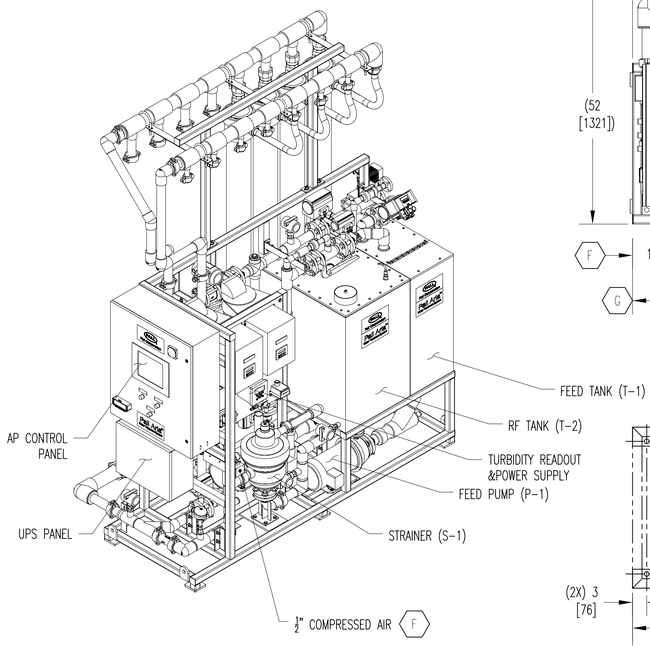
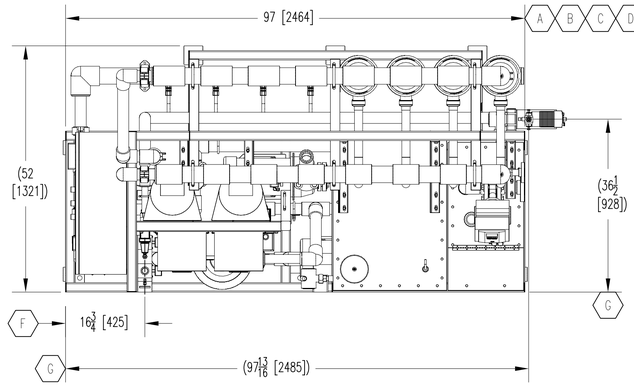
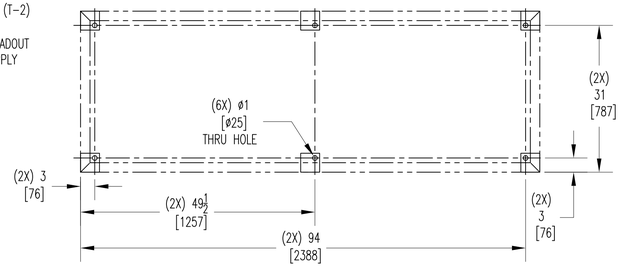


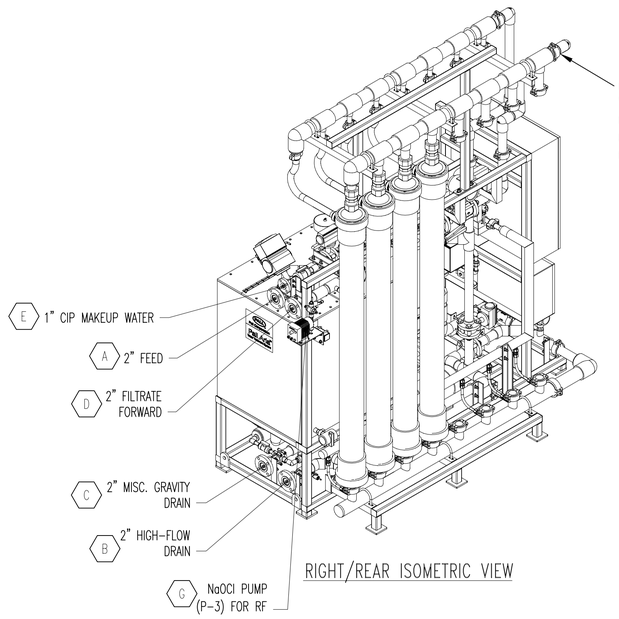
LEFT/FRONT ISOMETRIC VIEW



TOP VIEW
(SOME PIPING REMOVED FOR CLARITY)



SKID MOUNTING FOOTPRINT



RIGHT/REAR ISOMETRIC VIEW

AP2 W/4 MODULES				
	WEIGHT			
EQUIPMENT	DRY Lbs.	DRY Kgs.	WET Lbs.	WET Kgs.
AP2 SKID	4,000	1,814	7,000	3,175

NOTES:

1.) DO NOT STORE THE MODULES OR THEIR SHIPPING CONTAINERS OUTSIDE OR IN AN AREA WHERE THERE WILL BE EXPOSURE TO DIRECT SUNLIGHT, EXCESSIVE HEAT, OR COLD. PALL CORPORATION REQUIRES MEMBRANES BE STORED IN A CONTROLLED, SECURE ENVIRONMENT TO GUARANTEE MODULES ARE NOT DAMAGED DURING STORAGE.

2.) DO NOT DROP OR EXPOSE THE MODULES OR THEIR SHIPPING CONTAINERS TO SHOCK OR IMPACT. THERE MAY BE DAMAGE TO THE MEMBRANE EVEN IF NO VISIBLE DAMAGE TO THE MODULE CASE IS EVIDENT.

3.) THE MODULE RACK, INTERCONNECT PIPING, AND CHLORINE PUMP ASSEMBLY WILL BE SHIPPED SEPARATELY FOR INSTALLATION IN THE FIELD.

4.) THIS DRAWING SHOWS (1) COMPLETE AP2 ASSEMBLY.

5.) THE DISKS ON ELASTOMER-SEATED BUTTERFLY VALVES MUST BE AT LEAST PARTIALLY OPEN WHEN TIGHTENING FLANGE BOLTS. FAILURE TO DO SO WILL CAUSE PREMATURE FAILURE, AND WILL VOID ALL WARRANTIES ON THE VALVE.

6.) REFER TO INSTALLATION INSTRUCTIONS FOR PIPING ASSEMBLY.

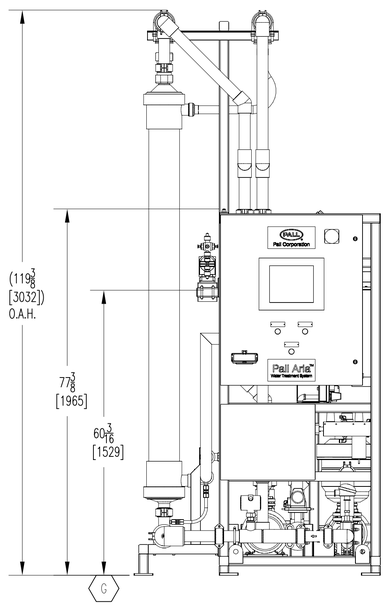
7.) THE CONTROL ENCLOSURE IS CONSTRUCTED OF CARBON STEEL, PAINTED BLUE AND RATED NEMA 4. THE USE OF ALL CONDUIT PENETRATION HUBS OF THE SAME ENVIRONMENTAL RATING AS THE ENCLOSURE IS REQUIRED.
DO NOT PENETRATE THE TOP OF THE ENCLOSURE.

8.) ALL FLANGES ARE BOLT CIRCLE/HOLE SIZE EQUIVALENT TO ANSI 150# RATED FLANGES.

