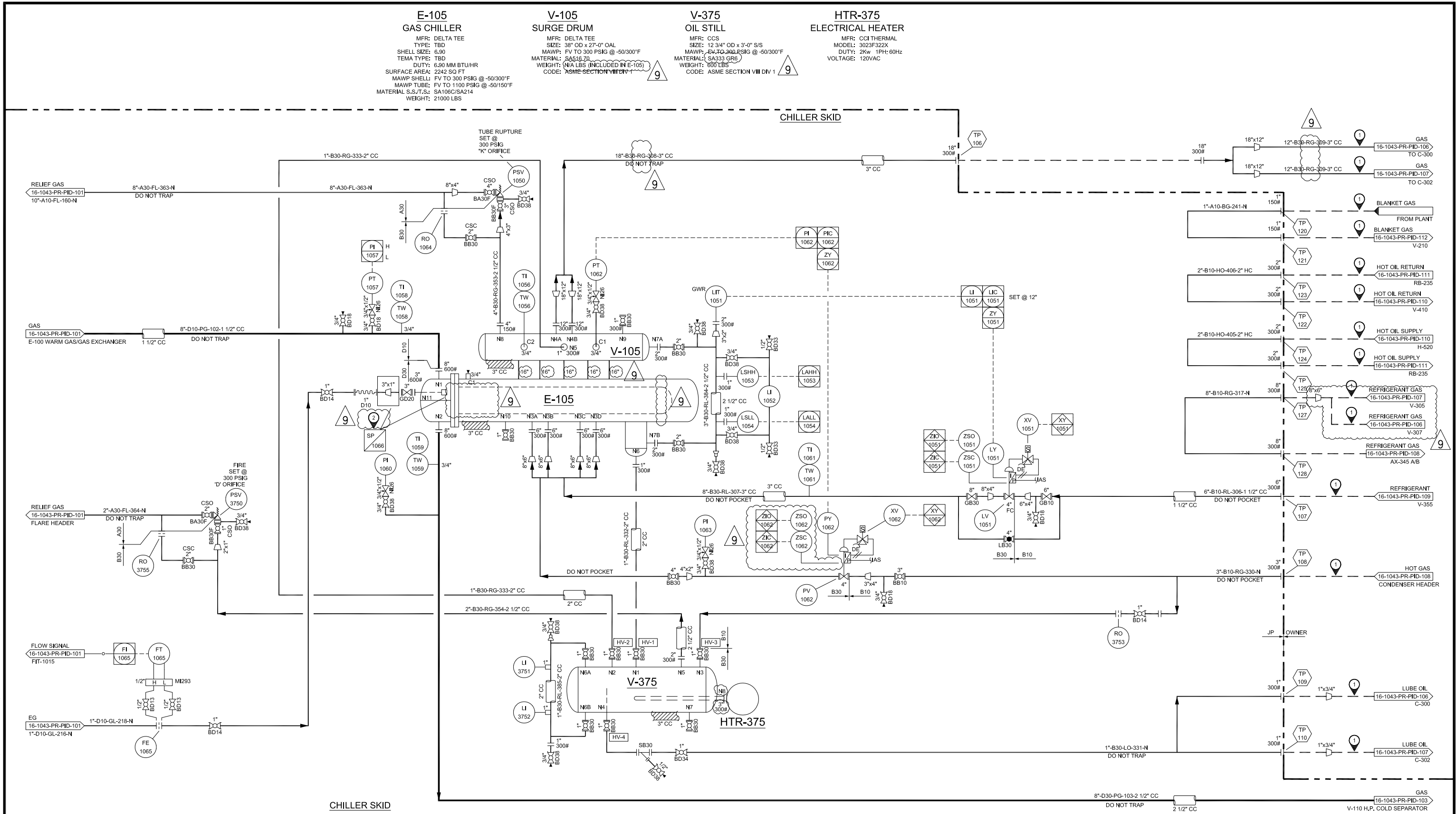


R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 P&ID AND DATABASE\16-1043-PR-PID-102



- NOTES:
- 1 INTERCONNECT PIPING / VALVING BY OTHERS.
 - 2 EG SPRAY NOZZLE ASSEMBLY PURCHASED FROM SPRAYING SYSTEMS.

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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STATUS
ISSUED FOR FABRICATION

PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENTED JT PLANT
CHILLER AND OIL STILL

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-102	9

R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 P&ID AND DATABASE\16-1043-PR-PID-103

V-110
H.P. COLD SEPARATOR

MFR: CCS
SIZE: 60" OD x 25'-0" S/S
BOOT SIZE: 30" OD x 3'-6" S/T
MAWP: FV TO 1100 PSIG @ -50/150°F
MATERIAL: SA516 70N
WEIGHT: 45,500 LBS
CODE: ASME SECTION VIII DIV 1

