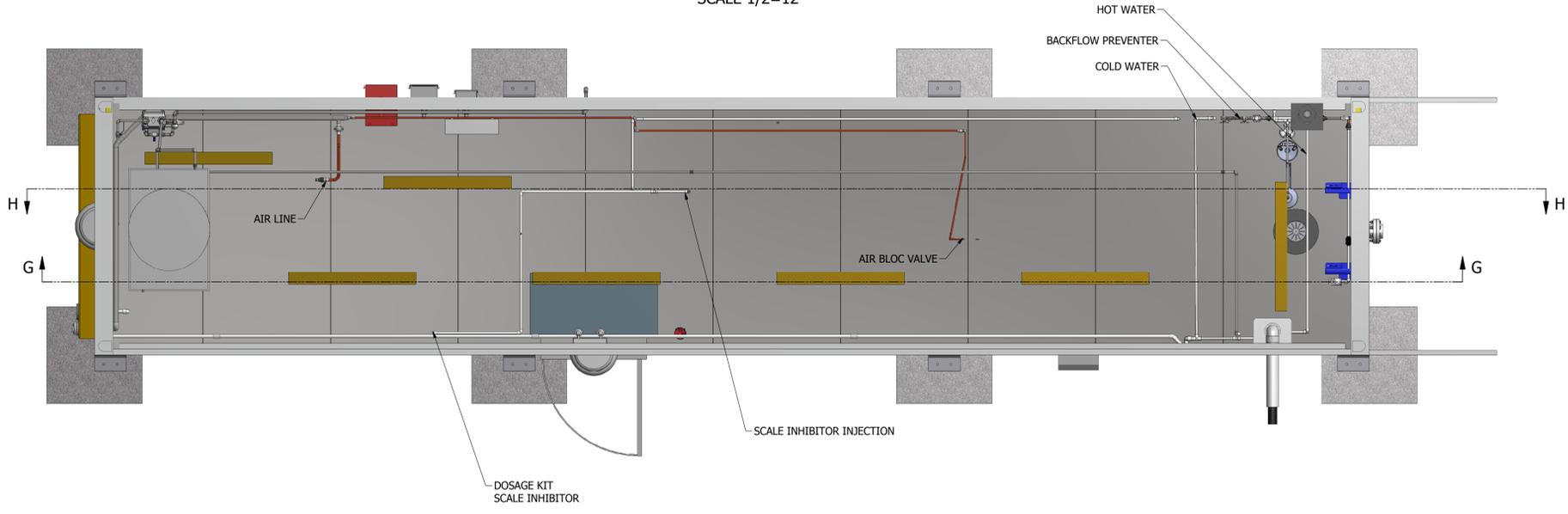
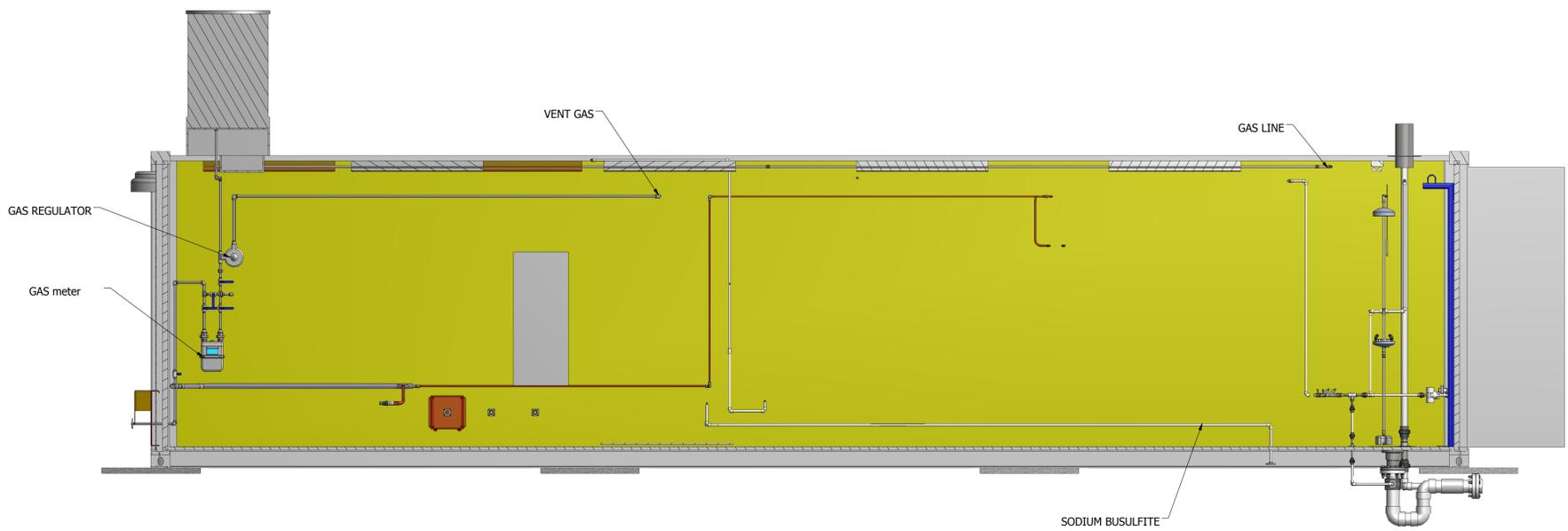
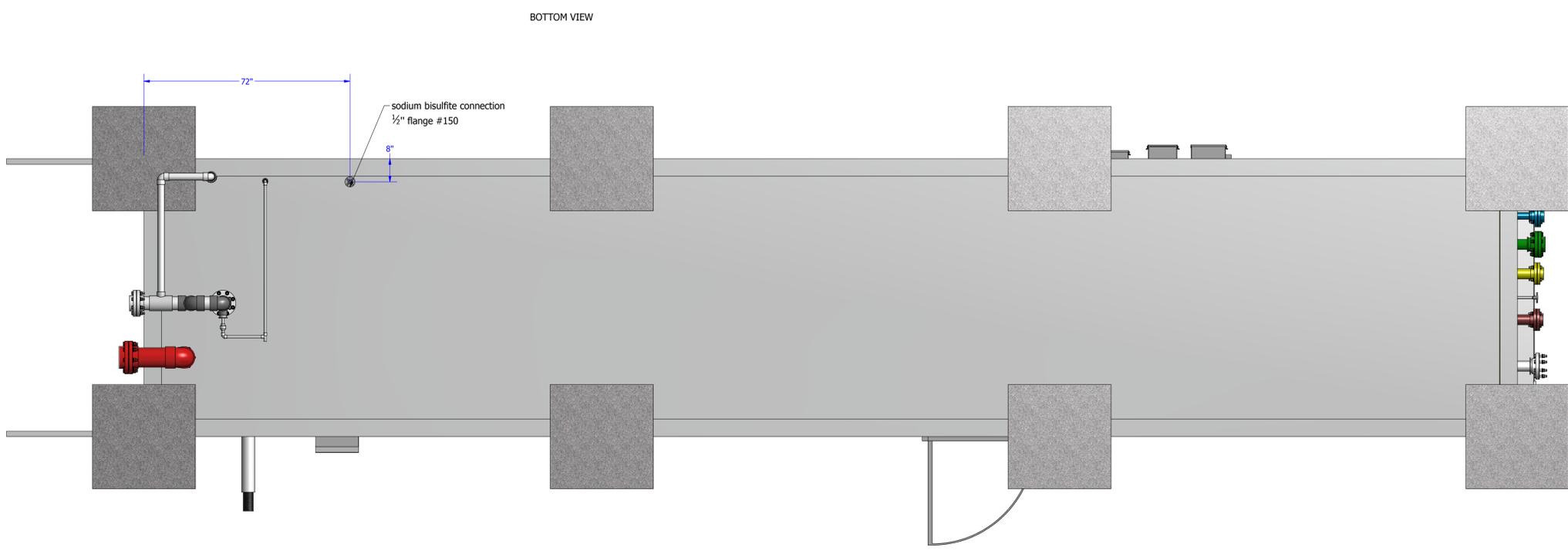
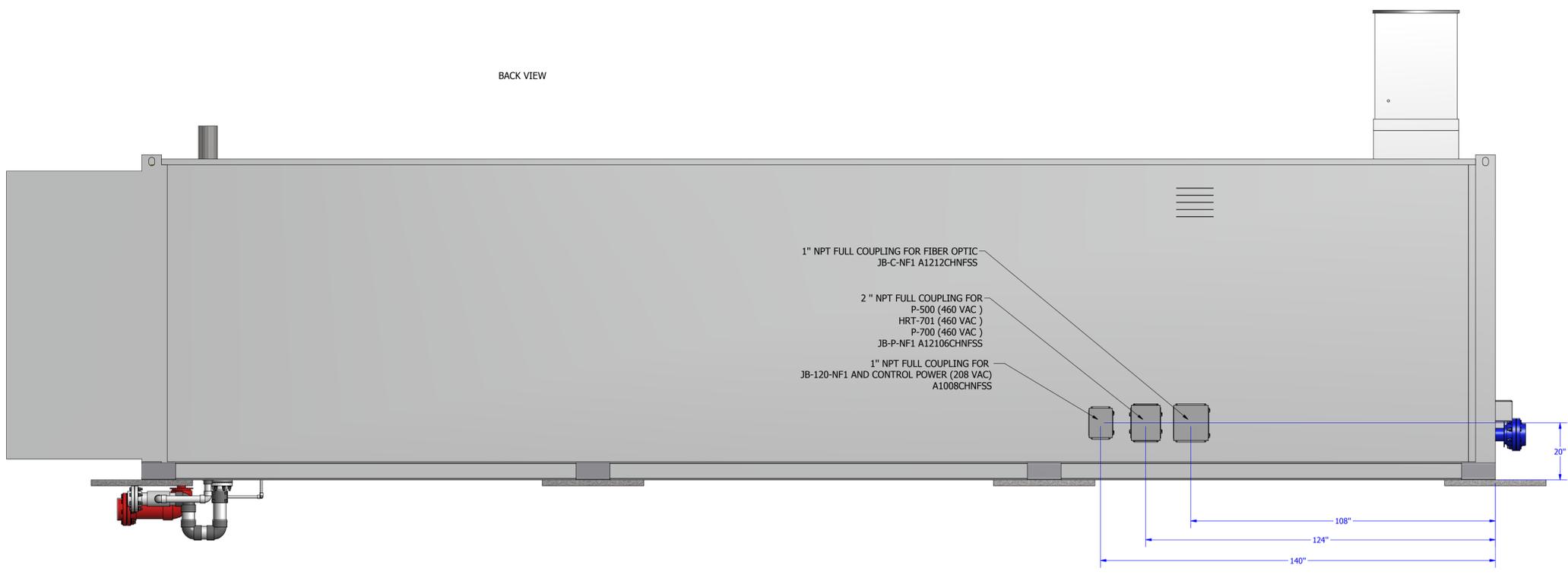