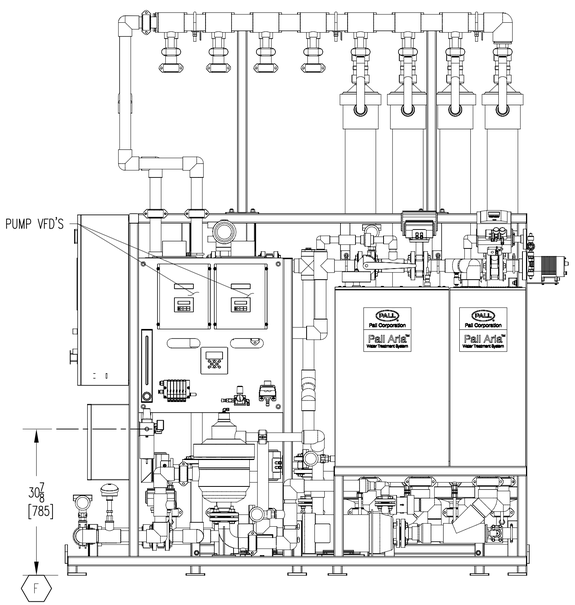
9.) PIPING CONNECTIONS TO PALL EQUIPMENT, MUST BE ADEQUATELY SUPPORTED TO PREVENT ANY NOZZLE LOADS ON THE EQUIPMENT.
DO NOT USE SKID CONNECTIONS TO SUPPORT PIPING.

ITEM	DESCRIPTION	TYPE	
G	NaOCL FOR RF (OPTIONAL P3)	1/2" [12] TUBE	--
F	COMPRESSED AIR SUPPLY	1/2" [12] FNPT	--
E	CIP MAKE UP WATER	1" [25] FLG	NOTE 9
D	FILTRATE FORWARD	2" [50] FLG	NOTE 9
C	MISC. DRAIN	2" [50] FLG	NOTE 9
B	CIP/RF/AS DRAIN	2" [50] FLG	NOTE 9
A	FEED	2" [50] FLG	NOTE 9

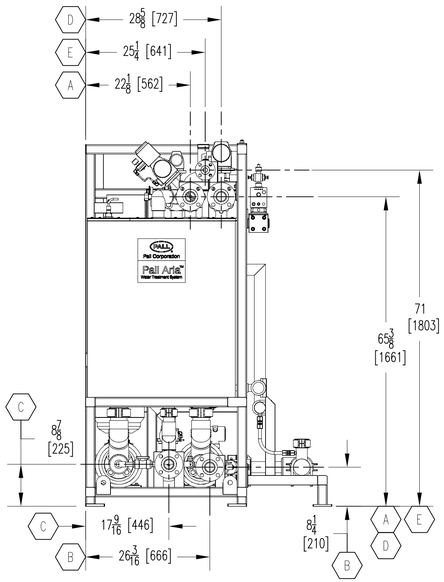
BATTERY LIMIT CONNECTIONS



LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW
UPPER MANIFOLDS AND SUPPORTS REMOVED FOR CLARITY

PALL ARIA™ AP-2 SYSTEM

IMPORTANT: BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.

CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	S. SMITH	22JUN2005
PROJECT ENGINEER	M. POOLE	23AUG2005
ENGINEER	----	----
ENGINEER	----	----
ENGINEER	----	----
CHECKER	J. HOSKINS	25AUG2005

--> DO NOT SCALE DRAWING <--

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

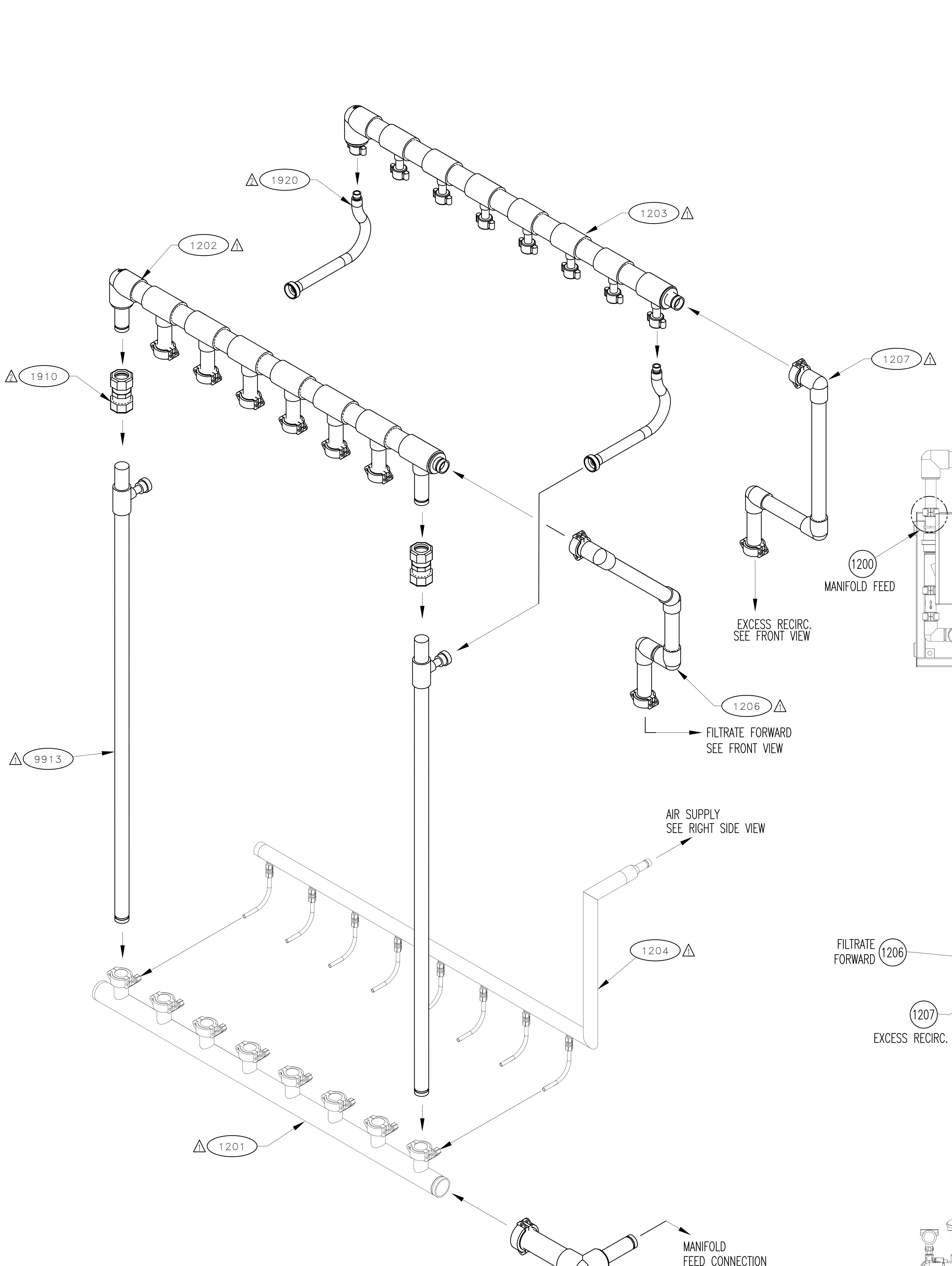
DIMENSIONS ARE IN: INCHES [mm]
TOLERANCE: X. ± .XXX ± | .X ± FRACTION ± 1/8 | .XX ± ANGLE ± 2°
SURFACE FINISH √ μIN [μm]

Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

DRAWING NUMBER: 10000005376 | REVISION: 01 | DWG SIZE: D

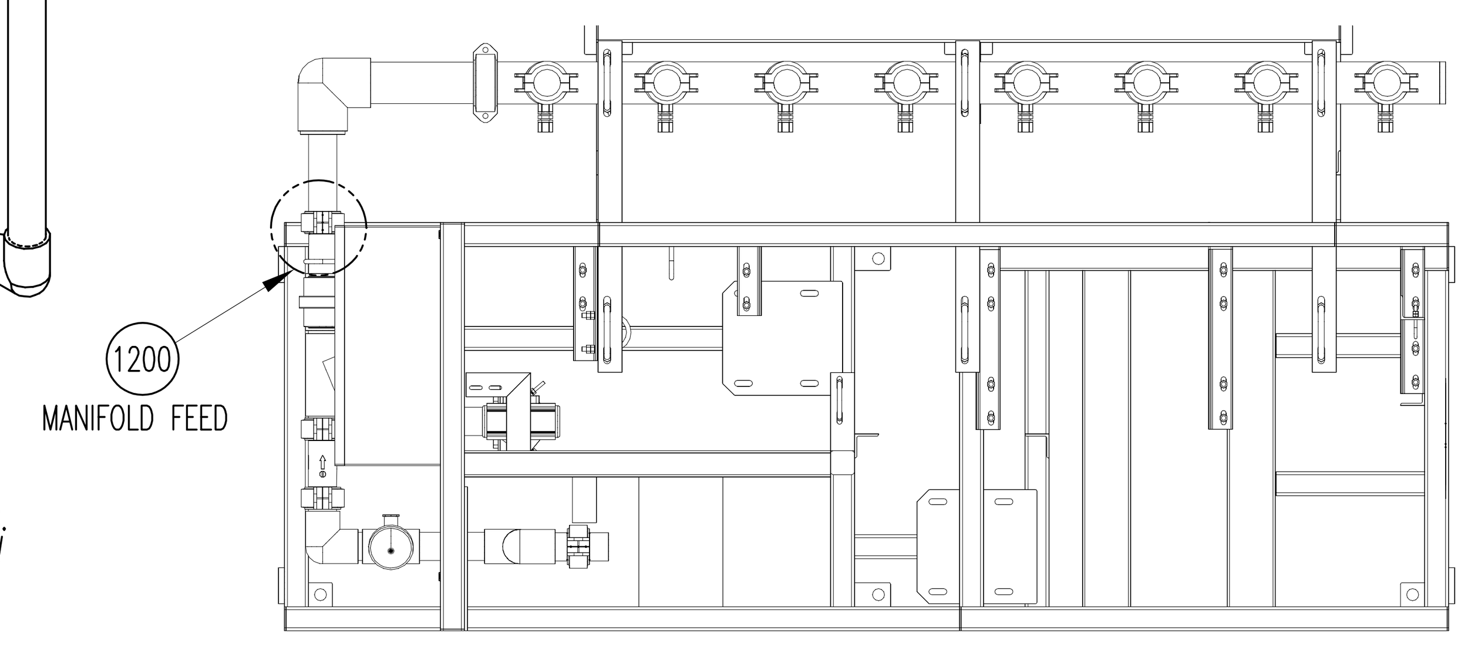
DRAWING NAME: ASSY,FILTSKID,AP2,2006,STOCK,R1,C

THIRD ANGLE PROJECTION | SCALE: 1/16 | MATERIAL NUMBER | SHEET 1 OF 3



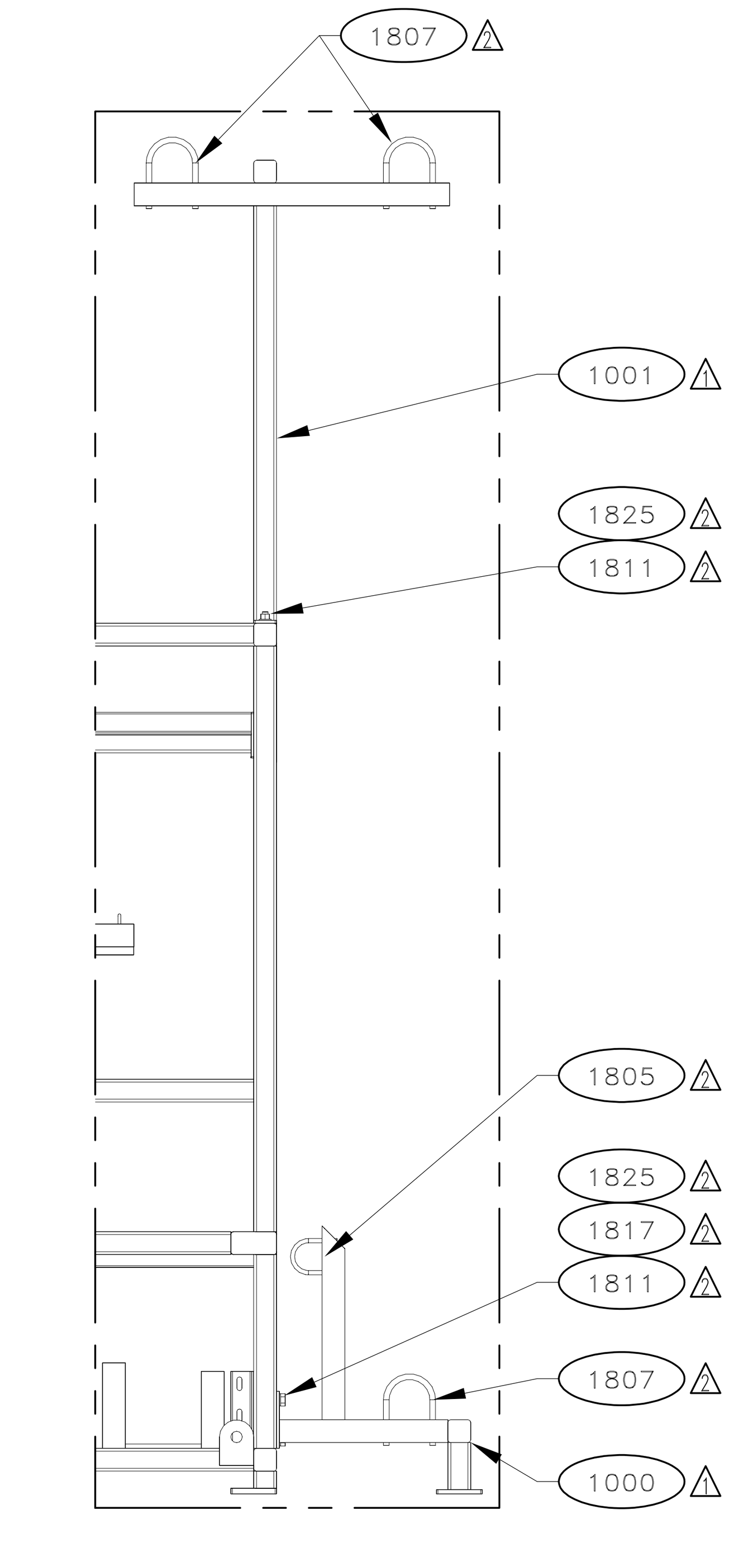
LEFT/REAR ISOMETRIC VIEW

INITIAL CONFIGURATION
(EXPLODED ASSEMBLY)

