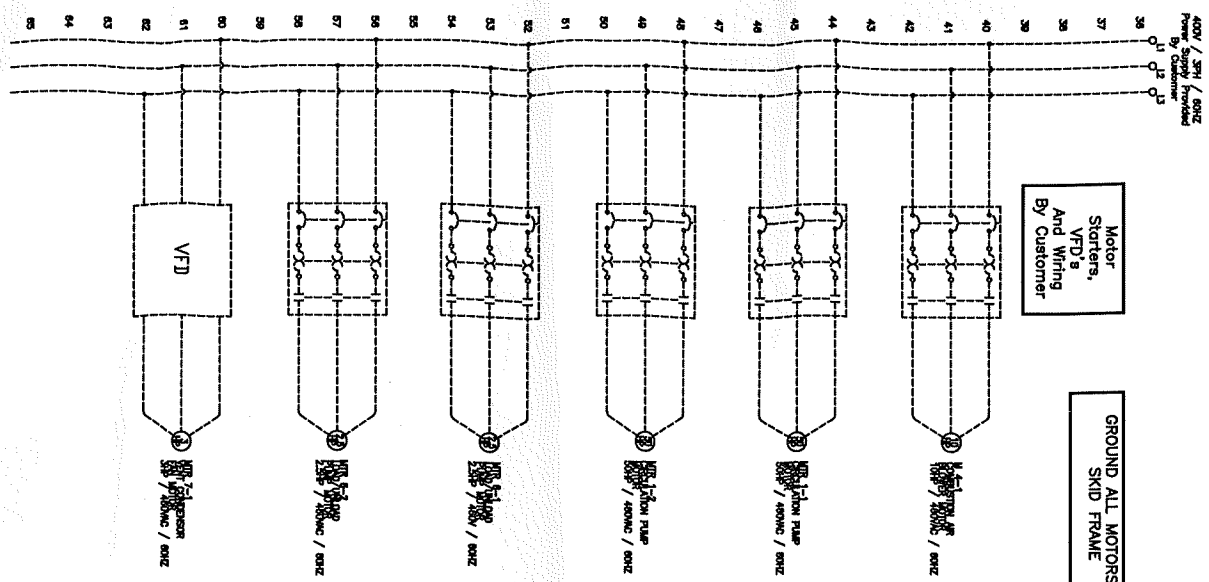


EQUIPMENT GROUND (PER NEC) #10 AWG GREEN WIRE

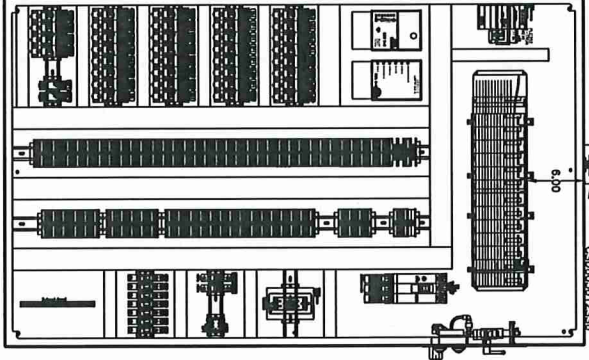
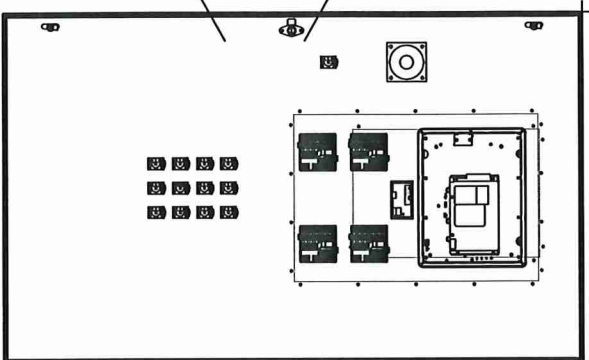
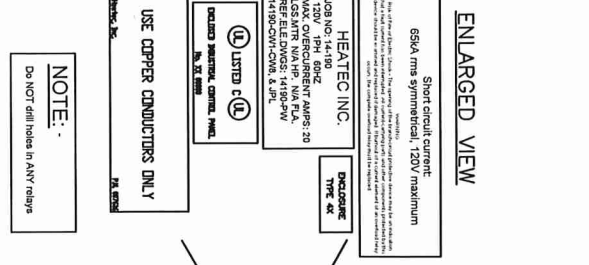
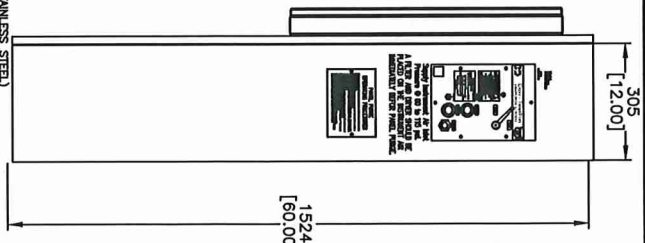
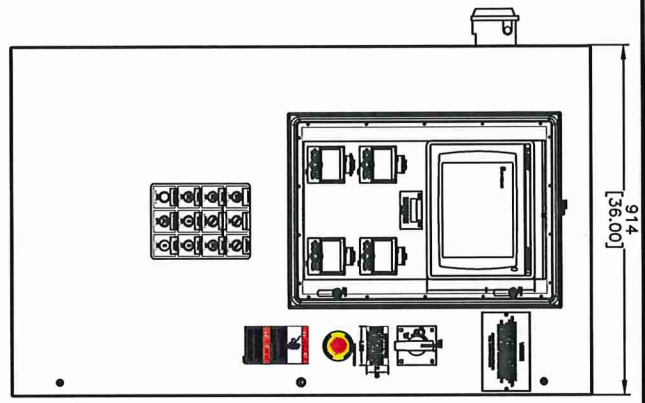
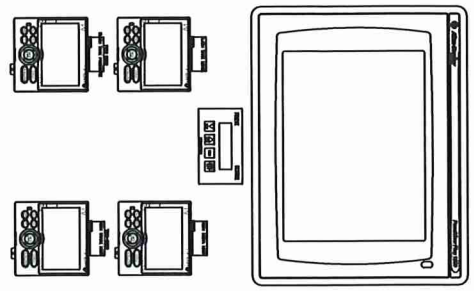


**NOTE:**  
See Heatec Standard Electrical Practices Wire and Terminal Colors Publication HSP 7-11-002

Equip. Tag# US0001-941-PK-0001  
Customer P.L.D. 10040  
Customer Job# 13-1200-M-019  
Project Hot Oil Heater Package

<b>HEATEC INC.</b> an Aetna company P.O. BOX 72708 CHATTANOOGA, TN 37407 PHONE (423) 821-5200 FAX (423) 821-7673		<b>CUSTOMER</b> Juniper GTL, LLC	
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DRAWN BY: RDJ DATE: 2/1/2015	CHECKED BY: [ ] DATE: [ ]	DRAWING NAME: VHCI-12010-50-D-G-S Power Wiring Sheet 2 Zeeco GLSF-11-1	CUSTOMER: Juniper GTL, LLC
DWG/PART NO.: 14-190-PW2	REV. # 1 DATE 12/15/2015 BY [ ] DESCRIPTION: As Built	REV. # 2 DATE 5/3/2015 BY [ ] DESCRIPTION: Released to shop with customer changes incorporated	REV. # 3 DATE 4/17/2015 BY [ ] DESCRIPTION: Submitted to customer for approval
DWG # H114-190	VCI # 14-190-551	DATE [ ]	ISSUE DATE [ ]

14-190-PW2



**HEATEC INC.**  
 6584 rms symmetrical, 120V maximum  
 Short circuit current  
 HEATEC INC.  
 JOB NO: 14-190  
 MAX OVERCURRENT AMPS: 20  
 LOSS AMPS: N/A HP, N/A FLA  
 REFER TO: DDCS, 1480-PAV  
 WVS, C-1, 14-190

**DISCLOSED TYPE 4X**

**LISTED C-UL**  
 LISTED ELECTRICAL CONTROL PANEL  
 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

**NOTE:**  
 Do NOT drill holes in ANY relays

**USE COPPER CONDUCTORS ONLY**

**WARNING**  
 POWER TO THIS PANEL SUPPLIED FROM MAIN CONTROL PANEL. MAKE SURE ALL POWER SUPPLIED TO THIS PANEL HAS BEEN REMOVED BEFORE ANY SERVICING IS PERFORMED.

**WARNING**  
 THIS PANEL IS NOT TO BE OPENED OR SERVICED UNLESS THE MAIN CONTROL PANEL HAS BEEN OPENED AND THE POWER SUPPLY TO THIS PANEL HAS BEEN REMOVED. SERVICING IS PERFORMED.

**WARNING**  
 THIS PANEL IS NOT TO BE OPENED OR SERVICED UNLESS THE MAIN CONTROL PANEL HAS BEEN OPENED AND THE POWER SUPPLY TO THIS PANEL HAS BEEN REMOVED. SERVICING IS PERFORMED.

**CR1 1X (316 STAINLESS STEEL)**  
 MAIN CONTROL PANEL :  
 HOFFMAN  
 (505)268-1255

**PANEL MOUNTED**  
 VENDOR TYPE FILM  
 HEATED 5044371

**GLA**  
 VENDOR TYPE FILM  
 HEATED 5044371

**GLA**  
 VENDOR TYPE FILM  
 HEATED 5044371

**GLA**  
 VENDOR TYPE FILM  
 HEATED 5044371

<b>HEATEC INC.</b> an Asteo company P.O. BOX 72769 CHATTANOOGA, TN 37487 PHONE (423) 821-5200 FAX (423) 821-7673		CUSTOMER Juniper GTL, LLC	
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DATE: RJD 4/13/2015	CHECK DATE:	APPROVE:	DRAWING NAME: VHCI-12010-50-D-G-S Main Control Panel Layout Zecco GLSF-11-1
DWG/PART NO. 14190-CPL	REV. 2 As BUILT	REV. 1 Released to shop with customer changes incorporated	REV. 0 Submitted to customer for approval
JOB # HI14-190	VO # 14-190-551	DATE 12/75/2014	DATE 5/05/2015
ISSUE DATE	CHKD. APPR.	RJD	RJD

24VDC / 4 Pin / 50% Derated  
 24VDC Terminal Power Supplied  
 From Heater Control Transformer

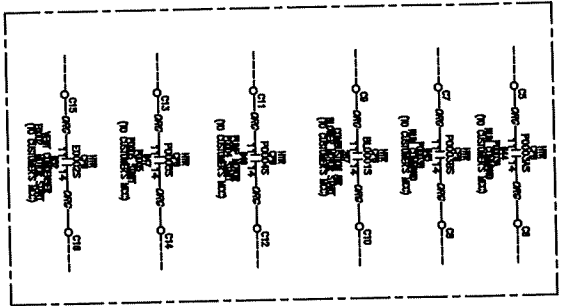
### CUSTOMER INPUTS

24 Volt Relay for Customer Use  
 Customer Terminal Connections Will be  
 Labeled With a "C" Before The Number

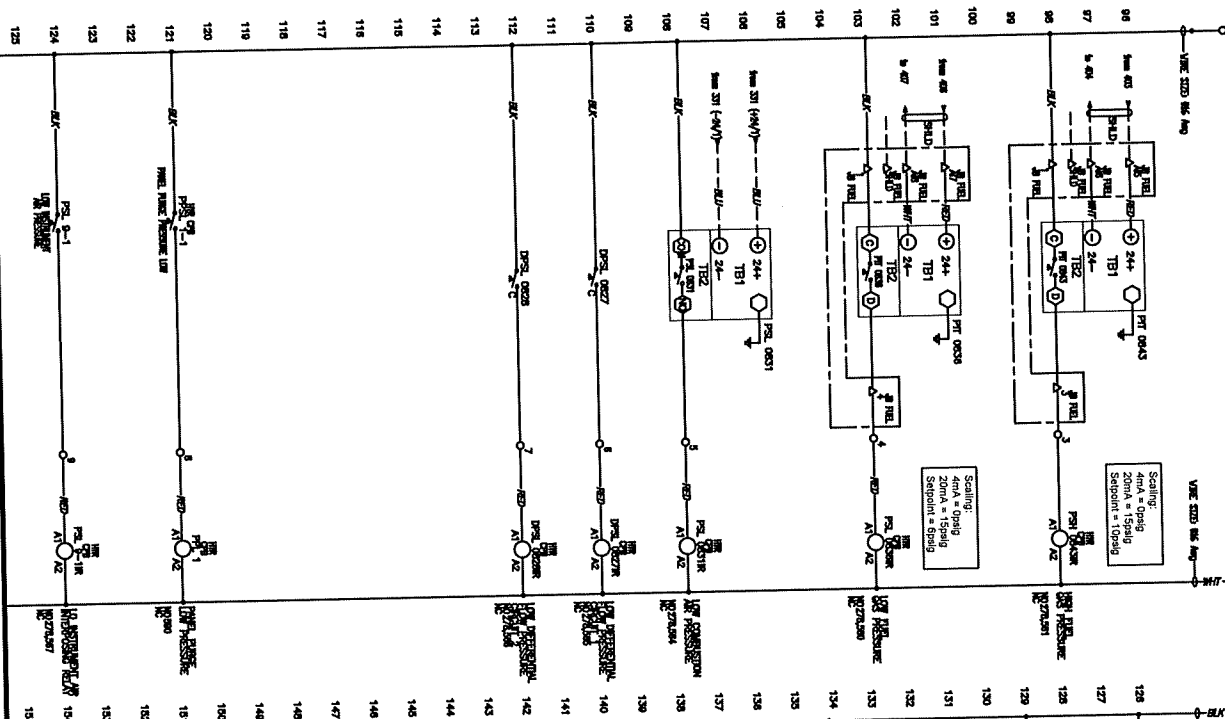
Application of 24VDC to C1/C2 from  
 customer's equipment enables control power.  
 Removal of 24VDC or actuating ESD 1-1  
 (Emergency shutdown) removes control  
 power from control panel. PLC Power is NOT  
 disabled

Application of 24VDC to C3/C4 from  
 customer's equipment allows burner to run.  
 Media temperature is controlled by TIC 1-1  
 through BC 1

- CUSTOMER CONTACTS
- RUN COMMAND ("START")
- CIRCULATION PUMPS
- COMBUSTION BLOWER
- DRAIN/SUPPLY TANK PUMPS
- VENT CONDENSER

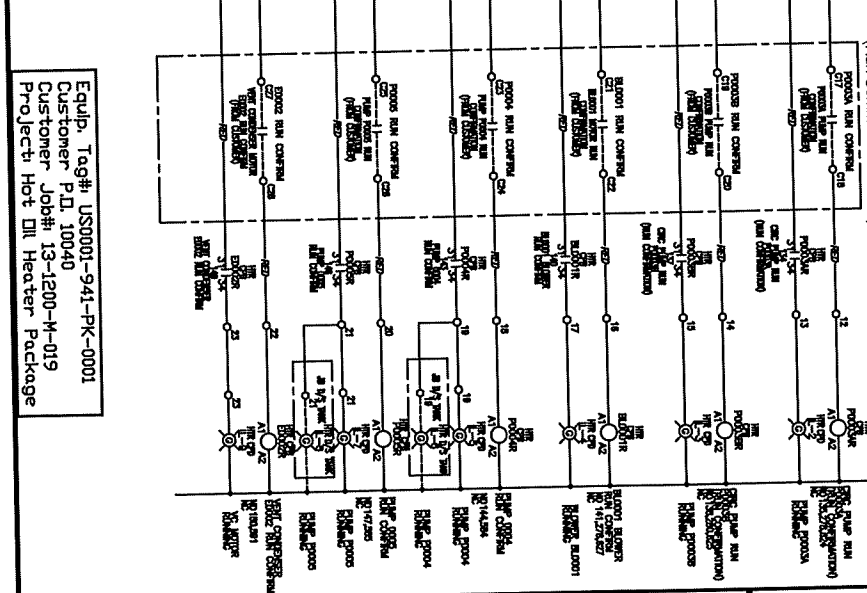


### EXHAUST SYSTEMS CONTROLLER



### CUSTOMER CONNECTIONS FROM CUSTOMER'S MCC

MOTOR STARTER  
 AUXILIARY CONTACT INPUTS  
 (Run Command Feedback)



Equip. Tag#: US0001-941-PK-0001  
 Customer P.I. 10040  
 Customer Job#: 13-1200-W-019  
 Project: Hot Oil Heater Package

**HEATEC INC.** an Auto company  
 P.O. Box 72764  
 Chattanooga, TN 37474  
 Phone (423) 821-5300  
 Fax (423) 821-7673

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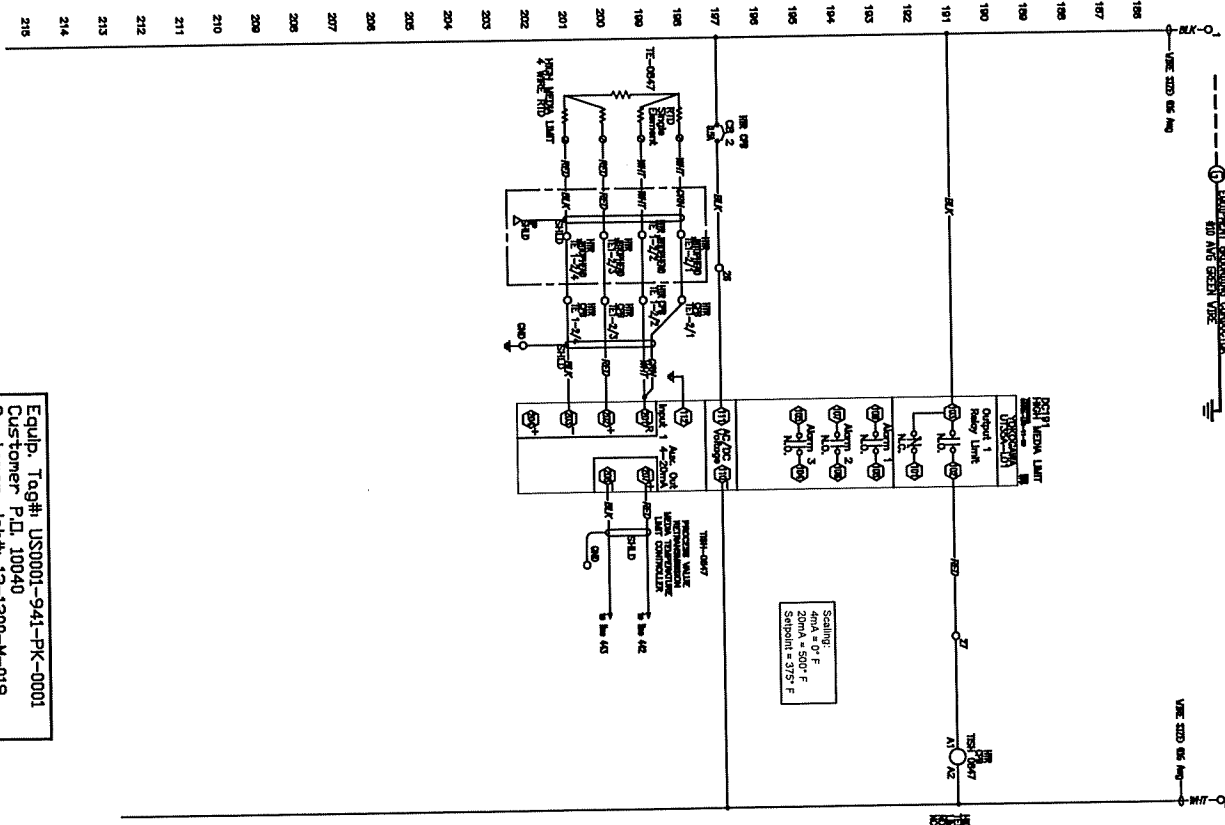
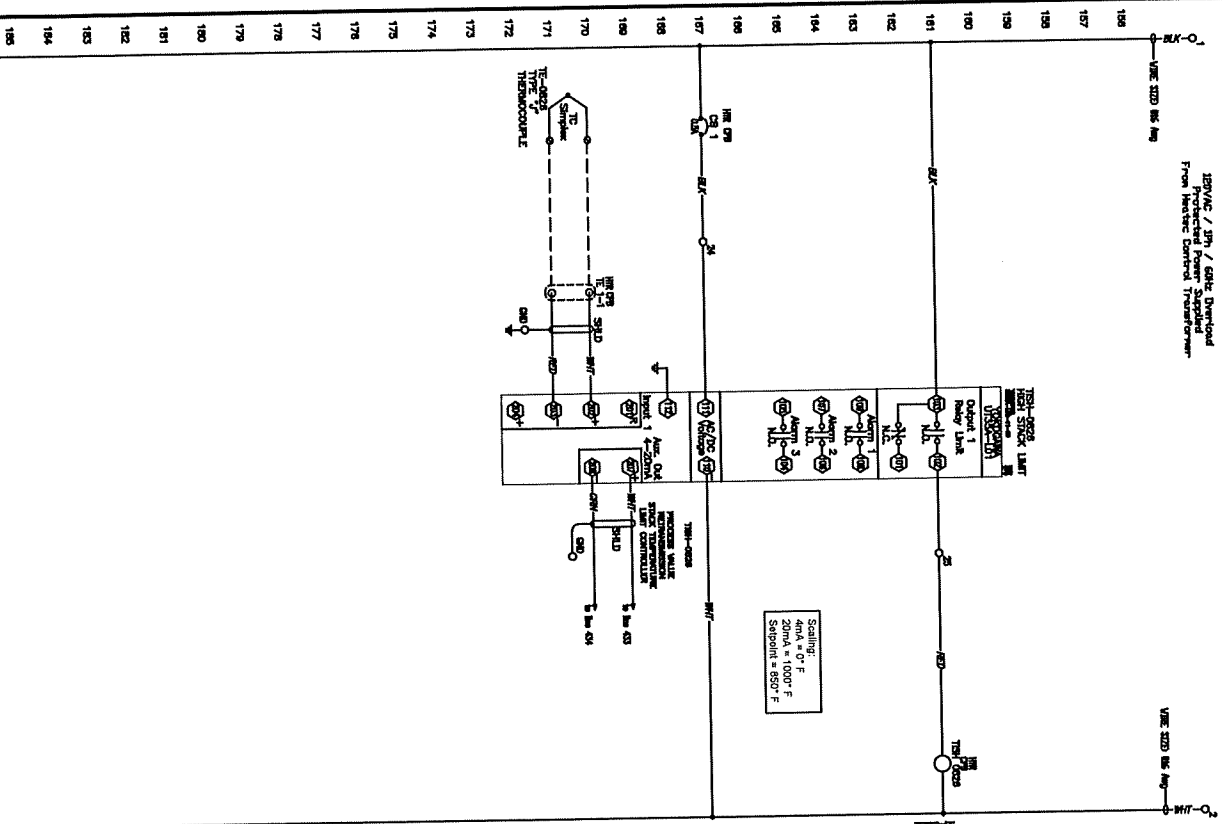
DATE: RDJ 2/1/2015  
 DWG/PART NO: 14190-CW1

CUSTOMER: Juniper GTL, LLC

DRAWING NO: VHCI-12010-50-D-G-S  
 Control Wiring  
 Sheet 01

REV.	DESCRIPTION	DATE	CHKD.	APP'D.	BY
2	As Bldg	02/15/2015			RDJ
1	Revised to shop with customer changes incorporated	5/5/2015			RDJ
0	Submitted to customer for approval	4/07/2015			RDJ

REV: H114-190  
 NO: 14-190-551  
 ISSUE DATE:



Equip. Tag# USD001-941-PK-0001  
 Customer P.L. 10040  
 Customer Job# 13-1200-M-019  
 Project: Hot Oil Heater Package

**HEATEC INC.**  
 an Amstar company

P.O. BOX 72768  
 CHATTANOOGA, TN 37477

PHONE (423) 821-5200  
 FAX (423) 821-7673

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DATE: RDJ 2/1/2015  
 DRAWN BY: RDJ  
 CHECKED BY: [ ]  
 APPROVED BY: [ ]

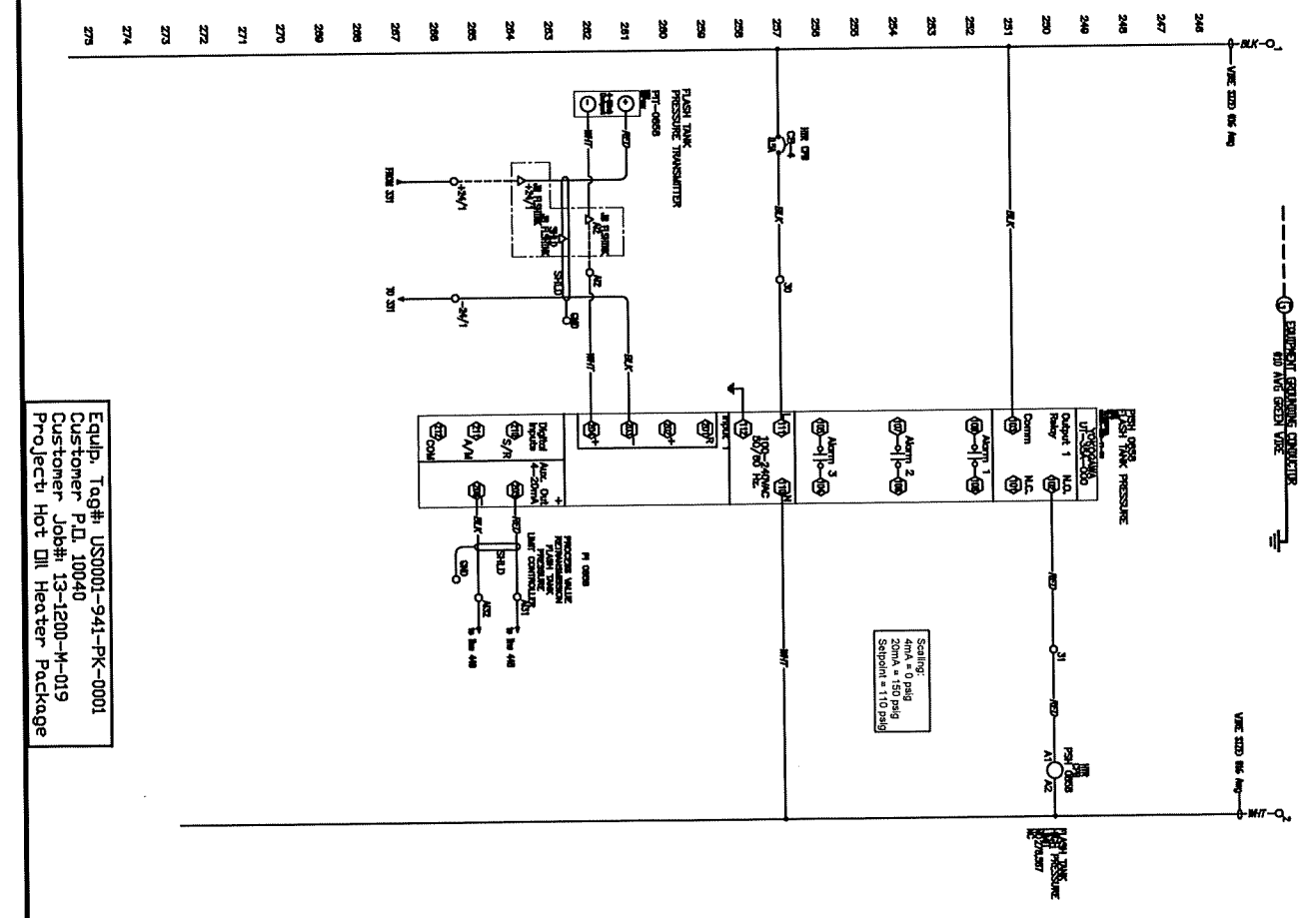
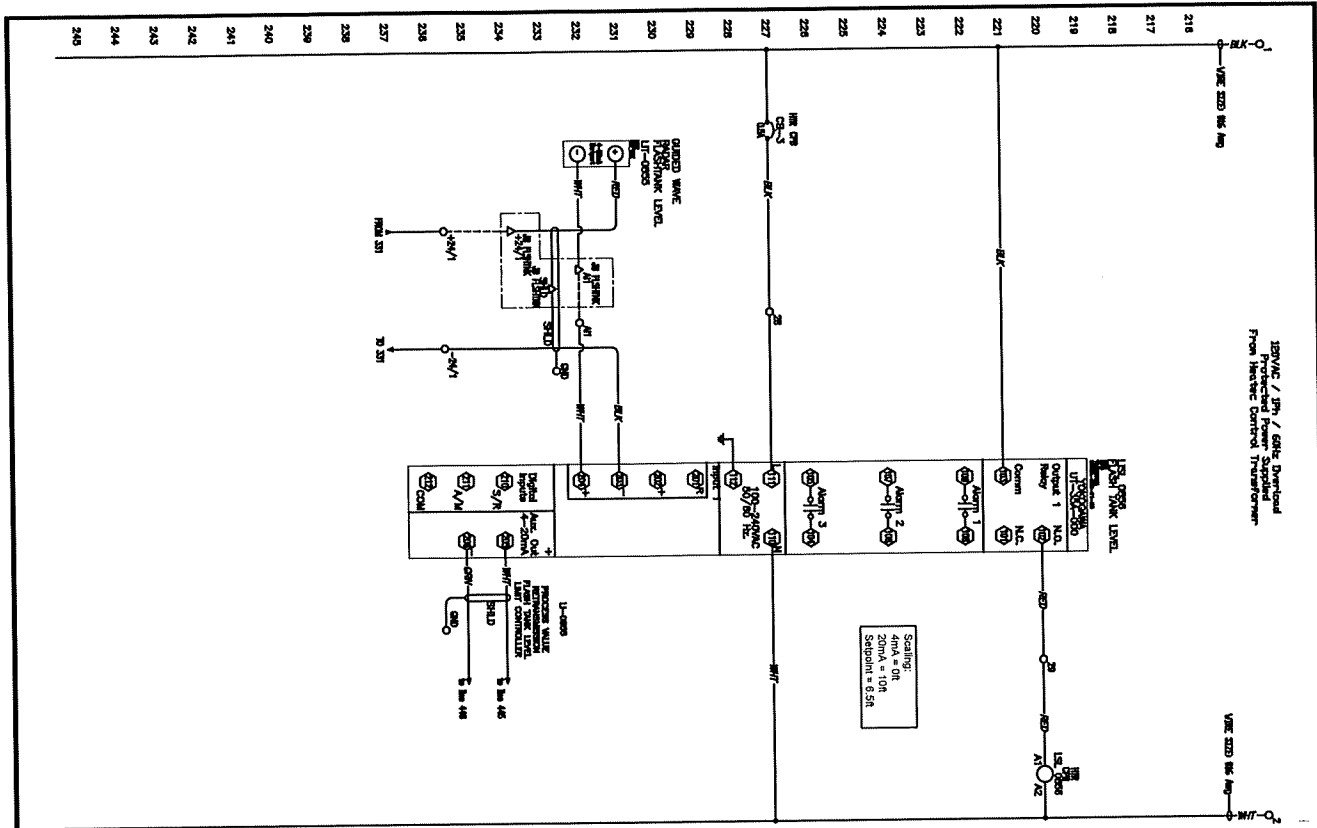
DWG/PART NO. 14190-CW2

CUSTOMER  
 Juniper GTL, LLC

DRAWING NO.  
 VHCI-12010-50-D-G-S  
 Control Wiring  
 Sheet 2

REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
2	As Bldg	12/15/2012			RDJ
1	Released to shop with customer changes incorporated	5/5/2015			RDJ
0	Submitted to customer for approval.	4/7/2015			RDJ

NO. 14-190-551  
 HI14-190



14190-CW3

**HEATEC INC.**  
an Aetco company

P.O. BOX 72764  
CHATTANOOGA, TN 37477

PHONE (423) 821-4300  
FAX (423) 821-7673

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DATE: 2/1/2015  
DRAWN BY: RDJ  
CHECK DATE: [ ]  
APPROVE: [ ]

