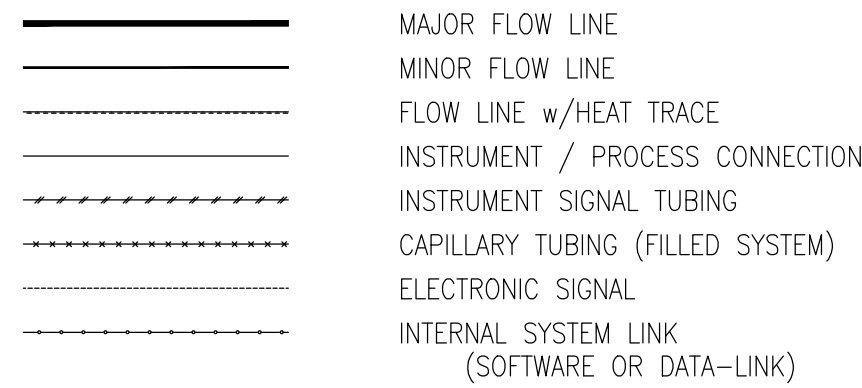
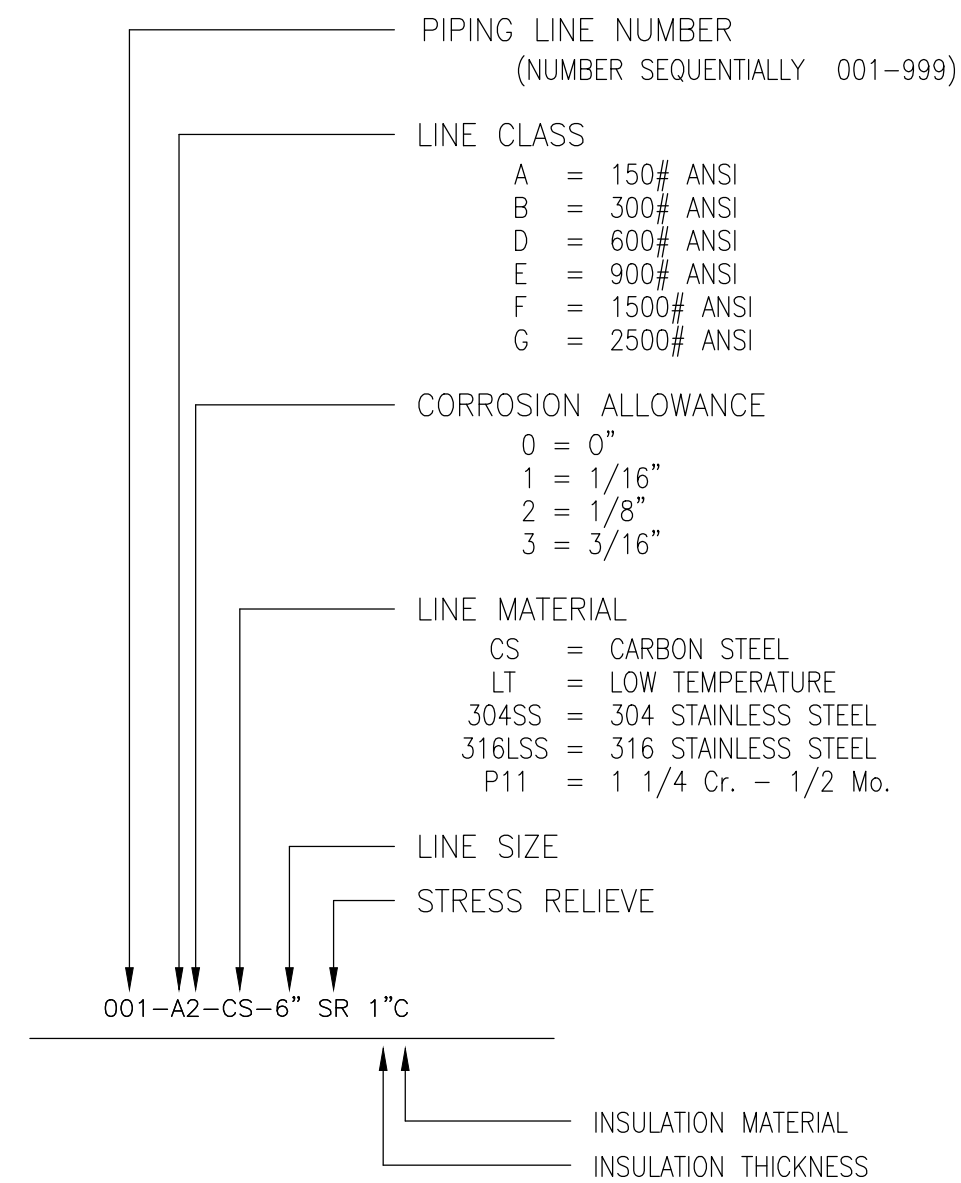


**LINE TYPES**



**LINE DESCRIPTION**



**FLANGE RATING**

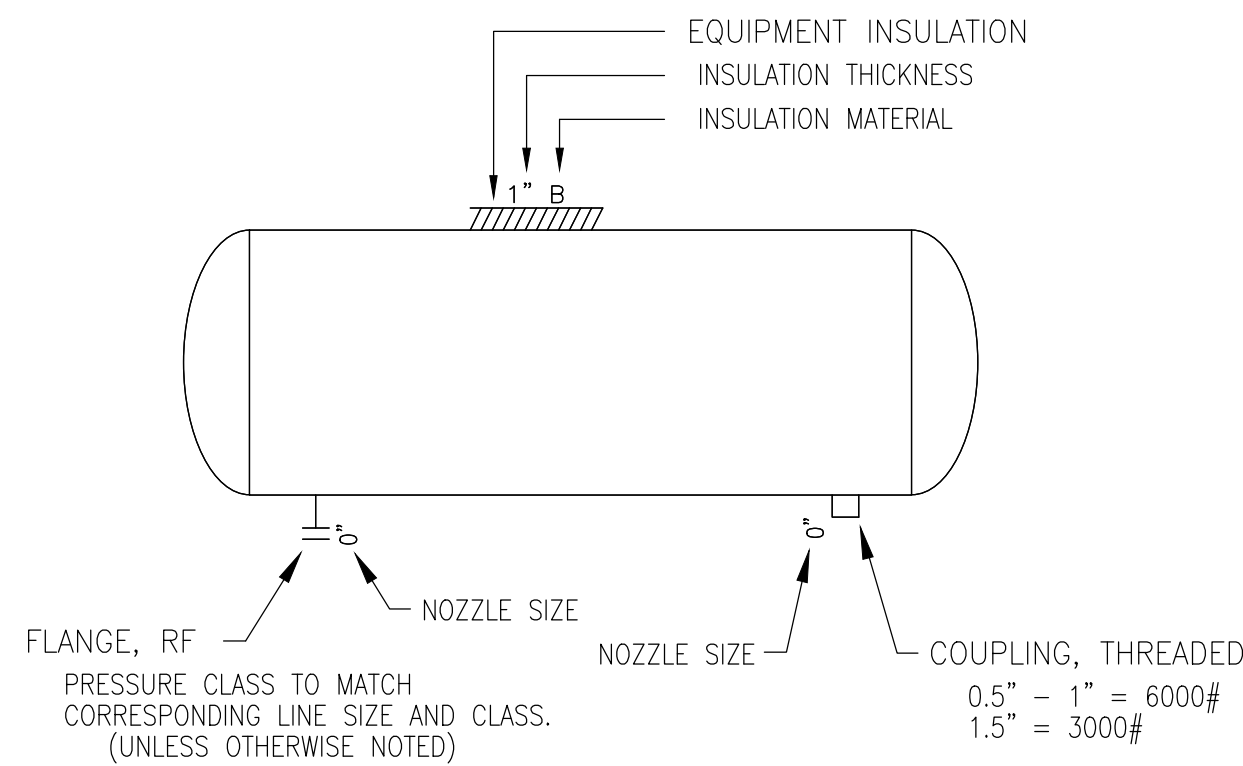
- A = 150# ANSI
- B = 300# ANSI
- D = 600# ANSI
- E = 900# ANSI
- F = 1500# ANSI
- G = 2500# ANSI

**VALVE MATERIAL**

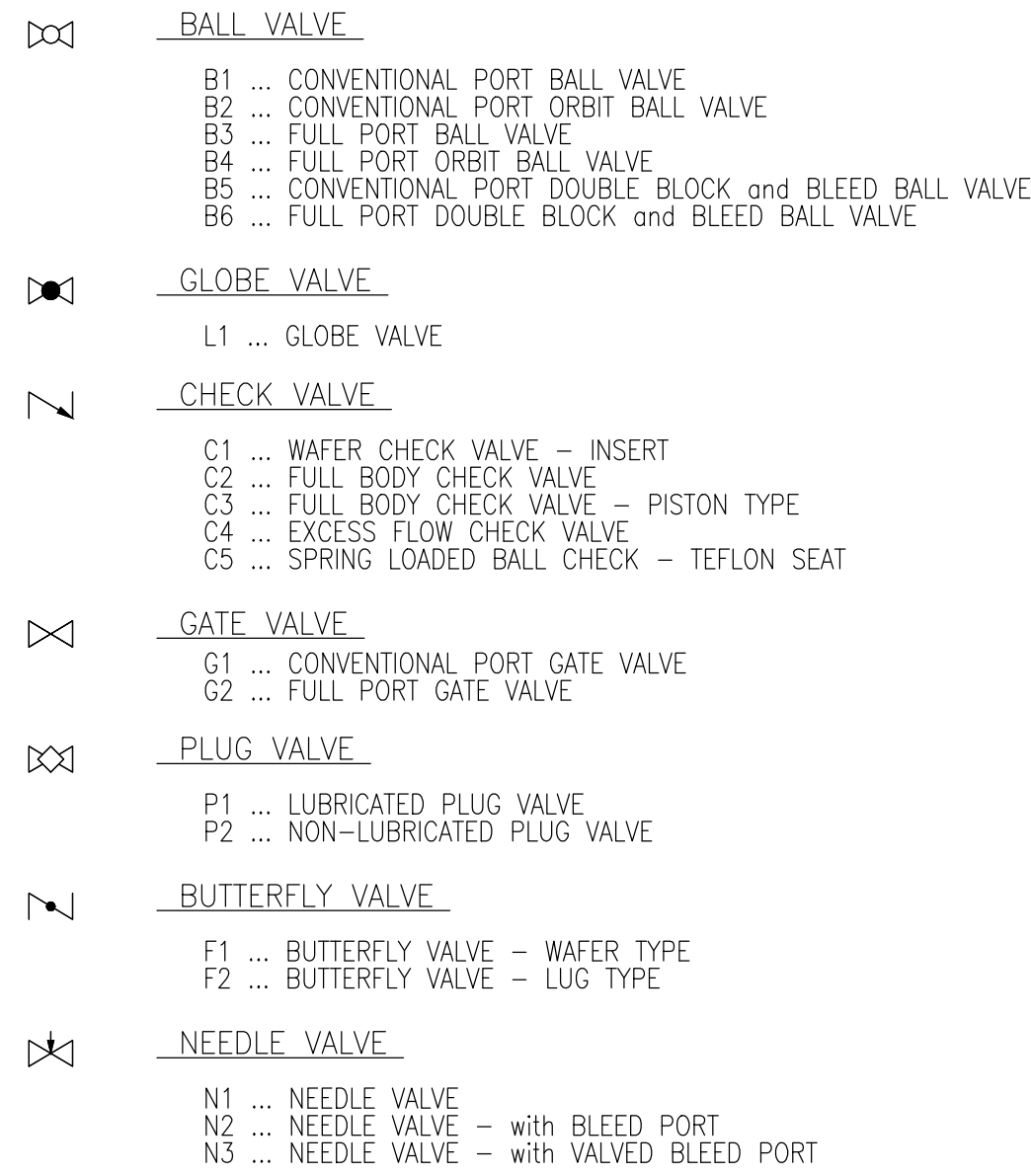
- 1 = CARBON STEEL
- 2 = LOW TEMP
- 3 = 304SS
- 4 = 316LSS
- 5 = 1 1/4 Cr. - 1/2 Mo.
- 6 = CPVC
- 7 = BRASS