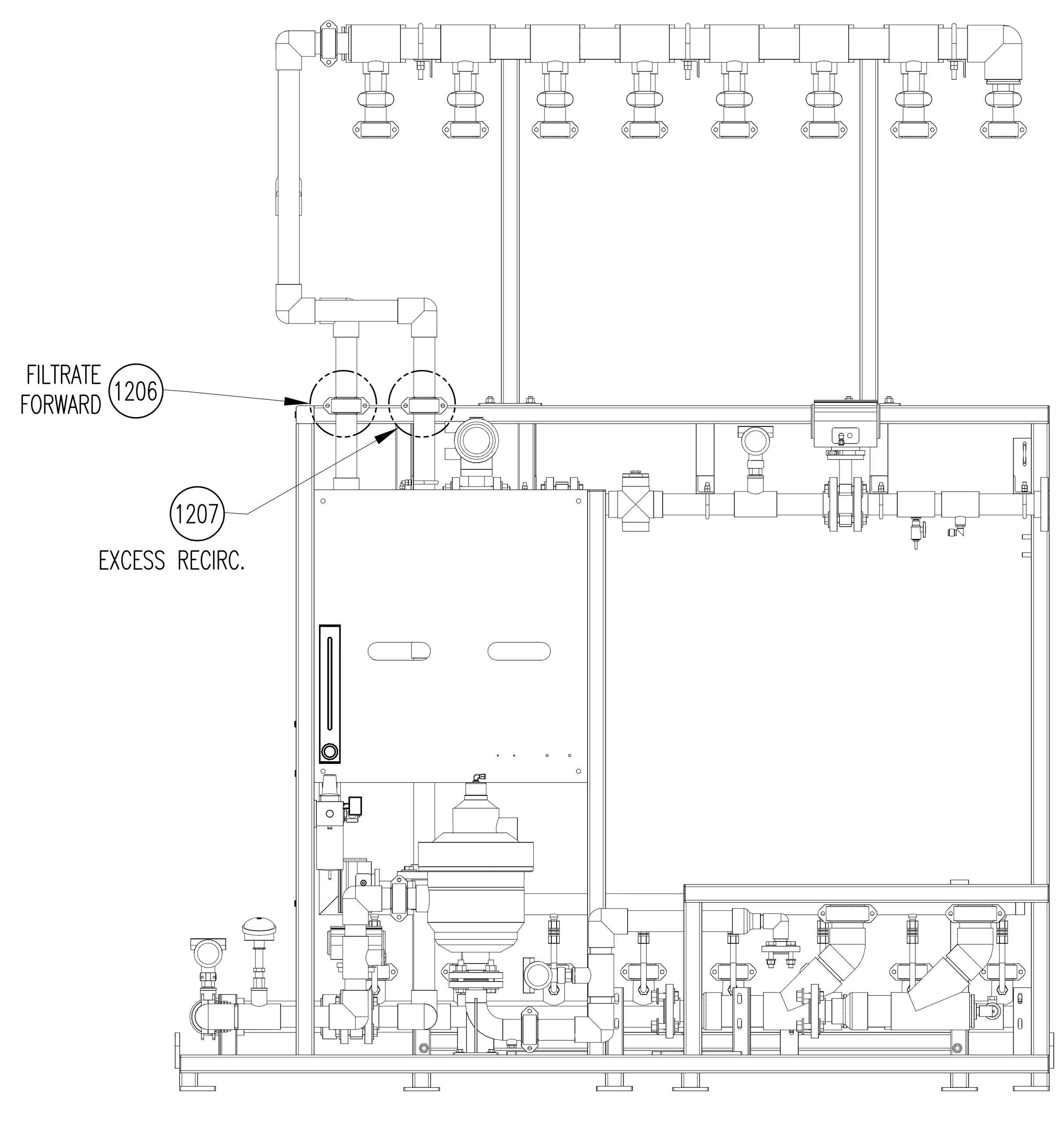


TOP VIEW

(SOME STEEL AND PIPING REMOVED FOR CLARITY)

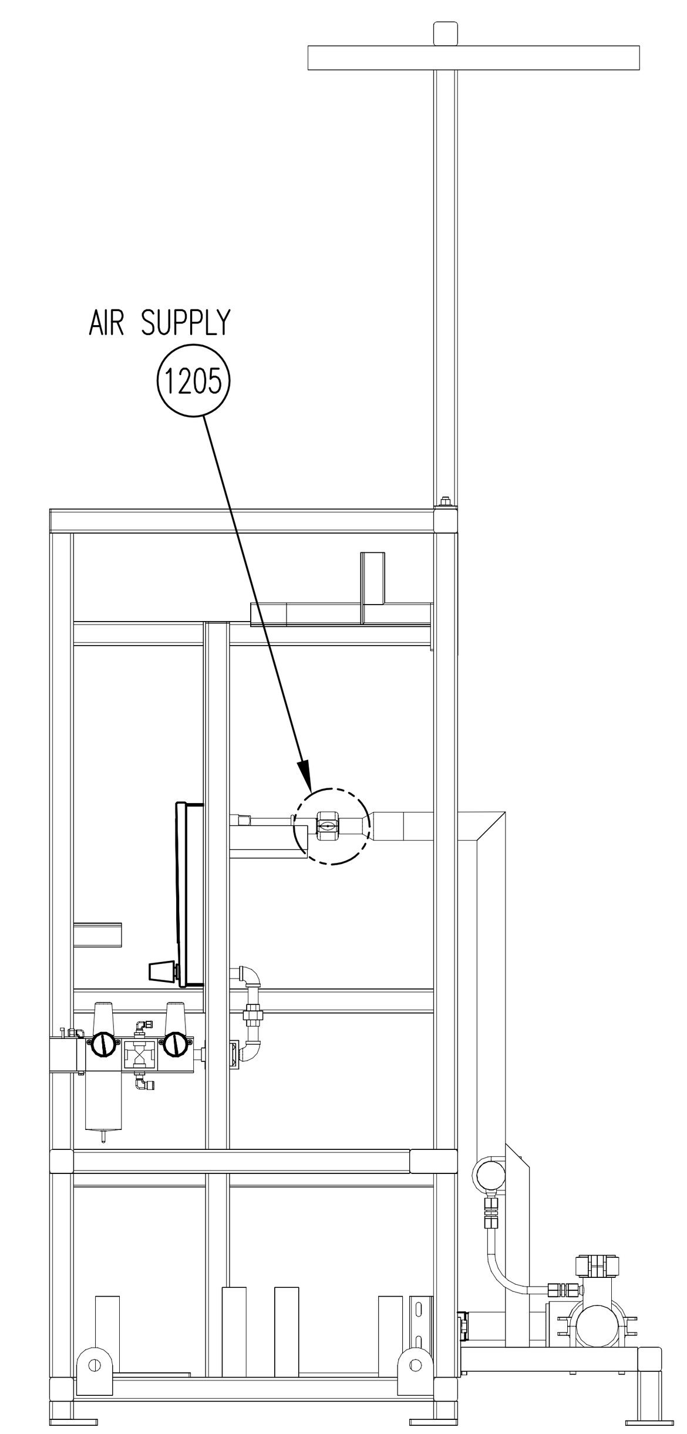


MODULE RACK/HRDW. ASSY.



FRONT VIEW

(SOME STEEL AND PIPING REMOVED FOR CLARITY)



RIGHT SIDE VIEW

(SOME STEEL AND PIPING REMOVED FOR CLARITY)

NOTES:

1.) 9900 SERIES PARTS ARE FROM START-UP KIT AND NEED TO BE RETURNED TO PALL.