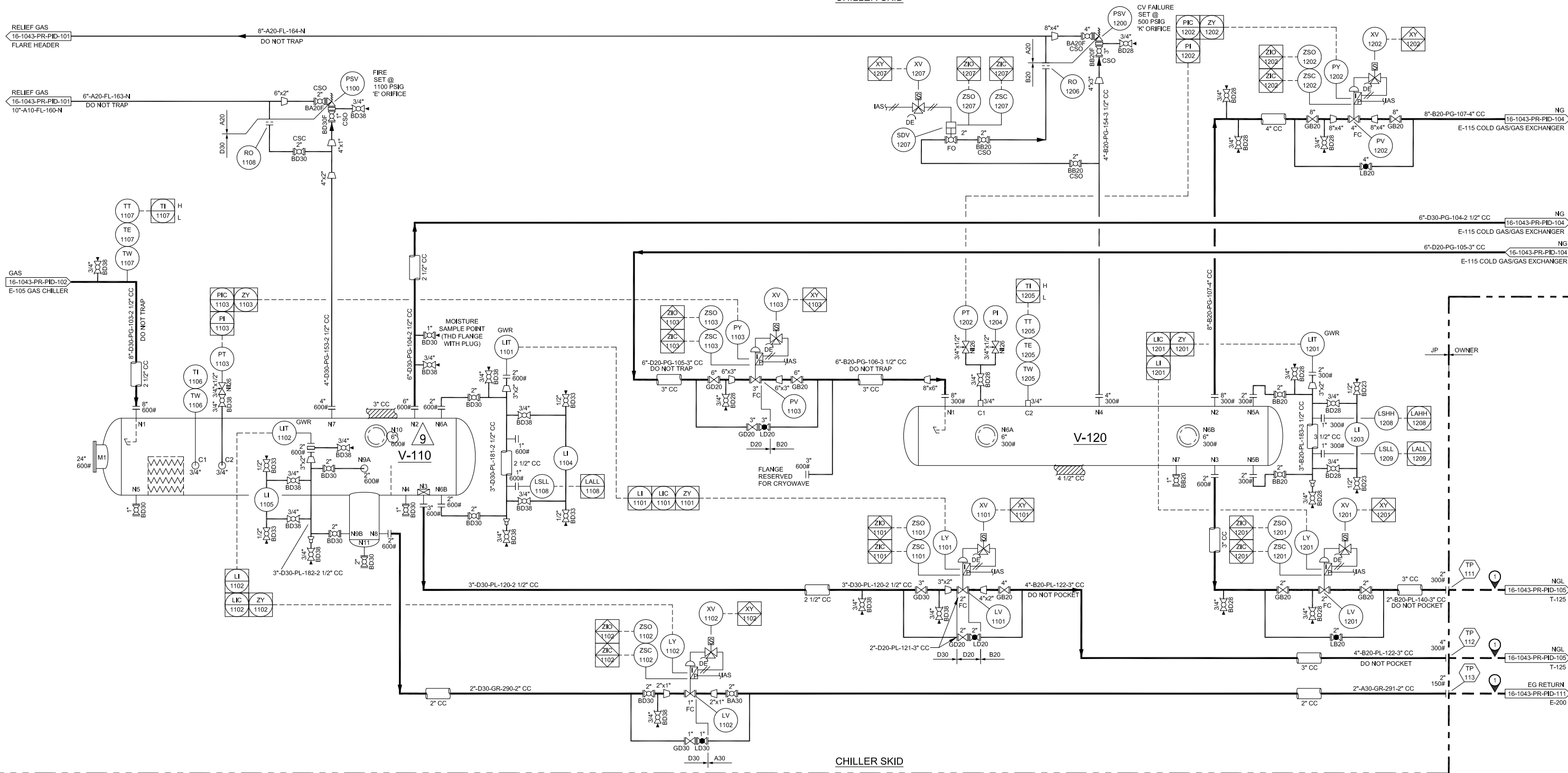
9

V-120
L.P. SEPARATOR

MFR: CCS
SIZE: 36" OD x 12'-0" S/S
MAWP: FV TO 500 PSIG @ -150/120°F
MATERIAL: SA240 304/304L
WEIGHT: 4,800 LBS
CODE: ASME SECTION VIII DIV 1

9

CHILLER SKID



NOTES:

1 INTERCONNECT PIPING / VALVING BY OTHERS.

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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STATUS
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PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
HP AND LP SEPARATOR

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-103	9

R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 P&ID AND DATABASE\16-1043-PR-PID-104

