

LEGEND	
PDB	POWER DISTRIBUTION BLOCK
PLC	PROGRAMMABLE LOGIC CONTROLLER
F1-F3	PUMP MOTOR FUSES
F4-F21	HEATER FUSES
F22-F23	PRIMARY FUSES
F24	CONTROL FUSE
FIC	FLOW INDICATING CONTROLLER
M1	PUMP MOTOR CONTACTOR
C	HEATER CONTACTOR
OL	PUMP MOTOR OVERLOAD
TF	TRANSFORMER
DISC	DISCONNECT
TSH	TEMPERATURE SWITCH HIGH
TIC	TEMPERATURE INDICATING CONTROLLER
SCR	SILICONE CONTROLLED RECTIFIER
TE	TYPE J THERMOCOUPLE

- NOTES-**
- MAX. DESIGN PRESSURE: 225 PSIG.
 - DESIGN TEMPERATURE RANGE: 50° TO 750°F
 - FLUID: DOWTHERM A.
 - ELECTRICAL: 460V / 3PH / 60HZ, 115 VAC CONTROL VOLTAGE, NEMA 12
 - ALL CONTROL WIRING SHALL USE #16 AWG WIRE, COPPER MULTI STRAND TYPE, 90°C MIN RATING.
 - DRAWING SHALL NOT BE USED FOR FIELD FABRICATION UNLESS IT IS THE "AS BUILT" RELEASE.
 - FACTORY JUMPER INSTALLED. REMOVE FOR REMOTE STOP TO FUNCTION.

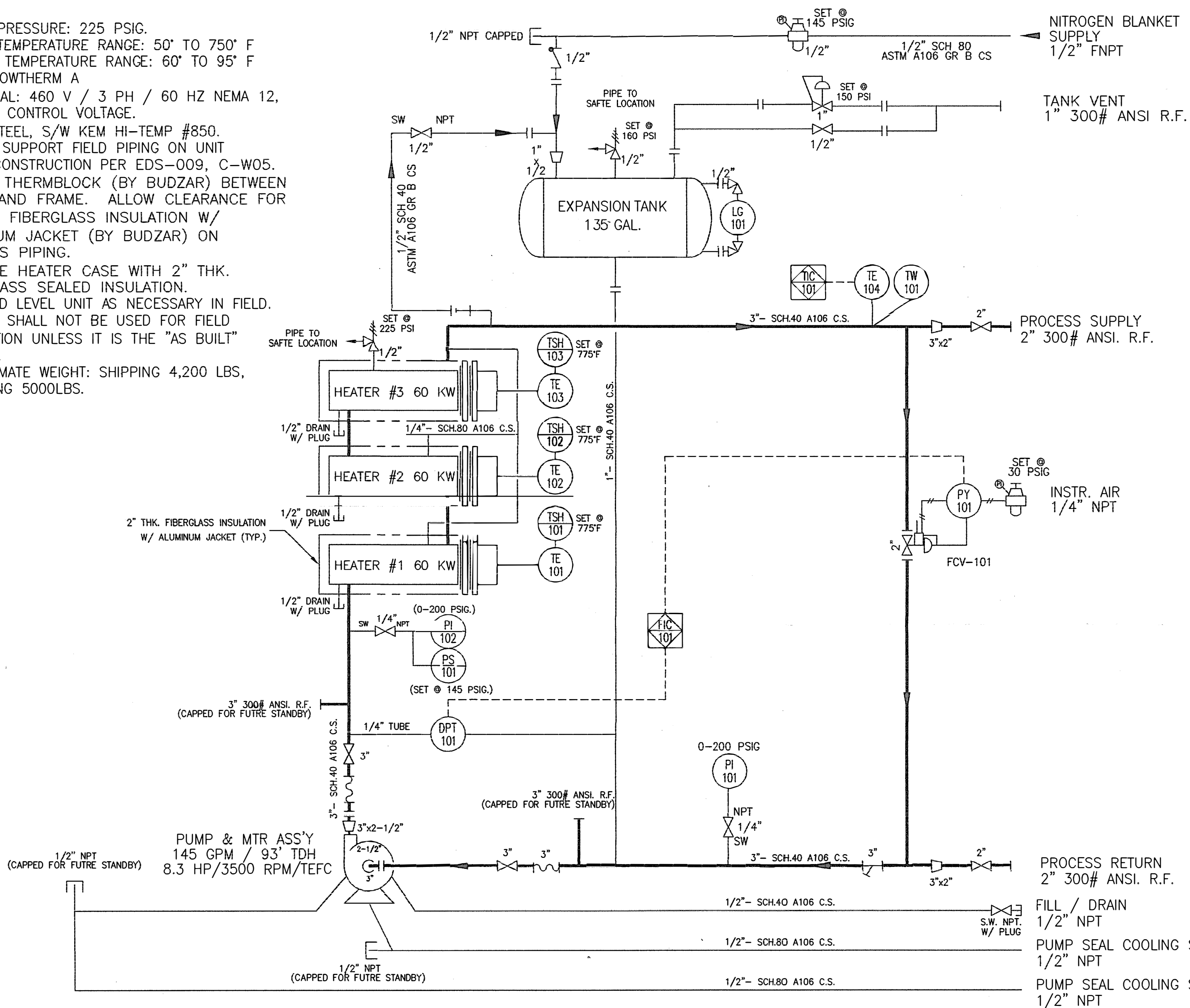
BUDZAR INDUSTRIES INC.
 PHONE (440-918-0505) FAX (440-918-0606) EMAIL: ENGINEERING@BUDZAR.COM