**INSULATION**

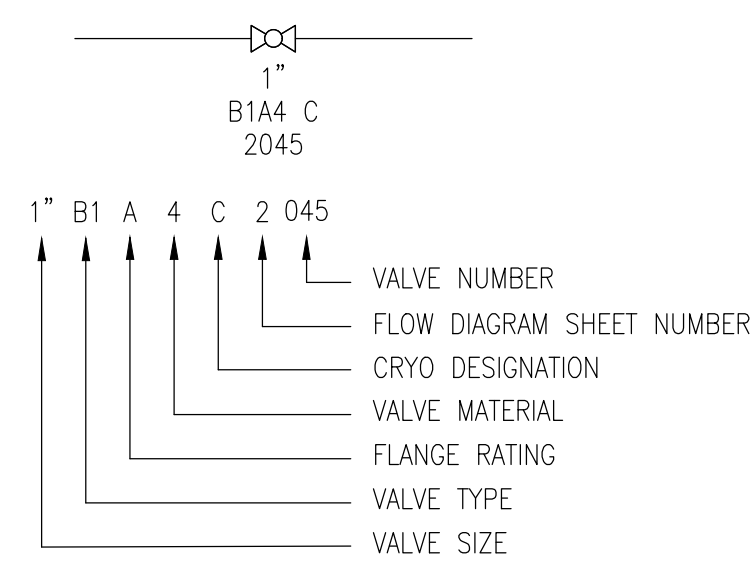
SYMBOL	SERVICE	MATERIAL
C	COLD	SEALED URETHANE, BELOW 35°F
FC	COLD	SEALED FOAMGLASS, BELOW 35°F
FCSS	COLD	SEALED FOAMGLASS (STAINLESS JACKETING)
U	HOT	UNSEALED URETHANE, 144°F to 35°F
H	HOT	CALCIUM SILICATE, ABOVE 145°F
B	HOT	CALCIUM SILICATE, PERSONNEL PROTECTION
FB	HOT	FOAM GLASS, PERSONNEL PROTECTION
FH	HOT	UNSEALED FOAMGLASS, ABOVE 145°F
FHSS	HOT	UNSEALED FOAMGLASS (STAINLESS JACKETING)
HSS	HOT	CALCIUM SILICATE (STAINLESS JACKETING)