⚠1 LABEL PIPE OR EQUIPMENT FOR FIELD INSTALLATION, INSTRUMENTS TO PACKAGED AND LABELED ON OUTSIDE OF BOX. TEXT IS TO BE WRITTEN IN BLACK CHARACTERS ON A LAMINATED WHITE ADHESIVE LABEL, WITH A TEXT HEIGHT OF 3/16."

⚠2 PACKAGE AND LABEL PARTS ACCORDING TO ITEM NUMBER. PACKAGES WITH MULTIPLE PARTS WILL HAVE QUANTITY INDICATED.

ITEM	QTY	UNIT	SAP NO	DESCRIPTION
9913	2	EA	14320	MODULE,USV/UNA,DUMMY MODULE,FAB
1952	100	EA	14299	PIN,MODULE,AUME-UV62-99
1920	4	EA	14523	ASSY,HOSE,1 IN FLEX HOSE, XR CONN,INNER
1913	4	EA	15807	MODULE,MF,UNA-620A
1900	4	EA	18340	MODULE,INSTALL,PARTS,AP
1825	24	EA	12382	WASHER, PLAIN,1/2IN,100,18-8
1817	10	EA	12890	SCREW, HEX HEAD CAP, 1/2-13x1.0, 18-8
1811	14	EA	12478	NUT, HEXAGON, 1/2-13, 18-8
1807	9	EA	11864	BOLT,U,3.0 PIPE,1/2-13,304SST
1805	2	EA	11868	BOLT, U, 2.0 PIPE, 3/8-16, 304SST
1207	1	EA	--------	2.0 EXCESS RECIRC. ASSEMBLY
1206	1	EA	--------	2.0 FILTRATE FORWARD ASSEMBLY
1204	1	EA	--------	MF/UF 2.0-8 x 3/8 AIR SCRUB MANI. W/CLAMP
1203	1	EA	--------	MF/UF 2.0-8 x 2 EXCESS RECIRC. MANIFOLD
1202	1	EA	--------	MF/UF 3.0-8 x 2 FILTRATE MANI. W/CAPS & CLAMPS
1201	1	EA	--------	MF/UF 3.0-8 x 2 FEED MANIFOLD W/CAPS & CLAMPS
1200	1	EA	--------	2.0 FEED PIPE ASSEMBLY
1001	1	EA	--------	MODULE SUPPORT ASSEMBLY
1000	1	EA	--------	MODULE SUPPORT BASE

CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	S. SMITH	22JUN2005
PROJECT ENGINEER	M. POOLE	23AUG2005
ENGINEER	----	----
ENGINEER	----	----
ENGINEER	----	----
CHECKER	J. HOSKINS	25AUG2005

--> DO NOT SCALE DRAWING <--

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN: INCHES [mm]

TOLERANCE: X. ± | .XXX ± | .X ± | FRACTION ± 1/8 | .XX ± | ANGLE ± 2°

SURFACE FINISH √ μIN: ____ [μm]: ____

PALL® Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

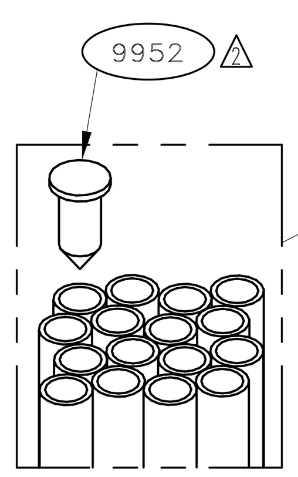
DRAWING NUMBER: **10000005376** REVISION: 01 DWG SIZE: D

DRAWING NAME: ASSY,FILTSKID,AP2,2006,STOCK,R1,C

THIRD ANGLE PROJECTION | SCALE 1/16 | MATERIAL NUMBER | SHEET 2 OF 3

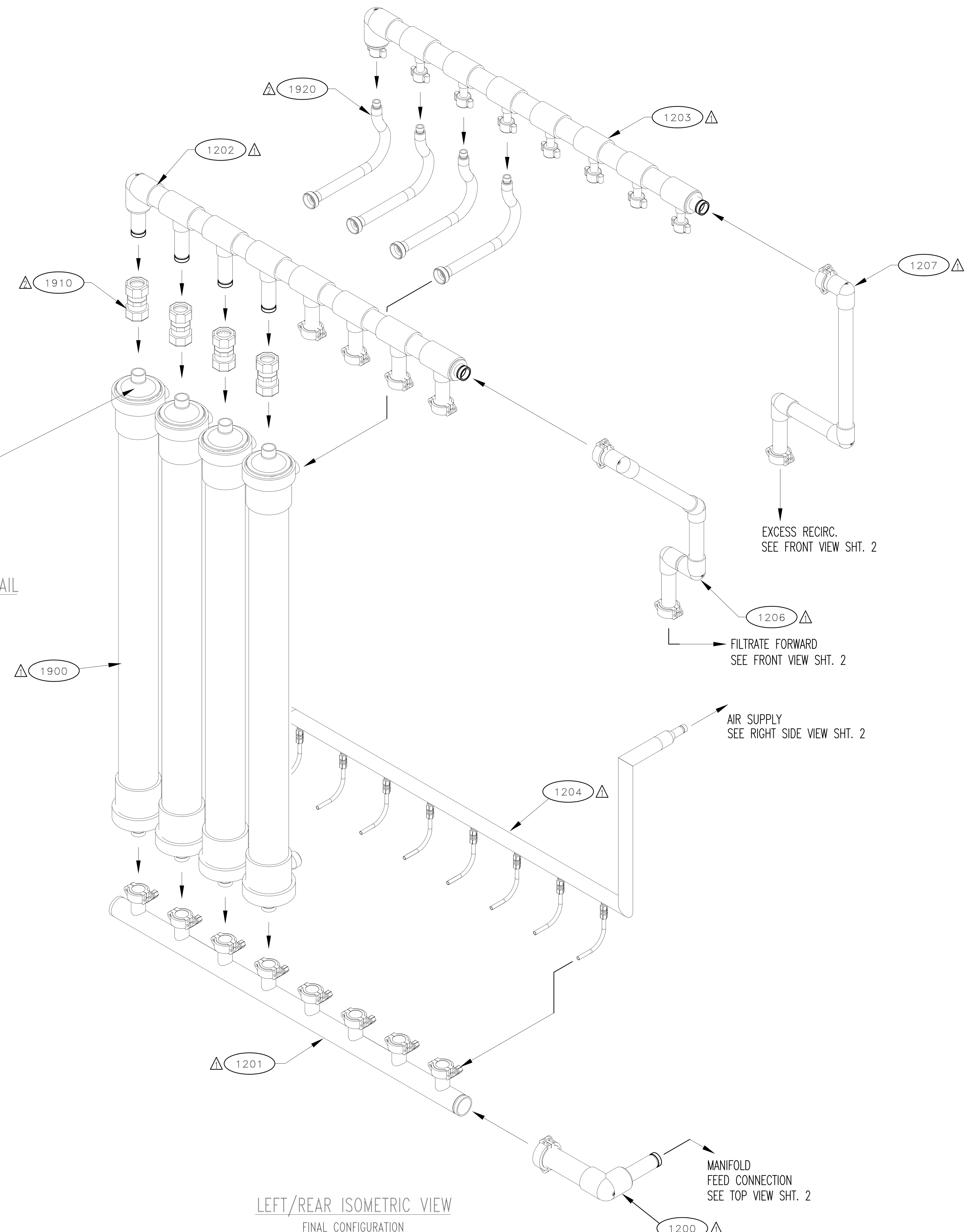
IMPORTANT: BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.

