

Exhibit M

Applicant's Financial Capability

Mist Resiliency Project
March 2024

Prepared for



Northwest Natural Gas

Prepared by



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List of Attachments

Attachment M-1. Miller Station Power Line Decommissioning Estimate

Attachment M-2. Miller Station Decommissioning Estimate

Attachment M-3. North Mist Compressor Station Decommissioning Estimate

Attachment M-4. Northwest Natural Gas 2022 Annual Report

Attachment M-5. Facility Bond Revision

Attachment M-6. Letter from Legal Counsel

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Oregon Administrative Rule (OAR) 345-021-0010(1)(m) requires proponents to provide information about the applicant's financial capability. The details normally discussed in this exhibit are included in the Project Description and OAR Division 27 Compliance document, which can be found at the beginning of this Request for Amendment to Site Certificate. However, supplemental information has been provided here regarding the Miller Station Power Line Decommissioning Estimate (Attachment M-1), the Miller Station Decommissioning Estimate (Attachment M-2), the North Mist Compressor Station Decommissioning Estimate (Attachment M-3), the Northwest Natural Gas 2022 Annual Report (Attachment M-4), the Facility Bond Revision (Attachment M-5), and Northwest Natural's Letter from Legal Counsel (Attachment M-6).

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Attachment M-1. Miller Station Power Line Decommissioning Estimate

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Miller Station Power Feed Retirement Costs (High Level)



Northwest Natural (NWN)

157831-BMcD-EST-003

Miller Station Power Feed

Project No. 157831

Revision B

2/16/2024

1.0 HIGH LEVEL RETIREMENT COST

As requested, BMcD has prepared the following explanation of the assumptions used for our estimate of the decommissioning cost **\$55,000** for the Miller Station Power Feed. This cost is based in 2024 US Dollars and does not compensate for any potential escalation or inflation between now and the end of the plant's useful lifespan. The total installed cost for the Miller Station Power Feed was issued separately. The TIC estimate includes the basis used to complete the estimate. Due to the nature of this scope this estimate assumes the contractor performing the decommissioning scope will be direct hired and managed by Northwest Natural and any EPC fees or markups are not included in this estimate.

1.1 Details

- Scrap Value of Insulated Copper Wire – **(\$45,000)**

The scrap value copper wire will vary based on market pricing at the time of decommissioning. The assumption is that all equipment at the end of a 30-year life cycle will be sold for scrap at the current Portland market rates. The current rate for Insulated Copper Wire averages \$1.75 per Pound. These values do not factor in any pickup fees or trucking costs to move the salvage material to the salvage yard.

- Removal cost of Insulated Copper Wire - **\$100,000**

Costs to remove all copper wire and fiber cable and hauled off site. It is expected that the underground raceways and cable splice vaults will be abandoned in place. Removal of electrical equipment is excluded from this cost estimate.

Attachment M-2. Miller Station Decommissioning Estimate

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Mist Miller Compressor Unit Retirement Costs (High Level)



Northwest Natural (NWN)

Mist Miller Unit 700 and 800 Project

#####

Revision A

2/9/2024

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1.1	Details	1-2
2.0	PROCESS FLOW DIAGRAMS (UNIT 700 AND 800 MIST MILLER STATION).....	2-4

1.0 HIGH LEVEL RETIREMENT COST

As requested, Basic Systems, Inc. has prepared the following explanation of the assumptions used for our estimate of the decommissioning cost **(\$1,450,000)** for the Mist 2.0 Compressor Station. This cost is based in 2023 US Dollars and does not compensate for any potential escalation or inflation between now and the end of the plant's useful lifespan. The total installed cost for the compressor station was issued separately. The TIC estimate includes the basis used to complete the estimate.

1.1 Details

- Scrap Value of Equipment, Pipe, Steel, and Insulated Copper Wire – **(\$200,000)**

The scrap value of all equipment, piping, steel, and copper wire will vary based on market pricing at the time of decommissioning. The assumption is that all equipment at the end of a 30-year life cycle will be sold for scrap at the current Portland market rates. The current rate for Steel is \$133.50 per Ton, Transformers/Electrical Equipment is \$0.19 per Pound, and Insulated Copper Wire averages \$1.75 per Pound.

- Removal cost of Equipment, Pipe, Steel, and Insulated Copper Wire - **\$1,000,000**

Costs to remove all mechanical equipment, electrical equipment, process building, pipe racks, platforms, facility piping and any other miscellaneous steel. This assumes that all structural steel, pipe, and copper wire will be cut into smaller pieces that can fit into a dumpster and that all equipment is small enough or will be broken down into smaller pieces that can fit on a standard tractor trailer for transport.

- Removal of Foundations - **\$500,000**

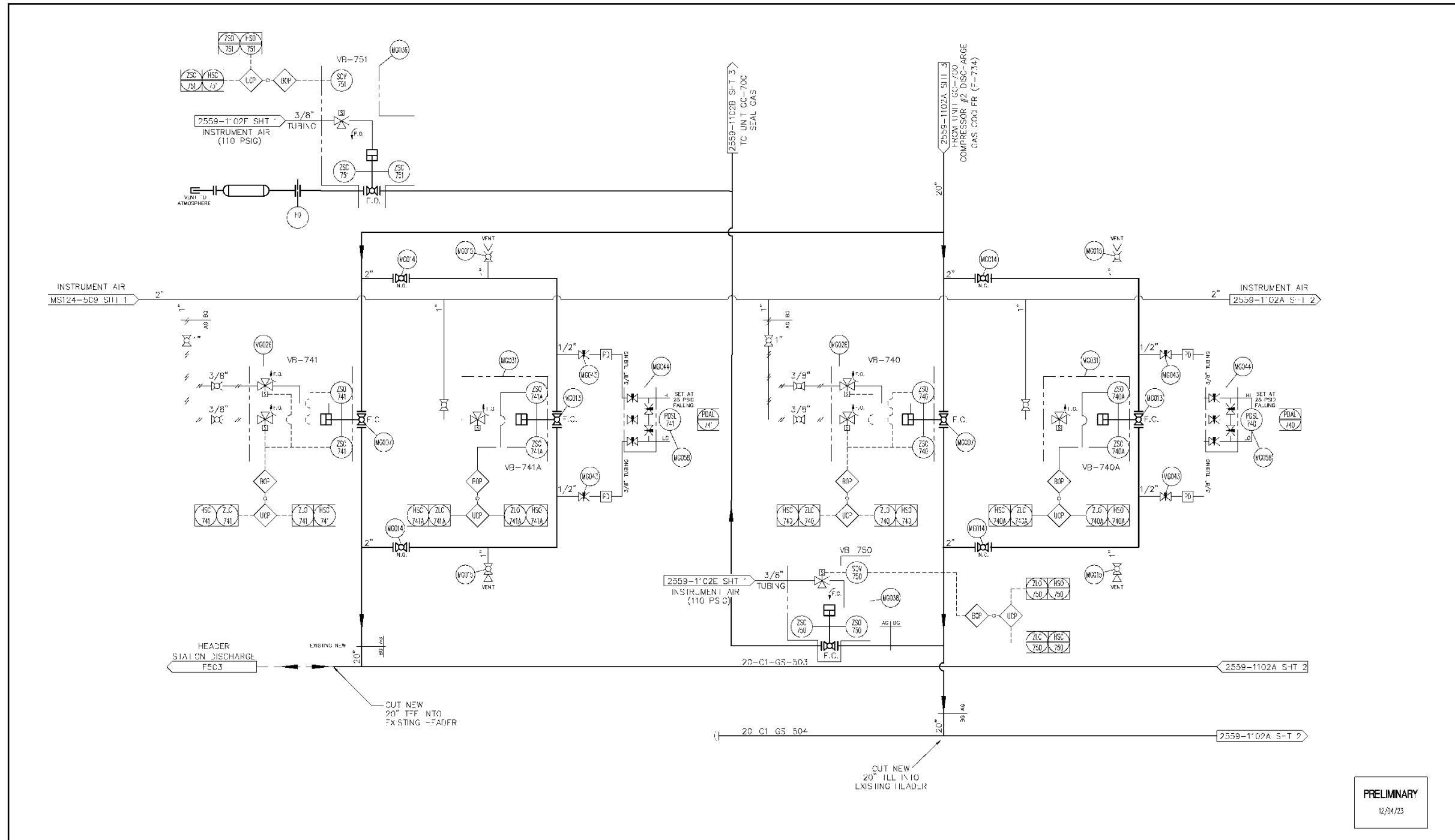
Foundation removal assumes that all foundations that extend above grade will be removed, and the concrete broken down into pieces that can fit into a dumpster that can be hauled off to an appropriate disposal facility. All drilled piers that are more than 1' below grade will be left in place, and any other drilled piers will be cut/knocked down to 1' below grade. This value does not factor in any trucking costs to move the concrete waste off site.

- Remove yard stone and hydroseed - **\$150,000.**

It is assumed that all gravel on site will be removed and hauled off site and the existing soil will be prepped and then hydroseeded. This value does not factor in any trucking costs to move the yard stone off site or to bring in any import soil.

2.0 PROCESS FLOW DIAGRAMS (STATION)

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PRELIMINARY
12/04/23

ENGINEER'S SEAL	OVERLAY NUMBERS	REFERENCE	NUMBER	NO.	DATE	REVISION	BY	CHK	APP	DATE	REVISION	BY	CHK	APP	ENGINEERING APPROVAL	DATE	DRAWING TITLE	DRAWN BY	DATE	GRAPHS NUMBER	REV	SHEET	
																	P&ID MAIN GAS SHEET 1 OF 5	PHC	9/18/23	2559-1102A	b	1 of 5	
																							2559

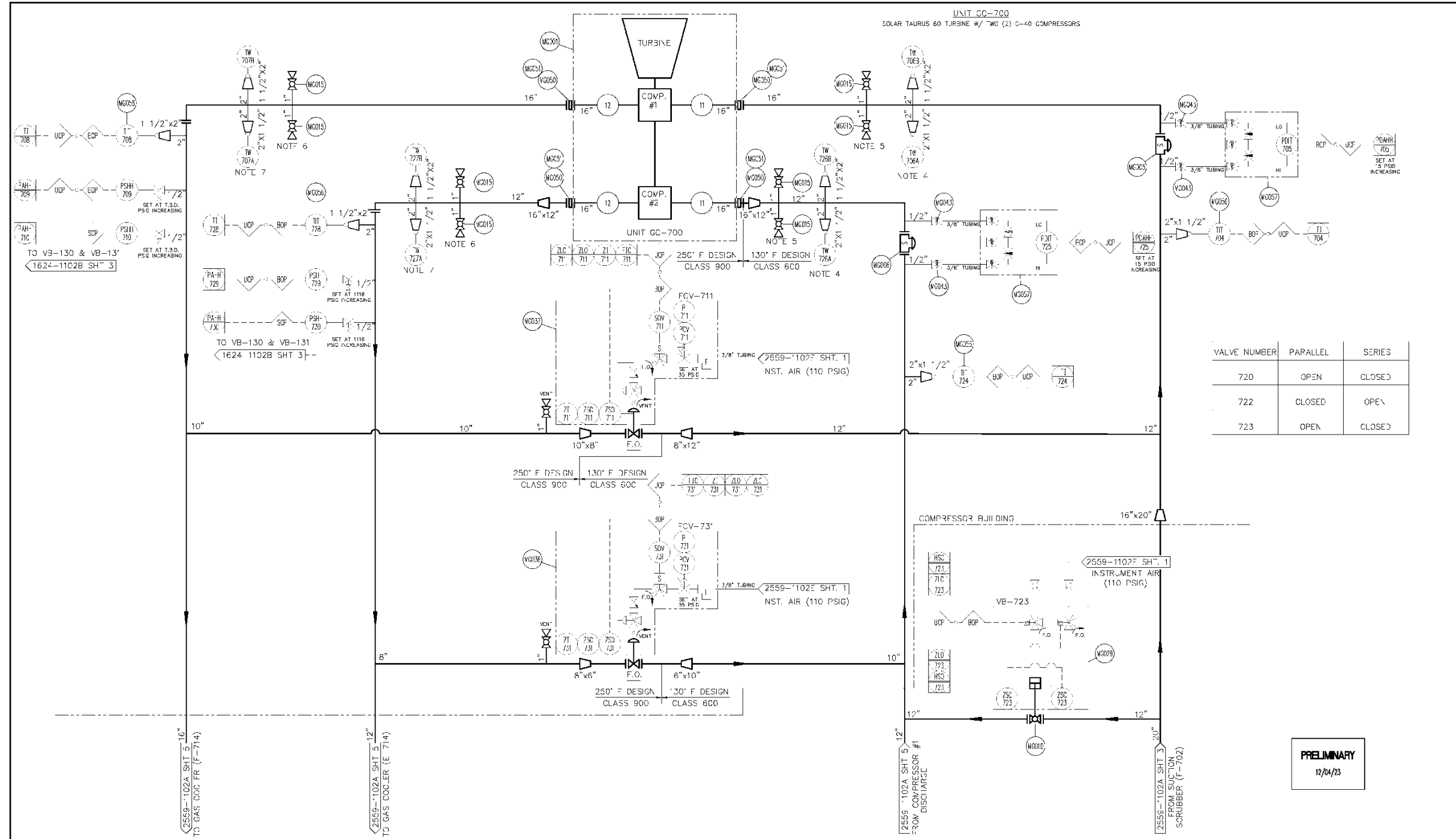
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BASIC SYSTEMS, INC.
9255 CADIZ ROAD
CAMBRIDGE, OHIO 43125
(740) 432-3001

NORTHWEST NATURAL GAS
MIST MILLER COMPRESSOR STATION

DRAWN BY: PHC
DATE: 9/18/23
SCALE: NONE



PRELIMINARY
12/04/23

ENGINEER'S SEAL	OVERLAY NUMBERS	REFERENCE	NUMBER	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD

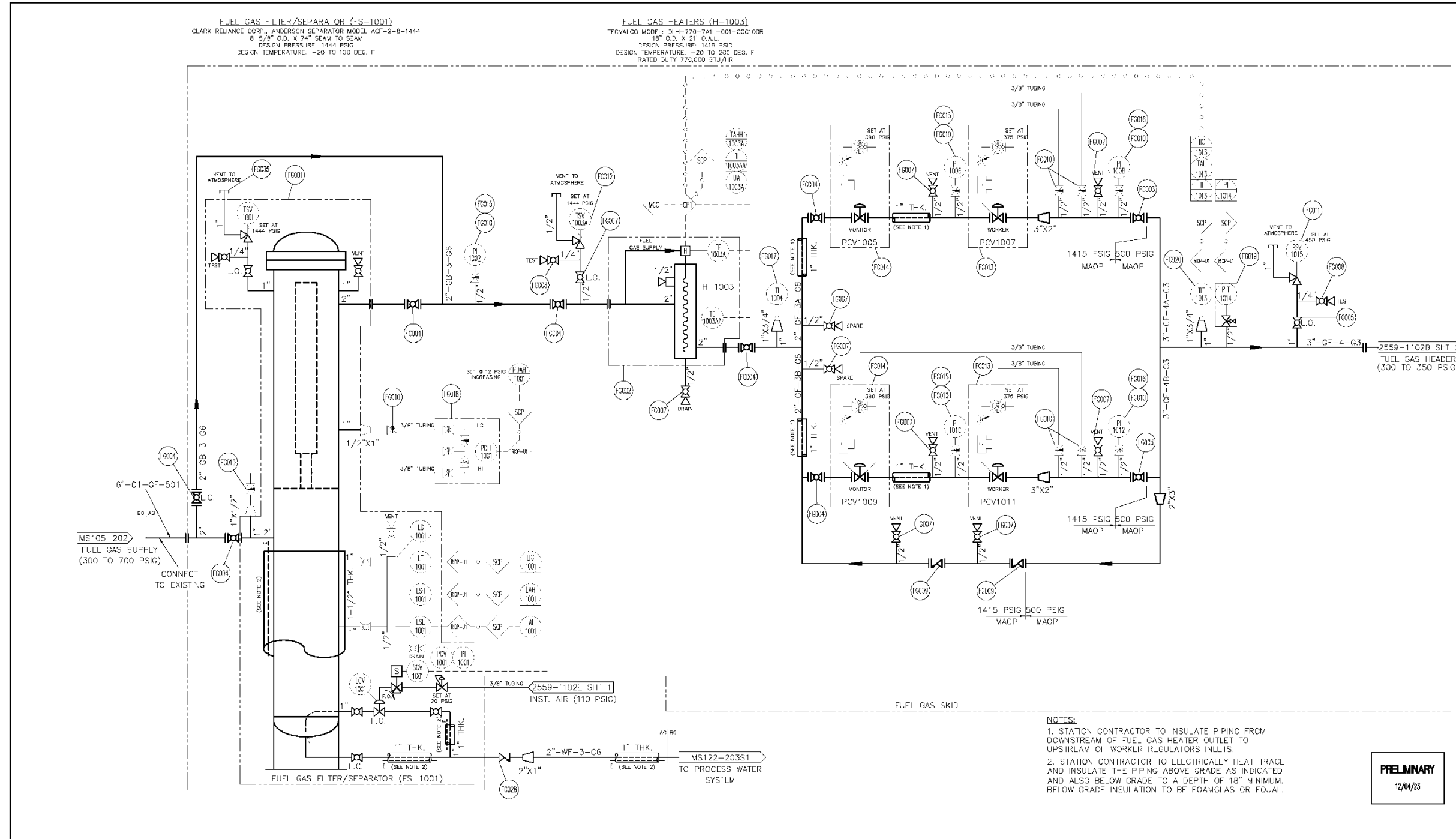
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ENGINEERING APPROVAL	DATE
DRAFTING CHECK	
DESIGN CHECK	
APPROVED BY	
CURT. APP. BY	

BASIC SYSTEMS, INC.
 9255 CADIZ ROAD
 CAMBRIDGE, OHIO 43725
 (740) 432-3001

DRAWING TITLE		DRAWN BY	DATE	ISSUING NUMBER	REV	SHEET
P&ID - MAIN GAS SHEET 4 OF 5		DDC	9/18/23	2559-1102A	b	4 of 5
SCALE: NONE						2559

**NORTHWEST NATURAL GAS
 MIST MILLER COMPRESSOR STATION**



NOTES:
 1. STATION CONTRACTOR TO INSULATE PIPING FROM DOWNSTREAM OF FUEL GAS HEATER OUTLET TO UPSIDE OF WORKER REGULATIONS INLLIS.
 2. STATION CONTRACTOR TO ELLIGIRICALLY TRAIL AND INSULATE THE PIPING ABOVE GRADE AS INDICATED AND ALSO BELOW GRADE TO A DEPTH OF 18" MINIMUM. BELOW GRADE INSULATION TO BE FOAMGLAS OR EQUIV.