**VALVE TYPES**

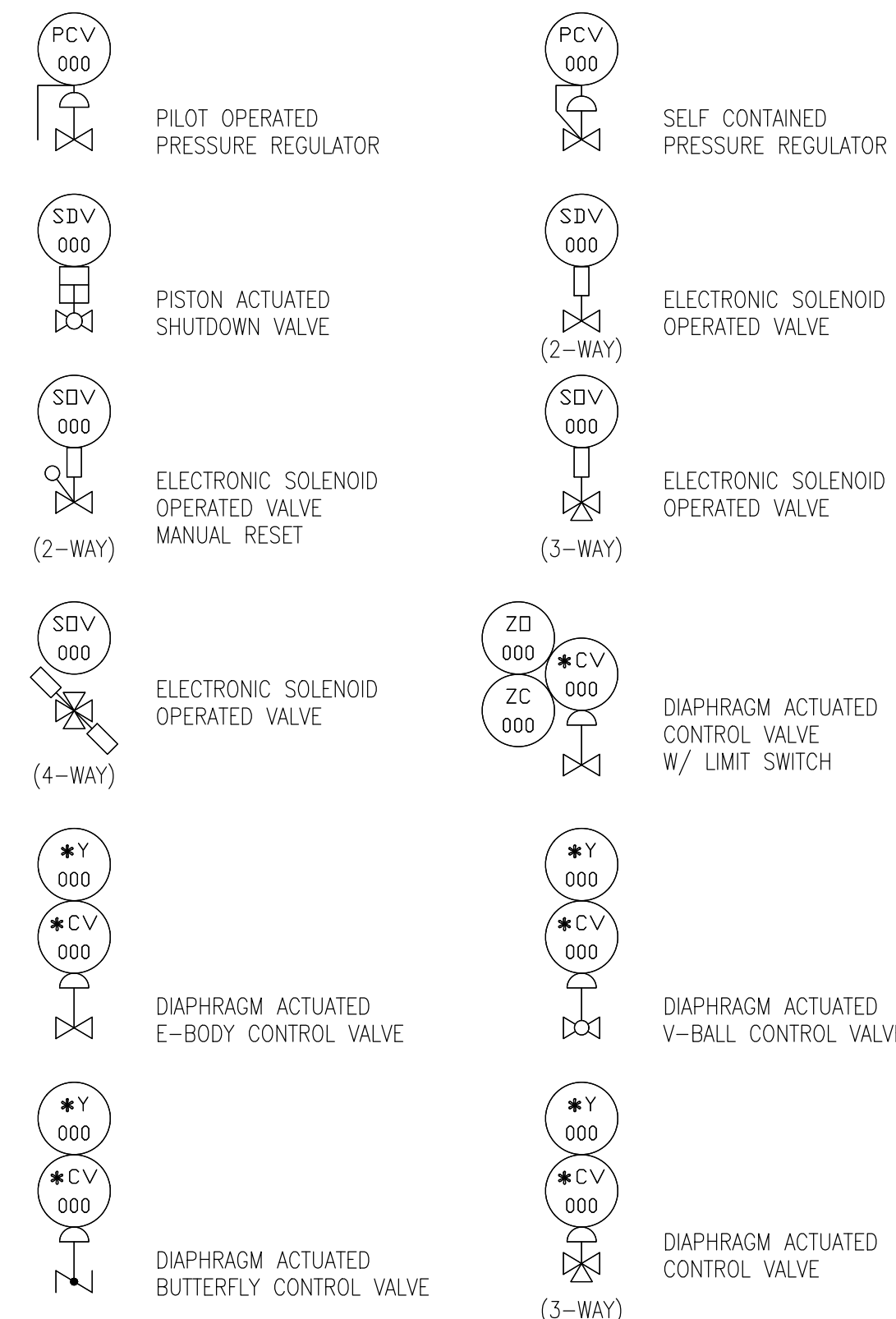


**VALVE DESCRIPTION**

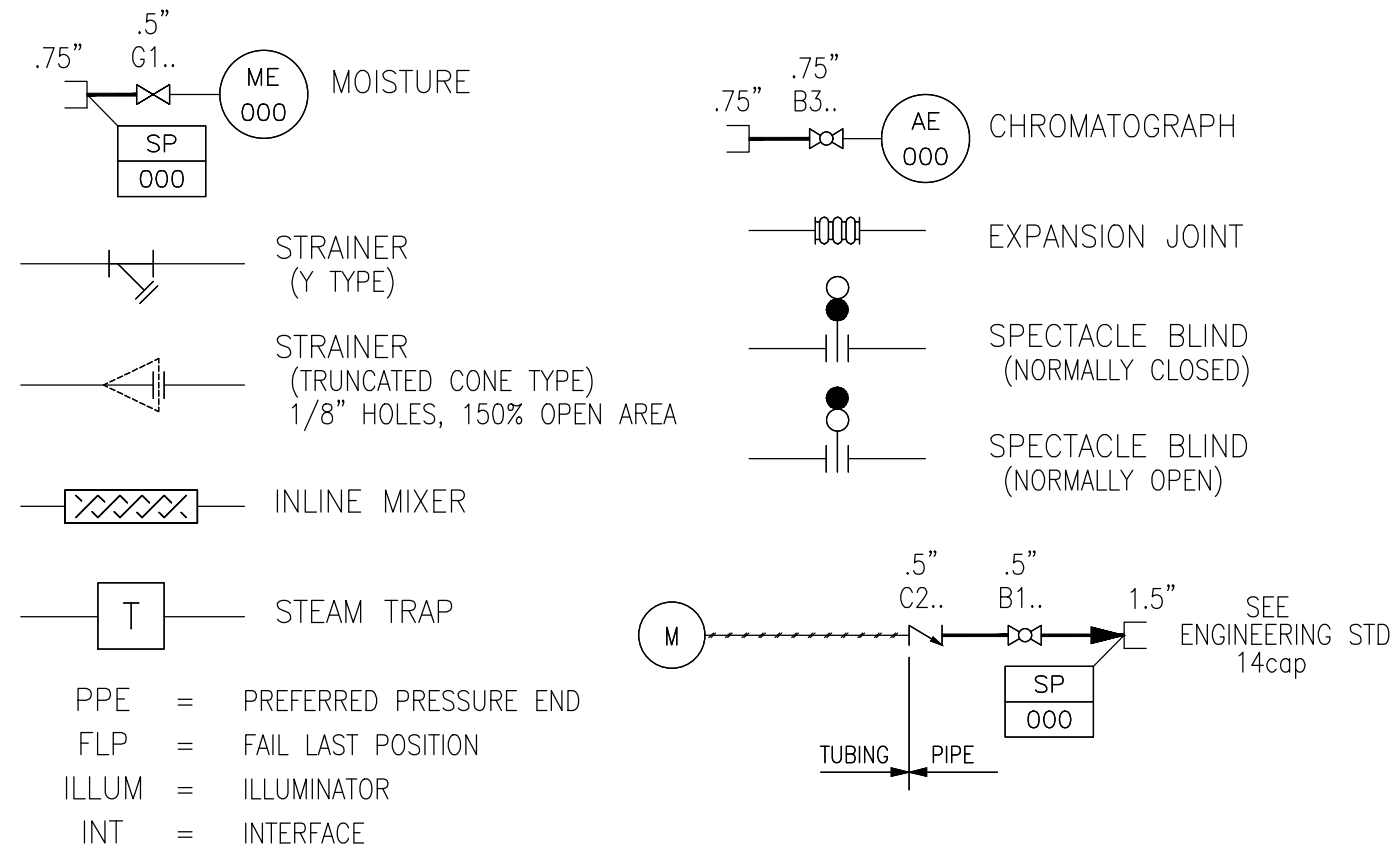


**CONTROL VALVES**

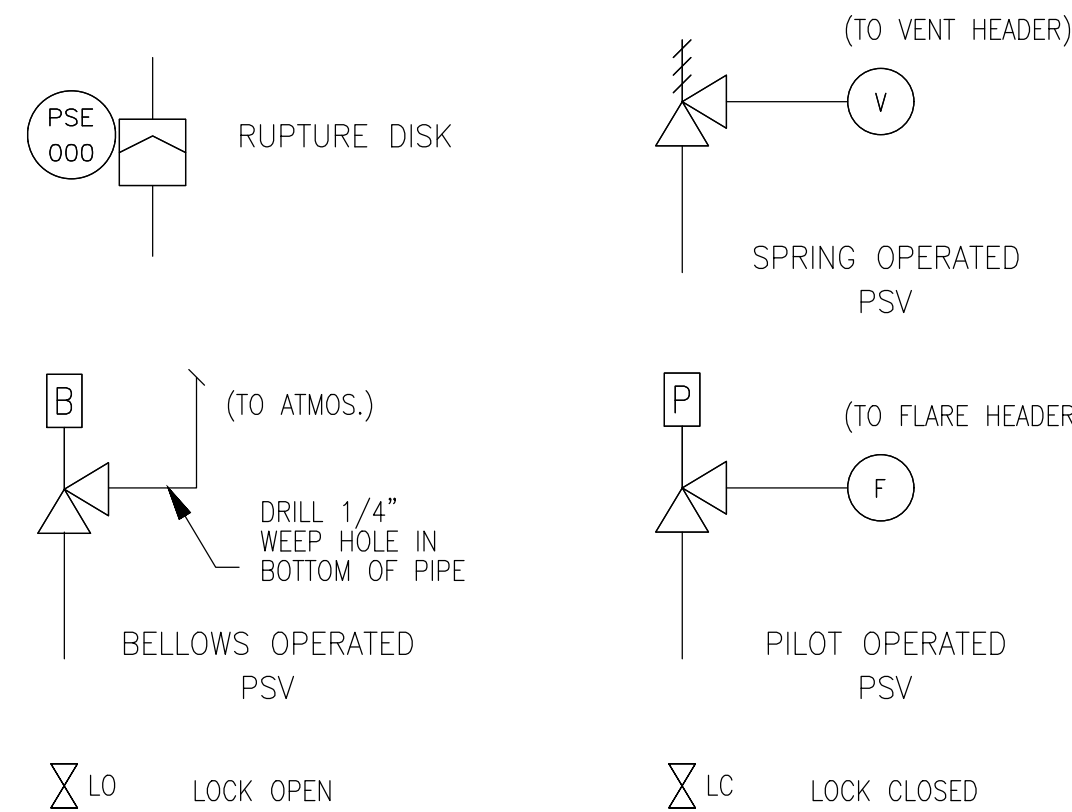
EXAMPLES: FCV, LCV, PCV, TCV, etc.  
 (\* DENOTES: F - FLOW, L - LEVEL, P - PRESSURE, T - TEMPERATURE)



