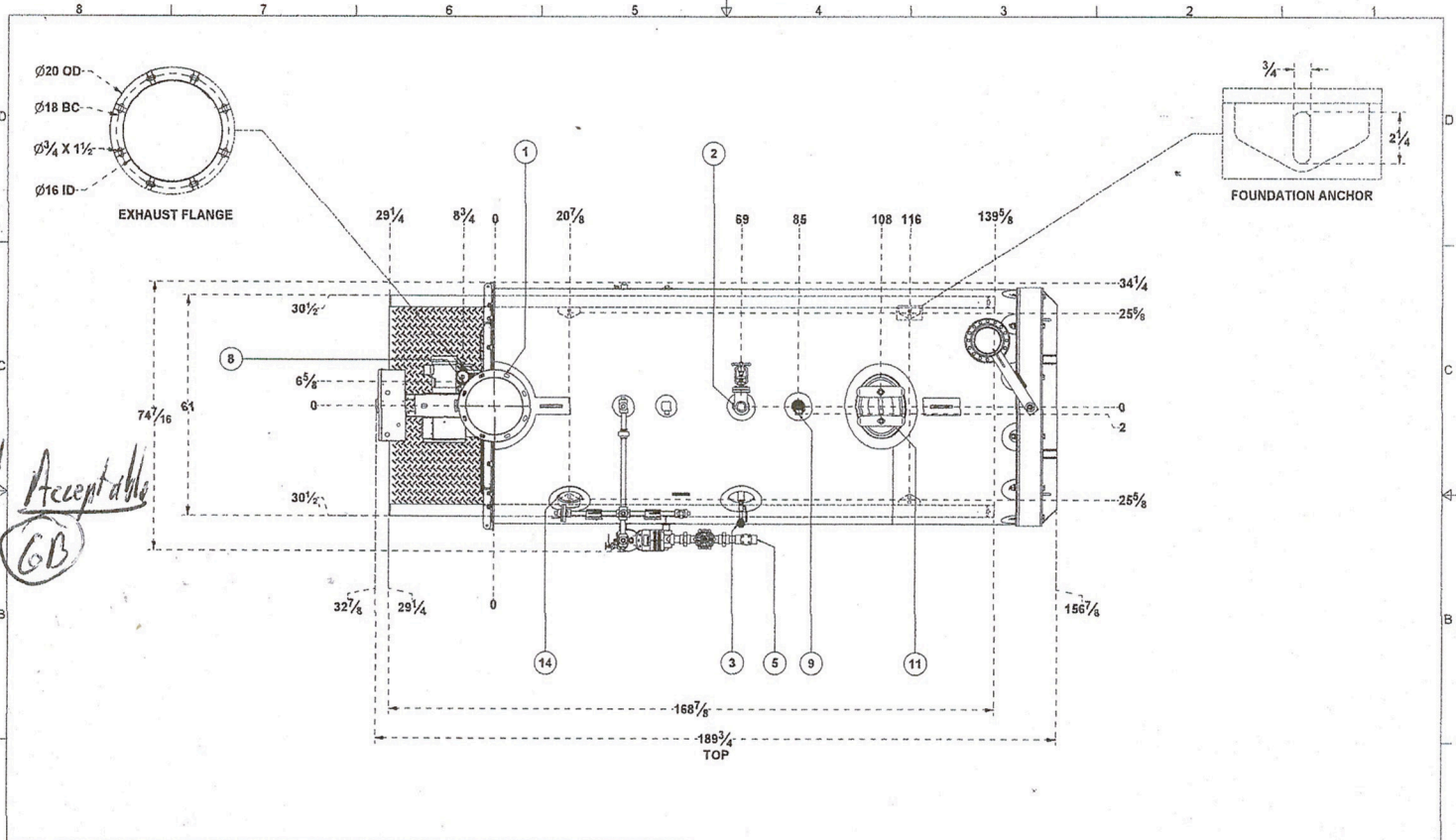
PART DESCRIPTION: 4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12

DATE: 2/1/2021

SCALE: 1/2" = 1'-0"