SECTION H-H
SCALE 1/2=12

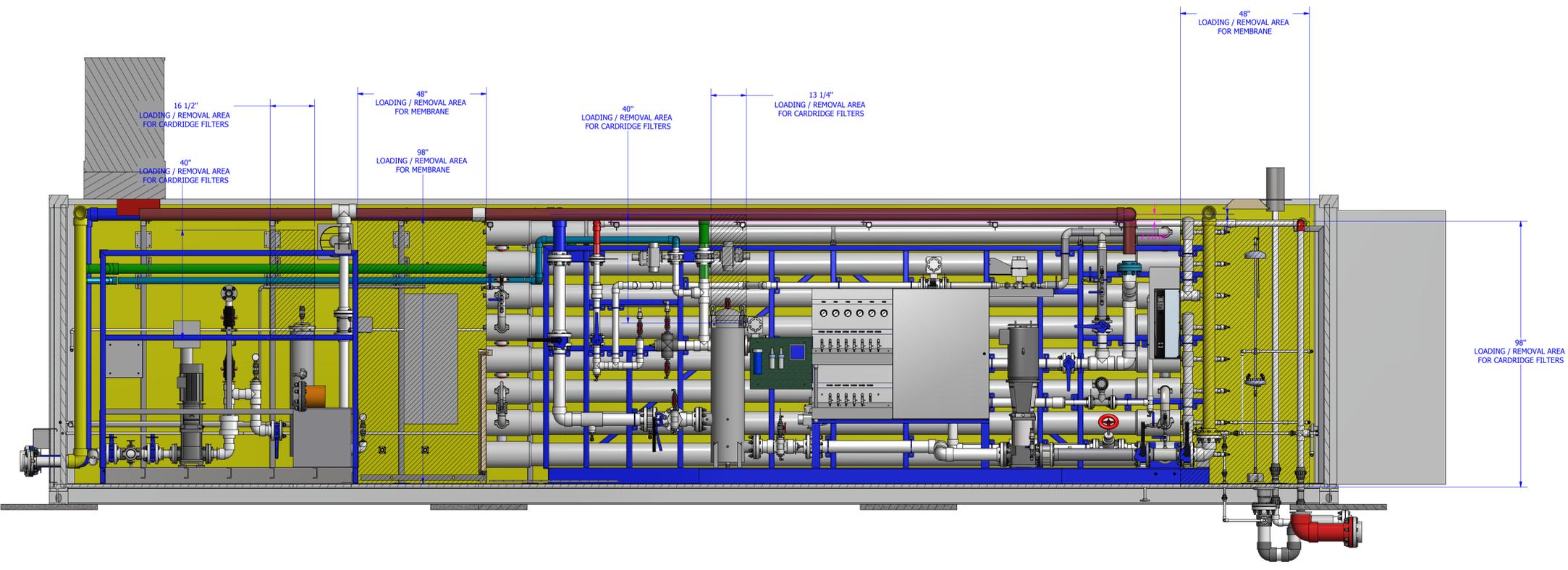
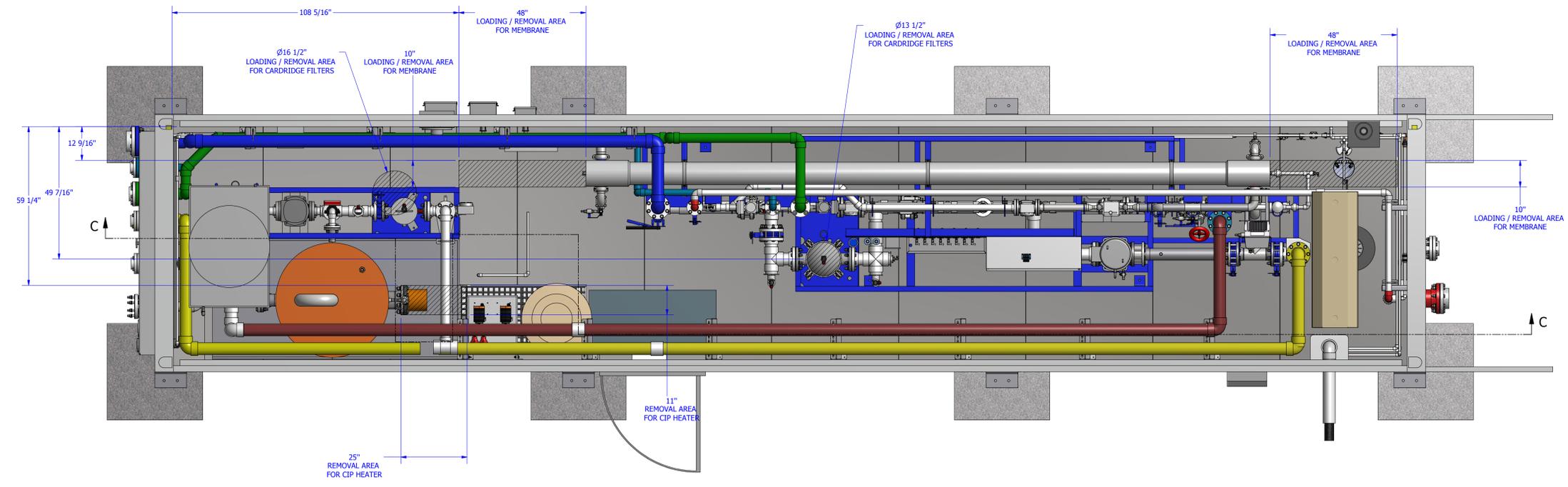


SECTION G-G
SCALE 1/2=12





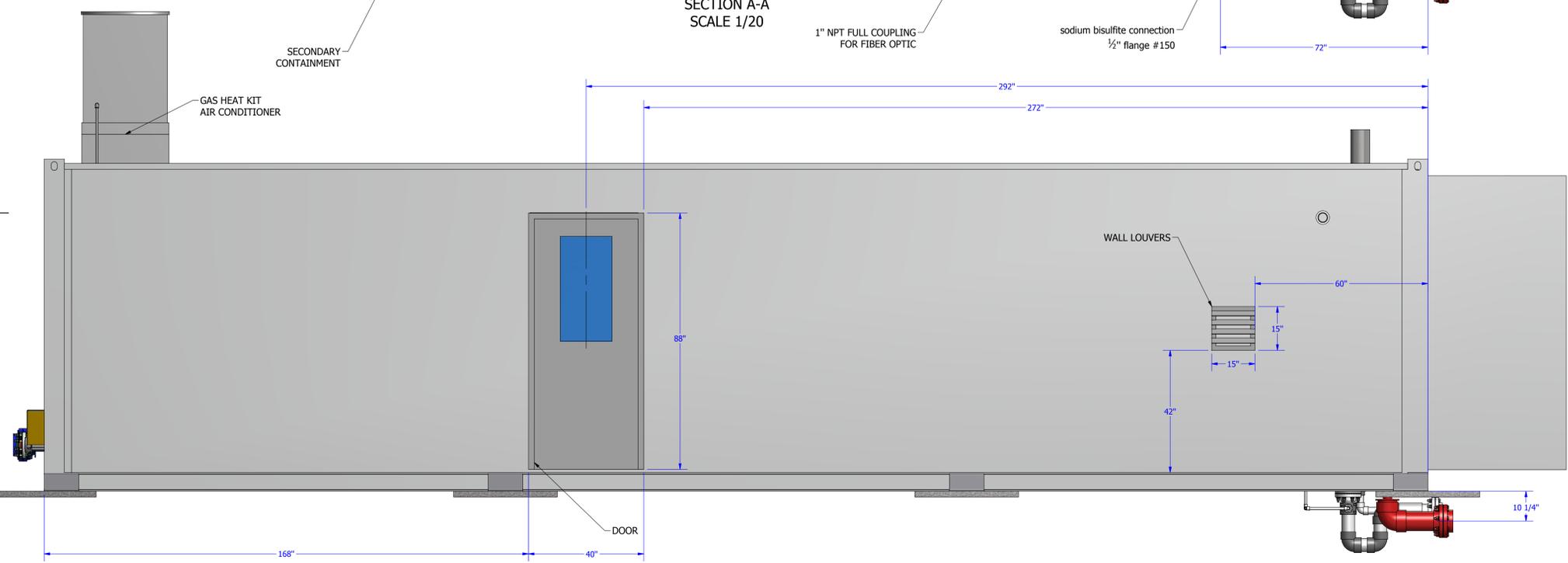
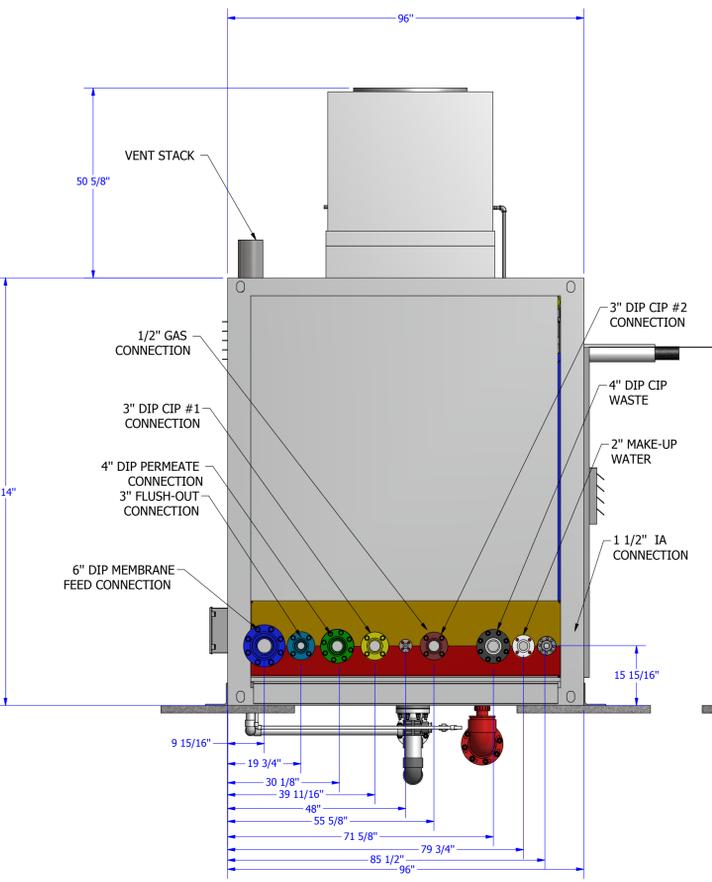
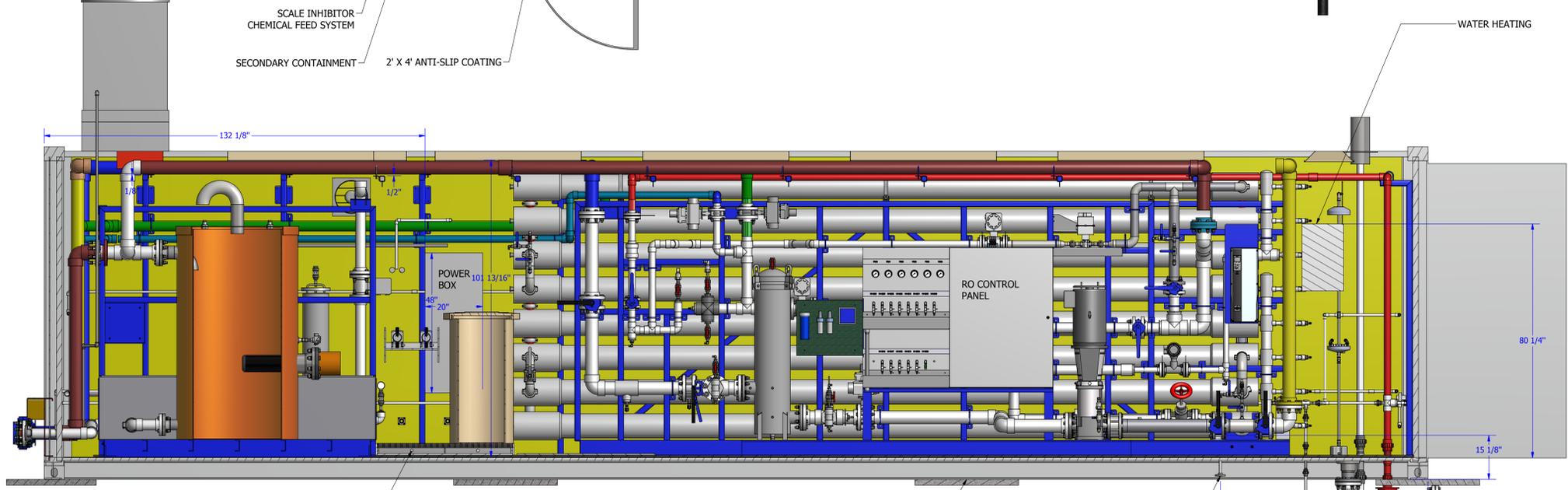
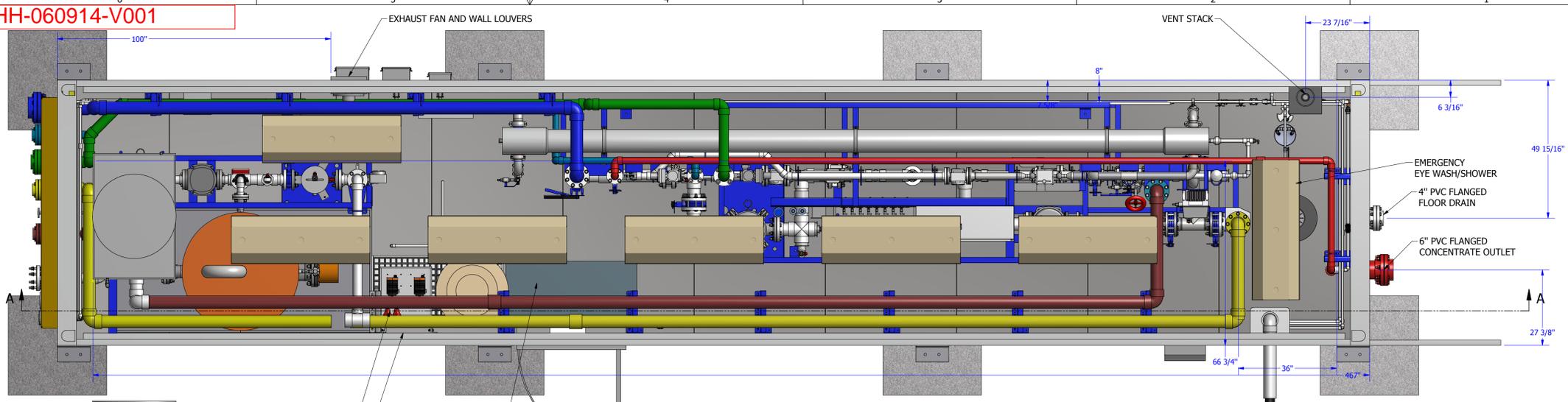
11-Primary RO Container #1 Arrangement-HH-060914-V001