DWG/PART NO. 14190-CW3

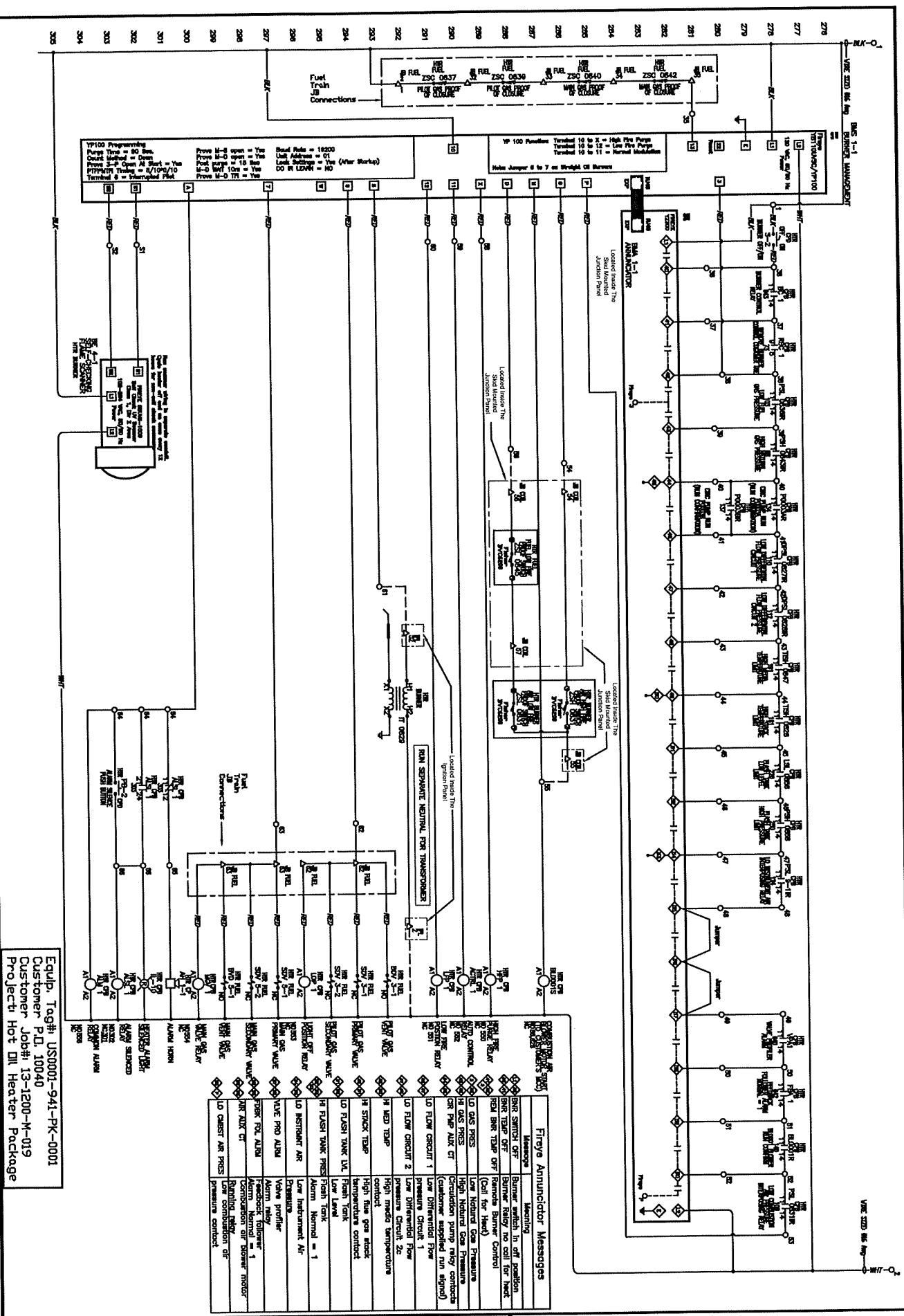
CUSTOMER  
Juniper GTL, LLC

DRAWING NO. VHC1-12010-50-D-G-S  
Control Wiring  
Sheet 3

REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
2	As BUILT	12/15/2015			RJL
1	Released to ship with customer changes incorporated	5/15/2015			RJL
0	Submitted to customer for approval	4/27/2015			RJL

REV. 14-190

ISSUE DATE 14-190-551



Equip. Tag#: US0001-941-PK-0001  
 Customer P.I. 10040  
 Customer Job#: 13-1200-M-019  
 Project: Hot Oil Heater Package

**HEATEC INC.**  
 an Aetec company  
 P.O. BOX 72764  
 CHATTANOOGA, TN 37467  
 PHONE (423) 821-9288  
 FAX (423) 821-7672

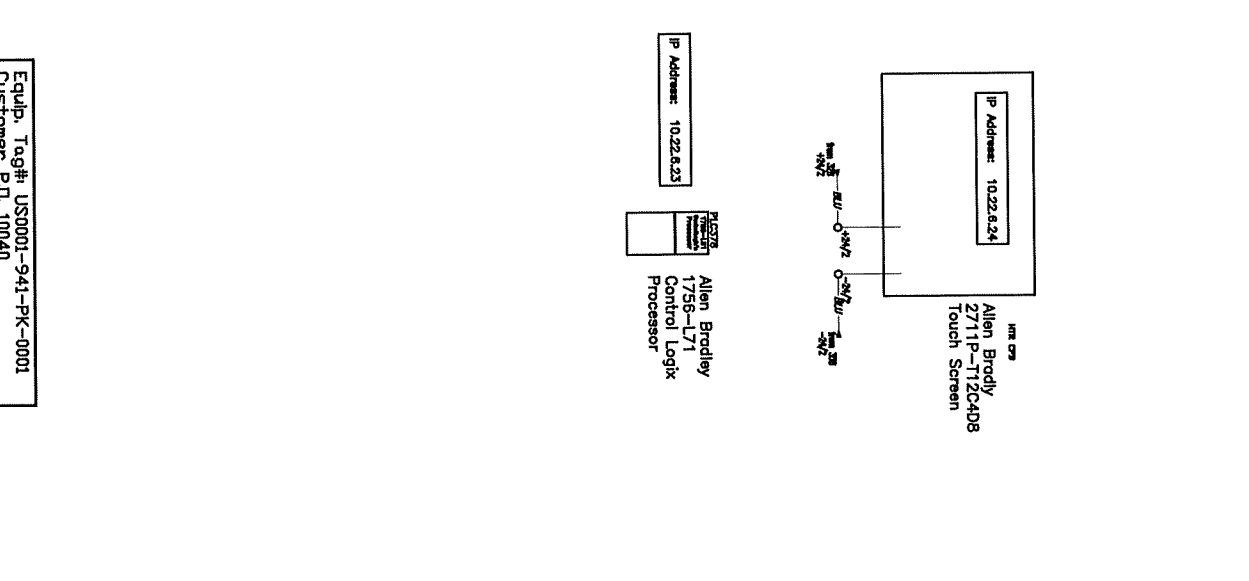
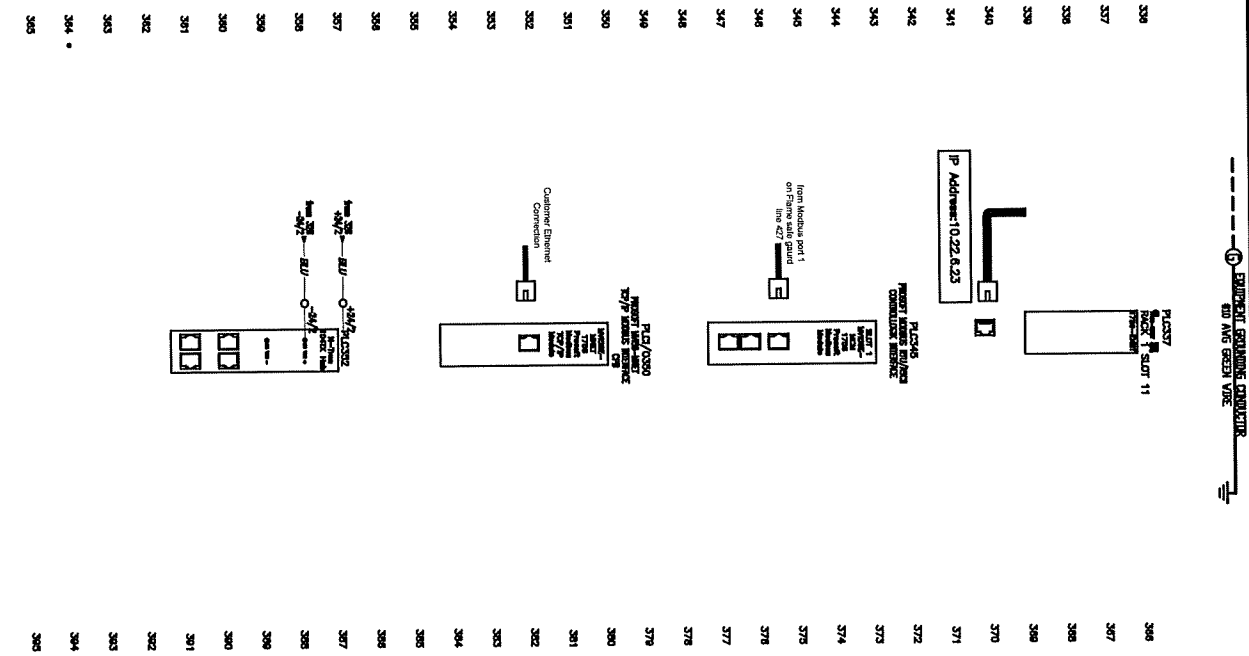
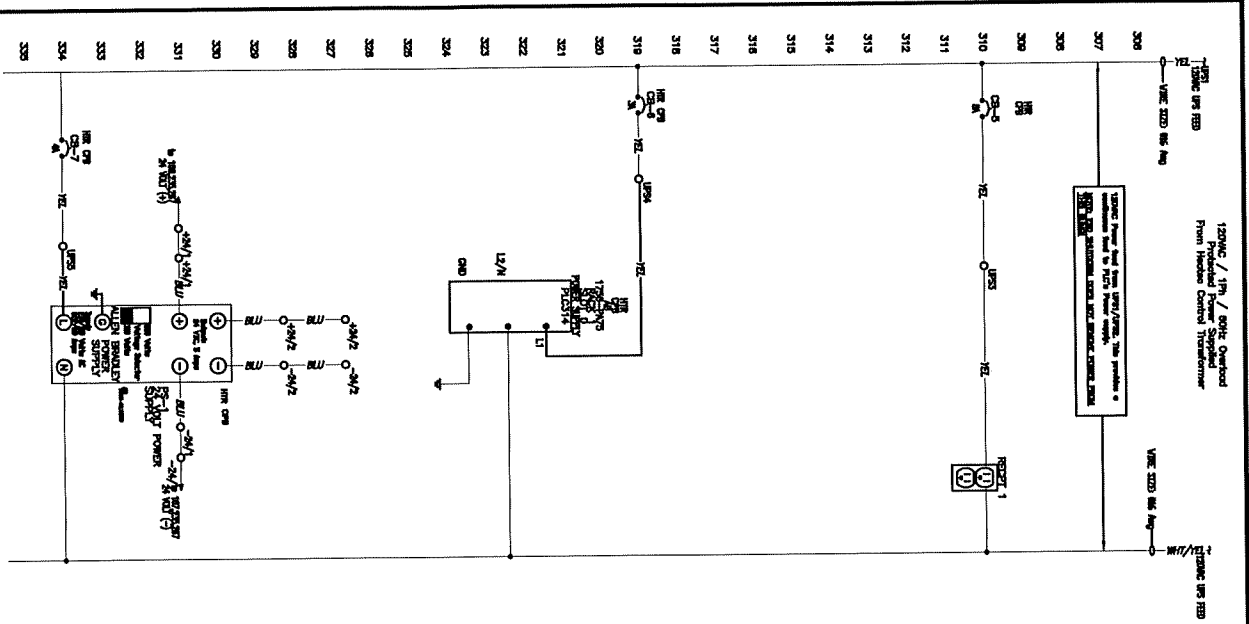
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 DATE: 2/11/2015  
 DRAWN BY: RDJ  
 CHECKED BY: [Blank]  
 APPROVED BY: [Blank]

CUSTOMER:  
**Juniper GTL, LLC**  
 DRAWING NO:  
**VHCI-12010-50-D-G-S**  
 Control Wiring  
 Sheet 04

REV.	DESCRIPTION	DATE	CHKD.	APPR.
2	As Bldg	12/15/2014		RDJ
1	Revised to show customer changes incorporated	5/5/2015		RDJ
	Submitted to customer for approval	4/17/2015		RDJ

REV. 1  
 VHCI-12010-50-D-G-S  
 Sheet 04

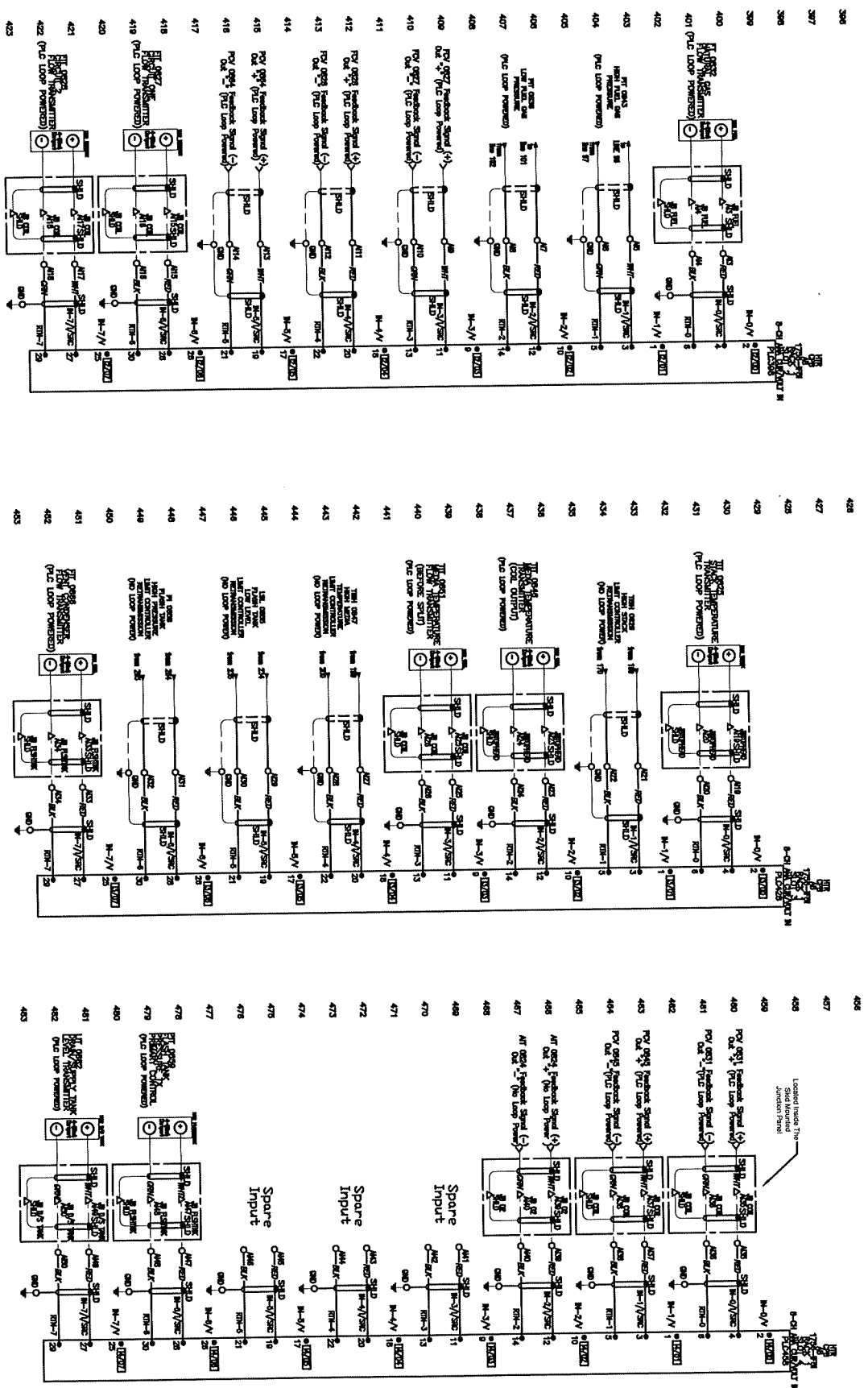
14190-CW4



Equip. Tag# US0001-941-PK-0001  
 Customer P.I.D. 10040  
 Customer Job# 13-1200-M-019  
 Project: Hot Oil Heater Package

<b>HEATEC INC.</b> an Astec company		P.O. BOX 72764 CHATTANOOGA, TN 37407	PHONE (423) 821-5200 FAX (423) 821-7673	CUSTOMER Juniper GTL, LLC	
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WORK BY: RDJ	DATE: 2/1/2015	CHECK DATE:	APPROVE:	REV. #	DESCRIPTION
DWG/PART NO.	14190-CW5			14-190-551	14-190-551
					12/15/2015
					5/5/2015
					4/7/2015

HEATER CONTROL CENTER  
HOT AIR HEATER WIRE



**HEATEC INC.** P.O. BOX 72768 CHATTANOOGA, TN 37407  
 PHONE (423) 821-3200 FAX (423) 821-7673  
 an Astec company

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DATE: RDJ 2/1/2015  
 DWG/PART NO: 14190-CW06

CUSTOMER: Juniper GTL, LLC  
 DRAWING NO: VHCI-12010-50-D-G-S  
 CONTROL WIRING SHEET 06

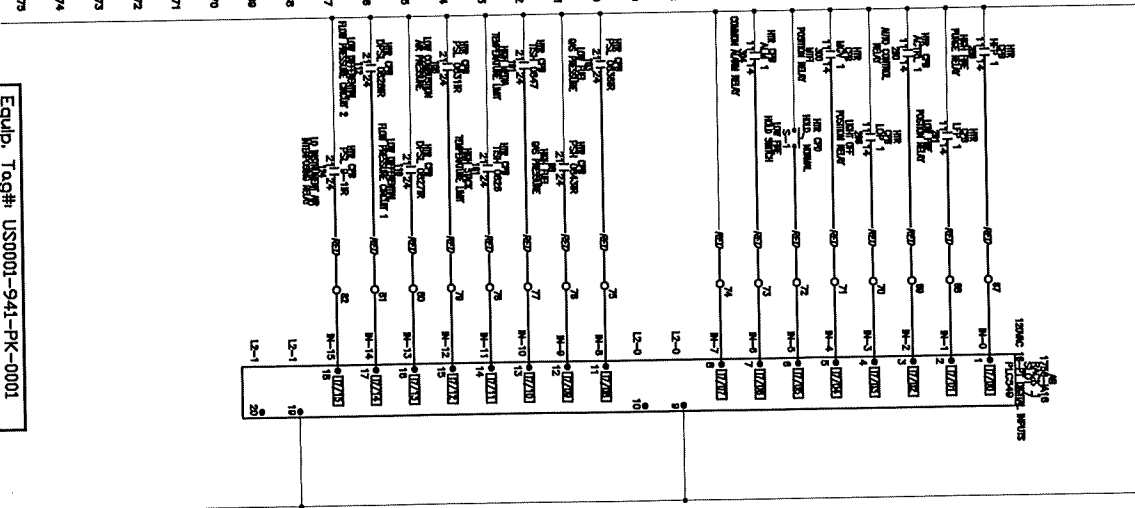
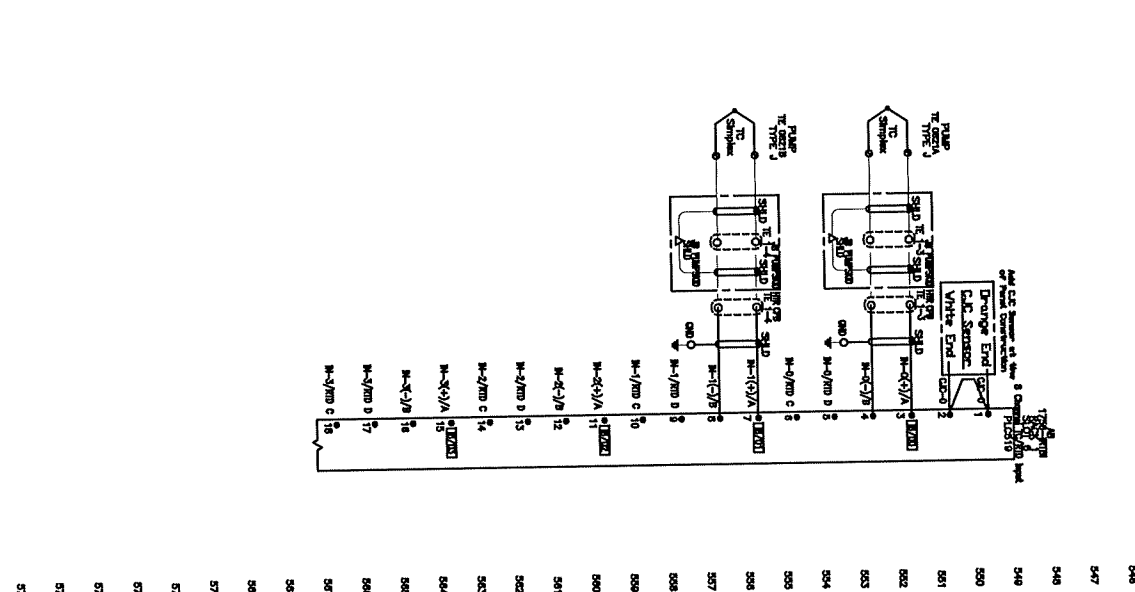
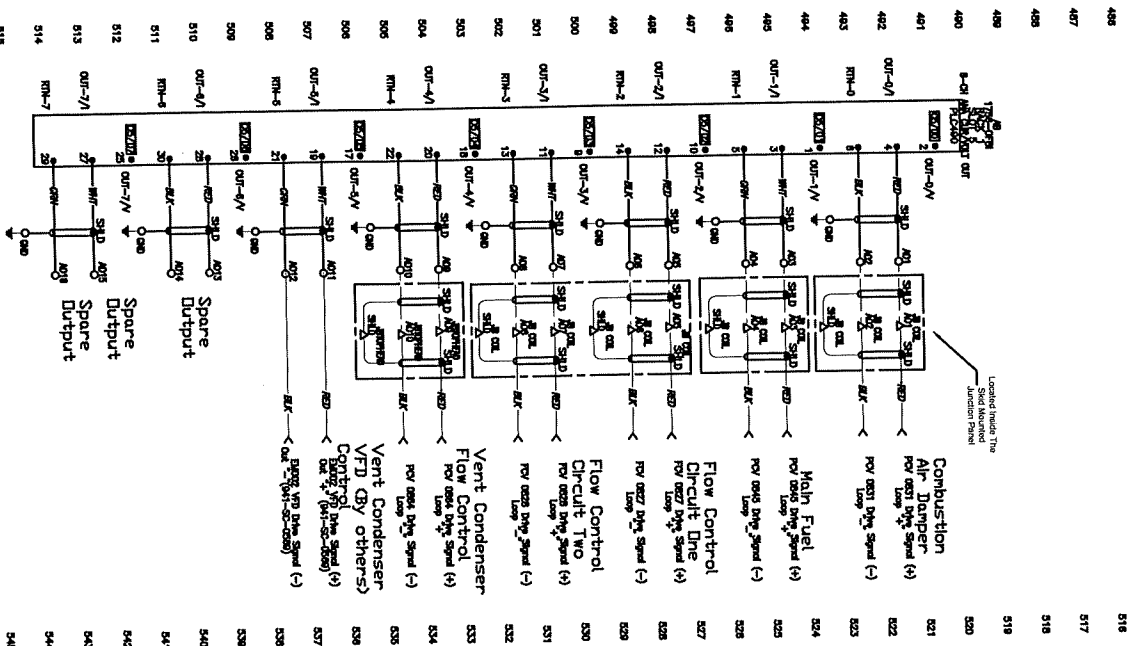
REV.	DESCRIPTION	DATE	CHKD	APPR.
1	As Bldg	12/15/2010		
2	Revised FT0866 wiring to Flash Tank #1	5/8/2012		
3	Revised to shop with customer changes incorporated	3/5/2015		
4	Submitted to customer for approval	4/7/2015		

NO. 14-190-551  
 ISSUE DATE



120VAC / 1PH / 60Hz Overhead  
From Heater Control Transformer

EQUIPMENT TERMINALS CONDUCTOR  
END AVG GREEN WIRE



Equip. Tag# US0001-941-PK-0001  
Customer P.I. 10040  
Customer Job# 13-1200-M-019  
Project Hot Dill Heater Package

**HEATEC INC.**  
an Astec company

PA BOX 7294 CHATTANOOGA, TN 37477  
PHONE (423) 821-2200 FAX (423) 821-7673

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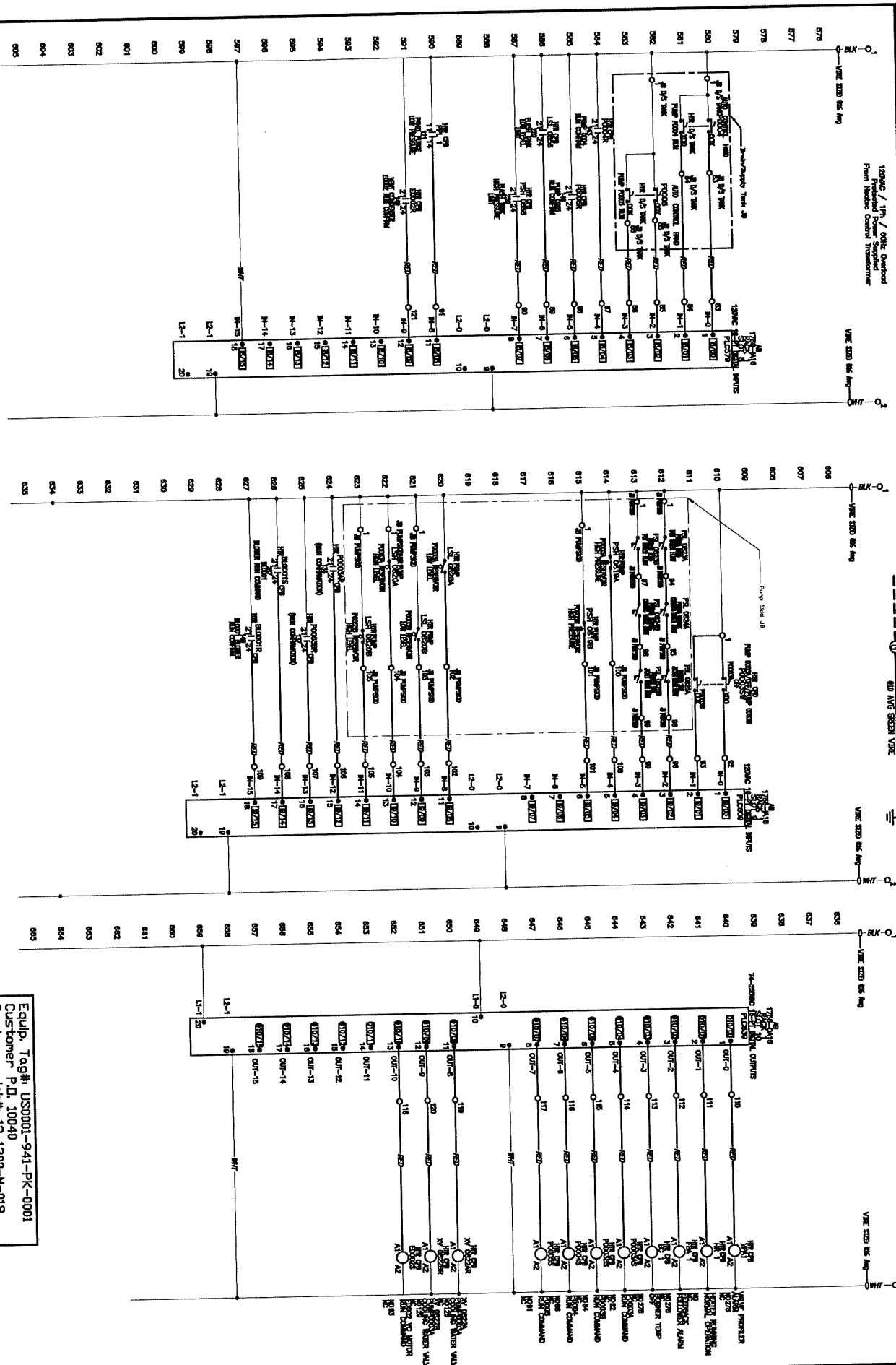
DATE: RDJ 2/1/2015  
DWG/PART NO: 14190-CW07

CUSTOMER  
Juniper GTL, LLC

DRAWING NO: VHCI-12010-50-D-G-S  
Control Wiring  
Sheet 07

REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
2	As Bldg	12/15/2014			RUI
1	Revised to shop with customer changes incorporated	5/5/2015			RUI
0	Submitted to customer for approval.	4/17/2015			RUI

NO 14-190-651  
ISSUE DATE



Equip. Tag#: US0001-941-PK-0001  
 Customer P.I. 10040  
 Customer Job#: 13-1200-M-019  
 Project: Hot Oil Heater Package

**HEATEC INC.**  
 an Aetna company  
 P.O. BOX 72768  
 CHATTANOOGA, TN 37477  
 PHONE (623) 821-5200  
 FAX (623) 821-7673

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DATE: RDJ 2/17/2015  
 CHECK DATE: \_\_\_\_\_  
 APPROVAL: \_\_\_\_\_

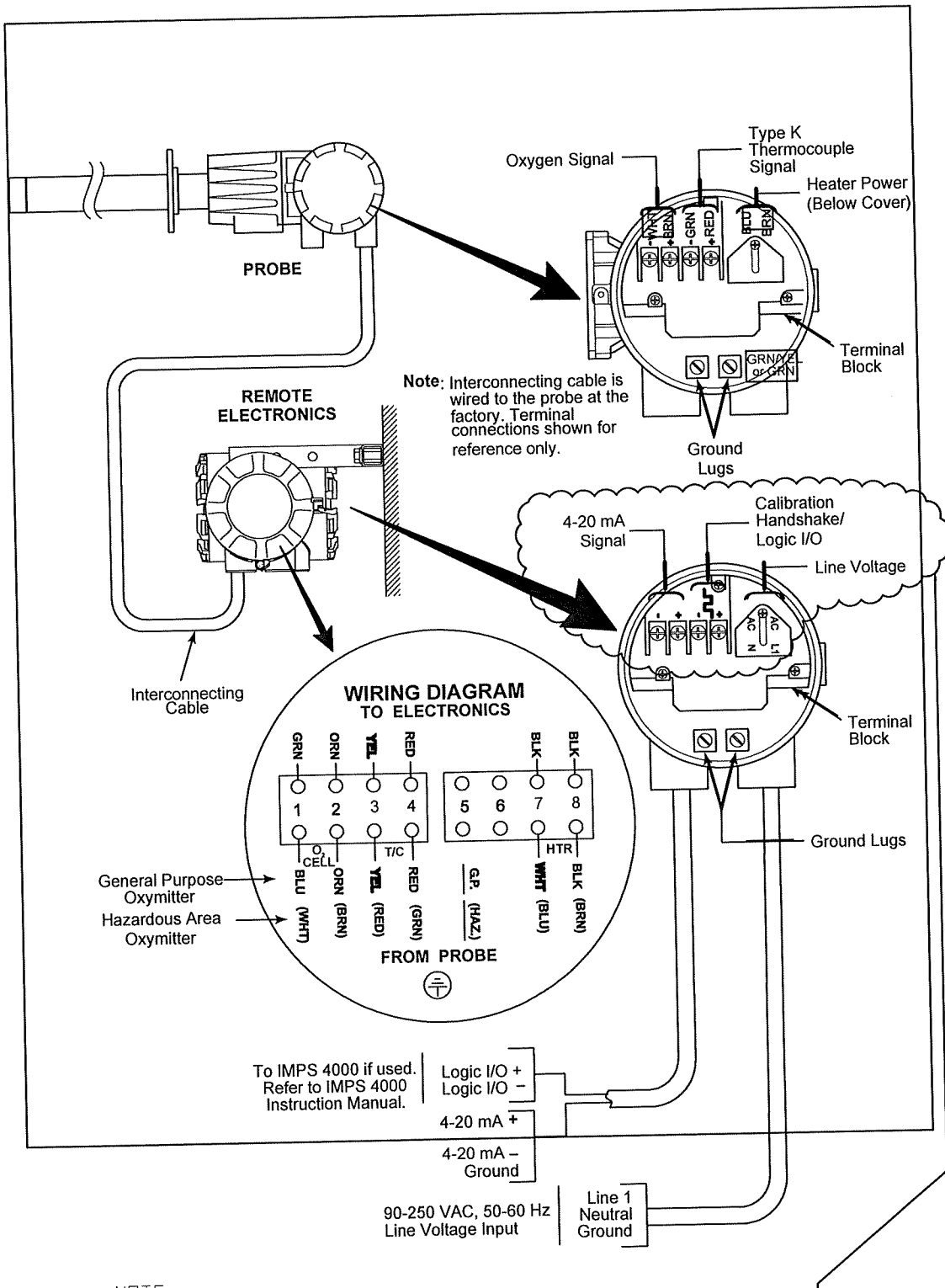
DWG/PART NO. 14190-CW8

Customer  
 Juniper, GTL, LLC

DRAWING NAME  
 VHCI-12010-50-D-G-S  
 Control Wiring  
 Sheet 08

REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
2	As Bldg	12/15/2015			
1	Revised to shop with customer changes incorporated	5/5/2015			
	Submitted to customer for approval	4/17/2015			

REV. # 14190-180  
 WIRING # 14-190-551  
 ISSUE DATE



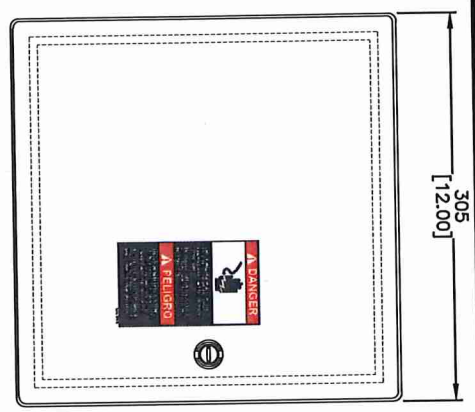
Note: Interconnecting cable is wired to the probe at the factory. Terminal connections shown for reference only.