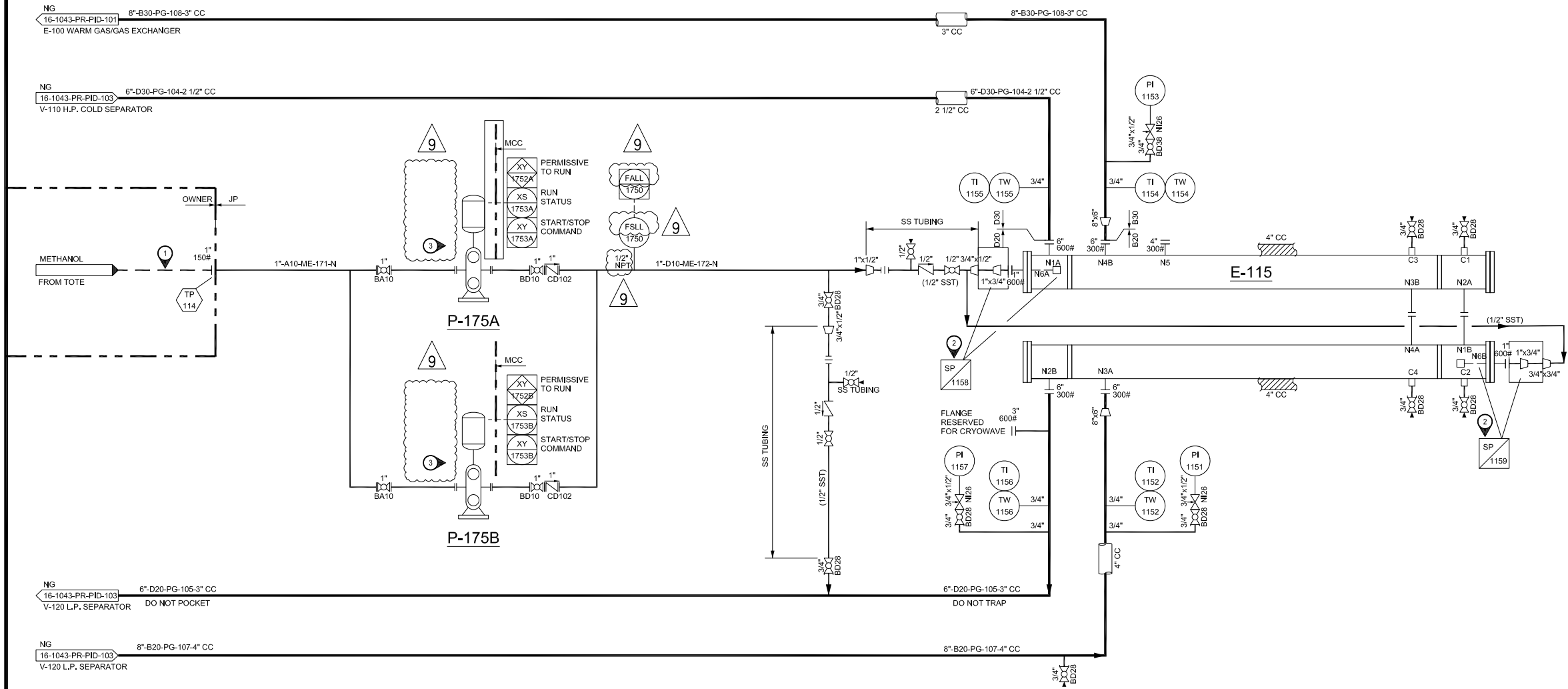
P-175A/B
METHANOL INJECTION PUMP

MFR: NEPTUNE
MODEL NO.: 500-S
TYPE: PISTON PUMP
CAPACITY: 1- 30 GPH
T.D.H.: TBD
DRIVER RATING: 1/2 HP/120 VAC/1PH
SPEED: TBD
FRAME: TBD
WEIGHT: 70 LBS

E-115
COLD GAS/GAS EXCHANGER

MFR: DELTA TEE
TYPE: NEN
SHELL SIZE: 14" OD x 30'-6 1/4" OAL
TEMA TYPE: C
DUTY: 1.79 MM BTU/HR
SURFACE AREA: 980 SQ FT
MAWP SHELL: FV TO 500 PSIG @ -150/120°F
MAWP TUBE: FV TO 1100 PSIG @ -150/120°F
MATERIAL S.S./T.S.: SA312/SA249
WEIGHT: 8500 LBS

CHILLER SKID



NOTES:

- INTERCONNECT PIPING / VALVING BY OTHERS.
- METHANOL INJ QUILL ASSEMBLY PURCHASED FROM SEBIE DISTRIBUTING INC.
- LOCAL HAND OFF AUTO CONTROLS ARE AVAILABLE AS AN OPTION

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	3/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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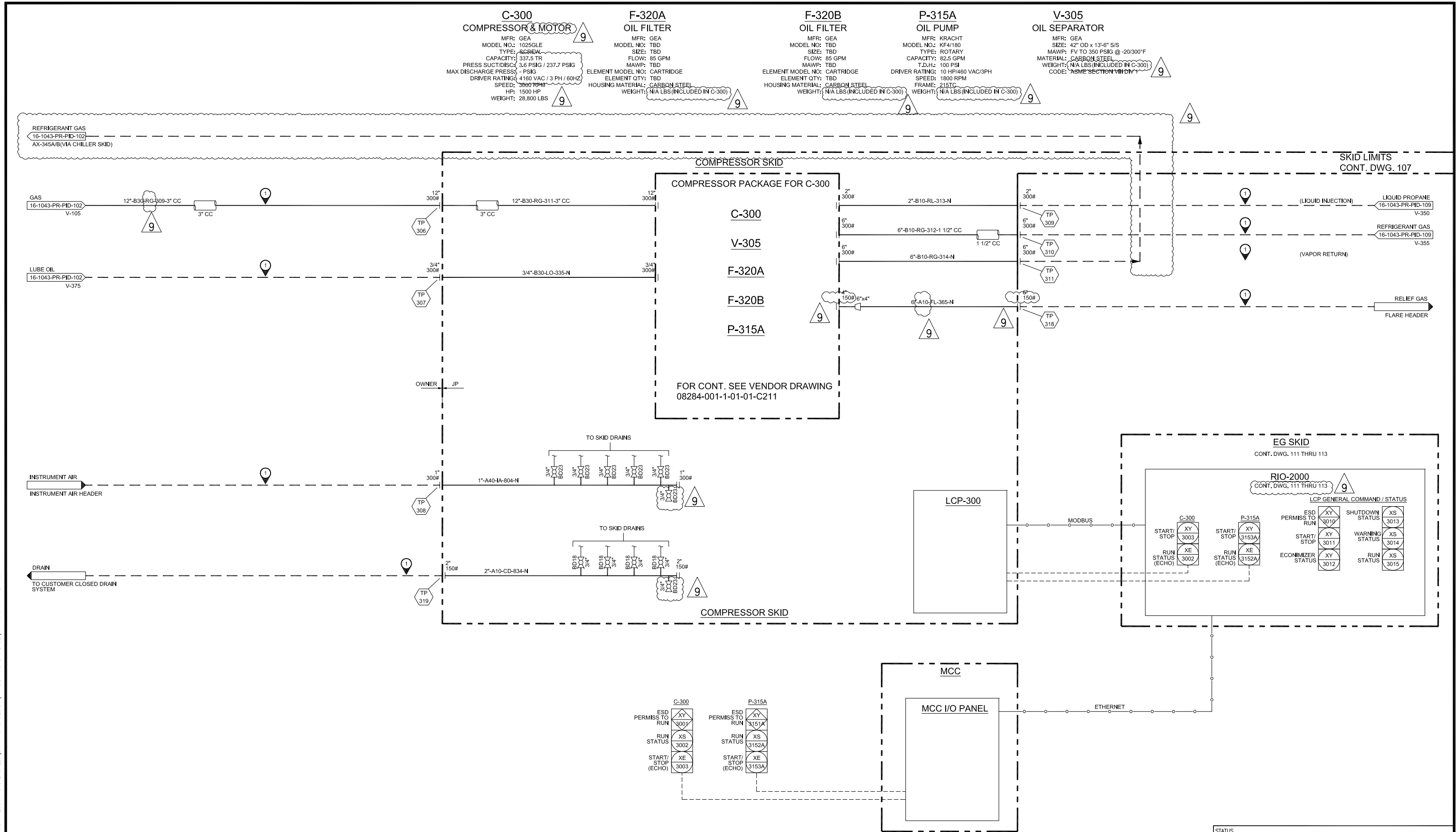
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PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
COLD GAS/GAS EXCHANGER

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-104	9

R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 P&ID AND DATABASE\16-1043-PR-PID-106



NOTES:
① INTERCONNECT PIPING / VALVING BY OTHERS.