PALL ARIA™ AP-2 SYSTEM



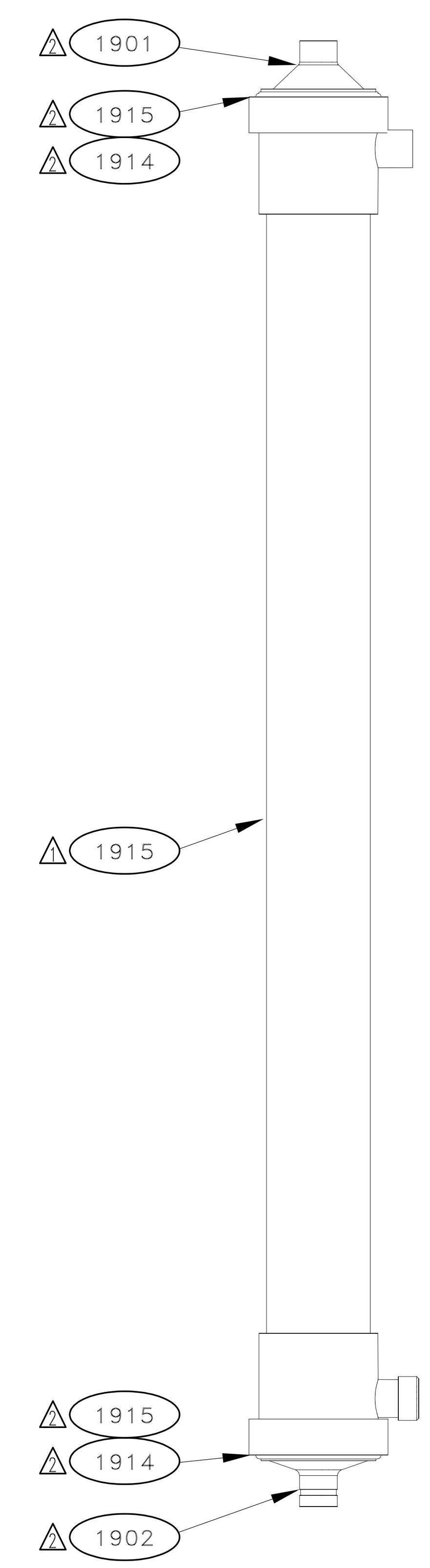
MODULE REPAIR PIN DETAIL

SCALE: NONE



LEFT/REAR ISOMETRIC VIEW

FINAL CONFIGURATION
(EXPLODED ASSEMBLY)



MODULE DETAIL

(4 SUPPLIED)
SEE DWG. 10000001238 FOR 1900 SERIES PARTS
SCALE: 1/10

⚠ LABEL PIPE OR EQUIPMENT FOR FIELD INSTALLATION, INSTRUMENTS TO PACKAGED AND LABELED ON OUTSIDE OF BOX. TEXT IS TO BE WRITTEN IN BLACK CHARACTERS ON A LAMINATED WHITE ADHESIVE LABEL, WITH A TEXT HEIGHT OF 3/16."

⚠2 PACKAGE AND LABEL PARTS ACCORDING TO ITEM NUMBER. PACKAGES WITH MULTIPLE PARTS WILL HAVE QUANTITY INDICATED.

CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	S. SMITH	22JUN2005
PROJECT ENGINEER	M. POOLE	23AUG2005
ENGINEER	----	----
ENGINEER	----	----
ENGINEER	----	----
CHECKER	J. HOSKINS	25AUG2005

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UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN:	TOLERANCE	
INCHES [mm]	X. ±	.XXX ±
SURFACE FINISH √ μIN: ___ [μm]: ___	.X ±	FRACTION ± 1/8
	.XX ±	ANGLE ± 2°

Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

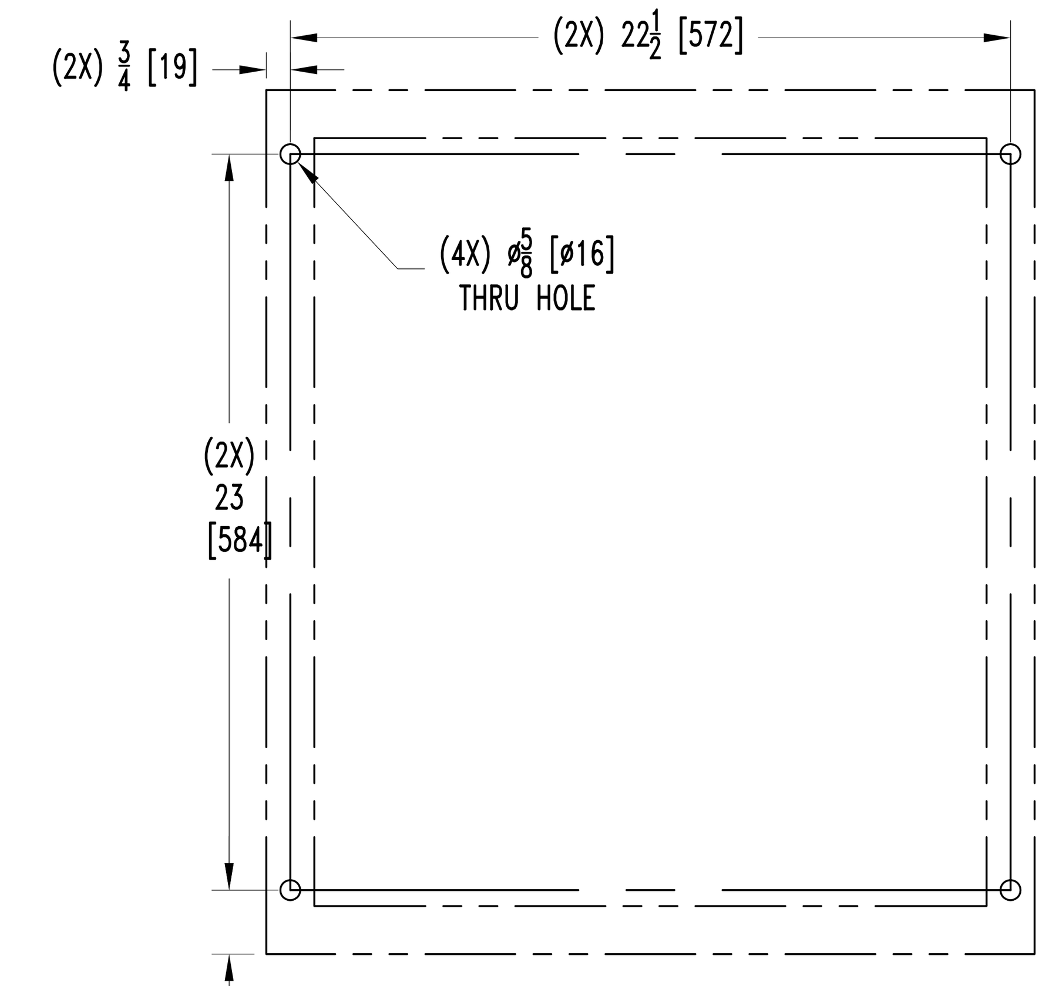
DRAWING NUMBER	REVISION	DWG SIZE
10000005376	01	D