REV	DESCRIPTION	DATE	BY	APPD
C	UPDATED AS BUILT	02/12/13	RX	REC
B	AS BUILT MODIFICATIONS	02/05/13	DZ	REC
A	UPDATED LEGEND	11/28/12	RX	REC

NELSON ENGINEERING ELECTRICAL SCHEMATIC 10T-18035-GOH-SP	REFERENCE G20770-GA REFERENCE G20770-FW REFERENCE G20770-PS SHEET 1 OF 1
DRAWN BY RX DATE 10/30/12 APPD BY REC DATE 10/30/12	SCALE NONE SERIAL 201208-20770
G20770-ES	

-NOTES-

1. DESIGN PRESSURE: 225 PSIG.
2. DESIGN TEMPERATURE RANGE: 50° TO 750° F
3. AMBIENT TEMPERATURE RANGE: 60° TO 95° F
4. FLUID: DOWTHERM A
5. ELECTRICAL: 460 V / 3 PH / 60 HZ NEMA 12, 115 VAC CONTROL VOLTAGE.
6. PAINT: STEEL, S/W KEM HI-TEMP #850.
7. DO NOT SUPPORT FIELD PIPING ON UNIT
8. PIPING CONSTRUCTION PER EDS-009, C-W05.
9. USE 2" THERMBLOCK (BY BUDZAR) BETWEEN PIPING AND FRAME. ALLOW CLEARANCE FOR 2" THK. FIBERGLASS INSULATION W/ ALUMINUM JACKET (BY BUDZAR) ON PROCESS PIPING.
10. INSULATE HEATER CASE WITH 2" THK. FIBERGLASS SEALED INSULATION.
11. SHIM AND LEVEL UNIT AS NECESSARY IN FIELD.
12. DRAWING SHALL NOT BE USED FOR FIELD FABRICATION UNLESS IT IS THE "AS BUILT" RELEASE.
13. APPROXIMATE WEIGHT: SHIPPING 4,200 LBS, OPERATING 5000LBS.