PER VIEW

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74" Acceptable
 GB

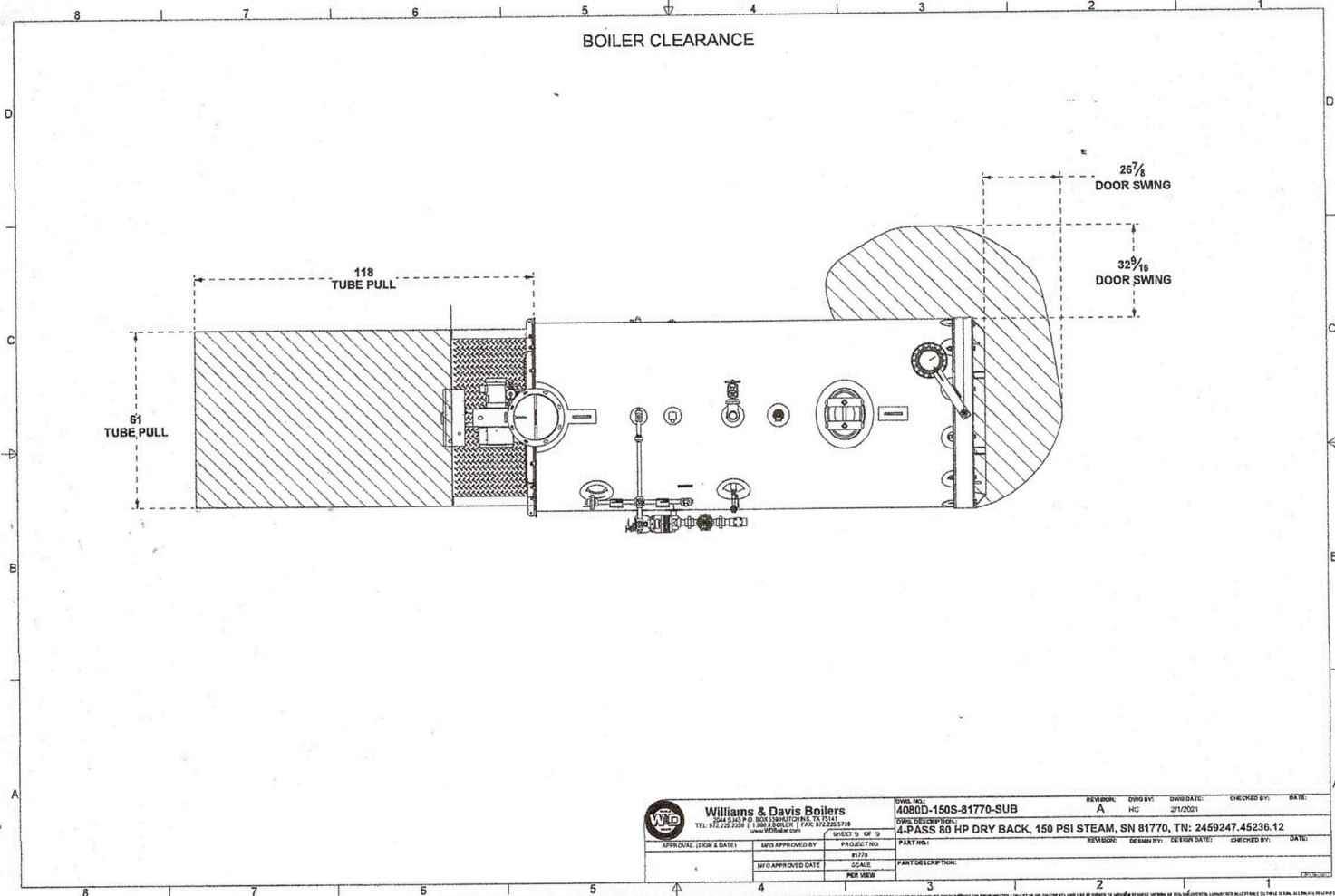
ITEM	DESCRIPTION	CONNECTION LIST	SIZE	TYPE	QTY
1	EXHAUST OUTLET TO OUTSIDE ATM		16"	WELD FLANGE	
2	STEAM OUTLET TO PROCESS HEATER		12"	FLG	
3	STEAM FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
4	CONDENSATE OUTLET		12"	FLG	
5	HEAT WATER INLET TO HEAT WATER SUPPLY SYSTEM		12"	FLG	
6	HEAT WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
7	HEAT SYSTEM INLET TO HEAT SUPPLY		12"	FLG	
8	HEAT SYSTEM FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
9	STEAM INLET TO HEAT SUPPLY SYSTEM		12"	FLG	
10	STEAM FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
11	CONDENSATE INLET TO HEAT SUPPLY SYSTEM		12"	FLG	
12	CONDENSATE FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
13	WATER SUPPLY INLET TO CONDENSATE PUMP		12"	FLG	
14	WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
15	WATER INLET TO CONDENSATE PUMP		12"	FLG	
16	WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
17	WATER INLET TO CONDENSATE PUMP		12"	FLG	
18	WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
19	WATER INLET TO CONDENSATE PUMP		12"	FLG	
20	WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
21	WATER INLET TO CONDENSATE PUMP		12"	FLG	
22	WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	
23	WATER INLET TO CONDENSATE PUMP		12"	FLG	
24	WATER FLOWDOWN OUTLET TO BLOWDOWN SYSTEM AS REQD		12"	FLG	

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 4080D-150S-81770-SUB
 4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12

APPROVAL (SIGN & DATE): MFG APPROVED BY: PROJECT NO.: 81778
 MFG APPROVED DATE: SCALE: PART DESCRIPTION:
 PER VIEW

DRAWING NO.: 4080D-150S-81770-SUB
 REVISION: A
 DWG BY: HC
 DWG DATE: 2/1/2021
 CHECKED BY: DATE:

Cy Ru 2/9/21



Williams & Davis Boilers
 394 S. 1st St. P.O. Box 10000, Memphis, TN 38110
 TEL: 901.225.2258 FAX: 901.225.2178
 www.wdboiler.com

DWG. NO.: 4080D-150S-81770-SUB	REVISION: A	DWG. DATE: 2/11/21	CHECKED BY:	DATE:
PART DESCRIPTION: 4-PASS 80 HP DRY BACK, 150 PSI STEAM, SN 81770, TN: 2459247.45236.12		DESIGN BY:	DESIGN DATE:	CHECKED BY:
APPROVAL (SIGN & DATE)	INFO APPROVED BY	PROJECT NO.	PART NO.:	
			81770	
	W/D APPROVED DATE	SCALE	PART DESCRIPTION:	
		PER VIEW		

GJK 2/9/21