PRELIMINARY
 12/04/23

ENGINEER'S SEAL	OVERLAY NUMBERS	REFERENCE	NUMBER	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD

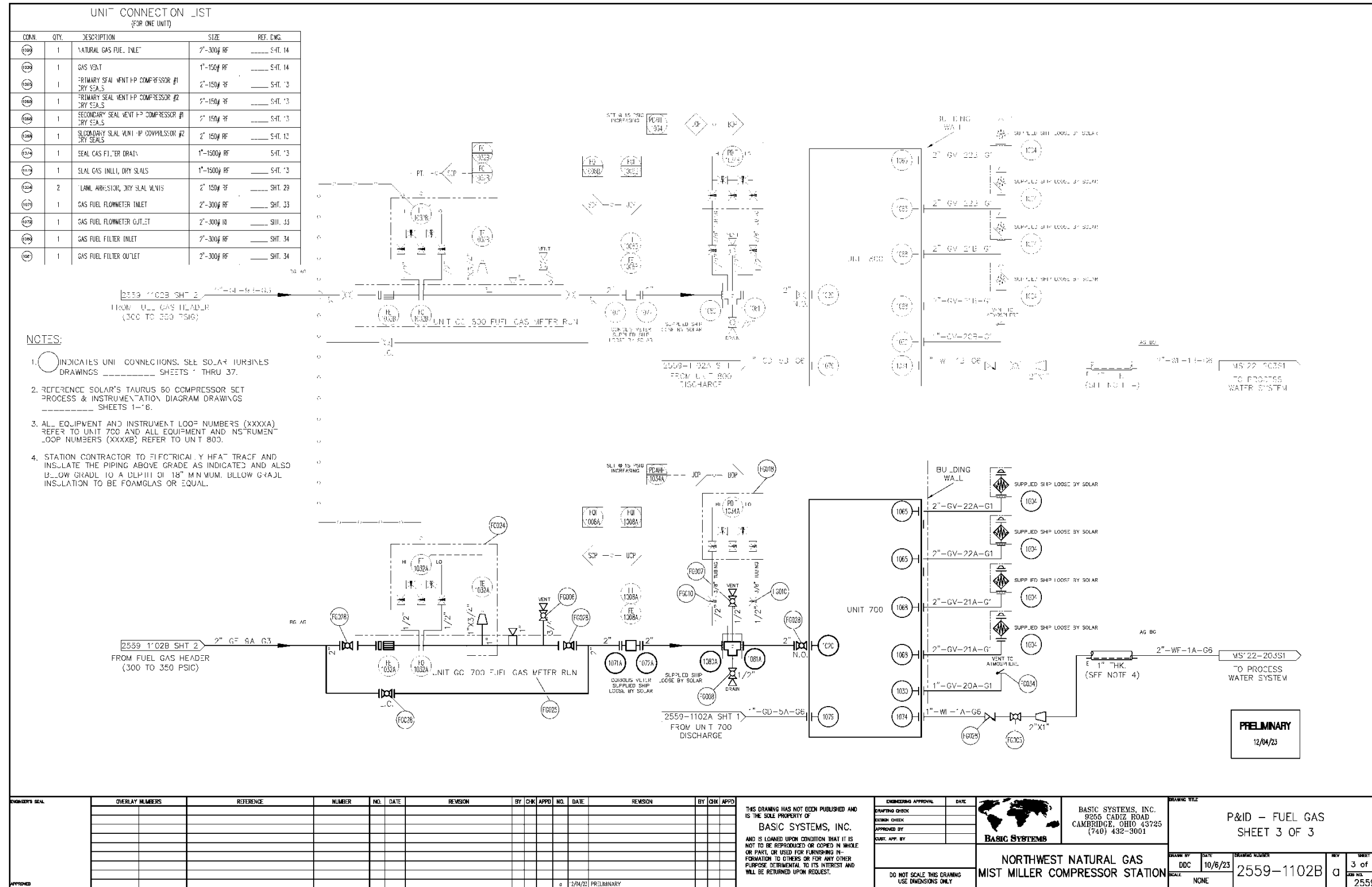
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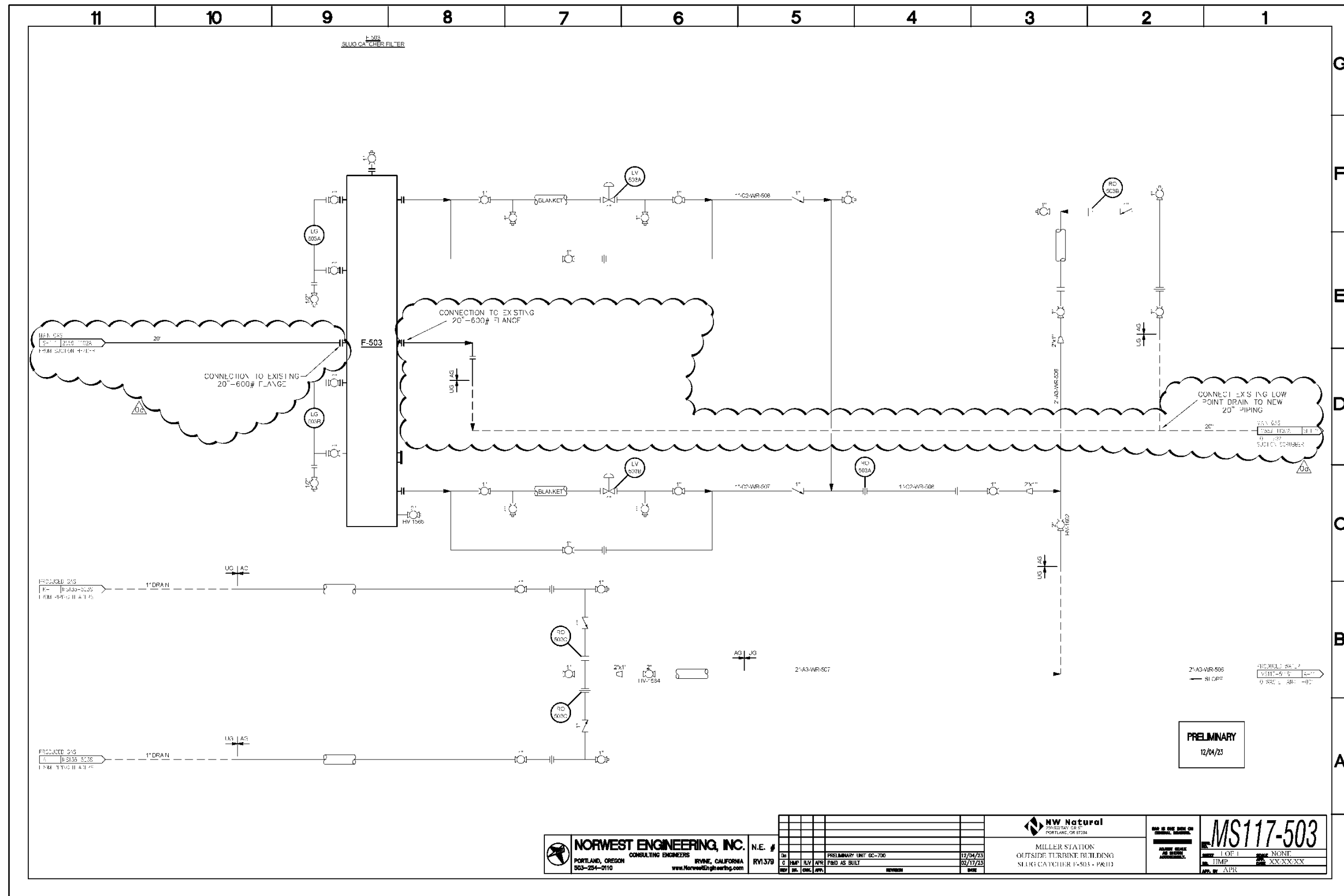
ENGINEERING APPROVAL _____ DATE _____
 DRAFTING CHECK _____
 DESIGN CHECK _____
 APPROVED BY _____
 CURT. APP. BY _____

BASIC SYSTEMS, INC.
 9255 CADIZ ROAD
 CAMBRIDGE, OHIO 43725
 (740) 432-3001

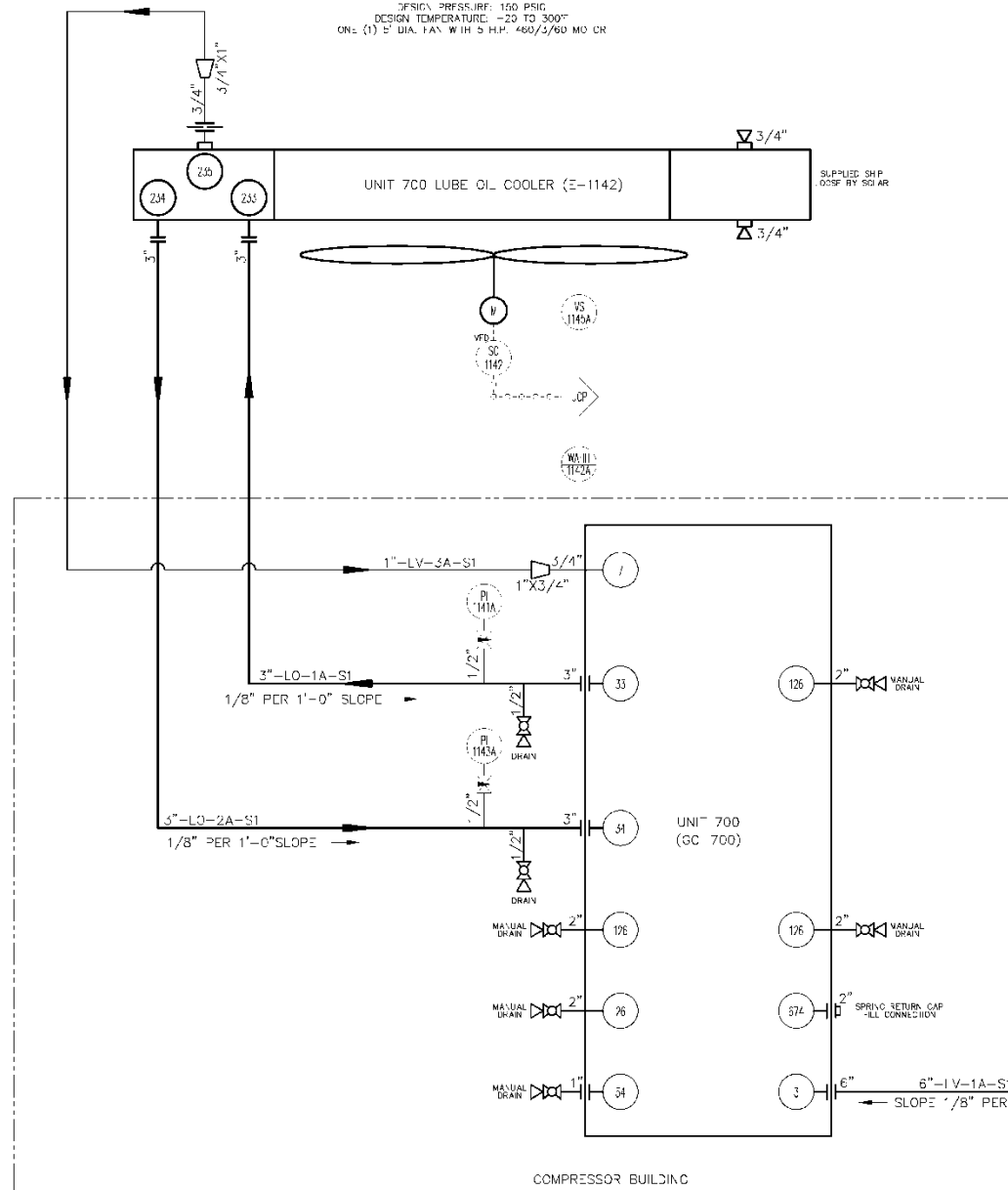
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P&ID - FUEL GAS		2559-1102B		a	1 of 3
SHEET 1 OF 3		DATE: 10/6/23		SCALE: NONE	

NORTHWEST NATURAL GAS
MIST MILLER COMPRESSOR STATION





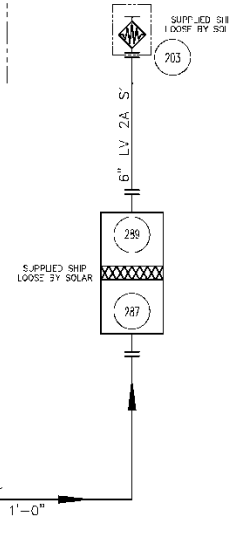
UNIT 700 & 800 LUBE OIL COOLER (E-1142A & E-1142B)
 AK-X-CHANGERS MODEL AXC 143090
 DESIGN PRESSURE: 100 PSIG
 DESIGN TEMPERATURE: -20 TO 300°F
 ON: (1) 2" DIA. FAN WITH 5 H.P. 460/3/60 MOTOR



UNIT CONNECTION LIST (FOR CVF UNIT)				
CC#	QTY.	DESCRIPTION	SIZE	REF. DWG.
3	1	LUBE OIL TANK VENT	6" 50# RF	SHT. 13
7	1	LUBE OIL COOLER VENT	3/4" FNPT	SHT. 13
26	1	LUBE OIL TANK DRAIN	2" FNPT	SHT. 13
33	1	LUBE OIL TO COOLER	3" 50# RF	SHT. 13
34	1	LUBE OIL FROM COOLER	3" 50# RF	SHT. 13
54	1	LUBE OIL FILTER DRAIN - UNFILTERED	1" 150# RF	SHT. 13
126	2	OIL DRAIN FROM URIP PAN	2" FNPT	SHT. 13 & 14
203	1	FLAME ARRESTOR, LUBE OIL TANK VENT	6" 50# RF	S-T. 30
233	1	LUBE OIL COOLER INLET	3" 50# RF	SHT. 31
234	1	LUBE OIL COOLER OUTLET	3" 50# RF	SHT. 31
236	1	LUBE OIL COOLER VENT RETURN TO TANK	3/4" FNPT	SHT. 31
287	1	LUBE OIL MIST SEPARATOR INLET	6" 50# RF	S-T. 30
288	1	LUBE OIL MIST SEPARATOR OUTLET	6" 50# RF	S-T. 32
674	1	LUBE OIL TANK FILL	2" ILL. CAP	SHT. 11

NOTES:

- INDICATES UNIT CONNECTIONS. SEE SOLAR TURBINES DRAWINGS SHEETS 1 THRU 37.
- REFERENCE SOLAR'S TAURUS 50 COMPRESSOR SET PROCESS & INSTRUMENTATION DIAGRAM DRAWINGS SHEETS 1 T-R. 16.
- ALL EQUIPMENT AND INSTRUMENT LOOP NUMBERS (11XXA) RELATE TO UNIT GC-700 AND ALL EQUIPMENT AND INSTRUMENT LOOP NUMBERS (11XXB) REFER TO UNIT GC-800.



PRELIMINARY
12/04/23

ENGINEER'S SEAL	OVERLAY NUMBERS	REFERENCE	NUMBER	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD

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ENGINEERING APPROVAL	DATE
DRAFTING CHECK	
DESIGN CHECK	
APPROVED BY	
CURT. APP. BY	



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 9255 CADIZ ROAD
 CAMBRIDGE, OHIO 43725
 (740) 432-3001

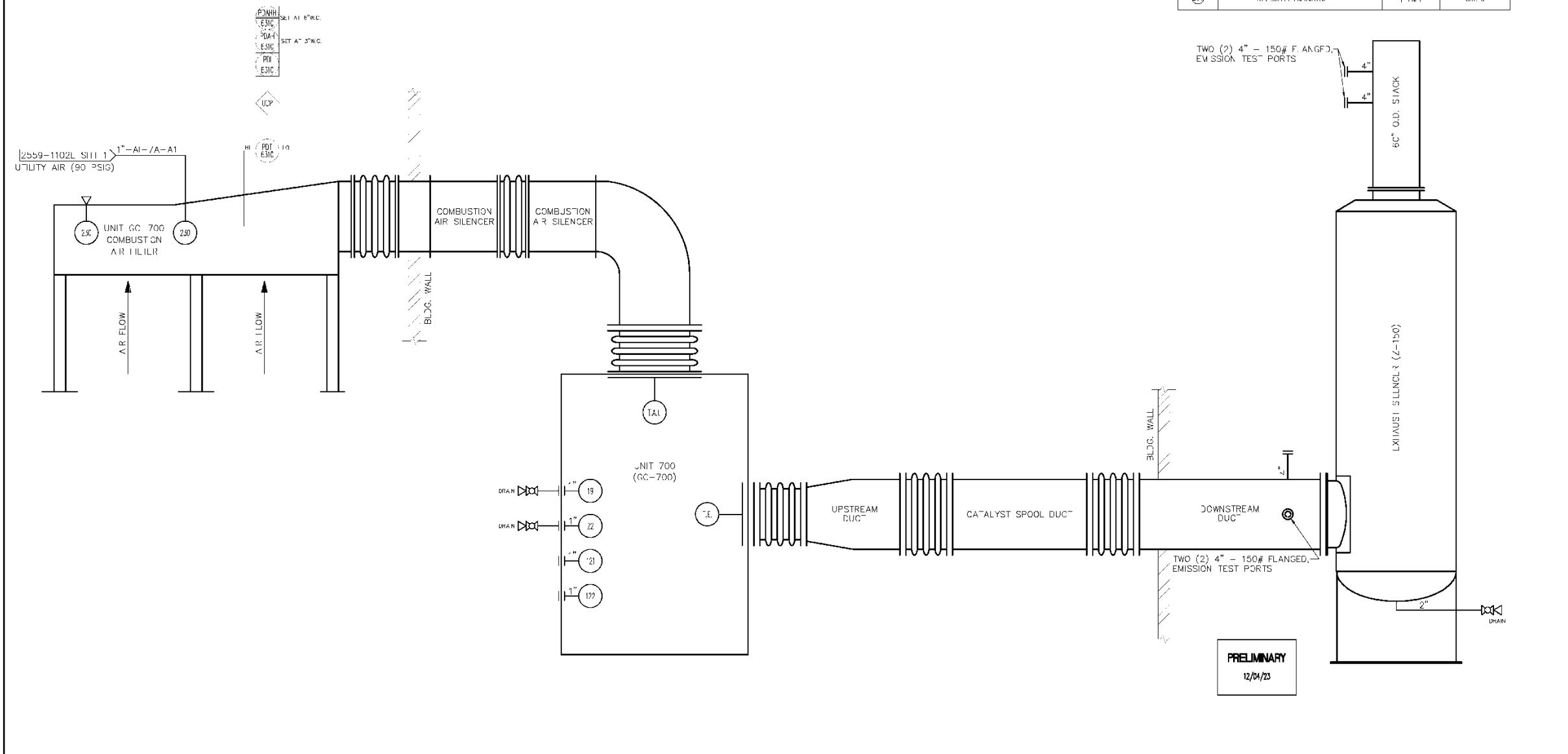
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P&ID - LUBE OIL SHEET 1 OF 1			
DRAWN BY	DATE	ISSUING NUMBER	REV
AMC	10/24/23	2559-1102C	a
SCALE	NONE		1 of 1
			2559

**NORTHWEST NATURAL GAS
 MIST MILLER COMPRESSOR STATION**

NOTES:

1. ○ INDICATES UNIT CONNECTIONS. SEE SOLAR TURBINES DRAWINGS SHEETS 1 THRU 37.
2. REFERENCE SOLAR'S TAURUS 60 COMPRESSOR SET PROCESS & INSTRUMENTATION DIAGRAM DRAWINGS SHEETS 11-R-18.
3. ALL EQUIPMENT AND INSTRUMENT LOOP NUMBERS (XXXX) REFER TO UNIT GC-700 AND ALL EQUIPMENT AND INSTRUMENT LOOP NUMBERS (XXXXB) REFER TO UNIT GC-800.