LEGEND:

- FIC = FLOW INDICATING CONTROLLER
- FCV = FLOW CONTROL VALVE
- LG = LEVEL GAUGE (SIGHT GLASS)
- PI = PRESSURE GAUGE
- PS = PRESSURE SWITCH
- PY = PRESSURE TRANSDUCER
- TE = THERMOCOUPLE (TYPE J)
- TSH = TEMPERATURE SWITCH
- TW = THERMOWELL
- **** = FIELD MOUNTED INSTRUMENT
- **** = PANEL MOUNTED INSTRUMENT
- **** = BEHIND PANEL MOUNTED INSTRUMENT
- TIC = TEMPERATURE INDICATING CONTROLLER
- ⊗ = GATE VALVE
- ⊥ = STRAINER
- ⊥ = BACK PRESSURE VALVE
- ⊥ = PRESSURE SAFETY RELIEF VALVE
- ⊥ = FLOW CONTROL VALVE

DRIP PAN DRAIN
1/2" NPT W/PLUG

DRAIN PAN

DRIP PAN DRAIN
1/2" NPT W/PLUG

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NELSON ENGINEERING	REFERENCE	D20770-GA
PIPING & INSTRUMENT DIAGRAM	REFERENCE	D20770-FW
10T-180145-GOH-SP	REFERENCE	D20770-ES
DRWN BY RX DATE 10/23/12 SCALE NONE	SHEET 1 OF 1	SIZE C
APPD BY REC DATE 10/23/12	SERIAL	201208-20770
INDUSTRIAL TOLERANCE UNLESS OTHERWISE NOTED	LINEAR ± N/A	ANG. ± N/A