SECTION C-C
SCALE 1/20

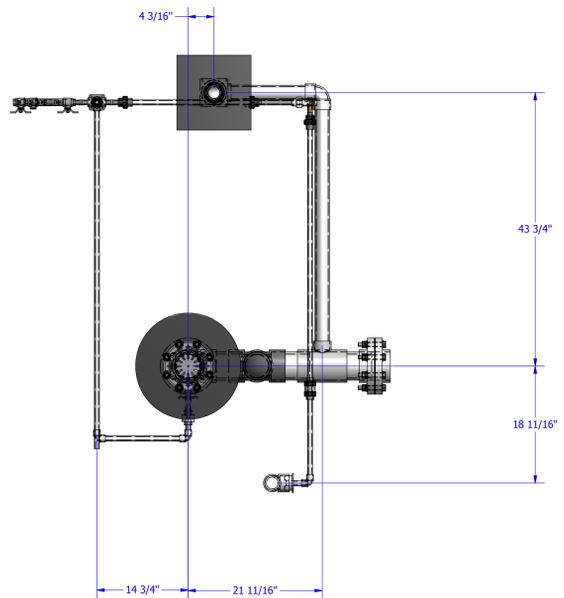
11-Primary RO Container #1 Arrangement-HH-060914-V001

APPROXIMATE WEIGHTS
 SHIPPING WEIGHT = 24 600 LBS

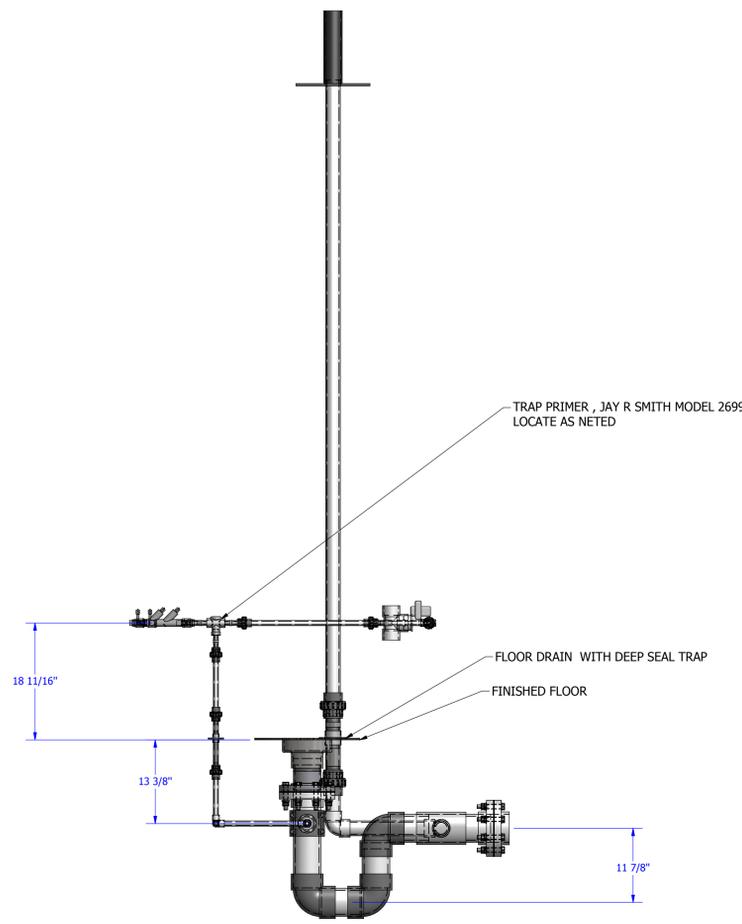


11-Primary RO Container #1 Arrangement-HH-060914-V001

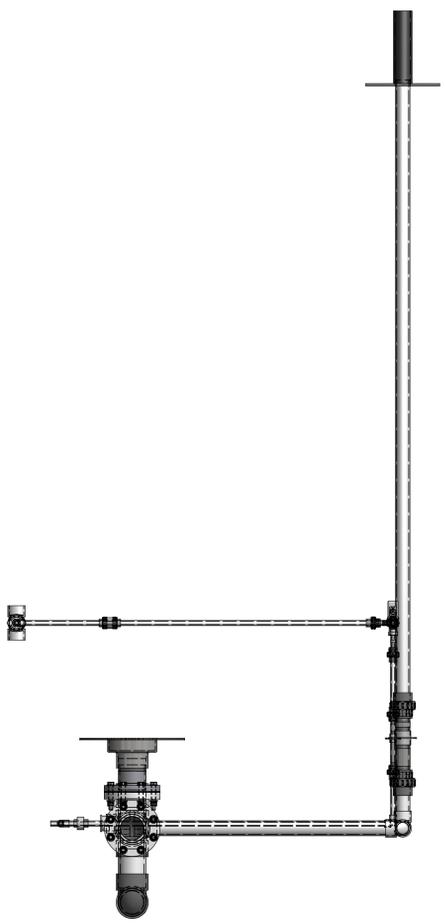
TOP VIEW



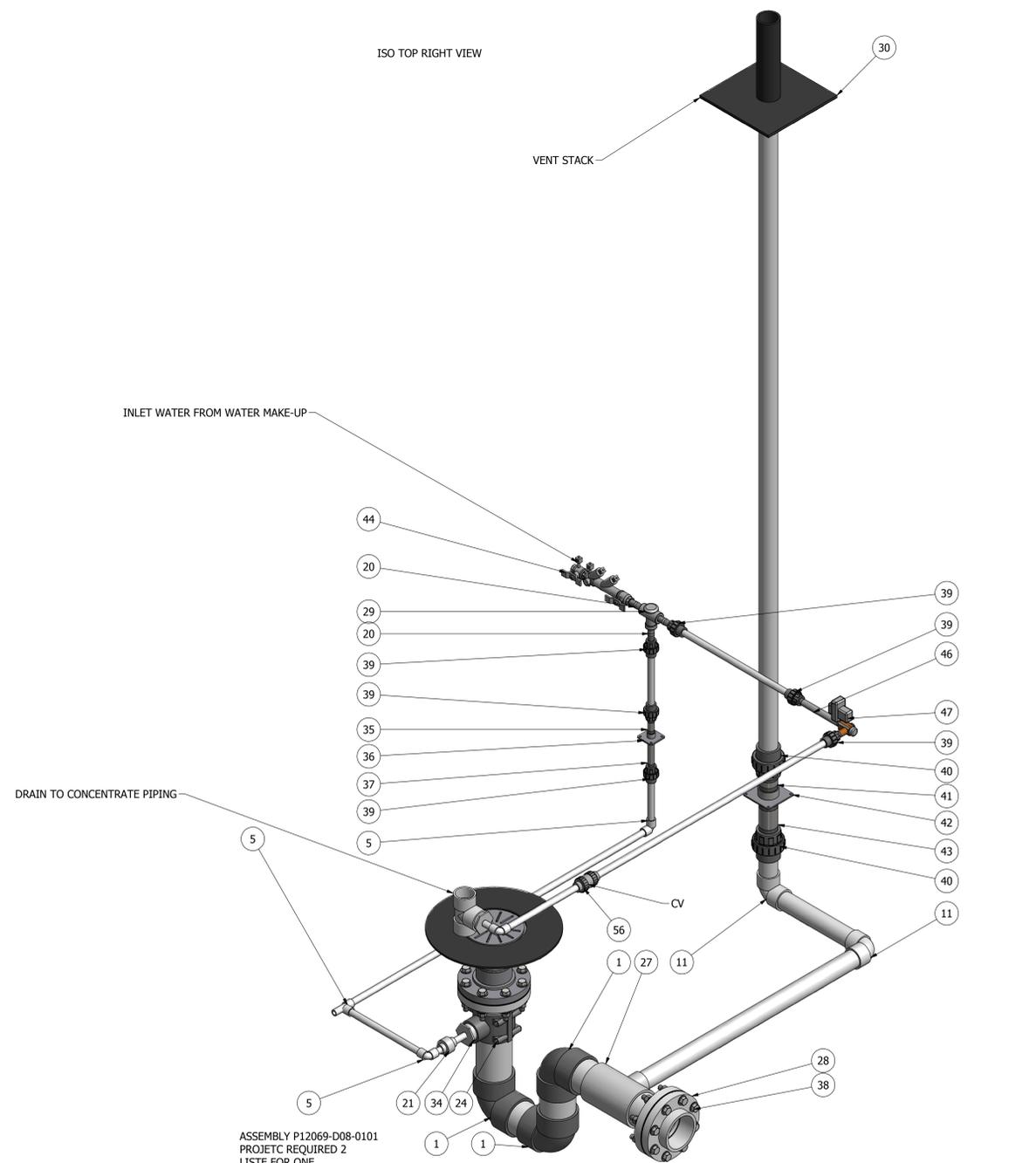
FRONT VIEW



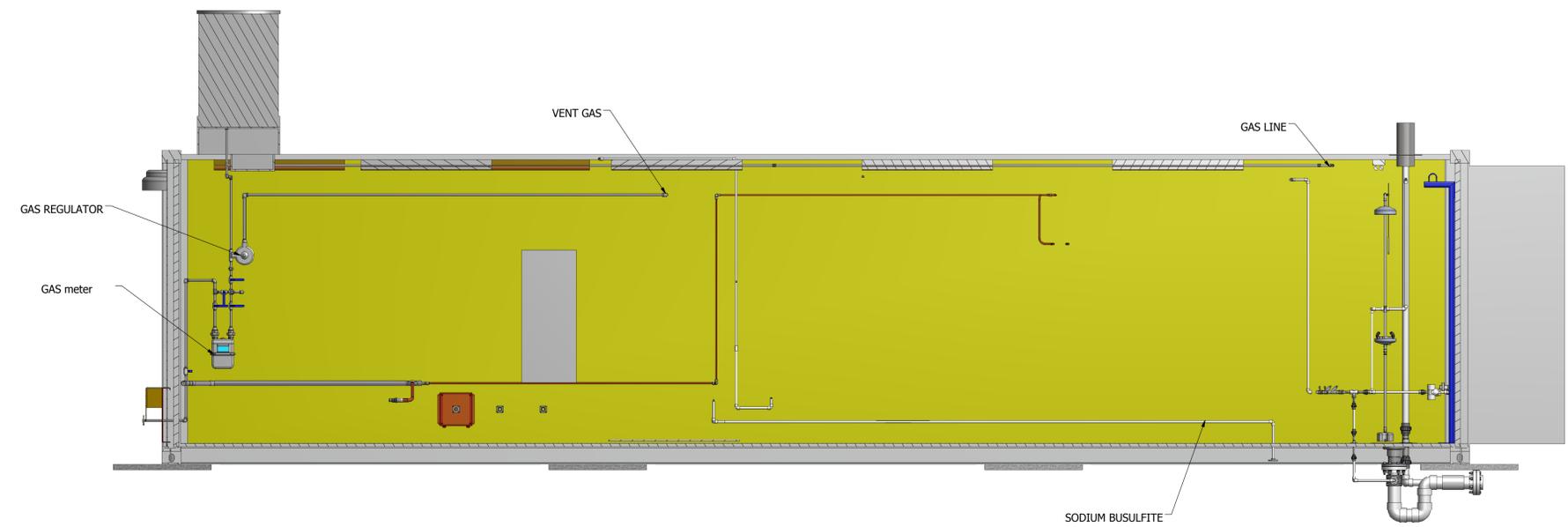
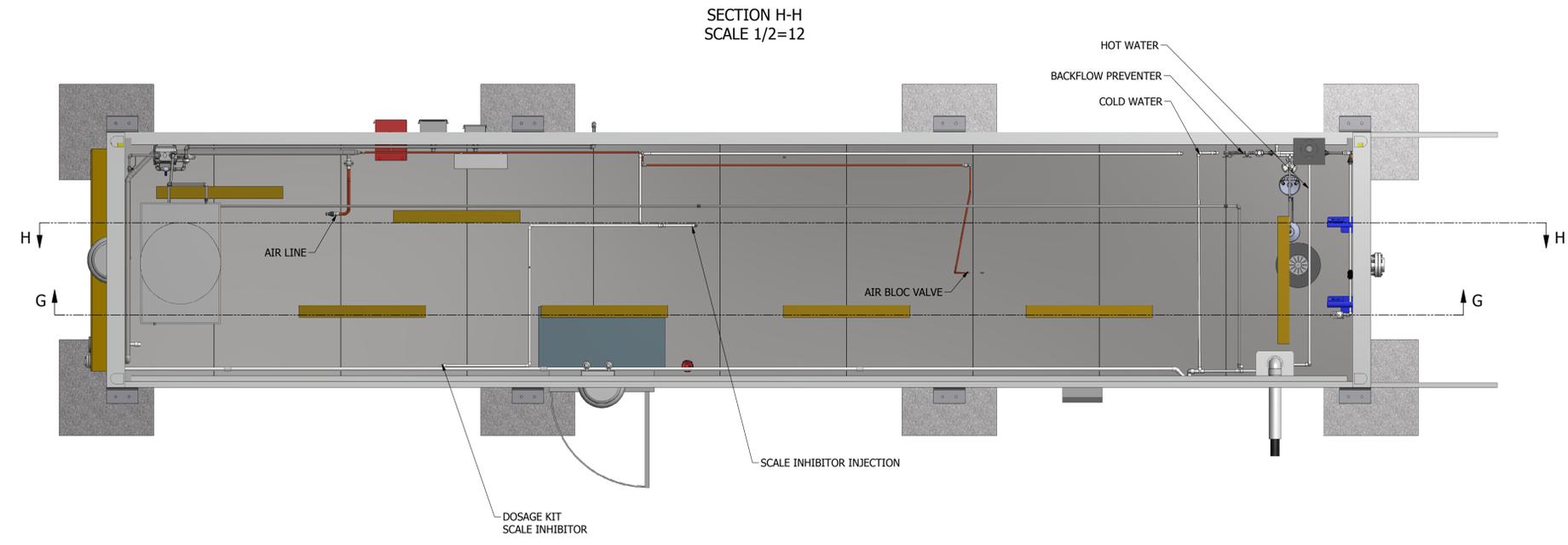
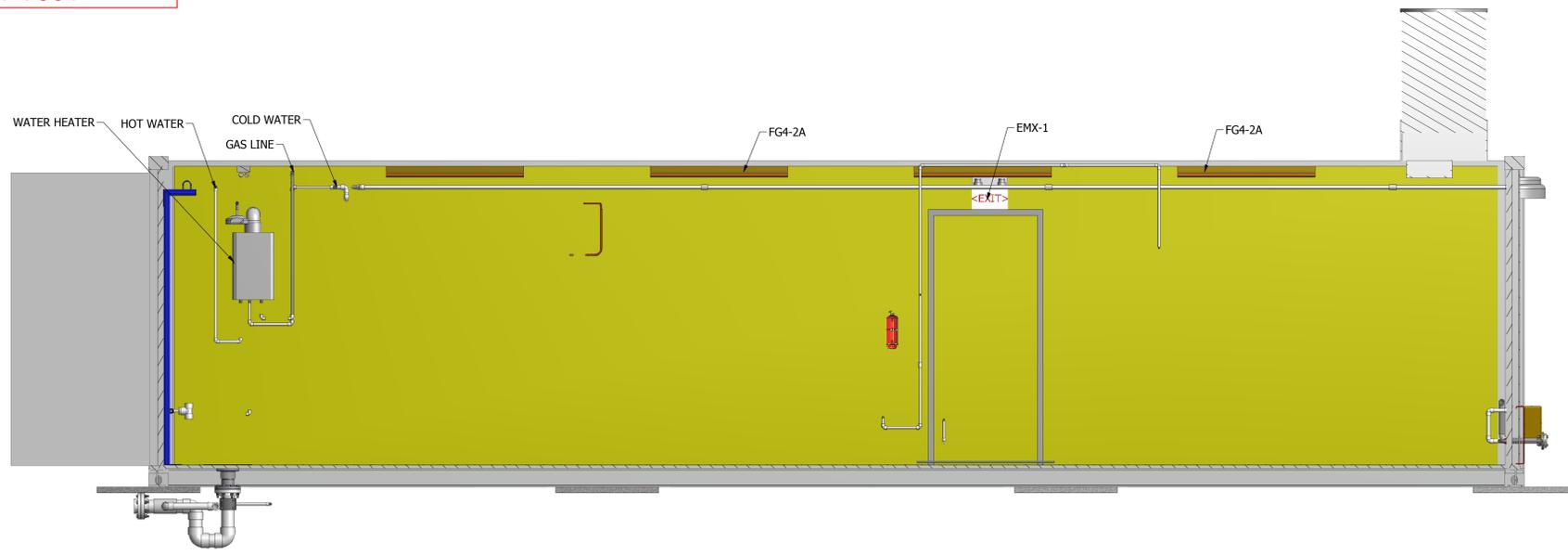
RIGHT VIEW