NOTE:  
Run 120VAC Input Power Connection in separate conduit from 4-20ma output/Calibration-Handshake Logic I/O signal wires. Route 4-20ma output and Calibration-Handshake Logic wiring to Control Panel. Terminate 4-20ma Output signal on AI39(+)/AI40(-). Coil up wire from Calibration-Handshake Logic terminals inside control panel for future use

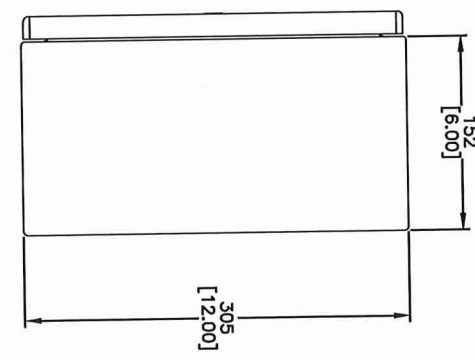
Equip. Tag# US0001-941-PK-0001  
Customer P.I. 10040  
Customer Job# 13-1200-M-019  
Project: Hot Dil Heater Package

<b>HEATEC INC.</b> an Astec company		P.O. BOX 72768 CHATTANOOGA, TN 37477	PHONE (423) 821-3200 FAX (423) 821-7673	CUSTOMER Juniper GTL, LLC	2 As Bldt 12/25/2015 RJU
THIS DRAWING AND THE DESIGN HEREIN IS THE PROPERTY OF HEATEC INC. AND THE USE OR COPIES THEREOF WITHOUT WRITTEN CONSENT.				DRAWING NAME VHCI-12010-50-D-G-S Rosenmount OXT4C In Situ Transmitter Wiring Diagram	1 Revised to ship with customer changes incorporated 5/5/2015 RJU
DATE: RDJ 2/1/2015	CHECKED:	APPROVED:	REV. 1	DESCRIPTION	DATE:
DWG/PART NO. 14190-CW09				NO. 14-190-551	ISSUE DATE:

14190-CW09

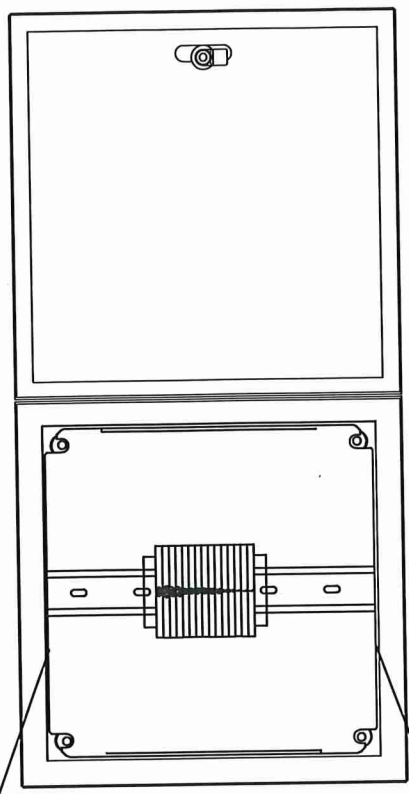


Front View



Right Side View

JPL  
NEMA 4X (316 STAINLESS STEEL)  
JUNCTION PANEL  
HOFFMAN  
CSD12126SS6

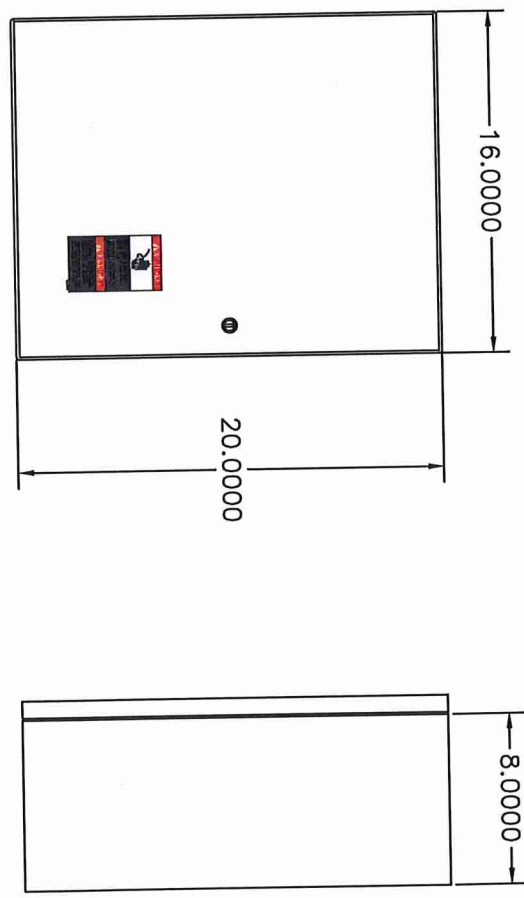


Inside View

1	1
1	1
2	2
19	19
20	20
83	83
84	84
85	85
86	86
A149	A149
A150	A150
SHLD	SHLD
GND	GND

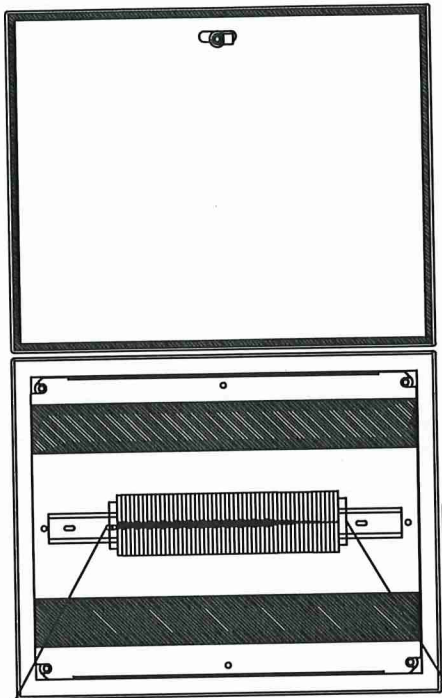
Entity: Juniper  
Customer: Juniper  
Project: 14190-JB\_DRAIN\_SUPPLY\_TNK

<b>HEATEC INC.</b> an Astec company P.O. BOX 72764 CHATTANOOGA, TN 37417 PHONE (423) 821-5200 FAX (423) 821-7673		CUSTOMER Juniper GTL, LLC	
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DRAWING NO. VHCI-12010-50-D-G-S Drain/Supply Tank Junction Box Layout	DATE: RDJ 2/1/2015 CHECK DATE: _____ APPROVATE: _____	REV. 2 As Built 1 Released for Construction 0 Submitted to customer for approval.	DATE: 12/15/2015 DATE: 5/19/2015 DATE: 4/17/2015
DWG/PART NO. 14190-JB_DRAIN_SUPPLY_TNK	JOB # HI14-190	WO # 14-190-551	ISSUE DATE



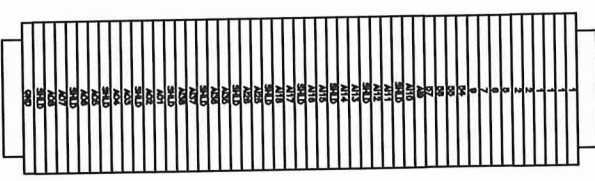
Front View

Side View



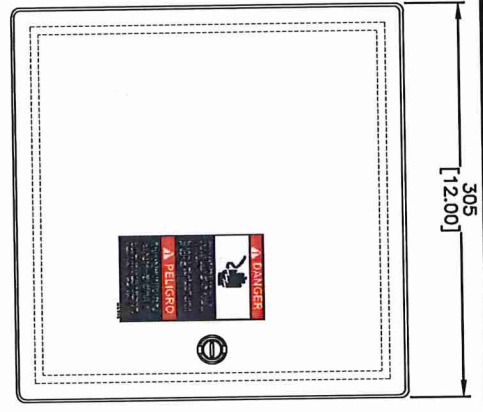
Inside View

P1  
NEMA 4X (316 STAINLESS STEEL)  
JUNCTION BOX  
HOFFMAN  
CSD2010858

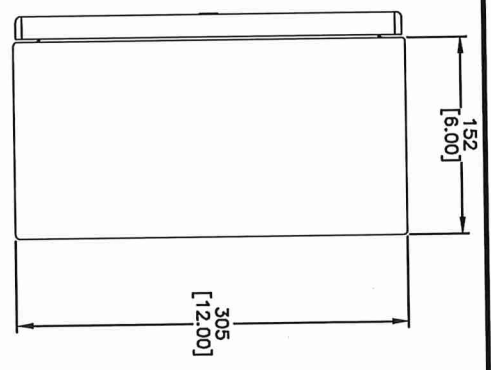


Equip. Tag# US0001-941-PK-0001  
Customer P.I. 10040  
Customer Job# 13-1200-M-019  
Project: Hot Oil Heater Package

<b>HEATEC INC.</b> an Aesee company		P.O. BOX 72764 CHATTANOOGA, TN 37407		PHONE (423) 821-5200 FAX (423) 821-7673	
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DRAWING NAME VHCI-12010-50-D-G-S Coil Junction Box Layout		REV. 2 As Built		DATE 12/15/2015	
DATE RJD 2/1/2015		CHECK DATE		DATE 11/6/2014	
DWG/PART NO. 14190-JB_COIL		REV. 1 Released to Shop for Construction		DATE 9-10-2014	
Dwg # H114-190		Part # 14-190-551		DATE 12/15/2015	
ISSUE DATE		CHKD. APPR. BY		DATE 11/6/2014	

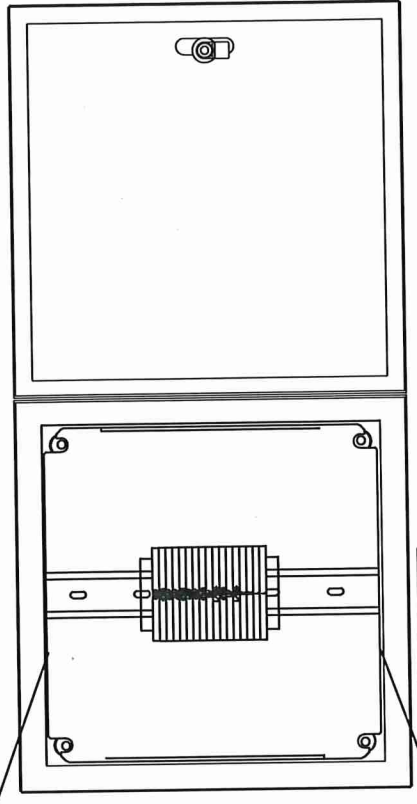


Front View



Right Side View

JPL  
NEMA 4X (316 STAINLESS STEEL)  
JUNCTION PANEL  
HOFFMAN  
CSD12126SS6



Inside View

1
1
2
2
+24/1
AI1
SHLD
+24/1
AI2
SHLD
AI33
AI34
SHLD
AI47
AI48
SHLD
GND

Exhib. 1, page 103000-041-FR-0000  
Customer: PUL 3009  
Customer Part: 14190-JB  
Project: Int. II. Review Package

**HEATEC INC.** P.O. BOX 72748 CHATTANOOGA, TN 37407  
PHONE (423) 821-5200 FAX (423) 821-7673

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DATE: RDJ 2/1/2015  
DRAWN BY: RDJ  
CHECKED BY: [ ]  
APPROVED BY: [ ]

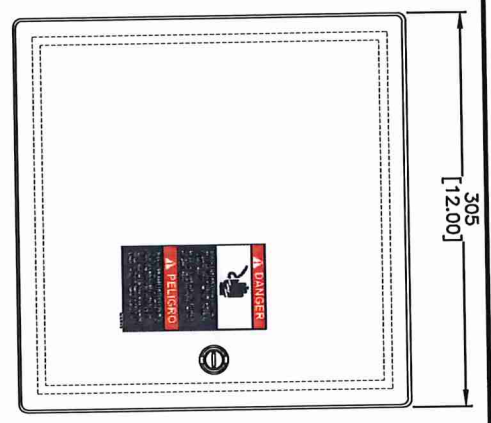
DWG/PART NO. 14190-JB\_FLASH\_TANK

CUSTOMER Juniper GTL, LLC

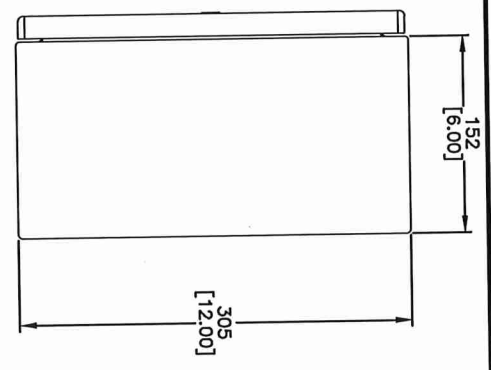
DRAWING NAME VHCI-12010-50-D-G-S  
Flash Tank Junction Box Layout

REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
3	As Bldg	12/15/2013			RSJ
2	Moved FT1866 wiring to Flash Tank JB	5/18/2013			RSJ
1	Release to Shop for Construction	5/15/2013			RSJ
0	Submitted to customer for approval	4/17/2013			RSJ

JOB # HI14-190  
WO # 14-190-551  
ISSUE DATE

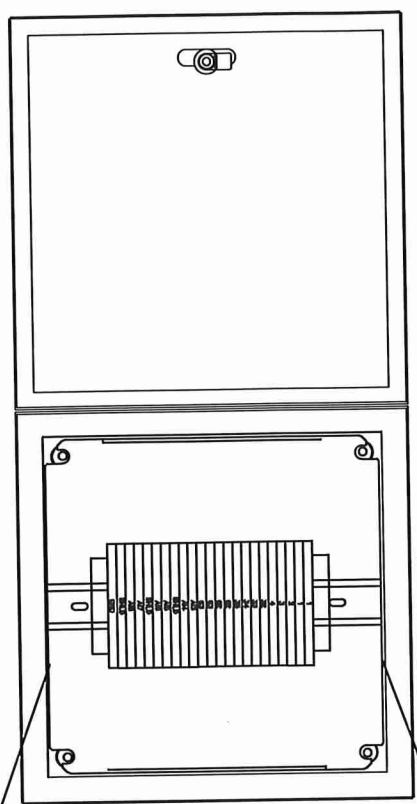


Front View

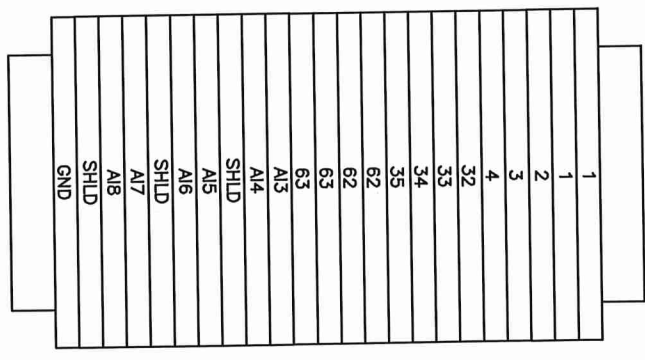


Right Side View

JPL  
NEMA 4X (316 STAINLESS STEEL)  
JUNCTION PANEL  
HOFFMAN  
CSD12126SS6

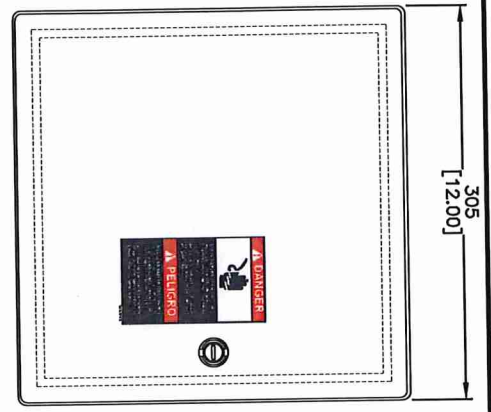


Inside View

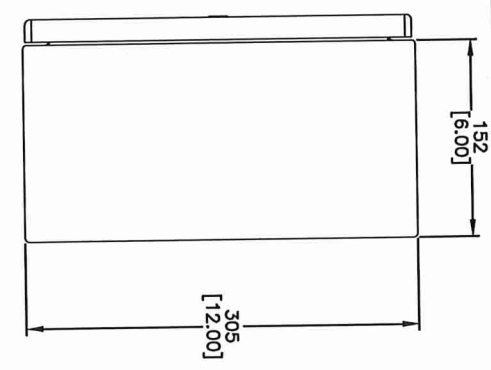


Equip. Tag# 152000-941-PC-001  
Customer: P.O. Box 72740  
Product Ref: III Inventory Package

<b>HEATEC INC.</b> an Astec company P.O. BOX 72740 CHATTANOOGA, TN 37447 PHONE (423) 821-5300 FAX (423) 821-7673		CUSTOMER Juniper GTL, LLC	
THIS DRAWING AND THE DESIGN SHOWN THEREIN IS THE PROPERTY OF HEATEC INC. AND THE USE OR COPIES THEREOF CANNOT BE MADE WITHOUT WRITTEN CONSENT.			
DRAWN BY: RDJ DATE: 2/1/2015	CHECK DATE:	APPROVATE:	DRAWING NAME: VHCI-12010-50-D-G-S Fuel Train Junction Box Layout
DWG/PART NO. 14190-JB_FUEL	REV. # H114-190	DESCRIPTION 14-190-551	ISSUE DATE
2 As Built 1 Released to Shop for Construction 0 Submitted to customer for approval.	12/15/2015 5/15/2015 4/17/2015	DATE DATE DATE	RBY RBY RBY

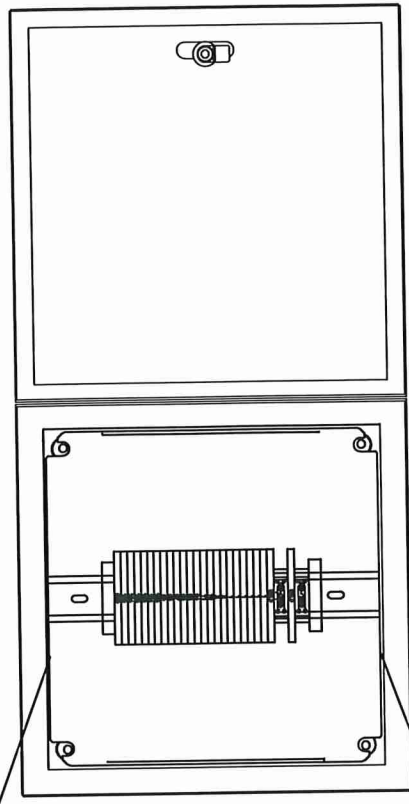


Front View

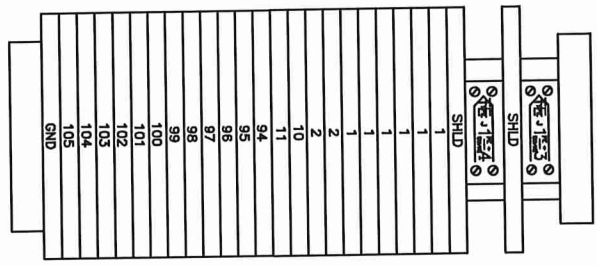


Right Side View

JPL  
NEMA 4X (316 STAINLESS STEEL)  
JUNCTION PANEL  
HOFFMAN  
CSD12126SS6



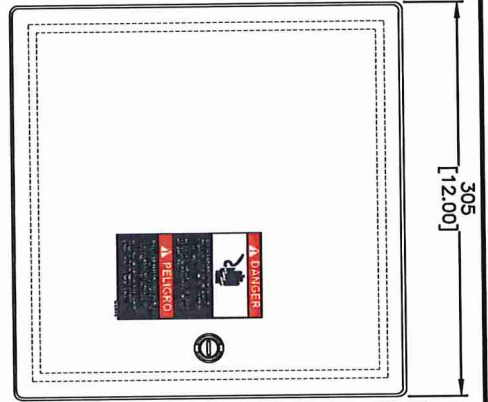
Inside View



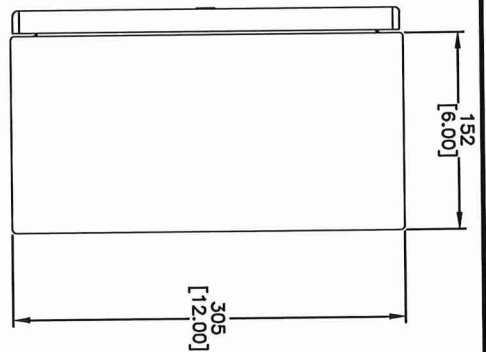
Scale: 1/8" = 1" (1:8)  
Customer: Juniper GTL, LLC  
Product: Hot Oil Heater Package

<b>HEATEC INC.</b> an Asteco company P.O. BOX 72768 CHATTANOOGA, TN 37407 PHONE (423) 821-8200 FAX (423) 821-7673		CUSTOMER Juniper GTL, LLC	
THIS DRAWING AND THE DESIGN SHOWN THEREIN IS THE PROPERTY OF HEATEC INC. AND THE USE OR COPIES THEREOF WITHOUT WRITTEN CONSENT.		DRAWING NO: VHCI-12010-50-D-G-S Pump Skid Junction Box Layout	
DATE: RDJ 2/1/2015	DRAWN BY:	CHECKED BY:	APPROVED BY:
DWG/PART NO. 14190-JB_PUMPSKITD	REV. 2 As Built 1 Released for Construction 0 Submitted to customer for approval		DATE: 12/15/2014 3/18/2015 4/7/2015
LIB # HI14-180		VO # 14-180-551	ISSUE DATE:



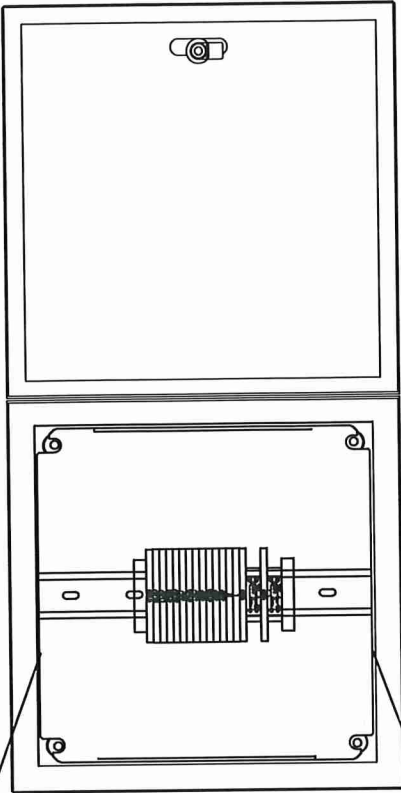


Front View

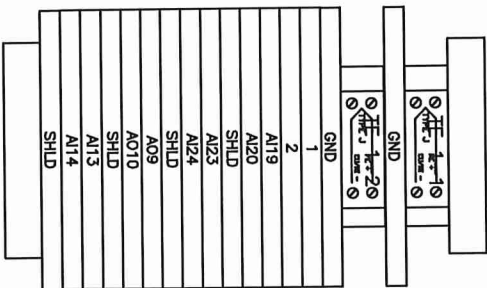


Right Side View

JPL  
NEMA 4X (316 STAINLESS STEEL)  
JUNCTION PANEL  
HOFFMAN  
CSD12126SS6



Inside View



Each Top Head 15000-54-PC-001  
Customer P.O. 1000  
Customer Address 15-250-4-10  
Project 14190 JB Header Package

HEATEC, INC.	
PANEL ROOM	
SHOP	
CHECKOUT	
ISSUE DATE:	
COMPLETED BY:	

<b>HEATEC INC.</b> an Astec company	P.O. BOX 72704 CHATTANOOGA, TN 37407	PHONE (423) 821-5200 FAX (423) 821-7673
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DATE: RDJ 2/1/2015	DATE:	DATE:
DWG/PART NO. 14190-JB_TOPHEAD		

CUSTOMER Juniper GTL, LLC	DRAWING NAME VHCT-12010-50-D-G-S Top Header Junction Box Layout
------------------------------	--

2	As Built	12/15/2015			RBJ
1	Released for Construction	5/16/2015			RBJ
0	Submitted to customer for approval.	4/7/2015			RBJ
REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
ED #	14-190-551	ISSUE DATE			
ED #	HI14-180				

- NOTES:**
- FUEL GAS VENT VALVES, PRESSURE REGULATOR VENTS, RELIEF VALVE VENTS, ETC. MUST BE PIPED TO SAFE AREA BY OTHERS
  - ALL ELECTRICAL EQUIPMENT SHALL BE SUITABLE FOR A CLASS I, DIV 2, GROUP B, C AND D AREA.
  - FINAL SETPOINTS WILL BE DETERMINED IN THE FIELD AT STARTUP.
  - HEATER COIL TO BE BUILT AND STAMPED PER ASME SECTION VIII, DIV 1, 2013 EDITION FOR 200 PSIG @ 875F TO -20F.
  - ALL MOTORS TO BE TEFC, 460V/3PH/60HZ.
  - DELETED
  - DELETED
  - CONDENSER CONTROL VALVE BYPASS HV 7-2 TO BE LEFT SLIGHTLY OPEN IN NORMAL SERVICE.

US-01-941-D-0001  
5100 GALLON DRAIN/SUPPLY TANK  
ATMOSPHERIC

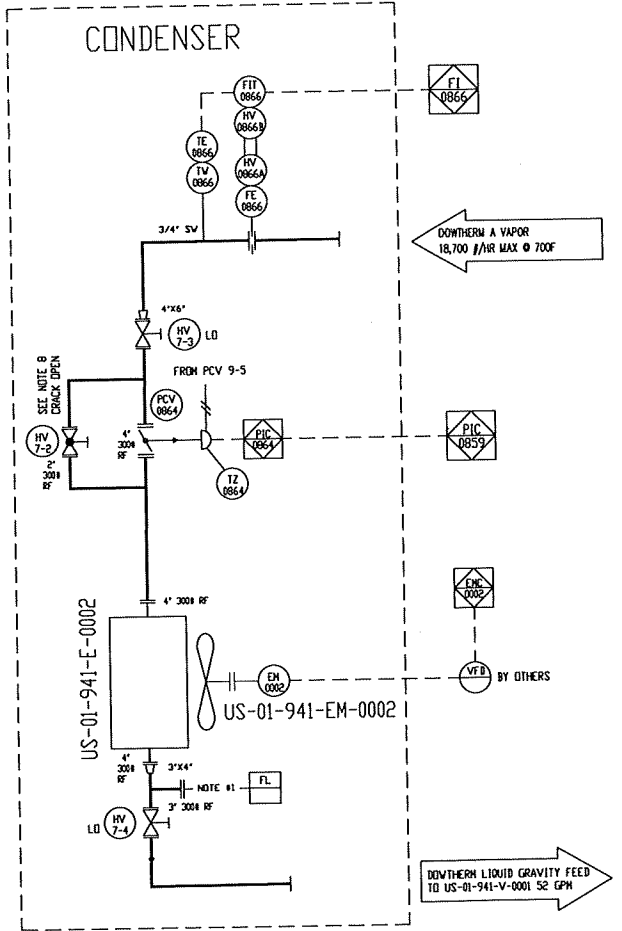
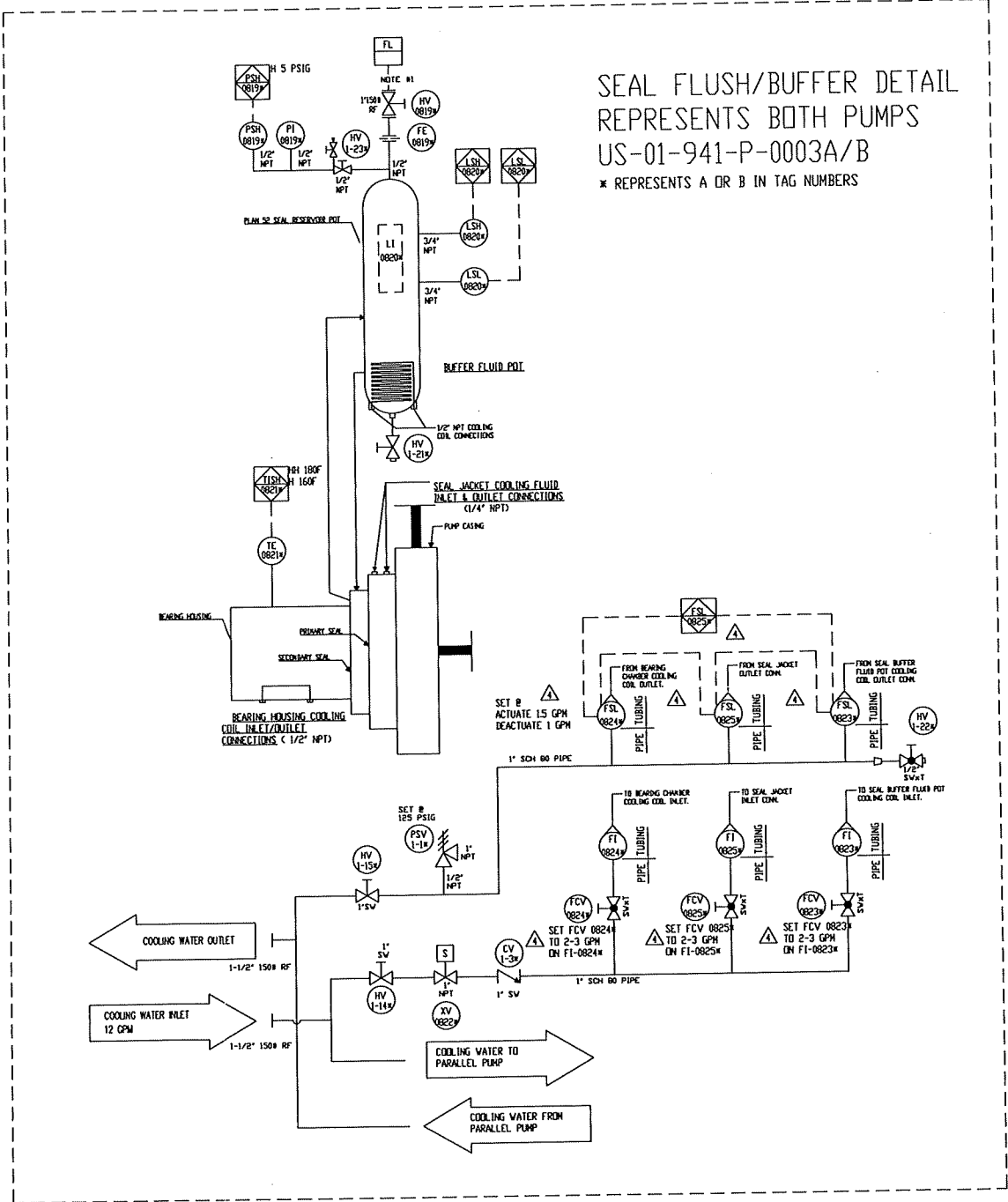
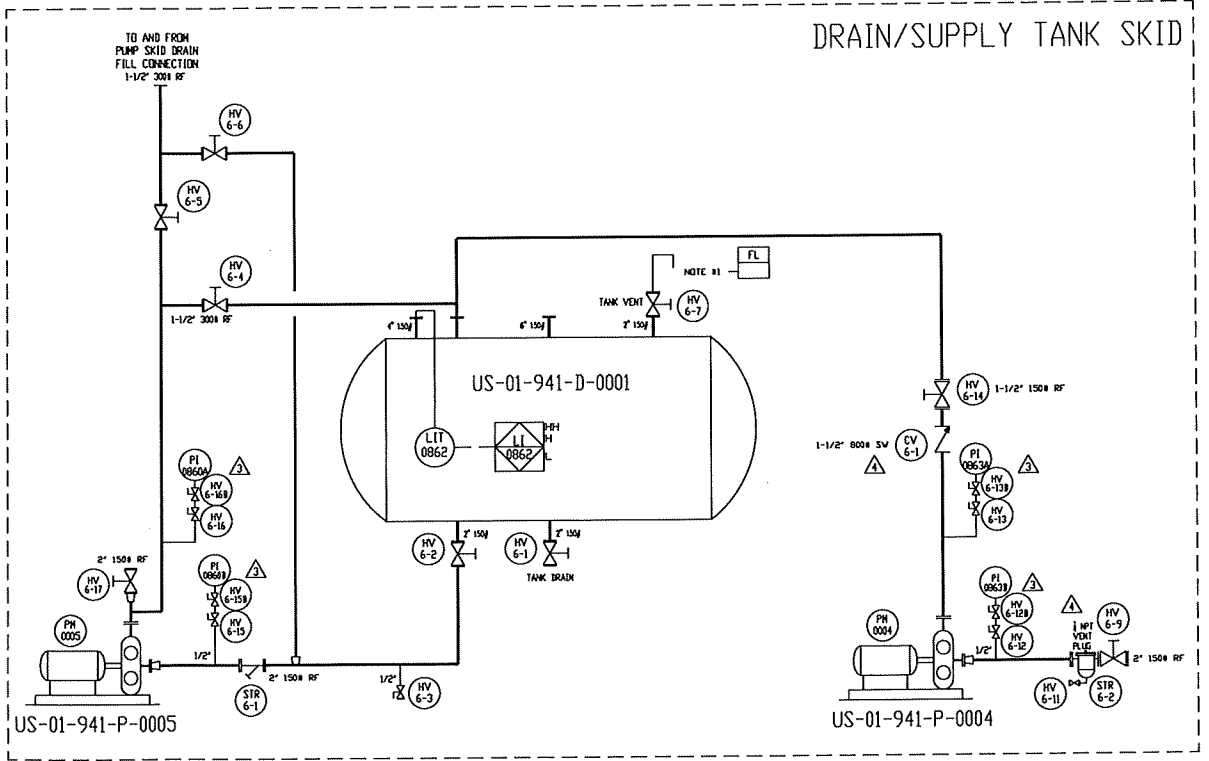
US-01-941-P-0005  
POSITIVE DISPLACEMENT  
DRAIN/FILL PUMP  
29 GPM @ 100 PSIG  
5 HP, 460V/3PH/60HZ

US-01-941-P-0004  
POSITIVE DISPLACEMENT  
UNLOADING PUMP  
29 GPM @ 100 PSIG  
5 HP, 460V/3PH/60HZ

US-01-941-E-0002  
CONDENSER  
DESIGN DUTY: 1.85 MMBTU/HR  
ASME SECTION VIII, DIV. 1, 2013 ED.  
150 PSIG @ 800F TO -20F

US-01-941-EM-0002  
CONDENSER FAN MOTOR  
3 HP, 460V/3PH/60HZ

- LEGEND:**
- LOCAL INSTRUMENT OR DEVICE IDENTIFICATION
  - ◐ HEATEC PANEL MOUNTED INSTRUMENT
  - ◑ HEATEC FLAME MANAGEMENT SYSTEM (BURNERLOGIX YB230)
  - ◒ INTERLOCK
  - ◓ HEATEC PANEL PLC



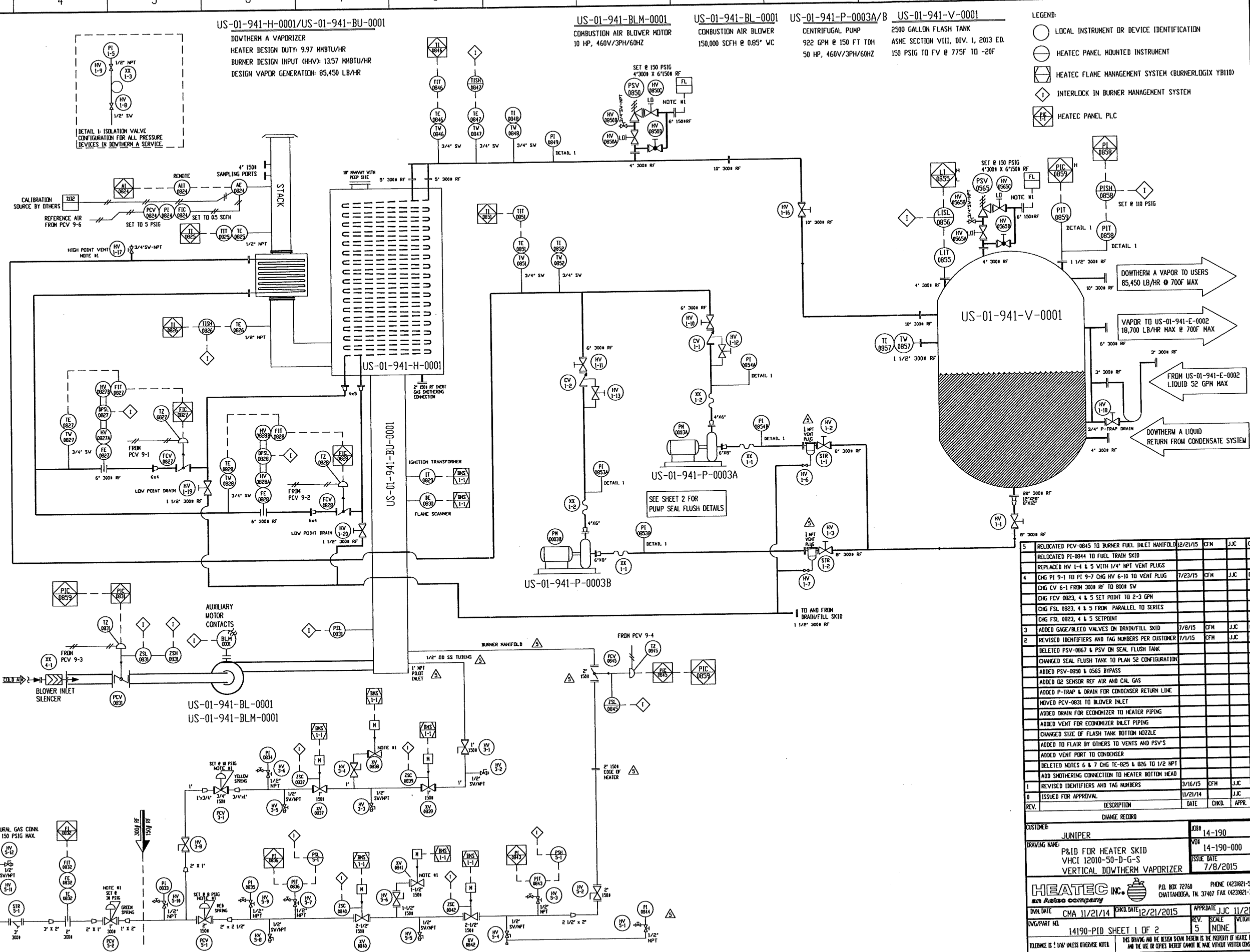
REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
5	SEE SHEET 1 FOR REVISION DESCRIPTION	12/21/15	CFM	JJC	CFM
4	SEE SHEET 1 FOR REVISION DESCRIPTION	7/23/15	CFM	JJC	CFM
3	ADDED GAGE/BLEED VALVES ON DRAIN/FILL SKID	7/8/15	CFM	JJC	CFM
2	SEE SHEET 1 FOR REVISION DESCRIPTION	7/1/15	CFM	JJC	CFM
1	REVISED IDENTIFIERS AND TAG NUMBERS	3/16/15	CFM	JJC	CHA
0	ISSUED FOR APPROVAL	11/21/14	JJC	JJC	CHA

CHANGE RECORD	
CUSTOMER:	JUNIPER
DRAWING NAME:	P&ID FOR HEATER SKID VHCI 12010-50-D-G-S VERTICAL DOWNTHERM VAPORIZER
ISSUE DATE:	7/8/2015
JOB#:	14-190
VOR#:	14-190-000

HEATEC INC. an Asarco company	P.O. BOX 72768 CHATTANOOGA, TN 37407	PHONE (423)821-5200 FAX (423)821-7673
DATE: CHA 11/21/14	REV. DATE: 12/21/2015	APPROVAL: JJC 11/21/14
DWG/PART NO. 14190-PID SHEET 2 OF 2	REV. SCALE 5	WEIGHT NONE

TOLERANCE IS 1/32" UNLESS OTHERWISE NOTED. THIS DRAWING AND THE DESIGN SHOWN THEREIN IS THE PROPERTY OF HEATEC INC. AND THE USE OR COPIES THEREOF WITHOUT THE WRITTEN PERMISSION OF HEATEC INC. IS STRICTLY PROHIBITED.