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR DESIGN-REVISED	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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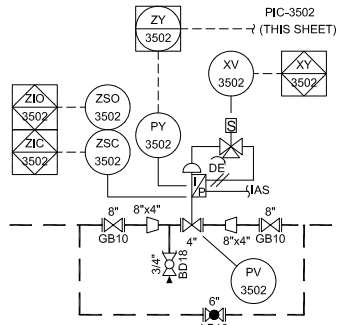
STATUS
ISSUED FOR FABRICATION

PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
COMPRESSOR PACKAGE "A"

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-106	9

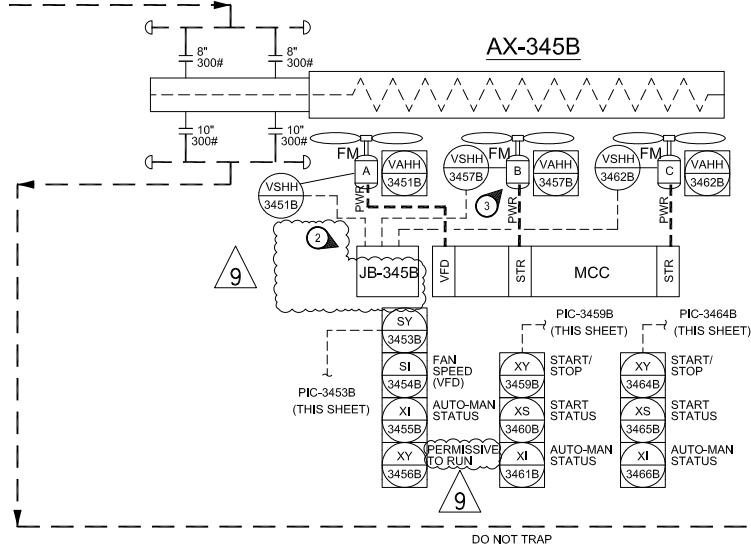
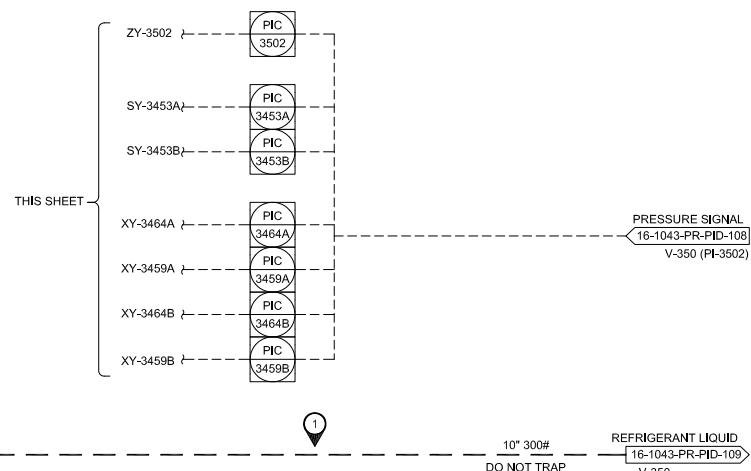
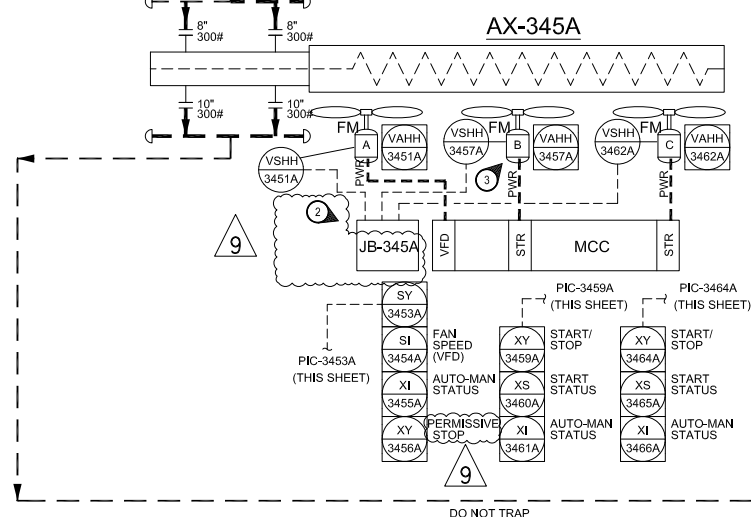
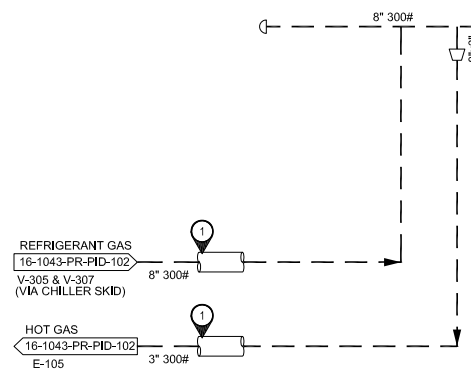
AX-345A
REFRIGERANT CONDENSER

MFR: SMITHCO ENGINEERING INC
MODEL NO.: 2 F60-160-3
TYPE: FORCED DRAFT
DUTY: 7.7 MM BTU/HR
SURFACE AREA: 205.53 SQ FT
DRIVER RATING: (3) 30 HP / 460 VAC / 3 PH / 60HZ
TUBE MAWP: 300 PSIG @ 20/300 F
MATERIAL: TUBE: SA214
WEIGHT: 105,600 LBS