UNIT CONNECTION LIST (FOR ONE UNIT)				
CONN.	QTY.	DESCRIPTION	SIZE	REF. DWG.
19	-	ENGINE EXHAUST COLLECTOR AND COMBUSTOR DRAIN	1" 150# RF	SHT. 14
22	-	ENGINE AIR INLET DUCT DRAIN	1" 150# RF	SHT. 14
21	-	ON LINE CLEANING FLUID INLET	1" 150# RF	SHT. 14
22	-	ON CRANK CLEANING FLUID INLET	1" 150# RF	SHT. 14
23	-	AIR SUPPLY PNEUMATIC	1" FNPT	SHT. 8



PRELIMINARY
12/04/23

ENGINEER'S SEAL	OVERLAY NUMBERS	REFERENCE	NUMBER	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD

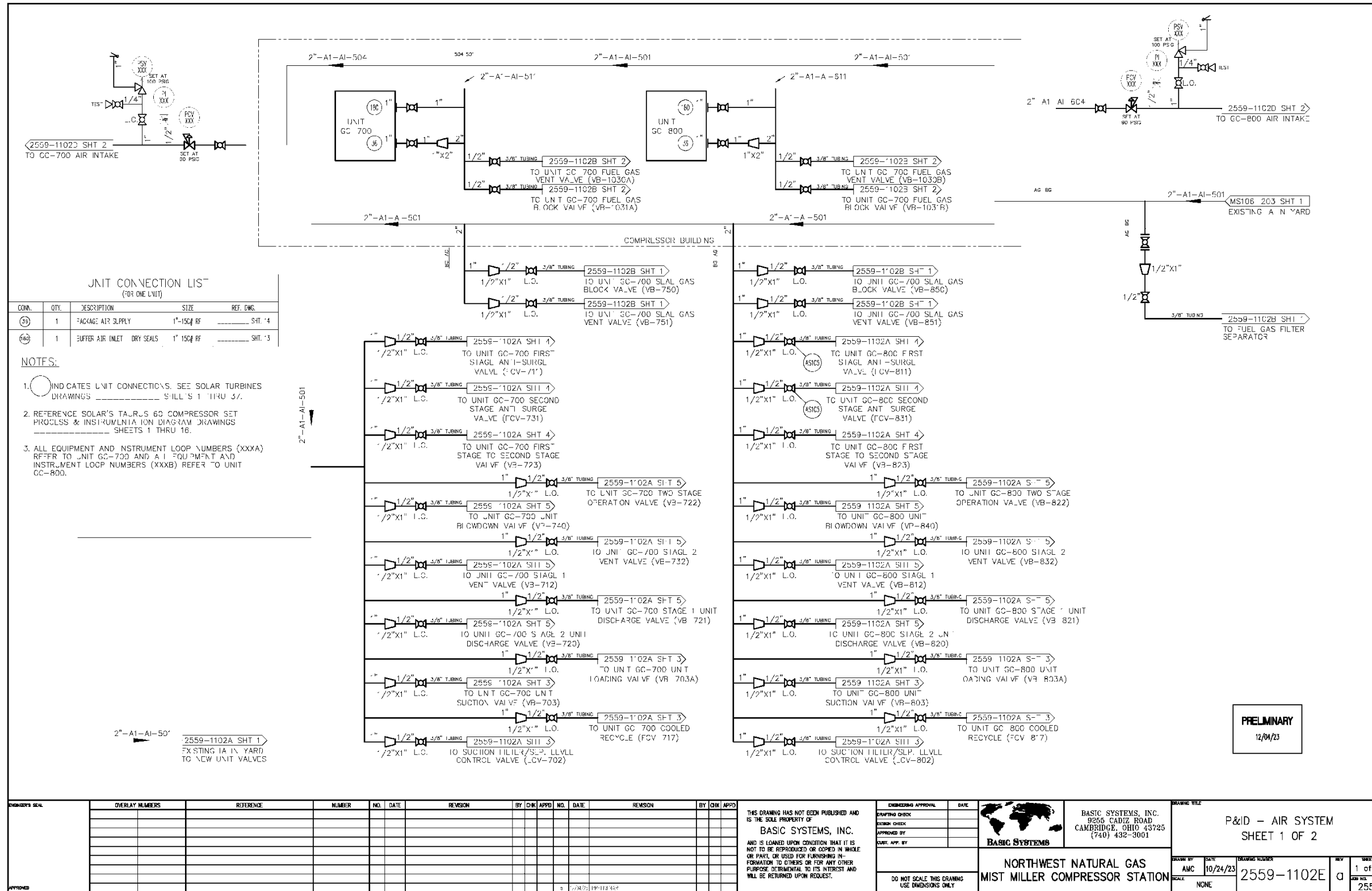
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ENGINEERING APPROVAL	DATE
DRAFTING CHECK	
DESIGN CHECK	
APPROVED BY	
CURT. APP. BY	

BASIC SYSTEMS

BASIC SYSTEMS, INC.
 9255 CADIZ ROAD
 CAMBRIDGE, OHIO 43725
 (740) 432-3001

DRAWING TITLE			
P&ID - ANCILLARY SHEET 1 OF 1			
DRAWN BY	DATE	ISSUING NUMBER	REV
AMC	10/24/23	2559-1102D	a
SCALE	NONE		SHEET 1 of 1
			2559



UNIT CONNECTION LIST
(FOR ONE UNIT)

CON.	QTY.	DESCRIPTION	SIZE	REF. DWG.
(35)	1	PACKAGE AIR SUPPLY	1" 150# RF	SHT. 4
(60)	1	BUFFER AIR INLET DRY SEALS	1" 150# RF	SHT. 3

- NOTES:
1. CIRCLES INDICATE UNIT CONNECTIONS. SEE SOLAR TURBINES DRAWINGS FOR CONNECTIONS. SEE SILL'S 1 THRU 3.
 2. REFERENCE SOLAR'S TUBING 60 COMPRESSOR SET PROCESS & INSTRUMENTATION DIAGRAM DRAWINGS SHEETS 1 THRU 16.
 3. ALL EQUIPMENT AND INSTRUMENT LOOP NUMBERS (XXXX) REFER TO UNIT GC-700 AND ALL EQUIPMENT AND INSTRUMENT LOOP NUMBERS (XXXXB) REFER TO UNIT GC-800.

ENGINEER'S SEAL	OVERLAY NUMBERS	REFERENCE	NUMBER	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD

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ENGINEERING APPROVAL: [Signature] DATE: [Date]

DRAFTING CHECK: [Signature] DATE: [Date]

DESIGN CHECK: [Signature] DATE: [Date]

APPROVED BY: [Signature] DATE: [Date]

CURT. APP. BY: [Signature] DATE: [Date]

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BASIC SYSTEMS

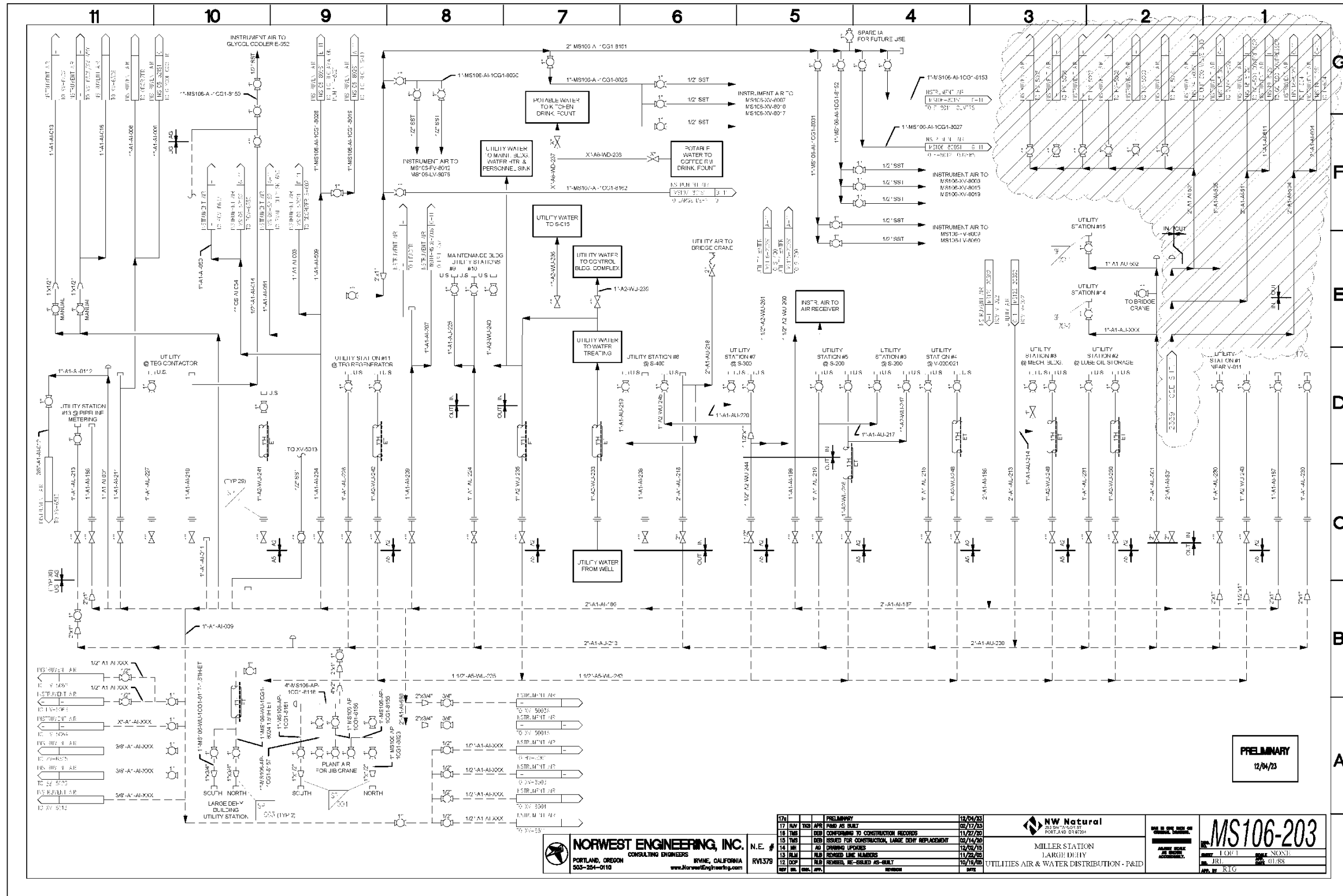
BASIC SYSTEMS, INC.
9255 CADIZ ROAD
CAMBRIDGE, OHIO 43725
(740) 432-3001

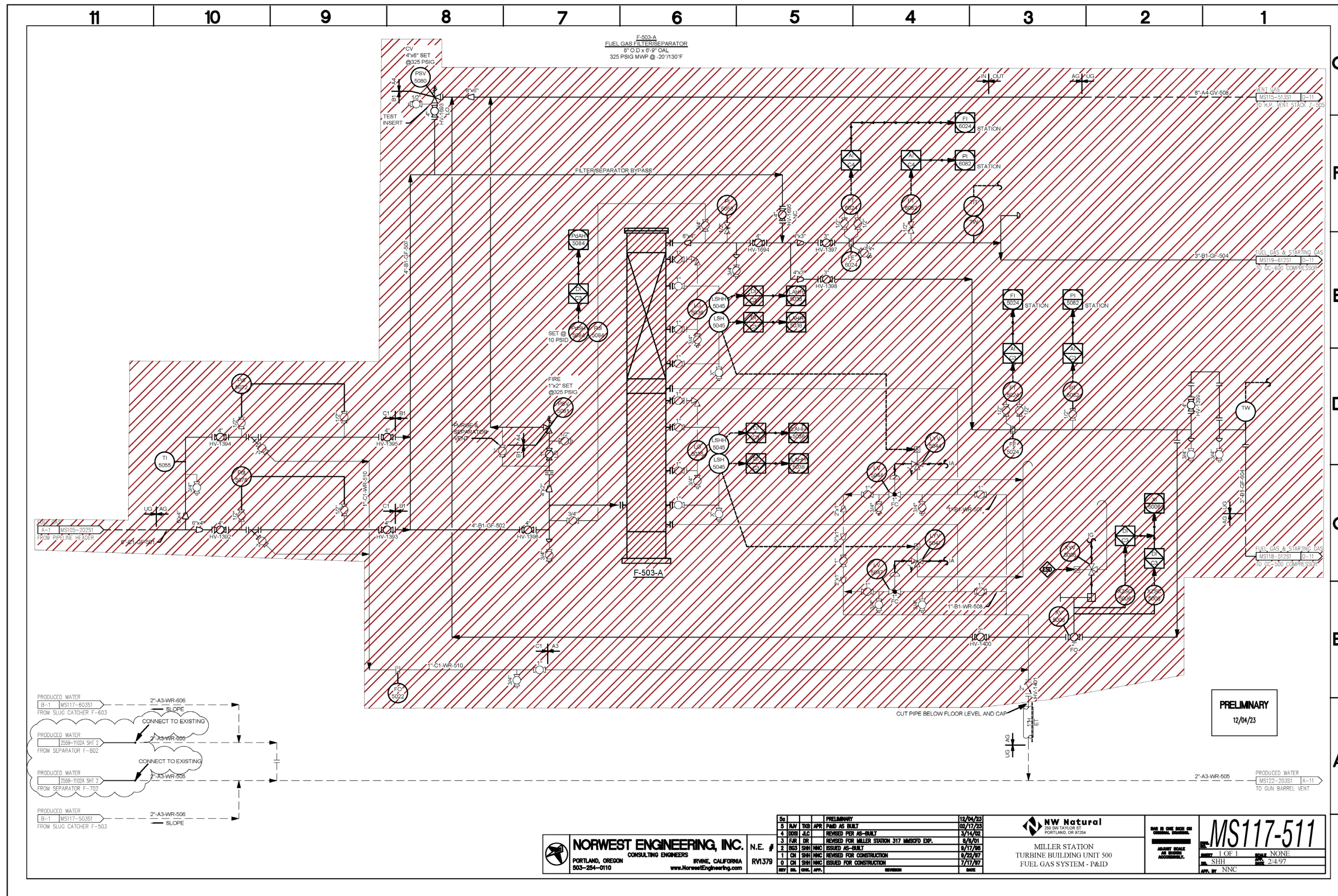
**NORTHWEST NATURAL GAS
MIST MILLER COMPRESSOR STATION**

DRAWING TITLE: P&ID - AIR SYSTEM SHEET 1 OF 2

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SCALE: NONE



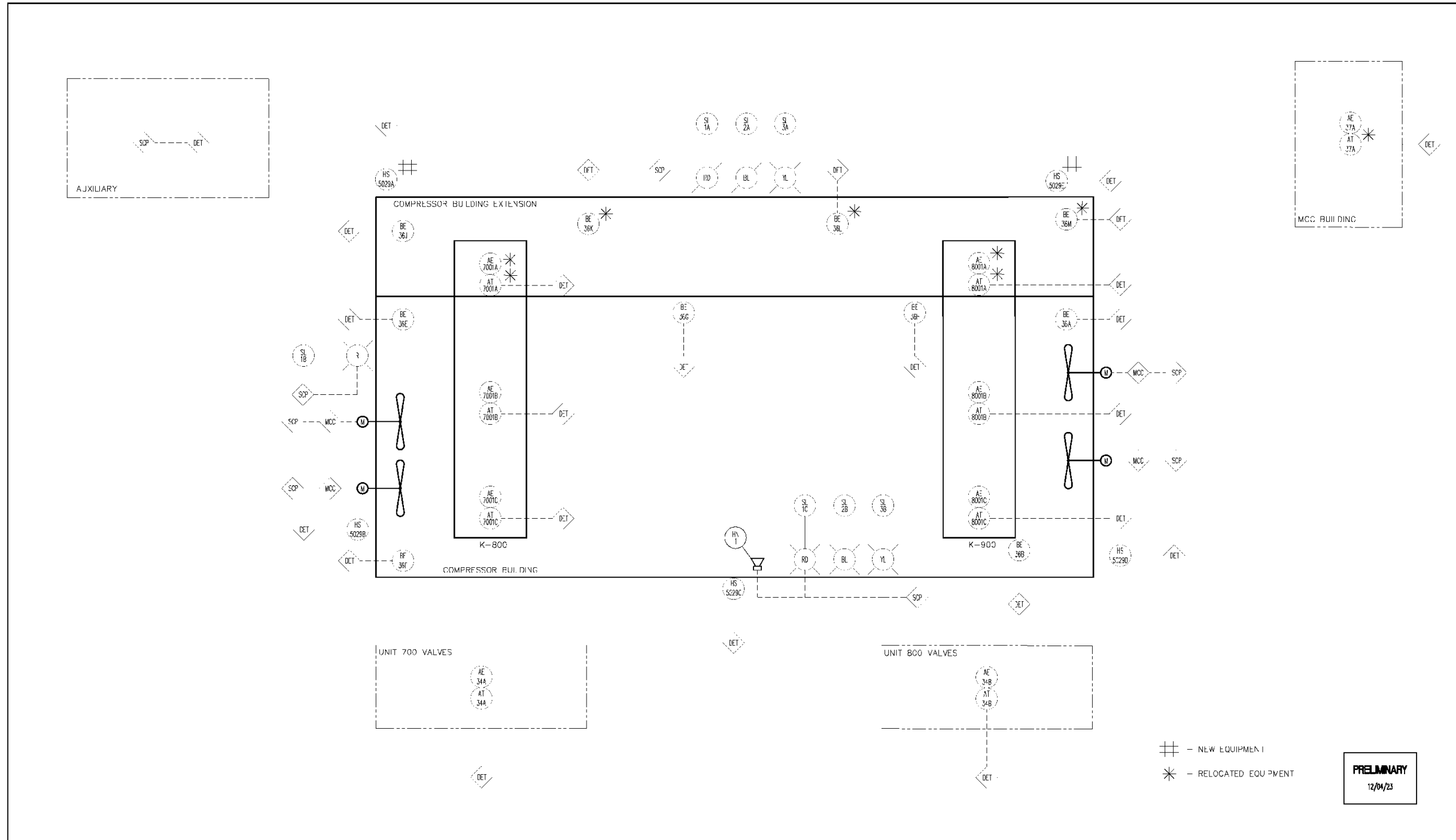


NORWEST ENGINEERING, INC.
CONSULTING ENGINEERS
PORTLAND, OREGON 503-254-0110
RYAN, CALIFORNIA
www.NorwestEngineering.com

NO.	DATE	DESCRIPTION	BY	CHKD.
5	12/04/23	PRELIMINARY		
4	02/17/23	REVISED FOR AS-BUILT		
3	13/14/22	REVISED FOR MILLER STATION 317 MAKEFO EXP.		
2	9/17/20	ISSUED AS-BUILT		
1	9/22/17	REVISED FOR CONSTRUCTION		
0	7/17/17	ISSUED FOR CONSTRUCTION		

NW Natural
200 SW TAYLOR ST
PORTLAND, OR 97204
MILLER STATION
TURBINE BUILDING UNIT 500
FUEL GAS SYSTEM - P&ID

MS117-511	DATE: 12/04/23	SCALE: AS SHOWN
REV. 1 OF 1	DATE: NONE	BY: NNC
APP. BY: NNC	DATE: 2-4-97	



DRAWN BY	DATE	DRAWING NUMBER	REV	SHEET	REVISION		BY		CHK		APPD		DATE	REVISION	BY	CHK	APPD	
					NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE						

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ENGINEERING APPROVAL	DATE		BASIC SYSTEMS, INC. 8255 CADIZ ROAD CAMBRIDGE, OHIO 43725 (740) 432-3001
DRAWING CHECK			
DESIGN CHECK			
APPROVED BY			
DATE		NORTHWEST NATURAL GAS MIST MILLER COMPRESSOR STATION	
SCALE	NONE	2559-1102F	1 of 1

DO NOT SCALE THIS DRAWING
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Attachment M-3. North Mist Compressor Station Decommissioning Estimate

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North Mist 2.0, Wellpads and Laterals Retirement Costs (High Level)



Northwest Natural (NWN)

157831-BMcD-EST-002

North Mist 2 FEED Project

Project No. 157831

Revision A

12/28/2023

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1.1	Details	1-2
2.0	PROCESS FLOW DIAGRAMS (STATION, WELLPADS AND LATERALS)....	2-4

1.0 HIGH LEVEL RETIREMENT COST

As requested, BMcD has prepared the following explanation of the assumptions used for our estimate of the decommissioning cost (**\$6,550,000**) for the Mist 2.0 Compressor Station. This cost is based in 2023 US Dollars and does not compensate for any potential escalation or inflation between now and the end of the plant's useful lifespan. The total installed cost for the compressor station, wellpads and laterals was issued separately. The TIC estimate includes the basis used to complete the estimate.