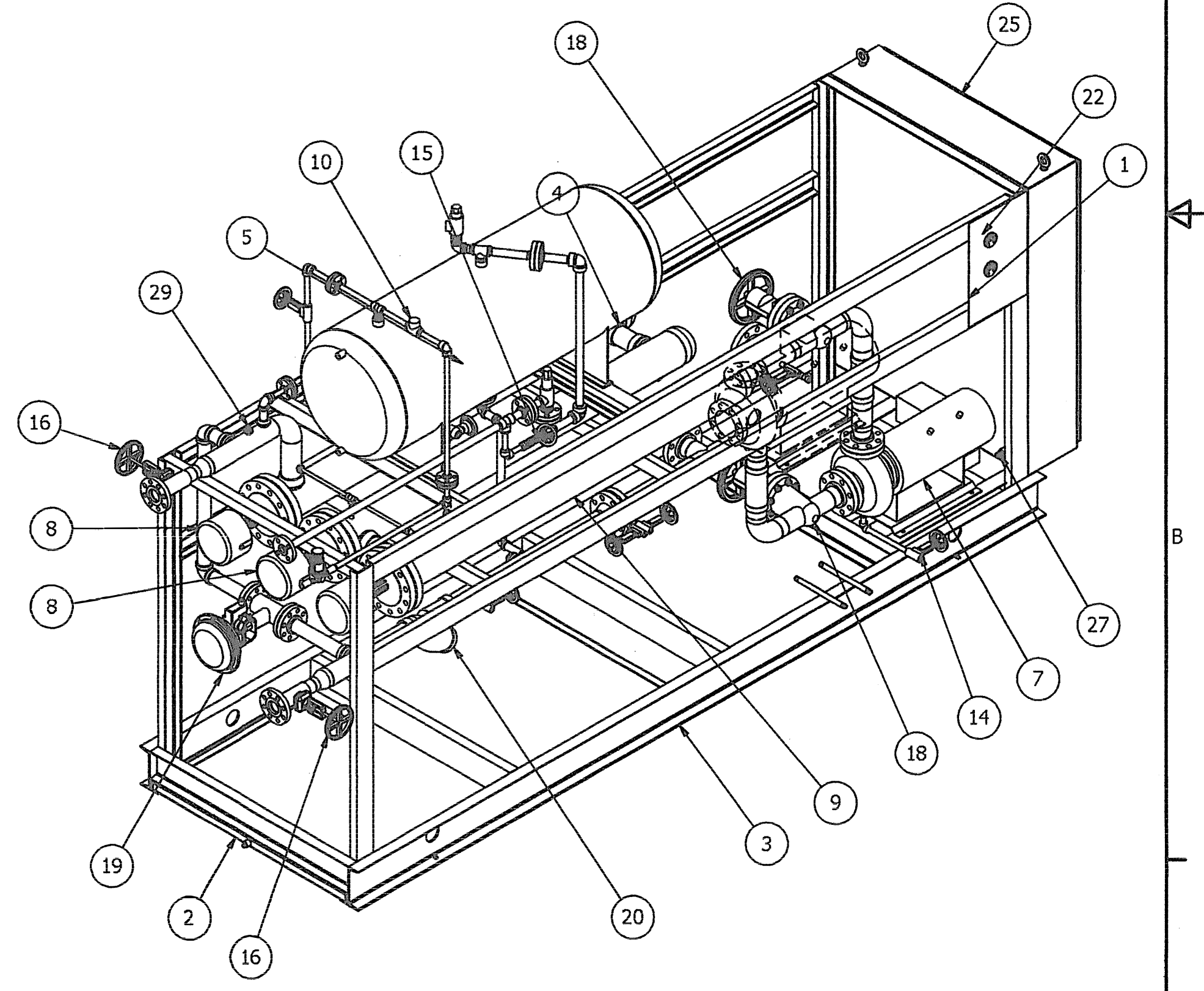
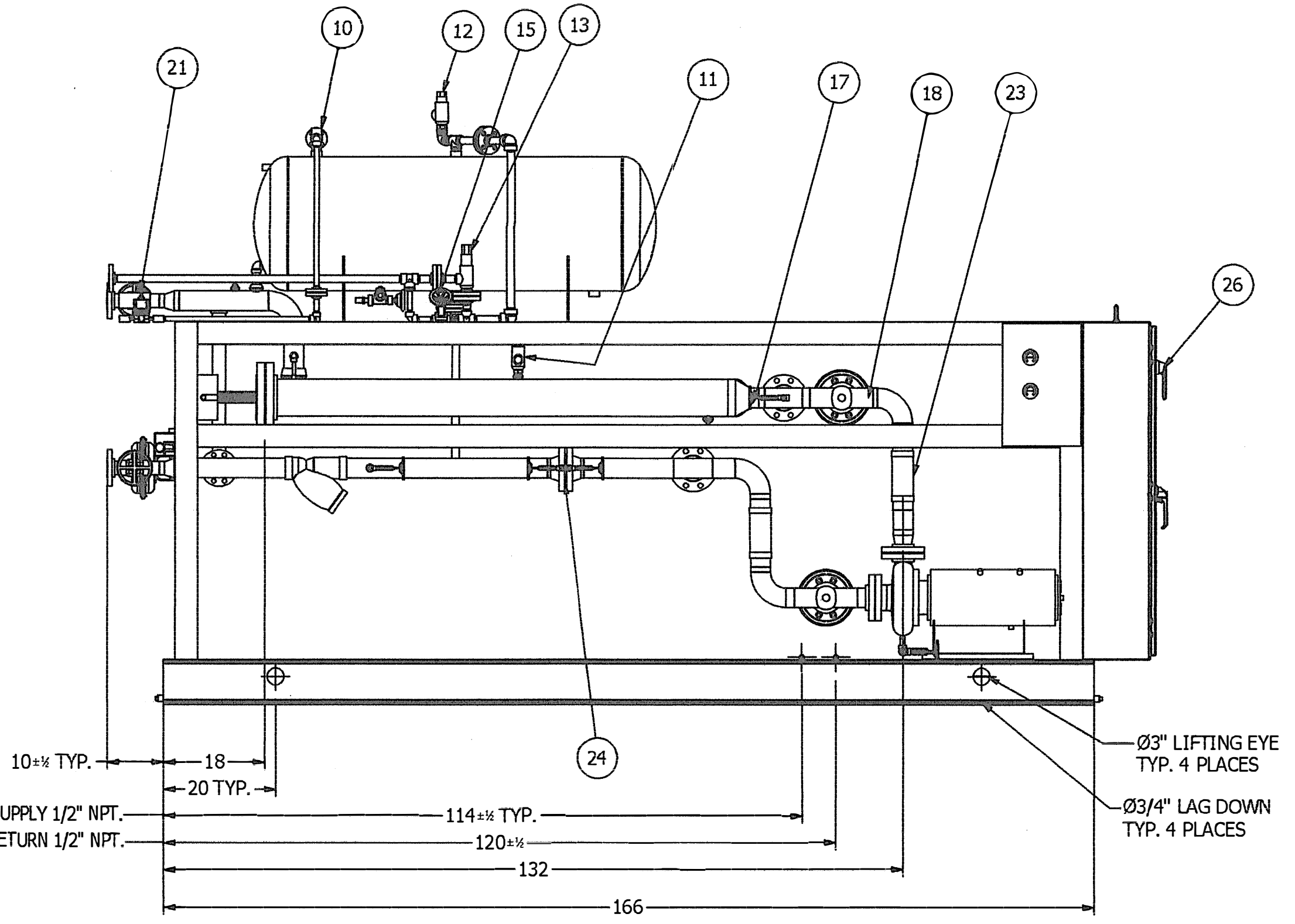
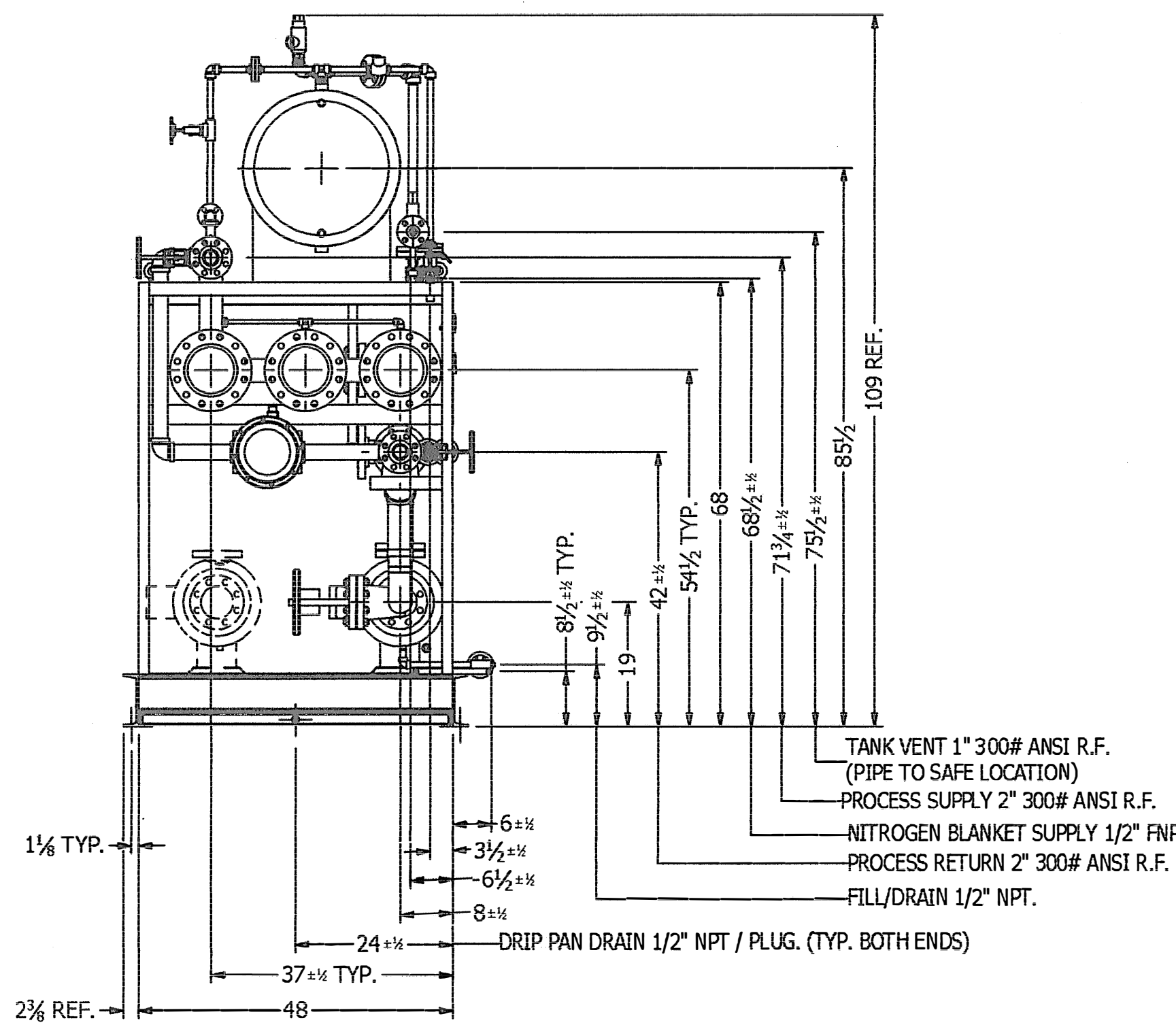