AX-345B
REFRIGERANT CONDENSER

MFR: SMITHCO ENGINEERING INC
MODEL NO.: 2 F60-160-3
TYPE: FORCED DRAFT
DUTY: 7.7 MM BTU/HR
SURFACE AREA: 205.53 SQ FT
DRIVER RATING: (3) 30 HP / 460 VAC / 3 PH / 60HZ
TUBE MAWP: 300 PSIG @ 20/300 F
MATERIAL: TUBE: SA214
WEIGHT: 105,600 LBS



NOTES:

- ① INTERCONNECT PIPING / VALVING BY OTHERS.
- ② SIGNALS CONNECTED TO JB-345A, JB-345B, AND PV-3502 ARE ROUTED RIO-3000
- ③ LOCAL HAND OFF AUTO CONTROLS ARE AVAILABLE AS AN OPTION

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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PROJECT TITLE

CUSTOM COMPRESSION SYSTEMS LLC

PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
REFRIGERANT CONDENSER

SCALE

DRAWING NUMBER

REV

Joule-16-1043-PR-PID-108

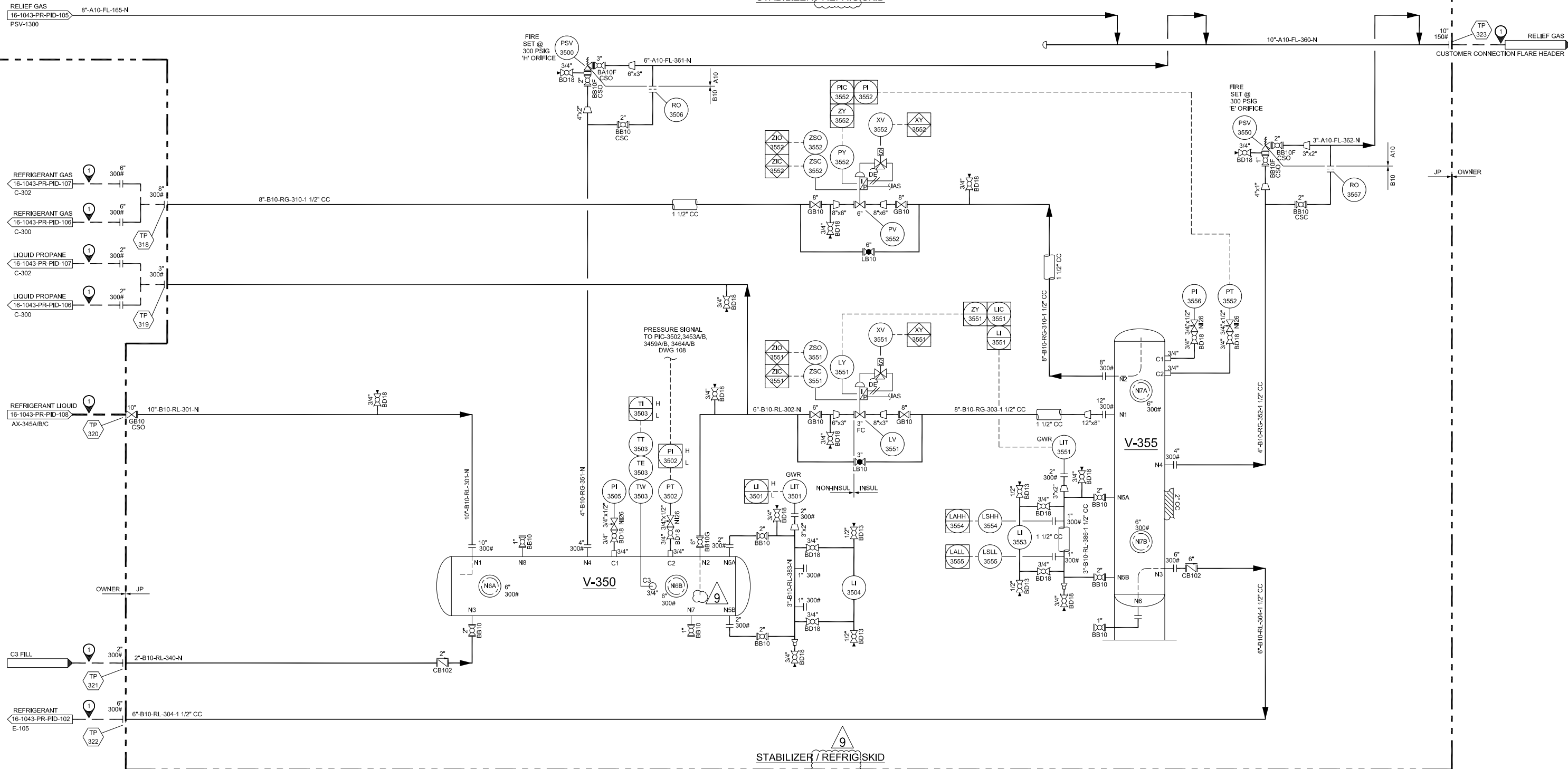
R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 P&ID AND DATABASE\16-1043-PR-PID-109

V-350
RECEIVER
MFR: CCS
SIZE: 60" OD x 25'-0" S/S
MAWP: FV TO 300 PSIG @ -20/300°F
MATERIAL: SA516 70
WEIGHT: 13643 LBS
CODE: ASME SECTION VIII DIV 1

V-355
ECONOMIZER
MFR: CCS
SIZE: 54" OD x 8'-0" S/S
MAWP: FV TO 300 PSIG @ -20/300°F
MATERIAL: SA516 70
WEIGHT: 5550 LBS
CODE: ASME SECTION VIII DIV 1

STABILIZER / REFRIG SKID

STABILIZER / REFRIG SKID



NOTES:

① INTERCONNECT PIPING / VALVING BY OTHERS.