1.1 Details

- Scrap Value of Equipment, Pipe, Steel, and Insulated Copper Wire - **\$200,000**

The scrap value of all equipment, piping, steel, and copper wire will vary based on market pricing at the time of decommissioning. The assumption is that all equipment at the end of a 30-year life cycle will be sold for scrap at the current Portland market rates. The current rate for Steel is \$133.50 per Ton, Transformers/Electrical Equipment is \$0.19 per Pound, and Insulated Copper Wire averages \$1.75 per Pound. These values do not factor in any pickup fees or trucking costs to move the salvage material to the salvage yard.

- Removal cost of Equipment, Pipe, Steel, and Insulated Copper Wire - **\$4,500,000**

Costs to remove all mechanical equipment, electrical equipment, process building, pipe racks, platforms, facility piping and any other miscellaneous steel. This assumes that all structural steel, pipe, and copper wire will be cut into smaller pieces that can fit into a dumpster and that all equipment is small enough or will be broken down into smaller pieces that can fit on a standard tractor trailer for transport.

- Removal of Foundations - **\$500,000**

Foundation removal assumes that all foundations that extend above grade will be removed, and the concrete broken down into pieces that can fit into a dumpster that can be hauled off to an appropriate disposal facility. All drilled piers that are more than 1' below grade will be left in place, and any other drilled piers will be cut/knocked down to 1' below grade. This value does not factor in any trucking costs to move the concrete waste off site.

- Remove yard stone and hydroseed - **\$150,000.**

It is assumed that all gravel on site will be removed and hauled off site and the existing soil will be prepped and then hydroseeded. This value does not factor in any trucking costs to move the yard stone off site or to bring in any import soil.

- Decommission of Surface equipment at the wellpads & Pipeline - **\$1,200,000**

The decommissioning of the surface equipment at the wellpads and pipelines includes removal of the Newton, Stegosaur, and Medicine equipment, purging the pipelines, and abandon in place.

2.0 PROCESS FLOW DIAGRAMS (STATION, WELLPADS AND LATERALS)

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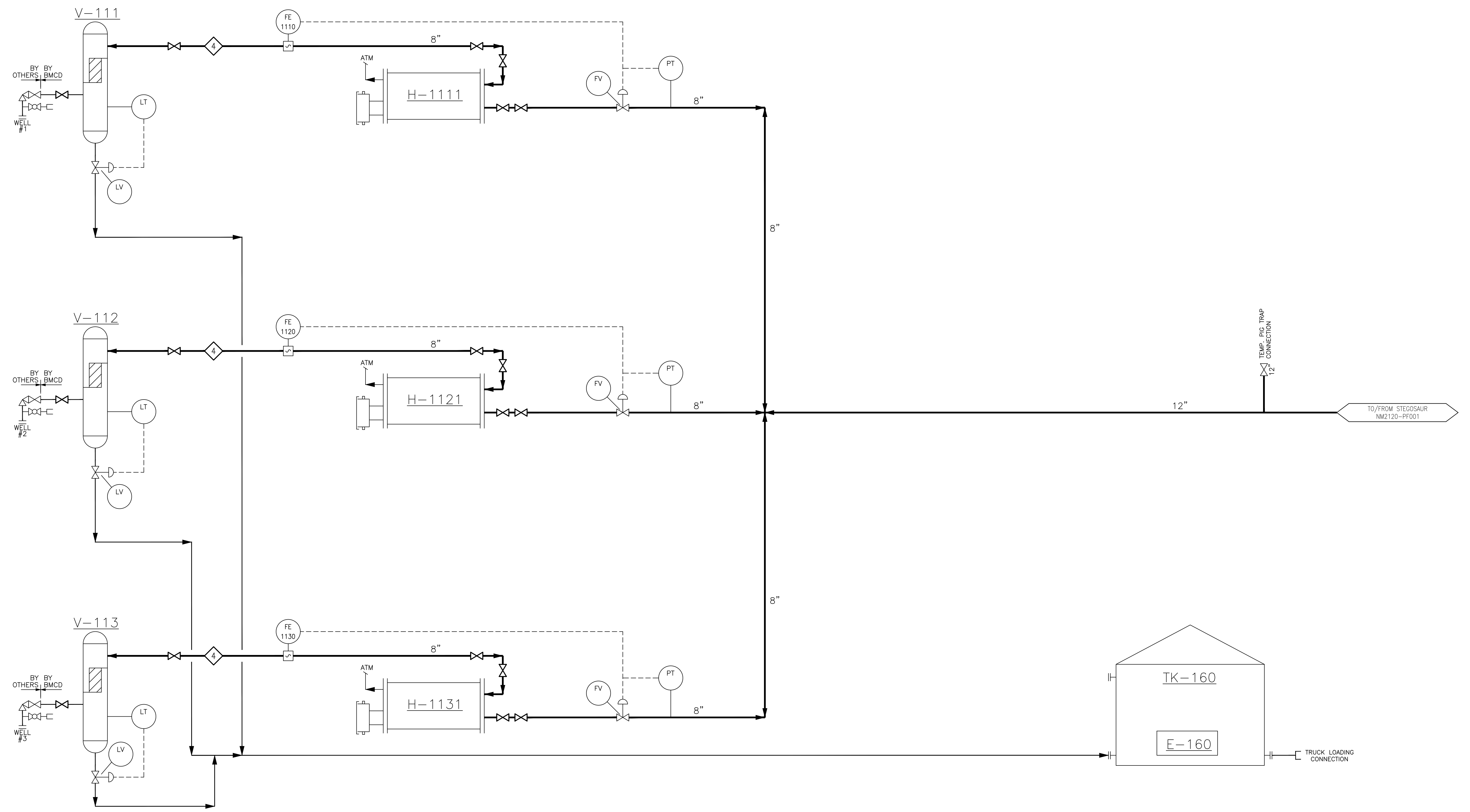
V-111/112/113
WELL
SEPARATORS

FE-1110/1120/1130
ULTRASONIC FLOW
METERS

H-1111/1121/1131
PROCESS HEATER

TK-160
PRODUCED WATER
STORAGE TANK

E-160
PRODUCED WATER
STORAGE TANK HEATER



				BAR IS ONE INCH ON ORIGINAL DRAWING.		NM2100-PF001	
		NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM NEWTON WELLPAD		ADJUST SCALE AS SHOWN ACCORDINGLY.		DWG. NO. 1 OF 12 SHEET 1 OF 12 SCALE NONE DR. KIK APP. DATE 10/31/23 APP. BY KIK	
REV	DR.	CHK.	APP.	ISSUED FOR DESIGN	12/21/23	REVISION	DATE

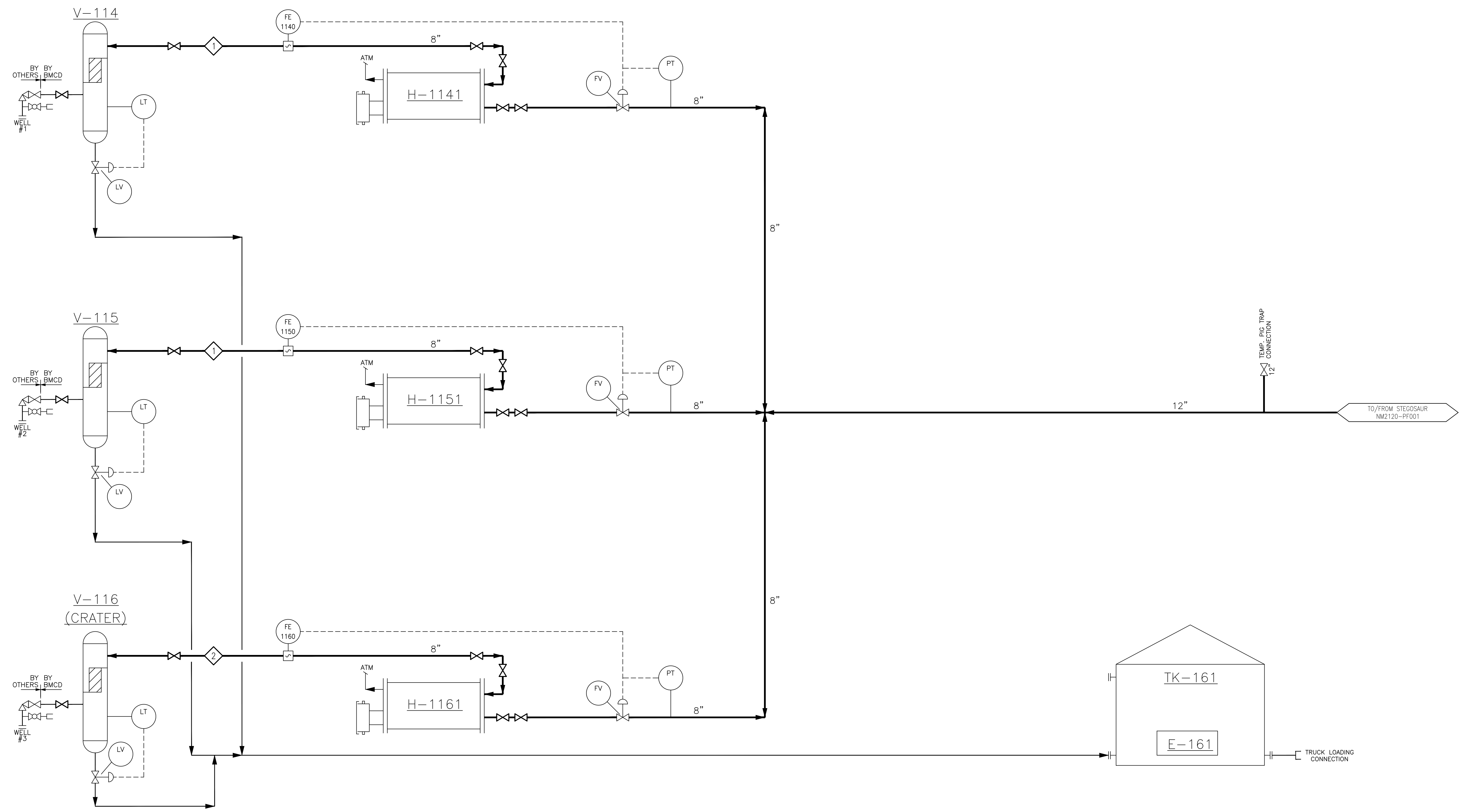
V-114/115/116
WELL
SEPARATORS

FE-1140/1150/1160
ULTRASONIC FLOW
METERS

H-1141/1151/1161
PROCESS HEATER

TK-161
PRODUCED WATER
STORAGE TANK

E-161
PRODUCED WATER
STORAGE TANK HEATER



				BAR IS ONE INCH ON ORIGINAL DRAWING.	NM2110-PF001
		NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM MEDICINE WELLPAD			
REV. A	DR. KIK	CHK. KIK	APP. BB	ISSUED FOR DESIGN	12/21/23
REV.	DR.	CHK.	APP.	REVISION	DATE

11

10

9

8

7

6

5

4

3

2

1

V-117
WELL
SEPARATOR

FE-1170
ULTRASONIC FLOW
METER

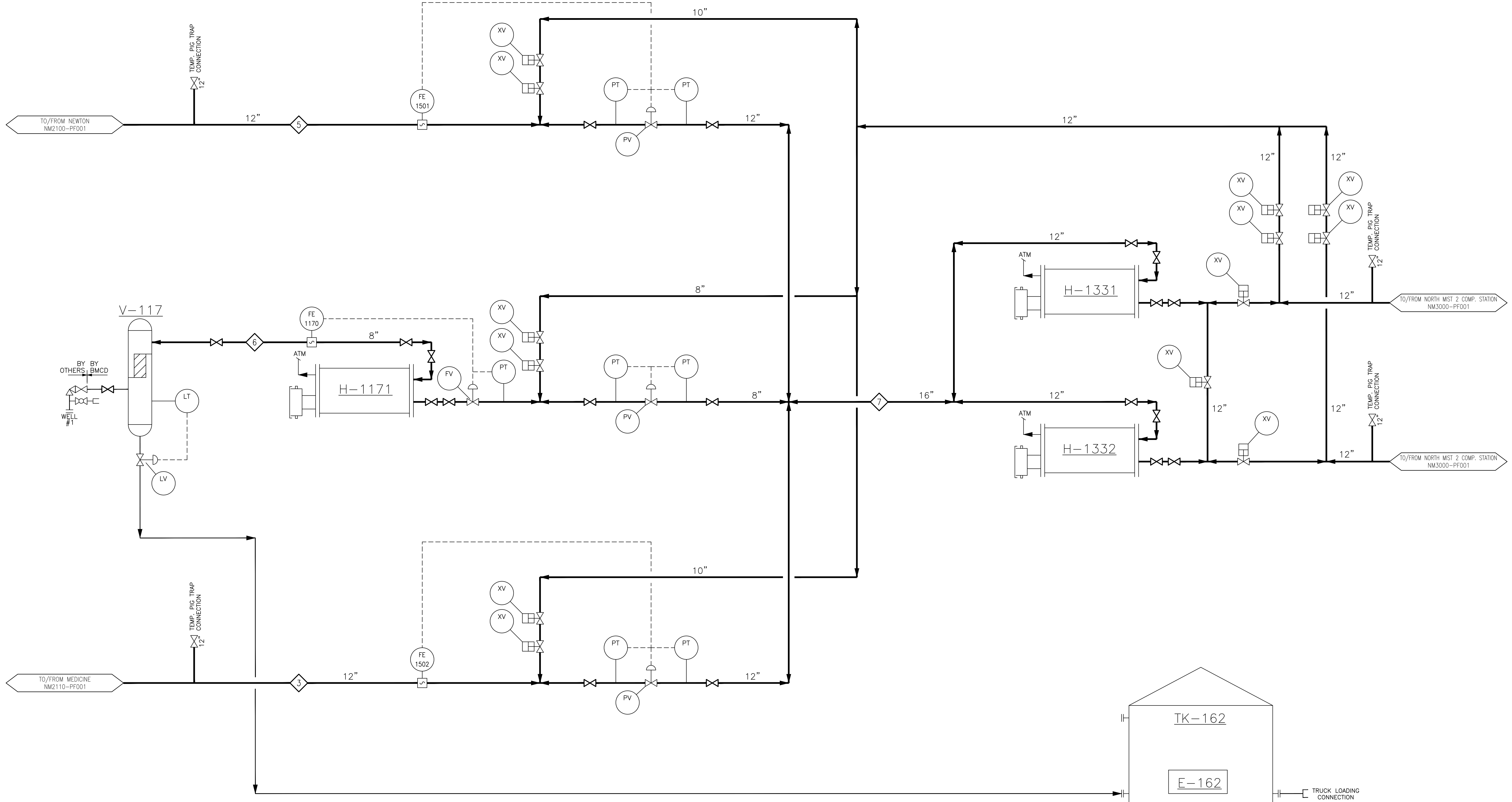
FE-1501/1502
ULTRASONIC FLOW
METER

H-1171
PROCESS HEATER

H-1331/1332
PROCESS HEATERS

TK-162
PRODUCED WATER
STORAGE TANK

E-162
PRODUCED WATER
STORAGE TANK HEATER



REV	DR.	CHK.	APP.	REVISION	DATE
A	KIK	KIK	BB	ISSUED FOR DESIGN	12/21/23

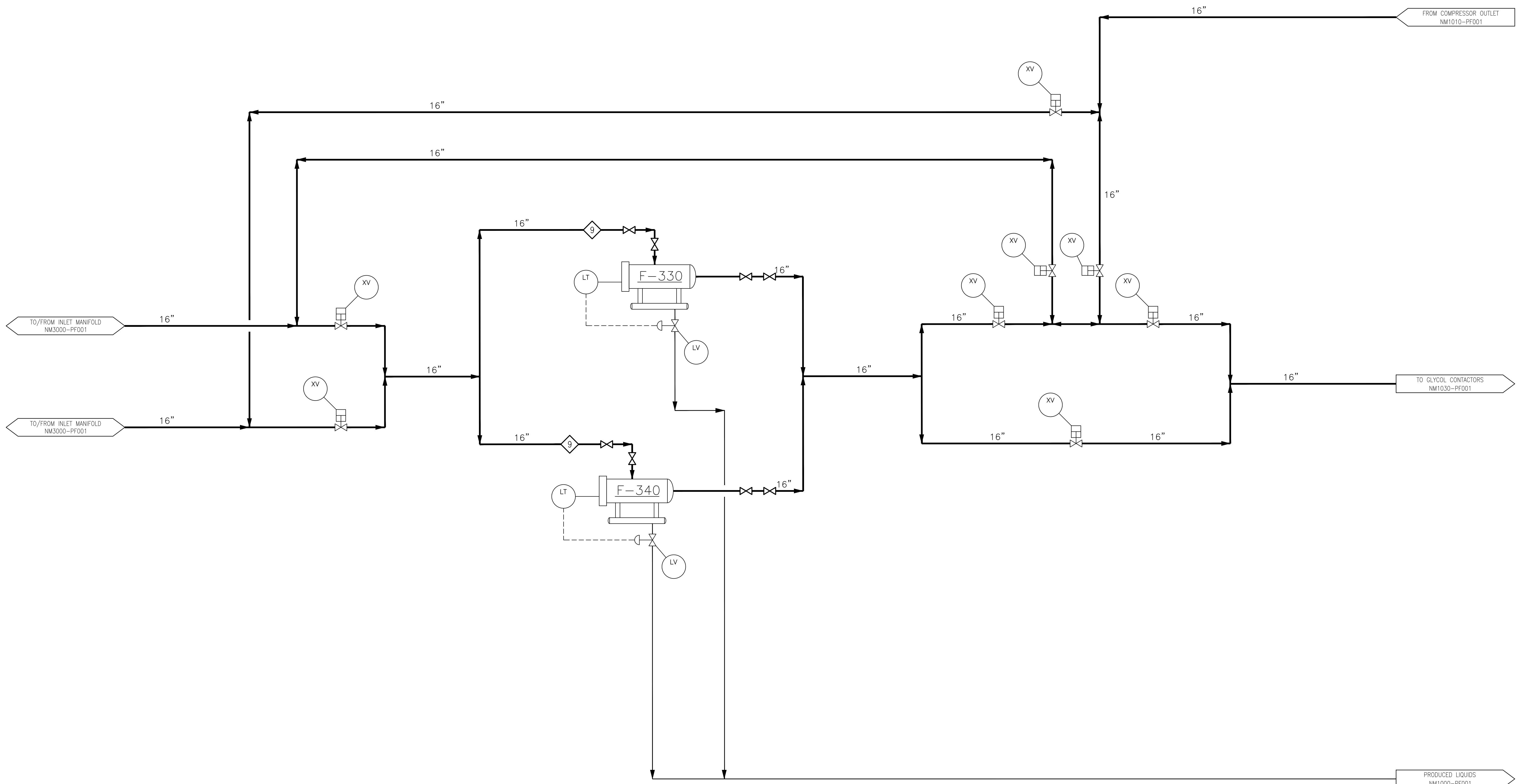


NORTH MIST RESILIENCY
PROCESS FLOW DIAGRAM
STEGOSAUR WELLPAD

BAR IS ONE INCH ON
ORIGINAL DRAWING.
ADJUST SCALE
AS SHOWN
ACCORDINGLY.