ISO TOP RIGHT VIEW

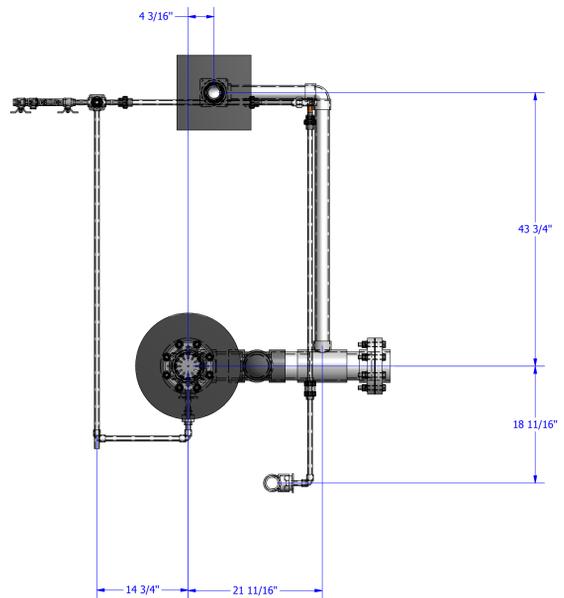


ITEM	ITEM QTY	PART NUMBER	DESCRIPTION
1	3	SPE806-040	ELBOW, 90 DEG SOCKET, 4" SCH.80 PVC, GREY
5	4	SPE806-005	ELBOW, 90 DEG SOCKET, 1/2" SCH.80 PVC, GREY
6	1	ASME B16.5 Flange Threaded - Class 150 4	Flange
8	2	FG040E	FULL FACE GASKET 4" EPDM 150LBS
11	2	SPE806-020	ELBOW, 90 DEG SOCKET, 2" SCH.80 PVC, GREY
17		SPE800-020	PIPE, PVC, 2" SCH.80, GREY
20	3	SPE882-015	MAMELON 1/2" X 1 1/2" PVC 80
21	1	SPE899-005	UNION SOCKET X FPT PVC SCH80 1/2" GREY
24	1	SPE866-420	SADDLE, CLAMP-ON, SOCKET, 4" x 2", PVC, C/W EPDM O-RING AND ZINC PLATED BOLTS
25	1	FLOOR DRAIN DX2565T04	DRAIN FLOOR 4" WITH THREADED CONNECTION
26	1	SSF304490040	NIPPLE 4" X 4 SS304 SCH40
27	1	SPE801-420	REDUCING TEE SOCKET PVC 4 X 4 X 2 GREY
28	3	SPE854-040HD	FLANGE VAN STONE SOCKET PVC SCH80 4" GREY
29	1	TRAP PRIMERS 2699.2699-1	TRAP PRIMERS 2699.2699-1
30	1	VENT STACK DETAIL	VENT STACK DETAIL
32	5	SPE800-040	PIPE, PVC, 4" SCH.80, GREY
33	3	SPE800-005	PIPE, PVC, 1/2" SCH.80, GREY
34	2	SPE837-247	REDUIT COLLE/COLLE PVC 80 2" X 1/2"
35	1	SSF3048220	NIPPLE, TBE, 2" LG, 304 SS
36	1	I12069-D01-1601,02	
37	1	SSF3048240	NIPPLE, TBE, 4" LG, 304 SS
38	16	BOLT-5-8 X 4"- (2.375)	ASS. BOLT-5/8 X 4" L
39	6	SPE899-005SR	UNION, REINFORCED, SOCKET X FNPT, 1/2" SCH.80 PVC, GREY, W/ EPDM O-RING
40	2	SPE899-020SR	UNION, REINFORCED, SOCKET X FNPT, 2" SCH.80 PVC, GREY, W/ EPDM O-RING
41	1	SSF30487CL	NIPPLE, TBE, CLOSE (2" LG), 304 SS
42	1	I12069-D01-1602,02	
43	1	SSF3048740	NIPPLE, TBE, 4" LG, 304 SS
44	1	007M3QT 00-0500npt	
46	1	SSF3048270	NIPPLE, TBE, 7" LG, 304 SS
47	1	ASCO V7651R2	VAVLE ASCO 1/2" YCL-S-210298A-01
48	1	ASTM D 2467 Raccord en T d'emboitement - Nomenclature 80 2	TEE, SOCKET, 2" SCH.80 PVC, GREY
56	1	CHEBTA005EC	TRUE UNION BALL CHECK VALVE CHEMLINE PVC 1/2" SEAT EPDM BTA005EC