- NOTES:**
- FUEL GAS VENT VALVES, PRESSURE REGULATOR VENTS, RELIEF VALVE VENTS, ETC. MUST BE PIPED TO SAFE AREA BY OTHERS
  - ALL ELECTRICAL EQUIPMENT SHALL BE SUITABLE FOR A CLASS I, DIV 2, GROUP B, C AND D AREA.
  - FINAL SETPOINTS WILL BE DETERMINED IN THE FIELD AT STARTUP.
  - HEATER COIL TO BE BUILT AND STAMPED PER ASME SECTION VIII, DIV 1, 2013 EDITION FOR 200 PSIG @ 875F TO -20F.
  - ALL MOTORS TO BE TEFC, 460V/3PH/60HZ.
  - DELETED
  - DELETED
  - CONDENSER CONTROL VALVE BYPASS HV 7-2 TO BE LEFT SLIGHTLY OPEN IN NORMAL SERVICE.



- LEGEND:**
- LOCAL INSTRUMENT OR DEVICE IDENTIFICATION
  - ◐ HEATEC PANEL MOUNTED INSTRUMENT
  - ◑ HEATEC FLAME MANAGEMENT SYSTEM (BURNERLOGIX YB110)
  - ◇ INTERLOCK IN BURNER MANAGEMENT SYSTEM
  - ◻ HEATEC PANEL PLC

REV.	DESCRIPTION	DATE	CHKD.	APPR.	BY
5	RELOCATED PCV-0845 TO BURNER FUEL INLET MANIFOLD	12/21/15	CFM	JJC	CFM
	RELOCATED PI-0844 TO FUEL TRASH SKID				
	REPLACED HV 1-4 & 5 WITH 1/4" NPT VENT PLUGS				
4	CHG CV 9-1 TO PI 9-7 CHG HV 6-10 TO VENT PLUG	7/23/15	CFM	JJC	CFM
	CHG CV 6-1 FROM 300# RF TO 800# SV				
	CHG FCV 0823, 4 & 5 SET POINT TO 2-3 GPM				
	CHG FSL 0823, 4 & 5 FROM PARALLEL TO SERIES				
	CHG FSL 0823, 4 & 5 SETPOINT				
3	ADDED GAGE/BLEED VALVES ON DRAIN/FILL SKID	7/8/15	CFM	JJC	CFM
2	REVISED IDENTIFIERS AND TAG NUMBERS PER CUSTOMER	7/1/15	CFM	JJC	CFM
	DELETED PSV-0867 & PSV ON SEAL FLUSH TANK				
	CHANGED SEAL FLUSH TANK TO PLAN 52 CONFIGURATION				
	ADDED PSV-0850 & 0856 BYPASS				
	ADDED O2 SENSOR REF AIR AND CAL GAS				
	ADDED P-TRAP & DRAIN FOR CONDENSER RETURN LINE				
	MOVED PCV-0831 TO BLOWER INLET				
	ADDED DRAIN FOR ECONOMIZER TO HEATER PIPING				
	ADDED VENT FOR ECONOMIZER INLET PIPING				
	CHANGED SIZE OF FLASH TANK BOTTOM NOZZLE				
	ADDED TO FLAIR BY OTHERS TO VENTS AND PSV'S				
	ADDED VENT PORT TO CONDENSER				
	DELETED NOTES 6 & 7 CHG TE-025 & 026 TO 1/2" NPT				
	ADD SMOTHERING CONNECTION TO HEATER BOTTOM HEAD				
1	REVISED IDENTIFIERS AND TAG NUMBERS	3/16/15	CFM	JJC	CFM
0	ISSUED FOR APPROVAL	11/21/14		JJC	CFM

**OWNER RECORD**

CUSTOMER: JUNIPER  
 DRAWING NAME: P&ID FOR HEATER SKID  
 VHCI 12010-50-D-G-S  
 VERTICAL DOWTHERM VAPORIZER

DATE: 11/21/14  
 DATE: 12/21/2015  
 APPROX: JJC 11/21/14

14190-PID SHEET 1 OF 2

HEATEC INC. an Alstom company  
 P.O. BOX 72740 CHATTANOOGA, TN 37407  
 PHONE (423)821-5200 FAX (423)821-7673

SCALE: NONE  
 WEIGHT: 5

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# 14190 - P&ID BILL OF MATERIALS

HEATEC JOB NO: 14-190  
 CUST. P.O. NO.: 10040  
 CUSTOMER NAME: Juniper GTL  
 CUSTOMER JOB NO: US-01-941-PK-0001

Date 7/28/2015  
 Rev 2

Item	Tag Prefix	Tag Suffix	Part #	MFR	PART NAME	Description	W.O.	Visual	UM	Qty
<b>HEATER COMPONENTS</b>							555	0	EA	1
1	AE	0824	--	ROSEMOUNT	OXYGEN ELEMENT	INCLUDED WITH OXYGEN TRANSMITTER AIT-0824	555	0	EA	1
2	AIT	0824	5045176	ROSEMOUNT	OXYGEN TRANSMITTER	Oxymitter™ 4000 In Situ Oxygen Transmitter, Part No.: OXT4C-2-0-1-1-24-3-1-00-01-00-12	555	0	EA	1
3	FIC	0824	--	ROSEMOUNT	FLOW METER	INCLUDED WITH OXYGEN TRANSMITTER AIT-0824	555	0	EA	1
4	PI	0824	--	ROSEMOUNT	PRESS GAGE	INCLUDED WITH OXYGEN TRANSMITTER AIT-0824	555	0	EA	1
5	PCV	0824	--	ROSEMOUNT	REGULATOR	INCLUDED WITH OXYGEN TRANSMITTER AIT-0824	555	0	EA	1
6	DPSL	0827	5045435	UNITED ELECTRIC	DP SWITCH	DIFFERENTIAL PRESSURE SWITCH, UE 120 SERIES, Part No: J120K-543-M540-M440-M446-M449	555	0	EA	1
7	DPSL	0828	5045435	UNITED ELECTRIC	DP SWITCH	DIFFERENTIAL PRESSURE SWITCH, UE 120 SERIES, Part No: J120K-543-M540-M440-M446-M449	555	0	EA	1
8	FCV	0827	5044912	FISHER	CONTROL VALVE	4" 2052-8560-DVC6200 BUTTERFLY (Hi-Temp NOVEX Seal)	555	0	EA	1
9	FCV	0828	5044912	FISHER	CONTROL VALVE	4" 2052-8560-DVC6200 BUTTERFLY (Hi-Temp NOVEX Seal)	555	0	EA	1
10	FE	0827	--	ROSEMOUNT	FLOW ELEMENT	6" LINE SIZE CONDITIONING ORIFICE INCLUDED AS PART OF FIT 0827	555	0	EA	1
11	FE	0828	--	ROSEMOUNT	FLOW ELEMENT	6" LINE SIZE CONDITIONING ORIFICE INCLUDED AS PART OF FIT 0828	555	0	EA	1
12	FIT	0827	5045190	ROSEMOUNT	FLOW TRANSMITTER	COMPACT ORIFICE FLOWMETER PART NUMBER 3051SFC1CS060N065R72JA1A3ETE5M5F2 (See Quote #4111511 Rev. E Item 1.1)	555	0	EA	1
13	FIT	0828	5045190	ROSEMOUNT	FLOW TRANSMITTER	COMPACT ORIFICE FLOWMETER PART NUMBER 3051SFC1CS060N065R72JA1A3ETE5M5F2 (See Quote #4111511 Rev. E Item 1.1)	555	0	EA	1
14	HV	1-8	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	555	0	EA	1
15	HV	1-9	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS (USE WITH PI-0849)	555	0	EA	1
16	HV	1-19	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	555	0	EA	1
17	HV	1-20	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	555	0	EA	1
18	HV	0827A	--	ROSEMOUNT	MANIFOLD	3-VALVE MANIFOLD (INTEGRAL TO FLOW ELEMENT FE 0827) INCLUDED AS PART OF FIT 0827	555	0	EA	1
19	HV	0827B	--	ROSEMOUNT	MANIFOLD	3-VALVE MANIFOLD (COPLANAR MOUNTED TO FIT 0827) INCLUDED AS PART OF FIT 0827	555	0	EA	1
20	HV	0828A	--	ROSEMOUNT	MANIFOLD	3-VALVE MANIFOLD (INTEGRAL TO FLOW ELEMENT FE 0828) INCLUDED AS PART OF FIT 0828	555	0	EA	1
21	HV	0828B	--	ROSEMOUNT	MANIFOLD	3-VALVE MANIFOLD (COPLANAR MOUNTED TO FIT 0828) INCLUDED AS PART OF FIT 0828	555	0	EA	1
22	HV	0850A	5002235	BONNEY FORGE	HAND VALVE	VALVE GATE 4"-300# RF GA03CB501 BONNEY FORGE Part #: 3-11-RF	555	0	EA	1
23	HV	0850B	5024175	BONNEY FORGE	HAND VALVE	VALVE GATE 3/4" 800# SWxFNPT GA08CB200	555	0	EA	1
24	HV	0850C	5002948	BONNEY FORGE	HAND VALVE	VALVE GATE 6"-150# RF GA01CB501 BONNEY FORGE Part #: 1-11-RF	555	0	EA	1
25	HV	0850D	5002235	BONNEY FORGE	HAND VALVE	VALVE GATE 4"-300# RF GA03CB501 BONNEY FORGE Part #: 3-11-RF	555	0	EA	1
26	PI	0849	5009363	ASHCROFT	PRESS. GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	555	0	EA	1
27	PSV	0850	5044981	CROSBY	RELIEF VALVE	4P6JLTJOS-E36J, 4" 300# RF X 6" 150# RF	555	0	EA	1
28	TE	0825	5045196	ROSEMOUNT	TEMP. ELEMENT	STACK GAS THERMOCOUPLE TYPE J PART NUMBER 0183N11J2C60N150E5XA ASSEMBLE WITH TRANSMITTER TIT 0825 (See Quote #4111511 Rev. E Item 7.1)	555	0	EA	1
29	TE	0826	5045202	ROSEMOUNT	TEMP. ELEMENT	STACK GAS THERMOCOUPLE TYPE J PART NUMBER 0183D11J2C60N240E5 WIRE DIRECT TO HIGH TEMP SWITCH TISH 0826 (See Quote #4111511 REV. E Item 16.1)	555	0	EA	1
30	TE	0827	5045203 5045204	ROSEMOUNT	TEMP. ELEMENT	WIRE-WOUND PLATINUM RTD SENSOR, Part No: 0078P21C30C030W42E5 assemble with FIT-0827 using Heatec Part 5045204 Rosemont Part 03151-9065-0012 KIT, SPARES, RTD CABLE ASSY, ARMORED, 12 FT, 1/2 NPT	555	0	EA	1
31	TE	0828	5045204	ROSEMOUNT	TEMP. ELEMENT	WIRE-WOUND PLATINUM RTD SENSOR, Part No: 0078P21C30C030W42E5 assemble with FIT-0828 using Heatec Part 5045204 Rosemont Part 03151-9065-0012 KIT, SPARES, RTD CABLE ASSY, ARMORED, 12 FT, 1/2 NPT	555	0	EA	1
32	TE	0846	5045194	ROSEMOUNT	TEMP. ELEMENT	RTD PART NUMBER 0078N21C30C050W38E5XA (SEE TW 0846) (ASSEMBLE WITH TIT 0846) (See Quote #4111511 REV. E Item 5.1)	555	0	EA	1
33	TE	0847	5045201	ROSEMOUNT	TEMP. ELEMENT	RTD PART NUMBER 0078D21C30C050W38E5 (SEE TW 0847) (WIRE DIRECT TO CONTROL CABINET TISH 0847) (See Quote #4111511 REV. E Item 15.1)	555	0	EA	1
34	TE	0851	5045193	ROSEMOUNT	TEMP. ELEMENT	RTD PART NUMBER 0078N21C30C030W42E5XA (SEE TW 0851) (ASSEMBLE WITH TIT 0851) (See Quote #4111511 REV. E Item 3.1)	555	0	EA	1
35	TI	0848	5045498	ASHCROFT	TEMP. GAGE	THERMOMETER 50 EI 60 E 120 200/1000F XCSNHSG	555	0	EA	1
36	TI	0852	5045496	ASHCROFT	TEMP. GAGE	THERMOMETER 50 EI 60 E 090 200/1000F XCSNHSG	555	0	EA	0
37	TISH	0826				SEE ELECTRICAL BOM	555		EA	0
38	TISH	0847				SEE ELECTRICAL BOM	555		EA	0
39	TIT	0825	5045195	ROSEMOUNT	TEMP. TRANSMITTER	STACK GAS TEMPERATURE TRANSMITTER PART NUMBER 3144PD1A1E5M5XA ASSEMBLE WITH TE 0825 (See Quote #4111511 Rev. E Item 6.1)	555	0	EA	1
40	TIT	0846	5044364	ROSEMOUNT	TEMP. TRANSMITTER	PART NUMBER 3144PD1A1E5M5XA (ASSEMBLE TO TE 0846) (See Quote #4111511 REV. E Item 4.1)	555	0	EA	1
41	TIT	0851	5044364	ROSEMOUNT	TEMP. TRANSMITTER	PART NUMBER 3144PD1A1E5M5XA (ASSEMBLE TO TE 0851) (See Quote #4111511 REV. E Item 2.1)	555	0	EA	1
42	TW	0827	--	ROSEMOUNT	THERMOWELL	CARBON STEEL 3/4" SOCKET WELD WITH 3" INSERTION INTO 6" LINE TAPERED STEM (INCLUDED AS PART OF TE 0827)	555	0	EA	1
43	TW	0828	--	ROSEMOUNT	THERMOWELL	CARBON STEEL 3/4" SOCKET WELD WITH 3" INSERTION INTO 6" LINE TAPERED STEM (INCLUDED AS PART OF TE 0828)	555	0	EA	1
44	TW	0846	--	ROSEMOUNT	THERMOWELL	CARBON STEEL 3/4" SOCKET WELD WITH 5" INSERTION INTO 10" LINE STEPPED STEM (INCLUDED AS PART OF TE 0846) (See Quote #4111511 REV. E Item 5.1)	555	0	EA	1
45	TW	0847	--	ROSEMOUNT	THERMOWELL	CARBON STEEL 3/4" SOCKET WELD WITH 5" INSERTION INTO 10" LINE STEPPED STEM (INCLUDED AS PART OF TE 0847) (See Quote #4111511 REV. E Item 15.1)	555	0	EA	1
46	TW	0848	5045499	ASHCROFT	THERMOWELL	THERMOWELL 75 W 0750 2 L H S 260 B - XNFW6	555	0	EA	1
47	TW	0851	--	ROSEMOUNT	THERMOWELL	CARBON STEEL 3/4" SOCKET WELD WITH 3" INSERTION INTO 6" LINE TAPERED STEM (INCLUDED AS PART OF TE 0851) (See Quote #4111511 REV. E Item 3.1)	555	0	EA	1
48	TW	0852	5045497	ASHCROFT	THERMOWELL	THERMOWELL 75 W 0450 2 L H S 260 B - XNFW6	555	0	EA	1
49	TZ	0827	--	TOPWORKS	INDICATOR	VALVE POSITION INDICATOR INTEGRAL WITH FCV-0827	555	0	EA	1
50	TZ	0828	--	TOPWORKS	INDICATOR	VALVE POSITION INDICATOR INTEGRAL WITH FCV-0828	555	0	EA	1
51	XX	1-3	5045415	WIKA	TUBE LOOP	SYPHON COIL 1/2" NPT, ST160, 910.15 WIKA GAUGE NO. 4201841 (USE WITH PI-0849)	555	0	EA	1



# 14190 - P&ID BILL OF MATERIALS

HEATEC JOB NO: 14-190  
 CUST. P.O. NO.: 10040  
 CUSTOMER NAME: Juniper GTL  
 CUSTOMER JOB NO: US-01-941-PK-0001

Date 7/28/2015  
 Rev 2

Item	Tag Prefix	Tag Suffix	Part #	MFTR	PART NAME	Description	W.O.	Visual	UM	Qty
<b>PILOT GAS TRAIN COMPONENTS</b>										
52	HV	3-1	5045171	JAMESBURY	HAND VALVE	BALL VALVE: 1"-150# RF, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 7150-31-2236-XTZ1	555	0	EA	1
53	HV	3-2	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
54	HV	3-3	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
55	HV	3-4	5045171	JAMESBURY	HAND VALVE	BALL VALVE: 1"-150# RF, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 7150-31-2236-XTZ1	555	0	EA	1
56	HV	3-5	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
57	HV	3-6	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	555	0	EA	1
58	HV	3-8	5045171	JAMESBURY	HAND VALVE	BALL VALVE: 1"-150# RF, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 7150-31-2236-XTZ1	555	0	EA	1
59	PCV	3-1	5044809	FISHER	REGULATOR	3/4"-150# RF, FISHER 627, 1/8" ORIFICE, 5 TO 20 PSIG SPRING (10B3076), CS,	555	0	EA	1
60	PI	0834	5010874	ASHCROFT	PRESS. GAUGE	GAUGE: ASHCROFT NO.45 1279SS 04L XLL, 0-30 PSIG, 4-1/2" DIAL, 1/2" NPT LOWER MOUNT, SS INTERNALS,	555	0	EA	1
61	XV	0837	5045040	MAXON	SHUT DOWN VALVE	1", 150# RF, 115V/60HZ, FAIL CLOSED, 100SMA12-FA22-BB23B0	555	0	EA	1
62	XV	0838	5045043	MAXON	VENT VALVE	1", 150# RF, 115V/60HZ, FAIL OPEN, 100SMA22-FA22-BB13B0	555	0	EA	1
63	XV	0839	5045040	MAXON	SHUT DOWN VALVE	1", 150# RF, 115V/60HZ, FAIL CLOSED, 100SMA12-FA22-BB23B0	555	0	EA	1
64	ZSC	0837	--	MAXON	POSITION SWITCH	PROOF OF CLOSURE SWITCH (INTEGRAL TO XV 0837)	555	0	EA	1
65	ZSC	0839	--	MAXON	POSITION SWITCH	PROOF OF CLOSURE SWITCH (INTEGRAL TO XV 0839)	555	0	EA	1
<b>BURNER/COMBUSTION AIR COMPONENTS</b>										
66	BE	0830	--	FIREYE	FLAME SCANNER	FLAME SCANNER 55UV5-1009 (See Electrical BOM)	555		EA	0
67	BL	0001	--	HARTZELL	BLOWER	INCLUDED WITH BU-0001	555	0	EA	1
68	BLM	0001	--	BALDOR	MOTOR	INCLUDED WITH BU-0001	555	0	EA	1
69	BU	0001	5044706	ZEECO	BURNER	Model no: GLSF-11-1	555		EA	0
70	IT	0829	--	ALLANSON	TRANSFORMER	IGNITION TRANSFORMER (SEE ELECTRICAL BOM)	555	0	EA	1
71	PCV	0831	--	ZEECO	DAMPER	INCLUDED WITH BU-0001	555	0	EA	1
72	PSL	0831	--	ZEECO	PRESS. SWITCH	INCLUDED WITH BU-0001	555	0	EA	1
73	TZ	0845	5045129	FISHER	ACTUATOR	ACTUATOR PNEUMATIC 2052-DVC6200-DXP-M21GSEB	555	0	EA	1
74	XX	4-1	--		FILTER/SILENCER	INCLUDED WITH BU-0001	555	0	EA	1
75	ZSH	0831	--	FISHER	POSITION SWITCH	INCLUDED WITH TZ-0845 Topworx DXP-M21GSEB Switchpack for Discrete (open/closed) output	555	0	EA	1
76	ZSL	0831	--	FISHER	POSITION SWITCH	INCLUDED WITH TZ-0845 Topworx DXP-M21GSEB Switchpack for Discrete (open/closed) output	555	0	EA	1
<b>MAIN FUEL GAS TRAIN COMPONENTS</b>										
77	FE	0832	5045197	ROSEMOUNT	FLOW ELEMENT	CONDITIONING COMPACT ORIFICE FLOWMETER PN 3051SFC1CS020N040T32JA1A5E5M5 INCLUDES FT 0832 AND TE 0832 (See Quote #4111511 REV. E Item 8.1), 2"-300# PROCESS CONN.	555	0	EA	1
78	FIT	0832	--	ROSEMOUNT	FLOW TRANSMITTER	INTEGRAL PART OF FE 0832 (See Quote #4111511 REV. E Item 8.1)	555	0	EA	1
79	HV	5-1	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	555	0	EA	1
80	HV	5-2	5045169	JAMESBURY	HAND VALVE	BALL VALVE: 2"-150# RF, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 7150-31-2236-XTZ1	555	0	EA	1
81	HV	5-3	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	555	0	EA	1
82	HV	5-4	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
83	HV	5-5	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
84	HV	5-6	5045170	JAMESBURY	HAND VALVE	BALL VALVE: 1-1/2"-150# RF, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 7150-31-2236-XTZ1	555	0	EA	1
85	HV	5-7	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	555	0	EA	1
86	HV	5-8	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
87	HV	5-9	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	555	0	EA	1
88	HV	5-10	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	555	0	EA	1
89	HV	5-11	5045168	JAMESBURY	HAND VALVE	BALL VALVE: 3"-300# RF, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 730S-31-2236-XTZ1	555	0	EA	1
90	HV	5-12	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	555	0	EA	1
91	PCV	0845	--	FISHER	CONTROL VALVE	CONTROL VALVE: 2"-150# C.S. (SUPPLIED W/ BURNER)	555	0	EA	1
92	ZSL	0845	--	FISHER	LIMIT SWITCH	PROOF OF CLOSURE SWITHC (INTEGRAL TO PCV 0845) Topworx DXP-M21GSEB Switchpack for Discrete (open/closed) output	555	0	EA	1
93	TZ	0845	5045129	FISHER	ACTUATOR	ACTUATOR PNEUMATIC 2052-DVC6200-DXP-M21GSEB	555	0	EA	1
94	PCV	5-1	5044808	FISHER	REGULATOR	2"-150# RF, FISHER 299H, 3/4" ORIFICE, 5 TO 16 PSIG SPRING (T13918), CS	555	0	EA	1
95	PCV	5-2	5044807	FISHER	REGULATOR	1"-300# RF, FISHER 627, 3/8" ORIFICE, 15 TO 40 PSIG SPRING (10B3077), CS	555	0	EA	1
96	PI	0833	5009525	ASHCROFT	PRESS. GAUGE	GAUGE: ASHCROFT NO.45 1279SS 04L XLL, 0-60 PSIG, 4-1/2" DIAL, 1/2" NPT LOWER MOUNT, SS INTERNALS,	555	0	EA	1
97	PI	0835	5010874	ASHCROFT	PRESS. GAUGE	GAUGE: ASHCROFT NO.45 1279SS 04L XLL, 0-30 PSIG, 4-1/2" DIAL, 1/2" NPT LOWER MOUNT, SS INTERNALS,	555	0	EA	1
98	PI	0844	5010874	ASHCROFT	PRESS. GAUGE	GAUGE: ASHCROFT NO.45 1279SS 04L XLL, 0-30 PSIG, 4-1/2" DIAL, 1/2" NPT LOWER MOUNT, SS INTERNALS,	555	0	EA	1
99	PIT	0836	5045434	UNITED ELECTRIC	PRESS. TRANS/SWITCH	PRESSURE SWITCH, UE ONE SERIES, Part No.: 2XLP41-P11-M446-M449	555	0	EA	1
100	PIT	0843	5045434	UNITED ELECTRIC	PRESS. TRANS/SWITCH	PRESSURE SWITCH, UE ONE SERIES, Part No.: 2XLP41-P11-M446-M449	555	0	EA	1
101	STR	5-1	5045128	MUELLER	STRAINER	Y-STRAINER: 3"-300# RF, MUELLER NO. 782, A216-WCB, W/ 100 MESH SS SCREEN	555	0	EA	1
102	TE	0832	--	ROSEMOUNT	TEMP. ELEMENT	INTEGRAL PART OF FE 0832 (See Quote #4111511 REV. E Item 8.1)	555	0	EA	1
103	XV	0840	5045041	MAXON	SHUT DOWN VALVE	2-1/2"-150# RF FLGD CP5000, MAXON NO. 250CMA12-BA22-BB23B0, NC, 115V 60 Hz, CARBON STEEL	555	0	EA	1
104	XV	0842	5045041	MAXON	SHUT DOWN VALVE	2-1/2"-150# RF FLGD CP5000, MAXON NO. 250CMA12-BA22-BB23B0, NC, 115V 60 Hz, CARBON STEEL	555	0	EA	1
105	XV	0841	5045042	MAXON	VENT VALVE	1-1/2"-150# RF FLGD CP5000, MAXON NO. 150SMA22-FA22-BB13B0, NO, 115V60 HZ, CARBON STEEL	555	0	EA	1
106	ZSC	0840	--	MAXON	POSITION SWITCH	PROOF OF CLOSURE SWITCH (INTEGRAL TO XV 0840)	555	0	EA	1
107	ZSC	0842	--	MAXON	POSITION SWITCH	PROOF OF CLOSURE SWITCH (INTEGRAL TO XV 0842)	555	0	EA	1



# 14190 - P&ID BILL OF MATERIALS

Date 7/28/2015  
Rev 2

HEATEC JOB NO: 14-190  
CUST. P.O. NO.: 10040  
CUSTOMER NAME: Juniper GTL  
CUSTOMER JOB NO: US-01-941-PK-0001

Item	Tag Prefix	Tag Suffix	Part #	MFTR	PART NAME	Description	W.O.	Visual	UM	Qty
<b>FLASH TANK COMPONENTS</b>										
108	HV	1-1	5045287	PK	HAND VALVE	8" CL300 RF GATE WCB API T8 PK 300RF8	654	0	EA	1
109	HV	1-8	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	251	0	EA	2
110	HV	1-9	5044500	ROSEMOUNT	INTEGRAL MANIFOLD	2-VALVE PN 0306RT22BA21 ASSEMBLE TO PIT 0858 AND PIT 0859 AND XX 1-3 (See Quote #4111511 REV. E Item 11.1)	251	0	EA	2
111	HV	1-16	5045288	PK	HAND VALVE	10" CL300 RF GATE WCB API T8 PK 300RF8	555	0	EA	1
112	HV	1-18	5040246	BONNEY FORGE	HAND VALVE	VALVE GATE 3/4" 800# SW GA08CB300	351	0	EA	1
113	HV	0565A	5002235	BONNEY FORGE	HAND VALVE	VALVE GATE 4"-300# RF GA03CB501 BONNEY FORGE Part #: 3-11-RF	251	0	EA	1
114	HV	0565B	5024175	BONNEY FORGE	HAND VALVE	VALVE GATE 3/4" 800# SWxFNPT GA08CB200	251	0	EA	1
115	HV	0565C	5002948	BONNEY FORGE	HAND VALVE	VALVE GATE 6"-150# RF GA01CB501 BONNEY FORGE Part #: 1-11-RF	251	0	EA	1
116	HV	0565D	5002235	BONNEY FORGE	HAND VALVE	VALVE GATE 4"-300# RF GA03CB501 BONNEY FORGE Part #: 3-11-RF	251	0	EA	1
117	LISL	0856			LEVEL SWITCH	SEE ELECTRICAL BOM	251		EA	0
118	LIT	0855	5045198	ROSEMOUNT	LEVEL TRANSMITTER	GUIDRD WAVE RADAR LIQUID LEVEL TRANSMITTER PN 5301HA1H1N4BE01200CBE5M1B3 (See Quote #4111511 REV. E Item 9.1)	251	0	EA	1
119	PIT	0858	5044364	ROSEMOUNT	PRESS. TRANSMITTER	SCALABLE PRESSURE TRANSMITTER PN 3051S2TG2A2A11A1AE5M5 (See Quote #4111511 REV. E Item 10.1)	251	0	EA	1
120	PIT	0859	5044364	ROSEMOUNT	PRESS. TRANSMITTER	SCALABLE PRESSURE TRANSMITTER PN 3051S2TG2A2A11A1AE5M5 (See Quote #4111511 REV. E Item 10.1)	251	0	EA	1
121	PSV	0565	5044982	CROSBY	RELIEF VALVE	4L6JLTJOS-E36J, 4" 300# RF X 6" 150# RF	251	0	EA	1
122	TI	0857	5045498	ASHCROFT	TEMP. GAGE	THERMOMETER 50 EI 60 E 120 200/1000F XCSNHSG	251	0	EA	1
123	TW	0857	5045500	ASHCROFT	THERMOWELL	THERMOWELL 15 W 1000 2 - H F 260 S - R 300 XMQNFW6	251	0	EA	1
124	XX	1-3	5045415	WIKA	TUBE LOOP	SYPHON COIL 1/2" NPT, ST160, 910.15 WIKA GAUGE NO. 4201841 (USE WITH PIT-0858 & PIT-0859)	251	0	EA	2
<b>PUMP PIPING COMPONENTS</b>										
125	CV	1-1	5044532	KITZ	CHECK VALVE	6 CL300 RF SWING CHECK WCB API TR 8	651	0	EA	1
126	CV	1-2	5044532	KITZ	CHECK VALVE	6 CL300 RF SWING CHECK WCB API TR 8	651	0	EA	1
127	HV	1-2	5045287	PK	HAND VALVE	8" CL300 RF GATE WCB API T8 PK 300RF8	651	0	EA	1
128	HV	1-3	5045287	PK	HAND VALVE	8" CL300 RF GATE WCB API T8 PK 300RF8	651	0	EA	1
129	HV	1-4	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	651	0	EA	1
130	HV	1-5	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	651	0	EA	1
131	HV	1-6	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	651	0	EA	1
132	HV	1-7	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	651	0	EA	1
133	HV	1-8	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	651	0	EA	4
134	HV	1-9	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS (USE WITH PI-0853A, PI-0853B, PI-0854A & PI-0854B)	251	0	EA	4
135	HV	1-10	5044533	PK	HAND VALVE	6 CL300 RF GATE WCB API Tr 8 PK 300RF8	651	0	EA	1
136	HV	1-11	5044533	PK	HAND VALVE	6 CL300 RF GATE WCB API Tr 8 PK 300RF8	651	0	EA	1
137	HV	1-12	5040246	BONNEY FORGE	HAND VALVE	VALVE GATE 3/4" 800# SW GA08CB300	651-351	0	EA	1
138	HV	1-13	5040246	BONNEY FORGE	HAND VALVE	VALVE GATE 3/4" 800# SW GA08CB300	651-351	0	EA	1
139	HV	1-17	5024175	BONNEY FORGE	HAND VALVE	VALVE GATE 3/4" 800# SWxFNPT GA08CB200	351	0	EA	1
140	PM	0003A	--	HYUNDAI	MOTOR	50 HP IEEE-841 CLASS 1, GROUP B,C & D, DIVISION 2 MOTOR (INCLUDED WITH PUMP TAG P-1-1)	651	0	EA	1
141	PM	0003B	--	HYUNDAI	MOTOR	50 HP IEEE-841 CLASS 1, GROUP B,C & D, DIVISION 2 MOTOR (INCLUDED WITH PUMP TAG P-1-2)	651	0	EA	1
142	P	0003A	5044655	BLACKMER	PUMP	SYSTEM ONE 4 x 6 - 13 FRAME A/LD17	651	0	EA	1
143	P	0003B	5044655	BLACKMER	PUMP	SYSTEM ONE 4 x 6 - 13 FRAME A/LD17	651	0	EA	1
144	PI	0853A	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	651	0	EA	1
145	PI	0853B	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	651	0	EA	1
146	PI	0854A	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	651	0	EA	1
147	PI	0854B	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	651	0	EA	1
148	STR	1-1	5044913	TITAN	STRAINER	Model: BS 86-CS 8" 300# RF 0.125 PERF W/BASKET	651	0	EA	1
149	STR	1-2	5044913	TITAN	STRAINER	Model: BS 86-CS 8" 300# RF 0.125 PERF W/BASKET	651	0	EA	1
150	XX	1-1	5017045-1	US HOSE	FLEX HOSE	8" HOSE FLEX 8x24 DOUBLE BRAID WELD NIPPLE EA END SS HOSE & BRAID SCH 40 SA 106 NIPPLES	651-351	0	EA	2
151	XX	1-2	5021421	US HOSE	FLEX HOSE	6" HOSE FLEX 6 x 24 DOUBLE BRAID WELD NIP EA END SS HOSE & BRAID SCH 40 SA 106 NIPS	651-351	0	EA	2
152	XX	1-3	5045415	WIKA	TUBE LOOP	SYPHON COIL 1/2" NPT, ST160, 910.15 WIKA GAUGE NO. 4201841 (USE WITH PI-0853A, PI-0853B, PI-0854A & PI-0854B)	651	0	EA	4