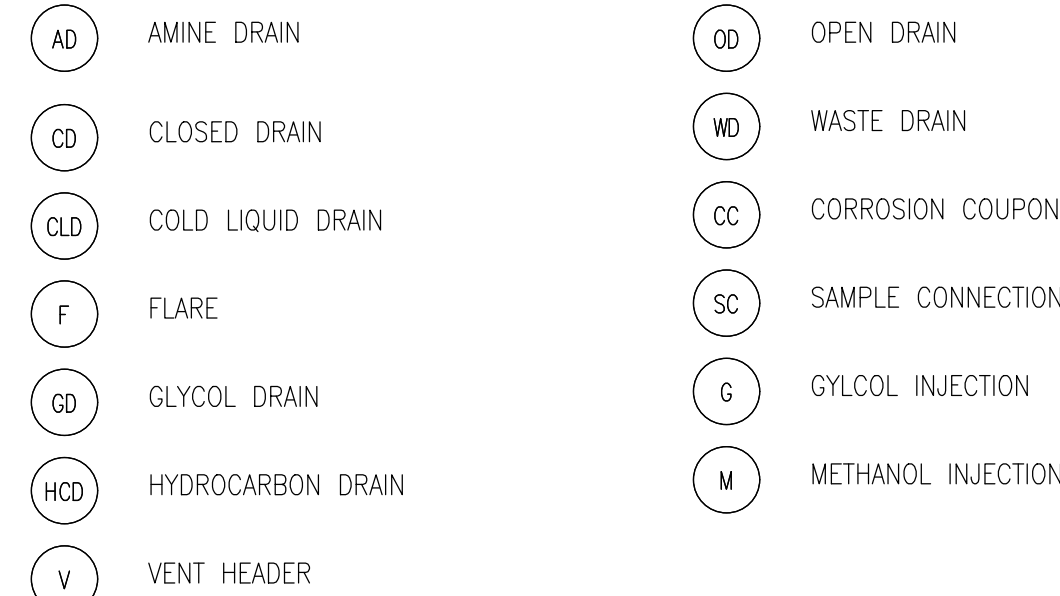
**SPECIALTY ITEMS**



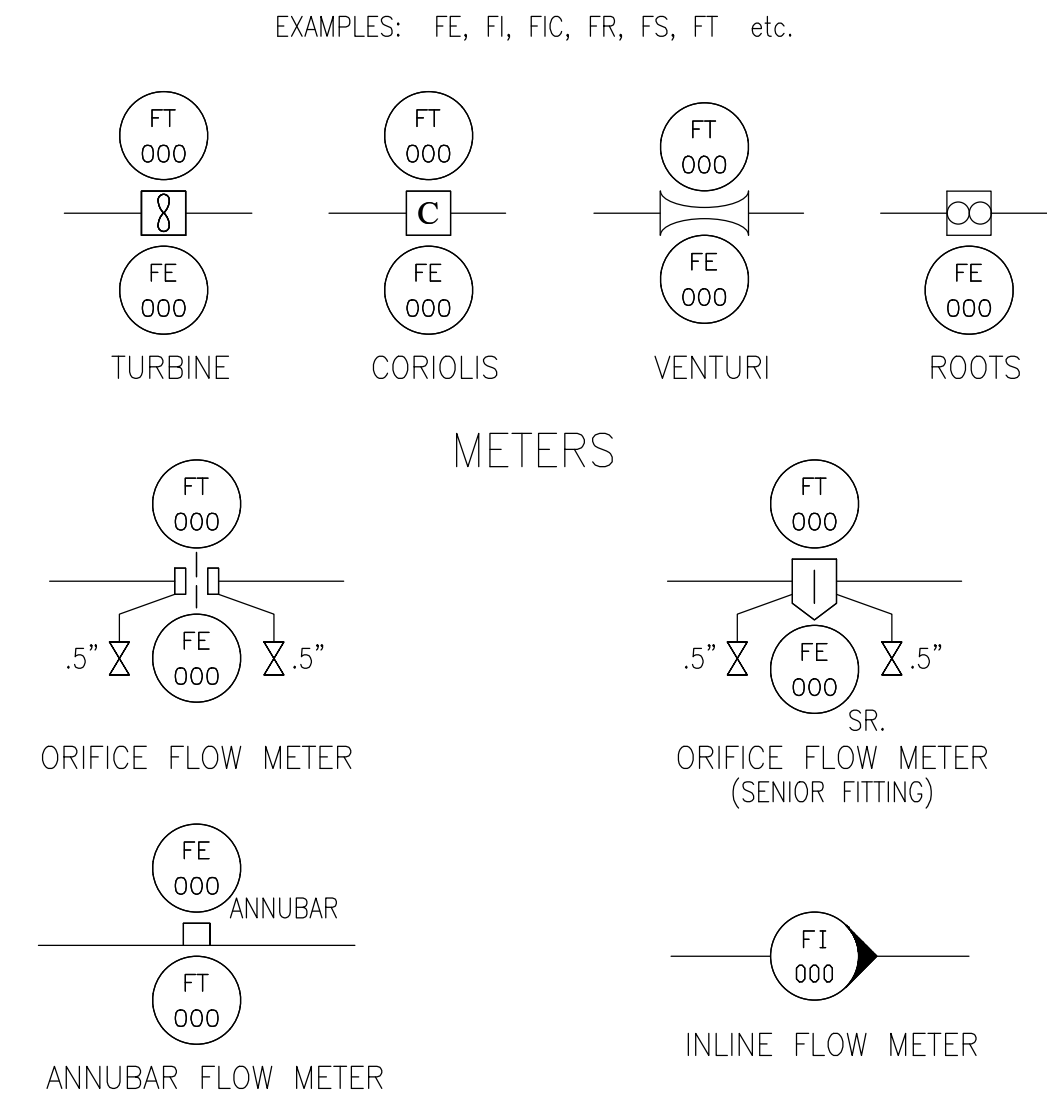
**SAFETY ITEMS**



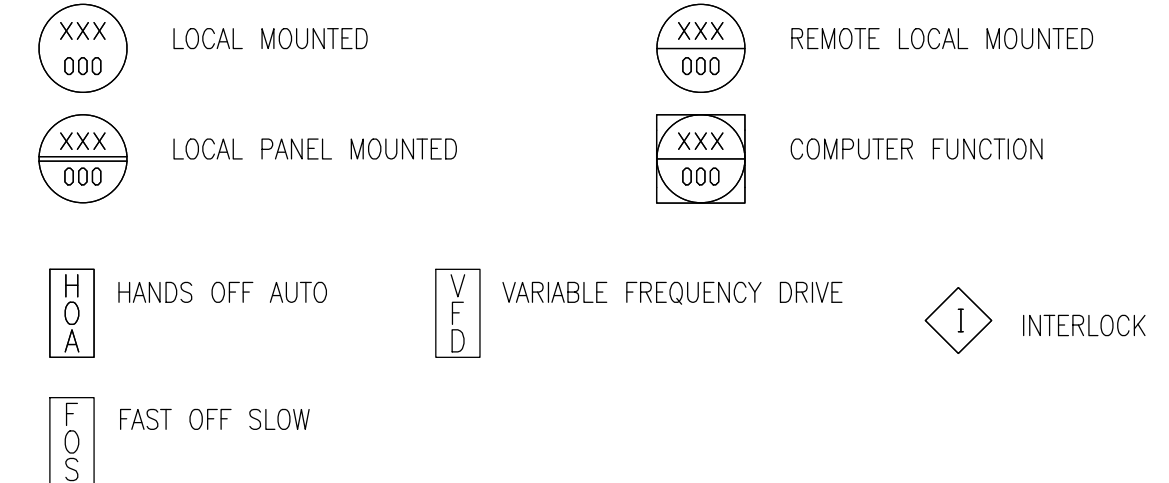
**DRAINS & VENT DESCRIPTIONS**



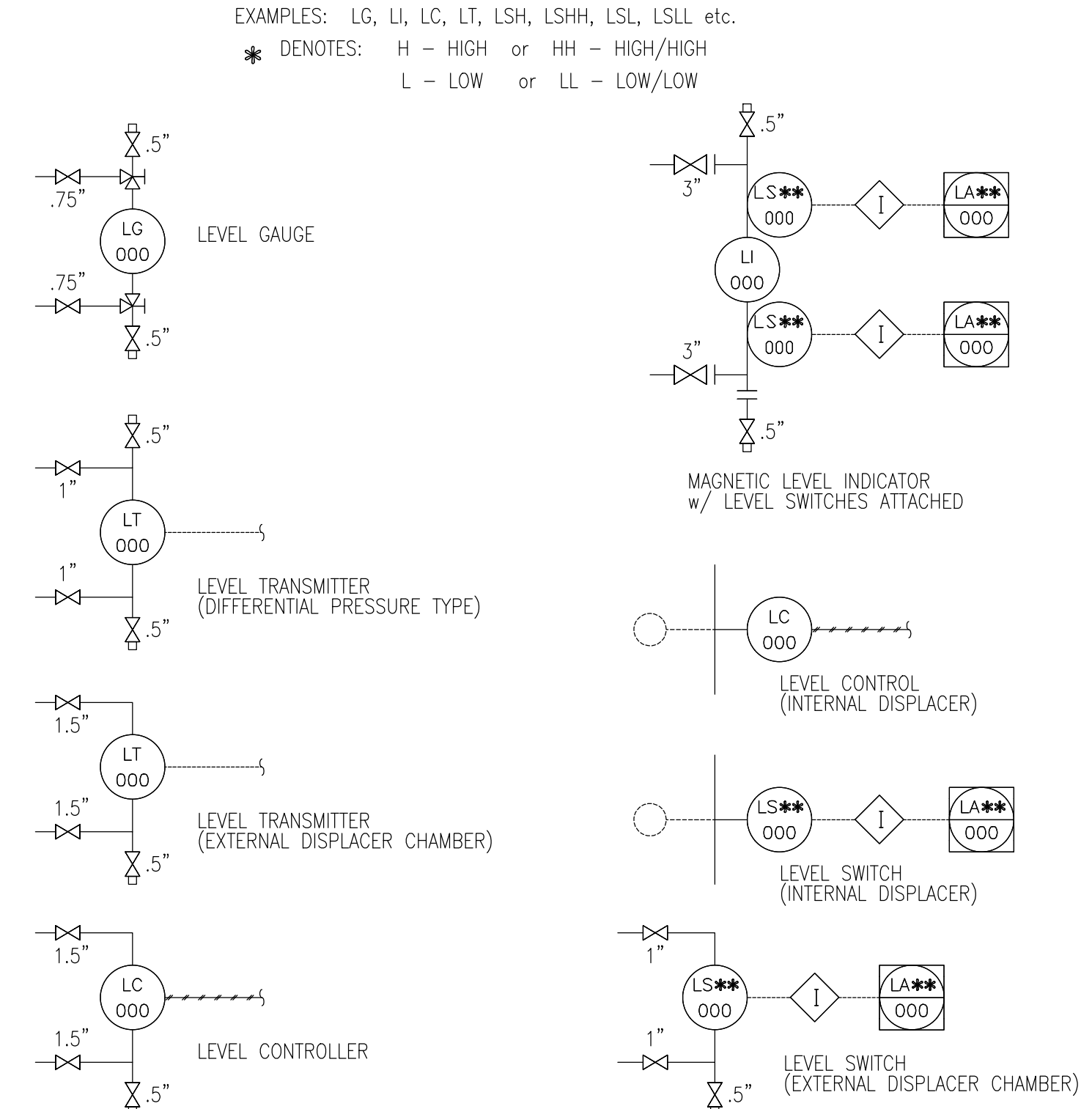
**FLOW INSTRUMENTS**



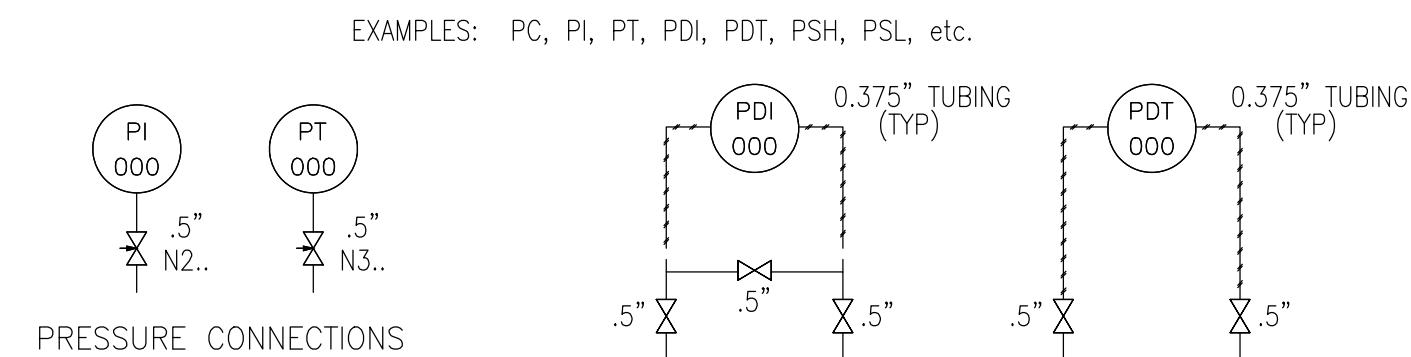
**INSTRUMENT FUNCTION SYMBOLS**



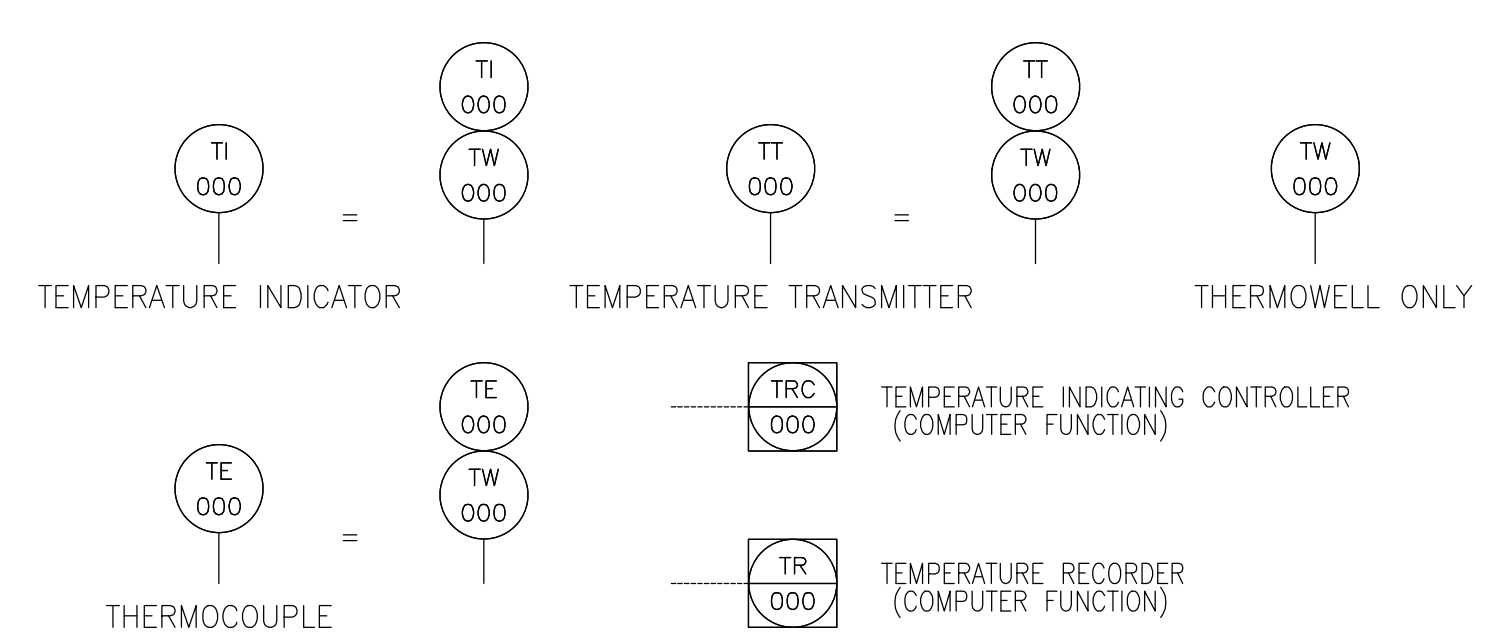
**LEVEL INSTRUMENTS**



**PRESSURE INSTRUMENTS**



**TEMPERATURE INSTRUMENTS**



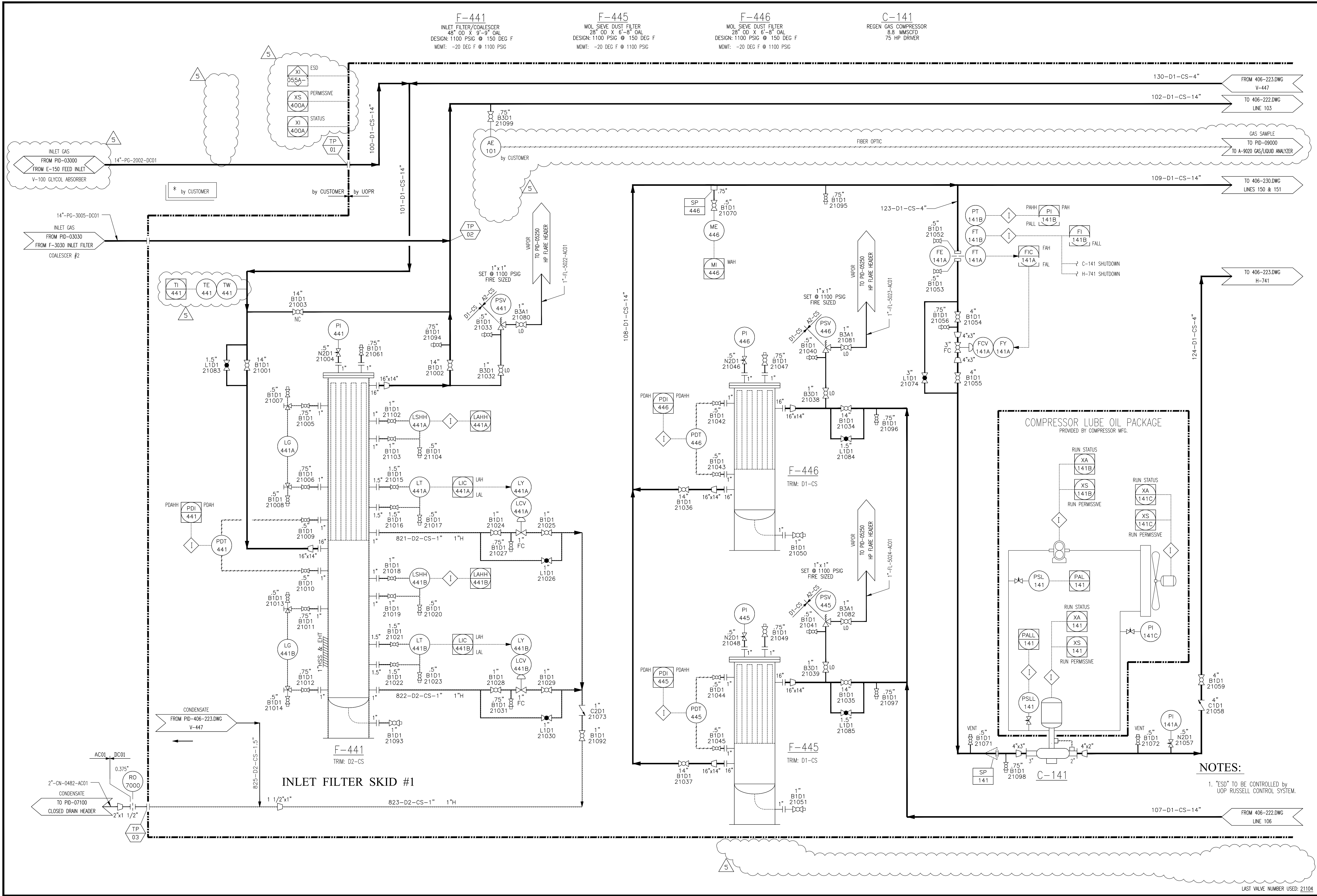
**NOTES:**

- INSTRUMENT LETTER DESIGNATIONS PER ANSI/ISA-5.1 (LATEST EDITION)
- FOR BLOCK VALVES - USE BALL OR GATE VALVES UP TO 275°F DESIGN TEMPERATURES AND GATE VALVES FOR HIGHER DESIGN TEMPERATURES.
- ALL DRAIN PIPING TO BE FREE DRAINING.
- ALL PIPING TO AND FROM PSV'S TO BE FREE DRAINING.
- HIGH POINT VENTS ARE 0.5" COUPLINGS w/PLUGS, AND LOW POINT DRAINS ARE 0.75" GATE VALVES w/PLUGS.
- ALL EQUIPMENT AND INSTRUMENTS WILL HAVE AN "\*" IN PLACE OF THE PLANT NUMBER.

UOP Russell  
 STANDARD 200 MMSF CRYO PLANT MECHANICAL FLOW DIAGRAM LEGEND SHEET  
 3 406-200  
 Sep 30, 2021 - 1:54pm  
 File Name: 406-200.dwg  
 P:\High Country Sites\Urologi Cryo\200a\