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	ISSUED FOR FABRICATION	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
REFRIGERATION ACCESSORIES

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-109	9

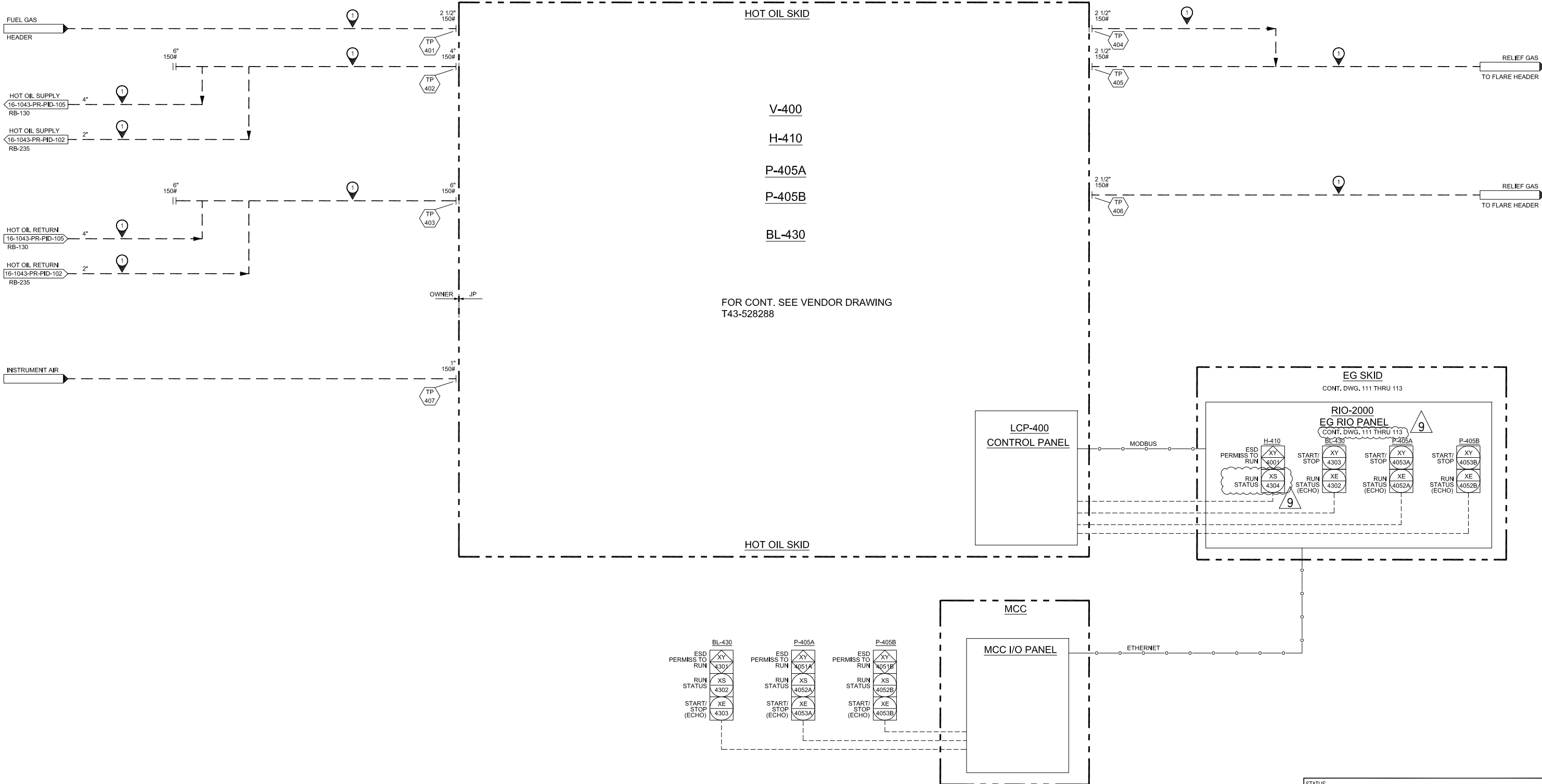
R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 PID AND DATABASE\16-1043-PR-PID-110

V-400
EXPANSION TANK
MFR: FULTON
SIZE: 48" OD x 12-9" OAL
MAWP: 150 PSIG @ -20/550°F
MATERIAL: TBD
WEIGHT: TBD
CODE: ASME SECTION VIII DIV 1

P-405A/B
HOT OIL PUMP
MFR: DEAN PUMPS
MODEL NO.: RA 3000
TYPE: CENTRIFUGAL
CAPACITY: TBD
T.D.H.: TBD
DRIVER RATING: 40 HP/480 VAC/3PH/60 HZ
SPEED: 3500 RPM
FRAME: TBD
WEIGHT: TBD LBS

H-410
HOT OIL HEATER
DUTY: 12 MM BTU/HR MM BTU/HR
WEIGHT: 51,234 LBS

BL-430
BLOWER
MFR: TBD
MODEL NO.: TBD
TYPE: TBD
CAPACITY: TBD
T.D.H.: TBD
DRIVER RATING: 60 HP/480 VAC/3PH/60 HZ
SPEED: TBD
FRAME: TBD
WEIGHT: N/A LBS (INCLUDED IN H-410)



NOTES:
① INTERCONNECT PIPING / VALVING BY OTHERS.