DWG. NO. **NM2120-PF001**
SHEET 3 OF 12 SCALE NONE
DR. KIK APP. DATE 10/31/23
APP. BY KIK

F-330/340
FILTER
SEPARATOR

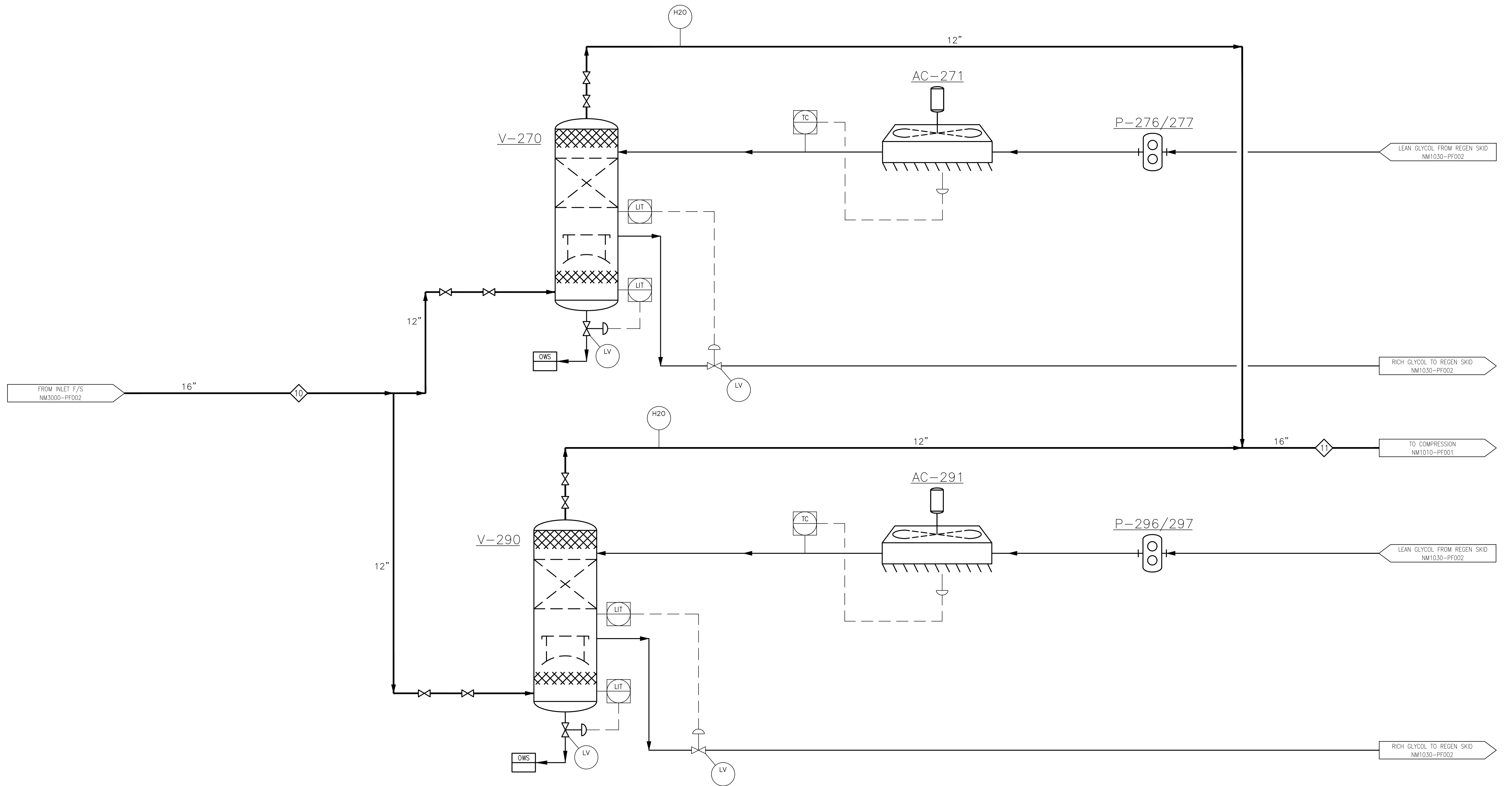


				BAR IS ONE INCH ON ORIGINAL DRAWING.		
		NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM INLET FILTRATION AND DIST. MANIFOLD		ADJUST SCALE AS SHOWN ACCORDINGLY.		
REV	DR.	CHK.	APP.	REVISION	DATE	APP. BY
A	KIK	KIK	BB	ISSUED FOR DESIGN	12/21/23	KIK

V-270/290
GLYCOL TOWERS

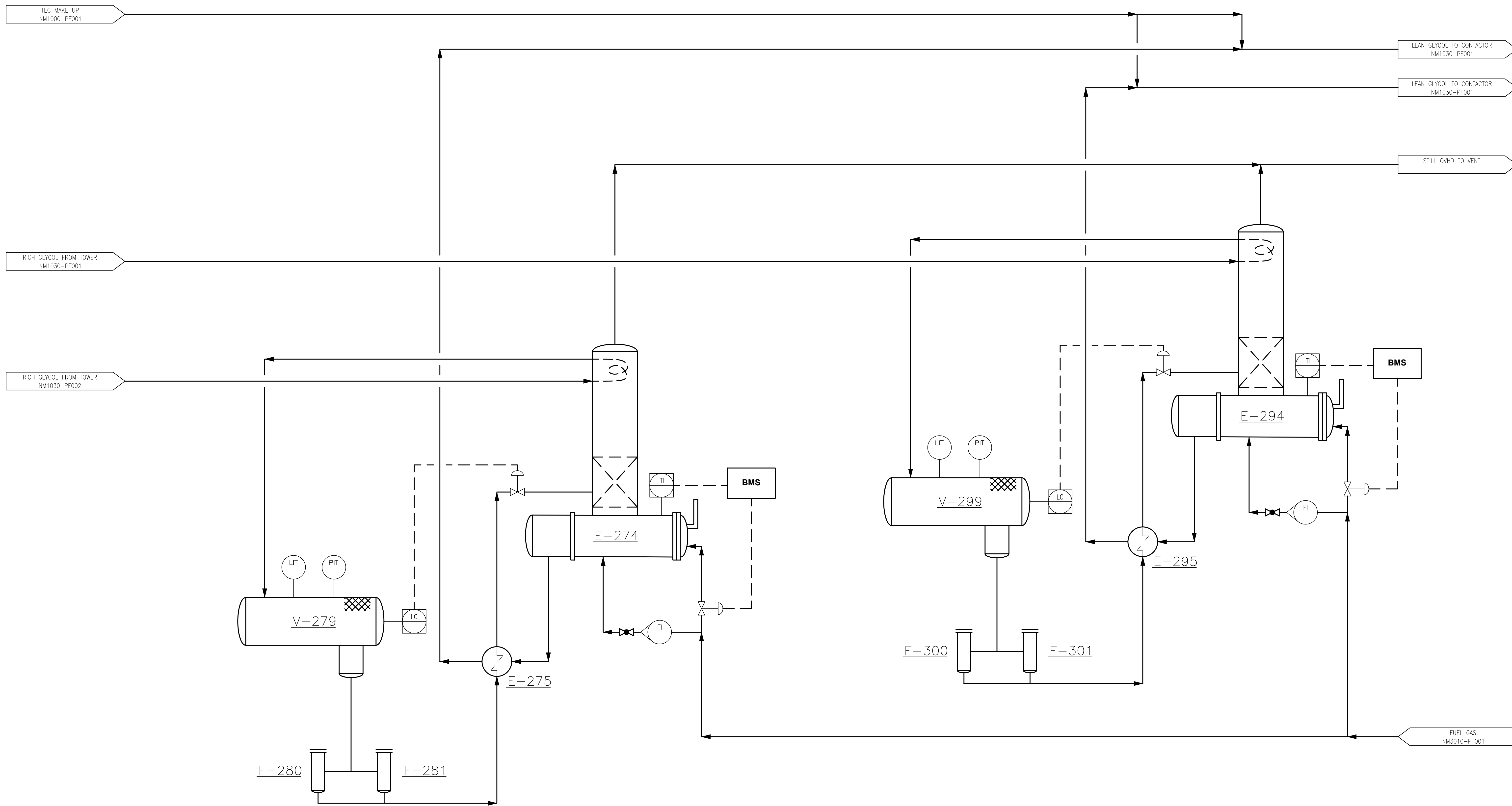
AC-271/AC-291
HEAT EXCHANGERS

P-276/277 & P-296/297
GLYCOL PUMPS



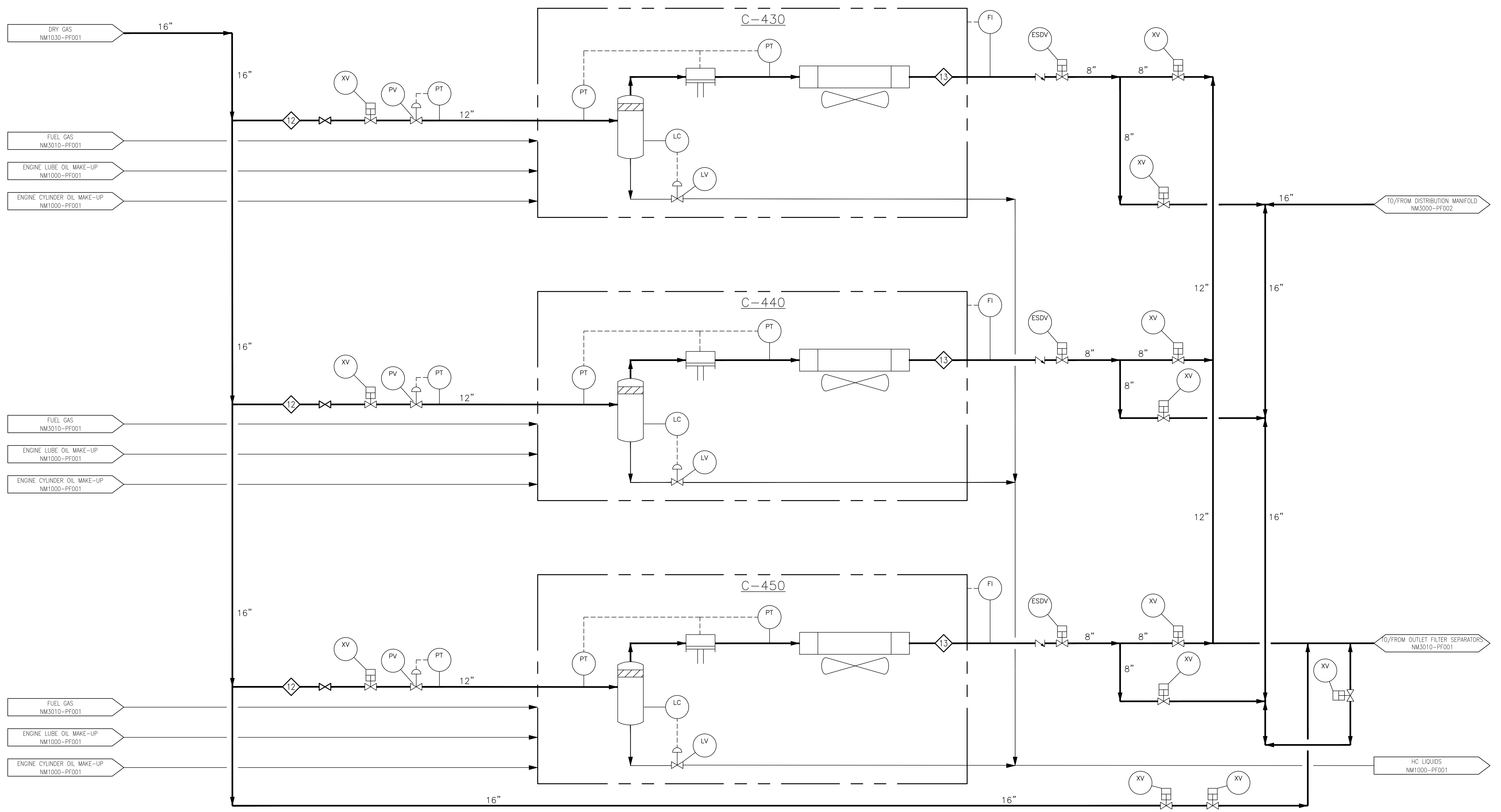
				NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM GLYCOL CONTACTORS	BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE AS SHOWN ACCORDINGLY.	NM1030-PF001 DWG. NO.
		250 SW TAYLOR ST PORTLAND, OR 97204				
REV	DR.	CHK.	APP.	REVISION	DATE	
A	KIK	KIK	BB	ISSUED FOR DESIGN	12/21/23	

V-279 GLYCOL VESSEL F-280/281 GLYCOL FILTERS E-275 HEAT EXCHANGER E-274 GLYCOL REBOILER V-299 GLYCOL VESSEL F-300/301 GLYCOL FILTERS E-295 HEAT EXCHANGER E-294 GLYCOL REBOILER



				BAR IS ONE INCH ON ORIGINAL DRAWING.														
NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM GLYCOL REGENERATION		DWG. NO.: SHEET 7 OF 12 DR. KIK APP. BY: KIK		SCALE NONE APP. DATE 10/31/23		ADJUST SCALE AS SHOWN ACCORDINGLY.												
<table border="1"> <thead> <tr> <th>REV</th> <th>DR.</th> <th>CHK.</th> <th>APP.</th> <th>REVISION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>KIK</td> <td>KIK</td> <td>BB</td> <td>ISSUED FOR DESIGN</td> <td>12/21/23</td> </tr> </tbody> </table>	REV	DR.	CHK.	APP.	REVISION	DATE	A	KIK	KIK	BB	ISSUED FOR DESIGN	12/21/23						
REV	DR.	CHK.	APP.	REVISION	DATE													
A	KIK	KIK	BB	ISSUED FOR DESIGN	12/21/23													

C-430/440/450
GAS COMPRESSOR SKID



G

F

E

D

C

B

A



REV	DR.	CHK.	APP.	REVISION	DATE
A	KIK	KIK	BB	ISSUED FOR DESIGN	12/21/23

NW Natural
250 SW TAYLOR ST
PORTLAND, OR 97204

NORTH MIST RESILIENCY
PROCESS FLOW DIAGRAM
COMPRESSION

BAR IS ONE INCH ON ORIGINAL DRAWING.

ADJUST SCALE AS SHOWN ACCORDINGLY.