# 14190 - P&ID BILL OF MATERIALS

Date 7/28/2015  
Rev 2

HEATEC JOB NO: 14-190  
CUST. P.O. NO.: 10040  
CUSTOMER NAME: Juniper GTL  
CUSTOMER JOB NO: US-01-941-PK-0001

Item	Tag Prefix	Tag Suffix	Part #	MFTR	PART NAME	Description	W.O.	Visual	UM	Qty
<b>PUMP SEAL COOLING WATER AND BUFFER POT COMPONENTS</b>										
153	CV	1-3*	5025229	BONNEY FORGE	CHECK VALVE	CHECK VALVE 1" SW, CLASS 800, 13 CR, API 602 TRIM 8, PISTON TYPE, HAND WHEEL OPR., A105, #HL-41-SW	651	0	EA	2
154	HV	1-14*, 1-15*	5003863	BONNEY FORGE	HAND VALVE	GATE VALVE 1" SW, CLASS 800, 13 CR, API 602 TRIM 8, SOLID WEDGE, GRAPHITE PACKING, HAND WHEEL OPR., #HL-11-SW	651	0	EA	4
155	HV	1-21*	~		HAND VALVE	GATE VALVE 1" NPT, CLASS 800, 13 CR, API 602 TRIM 8, SOLID WEDGE, HAND WHEEL OPR. (SUPPLIED BY PUMP VENDOR)	651	0	EA	2
156	HV	1-22*	5024302	BONNEY FORGE	HAND VALVE	VALVE GATE 1/2 SWxFNPT, CLASS 800#, 13 CR, API 602, SOLID WEDGE, GRAPHITE PACKING, HAND WHEEL OPR., # HL11SW/T	651	0	EA	2
157	HV	0819*	5023658	BONNEY FORGE	HAND VALVE	VALVE GATE 1"-150# RF, 13 CR, API 602, SOLID WEDGE, GRAPHITE PACKING, HAND WHEEL OPR., A216-WCB, # HL1-11-RF	651	0	EA	2
158	HV	1-23*	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	652	0	EA	2
159	FCV	0823*,0824*,0825*	5045423	BONNEY FORGE	HAND VALVE	GLOBE VALVE 1" SWxNPT, CLASS 800, STELLITE 6, API 602 TRIM 8, CONICAL, GRAPHITE PACKING, HAND WHEEL OPR., #HL-31-SW/T	651	0	EA	6
160	FE	0819*	5045481	HART	ORIFICE W/HOLDER	ORIFICE UNION 0.500" FNPT #3000 A105 WITH 0.125" SS ORIFICE PLATE	651	0	EA	2
161	FI	0823*/0824*/0825*	5045448	DWYER	FLOWMETER	FLOWMETER MAX H2O 6 GPM, Part Number: IF2708, Series IF Industrial Direct Reading See Dwyer 2015 catalog p-157	651	0	EA	6
162	FSL	0823*/0824*/0825*	5045449	W.E. ANDERSON	FLOW SWITCH	SWITCH FLOW ACTUATE 1.50 GPM DEACTUATE 1.00 GPM, Part Number: V6EPS-S-S-1-FS See Dwyer 2015 catalog p-180	651	0	EA	2
163	LSH	0820*	5021478	MAGNETROL	SWITCH	LEVEL SWITCH, ULTRASONIC SINGLE POINT, 3/4" NPT, 1" ACTUATION LENGTH, 120 V, MODEL #910-A1A0-001	651	0	EA	2
164	LSL	0820*	5021478	MAGNETROL	SWITCH	LEVEL SWITCH, ULTRASONIC SINGLE POINT, 3/4" NPT, 1" ACTUATION LENGTH, 120 V, MODEL #910-A1A0-001	651	0	EA	2
165	PI	0819*	5012250	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-15 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	651	0	EA	2
166	PSH	0819*	5017383	UE	PRESS SWITCH	PRESSURE SWITCH, #J120-535, 10 TO 250 IN W.C., 1/2" FNPT, FACTORY SET @ 2 PSI INCREASING, NEMA 7, 316SS INT., ALUM. BODY	651	0	EA	2
167	PSV	1-1*	5045416	KUNKLE	RELIEF VALVE	RELIEF VALVE: KUNKLE #916BDCN01JE0125 MODEL: 916 1/2" MNPT INLET x 1" FNPT OUTLET ORIFICE: D (0.1213 IN SQ)	651	0	EA	2
168	TE	0821*	5045446	PYROMATION	TEMP. ELEMENT	SINGLE THERMOCOUPLE TYPE J, Part No: XP-J48U-002-00-8RNBC93,1,SB, FM/CSA Explosion-Proof approved assembly	651	0	EA	2
169	XV	0822*	5045417	ASCO	VALVE	SOLENOID VALVE 1" NPT, #EF8210G89, 120 VAC 60 HZ, STAINLESS STEEL BODY, NEMA 7, UL LISTED	652	0	EA	2
<b>DRAIN/SUPPLY TANK COMPONENTS</b>										
170	CV	6-1	5024368	BONNEY FORGE	CHECK VALVE	VALVE CHECK 1-1/2"-800# SW CL08CB300 BONNEY FORGE Part #: HL-41-SW	652-351	0	EA	1
171	HV	6-1	5000545	BONNEY FORGE	HAND VALVE	VALVE GATE 2"-150# RF GA01CB500 BONNEY FORGE Part #: 1-11-RF	652-351	0	EA	1
172	HV	6-2	5000545	BONNEY FORGE	HAND VALVE	VALVE GATE 2"-150# RF GA01CB500 BONNEY FORGE Part #: 1-11-RF	652-351	0	EA	1
173	HV	6-3	5045172	JAMESBURY	HAND VALVE	BALL VALVE: 1/2" SOC X 1/2" NPT, CS BODY, 316 SS BALL & TRIM, FIRE-TITE, STD PT, LEVER HANDLE, PART NO. 4M-2236-XTB1	652-351	0	EA	1
174	HV	6-4	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	652-351	0	EA	1
175	HV	6-5	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	652-351	0	EA	1
176	HV	6-6	5024176	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-300# RF GA03CB500 BONNEY FORGE Part #: L3-11-RF	652-351	0	EA	1
177	HV	6-7	5000545	BONNEY FORGE	HAND VALVE	VALVE GATE 2"-150# RF GA01CB500 BONNEY FORGE Part #: 1-11-RF	652-351	0	EA	1
178	HV	6-9	5000545	BONNEY FORGE	HAND VALVE	VALVE GATE 2"-150# RF GA01CB500 BONNEY FORGE Part #: 1-11-RF	652-351	0	EA	1
179	HV	6-11	5024302	BONNEY FORGE	HAND VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200	652-351	0	EA	1
180	HV	6-12	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	652	0	EA	1
181	HV	6-12B	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	652-351	0	EA	1
182	HV	6-13	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	652	0	EA	1
183	HV	6-13B	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	652-351	0	EA	1
184	HV	6-14	5000544	BONNEY FORGE	HAND VALVE	VALVE GATE 1-1/2"-150# RF GA01CB500 BONNEY FORGE Part #: L1-11-RF	652-351	0	EA	1
185	HV	6-15	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	652	0	EA	1
186	HV	6-15B	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	652-351	0	EA	1
187	HV	6-16	5024302	BONNEY FORGE	INSTRUMENT VALVE	VALVE GATE 1/2" 800# SWxFNPT GA08CB200 (DETAIL 1)	652	0	EA	1
188	HV	6-16B	5042780	AND/GREEN	INSTRUMENT VALVE	GAUGE VALVE: 1/2" MFNT x 1/2" FNPT, PART NO. M5HIS-44 W/ NO. V6VIS-4 BLEEDER VA., GRAFOIL PACKING, INTEGRAL SEATS, SS	652-351	0	EA	1
189	HV	6-17	5000545	BONNEY FORGE	HAND VALVE	VALVE GATE 2"-150# RF GA01CB500 BONNEY FORGE Part #: 1-11-RF	652	0	EA	1
190	LIT	0862	5045200	ROSEMOUNT	LEVEL TRANSMITTER	GUIDRD WAVE RADAR LIQUID LEVEL TRANSMITTER PN 5301HA1H1N4BE00800CAE5M1B3 (See Quote #4111511 REV. E Item 12.1)	555	0	EA	1
191	PM	0004	--	VOIGT	MOTOR	HYUNDAI 5HP CLASS I DIV 2 GROUPS A, B, C and D included with P-0004	652	0	EA	1
192	PM	0005	--	VOIGT	MOTOR	HYUNDAI 5HP CLASS I DIV 2 GROUPS A, B, C and D included with P-0005	652	0	EA	1
193	P	0004	5045213	VOIGT	PUMP	MAAG G-Series Internal Gear Pump Model G1-4WC	652	0	EA	1
194	P	0005	5045213	VOIGT	PUMP	MAAG G-Series Internal Gear Pump Model G1-4WC	652	0	EA	1
195	PI	0860A	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	251	0	EA	1
196	PI	0860B	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	251	0	EA	1
197	PI	0863A	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	251	0	EA	1
198	PI	0863B	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	251	0	EA	1
199	STR	6-1	5045485	TITAN	STRAINER	Y-STRAINER 2.000-150# FLGD CS A216WCB TITAN YS61-CS Screen: Standard (water) 304SS .062 Perf	652	0	EA	1
200	STR	6-2	5045458	TITAN	STRAINER	STRAINER 2" 150# RF 0.0625 PERF W/BASKET TITAN Model: BS 85-CS	652	0	EA	1



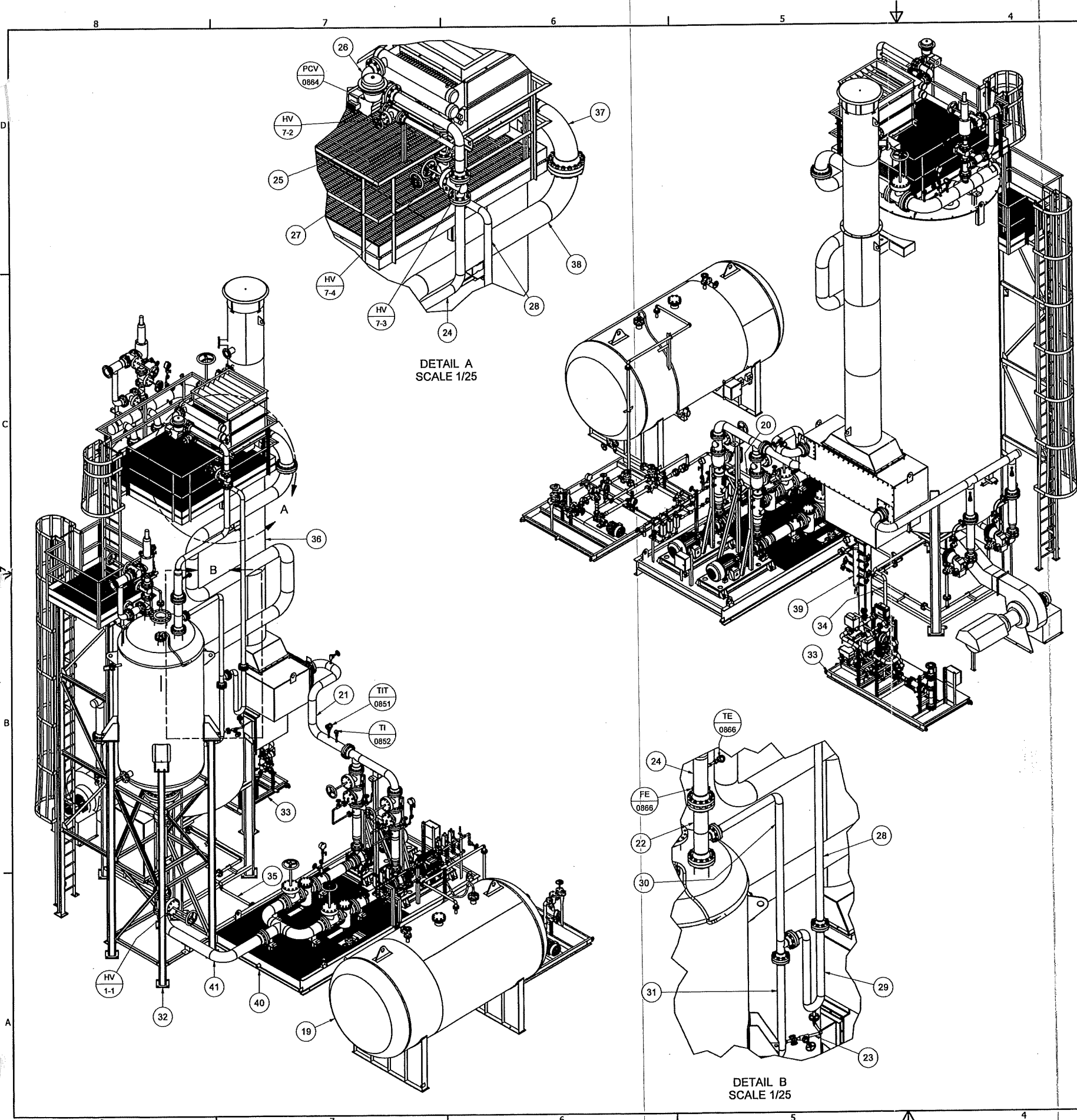
14190 - P&ID BILL OF MATERIALS

HEATEC JOB NO: 14-190  
 CUST. P.O. NO.: 10040  
 CUSTOMER NAME: Juniper GTL  
 CUSTOMER JOB NO: US-01-941-PK-0001

Date 7/28/2015  
 Rev 2

Item	Tag Prefix	Tag Suffix	Part #	MFTR	PART NAME	Description	W.O.	Visual	UM	Qty
<b>CONDENSER COMPONENTS</b>										
201	FE	0866	--	ROSEMOUNT	FLOW ELEMENT	6" LINE SIZE CONDITIONING ORIFICE INCLUDED AS PART OF FIT 0866	751	0	EA	1
202	FIT	0866	5045190	ROSEMOUNT	FLOW TRANSMITTER	COMPACT ORIFICE FLOWMETER PART NUMBER 3051SFC1CS060N065R72JA1A3ETE5M5F2 (See Quote #4111511 Rev. E Item 1.1)	751	0	EA	1
203	HV	7-2	5010419	BONNEY FORGE	HAND VALVE	VALVE GLOBE 2"-300# RF GL03CB501 BONNEY FORGE Part #: 3-31-RF	751	0	EA	1
204	HV	7-3	5002235	BONNEY FORGE	HAND VALVE	VALVE GATE 4"-300# RF GA03CB501 BONNEY FORGE Part #: 3-11-RF	751	0	EA	1
205	HV	7-4	5002236	BONNEY FORGE	HAND VALVE	VALVE GATE 3"-300# RF GA03CB501 BONNEY FORGE Part #: 3-11-RF	751	0	EA	1
206	HV	0866A	--	ROSEMOUNT	MANIFOLD	3-VALVE MANIFOLD (INTEGRAL TO FLOW ELEMENT FE 0866)	751	0	EA	1
207	HV	0866B	--	ROSEMOUNT	MANIFOLD	3-VALVE MANIFOLD (COPLANAR MOUNTED TO FIT 0866)	751	0	EA	1
208	EM	0002	--	TECO	MOTOR	3HP TEFC 3Ø 60 HZ 230/460 VAC INDUCTION MOTOR	751	0	EA	1
209	PCV	0864	5044912	FISHER	CONTROL VALVE	4" 2052-8560-DVC6200 BUTTERFLY (Hi-Temp NOVEX Seal)	751	0	EA	1
210	TE	0866	5045203 5045204	ROSEMOUNT	TEMP. ELEMENT	WIRE-WOUND PLATINUM RTD SENSOR, Part No: 0078P21C30C030W42E5 assemble with FIT-0866 using Heatec Part 5045204 Rosemont Part 03151-9065-0012 KIT, SPARES, RTD CABLE ASSY, ARMORED, 12 FT, 1/2 NPT	751	0	EA	1
211	TW	0866	--	ROSEMOUNT	THERMOWELL	CARBON STEEL 3/4" SOCKET WELD WITH 3" INSERTION INTO 6" LINE TAPERED STEM (INCLUDED AS PART OF TE 0866)	751	0	EA	1
212	TZ	0864	--	TOPWORKS	INDICATOR	VALVE POSITION INDICATOR INTEGRAL WITH FCV-0864	751	0	EA	1
213	EM	0002	5044629	KINETIC	CONDENSER	AIR COOLED EXCHANGER 42x421F30H	751	0	EA	1
<b>INSTRUMENT AIR MANIFOLD</b>										
214	HV	9-1 THRU 9-10	5044664	JAMESBURY	HAND VALVE	Ball Valve: 1/2" NPT, 3-Piece, Fire-Tite, Carbon Steel Body, Stainless Steel Ball & Stem, Xtreme Seat & Seals, Lever Handle Series No. 1/2 4A 2236 XTB1	555	0	EA	10
215	PCV	9-1 THRU 9-6	5009130	FISHER	REGULATOR	REGULATOR #67CFR-239 1/4" NPT 0-125 PSI SPRING w/ 160# PRESSURE GAUGE	555	0	EA	6
216	PI	9-1 THRU 9-6	--		PRESS GAUGE	INCLUDED WITH PCV 9-1 THRU 9-6	555	0	EA	6
217	PI	9-7	5009363	ASHCROFT	PRESS GAUGE	PRESSURE GAUGE: 45 1279SS 04L XLL 0-200 PSIG 4-1/2" DIAL, 1/2" NPT LOWER MOUNT ASHCROFT DURAGAUGE PLUS	555	0	EA	1
218	PSL	9-1	5022145	UE	PRESS SWITCH	PRESSURE SWITCH, UE 120 SERIES Part No: J120-173 Adjustable Set Point Range:4 to 100 psi 1/2" NPT (female) pressure connection	555	0	EA	1





DETAIL A  
SCALE 1/25

DETAIL B  
SCALE 1/25

ITEM	PART ID	DRAWING #	PART NAME	DESCRIPTION	VISUAL	UM	TOTAL LB	QTY	LNG EA
1	5001425	NA	STUD BOLT	BOLT STUD 0.625-11x3.500 SA193B7 BLK	16	EA	4.9	16	0'-0"
2	5003972	NA	STUD BOLT	BOLT STUD 0.750-10x4.250 SA193B7 BLK	56	EA	29.8	56	0'-0"
3	5001428	NA	STUD BOLT	BOLT STUD 3/4-10x3 1/2 SA193B7	16	EA	7.0	16	0'-0"
4	5042764	NA	STUD BOLT	BOLT STUD 3/4-10x4 1/2 SA193B7 PLAIN	32	EA	18.0	32	0'-0"
5	5003043	NA	GASKET	GASKET FLG 1 1/2-300# SPIRAL WD	4	EA	0.7	4	0'-0"
6	5012247	NA	GASKET	GASKET FLG 10-300# SPIRAL WD	3	EA	7.5	3	0'-0"
7	5001336	NA	GASKET	GASKET FLG 2 150# SPIRAL WD	2	EA	0.4	2	0'-0"
8	5001737	NA	GASKET	GASKET FLG 2-300# SPIRAL WD	2	EA	0.4	2	0'-0"
9	5002310	NA	GASKET	GASKET FLG 3-300# SPIRAL WD	7	EA	4.3	7	0'-0"
10	5002378	NA	GASKET	GASKET FLG 3/4-300# SPIRAL WD	2	EA	0.4	2	0'-0"
11	5001338	NA	GASKET	GASKET FLG 4-300# SPIRAL WD	6	EA	5.1	6	0'-0"
12	5001738	NA	GASKET	GASKET FLG 6-300# SPIRAL WD	5	EA	7.5	5	0'-0"
13	5004232	NA	GASKET	GASKET FLG 8-300# SPIRAL WD	3	EA	6.2	3	0'-0"
14	5001418	NA	HEX NUT	NUT HEX 0.625-11 A194-2H CAD	8	EA	0.7	8	0'-0"
15	5027741	NA	HEX NUT	NUT HEX 0.625-11 A194-2H PLAIN	48	EA	4.0	48	0'-0"
16	5024335	NA	HEX NUT	NUT HEX 0.750-10 A194-2H PLAIN	320	EA	68.0	320	0'-0"
17	5002990	NA	HEX NUT	NUT HEX 1.000-8 A194-2H PLAIN	96	EA	45.2	96	0'-0"
18	5002991	NA	HEX NUT	NUT HVY HEX 0.875-9 SA194-2H BLK	72	EA	15.8	72	0'-0"
19	NA	14190-DFGA	DRAIN FILL GENERAL ARRANGEMENT	SEE DETAIL DRAWING	1	EA	8372.8	1	0'-0"
20	NA	14190-DFS11	DRAIN FILL SPOOL 11	SEE DETAIL DRAWING	1	EA	28.5	1	0'-0"
21	NA	14190-EPS	EGON TO PUMP SPOOL	SEE DETAIL DRAWING	1	EA	306.8	1	0'-0"
22	NA	14190-FCSP1	FLASH TANK CONDENSER SPOOL 1	SEE DETAIL DRAWING	1	EA	139.2	1	0'-0"
23	NA	14190-FCSP10	FLASH TANK CONDENSER SPOOL 10	SEE DETAIL DRAWING	1	EA	14.8	1	0'-0"
24	NA	14190-FCSP2	FLASH TANK CONDENSER SPOOL 2	SEE DETAIL DRAWING	1	EA	205.1	1	0'-0"
25	NA	14190-FCSP3	FLASH TANK CONDENSER SPOOL 3	SEE DETAIL DRAWING	1	EA	125.1	1	0'-0"
26	NA	14190-FCSP4	FLASH TANK CONDENSER SPOOL 4	SEE DETAIL DRAWING	1	EA	77.3	1	0'-0"
27	NA	14190-FCSP5	FLASH TANK CONDENSER SPOOL 5	SEE DETAIL DRAWING	1	EA	64.1	1	0'-0"
28	NA	14190-FCSP6	FLASH TANK CONDENSER SPOOL 6	SEE DETAIL DRAWING	1	EA	161.1	1	0'-0"
29	NA	14190-FCSP7	FLASH TANK CONDENSER SPOOL 7	SEE DETAIL DRAWING	1	EA	95.5	1	0'-0"
30	NA	14190-FCSP8	FLASH TANK CONDENSER SPOOL 8	SEE DETAIL DRAWING	1	EA	126.3	1	0'-0"
31	NA	14190-FCSP9	FLASH TANK CONDENSER SPOOL 9	SEE DETAIL DRAWING	1	EA	71.3	1	0'-0"
32	NA	14190-FTGA	FLASH TANK GENERAL ARRANGEMENT	SEE DETAIL DRAWING	1	EA	15512.2	1	0'-0"
33	NA	14190-GTGA	GAS TRAIN GENERAL ARRANGEMENT	SEE DETAIL DRAWING	1	EA	1786.7	1	0'-0"
34	NA	14190-GTS10	GAS TRAIN SPOOL 10	SEE DETAIL DRAWING	1	EA	48.4	1	0'-0"
35	NA	14190-HDS4	HEATER DRAIN SPOOL 4	SEE DETAIL DRAWING	1	EA	31.8	1	0'-0"
36	NA	14190-HGA	HEATER GENERAL ARRANGEMENT	SEE DETAIL DRAWING	1	EA	75007.4	1	0'-0"
37	NA	14190-HSP1	HEATER SPOOL PIPE 1	SEE DETAIL DRAWING	1	EA	493.0	1	0'-0"
38	NA	14190-HSP2	HEATER SPOOL PIPE 2	SEE DETAIL DRAWING	1	EA	1684.0	1	0'-0"
39	NA	14190-IAMA	INSTRUMENT AIR MANIFOLD ARRANGEMENT	SEE DETAIL DRAWING	1	EA	82.1	1	0'-0"
40	NA	14103-PSGA	PUMP SKID	SEE DETAIL DRAWING	1	EA	13177.1	1	0'-0"
41	NA	14190-CPS6	PUMP SPOOL 6	SEE DETAIL DRAWING	1	EA	425.7	1	0'-0"
42	5044631	NA	STUD BOI.T	STUD 0.625-11x3.000 A193-B7 PLAIN	8	EA	2.1	8	0'-0"
43	5008344	NA	STUD BOI.T	STUD 0.625-11x3.500 A193-B7 CAD	4	EA	1.2	4	0'-0"
44	5045218	NA	STUD BOI.T	STUD 0.750-10x4.750 A193-B7 PLAIN	36	EA	21.5	36	0'-0"
45	5003379	NA	STUD BOI.T	STUD 0.750-10x6.000 A193-B7 PLAIN	12	EA	9.0	12	0'-0"
46	5045462	NA	STUD BOI.T	STUD 0.750-10x7.000 A193-B7 PLAIN	8	EA	7.0	8	0'-0"
47	5045217	NA	STUD BOI.T	STUD 0.875-9x5.500 A193-B7 PLAIN	36	EA	33.8	36	0'-0"
48	5045418	NA	STUD BOLT	STUD 1.000-8x6.250 A193-B7 PLAIN	48	EA	66.9	48	0'-0"

**HEATER DATA:**

ESTIMATED SHIPPING TOTAL WEIGHT: 41,500 Lbs [18370.49 Kgs]  
 HEATER OPERATING WEIGHT: 53,500 Lbs [23828.11 Kgs]

**FLASH TANK DATA:**

ESTIMATED SHIPPING WEIGHT: 15,000 Lbs [6451.9 Kgs]  
 TANK OPERATING WEIGHT: 39,200 Lbs [17415.23 Kgs]

**DRAIN/FILL TANK:**

ESTIMATED SHIPPING WEIGHT: 8,500 Lbs [3855.535 Kgs]  
 TANK OPERATING WEIGHT: 52,000 Lbs [23199.44 Kgs]

**CIRCULATION SKID DATA:**

ESTIMATED SHIPPING WEIGHT: 13,500 Lbs [5859.05 Kgs]  
 TOTAL CIRCULATION OPERATING WEIGHT: 14,500 Lbs [6205.14 Kgs]

**BURNER/BLOWER DATA:**

BLOWER PACKAGE: 1,200 Lbs [518.91 Kgs]  
 BURNER: 700 Lbs [290.3 Kgs]

**HEAT EXCHANGER:**

SHIPPING WEIGHT: 2,230 Lbs [1011.511 Kgs]

**ECONOMIZER & STACK ARRANG.:**

ESTIMATED SHIPPING WEIGHT: 13,000 Lbs [5765.61 Kgs]  
 TOTAL OPERATING WEIGHT: 13,600 Lbs [6059.54 Kgs]

**HEATER GA (WITH ECON PACKAGE):**

ESTIMATED SHIPPING WEIGHT: 75,000 Lbs [34019.428 Kgs]  
 TOTAL OPERATING WEIGHT: 87,600 Lbs [39734.692 Kgs]

**TOTAL GA ARRANGEMENT:**

ESTIMATED SHIPPING WEIGHT: 120,833 Lbs [54808.93 Kgs]  
 TOTAL OPERATING WEIGHT: 206,034 Lbs [93455.5 Kgs]

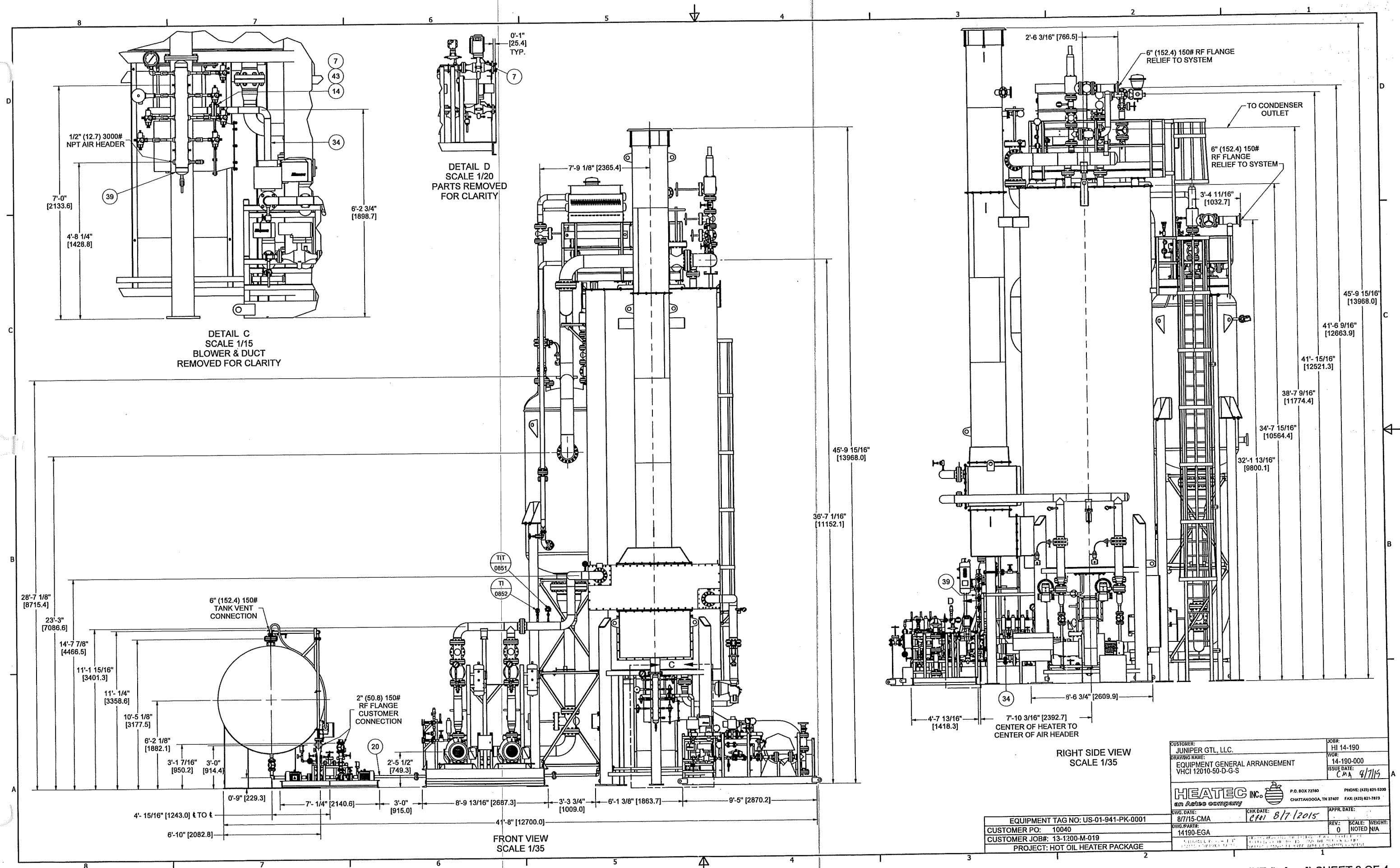
**NOTE:**

- USA MATERIAL OR ORIGINS IN ACCORDANCE WITH 1015-RIDS-321-STD-00001-00.
- TRANSFER HEAT NUMBERS TO EACH PIECE.