REV	DATE	BY	APP'D	DATE	DESCRIPTION
3	09-04-2013	Judi		09-04-2013	REVISIONS
2	09-04-2013	Judi		09-04-2013	REVISIONS
1	09-04-2013	Judi		09-04-2013	REVISIONS

UOP Russell  
 2950 S. Voth, Suite 210  
 Tulsa, Oklahoma 74136  
 Phone: 918-481-5888  
 Fax: 918-481-7827



REV.	5	DATE	09-04-2013	BY	Judi	DESCRIPTION	NONE
SCALE	406-221	DATE	09-04-2013	BY	Judi	DESCRIPTION	NONE
DRAWN BY	None	DATE	09-04-2013	BY	Judi	DESCRIPTION	NONE
CHECKED BY	None	DATE	09-04-2013	BY	Judi	DESCRIPTION	NONE
APPROVED BY	None	DATE	09-04-2013	BY	Judi	DESCRIPTION	NONE
DATE	09-04-2013	BY	Judi	DESCRIPTION	NONE		
DATE	02/28/20	BY	APD	DESCRIPTION	REVISIONS		
DATE	02/28/20	BY	APD	DESCRIPTION	REVISIONS		
DATE	07/17/20	BY	SR	DESCRIPTION	REVISIONS		
DATE	03/10/21	BY	SR	DESCRIPTION	REVISIONS		
DATE	10/01/21	BY	SR	DESCRIPTION	REVISIONS		
DATE	10/01/21	BY	SR	DESCRIPTION	REVISIONS		

UOP Russell  
3950 S. 14th, Suite 210  
Tulsa, Oklahoma 74136  
Phone: 918-481-5888  
Fax: 918-481-7827

STANDARD 200 MMSCFD ORYO PLANT  
MECHANICAL FLOW DIAGRAM  
INLET FILTERATION AND DUST FILTERS

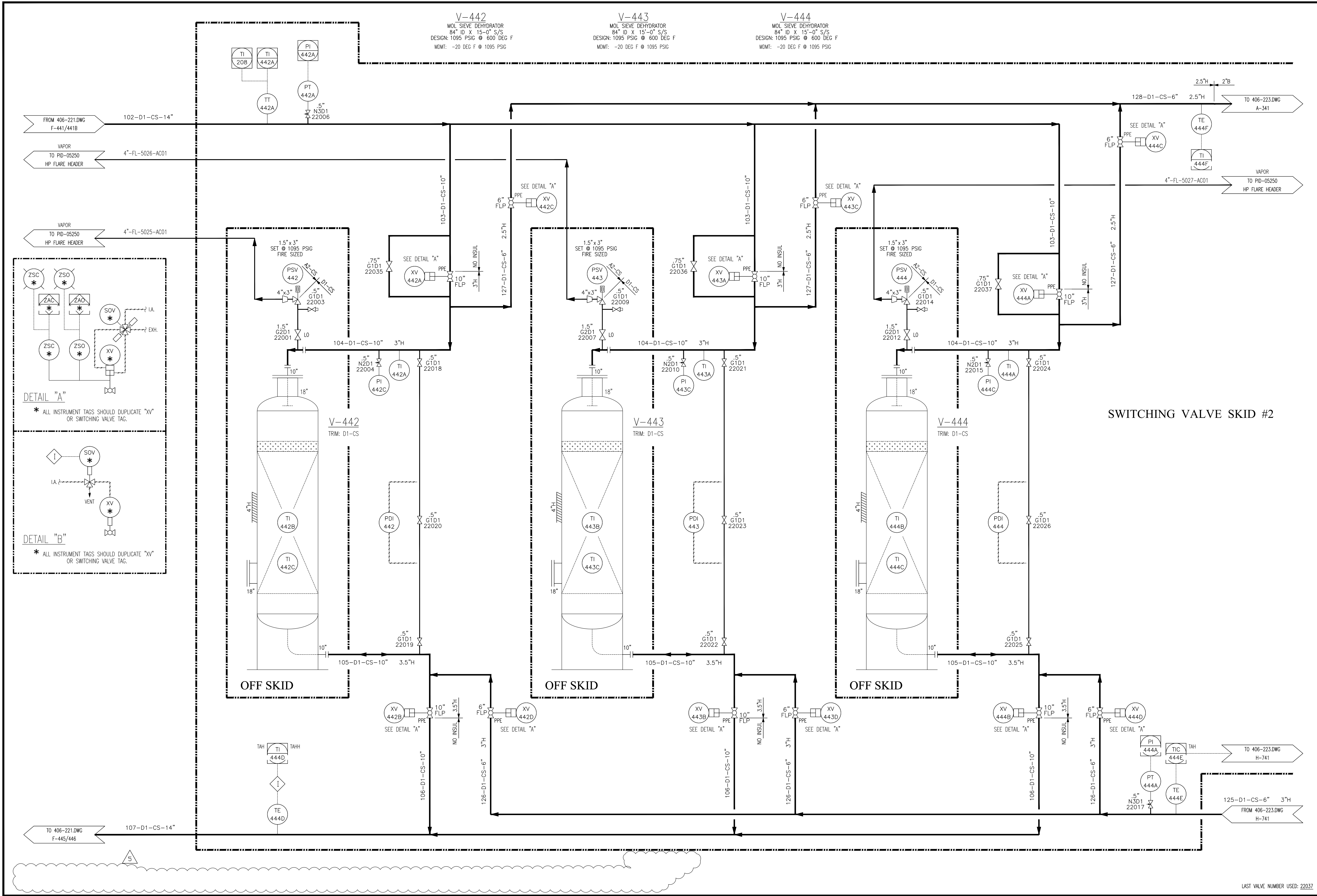
OR P.E.# 4327  
WV CO# 00745-00  
TX P.E.# F-753