NM1010-PF001

DWG. NO. 8 OF 12 SCALE NONE

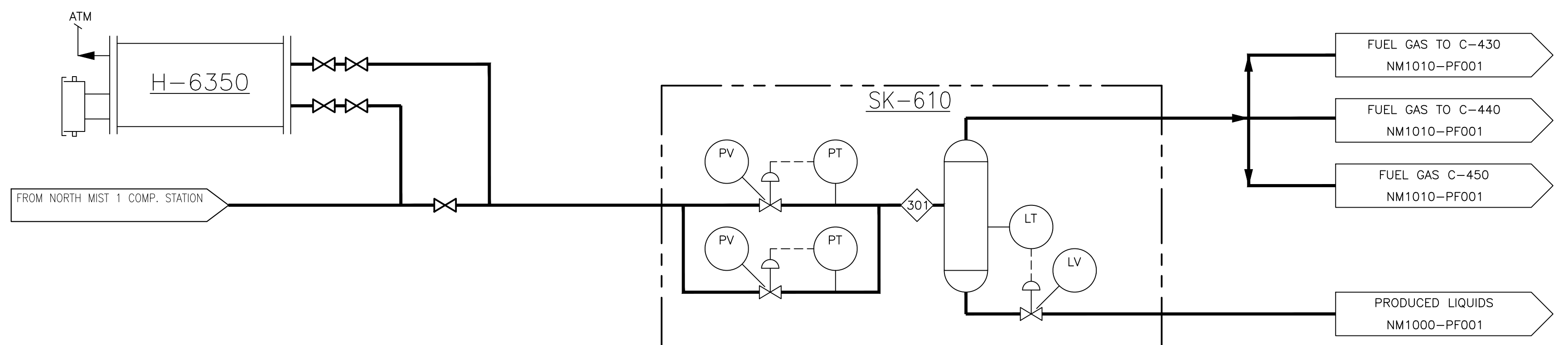
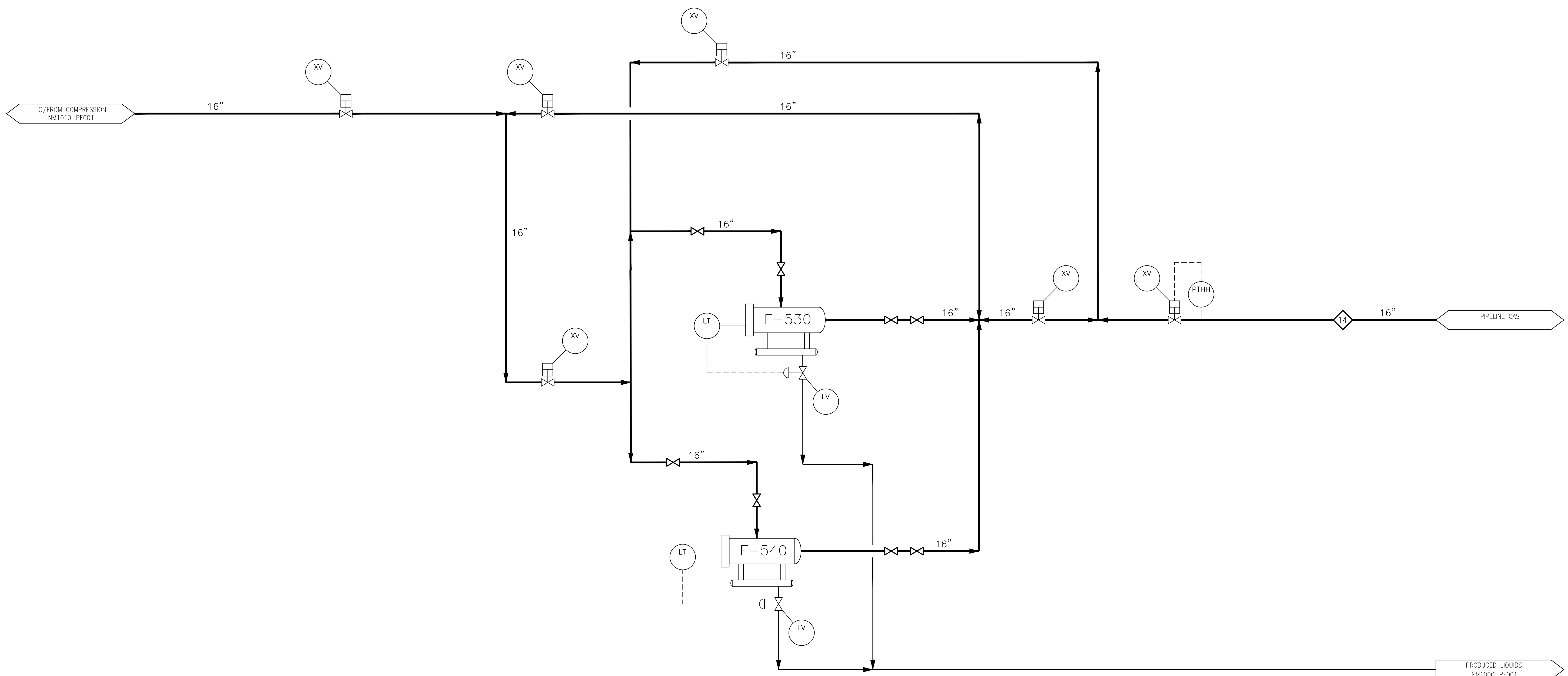
SHEET 8 OF 12 APP. DATE 10/31/23

DR. KIK APP. DATE 10/31/23

APP. BY KIK

F-530/540
OUTLET FILTER SEPARATOR

SK-610
FUEL GAS SKID



REV	DR.	CHK.	APP.	REVISION	DATE
A	KIK	BB		ISSUED FOR DESIGN	12/21/23



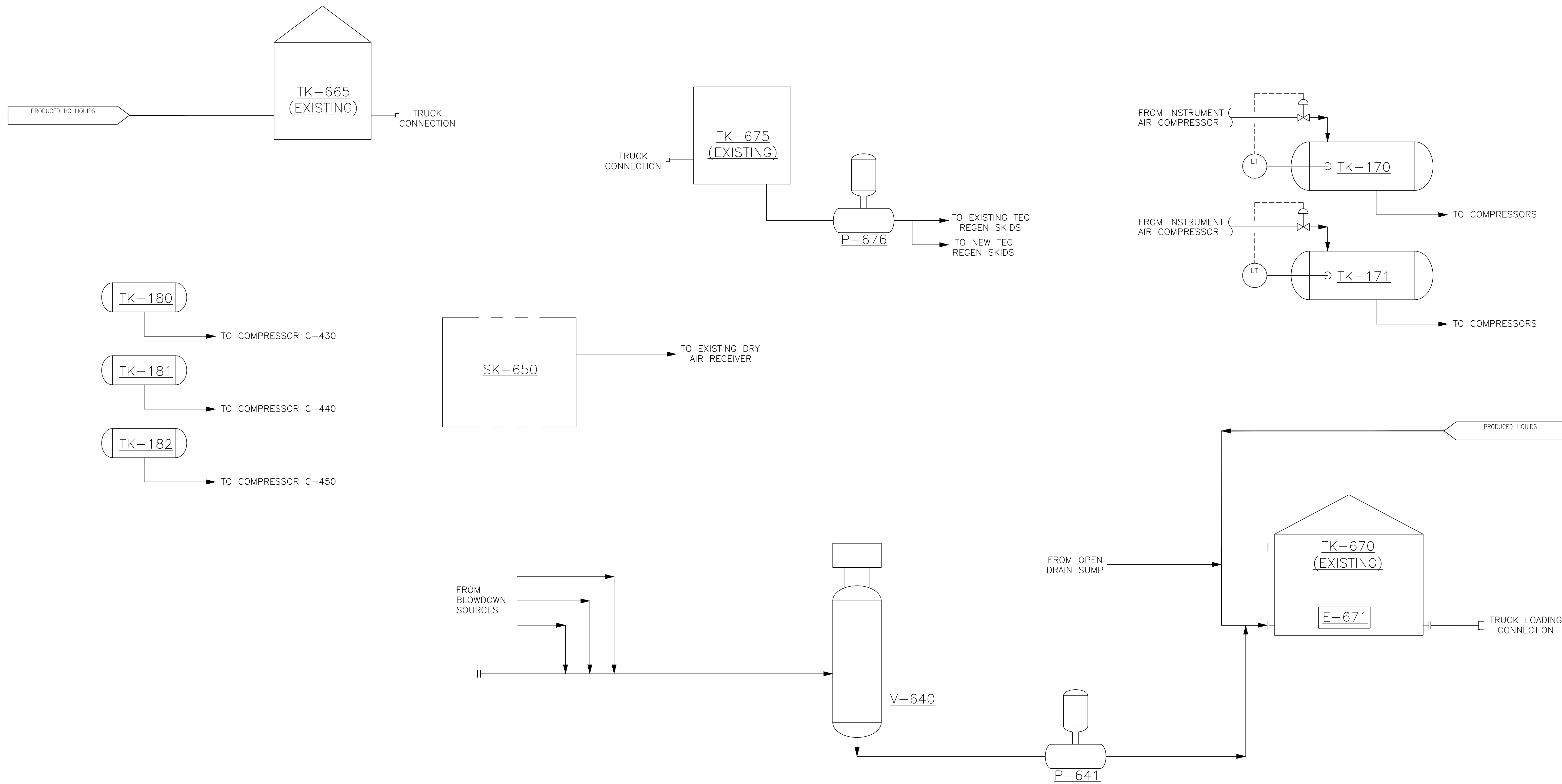
NORTH MIST RESILIENCY
PROCESS FLOW DIAGRAM
OUTLET FILTRATION

BAR IS ONE INCH ON ORIGINAL DRAWING.
ADJUST SCALE AS SHOWN ACCORDINGLY.

DWC. NO.		SCALE	
SHEET 9 OF 12		NONE	
DR. KIK	APP. DATE	10/31/23	
APP. BY KIK			

NM3010-PF001

TK-665 (EXISTING) WASTE OIL TANK TK-180 COMPRESSOR COOLANT MAKE-UP TANK TK-182 COMPRESSOR COOLANT MAKE-UP TANK TK-181 COMPRESSOR COOLANT MAKE-UP TANK TK-675 (EXISTING) TEG MAKEUP TANK TK-170 ENGINE LO TANK P-676 GLYCOL MAKEUP PUMP P-641 VENT STACK PUMP TK-171 CYLINDER LUBE OIL MAKEUP TANK V-640 VENT KO DRUM SK-650 INSTRUMENT AIR PACKAGE E-671 (EXISTING) OILY WATER STORAGE TANK HEATER TK-670 (EXISTING) OILY WATER STORAGE TANK



BURNS MEDONNELL		NW Natural 250 SW TAYLOR ST PORTLAND, OR 97204		BAR IS ONE INCH ON ORIGINAL DRAWING.		NM1000-PF001	
NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM TANKS		ADJUST SCALE AS SHOWN ACCORDINGLY.		SHEET 10 OF 12 SCALE NONE		DWG. NO. NM1000-PF001	
REV	DR.	CHK.	APP.	ISSUED FOR DESIGN	12/21/23	DATE	APP. BY KIK

HEAT & MATERIAL BALANCE – CASE #1

Stream Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Stream Description		Medicine Wellpad - Wells 1 & 2 (each)	Medicine Wellpad - Crater Well	Medicine to Stegosaur Lateral	Newton Wellpad - Wells 1, 2, & 3 (each)	Newton to Stegosaur Lateral	Stegosaur Wellpad - Well 1	Stegosaur Wellpad - Heater Inlet	Stegosaur to NM2CS Laterals (each)	NM2CS Inlet to Inlet Filter Separators (each)	NM2CS Dehy Contactor Inlet	NM2CS Dehy Contactor Outlet	Compressor Inlets (each)	Compressor Outlets (each)	Gas to/from 16" North Mist Pipeline
Overall Properties															
Vapor Fraction		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Temperature (F)		49.9	49.9	77.0	49.9	77.0	50.0	77.0	76.6	76.6	76.4	78.1	78.1	110.0	109.9
Pressure (PSIG)		418.0	418.0	391.2	418.0	392.2	420.0	391.2	380.6	380.6	377.4	375.4	375.4	797.8	796.8
Molar Flow (MMSCFD)		17.51	30.01	65.03	21.68	65.03	30.01	160.07	80.04	80.04	160.00	159.93	53.30	53.30	159.90
Mass Flow (lb/hr)		34,060	58,389	126,510	42,170	126,510	58,389	311,410	155,705	155,705	311,267	311,115	103,682	103,682	311,050
Composition, mass%															
	<u>Mol Wt.</u>														
Methane	16.0	90.53	90.53	90.53	90.53	90.53	90.53	90.53	90.53	90.53	90.53	90.57	90.57	90.57	90.57
Ethane	30.1	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69
Propane	44.1	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
i-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
n-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
i-Pentane	72.2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
n-Pentane	72.2	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
n-Hexane	86.2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
n-Heptane	86.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen	28.0	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
CO2	44.0	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
H2O	18.0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.01	0.01	0.01
Methanol	32.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CASE NOTES:
1. WITHDRAWAL WITH COMPRESSION. SATURATED GAS IN WELLS AT 420 PSIG. GAS COMPRESSED TO 750 PSIG AND SENT TO 16" PIPELINE.

HEAT & MATERIAL BALANCE – CASE #2

Stream Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Stream Description		Medicine Wellpad - Wells 1 & 2 (each)	Medicine Wellpad - Crater Well	Medicine to Stegosaur Lateral	Newton Wellpad - Wells 1, 2, & 3 (each)	Newton to Stegosaur Lateral	Stegosaur Wellpad - Well 1	Stegosaur Wellpad - Heater Inlet	Stegosaur to NM2CS Laterals (each)	NM2CS Inlet to Inlet Filter Separators (each)	NM2CS Dehy Contactor Inlet	NM2CS Dehy Contactor Outlet	Compressor Inlets (each)	Compressor Outlets (each)	Gas to/from 16" North Mist Pipeline
Overall Properties															
Vapor Fraction		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	1.00
Temperature (F)		49.9	49.9	77.2	49.9	77.0	50.0	77.0	77.1	77.1	77.0	78.2	-	-	78.2
Pressure (PSIG)		798.0	798.0	776.9	798.0	773.5	800.0	773.5	771.0	771.0	768.9	766.9	-	-	766.9
Molar Flow (MMSCFD)		17.50	30.01	65.02	21.67	65.02	30.01	160.04	80.02	80.02	160.00	159.95	-	-	159.90
Mass Flow (lb/hr)		34,054	58,379	126,487	42,162	126,487	58,379	311,353	155,677	155,677	311,282	311,167	-	-	311,166
Composition, mass%															
	<u>Mol Wt.</u>														
Methane	16.0	90.55	90.55	90.55	90.55	90.55	90.55	90.55	90.55	90.55	90.54	90.57	-	-	90.56
Ethane	30.1	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	-	-	6.70
Propane	44.1	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	-	-	1.50
i-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-	0.02
n-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-	0.02
i-Pentane	72.2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	-	-	0.04
n-Pentane	72.2	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	-	0.04
n-Hexane	86.2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-	0.02
n-Heptane	86.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00
Nitrogen	28.0	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	-	-	0.40
CO2	44.0	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	-	-	0.70
H2O	18.0	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	-	-	0.00
Methanol	32.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00

CASE NOTES:
1. WITHDRAWAL WITHOUT COMPRESSION. SATURATED GAS IN WELLS AT 800 PSIG. GAS FLOWS THROUGH DEHY, THEN TO 16" PIPELINE.

			NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM HEAT & MATERIAL BALANCE	BAR IS ONE INCH ON ORIGINAL DRAWING.	
	A KIK KIK BB REV DR. CHK. APP.	ISSUED FOR DESIGN REVISION			

HEAT & MATERIAL BALANCE – CASE #3

Stream Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Stream Description		Medicine Wellpad - Wells 1 & 2 (each)	Medicine Wellpad - Crater Well	Medicine to Stegosaur Lateral	Newton Wellpad - Wells 1, 2, & 3 (each)	Newton to Stegosaur Lateral	Stegosaur Wellpad - Well 1	Stegosaur Wellpad - Heater Inlet	Stegosaur to NM2CS Laterals (each)	NM2CS Inlet to Inlet Filter Separators (each)	NM2CS Dehy Contactor Inlet	NM2CS Dehy Contactor Outlet	Compressor Inlets (each)	Compressor Outlets (each)	Gas to/from 16" North Mist Pipeline
Overall Properties															
Vapor Fraction		1.00	1.00	1.00	1.00	1.00	1.00	-	1.00	-	-	-	1.00	1.00	1.00
Temperature (F)		106.6	106.6	108.4	107.6	108.4	107.7	-	109.9	-	-	-	42.4	110.0	42.4
Pressure (PSIG)		770.4	770.4	786.8	773.9	786.8	772.8	-	796.8	-	-	-	445.1	797.8	445.1
Molar Flow (MMSCFD)		17.50	30.00	65.00	21.67	65.00	30.00	-	80.00	-	-	-	53.33	53.33	160.00
Mass Flow (lb/hr)		34,046	58,364	126,455	42,153	126,455	58,364	-	155,637	-	-	-	103,757	103,757	311,274
Composition, mass%															
	<u>Mol Wt.</u>														
Methane	16.0	90.57	90.57	90.57	90.57	90.57	90.57	-	90.57	-	-	-	90.57	90.57	90.57
Ethane	30.1	6.70	6.70	6.70	6.70	6.70	6.70	-	6.70	-	-	-	6.70	6.70	6.70
Propane	44.1	1.50	1.50	1.50	1.50	1.50	1.50	-	1.50	-	-	-	1.50	1.50	1.50
i-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	-	-	-	0.02	0.02	0.02
n-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	-	-	-	0.02	0.02	0.02
i-Pentane	72.2	0.04	0.04	0.04	0.04	0.04	0.04	-	0.04	-	-	-	0.04	0.04	0.04
n-Pentane	72.2	0.03	0.03	0.03	0.03	0.03	0.03	-	0.03	-	-	-	0.03	0.03	0.03
n-Hexane	86.2	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	-	-	-	0.02	0.02	0.02
n-Heptane	86.2	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	0.00	0.00	0.00
Nitrogen	28.0	0.40	0.40	0.40	0.40	0.40	0.40	-	0.40	-	-	-	0.40	0.40	0.40
CO2	44.0	0.70	0.70	0.70	0.70	0.70	0.70	-	0.70	-	-	-	0.70	0.70	0.70
H2O	18.0	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	0.00	0.00	0.00
Methanol	32.0	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	0.00	0.00	0.00

CASE NOTES:
1. INJECTION WITH COMPRESSION. GAS FLOWING FROM 16" PIPELINE AT 450 PSIG, COMPRESSED TO 800 PSIG, THEN SENT TO WELLS.

HEAT & MATERIAL BALANCE – CASE #4

Stream Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Stream Description		Medicine Wellpad - Wells 1 & 2 (each)	Medicine Wellpad - Crater Well	Medicine to Stegosaur Lateral	Newton Wellpad - Wells 1, 2, & 3 (each)	Newton to Stegosaur Lateral	Stegosaur Wellpad - Well 1	Stegosaur Wellpad - Heater Inlet	Stegosaur to NM2CS Laterals (each)	NM2CS Inlet to Inlet Filter Separators (each)	NM2CS Dehy Contactor Inlet	NM2CS Dehy Contactor Outlet	Compressor Inlets (each)	Compressor Outlets (each)	Gas to/from 16" North Mist Pipeline
Overall Properties															
Vapor Fraction		1.00	1.00	1.00	1.00	1.00	1.00	-	1.00	-	-	-	1.00	1.00	1.00
Temperature (F)		107.0	107.0	108.5	107.9	108.5	107.8	-	109.9	-	-	-	45.9	110.0	45.9
Pressure (PSIG)		1,073.5	1,073.5	1,086.6	1,077.5	1,086.6	1,072.6	-	1,096.8	-	-	-	788.8	1,097.8	788.8
Molar Flow (MMSCFD)		17.50	30.00	65.00	21.67	65.00	30.00	-	80.00	-	-	-	53.33	53.33	160.00
Mass Flow (lb/hr)		34,046	58,364	126,455	42,153	126,455	58,364	-	155,637	-	-	-	103,757	103,757	311,274
Composition, mass%															
	<u>Mol Wt.</u>														
Methane	16.0	90.57	90.57	90.57	90.57	90.57	90.57	-	90.57	-	-	-	90.57	90.57	90.57
Ethane	30.1	6.70	6.70	6.70	6.70	6.70	6.70	-	6.70	-	-	-	6.70	6.70	6.70
Propane	44.1	1.50	1.50	1.50	1.50	1.50	1.50	-	1.50	-	-	-	1.50	1.50	1.50
i-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	-	-	-	0.02	0.02	0.02
n-Butane	58.1	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	-	-	-	0.02	0.02	0.02
i-Pentane	72.2	0.04	0.04	0.04	0.04	0.04	0.04	-	0.04	-	-	-	0.04	0.04	0.04
n-Pentane	72.2	0.03	0.03	0.03	0.03	0.03	0.03	-	0.03	-	-	-	0.03	0.03	0.03
n-Hexane	86.2	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	-	-	-	0.02	0.02	0.02
n-Heptane	86.2	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	0.00	0.00	0.00
Nitrogen	28.0	0.40	0.40	0.40	0.40	0.40	0.40	-	0.40	-	-	-	0.40	0.40	0.40
CO2	44.0	0.70	0.70	0.70	0.70	0.70	0.70	-	0.70	-	-	-	0.70	0.70	0.70
H2O	18.0	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	0.00	0.00	0.00
Methanol	32.0	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	0.00	0.00	0.00

CASE NOTES:
1. INJECTION WITH COMPRESSION. GAS FLOWING FROM 16" PIPELINE AT 750 PSIG, COMPRESSED TO 1100 PSIG, THEN SENT TO WELLS.