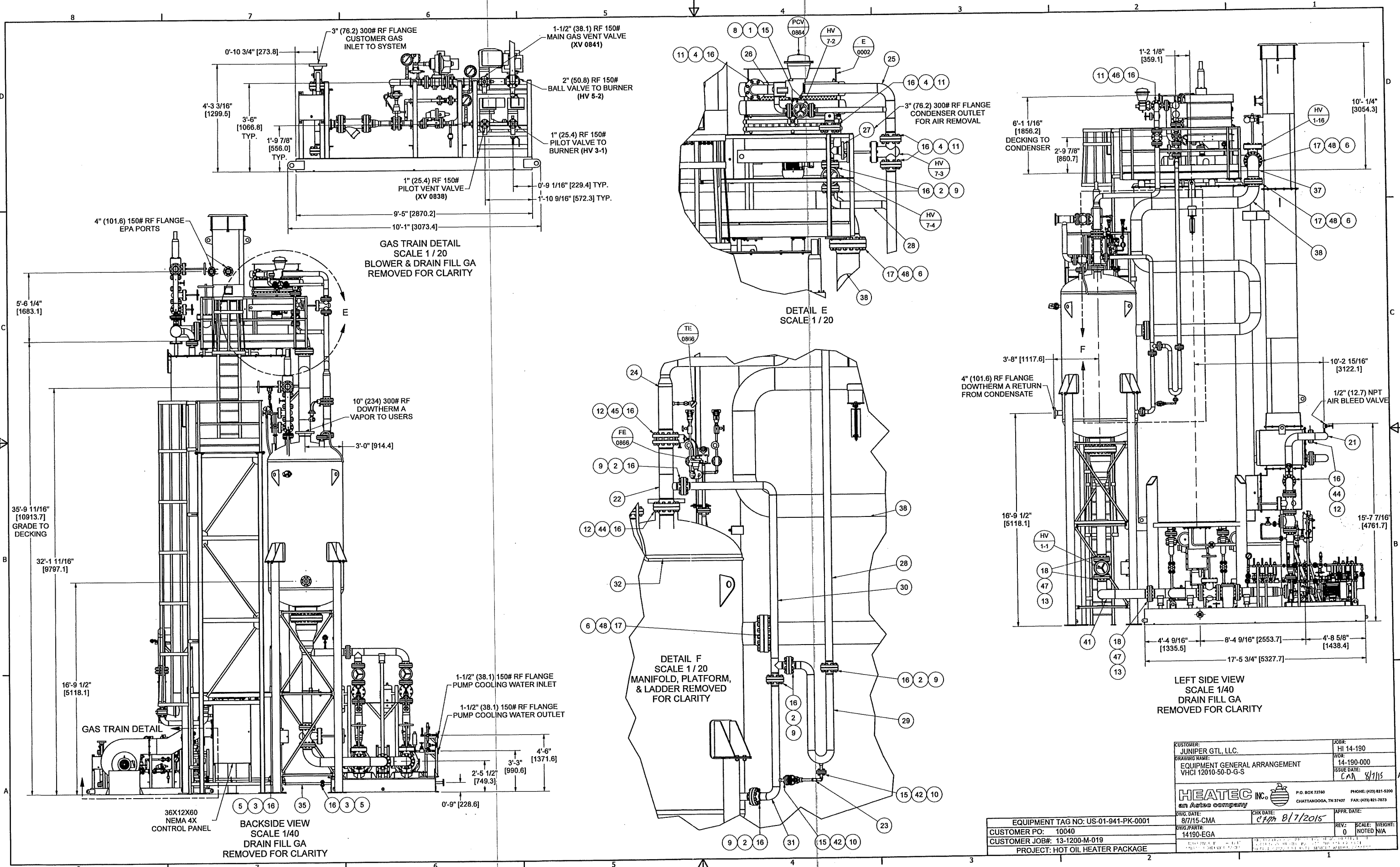
**MTR'S REQ'D**

EQUIPMENT TAG NO: US-01-941-PK-0001  
 CUSTOMER PO: 10040  
 CUSTOMER JOB#: 13-1200-M-019  
 PROJECT: HOT OIL HEATER PACKAGE

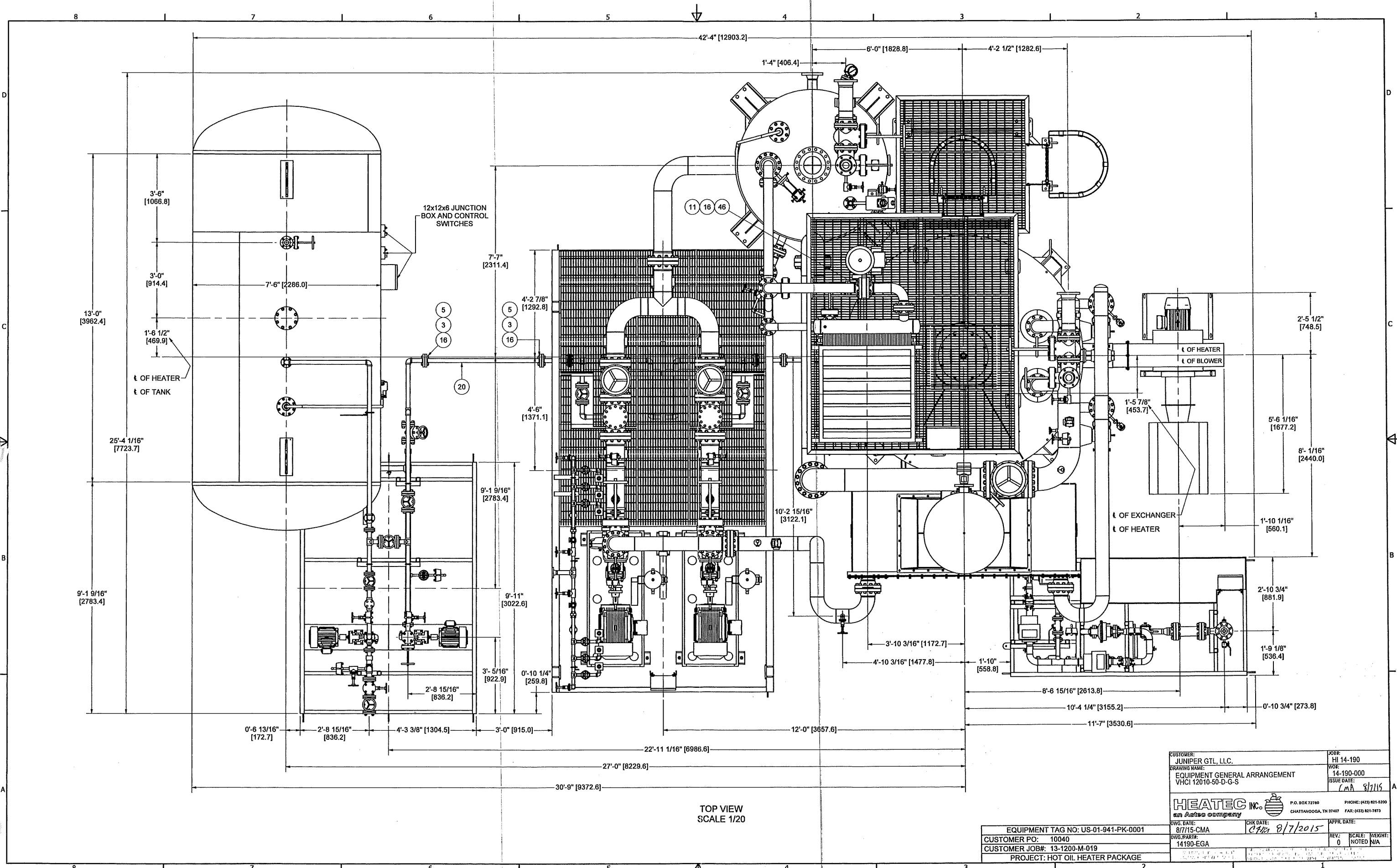
CUSTOMER: JUNIPER GTL, LLC.	JOB#: 14-190
DRAWING NAME: EQUIPMENT GENERAL ARRANGEMENT VHCI 12010-50-D-G-S	NO: 14-190-000 ISSUE DATE: 8/17/2015
<b>HEATEC INC.</b> P.O. BOX 73760 CHATTANOOGA, TN 37407 PHONE: (423) 821-0200 FAX: (423) 821-7873	
DWG. DATE: 8/7/15-CMA	APP. DATE:
DWG. PART: 14190-EGA	REV: 0 SCALE: WEIGHT: NOTED N/A



CUSTOMER: JUNIPER GTL, LLC.		JOB#: HI 14-190	
DRAWING NAME: EQUIPMENT GENERAL ARRANGEMENT		WORK: 14-190-000	
VHCI 12010-50-D-G-S		ISSUE DATE: CMA 9/1/15	
<b>HEATEC INC.</b> an Ashbo company		P.O. BOX 72760 CHATTANOOGA, TN 37407 PHONE: (423) 821-5200 FAX: (423) 821-7873	
DWG. DATE: 8/7/15-CMA	CHK DATE: CFEI 8/7/2015	APPR. DATE:	REV: 0
DWG. PART: 14190-EGA	SCALE: NOTED	WEIGHT: N/A	
EQUIPMENT TAG NO: US-01-941-PK-0001		CUSTOMER JOB#: 13-1200-M-019	
CUSTOMER PO: 10040		PROJECT: HOT OIL HEATER PACKAGE	



CUSTOMER: JUNIPER GTL, LLC.	JOB#: HI 14-190
DRAWING NAME: EQUIPMENT GENERAL ARRANGEMENT VHCI 12010-50-D-G-S	WOR#: 14-190-000
	ISSUE DATE: CMA 8/1/15
<b>HEATEC INC.</b> <small>an Arco company</small>	
P.O. BOX 72760 CHATTANOOGA, TN 37407 PHONE: (423) 821-5200 FAX: (423) 821-7973	
DWG. DATE: 8/7/15-CMA	CHK. DATE: CMA 8/7/2015
DWG. PART#: 14190-EGA	REV: 0 SCALE: WEIGHT: NOTED N/A
EQUIPMENT TAG NO: US-01-941-PK-0001	
CUSTOMER PO: 10040	
CUSTOMER JOB#: 13-1200-M-019	
PROJECT: HOT OIL HEATER PACKAGE	

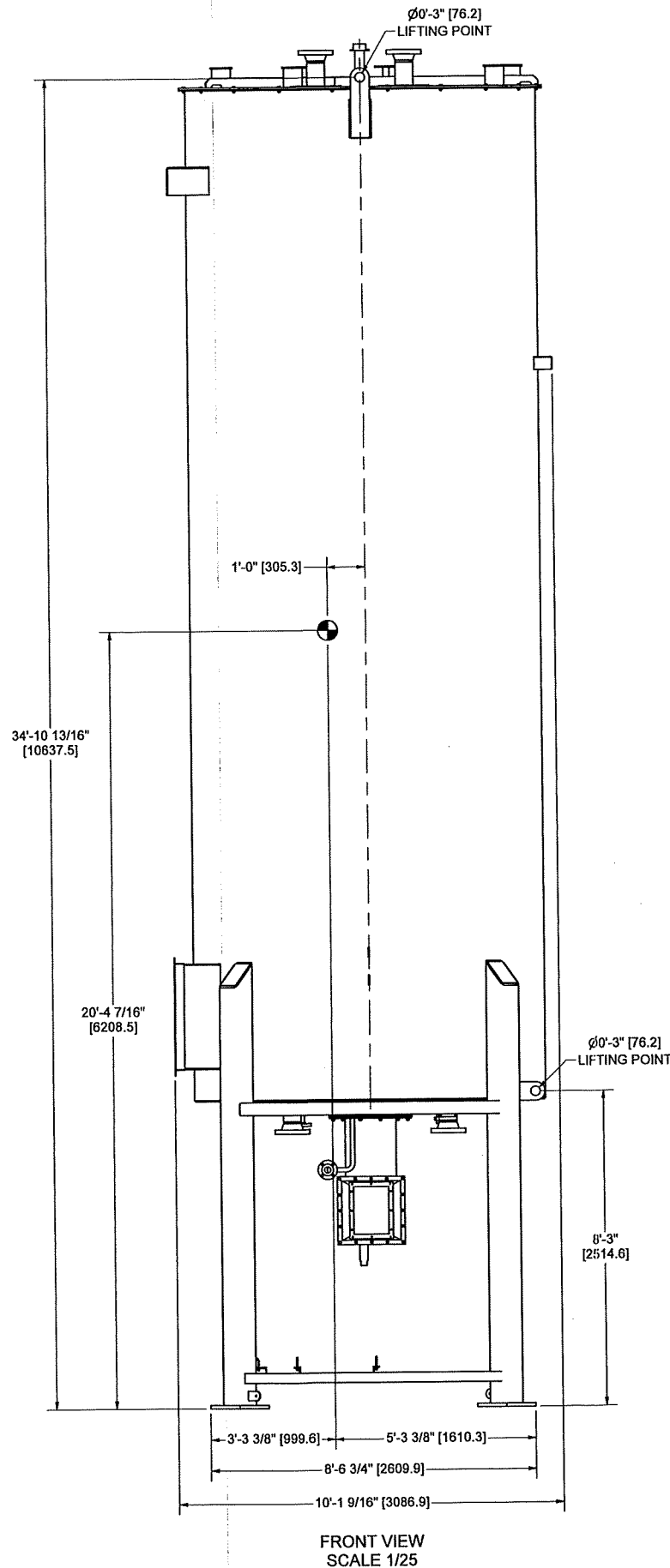


TOP VIEW  
SCALE 1/20

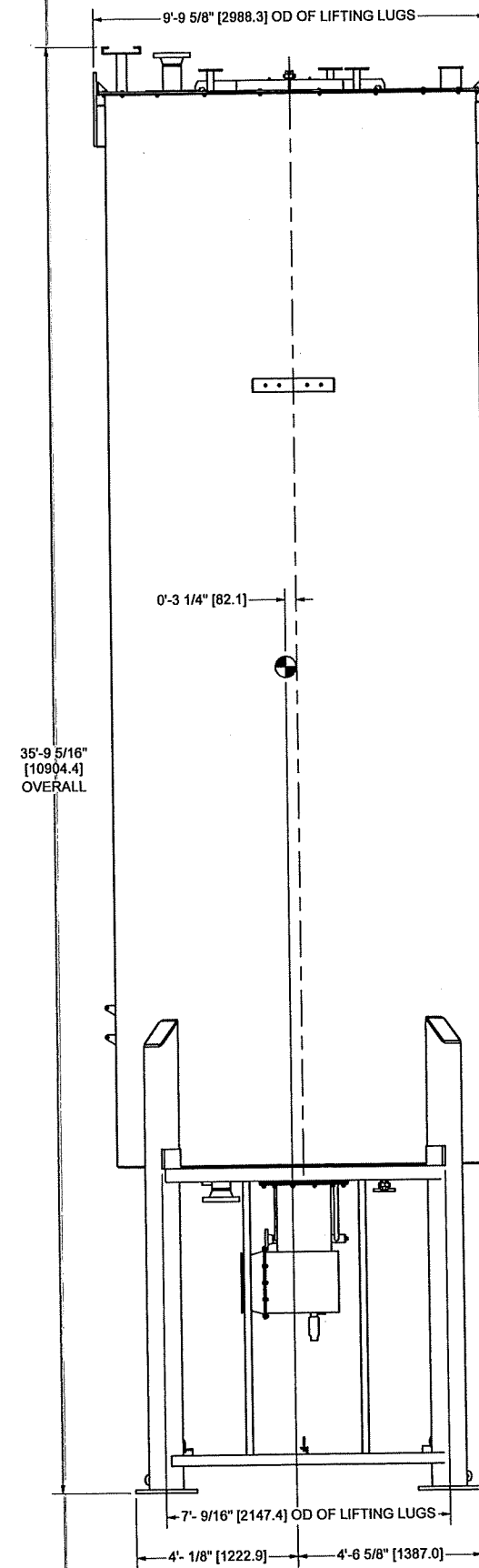
CUSTOMER: JUNIPER GTL, LLC.		JOB: HI 14-190	
DRAWING NAME: EQUIPMENT GENERAL ARRANGEMENT VHCI 12010-50-D-G-S		WOB: 14-190-000	
HEATEC INC. <i>an Astec company</i>		ISSUE DATE: CMA 8/11/15	
P.O. BOX 72700 CHAATANOOGA, TN 37407		PHONE: (423) 821-5200 FAX: (423) 821-7673	
DWG. DATE: 8/7/15-CMA	CHK. DATE: CMA 8/7/2015	APPR. DATE:	
DWG. PART: 14190-EGA	REV: 0	SCALE: NOTED N/A	WEIGHT:
EQUIPMENT TAG NO: US-01-941-PK-0001			
CUSTOMER PO: 10040			
CUSTOMER JOB#: 13-1200-M-019			
PROJECT: HOT OIL HEATER PACKAGE			

**NOTES:**

1. HEATER WILL ARRIVE HORIZONTALLY, USE THE PROVIDED LUGS TO STAND IT UPRIGHT.
2. ONLY QUALIFIED PERSONNEL SHOULD ATTEMPT TO MOVE THIS EQUIPMENT.
3. CRANES, HOOKS, SLINGS, SPREADER BARS, AND SPECIAL TOOLS ARE TO BE SPECIFIED BY THE LIFTING CONTRACTOR.
4. LIFTING EQUIPMENT, LIFTING PERSONNEL, AND ANY OTHER REQUIREMENTS FOR LIFTING ARE THE RESPONSIBILITY OF THE CUSTOMER AND ITS LIFTING CONTRACTOR.
5. HEATEC INC. IS NOT RESPONSIBLE FOR ANY DAMAGES AND/OR LOSS OF THE EQUIPMENT, PROPERTY, OR LIFE AS A RESULT OF LIFTING OPERATIONS.
6. APPROXIMATE SHIPPING WEIGHT OF HEATER IS 42,497 LBS [19276.315 KGS].
7. DIMENSIONS AND WEIGHTS LISTED **DO NOT** INCLUDE THE ADDITION OF CRAFTING MATERIALS.
8. USE PROVIDED LIFTING POINTS FOR LIFTING & POSITIONING HEATER UNIT.



FRONT VIEW  
SCALE 1/25



RIGHT SIDE VIEW  
SCALE 1/25

● = CENTER OF GRAVITY

**NOTE:**

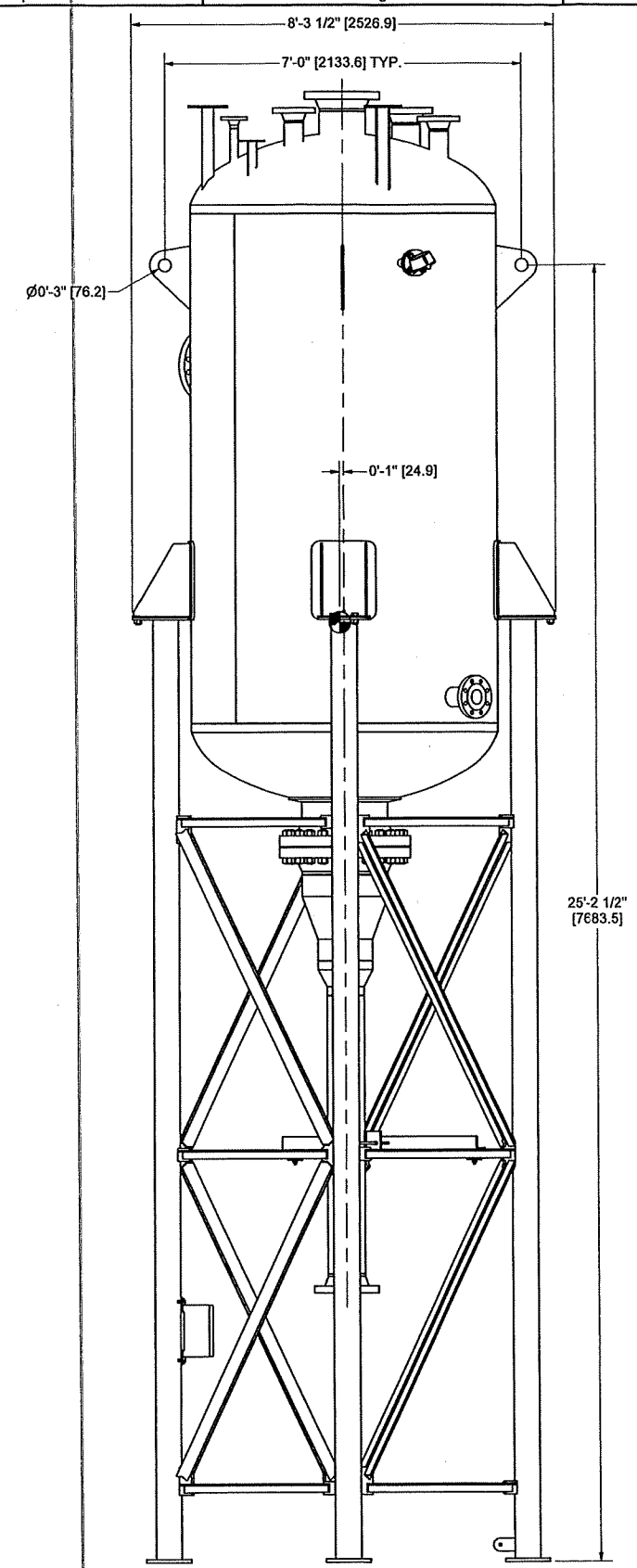
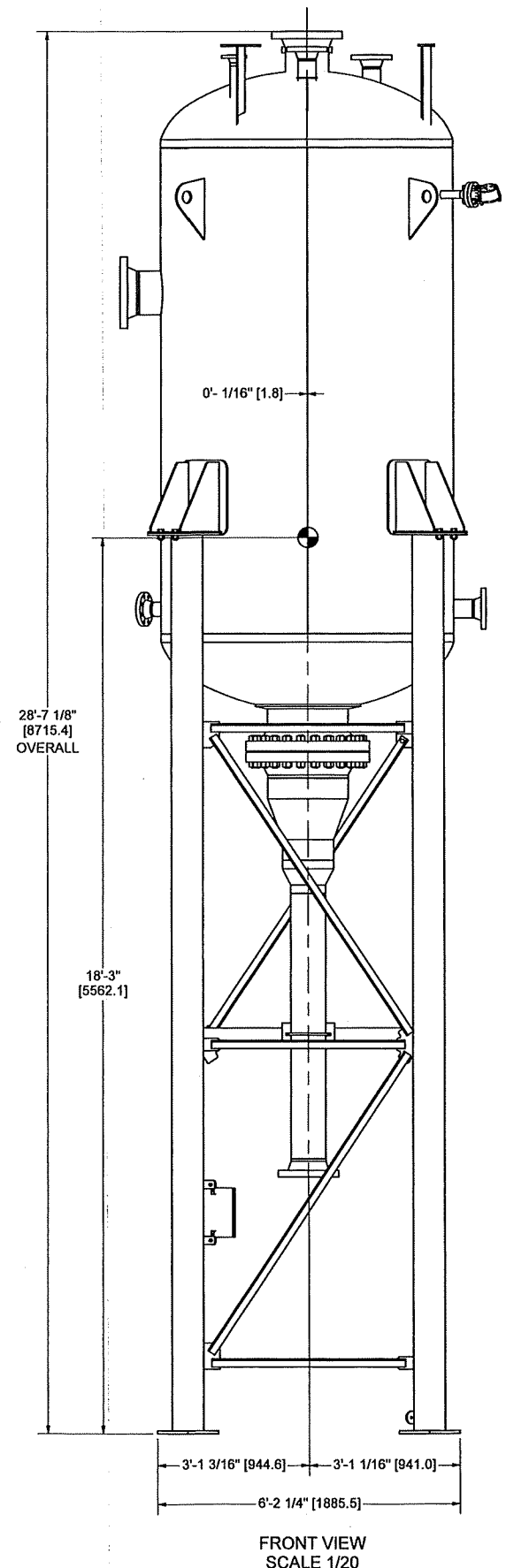
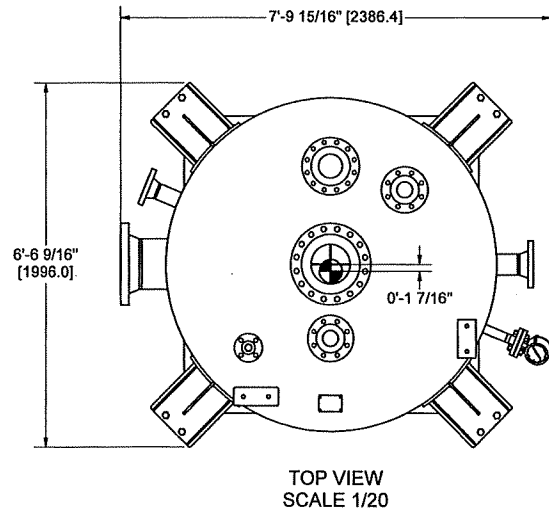
1. USA MATERIAL OR ORIGINS IN ACCORDANCE WITH 1015-RIDS-321-STD-00001-00.
2. TRANSFER HEAT NUMBERS TO EACH PIECE.

**MTR'S REQ'D**

CUSTOMER: JUNIPER GTL, LLC.	JOB: HI 14-190
DRAWING TITLE: LIFTING DIAGRAM VHCL 12010-50-D-G-S	WOP: 14-190-000
HEATEC INC. <i>an Asso company</i>	ISSUE DATE: CMA 8/18/15
P.O. BOX 72790 CHATTANOOGA, TN 37407	PHONE: (423) 821-5200 FAX: (423) 821-7073
DWG. DATE: 8/17/15-CMA	CHK. DATE: CMA 8/18/2015
DWG. PART: 14190-LD	APPR. DATE:
EQUIPMENT TAG NO: US-01-941-PK-0001	SCALE: NOTED
CUSTOMER PO: 10040	WEIGHT: NOTED
CUSTOMER JOB#: 13-1200-M-019	
PROJECT: HOT OIL HEATER PACKAGE	

**NOTES:**

1. FLASH TANK WILL ARRIVE HORIZONTALLY, USE THE PROVIDED LUGS TO STAND IT UPRIGHT.
2. ONLY QUALIFIED PERSONNEL SHOULD ATTEMPT TO MOVE THIS EQUIPMENT.
3. CRANES, HOOKS, SLINGS, SPREADER BARS, AND SPECIAL TOOLS ARE TO BE SPECIFIED BY THE LIFTING CONTRACTOR.
4. LIFTING EQUIPMENT, LIFTING PERSONNEL, AND ANY OTHER REQUIREMENTS FOR LIFTING ARE THE RESPONSIBILITY OF THE CUSTOMER AND ITS LIFTING CONTRACTOR.
5. HEATEC INC. IS NOT RESPONSIBLE FOR ANY DAMAGES AND/OR LOSS OF THE EQUIPMENT, PROPERTY, OR LIFE AS A RESULT OF LIFTING OPERATIONS.
6. APPROXIMATE SHIPPING WEIGHT OF FLASH TANK IS **14,280 LBS [6477.299 KGS]**.
7. DIMENSIONS AND WEIGHTS LISTED **DO NOT** INCLUDE THE ADDITION OF CRAFTING MATERIALS.
8. USE PROVIDED LIFTING POINTS FOR LIFTING & POSITIONING HEATER UNIT.



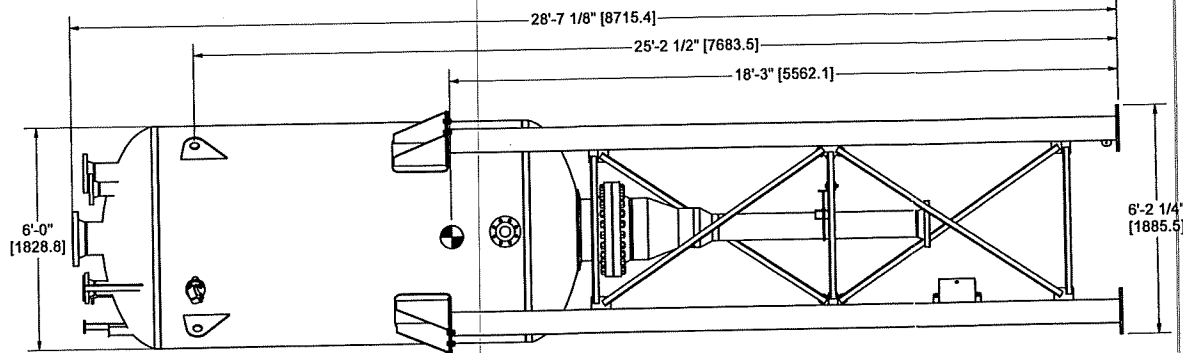
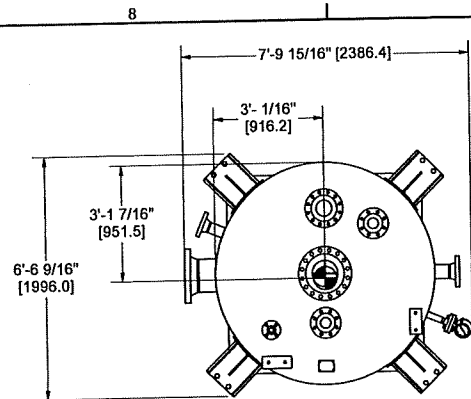
⊙ = CENTER OF GRAVITY

**NOTE:**

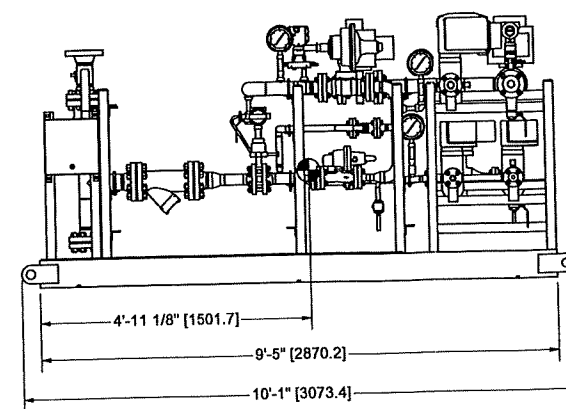
1. USA MATERIAL OR ORIGINS IN ACCORDANCE WITH 1015-RIDS-321-STD-00001-00.
2. TRANSFER HEAT NUMBERS TO EACH PIECE.