File Name: 406-221.DWG

406-221  
5  
Sep 30, 2021 - 1:54pm

LAST VALVE NUMBER USED: 21104

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<p>STANDARD 200 MMSCF ORYO PLANT MECHANICAL FLOW DIAGRAM MOL SIEVE DEHYDRATORS</p>		<p>OR P.E.# 4327 UOP Russell 2950 S. Yale, Suite 210 Tulsa, Oklahoma 74136 Phone: 918-481-5285 Fax: 918-481-7827</p>			
REV.	DATE	SCALE	BY	CHKD BY	APP'D BY
5	406-222	NONE	Judi	TKF	CWR
	09-04-2013		TKF	09-04-2013	08-08-2016
	09-04-2013		Judi	09-04-2013	08-08-2016
	02/29/20		TKF	02/29/20	02/29/20
	07/17/20		TKF	07/17/20	07/17/20
	03/10/21		TKF	03/10/21	03/10/21
	10/01/21		TKF	10/01/21	10/01/21
<p>REVISIONS</p>			<p>DESCRIPTION</p>		
<p>5 APPROVED FOR CONSTRUCTION</p>			<p>5 APPROVED FOR CONSTRUCTION</p>		
<p>4 ISSUED FOR APPROVAL</p>			<p>4 ISSUED FOR APPROVAL</p>		
<p>3 ISSUED FOR REVIEW</p>			<p>3 ISSUED FOR REVIEW</p>		
<p>2 ISSUED FOR REVIEW</p>			<p>2 ISSUED FOR REVIEW</p>		
<p>1 ISSUED FOR REVIEW</p>			<p>1 ISSUED FOR REVIEW</p>		

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2950 S. YALE, SUITE 210  
TULSA, OKLAHOMA 74136  
PHONE: 918-481-5285  
FAX: 918-481-7827

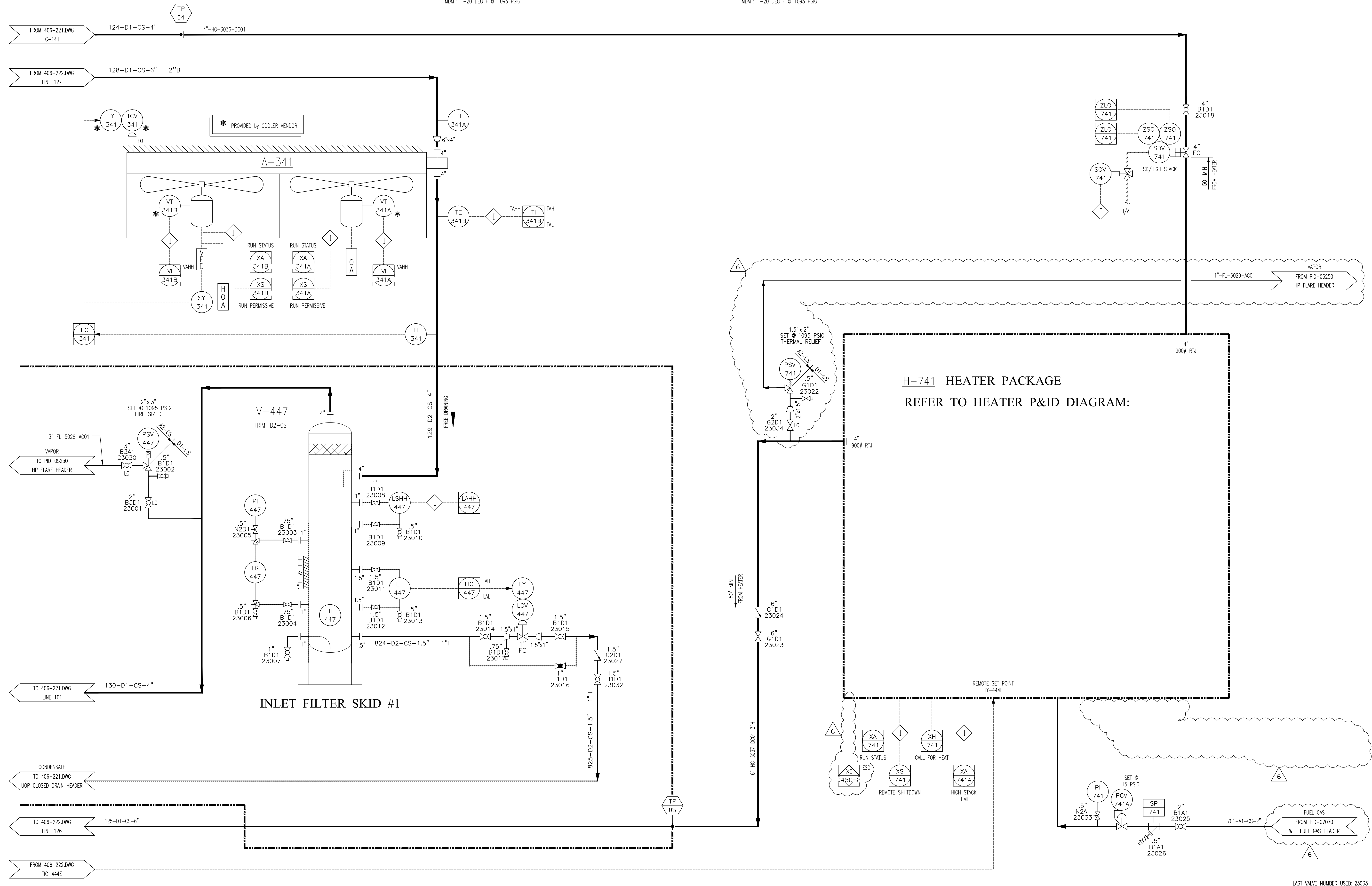
UOP RUSSELL  
2950 S. YALE, SUITE 210  
TULSA, OKLAHOMA 74136  
PHONE: 918-481-5285  
FAX: 918-481-7827

FILE NAME: 406-222.DWG  
LAST VALVE NUMBER USED: 22037  
Sep 30, 2021 - 1:53pm

**A-341**  
 REGEN GAS COOLER  
 4,062 MBTU/HR  
 18" OD x 5'-0" S/S  
 1095 PSIG @ 600 DEG F  
 (2) 10 HP MOTORS  
 MDMT: -20 DEG F @ 1095 PSIG

**V-447**  
 REGEN GAS SCRUBBER  
 18" OD x 5'-0" S/S  
 DESIGN: 1100 PSIG @ 150 DEG F  
 MDMT: -20 DEG F @ 1100 PSIG

**H-741**  
 REGEN GAS HEATER  
 5,605 MBTU/HR  
 1095 PSIG @ 650 DEG F  
 30 HP BLOWER MOTOR  
 MDMT: -20 DEG F @ 1095 PSIG



STANDARD 200 MMSCF CRYO PLANT MECHANICAL FLOW DIAGRAM REGEN GAS SYSTEM		OK P.E.# 4327 WJ CO# 00745-00 TX P.E.# F-753	5 ISSUED FOR APPROVAL 4 ISSUED FOR REVIEW 3 ISSUED FOR REVIEW 6 APPROVED FOR CONSTRUCTION REV	EMC 03/10/21 SPB 03/10/21 EMC 07/17/20 SE 07/17/20 EMC 02/28/20 SE 02/28/20 EMC 10/01/21 SPB 10/01/21	DATE APP'D DATE	REVISIONS DESCRIPTION
REV. 6 DRAWING NO. 406-223 DATE 09-04-2013 FILE 09-04-2013 FILE NAME 406-223.DWG	SALES NONE DRAWN BY Judd APPROVED BY TKF CHECKED BY CNR DATE 10-7-2016 FILE 10-7-2016	UOP Russell 2950 S. 10th, Suite 210 Tulsa, Oklahoma 74136 Phone: 918-481-5888 Fax: 918-481-7827	UOP Russell 2950 S. 10th, Suite 210 Tulsa, Oklahoma 74136 Phone: 918-481-5888 Fax: 918-481-7827	THIS DRAWING IS THE PROPERTY OF UOP RUSSELL, LLC. THIS DRAWING IS PROVIDED FOR THE SOLE PURPOSE OF MAINTAINING AND/OR OPERATING THE PLANT AND/OR RELATED EQUIPMENT DESCRIBED HEREIN. THE INFORMATION SHALL NOT BE USED FOR ANY OTHER PURPOSE. NO PART OF THIS DRAWING MAY BE REPRODUCED OR USED FOR THE PURPOSES OTHER THAN OPERATING AND/OR MAINTAINING THE PLANT AND/OR RELATED EQUIPMENT MANUFACTURED BY UOP RUSSELL, LLC WITHOUT THE EXPRESS WRITTEN CONSENT OF UOP RUSSELL, LLC. ANY DUPLICATION OF THIS DRAWING IN WHOLE OR IN PART IS A VIOLATION OF COPYRIGHT AND IS SUBJECT TO CIVIL AND CRIMINAL PENALTIES.	Sep 30, 2023 1:53pm LAST VALVE NUMBER USED: 23033	