REV	DATE	REVISIONS	BY	CHKD	APP
3	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
4	12/16/16	NO CHANGE THIS SHEET	JC	AU	GC
5	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR DESIGN-REVISED	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
HOT OIL SKID

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-110	9

R:\ACTIVE PROJECTS\16-1043-CUSTOM COMPRESSION SYSTEMS LLC\DRAWING & DESIGN\1 PKGD AND DATABASE\16-1043-PR-PID-112

V-210
EG FLASH DRUM
MFR: CCS
SIZE: 20" OD x 5'-0" S/S
MAWP: FV TO 150 PSIG @ -20/300°F
MATERIAL: SA106B
WEIGHT: 800 LBS
CODE: ASME SECTION VIII DIV 1

F-215
EG PRE-FILTER
MFR: FISCHER-ROBERTSON
MODEL NO: SL112-2F-SW-150-A-MOD
SIZE: 8" OD x 3'-11 5/8" OAL
FLOW: 4.5 GPM
MAWP: FV TO 150 PSIG @ -20/300°F
ELEMENT MODEL NO: BAG FILTER / MF-PO-5-2-PS
ELEMENT QTY: 1
HOUSING MATERIAL: CARBON STEEL
WEIGHT: 101 LBS

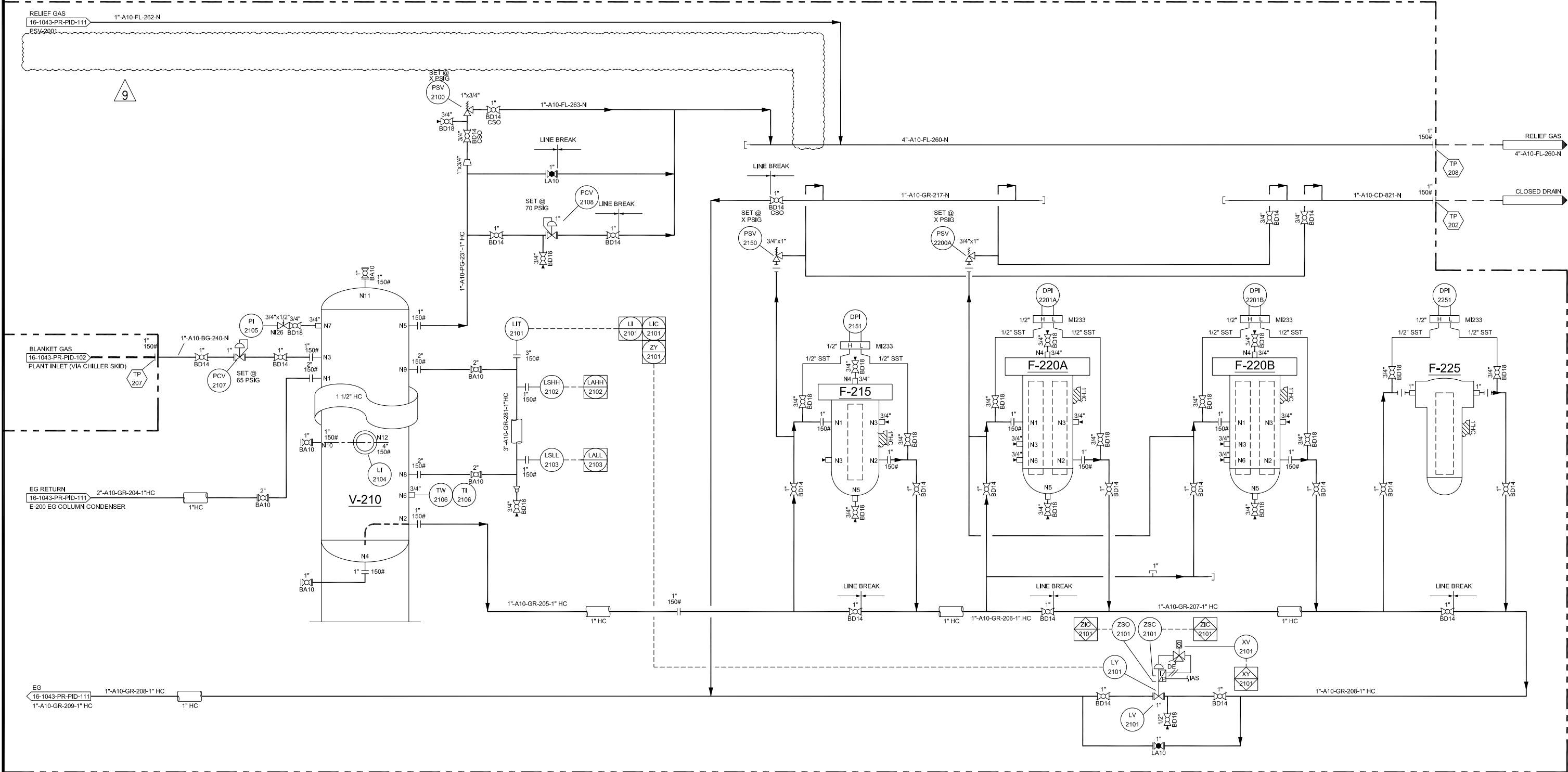
F-220A
EG CHARCOAL FILTER
MFR: FIL-TREK
MODEL NO: VC12-02-22-1P-150
SIZE: 12 3/4" OD x 6'-1 5/8" OAL
FLOW: 4.5 GPM
MAWP: FV TO 150 PSIG @ -20/300°F
ELEMENT MODEL NO: CC-1122-C
ELEMENT QTY: 2
HOUSING MATERIAL: CARBON STEEL
WEIGHT: 350 LBS

F-220B
EG CHARCOAL FILTER
MFR: FIL-TREK
MODEL NO: VC12-02-22-1P-150
SIZE: 12 3/4" OD x 6'-1 5/8" OAL
FLOW: 4.5 GPM
MAWP: FV TO 150 PSIG @ -20/300°F
ELEMENT MODEL NO: CC-1122-C
ELEMENT QTY: 2
HOUSING MATERIAL: CARBON STEEL
WEIGHT: 350 LBS

F-225
EG AFTER-FILTER
MFR: FISCHER-ROBERTSON
MODEL NO: GFHD131ND430
SIZE: 4 3/16" OD x 3'-0" OAL
FLOW: 4.5 GPM
MAWP: 300 PSIG @ -20/300°F
ELEMENT MODEL NO: GG5A30A
ELEMENT QTY: 1
HOUSING MATERIAL: 304 SS
WEIGHT: 90 LBS

EG SKID

EG SKID



NOTES:
① INTERCONNECT PIPING / VALVING BY OTHERS.