**MTR'S REQ'D**

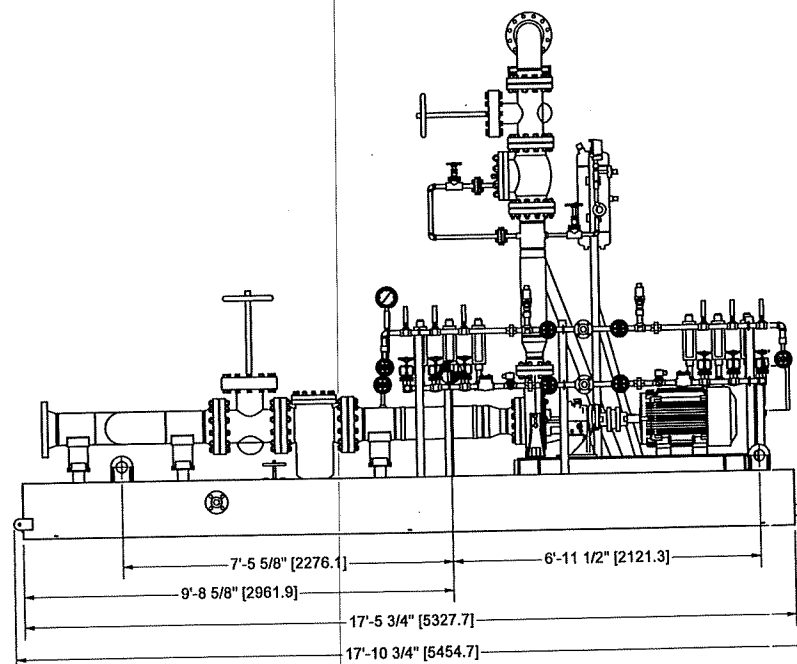
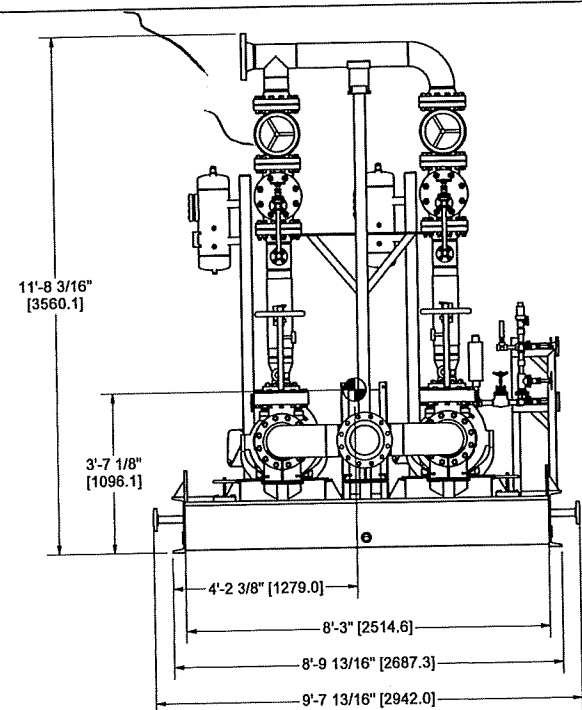
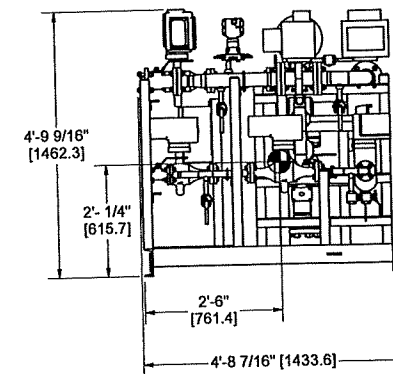
CUSTOMER: JUNIPER GTL, LLC.	JOB: HI 14-190
DRAWING NAME: LIFTING DIAGRAM VHCI 12010-50-D-G-S	NO: 14-190-000
	ISSUE DATE: CMA 8/18/15
<b>HEATEC INC.</b> <small>an Asso company</small>	
P.O. BOX 72700 CHATTANOOGA, TN 37407	PHONE: (423) 821-5200 FAX: (423) 821-7873
DRG. DATE: 8/17/15-CMA	CHK. DATE: 8/18/2015
DRG. PART: 14190-LD	APPR. DATE: 0
EQUIPMENT TAG NO: US-01-941-PK-0001	
CUSTOMER PO: 10040	
CUSTOMER JOB#: 13-1200-M-019	
PROJECT: HOT OIL HEATER PACKAGE	
SCALE: NOTED	WEIGHT: NOTED



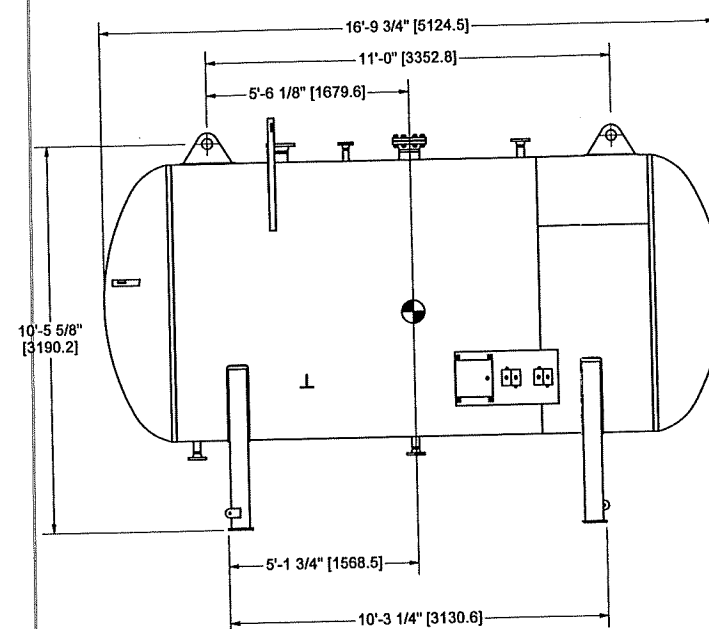
FLASH TANK  
SCALE 1/30  
WEIGHT: 14,280 LBS [6477.299 KGS]



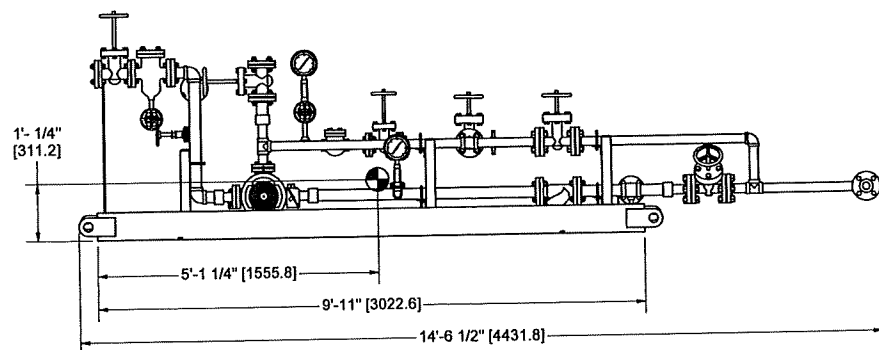
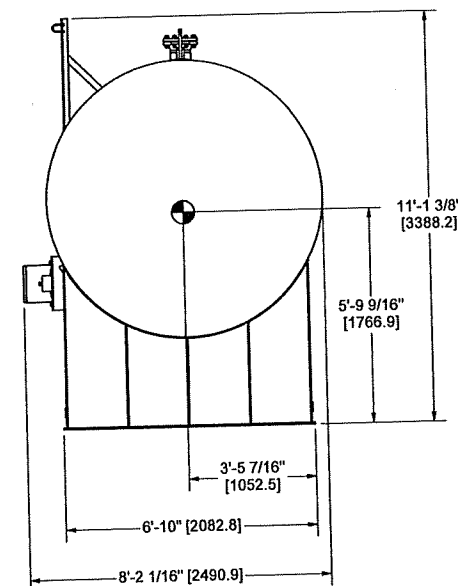
GAS TRAIN  
SCALE 1/20  
WEIGHT: 1,787 LBS [810.5696 KGS]



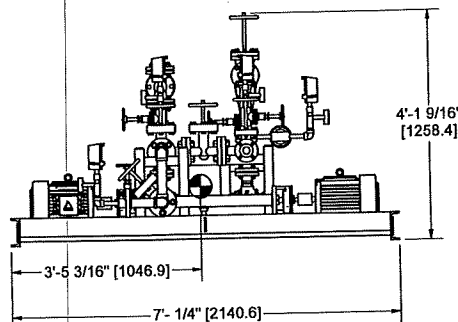
PUMP SKID  
SCALE 1/25  
WEIGHT: 13,178 LBS [5977.4403 KGS]



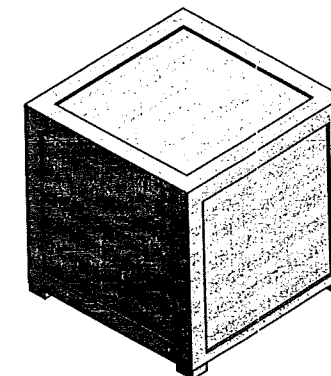
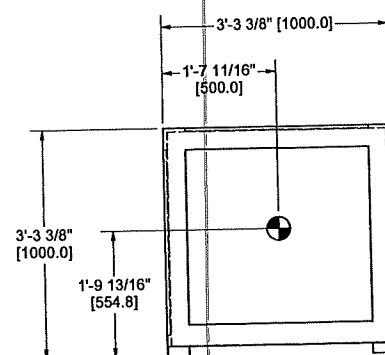
DRAIN/FILL TANK  
SCALE 1/30  
WEIGHT: 6,698 LBS [3038.162 KGS] CHANGE



DRAIN/FILL SKID  
SCALE 1/20  
WEIGHT: 1,286 LBS [583.3198 KGS]

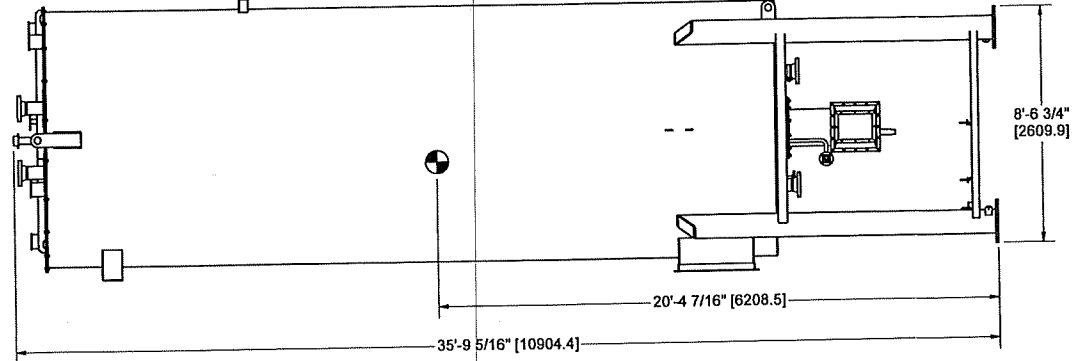
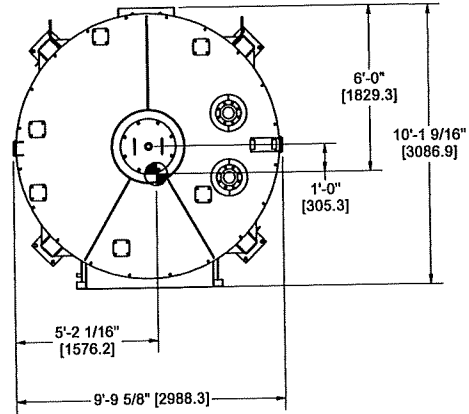


3'x3'x3' CRATE  
SCALE 1/16  
WEIGHT: 673 LBS [305.268 KGS]

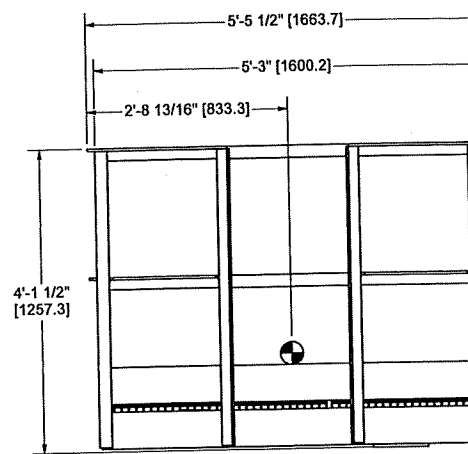


EQUIPMENT TAG NO: US-01-941-PK-0001  
CUSTOMER PO: 10C40  
CUSTOMER JOB#: 13-1200-M-019  
PROJECT: HOT OIL HEATER PACKAGE

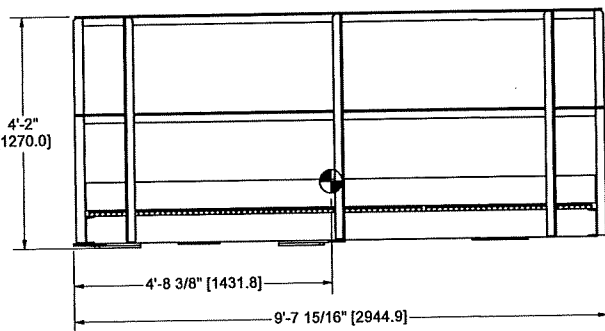
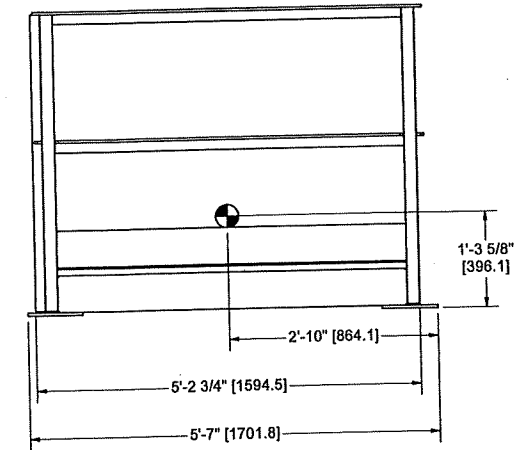
CUSTOMER: JUNIPER GTL, LLC.	JOB: HI 14-190
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS VHCI 12010-50-D-G-S	NO.: 14-190-000
HEATEC INC. <i>an Astec company</i>	ISSUE DATE: CMA 8/17/15
P.O. BOX 72160 CHATTANOOGA, TN 37407	PHONE: (423) 821-5200 FAX: (423) 821-7873
DWG. DATE: 8/12/15-CMA	APPR. DATE:
DWG. PARTS: 14190-SWD	REV: 0
	SCALE: NOTED
	WEIGHT: NOTED



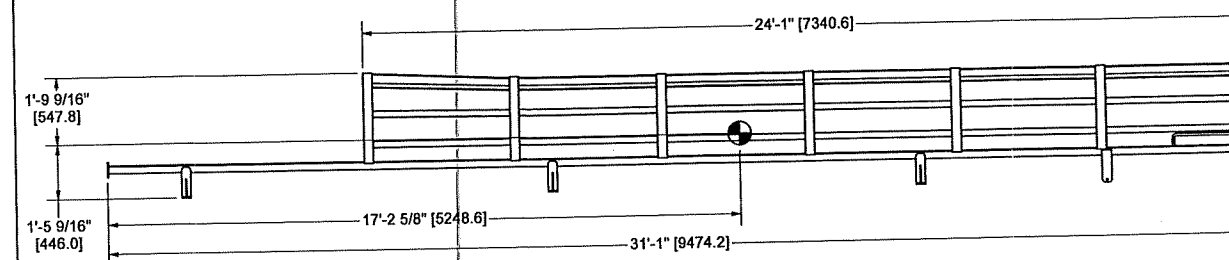
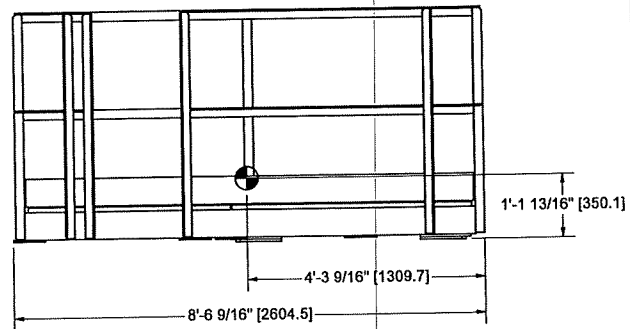
HEATER  
SCALE 1/40  
WEIGHT: 42,497 LBS [19276.315 KGS] CHANGE



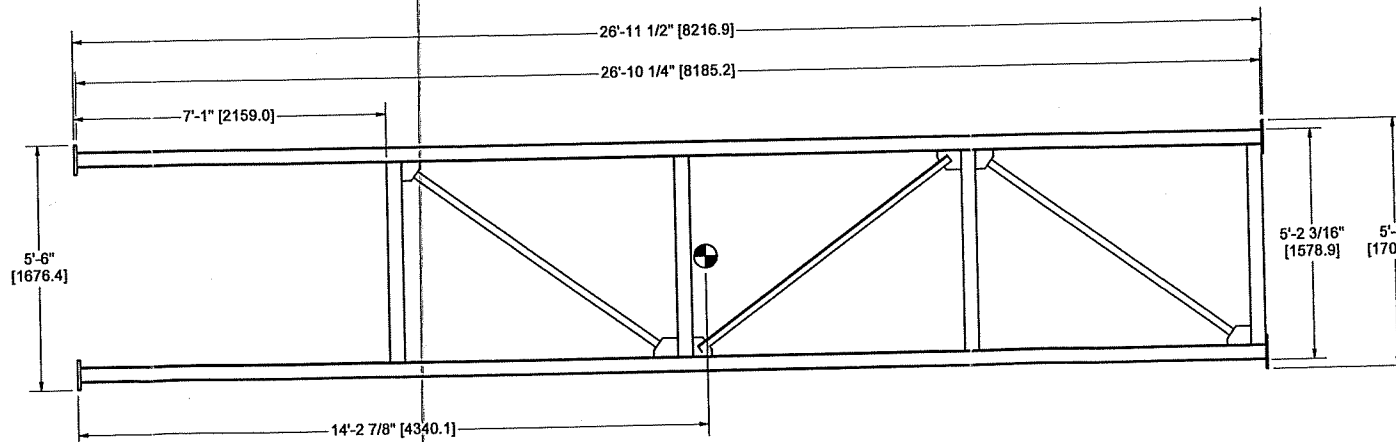
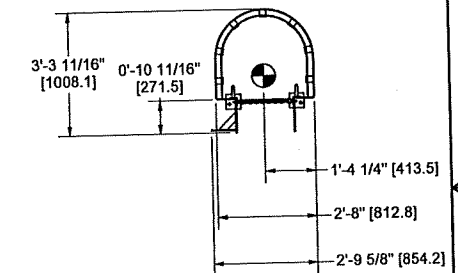
PLATFORM 1  
SCALE 1/15  
WEIGHT: 803 LBS [364.235 KGS]



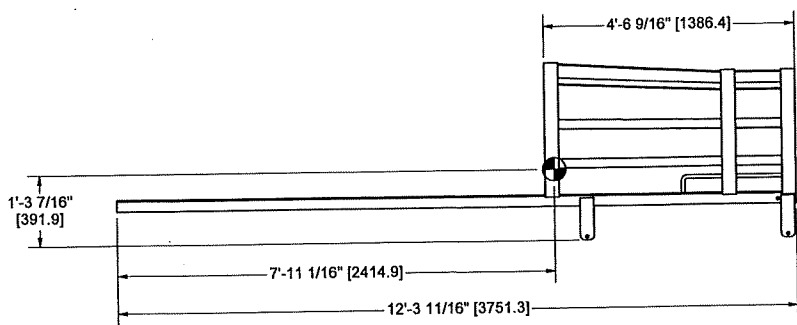
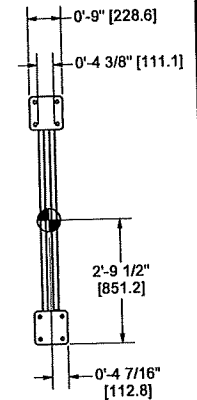
PLATFORM 2  
SCALE 1/20  
WEIGHT: 1,881 LBS [853.2072 KGS]



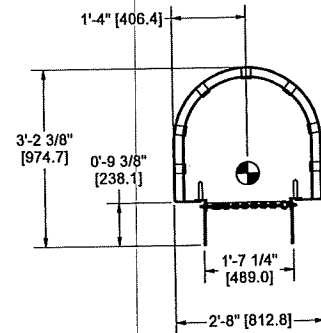
LADDER 1  
SCALE 1/30  
WEIGHT: 827 LBS [375.121 KGS]



PLATFORM BASE STAND  
SCALE 1/25  
WEIGHT: 968 LBS [439.077 KGS]



LADDER 2  
SCALE 1/20  
WEIGHT: 265 LBS [120.202 KGS]

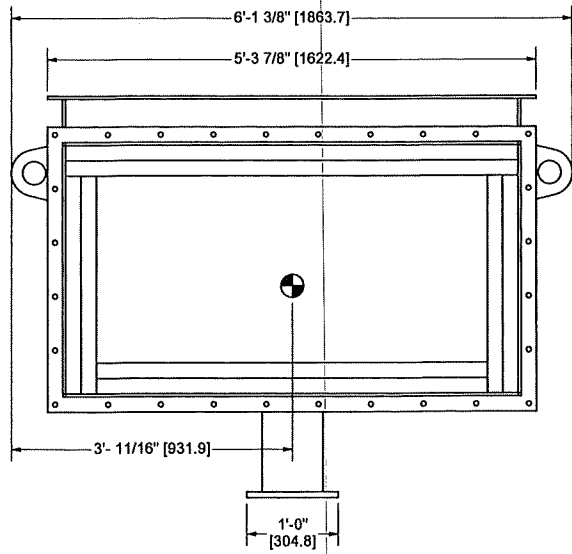
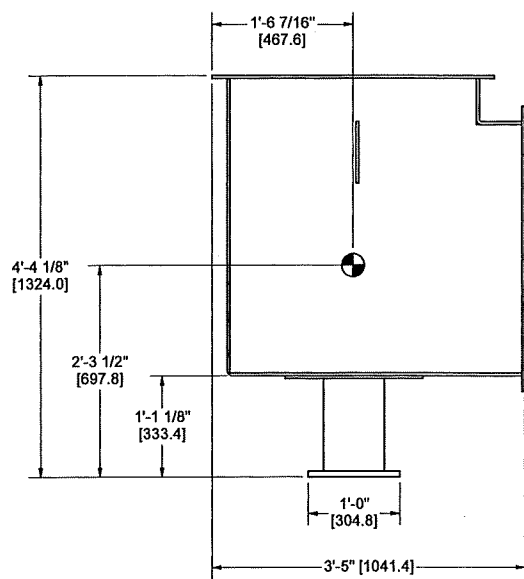


● = CENTER OF GRAVITY

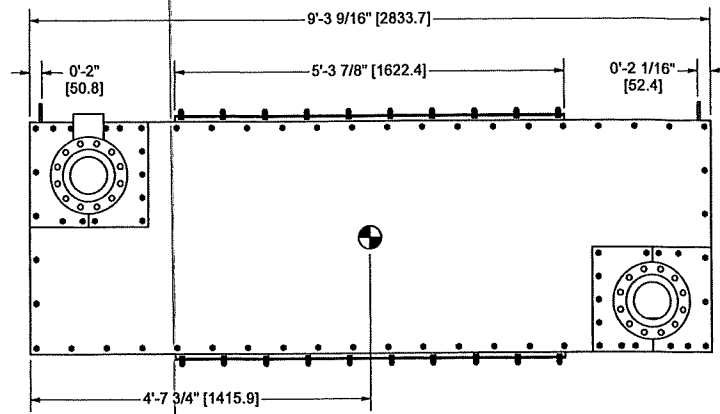
EQUIPMENT TAG NO: US-01-941-PK-0001	CUSTOMER PO: 10040	CUSTOMER JOB#: 13-1200-M-019	PROJECT: HCT OIL HEATER PACKAGE
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CUSTOMER: JUNIPER GTL, LLC.	JOB#: HI 14-190
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS	FOR: 14-190-000
VHCI 12010-50-D-G-S	ISSUE DATE: C.A.B. 8/11/2015
HEATEC INC. an Astec company	P.O. BOX 22780 CHATTANOOGA, TN 37407 PHONE: (423) 821-5200 FAX: (423) 821-7873
DWG. DATE: 8/12/15-CMA	CHK. DATE: 8/11/2015
DWG. PART: 14190-SWD	APP. DATE: 0
SCALE: 0	WEIGHT: NOTED

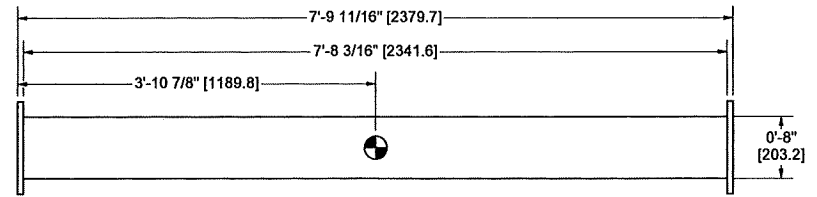
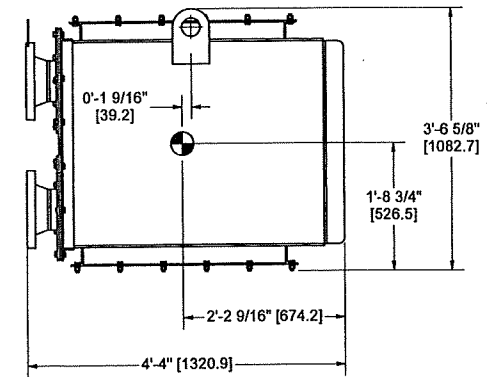




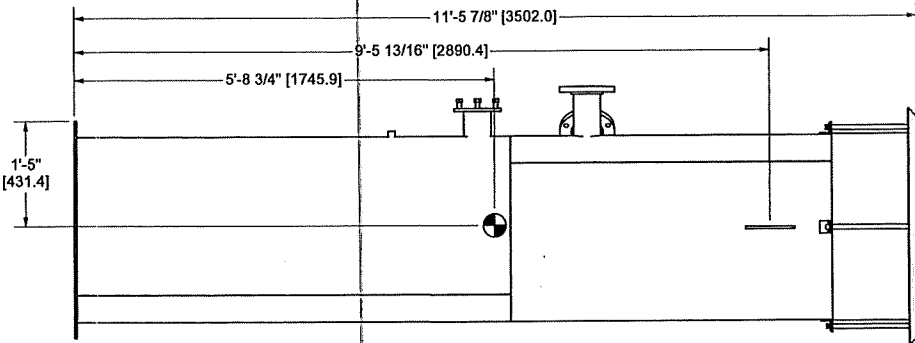
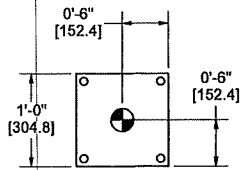
STACK ELBOW  
SCALE 1/12  
WEIGHT: 1,173 LBS [532.0639 KGS]



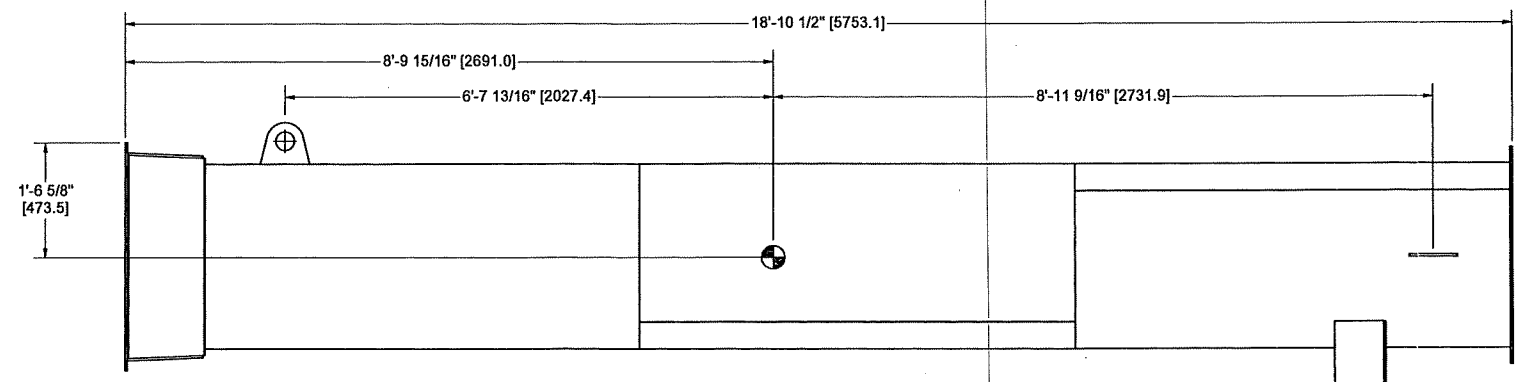
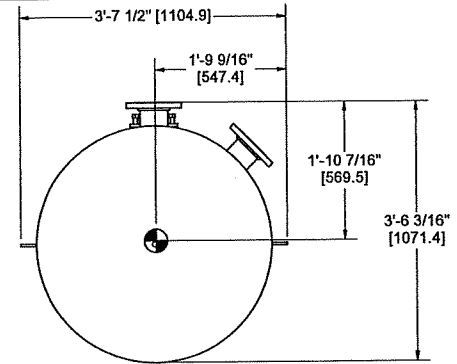
ECONOMIZER  
SCALE 1/15  
WEIGHT: 5,528 LBS [2507.459 KGS]



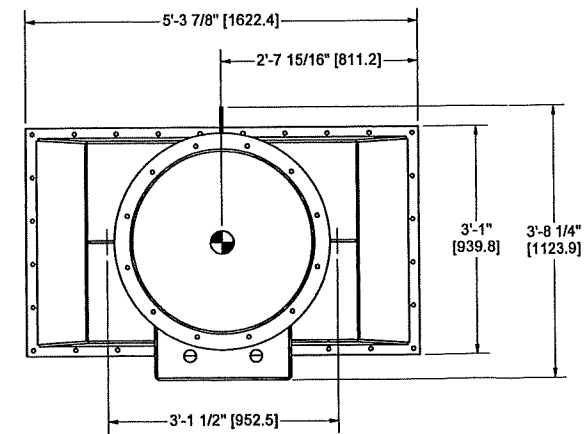
STACK ELBOW COLUMN  
SCALE 1/12  
WEIGHT: 350 LBS [158.757 KGS]



STACK TOP  
SCALE 1/15  
WEIGHT: 1,447 LBS [656.3482 KGS]

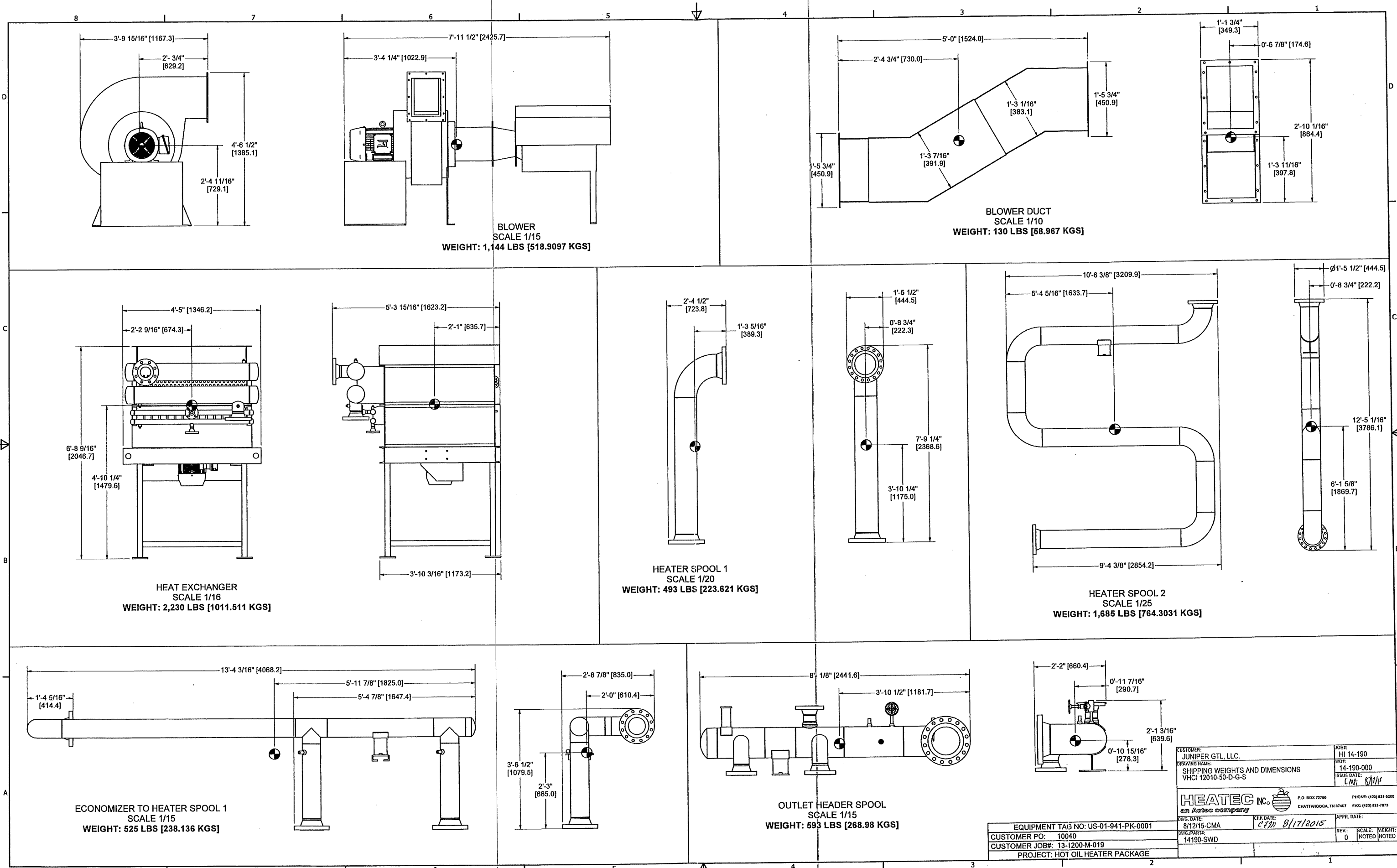


STACK BOTTOM  
SCALE 1/15  
WEIGHT: 2,526 LBS [1145.774 KGS]



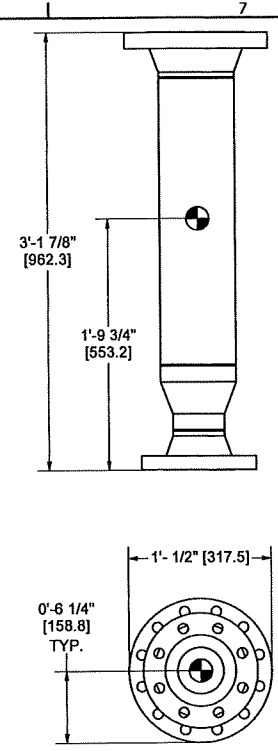
EQUIPMENT TAG NO: US-01-941-PK-0001  
CUSTOMER PO: 10040  
CUSTOMER JOB#: 13-1200-M-019  
PROJECT: HOT OIL HEATER PACKAGE

CUSTOMER: JUNIPER GTL, LLC.	JOB: HI 14-190
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS VHCI 12010-50-D-G-S	WOP: 14-190-000
ISSUE DATE: CMA 8/17/15	REV: 0
HEATEC INC. an Astor Energy company	P.O. BOX 72250 CHATTANOOGA, TN 37407 PHONE: (423) 921-4200 FAX: (423) 821-7873
DWG. DATE: 8/12/15-CMA	CHK. DATE: 8/17/2015
DWG. PARTS: 14190-SWD	APPR. DATE:
	SCALE: 0
	WEIGHT: NOTED