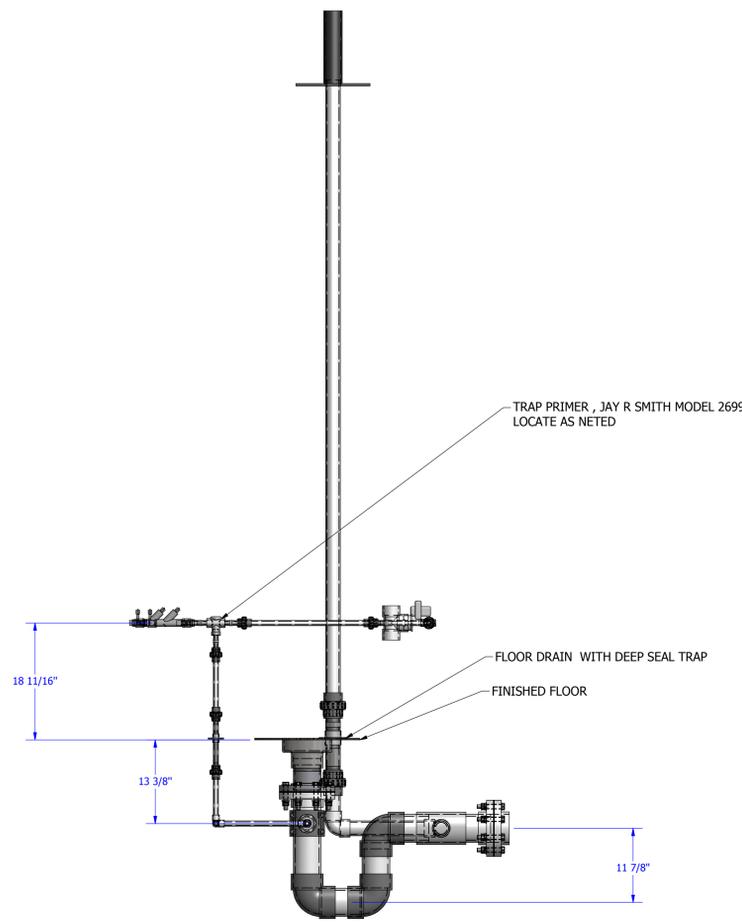


11-Primary RO Container #2 Arrangement-HH-060914-V001

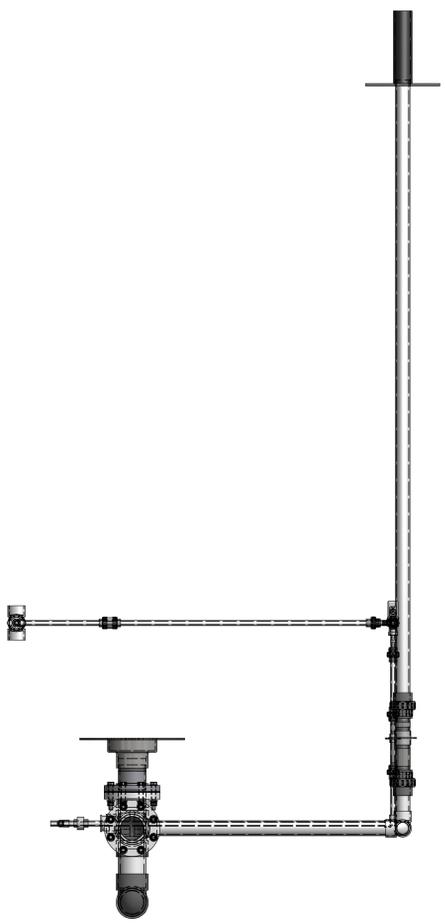
TOP VIEW



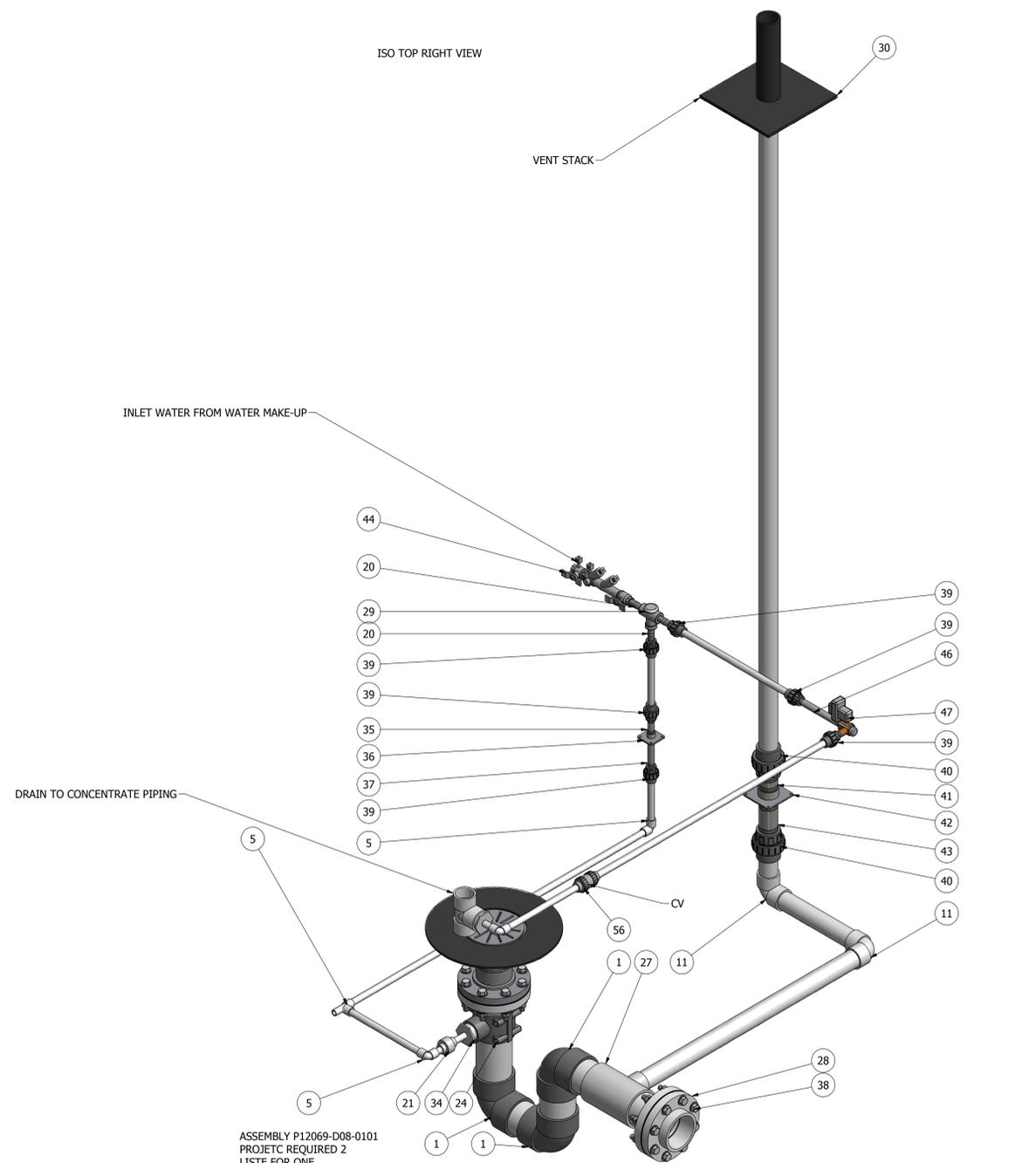
FRONT VIEW



RIGHT VIEW

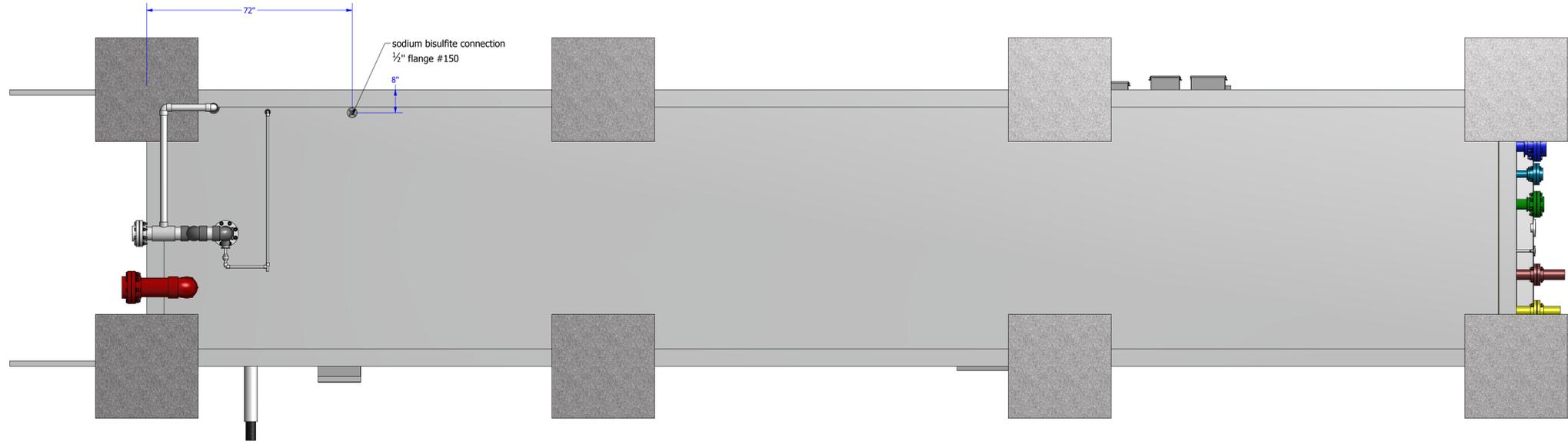
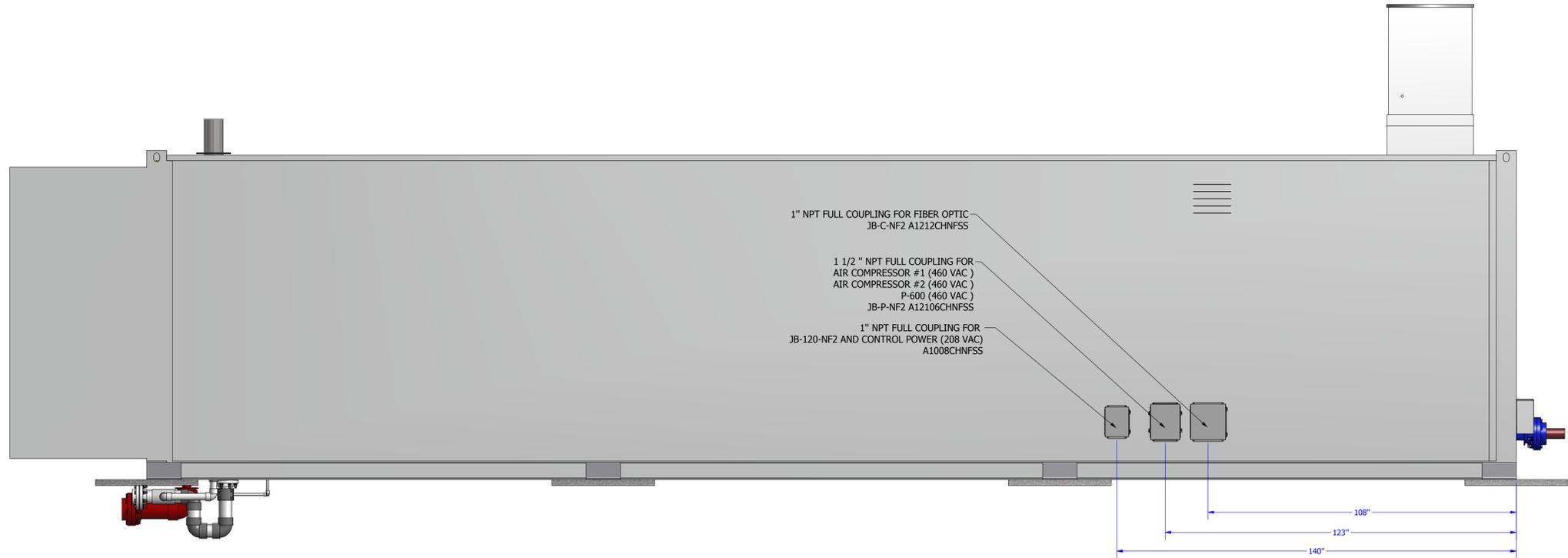


ISO TOP RIGHT VIEW

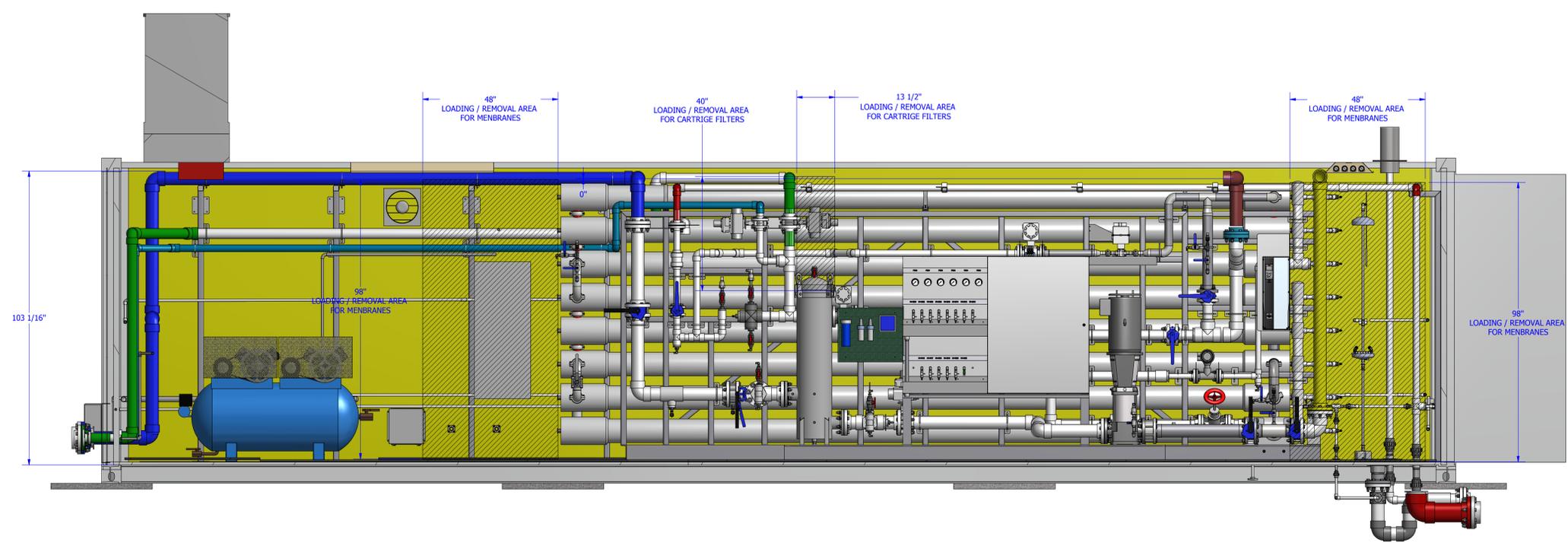
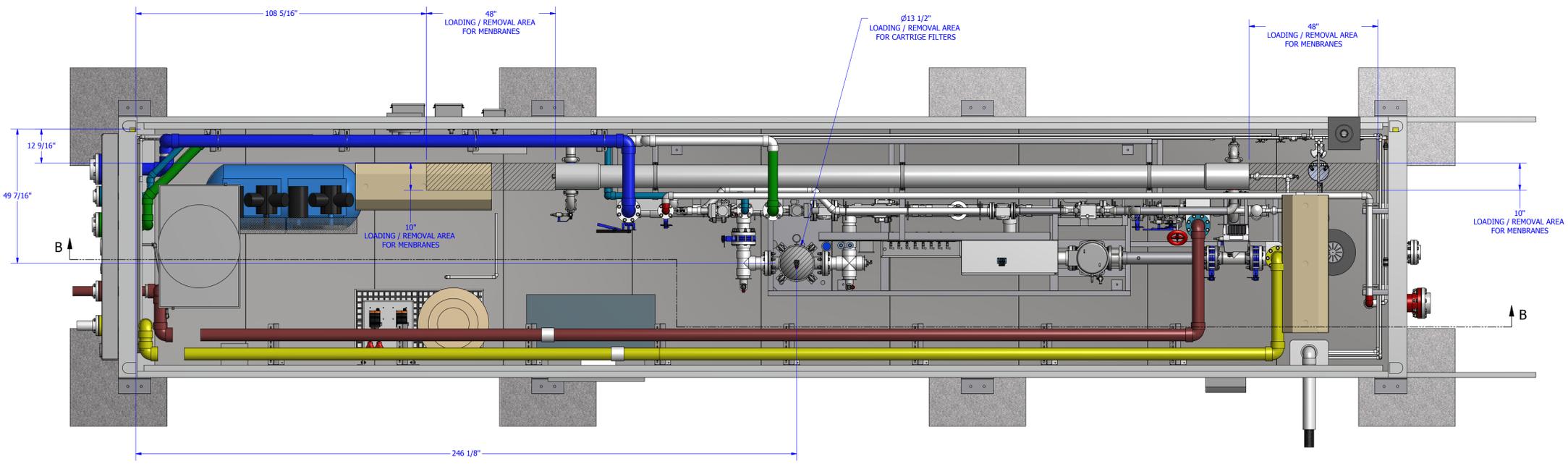


ITEM	ITEM QTY	PART NUMBER	DESCRIPTION
1	3	SPE806-040	ELBOW, 90 DEG SOCKET, 4" SCH.80 PVC, GREY
5	4	SPE806-005	ELBOW, 90 DEG SOCKET, 1/2" SCH.80 PVC, GREY
6	1	ASME B16.5 Flange Threaded - Class 150 4	Flange
8	2	FG040E	FULL FACE GASKET 4" EPDM 150LBS
11	2	SPE806-020	ELBOW, 90 DEG SOCKET, 2" SCH.80 PVC, GREY
17		SPE800-020	PIPE, PVC, 2" SCH.80, GREY
20	3	SPE882-015	MAMELON 1/2" X 1 1/2" PVC 80
21	1	SPE899-005	UNION SOCKET X FPT PVC SCH80 1/2" GREY
24	1	SPE866-420	SADDLE, CLAMP-ON, SOCKET, 4" x 2", PVC, C/W EPDM O-RING AND ZINC PLATED BOLTS