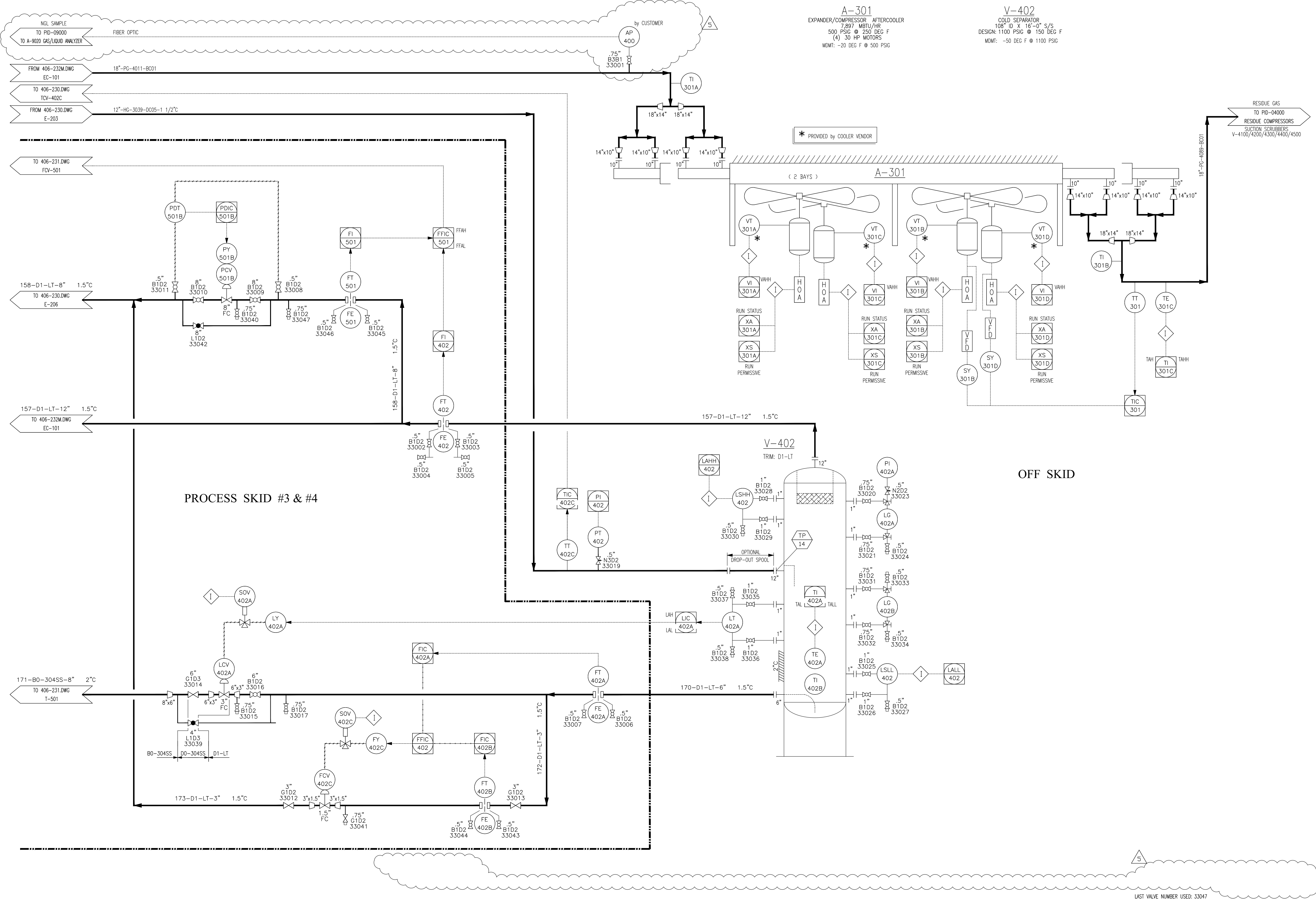






T/M

T/M



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**REVISIONS**

REV.	DATE	BY	DATE	APP'D	DESCRIPTION
1	03/10/21	EMC	03/10/21	SPB	ISSUED FOR APPROVAL
2	07/17/20	EMC	07/17/20	SB	ISSUED FOR REVIEW
3	10/01/21	EMC	10/01/21	SPB	APPROVED FOR CONSTRUCTION
4	10/01/21	EMC	10/01/21	SPB	APPROVED FOR CONSTRUCTION
5	10/01/21	EMC	10/01/21	SPB	APPROVED FOR CONSTRUCTION

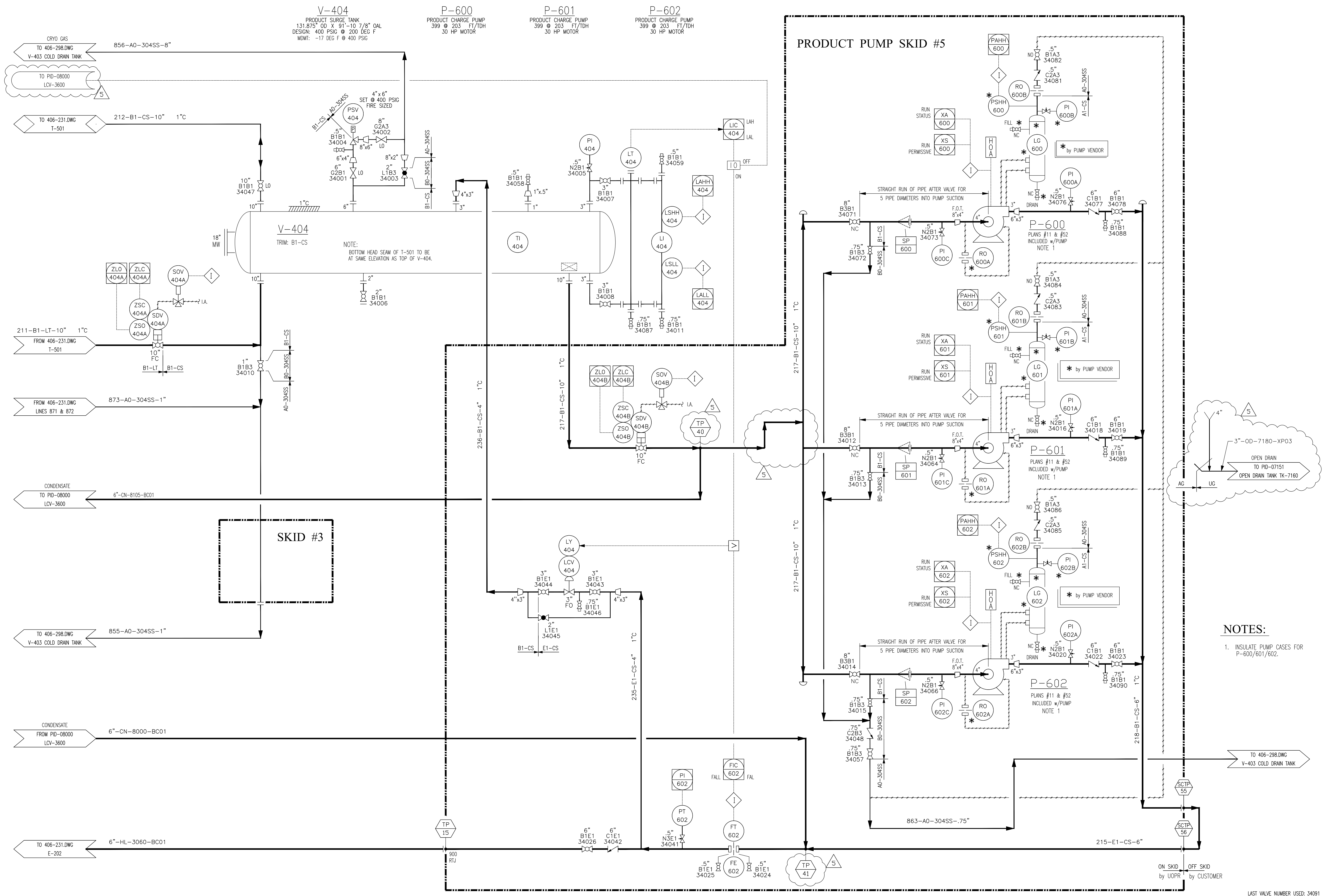
**UOP Russell**  
 200 MMSCFD CRYO PLANT  
 MECHANICAL FLOW DIAGRAM  
 EXPANDER/COMPRESSOR AND COLD SEPARATOR  
 SCALE: NONE  
 DRAWN BY: Judd  
 CHECKED BY: TKF  
 DATE: 9-04-2013  
 DATE: 9-04-2013  
 DATE: 10-7-2016  
 DWG NO: 406-233  
 SHEET: 5  
 FILE NAME: 406-233.DWG  
 P:\High Country Sites\Utterog, Cyo\PR001

STANDARD 200 MMSCFD CRYO PLANT  
 MECHANICAL FLOW DIAGRAM  
 EXPANDER/COMPRESSOR AND COLD SEPARATOR  
 SCALE: NONE  
 DRAWN BY: Judd  
 CHECKED BY: TKF  
 DATE: 9-04-2013  
 DATE: 9-04-2013  
 DATE: 10-7-2016  
 DWG NO: 406-233  
 SHEET: 5  
 FILE NAME: 406-233.DWG  
 P:\High Country Sites\Utterog, Cyo\PR001

5  
 406-233  
 NONE  
 Judd  
 TKF  
 9-04-2013  
 9-04-2013  
 10-7-2016  
 406-233  
 5  
 406-233.DWG  
 P:\High Country Sites\Utterog, Cyo\PR001

LAST VALVE NUMBER USED: 33047





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REV.	DATE	BY	APP'D	DATE	DESCRIPTION
5	10/01/21	SPB		10/01/21	APPROVED FOR CONSTRUCTION
4	03/10/21	SPB		03/10/21	ISSUED FOR APPROVAL
3	07/17/20	SB		07/17/20	ISSUED FOR REVIEW
2	02/28/20	SB		02/28/20	ISSUED FOR REVIEW

**REVISIONS**

UOP Russell  
2950 S. Yale, Suite 210  
Tulsa, Oklahoma 74136  
Phone: 918-481-5285  
Fax: 918-481-7227

STANDARD 200 MMSCFD CRYO PLANT  
MECHANICAL FLOW DIAGRAM  
PRODUCT SURGE TANK AND BOOSTER PUMPS

REV.	DATE	BY	APP'D	DATE	DESCRIPTION
5	04-2013	Judi		04-2013	NONE
4	04-2013	Judi		04-2013	NONE
3	04-2013	Judi		04-2013	NONE
2	04-2013	Judi		04-2013	NONE
1	04-2013	Judi		04-2013	NONE