REV	DATE	REVISIONS	BY	CHKD	APP
3	11/23/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
4	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
5	12/16/16	ISSUED FOR FABRICATION	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
EG FILTRATION SECTION

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-112	9

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P-240A/B
EG PUMP

MFR: CAT
MODEL NO.: 5CP6190
TYPE: TRIPLEX PLUNGER PUMP
CAPACITY: 6.18 GPM
T.D.H.: 997 PSI
DRIVER RATING: 5 HP/480 VAC/3PH
SPEED: 1755 RPM
FRAME: 184T
WEIGHT: TBD

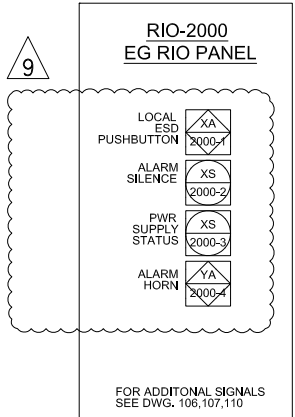
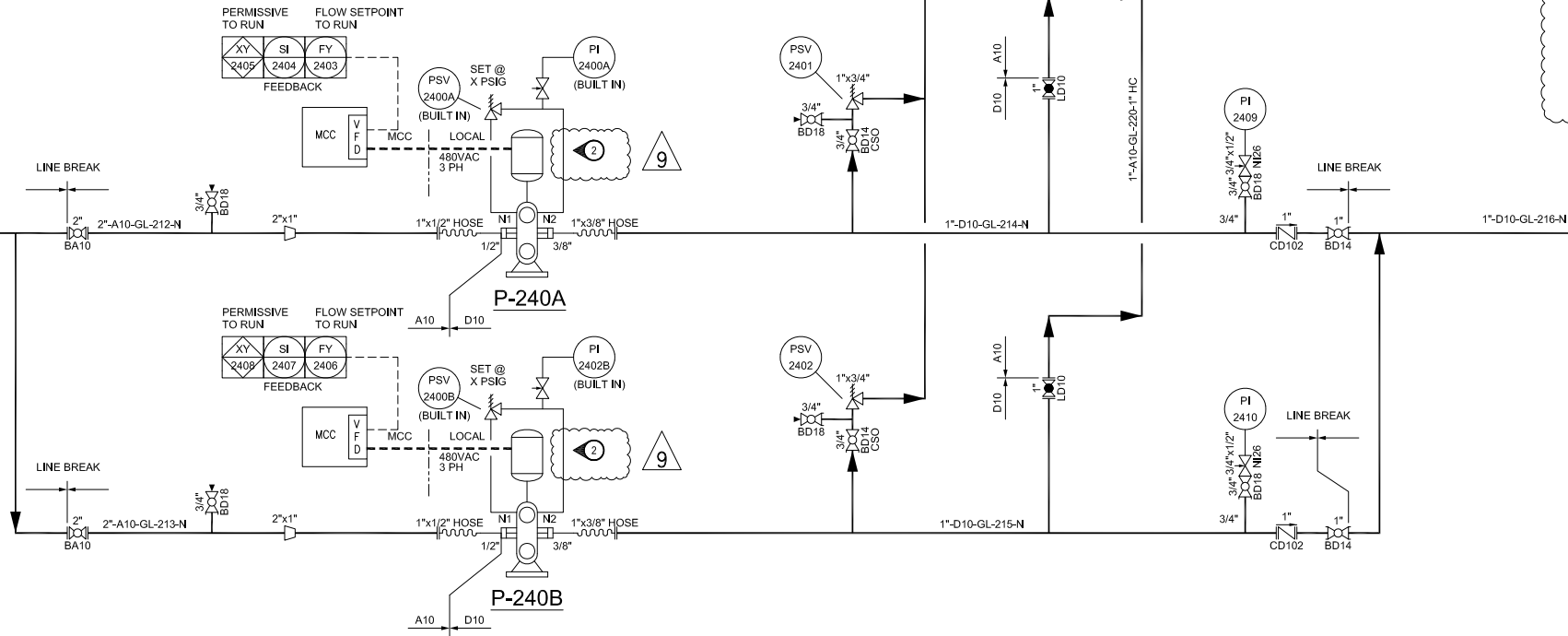
EG SKID

EG BYPASS
16-1043-PR-PID-111 1"-A10-GL-220-1" HC
RB-235 EG REBOILER

RELIEF LIQUID
16-1043-PR-PID-111 1"-A10-GL-219-1" HC
RB-235 EG REBOILER

EG RETURN
16-1043-PR-PID-111 2"-A10-GL-211-N
E-205 EG EXCHANGER

EG
16-1043-PR-PID-101 1"-D10-GL-216-N
E-100 / E-105



EG SKID

NOTES:

- ① INTERCONNECT PIPING / VALVING BY OTHERS.
- ② LOCAL HAND OFF AUTO CONTROLS ARE AVAILABLE AS AN OPTION

9

REV	DATE	REVISIONS	BY	CHKD	APP
3	11/23/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
4	12/16/16	ISSUED FOR DESIGN-REVISED	JC	AU	GC
5	12/16/16	ISSUED FOR FABRICATION	JC	AU	GC
6	01/13/17	NO CHANGE THIS SHEET	JC	AU	GC
7	01/30/17	ISSUED FOR FABRICATION	JC	AU	GC
8	02/03/17	ISSUED FOR FABRICATION-REVISED	JC	AU	GC
9	03/15/17	ISSUED FOR FABRICATION-REVISED	LZ	AU	GC

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PROJECT TITLE
CUSTOM COMPRESSION SYSTEMS LLC
PIPING AND INSTRUMENT DIAGRAM
40 MMSCFD REFRIGERATED JT PLANT
EG REGENERATION SECTION

SCALE	DRAWING NUMBER	REV
NONE	JOULE-16-1043-PR-PID-113	9