DRAWING NAME: ASSY,FILTSKID,AP2,2006,STOCK,R1,C

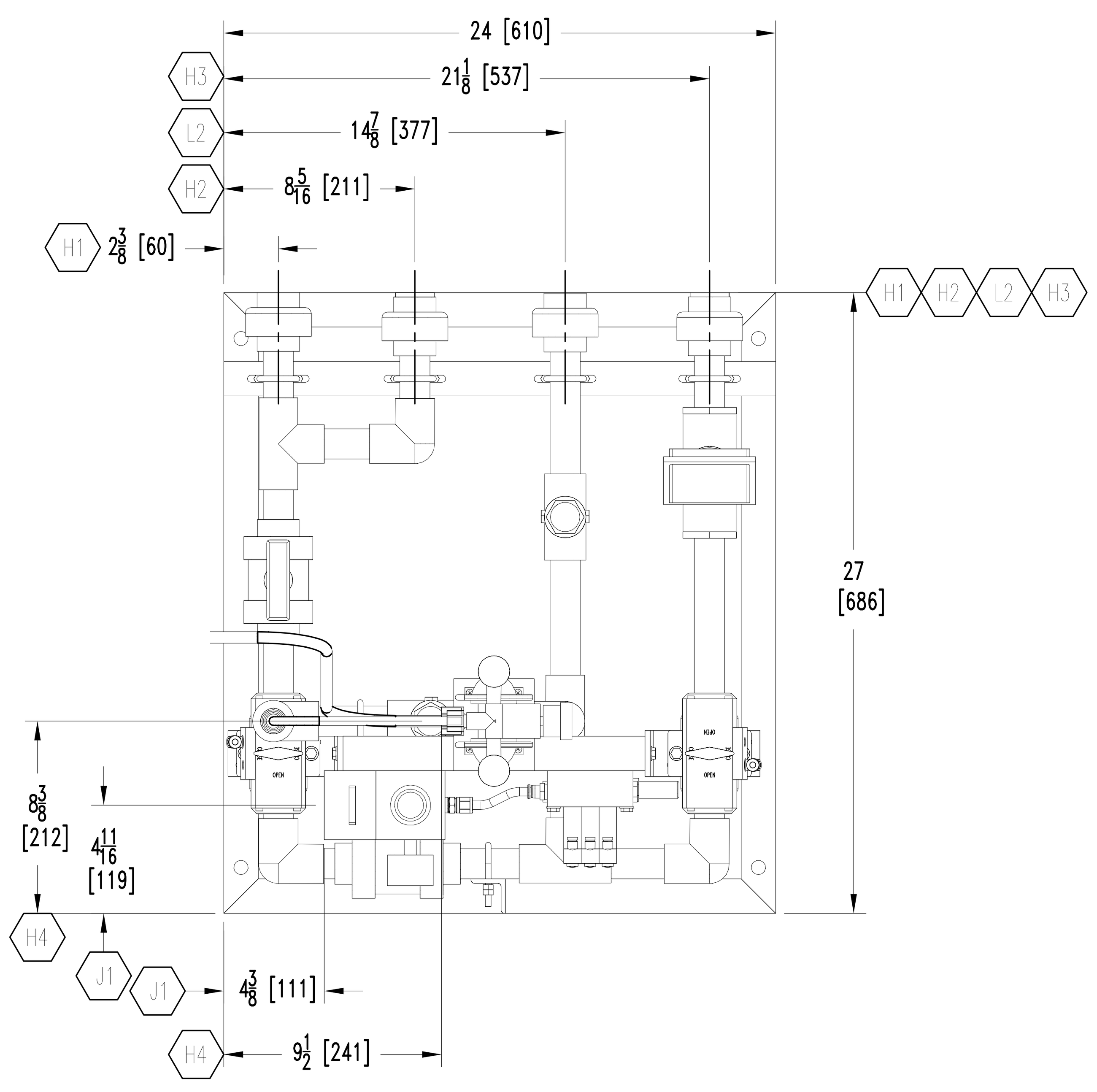
THIRD ANGLE PROJECTION | SCALE 1/16 | MATERIAL NUMBER | SHEET 3 OF 3

IMPORTANT: BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.