File Name: 406-234.DWG P:\High Country Sales\Urolog\Urolog Cryo\234.DWG

REV: 5 406-234  
DATE: 9-04-2013 11:57am

LAST VALVE NUMBER USED: 34091





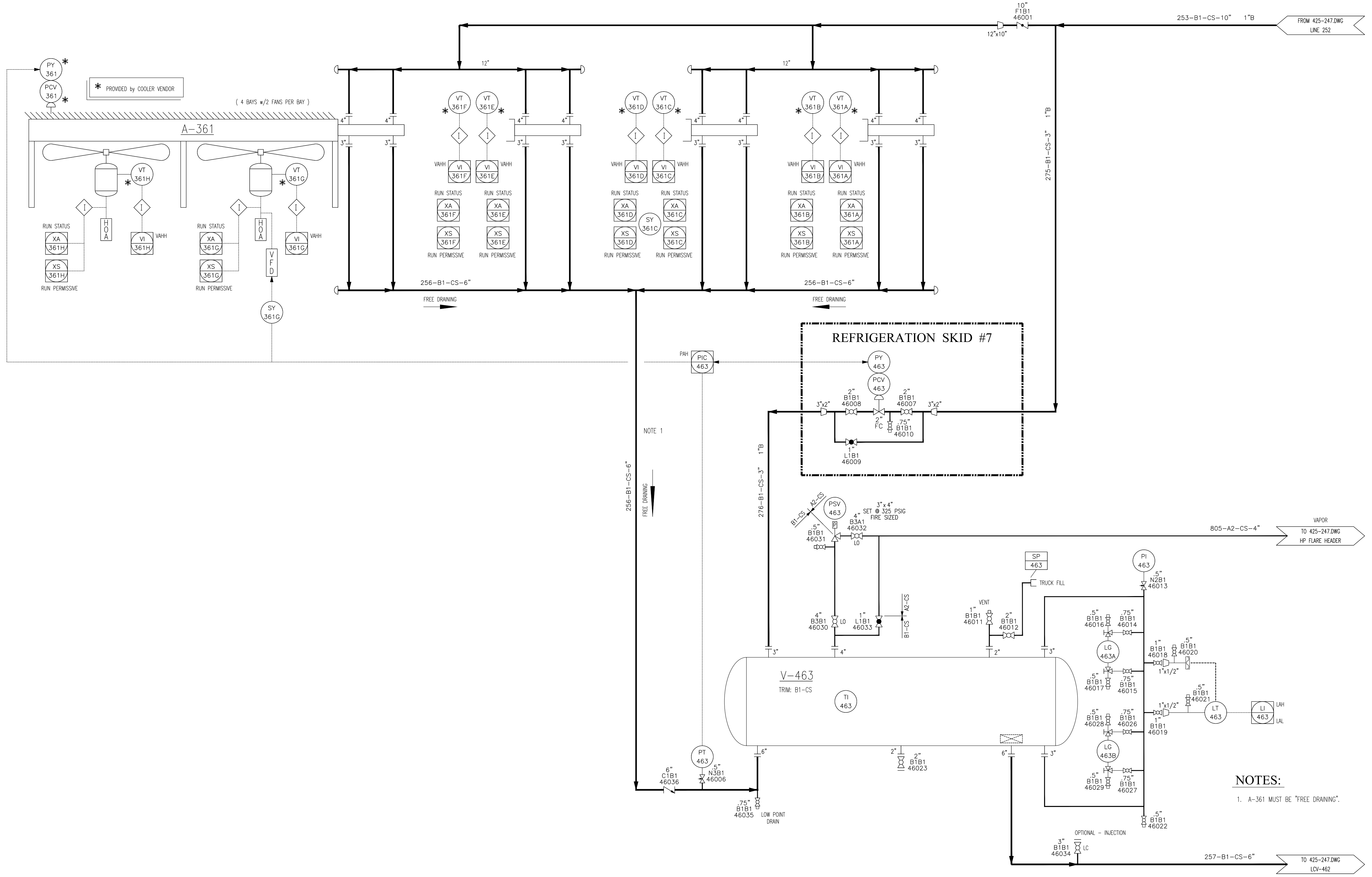






**A-361**  
 REFRIGERANT CONDENSER  
 SEE SPEC SHEET MBTU/HR  
 325 PSIG @ 250 DEG F  
 (8) 40 HP MOTORS  
 MDMT: -20 DEG F @ 325 PSIG

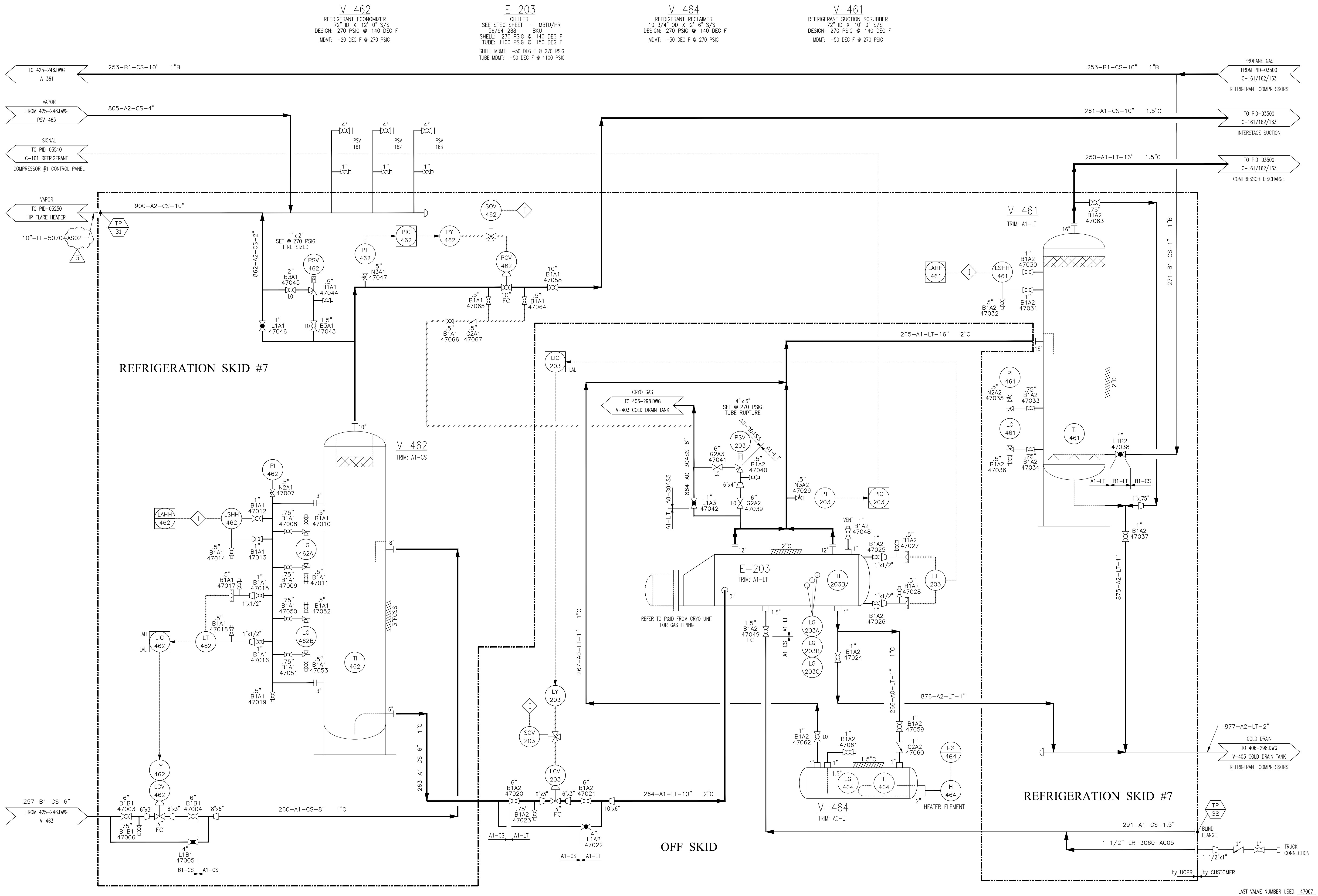
**V-463**  
 REFRIGERANT ACCUMULATOR  
 60" ID X 30" O/S  
 DESIGN: 325 PSIG @ 250 DEG F  
 MDMT: -20 DEG F @ 325 PSIG



**NOTES:**  
 1. A-361 MUST BE "FREE DRAINING".

STANDARD 4500 HP REFRIGERATION UNIT MECHANICAL FLOW DIAGRAM REFRIGERANT ACCUMULATOR AND CONDENSER		UOP Russell 2650 S. Yale, Suite 210 Tulsa, Oklahoma 74136 Phone: 918-481-5888 Fax: 918-481-7827
OR: P.E.# 4327 WJ: COM# 003745-00 TX: P.E.# F-753	1 ISSUED FOR REVIEW 4 APPROVED FOR CONSTRUCTION 3 ISSUED FOR APPROVAL 2 ISSUED FOR REVIEW	REVISIONS NO. DATE DESCRIPTION 1 10/01/21 SPB 10/01/21 2 02/28/20 SB 02/28/20 3 03/10/21 SPB 03/10/21 4 02/28/20 SB 02/28/20
4 425-246 SCALE NONE DRAWN BY KAH APPROVED BY TF DATE 9-04-2013 DATE 9-04-2013 DATE 10-7-2016	BU 10-7-2016	P:\High Country Sites\Urolog\Opre\880a\
Sep 30, 2021 - 1:58pm LAST VALVE NUMBER USED: 46036	File Name: 425-246.dwg	425-246.dwg

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REV.	DATE	BY	APP'D	DESCRIPTION
5	03/10/21	SPB	03/10/21	ISSUED FOR APPROVAL
4	07/17/20	SB	07/17/20	ISSUED FOR REVIEW
3	02/28/20	SB	02/28/20	ISSUED FOR REVIEW
2	10/01/21	SPB	10/01/21	APPROVED FOR CONSTRUCTION
1	10/01/21	SPB	10/01/21	APPROVED FOR CONSTRUCTION

OK P.E.# 4327  
 UOP Russell  
 7050 S. York, Suite 210  
 Tulsa, Oklahoma 74136  
 Phone: 918-481-5982  
 Fax: 918-481-7627

REV.	DATE	BY	APP'D	DESCRIPTION
5	04-2013	KAH	04-2013	ISSUED FOR APPROVAL
4	04-2013	TF	04-2013	ISSUED FOR REVIEW
3	04-2013	TF	04-2013	ISSUED FOR REVIEW
2	04-2013	TF	04-2013	ISSUED FOR REVIEW
1	04-2013	TF	04-2013	ISSUED FOR REVIEW

STANDARD 4500 HP REFRIGERATION UNIT  
 MECHANICAL FLOW DIAGRAM  
 REFRIGERATION UNIT

File Name: 425-247.dwg  
 Sep. 30, 2021 - 1:38pm

G/Y  
 G/Y  
 G/Y  
 G/Y

LAST VALVE NUMBER USED: 47067