25	1	FLOOR DRAIN DX2565T04	DRAIN FLOOR 4" WITH THREADED CONNECTION
26	1	SSF304490040	NIPPLE 4" X 4 SS304 SCH40
27	1	SPE801-420	REDUCING TEE SOCKET PVC 4 X 4 X 2 GREY
28	3	SPE854-040HD	FLANGE VAN STONE SOCKET PVC SCH80 4" GREY
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37	1	SSF3048240	NIPPLE, TBE, 4" LG, 304 SS
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40	2	SPE899-020SR	UNION, REINFORCED, SOCKET X FNPT, 2" SCH.80 PVC, GREY, W/ EPDM O-RING
41	1	SSF30487CL	NIPPLE, TBE, CLOSE (2" LG), 304 SS
42	1	I12069-D01-1602,02	
43	1	SSF3048740	NIPPLE, TBE, 4" LG, 304 SS
44	1	007M3QT 00-0500npt	
46	1	SSF3048270	NIPPLE, TBE, 7" LG, 304 SS
47	1	ASCO V7651R2	VALVE ASCO 1/2" YCL-S-210298A-01
48	1	ASTM D 2467 Raccord en T d'emboîtement - Nomenclature 80 2	TEE, SOCKET, 2" SCH.80 PVC, GREY
56	1	CHEBTA005EC	TRUE UNION BALL CHECK VALVE CHEMLINE PVC 1/2" SEAT EPDM BTA005EC