			NORTH MIST RESILIENCY PROCESS FLOW DIAGRAM HEAT & MATERIAL BALANCE	BAR IS ONE INCH ON ORIGINAL DRAWING.	
	250 SW TAYLOR ST PORTLAND, OR 97204	DWG. NO.: SHEET 12 OF 12 SCALE NONE DR. KIK APP. DATE 10/31/23 APP. BY KIK			
A KIK KIK BB REV DR. CHK. APP.	ISSUED FOR DESIGN REVISION	12/21/23 DATE			

Attachment M-4. Northwest Natural Gas 2022 Annual Report

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**NW Natural
HOLDINGS™**

Meeting the Moment

DECARBONIZE.
DIVERSIFY.
DELIVER.

2022 ANNUAL REPORT



President and CEO David H. Anderson with Construction Crew Leaders at newly renovated Vancouver, Washington Resource Center.

To Our Shareholders

In 2022, NW Natural Holdings demonstrated our continued commitment to decarbonization, diversification, growth and strong financial performance.

It was a transformative year on many fronts. We grew our customer base at our gas and water utilities, began operation of our first renewable natural gas (RNG) facility under the landmark Oregon Senate Bill 98, producing RNG on behalf of our gas utility customers, closed our largest water and wastewater acquisition to date, and began construction of the first RNG facilities we're investing in through our competitive RNG business.

We also increased dividends for the 67th consecutive year and were recognized by Ethisphere as one of the 2022 World's Most Ethical Companies¹. Recently, we learned we were recognized again by Ethisphere in 2023.

We're proud to operate three growing businesses that provide essential services, and I'm grateful for your confidence. I'm also grateful for our dedicated employees, whose steadfast focus on service, innovation and environmental stewardship allows us to meet the moment in these changing times.

Corporate Profile

NW NATURAL HOLDINGS (NYSE: NWN) is headquartered in Portland, Oregon, and, with its predecessors, has been doing business for 164 years. It owns a regulated natural gas distribution company (NW Natural), water and wastewater utilities (NW Natural Water), a renewable natural gas business (NW Natural Renewables), and other business interests.

ETHISPHERE[®]
WORLD'S MOST
ETHICAL
COMPANIES[®]
2022 - 2023

¹ "World's Most Ethical Companies" and "Ethisphere" names and marks are registered trademarks of Ethisphere LLC

2022 Highlights

NET INCOME

Reported net income for 2022 of \$86.3 million or \$2.54 per share, an increase of 10% in net income, compared to \$78.7 million or \$2.56 per share for 2021. The company's earnings per share for 2022 were affected by issuing common shares.



- Increased dividends paid for the 67th consecutive year, one of the longest records on the NYSE.
- Recognized by Ethisphere as one of the 2022 World's Most Ethical Companies^{®1}



The natural gas utility achievements in 2022 included:

Customer Growth

- Achieved an annual customer growth rate of 1.1% by adding 8,600 new natural gas meters, bringing the people we serve to approximately 2.5 million through nearly 795,000 meters.

Customer Service

- Ranked second in the West for large gas utilities and scored among the top 10 utilities in the nation in the annual J.D. Power Gas Utility Residential Customer Satisfaction Study.

Reliability & Resiliency

- Invested nearly \$340 million in our gas utility infrastructure. This included projects to support safety, reliability, growth and investments in technology.
- With cold temperatures on Dec. 22, 2022, NW Natural hit a record sendout of 8 million therms. The system performed very well.

Oregon Rate Case

- Received approval for Oregon rate case, with a \$59.4 million increase in the revenue requirement to recover investments in system reliability, resilience and upgrades to technology, including cybersecurity and our enterprise resource planning system.

Gas Utility Decarbonization

- On track to meet or exceed our voluntary carbon savings goal² of 30% by 2035, making progress toward our vision to be a provider of net carbon-neutral energy by 2050.
- Began operation of first RNG facility under the landmark Oregon Senate Bill 98.
- Completed a series of hydrogen-blend tests at our Sherwood operations and training center.
- Made progress on a turquoise hydrogen pilot project that is designed to turn methane into clean hydrogen and solid carbon in the first half of 2023.
- Began a pilot to test equipment that captures carbon from existing boilers and converts it to potassium carbonate for soap products.

² Voluntary emissions savings goal equivalent to 30% of the carbon emissions from our sales customers gas use and company operations in 2015.



Water and Wastewater Utility Growth and Service

- Closed largest acquisition to date increasing our customer base by approximately 70% and experienced strong 3.8% organic customer growth across the business.
- Supported safe and reliable service for 155,000 people through approximately 62,500 connections.



Competitive RNG

- On track to begin producing renewable natural gas in 2023 at two RNG facilities we're investing in through a partnership with EDL.



For the second year in a row, we ended with the lowest number of workplace injuries in nearly two decades.



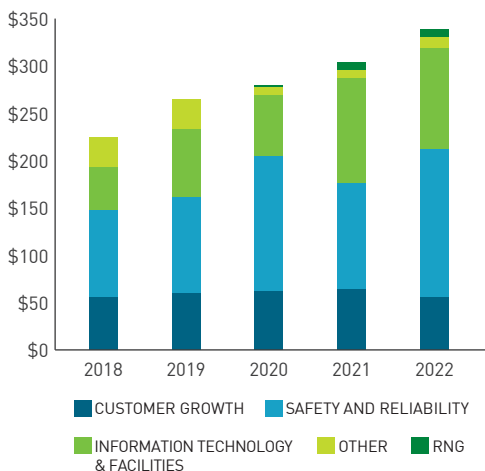
NW Natural®

Natural Gas Utility

Safety Guides All We Do

Operating safely is our greatest responsibility to customers, employees and communities we serve. Proactive field visits help us prevent safety issues across our service territory, and our 24/7 emergency response system allows us to quickly dispatch responders to damage and odor calls.

CAPITAL EXPENDITURES
(in millions)



Total investment in capital expenditures during 2022 was \$338 million on an accrual basis and includes cloud-based software.

Our Journey to Zero on-the-job safety initiative continued to deliver results in its third year, with the lowest number of workplace injuries in nearly two decades and a 25% increase in near-miss reporting (good-catch rate) from 2021. We also rolled out Work Ready, an app-based movement program, designed to help employees move better and support health and well-being. The last three years are among the best years for safety performance since 2009.

To support our goal of meeting or exceeding federal and state pipeline safety regulations, we maintain a rigorous program to inspect our transmission system with a combination of technologically advanced inline inspection tools and direct assessments. Our modernized pipe network allows us to use inline methods for most inspections. At the end of 2022, we had inspected about 2.5 times the amount of pipeline required by PHMSA safety regulators.

With no cast iron or bare steel pipe in our system, we operate one of the most modern distribution systems in the nation. In 2022, we invested nearly \$340 million in our natural gas infrastructure to support safety, system reliability, growth and improvements. Those investments included system reinforcement projects,

maintaining our valuable storage facilities and renovations at several of our service centers with a focus on seismic resiliency.

We continue to prioritize technology and cybersecurity investments to protect the safety and security of our critical systems and customer data. In 2022, we implemented a major upgrade to our enterprise resource planning system and made significant investments in enhanced cybersecurity protocols, systems and staff.

Growth & Service Achievements

The labor market and unemployment remained stable in 2022, while the housing market cooled as interest rates rose. In spite of this, we connected 8,600 new meters, for an overall growth rate of 1.1%.

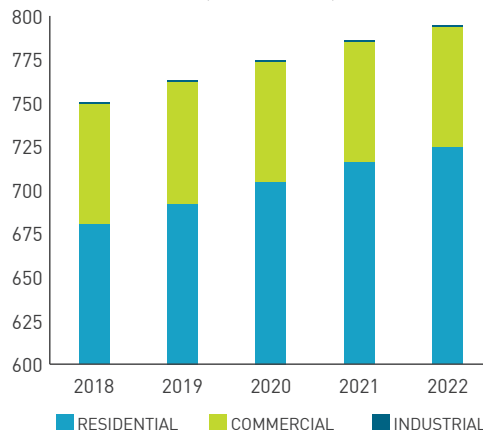
We are honored that our customers again ranked NW Natural second in the West among large gas utilities in the annual J.D. Power Gas Utility Residential Customer Satisfaction Study. It is the 19th year we have ranked in the top two in the West in the study's 21-year history. NW Natural also scored in the top 10 in the nation among large gas utilities this year. We also earned 2022 Environmental Champion recognition from Escalent, based on high marks for environmental stewardship in a customer survey. We were among 31 utilities to be recognized out of 140 utilities ranked.

Rates & Regulation

In October 2022, NW Natural received approval for an Oregon rate case, with a \$59.4 million increase in the revenue requirement and rate base of \$1.76 billion. The rate base increase of \$320 million compared to the last rate case allows us to recover investments in system reliability, resilience, technology upgrades and RNG. For Washington, the second year of a multiyear rate case went into effect, increasing the revenue requirement by \$3.0 million. We also received approval for annual purchase gas adjustments in Oregon and Washington, which update rates for projected gas costs in 2023. New rates went into effect in November 2022.

Even with new rates, our customers are paying less for their total bill than they did 15 years ago. Yet recognizing this is a time of energy market disruption and inflationary pressure, NW Natural worked with

UTILITY METERS AT YEAR-END
(in thousands)



We added 8,600 new customers in 2022, and now serve nearly 795,000 customers.

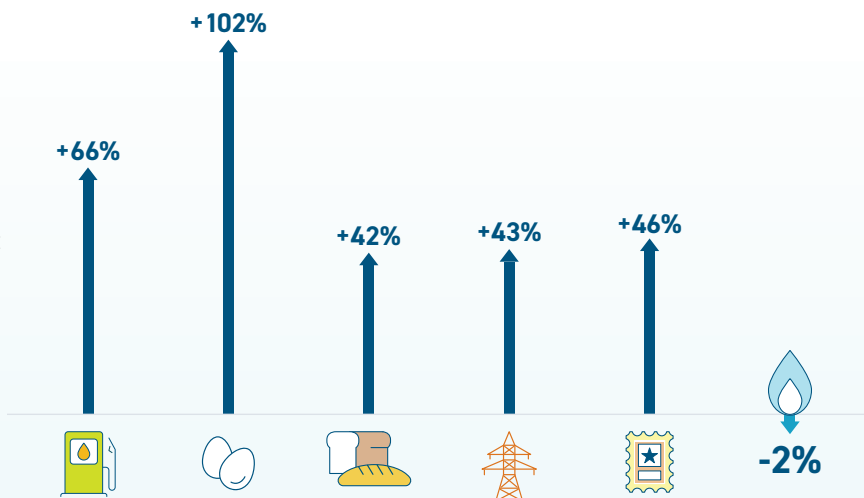
regulators and stakeholders to support customers with a rate mitigation tariff that smoothes the rate impacts over the year. To further help Oregon customers with household incomes less than 60% of the state median income, we introduced an income-qualified discount program that allows them to save 15% to 40% on monthly bills.

In September 2022, we filed our Integrated Resource Plan with Oregon and Washington regulators. This is the first plan to include comprehensive analysis to support implementation of the transformative climate policies adopted in both states. The long-term resource acquisition plan—which looks out to 2050—is designed to achieve emissions reductions at the least cost and risk, while continuing to provide safe and reliable service.

OUR CUSTOMERS ARE PAYING LESS THAN THEY DID 15 YEARS AGO

Despite this period of extraordinary market conditions, NW Natural customers are still paying less than they did 15 years ago for their natural gas bills.

Source: National data from Bureau of Labor Statistics, U.S. Postal Service, and NW Natural bills 2022 vs. 2007





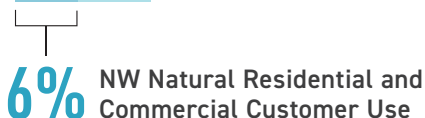
We believe climate change requires rapid innovation and collective action, which is why we're working to reduce emissions on multiple fronts

Justin Palfreyman, Senior Vice President of Strategy and Business Development with Anna Chittum, Director of Renewable Resources at the Lexington RNG Facility, which is the first facility under Senate Bill 98 and was completed in 2022.

Decarbonization

We believe climate change requires rapid innovation and collective action, which is why we are working to reduce emissions on multiple fronts and reimagining the role of our system and the fuel that we deliver. NW Natural has one of the tightest systems in the nation, and we use that modern system to deliver more energy in Oregon than any other utility. On the coldest winter days, we provide about 90% of the energy our residential space and water heating customers need. Natural gas use in our customers' homes and businesses accounts for approximately 6% of Oregon's annual greenhouse gas emissions.³ We're working to reduce that number even further.

OREGON GREENHOUSE GAS EMISSIONS BY SECTOR



Source: Oregon DEQ In-Boundary GHG Inventory 2019 data.

Since we launched our Low Carbon Pathway in 2016, we've made steady progress toward our voluntary goal of 30% carbon savings by 2035.

Our 2021 Destination Zero report analyzes scenarios for achieving carbon neutrality for our residential and commercial customers by 2050. We believe a combination of decarbonization measures that include energy efficiency, renewable energy, carbon offsets and carbon capture are needed in a low-carbon future. Replacing conventional natural gas over time with net carbon-neutral alternatives like RNG and clean hydrogen is central to achieving that vision.

In January 2022, operations began at our first RNG facility under Oregon Senate Bill 98 with BioCarbN and Tyson Foods. A second facility is slated to be completed in the spring of 2023. Groundbreaking Oregon legislation enables us to procure and invest in RNG and clean hydrogen on behalf of our customers. To date we have signed agreements with options to purchase or develop RNG totaling about 3% of NW Natural's current annual sales volume in Oregon, and we are pursuing additional RNG supply for the benefit of our customers.

Our engineering team completed hydrogen blend tests of 5%, 10% and 15% at our Sherwood operations and training center. We also made progress on an exciting turquoise hydrogen pilot project designed to turn methane into clean hydrogen and solid carbon in partnership with Modern Electron. We expect that pilot to go live in the first half of 2023.

In another pilot project, we're working with a handful of commercial customers to test CarbinX equipment that is designed to capture carbon from existing boilers and reduce energy use. The captured carbon dioxide is converted to potassium carbonate, which can be used to make soap products.

As part of our focus on decarbonization innovation and collaboration, NW Natural team members joined policymakers on a RNG and clean hydrogen fact-finding trip to Denmark to understand how that country is implementing these strategies. Notably, Denmark is already delivering roughly 30% RNG in its gas system, and is working towards meeting 75% of its gas demand from RNG by 2030 and 100% by 2034. Hydrogen has also gained momentum, and Denmark considers it part of its long-term energy future.

These projects are just the beginning. NW Natural is a 164-year-old company that has evolved many times since 1859 to meet the essential energy needs of our region. We're committed to implementing climate solutions that work for our environment, our customers, and our communities. The renewable supply is growing, the necessary technology exists, and our modern storage and delivery system is ready.



Gas process and storage equipment at the Nature Energy Korskro Biomethane Plant in Denmark.

³ NW Natural sales load data from the Oregon Department of Environmental Quality In-Boundary Greenhouse Gas Inventory, 2019 data.

Our main focus is working toward a portfolio of RNG projects that generate stable, growing income and cash flows and fit our overall corporate strategy



Competitive Renewables

Launched as a competitive RNG business in 2021, NW Natural Renewables is investing in renewable energy in support of the transition to a decarbonized future. It is focused on the production and supply of RNG, helping a variety of sectors decarbonize using existing waste streams and renewable energy sources.

NW Natural Renewables' first project is with EDL, a leading global producer of sustainable distributed energy. The project includes a total \$50 million investment toward the development of two RNG production facilities, which are under construction and on track to begin operations in the second quarter of 2023. NW Natural Renewables has contracted to take a 20-year supply of RNG from the facilities.

We're excited about additional opportunities in this fast-growing market. Given our size and expertise, we believe we have a competitive edge that allows us to be nimble and tailor our approach to each project.



Construction in progress at the two RNG facilities EDL is building.



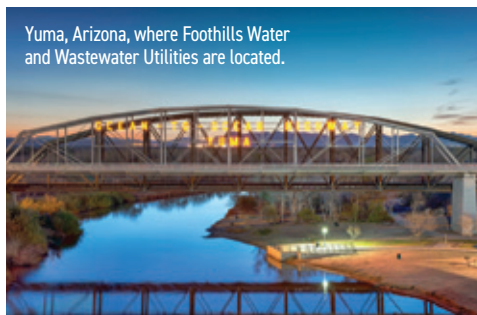
NW Natural
WATER™

Water & Wastewater Utilities

In 2022, we continued our disciplined acquisition strategy and saw strong organic growth in our water and wastewater utilities. Organic customer growth was 3.8% across the utilities, with extraordinary growth of 8% in Texas and 4% in Idaho Falls. In October 2022, we closed our largest water and wastewater acquisition to date in Yuma, Arizona, increasing our total connections by approximately 70%. The acquisition in this fast-growing area positions us for future acquisitions and growth. We also closed acquisitions in Texas, Idaho and Washington.

At the same time, we continued to invest in safety, system reliability and information technology with nearly \$20 million of infrastructure spend last year. We focused on collaborative, transparent and productive relationships with regulators and constructive general rate cases. In 2022, we completed three rate cases to recover essential investments in these systems.

Today, NW Natural Water provides water and wastewater services to approximately 155,000 people through over 62,500 connections, with approximately \$260 million of cumulative investment. We continue to see opportunity for growth and investment in this sector in the years ahead.

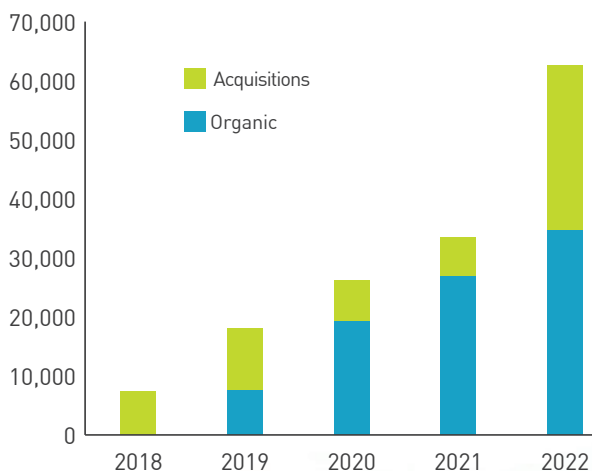


Reflecting on 2022, I'm beyond proud of all that we accomplished. We met the moment, delivering for our customers and keeping our employees safe while innovating, evolving and growing.