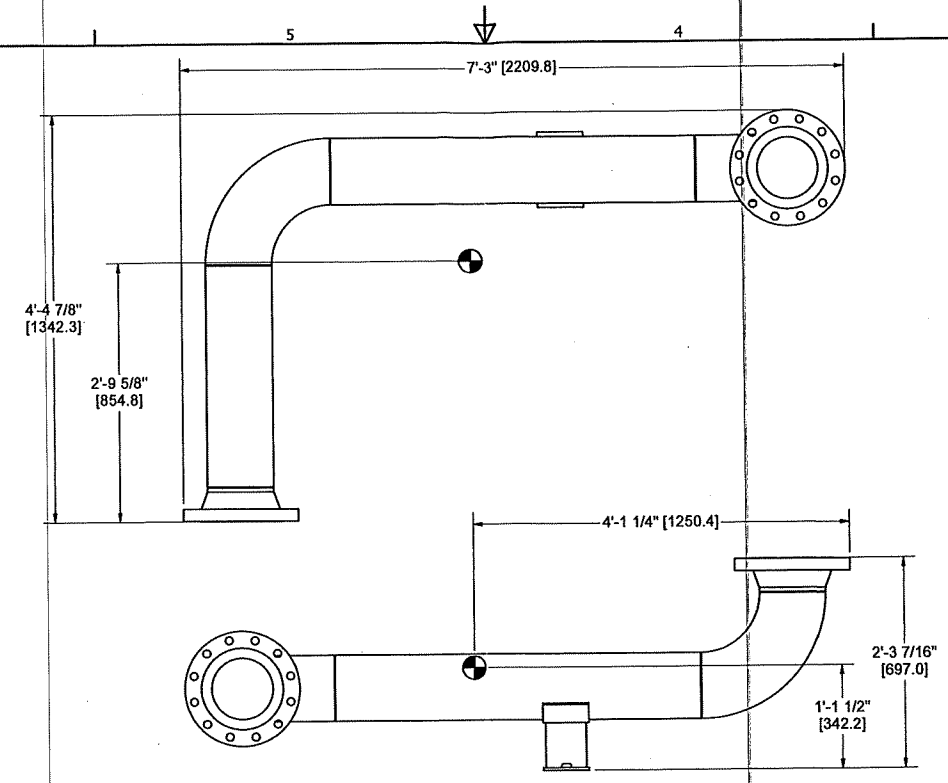


CUSTOMER: JUNIPER GTL, LLC.		JOB#: HI 14-190	
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS		WOF: 14-190-000	
VHCI 12010-50-D-G-S		ISSUE DATE: 8/17/15	
<b>HEATEC</b> INC. P.O. BOX 72780 CHATTANOOGA, TN 37407 PHONE: (423) 821-5200		FAX: (423) 821-7873	
DWG. DATE: 8/12/15-CMA	CHK. DATE: 8/17/2015	APPR. DATE:	
DWG. PART: 14190-SWD	REV: 0	SCALE: NOTED	WEIGHT: NOTED

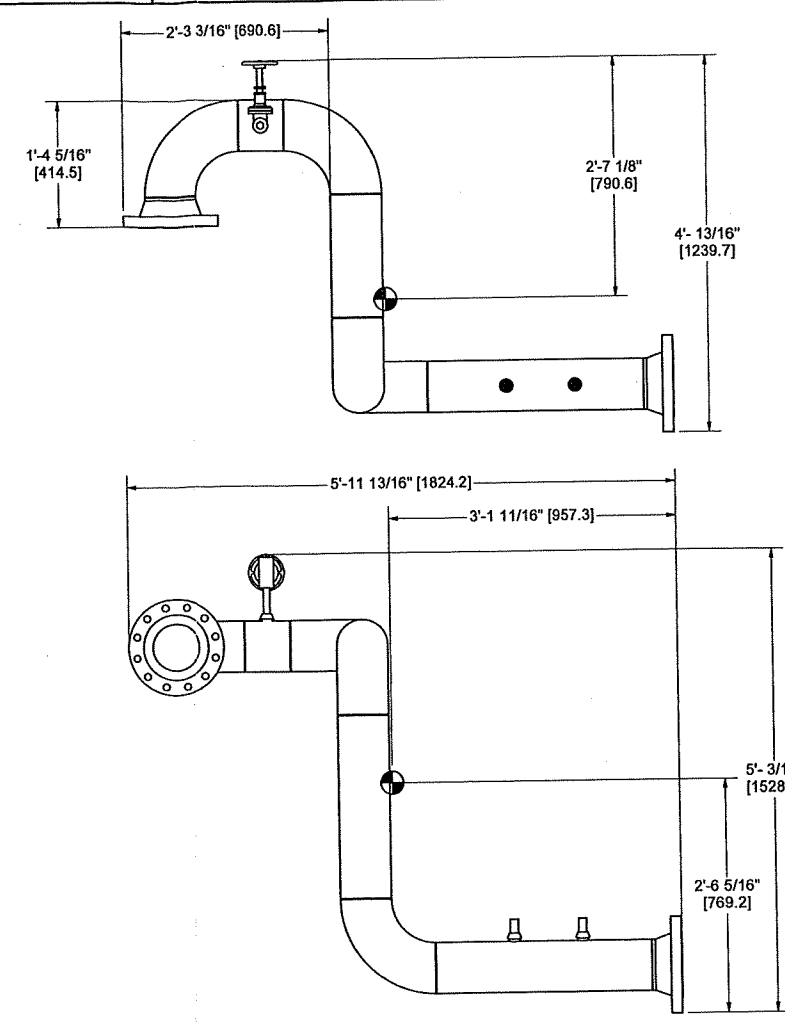
EQUIPMENT TAG NO: US-01-941-PK-0001  
 CUSTOMER PO: 10040  
 CUSTOMER JOB#: 13-1200-M-019  
 PROJECT: HOT OIL HEATER PACKAGE



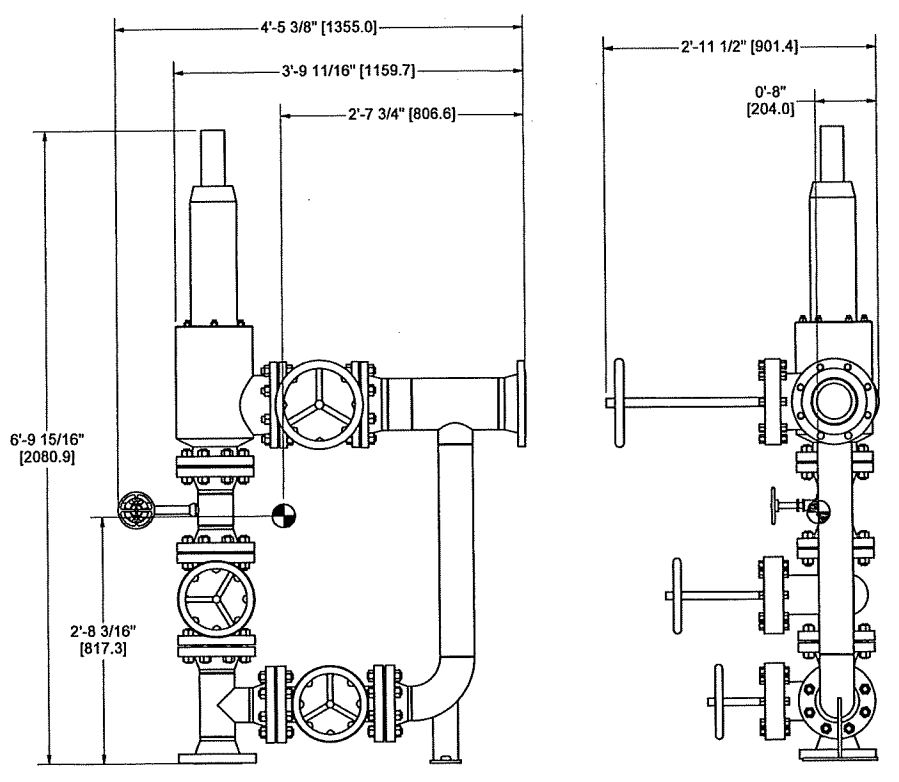
**ECONOMIZER TO HEATER SPOOL 2**  
SCALE 1/8  
WEIGHT: 116 LBS [52.6167 KGS]  
QTY: 2



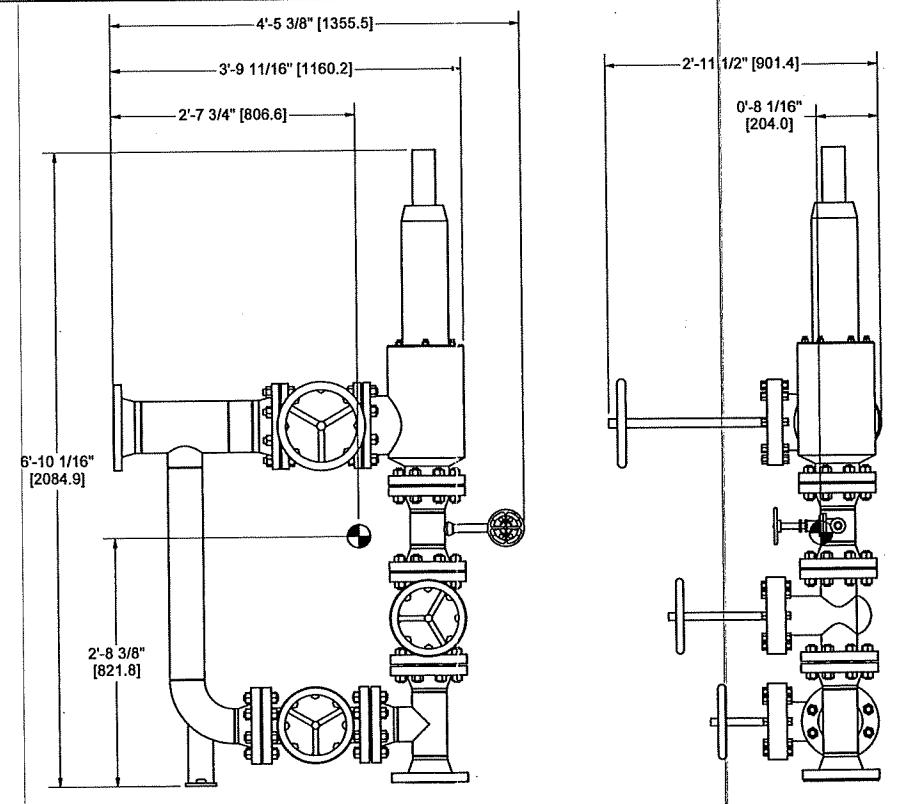
**PUMP SPOOL 6**  
SCALE 1/12  
WEIGHT: 426 LBS [193.23 KGS]



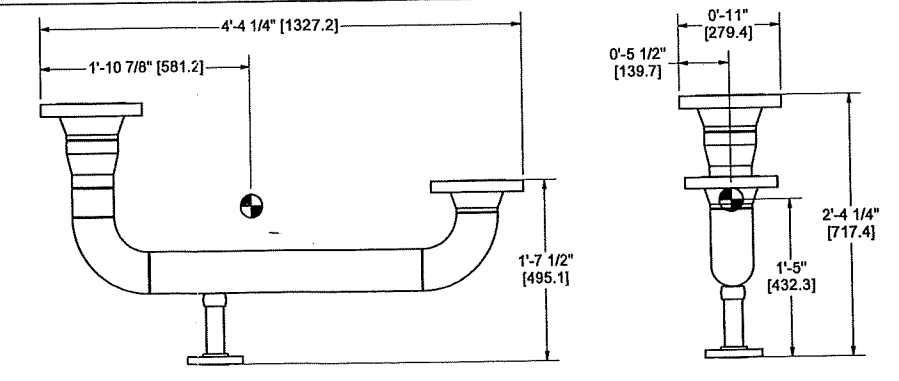
**ECONOMIZER TO PUMP SPOOL**  
SCALE 1/12  
WEIGHT: 307 LBS [139.253 KGS]



**FLASH TANK RELIEF MANIFOLD**  
SCALE 1/12  
WEIGHT: 1,131 LBS [513.013 KGS]

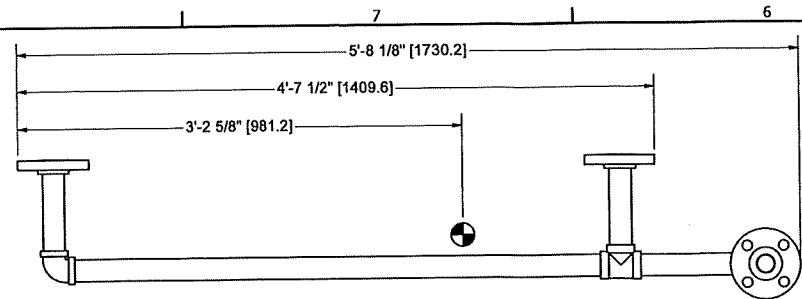


**HEATER RELIEF MANIFOLD**  
SCALE 1/12  
WEIGHT: 1,131 LBS [513.013 KGS]

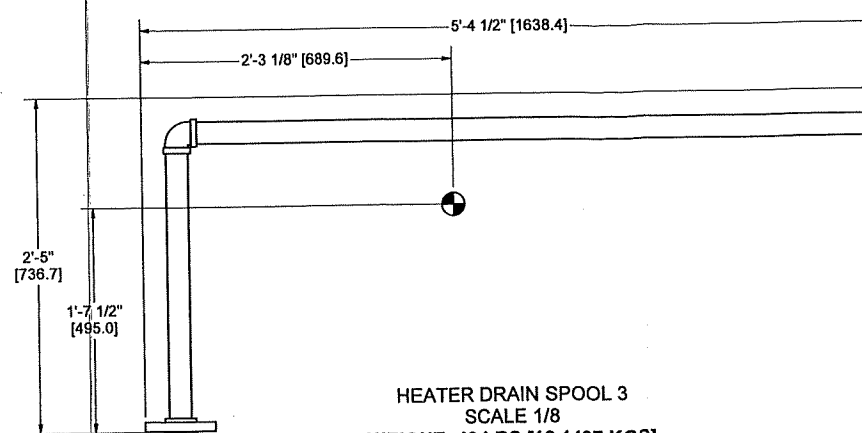
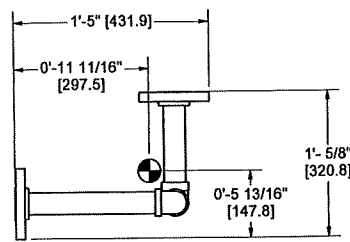


**INLET HEADER SPOOL**  
SCALE 1/10  
WEIGHT: 121 LBS [54.8847 KGS]  
QTY: 2

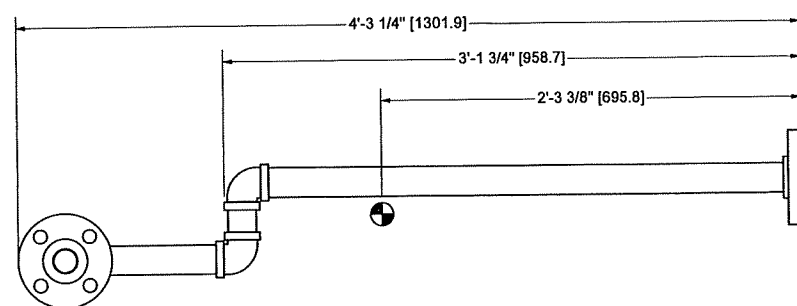
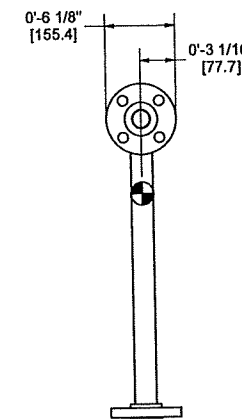
CUSTOMER: JUNIPER GTL, LLC.		JOB#: HI 14-190	
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS		REV#: 14-190-000	
VHC1 12010-50-D-G-S		ISSUE DATE: 8/11/15	
<b>HEATEC INC.</b>		P.O. BOX 72760 CHATTANOOGA, TN 37407 PHONE: (423) 821-9200	
FAX: (423) 821-7873		APPR. DATE:	
DRAWING DATE: 8/12/15-CMA		REV: 0	
REV. PART: 14190-SWD		SCALE: NOTED	
EQUIPMENT TAG NO: US-01-941-PK-0001		WEIGHT: NOTED	
CUSTOMER PO: 10040			
CUSTOMER JOB#: 13-1200-M-019			
PROJECT: HOT OIL HEATER PACKAGE			



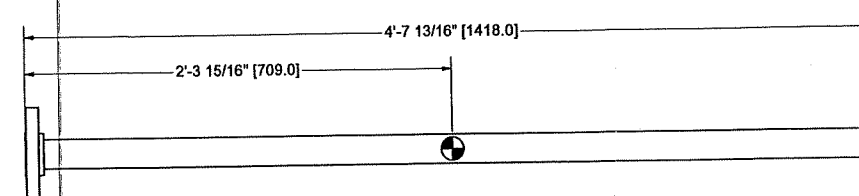
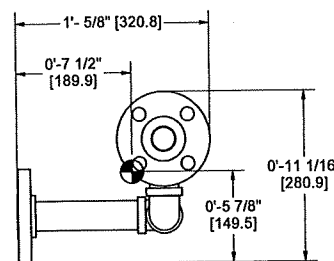
HEATER DRAIN SPOOL 2  
SCALE 1/8  
WEIGHT: 49 LBS [22.226 KGS]



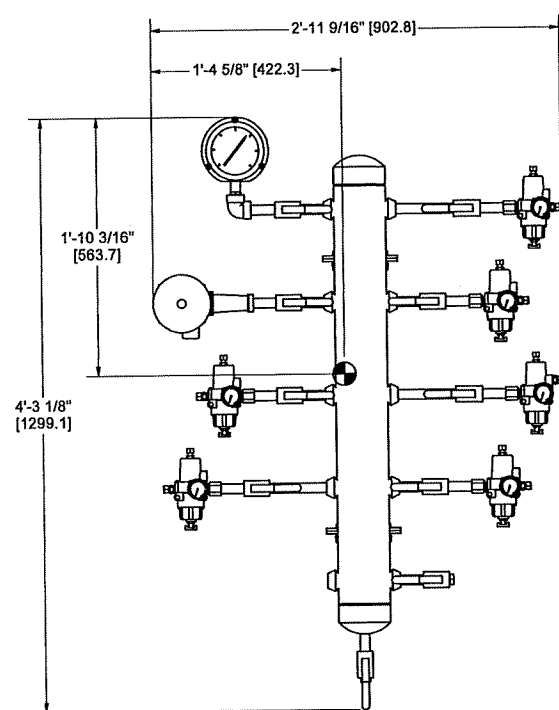
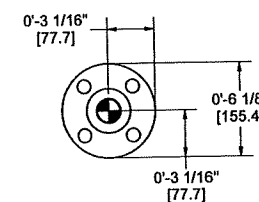
HEATER DRAIN SPOOL 3  
SCALE 1/8  
WEIGHT: 40 LBS [18.1437 KGS]



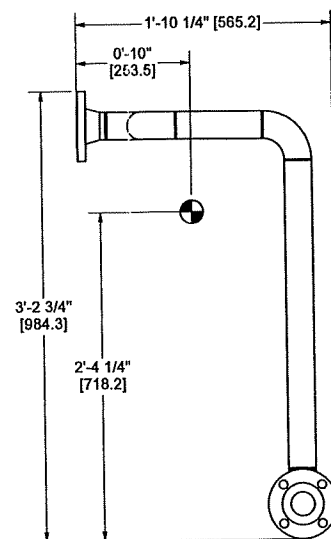
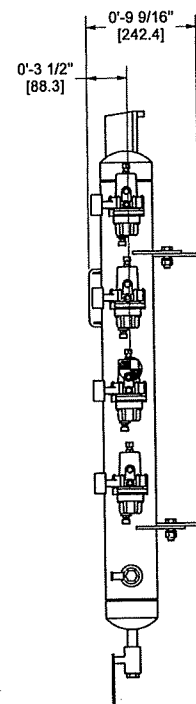
HEATER DRAIN SPOOL 4  
SCALE 1/6  
WEIGHT: 32 LBS [14.515 KGS]



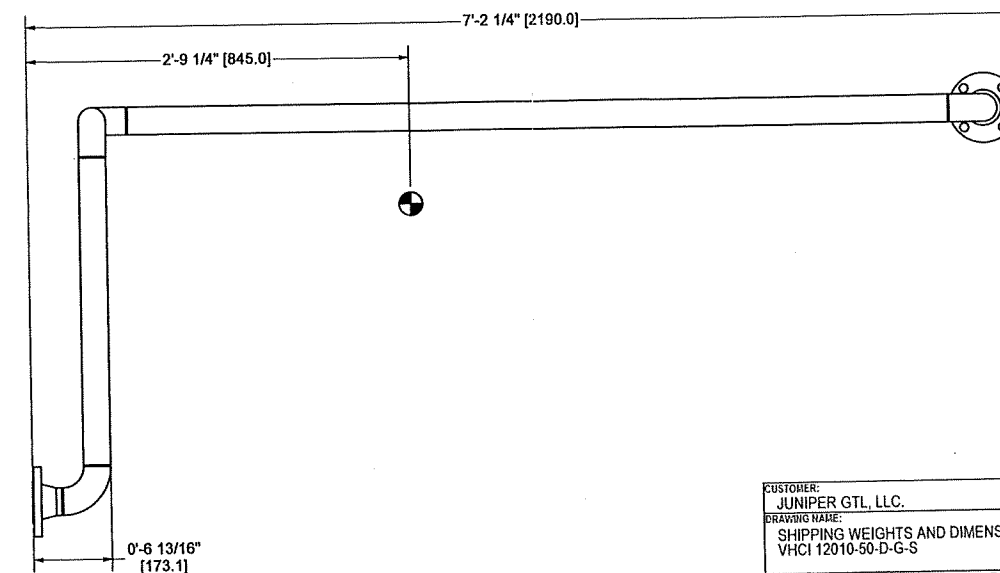
DRAIN FILL SPOOL 11  
SCALE 1/6  
WEIGHT: 29 LBS [13.1542 KGS]



INSTRUMENT AIR MANIFOLD  
SCALE 1/8  
WEIGHT: 83 LBS [37.6482 KGS]

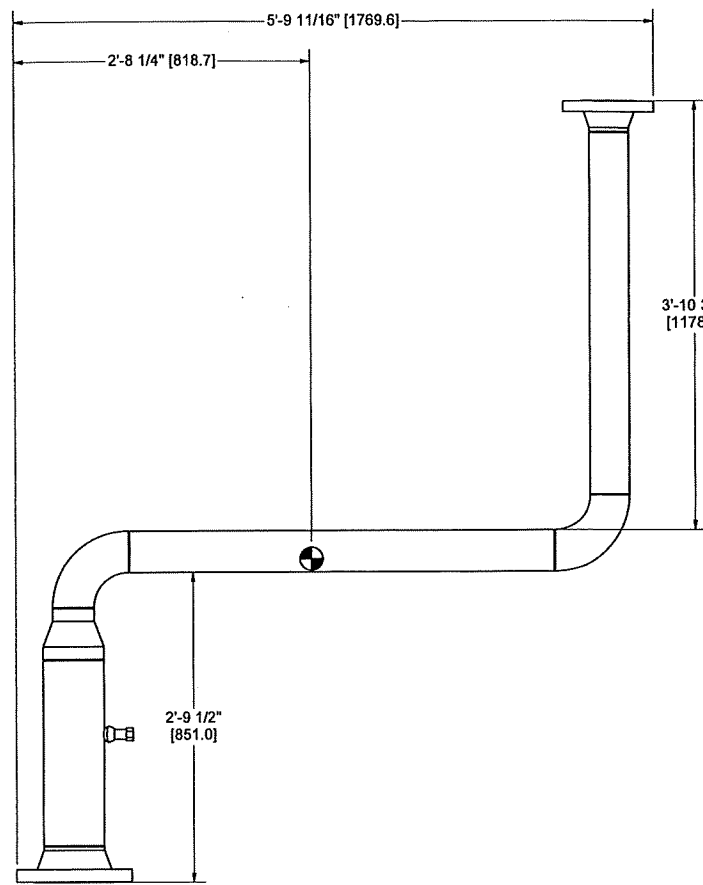


GAS TRAIN SPOOL 10  
SCALE 1/8  
WEIGHT: 50 LBS [22.6796 KGS]

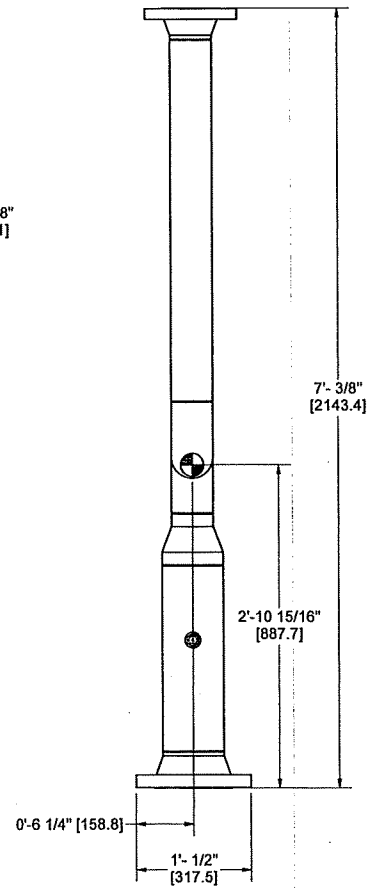


EQUIPMENT TAG NO: US-01-941-PK-0001  
CUSTOMER PO: 10040  
CUSTOMER JOB#: 13-1200-M-019  
PROJECT: HOT OIL HEATER PACKAGE

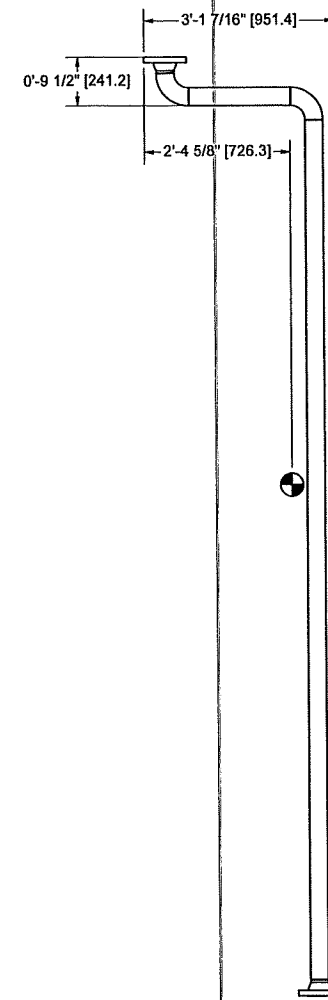
CUSTOMER: JUNIPER GTL, LLC.	JOB: HI 14-190
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS VHCI 12010-50-D-G-S	NO: 14-190-000
ISSUE DATE: CMA 8/17/15	ISSUE DATE: CMA 8/17/15
<b>HEATEC</b> INC.  P.O. BOX 72760 CHATTANOOGA, TN 37407 PHONE: (423) 831-5200 <small>AN ASSOCIATED COMPANY OF</small>	
DWG. DATE: 8/12/15-CMA	CHK. DATE: CMA 8/17/2015
DWG. PART: 14190-SWD	APPR. DATE: 0
SCALE: NOTED	WEIGHT: NOTED



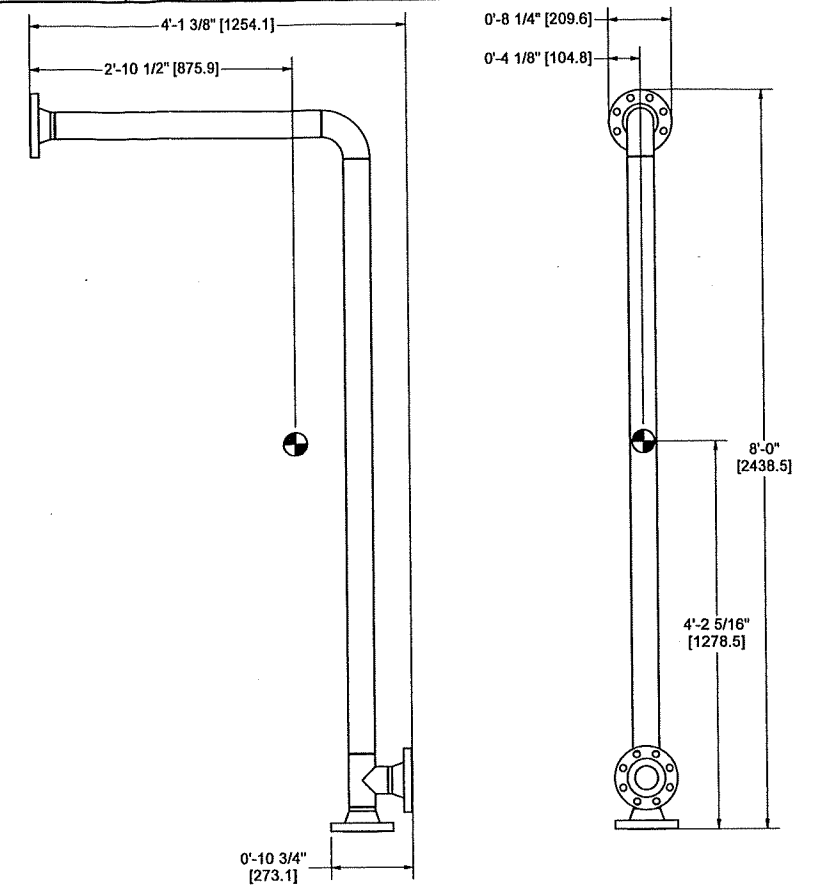
CONDENSER SPOOL 2  
SCALE 1/10  
WEIGHT: 206 LBS [93.44 KGS]



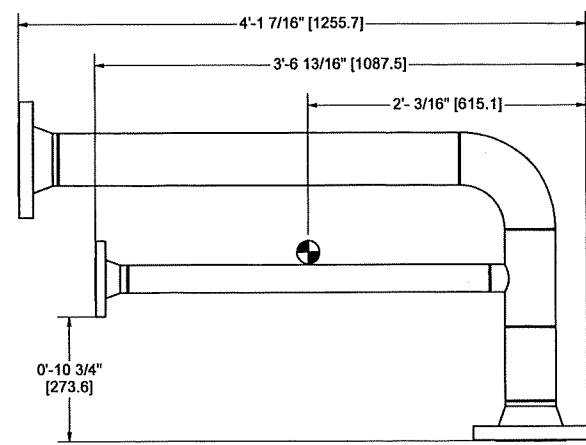
CONDENSER SPOOL 6  
SCALE 1/18  
WEIGHT: 162 LBS [73.482 KGS]



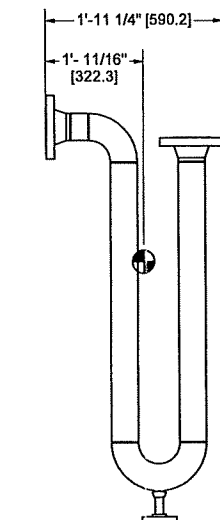
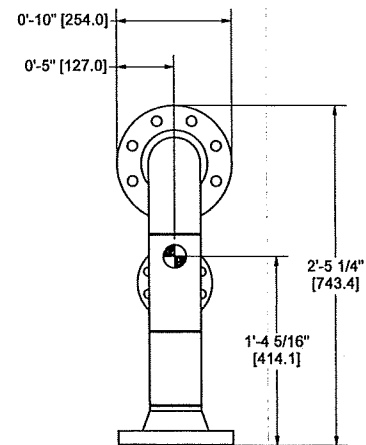
CONDENSER SPOOL 7  
SCALE 1/12  
WEIGHT: 96 LBS [43.5449 KGS]



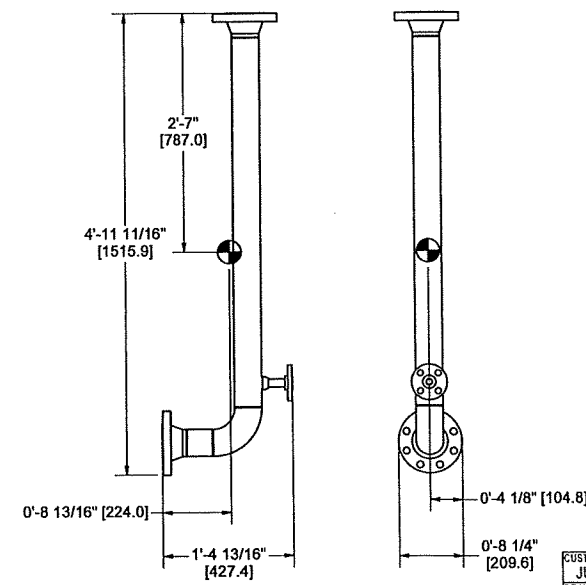
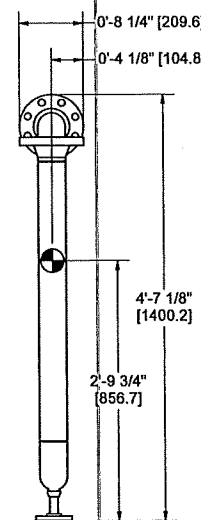
CONDENSER SPOOL 8  
SCALE 1/12  
WEIGHT: 127 LBS [57.6062 KGS]



CONDENSER SPOOL 3  
SCALE 1/8  
WEIGHT: 126 LBS [57.1626 KGS]



CONDENSER SPOOL 5  
SCALE 1/12  
WEIGHT: 96 LBS [43.5449 KGS]



CONDENSER SPOOL 9  
SCALE 1/12  
WEIGHT: 72 LBS [32.6587 KGS]

CUSTOMER: JUNIPER GTL, LLC.		JOB#: HI 14-190	
DRAWING NAME: SHIPPING WEIGHTS AND DIMENSIONS		NO: 14-190-000	
VHCI 12010-50-D-G-S		ISSUE DATE: 08/17/2015	
<b>HEATEC INC.</b>		P.O. BOX 72760 CHATTANOOGA, TN 37407	
PHONE: (423) 821-5000		FAX: (423) 821-7873	
DWG. DATE: 8/12/15-CMA	CHK. DATE: 8/17/2015	APPR. DATE:	
CUSTOMER PO: 10040	DWG. PART#: 14190-SWD	REV: 0	SCALE: NOTED
CUSTOMER JOB#: 13-1200-M-019		WEIGHT: NOTED	
PROJECT: HOT OIL HEATER PACKAGE			

EQUIPMENT TAG NO: US-01-941-PK-0001  
CUSTOMER PO: 10040  
CUSTOMER JOB#: 13-1200-M-019  
PROJECT: HOT OIL HEATER PACKAGE