11-Primary RO Container #2 Arrangement-HH-060914-V001



11-Primary RO Container #2 Arrangement-HH-060914-V001

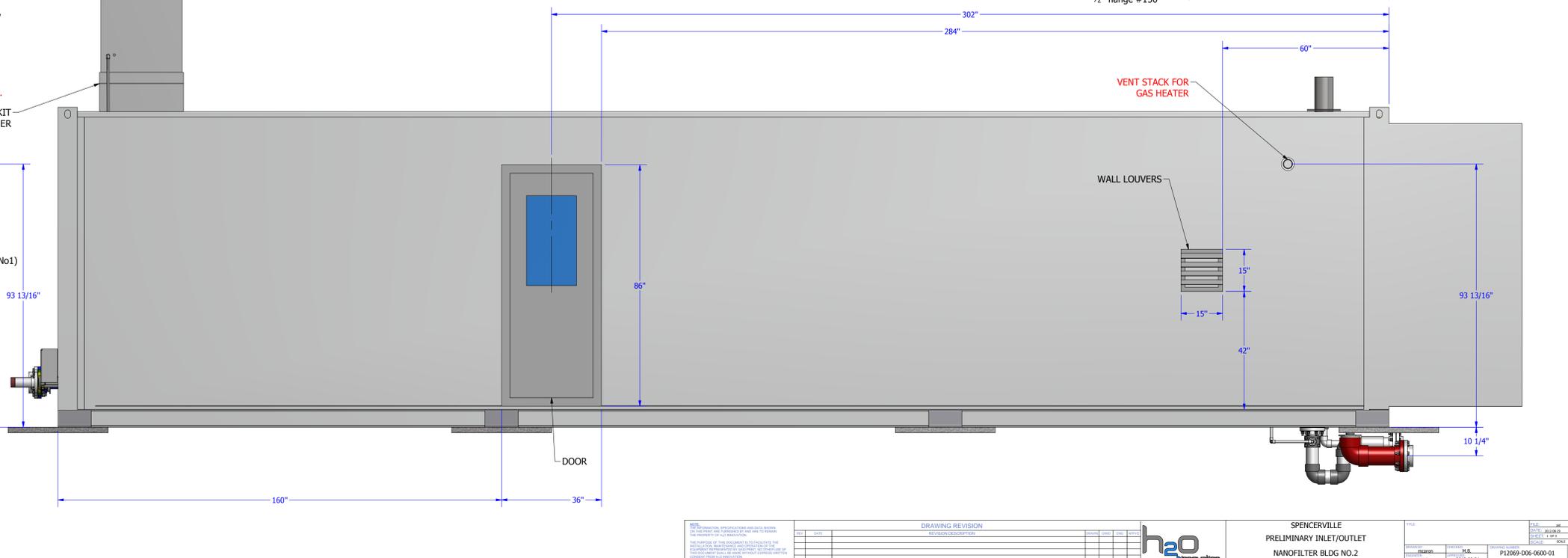
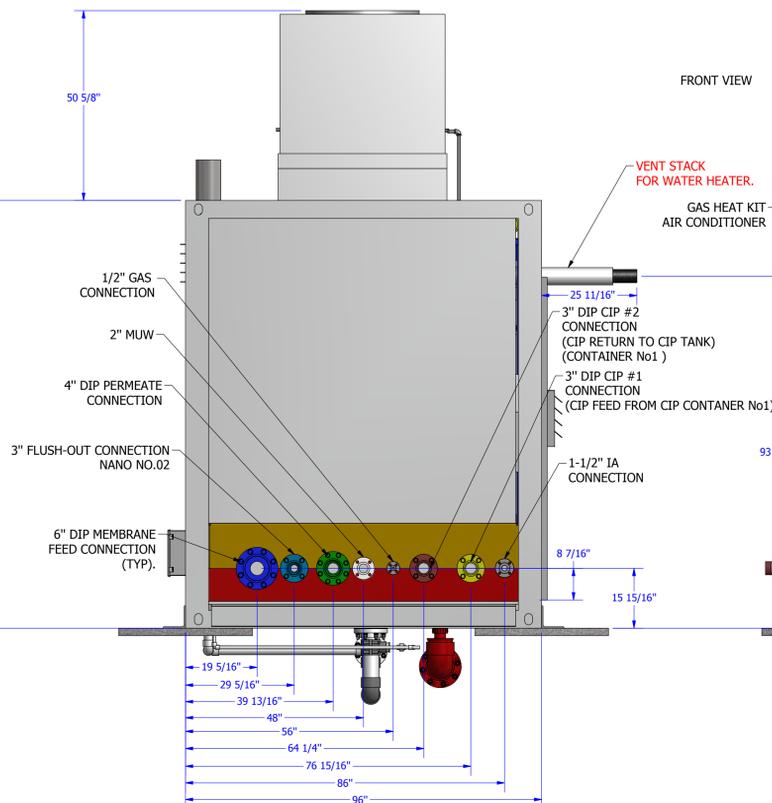
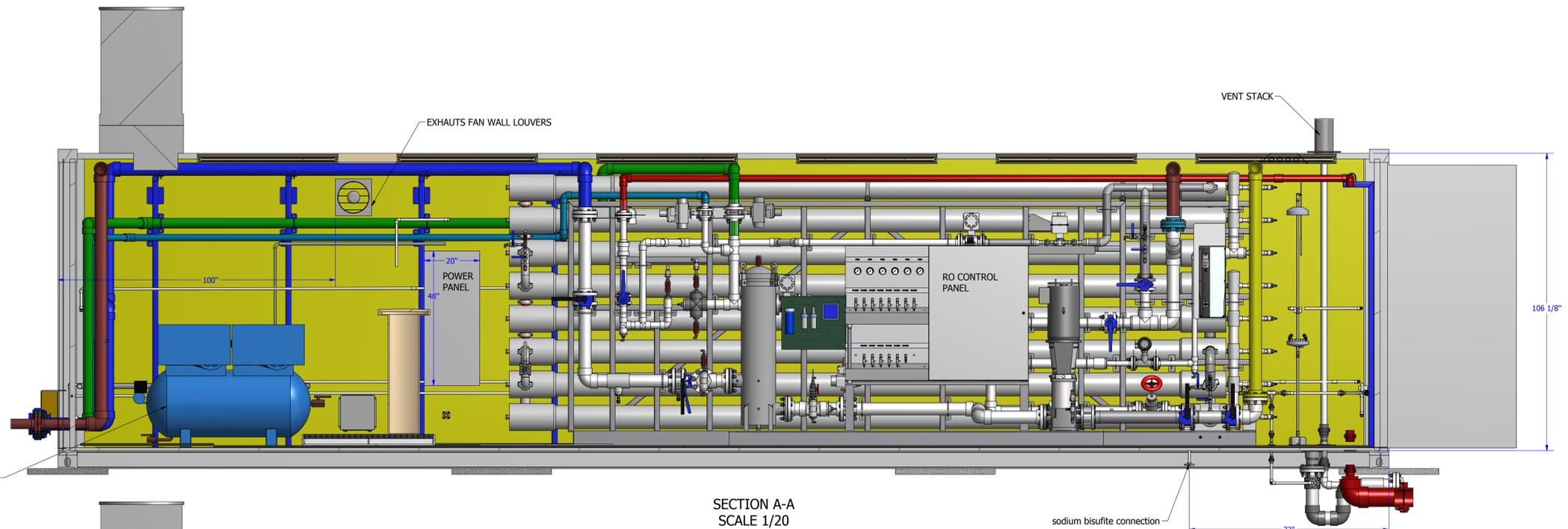
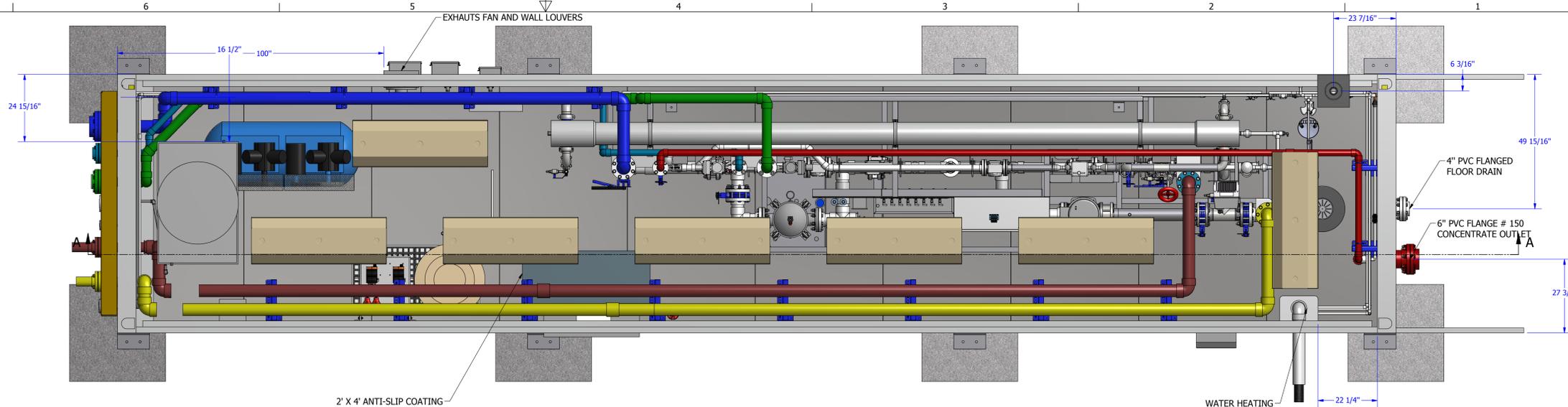


SECTION B-B
SCALE 1/20

TOP VIEW
 NANOFILTER BLDG NO.02
 PRELIMINARY DRAWING

**11-Primary RO Container #2
 Arrangement-HH-060914-V001**

APPROXIMATE WEIGHTS
 SHIPPING WEIGHT 21 385 LBS



DRAWING REVISION		DATE		BY		CHKD		APP'D	
NO.	DESCRIPTION	DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D

PROJECT	SPENCERVILLE	DATE	2012.08.24	SCALE	AS SHOWN
DESCRIPTION	NANOFILTER BLDG NO.2	DRAWN BY		CHECKED BY	
DESIGNED BY		PROJECT NO.	P12209-D06-0600-01	SHEET NO.	07

11-UV System Design Criteria-HH-06-09-14-V001

Client: **CCSD**
Project: **Emergency Water Supply System**
Detail: **UV System Design Criteria**

Job No.:
Checked By:
Date Checked:

Computed By: **Hoon Hyung**
Date: **6/9/2014**
Page No.: --

UV System

Total UV/AOP Feed Flow	696,960	gpd
	484	gpm

UV System

Type of UV System	Low-Pressure, High-Output
Manufacturer	Trojan
Model	UVPhox Model 72AL75

Hydrogen Peroxide System

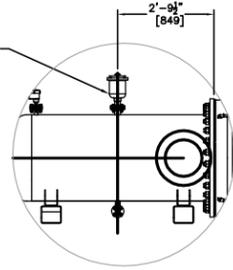
Concentration	30%	
Dose	2 to 10	mg/L
Dose, Design	5	mg/L
Dosing Rate	11.8	gpd

Treatment Goals

NDMA Reduction	1.2 Log
1,4-Dioxane Reduction	0.5 Log
Virus Reduction	4 Log
Giardia Reduction	3 Log
Cryptosporidium Reduction	3 Log

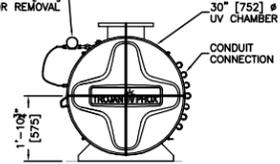
11-UV Arrangement-HH-060914-V001

IN CASES WHERE OUTLET PIPE IS TO THE RIGHT OR TO THE LEFT AN AIR VENT - VACUUM BREAKER (ANSI B 16.5 CLASS 150 FLANGE) IS PROVIDED. THE AIR VENT IS LOCATED IN THE CENTER OF THE UV CHAMBER.