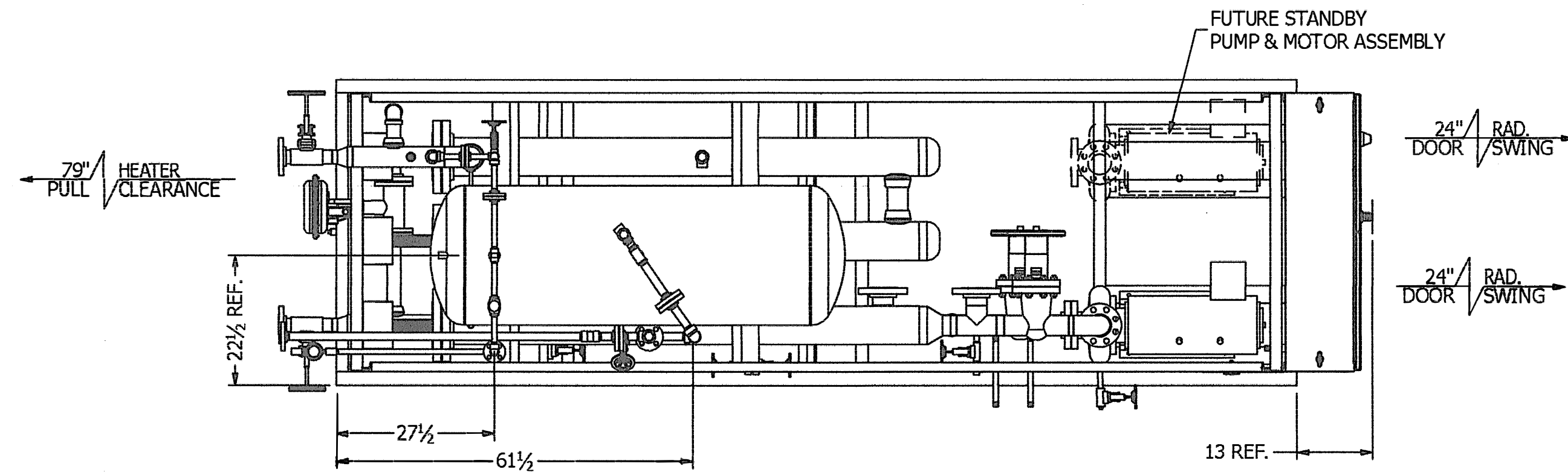
REV	DESCRIPTION	DATE	BY	APPD
C	UPDATED AS BUILT	02/12/13	RX	REC
B	UPDATED LEGEND	11/26/12	RX	REC
A	UPDATRED AS CUSTOMMER COMMENTS	11/07/12	RX	REC