Thank you for your confidence and trust in our company and our vision for the future. It means the world to us.

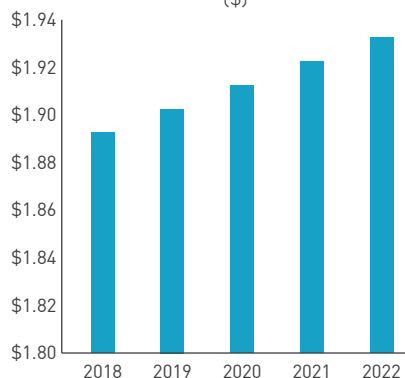
David H. Anderson
President and Chief Executive Officer

WATER UTILITY CUSTOMERS AT YEAR-END



We added over 29,000 new customers in 2022, and now serve over 62,500 customers.

DIVIDENDS PAID PER SHARE (\$)



The current indicated annual dividend is \$1.94 per share. Future dividends are subject to Board of Director discretion and approval. Annual dividends paid per share in 2022 increased for the 67th consecutive year.

Financial Overview

2022

2021

KEY HIGHLIGHTS

Consolidated financial facts (\$000):

Operating revenues	1,037,353	860,400
Net income	86,303	78,666
Financial ratios (%):		
Return on average common equity	8.2	8.6
Capital structure ¹ at year-end:		
Long-term debt	53.2	52.8
Common stock equity	46.8	47.2

COMMON STOCK

Shareholder data (000):

Average shares outstanding-diluted	33,984	30,752
Year-end shares outstanding	35,525	31,129
Per share data (\$):		
Diluted earnings	2.54	2.56
Dividends paid	1.93	1.92
Book value at year-end	33.09	30.04
Market value at year-end	47.59	48.78

NW Natural Gas Service Territory



NATURAL GAS DISTRIBUTION OPERATING HIGHLIGHTS

Gas deliveries (000 therms)	1,252,337	1,184,775
Margin ² (\$000)	505,875	479,811
Degree days	2,712	2,378
Meters at year-end	794,497	785,897
Employees at year-end	1,149	1,173

WATER OPERATING HIGHLIGHTS

Connections at year-end	62,592	33,417
Employees at year-end	105	61

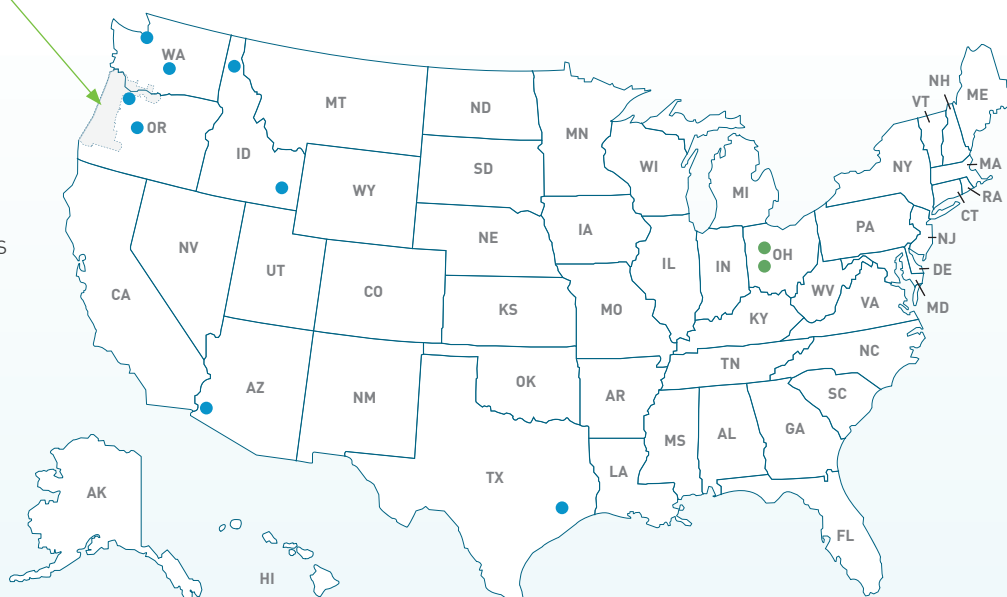
DIVIDENDS PAID ON COMMON STOCK (per share)

Payment date		
February	0.4825	0.4800
May	0.4825	0.4800
August	0.4825	0.4800
November	<u>0.4850</u>	<u>0.4825</u>
Total dividends paid	1.9325	1.9225

¹ Includes current maturities of long-term debt and excludes short-term debt.

² References to the margin refer to natural gas distribution segment.

- NW NATURAL GAS
- NW NATURAL WATER
- NW NATURAL RENEWABLES





DAVID H. ANDERSON
President and Chief Executive Officer, NW Natural Holdings and NW Natural



TIMOTHY P. BOYLE
President and Chief Executive Officer and Chairman of the Board, Columbia Sportswear Company



MONICA ENAND
Founder and Former Chief Executive Officer, Zapproved



KAREN LEE
Chief Executive Officer of Plymouth Housing



HON. DAVID K. MCCURDY
Former President and CEO of the American Gas Association



SANDRA MCDONOUGH
Former President and CEO of Oregon Business & Industry



NATHAN I. PARTAIN
Former President and Co-Chief Investment Officer of Duff & Phelps Investment Management Co.



JANE L. PEVERETT
Former President and Chief Executive Officer, British Columbia Transmission Corporation



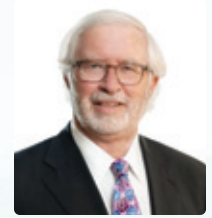
KENNETH THRASHER
Former Chairman of the Board, Compli Corporation



MALIA H. WASSON
Chair of the Board, NW Natural Holdings and NW Natural; Chief Executive Officer, Sand Creek Advisors



CHARLES A. WILHOITE
Managing Director, Willamette Management Associates, a Citizens Company



STEVEN E. WYNNE
Independent Director, NW Natural and Executive Vice President, Moda, Inc.

NW NATURAL SENIOR MANAGEMENT



DAVID H. ANDERSON¹
President and Chief Executive Officer



FRANK BURKHARTSMEYER¹
Senior Vice President and Chief Financial Officer



JAMES DOWNING
Vice President and Chief Information Officer



SHAWN M. FILIPPI^{1,2}
Vice President, Chief Compliance Officer and Corporate Secretary



JON HUDDLESTON
Vice President Engineering and Utility Operations



ZACHARY D. KRAVITZ
Vice President, Rates and Regulatory



JUSTIN B. PALFREYMAN²
Senior Vice President, Strategy and Business Development, and President, NW Natural Water



MELINDA ROGERS
Vice President, Chief Human Resources and Diversity Officer



KIMBERLY RUSH
Senior Vice President Operations and Chief Marketing Officer



MARDILYN SAATHOFF¹
Senior Vice President, Regulation and General Counsel



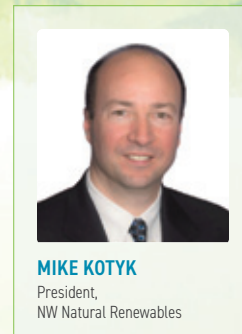
DAVID WEBER
Vice President, Gas Supply and Utility Support Services



KATHRYN WILLIAMS
Vice President, Public Affairs and Sustainability



BRODY J. WILSON^{1,2}
Vice President, Chief Accounting Officer, Controller and Treasurer



MIKE KOTYK
President, NW Natural Renewables

¹ Also officers at NW Natural Holdings
² Also officers at NW Natural Water

Notice of Annual Meeting

The 2023 Annual Meeting of Shareholders is scheduled to be held at 2 p.m., Thursday, May 25, 2023. We are expecting to conduct an entirely virtual Annual Meeting. A meeting notice and proxy statement describing our plans for conducting the meeting will be sent to all shareholders who hold shares as of the record date, April 6, 2023. Such plans may be supplemented or revised as appropriate.

Dividend reinvestment and direct stock purchase plan

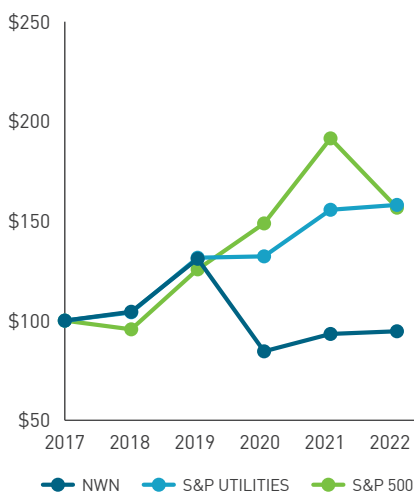
Participants may make an initial investment in company stock and common shareholders of record may reinvest all or part of their dividends in additional shares under the company's plan. Cash purchases may also be made. Participants in the plan bear the cost of brokerage fees and commissions for shares purchased on the open market to fulfill purchases under the plan. A prospectus will be sent upon request.

Scheduled dividend payment dates

Subject to Board approval, the following dates are scheduled for dividend payment:

February 15, 2023
 May 15, 2023
 August 15, 2023
 November 15, 2023

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN
 (Based on \$100 invested on 12/31/2017)



Total shareholder return (annualized) over the five years ending December 31, 2022 for NW Natural Holdings was 1.44%, compared to Standard & Poor's (S&P) Utilities Index return of 1.57%, and the S&P 500 Index return of -18.17%.

Certifications

The Chief Executive Officer certified to the NYSE on June 20, 2022, that as of that date, he was not aware of any violation by the company of NYSE's corporate governance listing standards, and the company had filed with the Securities and Exchange Commission (SEC), as exhibits 31.3 and 31.4 to its Annual Report on Form 10-K for the year ended Dec. 31, 2021, the certificates of the Chief Executive Officer and the Chief Financial Officer of the company certifying the quality of the company's public disclosure. For the year ended Dec. 31, 2022, the certificates of the Chief Executive Officer and Chief Financial Officer are attached as exhibits 31.3 and 31.4 to the Form 10-K included in this Annual Report.

Contact the NW Natural Holdings Board

Concerns may be directed to the nonmanagement directors by writing to:

Northwest Natural Holding Company
 Board of Directors
 c/o Corporate Secretary
 250 SW Taylor Street
 Portland, OR 97204

Forward-looking statements

The statements made in this Annual Report that are not purely historical, including statements regarding plans, goals, strategies, commitments, success, opportunities, dividends, earnings, financial value, financial results, future events, performance, stability, continuation of past practices, future demand or preference for gas, strategic goals and visions, environmental initiatives, decarbonization and role of natural gas and the gas delivery system, including competitive renewable natural gas strategy, decarbonization goals and timelines, energy efficiency measures, use of renewables, carbon emissions, targets and savings, renewable natural gas or hydrogen purchases, projects, investments or other renewable initiatives, including the construction of and production by RNG facilities, procurement of renewable natural gas or hydrogen for customers, technology and policy innovations, commodity costs, customer rates and service, competitive position,

revenues, customer and business growth, capital expenditures, system and infrastructure investments, emergency preparedness and response, technology and cybersecurity investments, system reliability, safety and implementation of safety initiatives, system and operational resiliency, business continuity, environmental stewardship, securities issuances, including sustainable financings, regulatory proceedings and actions including, but not limited to, our rate cases and the timing and results thereof, rate recovery, effects of regulatory mechanisms, the regional and national economy, business development and new business initiatives, water and wastewater acquisitions, partnerships, investment strategies, planned acquisitions and integration thereof, likelihood and success associated with any transaction, operating plans and implementation, system modernization and efficiency, diversity, equity and inclusion initiatives, and effects of legislation or changes in laws or regulations, including but not limited to carbon and renewable natural gas and hydrogen regulations are forward-looking statements within the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. NW Natural's actual results could differ materially from those anticipated in these forward-looking statements as a result of risks and uncertainties, including those described in the attached report on Form 10-K. For a more complete description of these risks and uncertainties, please refer to our filings with the SEC on Forms 10-K and 10-Q.

Request for publications

The following publications may be obtained without charge by contacting the Corporate Secretary at NW Natural's address: Annual Report; Form 10-K; Form 10-Q; Form 8-Ks; Corporate Governance Standards; Director Independence Standards; Code of Ethics; and Board Committee Charters. These publications, as well as other filings made with the SEC, are also available on our website at nwnaturalholdings.com. Our SEC filings are also available through the SEC's website (sec.gov).



PRODUCED BY NW NATURAL'S CORPORATE COMMUNICATIONS

PHOTO CREDITS: DALE HEADRICK - Page 4: field technician; ROBBIE MCCLARAN - Page 2: Vancouver Resource Center. **OTHER** - Page 6: Lexington RNG Facility, courtesy Anna Chittum; Page 7: Nature Energy Korskro Biomethane Plant, courtesy Chris Kroeker; Page 8: Limestone and Lorain RNG Facilities, courtesy Adam Larky.

PRINTING: Donnelley Financial Solutions

Investor and Shareholder Information



NIKKI SPARLEY

Director, Investor Relations
and Treasury
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Direct (503) 721-2530
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CATHY CROWN

Manager, Shareholder Services
Toll free (800) 422-4012, Ext. 2402
Direct (503) 220-2402
cathy.crown@nwnatural.com

STOCK TRANSFER AGENT AND REGISTRAR

For common stock:
American Stock Transfer
& Trust Company
6201 15th Avenue
Brooklyn, NY 11219
(888) 777-0321
web: astfinancial.com
email: info@astfinancial.com

TRUSTEE AND BOND PAYING AGENT

For bond issues:
Deutsche Bank
Trust Company Americas
60 Wall Street
New York, NY 10005
(800) 735-7777

Living Our Core Values Every Day



Integrity

- Earned the prestigious distinction as one of the Ethisphere® Institute's 2023 World's Most Ethical Companies® for the second year in a row



Safety

- No cast iron or bare steel pipe in the natural gas system, making our system one of the tightest and most modern in the nation
- Laser focused on employee safety with our Journey to Zero program, which has resulted in better employee health and safety



Caring

- Helps low-income customers manage their natural gas bills through a variety of programs
- Donates time and money to local nonprofits in the areas we serve with a heightened focus on organizations that demonstrate a commitment to diversity, equity and inclusion



Service Ethic

- Consistently receive top-level customer satisfaction scores in J.D. Power and Escalent studies



Environmental Stewardship

- Partners with Energy Trust of Oregon to offer natural gas customers energy-efficiency programs and services as we work toward a net carbon-neutral future
- Supports water conservation and encourages customers to reduce water use and has installed technology to help minimize water leakage across its infrastructure



Learn more about how our values guide our work: nwnatural.com/esgreport

"World's Most Ethical Companies" and "Ethisphere" names and marks are registered trademarks of Ethisphere LLC





**NW Natural
HOLDINGS™**

250 SW TAYLOR STREET
PORTLAND, OREGON 97204
NWNATURALHOLDINGS.COM
NYSE: NWN

ETHISPHERE®
WORLD'S MOST
ETHICAL
COMPANIES®
2022 - 2023

Our Core Values

Integrity
Safety
Caring
Service Ethic
Environmental Stewardship

Our Mission

We provide safe, reliable and affordable utility services and renewable energy in a sustainable way to better the lives of the communities we serve.

Our Vision

Lead in service excellence, innovation and environmental stewardship by harnessing our passion for customers.



Attachment M-5. Facility Bond Revision

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SURETY RIDER

To be attached to and form a part of

Bond No. 6053326

dated November 9, 2001
effective (MONTH-DAY-YEAR)

executed by Northwest Natural Gas Company, as Principal,
(PRINCIPAL)

and by SAFECO Insurance Company of America, as Surety,

in favor of State of Oregon, acting by and through the Energy Facility Siting Council
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

The Bond Amount from:

Four Million Five Hundred Fifty-seven Thousand Eight Hundred & 00/100 (\$4,557,800.00)

To:

Four Million Eight Hundred Twenty-seven Thousand & 00/100 (\$4,827,000.00)

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective March 6, 2024
(MONTH-DAY-YEAR)

Signed and Sealed March 6, 2024
(MONTH-DAY-YEAR)

Northwest Natural Gas Company
(PRINCIPAL)

By: [Signature]
(PRINCIPAL)

SAFECO Insurance Company of America
(SURETY)

By: [Signature]
Krista M. Lee, Attorney-in-Fact



This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

Certificate No: 8204867

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American States Insurance Company is a corporation duly organized under the laws of the State of Indiana, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America are corporations duly organized under the laws of the State of New Hampshire (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Krista M. Lee all of the city of Seattle, state of Washington each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 15th day of February, 2021.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America



By: David M. Carey

David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 15th day of February, 2021, before me personally appeared David M. Carey, who acknowledged himself to be Assistant Secretary of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: Teresa Pastella

Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-law and Authorizations of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, which are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorney-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 6th day of March, 2024



By: Renee C. Llewellyn

Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries,

Attachment M-6. Letter from Legal Counsel

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March 14, 2024

Oregon Department of Energy
625 Marion St. NE
Salem, OR 97301-3737

RE: Request for Amendment No. 13 to the Mist Underground Natural Gas Storage Site Certificate

Dear Sir or Madam:

I am Vice President, Corporate Secretary and Chief Compliance Officer for Northwest Natural Gas Company (“NW Natural”). NW Natural is the Site Certificate Holder for the Mist Underground Natural Gas Storage Facility (the “Mist Facility”). NW Natural is submitting its Request for Amendment No. 13 to the Mist Underground Natural Gas Storage Site Certificate with the Oregon Energy Facility Siting Council, for the purposes described in the Amendment filing.

In connection with the Request for Amendment, and in accordance with OAR 345-021-0010(1)(m)(A), I have examined originals or copies certified or otherwise identified to my satisfaction of the books and records of NW Natural and such other documents as I have deemed necessary and appropriate for the purposes of this opinion. In rendering this opinion expressed below, I also have assumed (i) the authenticity of all the documents submitted to me as original and (ii) the conformity to original documents of all documents submitted to me as copies.

Based on the foregoing, to the best of my knowledge, subject to NW Natural meeting all applicable federal, state and local laws (including all rules and regulations promulgated thereunder), NW Natural continues to have the legal authority to construct and operate the Mist Facility, and to construct and operate the expansion of the Mist Facility as described in the Request for Amendment, without violating NW Natural’s articles of incorporation, bond indenture agreements, common stock covenants, or similar agreements, in each case, as amended (“Agreements”).

I am an active member of the Oregon State Bar. By issuing this opinion, I do not hold myself out as an expert in, and am not expressing an opinion with respect to, the law of any jurisdiction other than the law of the State of Oregon. Further, the foregoing opinion is limited solely to whether the Applicant has the authority under its Agreements to construct and operate the Mist Facility.

I express no opinion as to the applicability of, or compliance with, any federal, state or local laws (including all rules and regulations promulgated thereunder) to such construction and operation or as to the effects of the foregoing laws on such construction and operation.

Very truly yours,



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