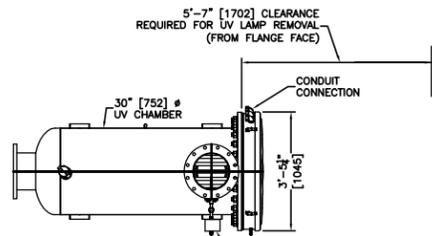


VENT
SCALE: NOT TO SCALE

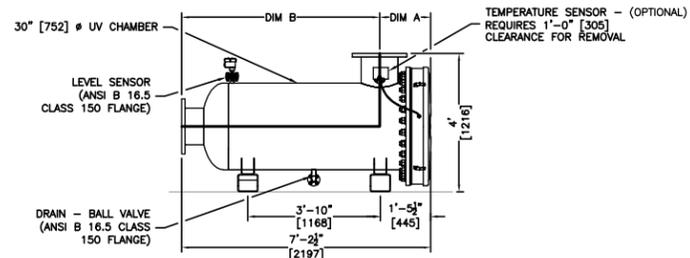
TEMPERATURE SENSOR - (OPTIONAL)
REQUIRES 1'-0" [305]
CLEARANCE FOR REMOVAL



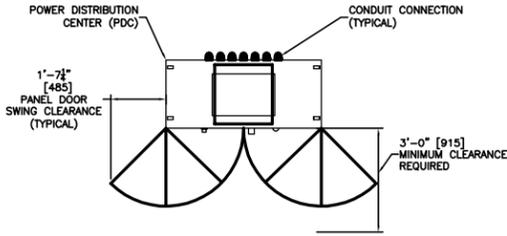
OUTLET END VIEW
SCALE: NOT TO SCALE



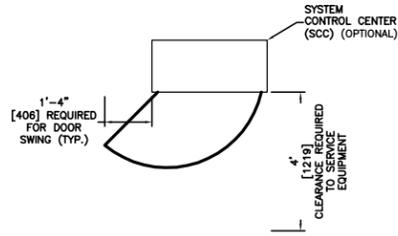
PLAN VIEW
SCALE: NOT TO SCALE



FRONT VIEW
SCALE: NOT TO SCALE



PLAN VIEW OF PDC
SCALE: NOT TO SCALE

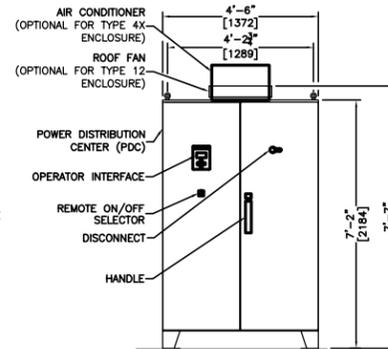


PLAN VIEW OF SCC
SCALE: NOT TO SCALE

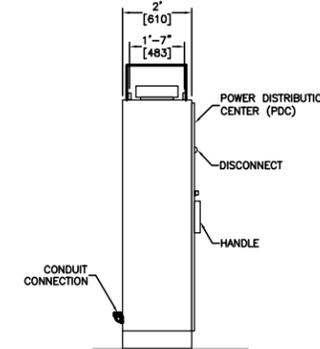
NOTES:

- : MAXIMUM OPERATING PRESSURE TO BE 65 psi [4.5 BAR].
- : INTERCONNECTING CABLE LENGTH TO BE 12 FT. [3658mm] FROM CONDUIT CONNECTOR ON UV CHAMBER END CAP TO CONDUIT CONNECTOR ON PDC.
- : INLET/OUTLET GASKETS AND HARDWARE TO BE SUPPLIED BY CUSTOMER.
- : INLET/OUTLET AWWA C207 CLASS D FLANGE.
- : HEAT EXCHANGER OR ROOF FANS ARE AVAILABLE METHODS FOR COOLING ON PDC. HEAT EXCHANGER SHOWN FOR CLARITY.
- : 72AL75 CHAMBER WEIGHT DRY 2100 lbs. [953 kg.] / WET 3700 lbs. [1678 kg.]
- : PDC WEIGHT 800 lbs [362 kg.]
- : UV CHAMBER MATERIAL TO BE 316 STAINLESS STEEL.
- : POWER DISTRIBUTION CENTER TO BE PAINTED MILD STEEL (STANDARD) 304 SST (OPTIONAL).
- : SCC MATERIAL TO BE MILD STEEL (STANDARD) OR 304 SST (OPTIONAL) OR 316L SST (OPTIONAL).
- : INLET AND OUTLET PIPES CAN BE FROM LEFT OR RIGHT ORIENTATIONS. TOP AND BOTTOM PIPE ORIENTATIONS ARE SHOWN FOR CLARITY ONLY.
- : SCC TO PDC WIRING MAXIMUM DISTANCE OF 1000 ft. [304.8m] REQUIRING A FIBER OPTIC CABLING - ALL OTHER WIRING HAS A MAXIMUM DISTANCE OF 300 ft. [91.4m].
- * INDICATES DIMENSIONS ARE SUBJECT TO CHANGE BASED ON PROJECT SPECIFIC REQUIREMENTS.

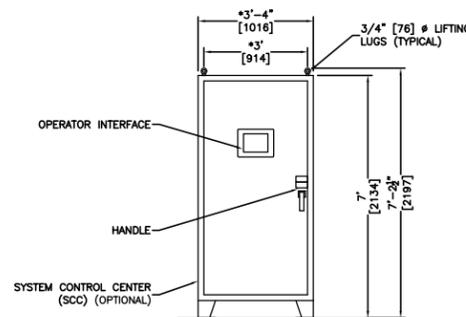
INLET / OUTLET PIPE SIZE (SS)	DIM A	DIM B
8	1'-4" [402]	5'-11" [1805]
12	1'-6" [454]	5'-9" [1753]
16	1'-7 1/2" [496]	5'-7 1/2" [1711]
20	1'-9 1/2" [546]	5'-5 1/2" [1660]



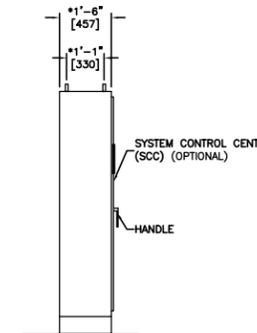
FRONT VIEW OF PDC
SCALE: NOT TO SCALE



LEFT VIEW OF PDC
SCALE: NOT TO SCALE



FRONT VIEW OF SCC
SCALE: NOT TO SCALE



LEFT VIEW OF SCC
SCALE: NOT TO SCALE



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DESCRIPTION: STD, TROJANUVPHOX 72AL75 SYSTEM - NON WIPING		STANDARD DRAWING NO. PH0007
DRAWN BY : CAR/CMS/MWW	DATE : 12AU28	REFERENCE NO. N/A
CHECKED BY : SAH	DATE : 12DE17	DWG NO. REV. D01 C
APPROVED BY : SLO	DATE : 12DE18	
SCALE (11x17) : NOT TO SCALE	LOG NUMBER : N/A	

11-Evaporator Design Criteria-HH-06-09-14-V001

Client: **CCSD**
Project: **Emergency Water Supply System**
Detail: **Mechanical Evaporator**

Job No.:
Checked By:
Date Checked:

Computed By: **Hoon Hyung**
Date: **6/9/2014**
Page No.: --

Evaporator Feed Pump

No. of Duty Pumps	4	
No. of Standby Pumps (Installed)	1	
Pump Type	Submersible, or Self-Priming Centrifugal Pump	
Flow per Pump	66	gpm
Head	20	psi
Motor HP	7.5	hp
VFD	No	
Pump Material	Plastic, or polymer coated Steel	

* Pump shall be compatible with concentrated RO brine.

Mechanical Evaporator

No. of Duty Evaporators	4	
No. of Standby Evaporators (Installed)	1	
Evaporation Flow per Evaporator	66	gpm
Estimated Net Evaporation Efficiency	30%	
Estimated Online Percent	50%	
Motor HP	25	hp
VFD	No	

** All wetted parts shall be compatible with concentrated RO brine.

RO Brine Water Quality

Salinity	36%	at maximum saturation
----------	-----	-----------------------



Hoon Hyung,
PhD, PE
CDM Smith
111 Academy Way | Irvine, CA 92617
Tel/fax: 949.930.7243 |
hyungh@cdmsmith.com

Hoon

Hi, thank you for your time on the phone and our discussions in regards to SMI evaporation systems. Below is an offer for SMI Evaporation equipment per your request.

Evaporation Site Summary

Goal is to evaporate RO reject brine having a pH = 9 and TDS = 13,000-30,000 ppm

9 PH

TDS: 13,000-30,000 ppm

Water inflow flow: 42 gpm or about 60,000gal per day

Pan Evaporation rate: 44 in./yr

Evaporation pond surface area: 3.75 acre

Pan evaporation is equivalent to about 4.3 million gallons per year for 3.75 acre pond @ 44 in per year pan rate. Or about 11780 gal per day

Evaporation system daily evaporation needs to be @ 48,200 gal evaporation per day.

Note that a campsite is very close to the evaporation pond so it is critical to minimize noise and disruption. We recommend not blowing the mist toward the campsite and consider installing the following:

- Drift fence between pond and camp site
- Sound insulation shelter to attenuate noise

CDM Smith would like to persue 4 SMI Super Polecat evaporation machine system with wind start/stop automatic controls and small 8 ft. square control building.

SMI Evaporation Summary and equipment offer.

Below is a technical description for the Super Polecat Evaporator

The **SMI Super Polecat evaporator** is a long throw ducted fan type design (over 200ft or 60 meters) that efficiently and reliably evaporates excess water in large areas. The SMI Super Polecat is easy to use, easy to move and easy to maintain, energy efficient and quiet – an excellent overall value. The Super Polecat can be configured as automatic or as manual operation for continual high flow with no regulation. The SMI Super Polecat has a 25hp fan motor or 18.25kW.