D20770-PS

C

- NOTES-**
- DESIGN PRESSURE: 225 PSIG.
 - DESIGN TEMPERATURE RANGE: 50° TO 750° F
 - AMBIENT TEMPERATURE RANGE: 60° TO 95° F
 - FLUID: DOWTHERM A
 - ELECTRICAL: 480 V / 3 PH / 60 HZ NEMA 12, 115 VAC CONTROL VOLTAGE.
 - PAINT: STEEL, SAKEM HI-TEMP #850
 - DO NOT SUPPORT FIELD PIPING ON UNIT
 - PIPING CONSTRUCTION PER EDS-009, C-W05.
 - USE 2" THERMLOCK (BY BUDZAR) BETWEEN PIPING AND FRAME. ALLOW CLEARANCE FOR 2" THK FIBERGLASS INSULATION W/ ALUMINUM JACKET (BY BUDZAR) ON PROCESS PIPING.
 - INSULATE HEATER CASE WITH 2" THK. FIBERGLASS SEALED INSULATION.
 - SHIM AND LEVEL UNIT AS NECESSARY IN FIELD.
 - DRAWING SHALL NOT BE USED FOR FIELD FABRICATION UNLESS IT IS THE "AS BUILT" RELEASE.
 - APPROXIMATE WEIGHT: SHIPPING 4,200 LBS, OPERATING 5000LBS.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	***	GAUGE PANEL: SEE DWG. # D20770-SM1
2	2	****	SHEET METAL (DRIP PAN): SEE DWG. # D20770-SM2
3	1	210-410-0004	FRAME WELDMENT: SEE DWG. # D20770-FW
4	1	220-010-0275	TANK: 135 GAL ASME
5	1	220-030-0173	GAUGE VALVE: 1/2" NPT
6	1	220-030-0193	REFLEX GAUGE
7	1	250-016-0033	PUMP AND MOTOR ASSEMBLY: 145 GPM, 7.5 HP
8	3	270-030-0675	HEATER: 60 KW 300# ANSI
9	1	270-110-0168	HEATER CASE: SEE DWG. #D20770-HC
10	1	290-020-0136	CHECK VALVE: 1/2"
11	1	290-030-0093	RELIEF VALVE: 1/2" SET @ 225 PSIG
12	1	290-030-0093-1	RELIEF VALVE: 1/2" SET @160 PSIG
13	1	290-030-0357	BALCOCK PRESSURE VALVE: 1" SET @ 150 PSIG
14	2	290-070-0115	GATE VALVE: 1/2" S.W. x NPT.
15	1	290-070-0116	GATE VALVE: 1/2" NPT
16	2	290-070-0126	GATE VALVE: 2" S.W.
17	4	290-070-0135	GATE VALVE 1/4" SW x NPT.
18	2	290-070-0140	GATE VALVE: 3" B.W.
19	1	290-120-1401	FLOW CONTROL VALVE: 2" 300#
20	1	300-025-0103	STRAINER: 3" CAST STEEL SW
21	1	300-040-0529	GAS REGULATOR: 1/2" NPT, SET @ 145 PSIG
22	2	310-010-0421	PRESSURE GAUGE 1/4" NPT. (0-200 PSIG.)
23	2	310-050-0093	FLEXIBLE HOSE: 3" BW 12" LG.
24	1	340-100-0040	ORIFICE PLATE: 1-3/8"
25	1	500-010-0278	ENCLOSURE: NEMA 12 60x48x12
26	1	510-020-0103	DISCONNECT HANDLE
27	1	600-010-0239	PRESSURE SWITCH: 1/4" NPT (SET @ 145 PSIG)
28	1	600-010-0397	DIFFERENTIAL PRESSURE TRANSMITTER (NOT SHOWN)
29	1	610-010-0128	THERMOCOUPLE: J-TYPE W/ 10' LEADS



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NELSON ENGINEERING		DATE: 10/30/2012	SCALE: 1=20	SHEET: 1 OF 1	SIZE: D
GENERAL ASSEMBLY		DATE: 11/07/12	SCALE: 1=20	SHEET: 201208-20770	SIZE: D
10T-180145-GOH-SP		DATE: 10/30/2012	SCALE: 1=20	SHEET: 201208-20770	SIZE: D
REV	DESCRIPTION	DATE	BY	APPD	D20770-GA
B	UPDATED AS BUILT	02/12/13	RX	REC	
A	UPDATED AS CUSTOMER COMMENTS	11/07/12	RX	REC	