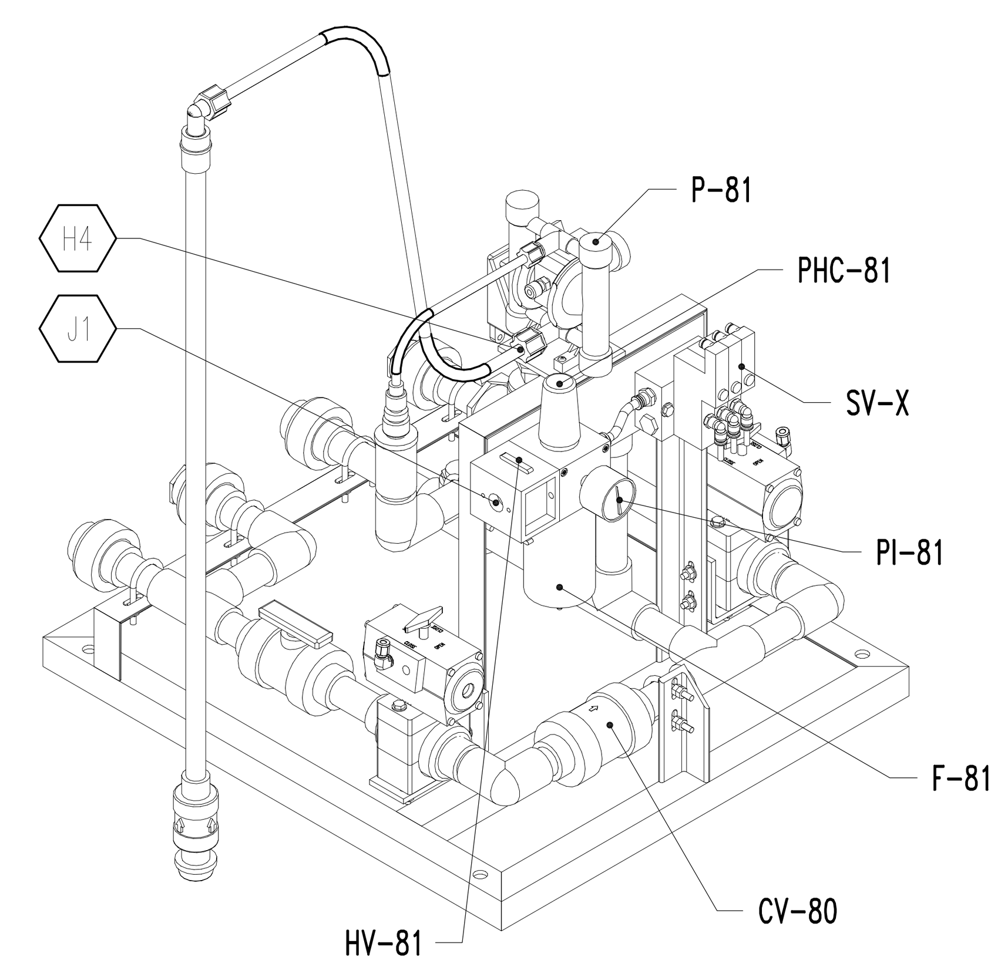
PALL ARIA™ AP-2 SYSTEM



SKID MOUNTING FOOTPRINT

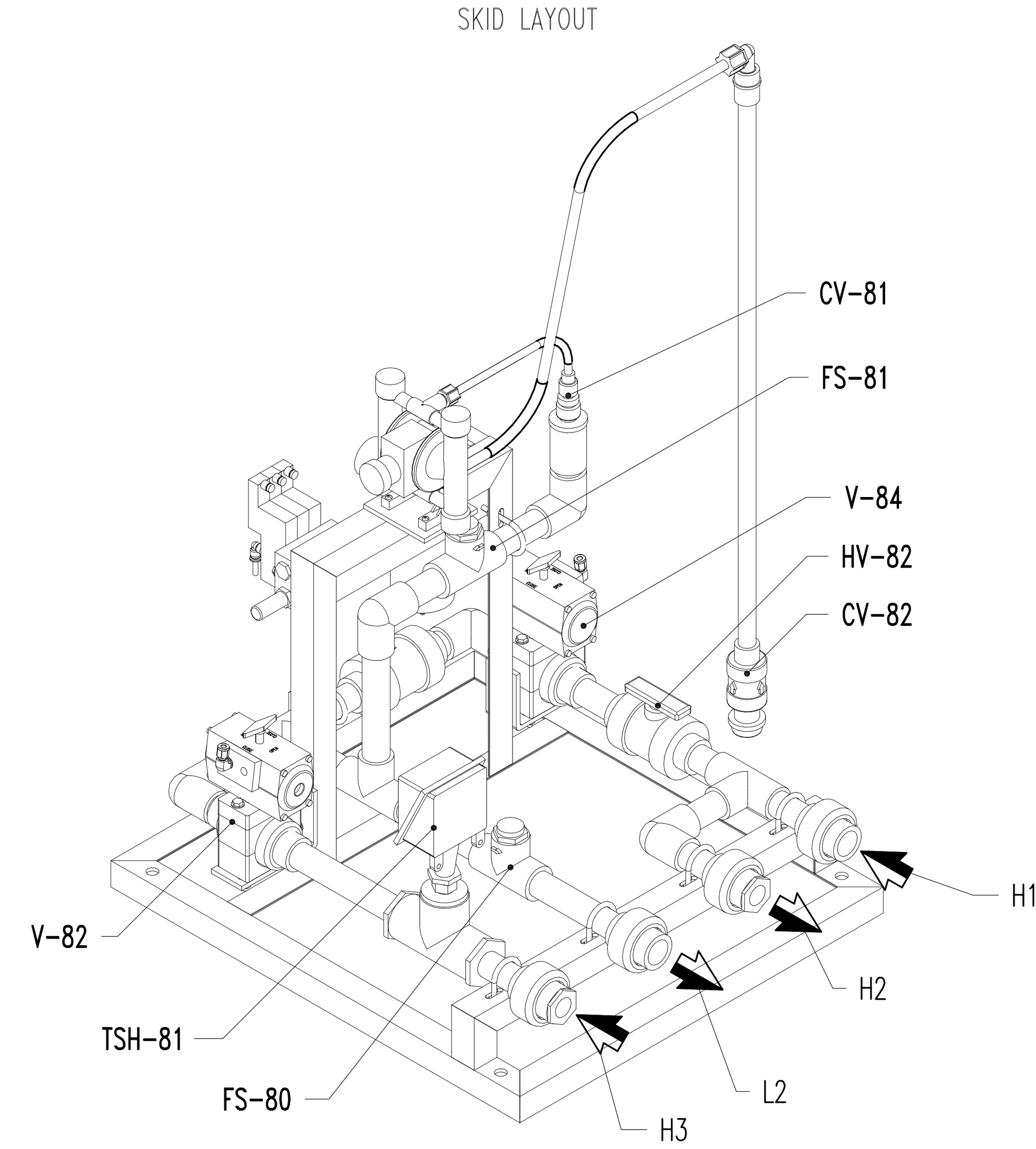


TOP VIEW



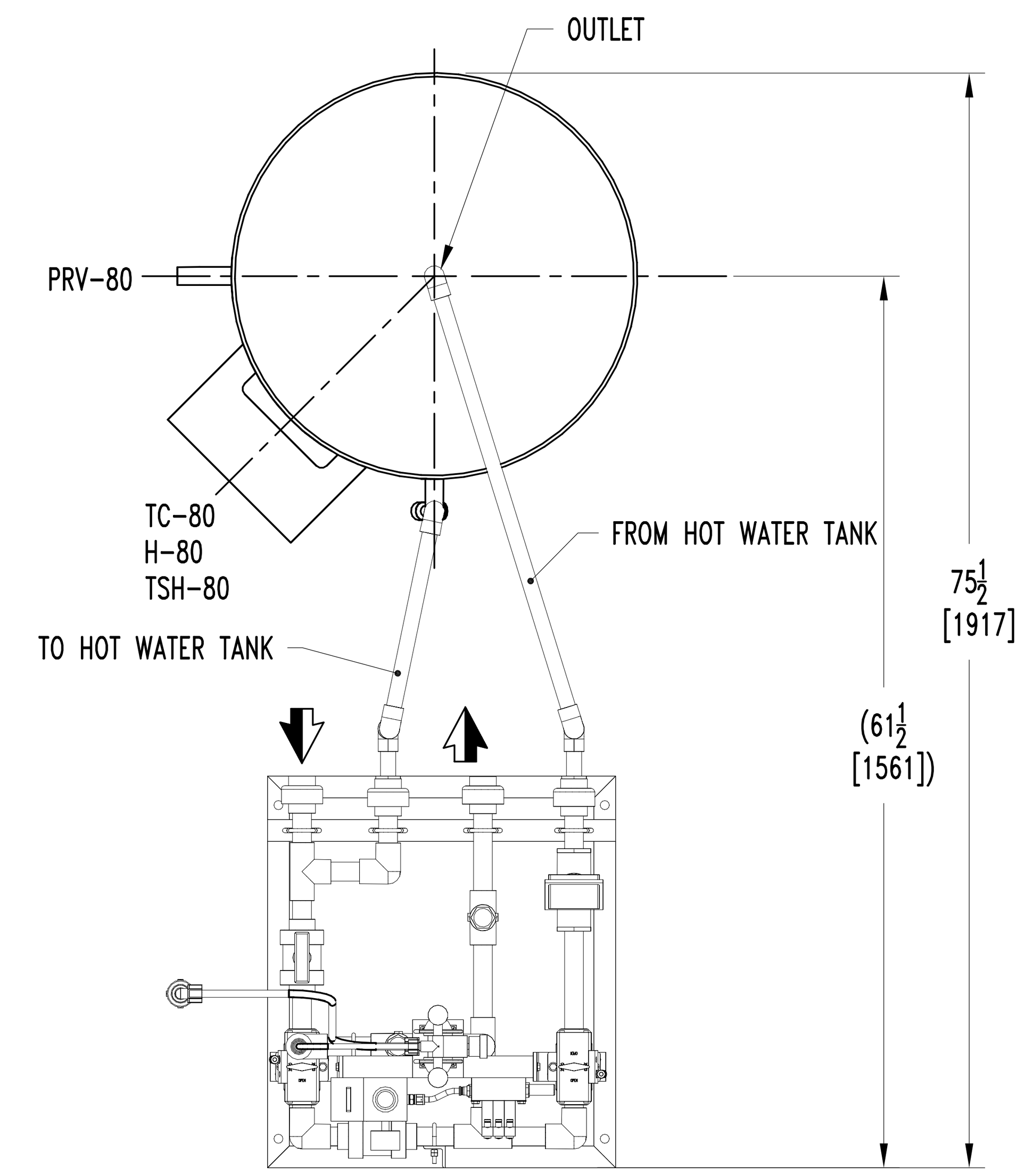
LEFT/FRONT ISOMETRIC VIEW

SKID LAYOUT



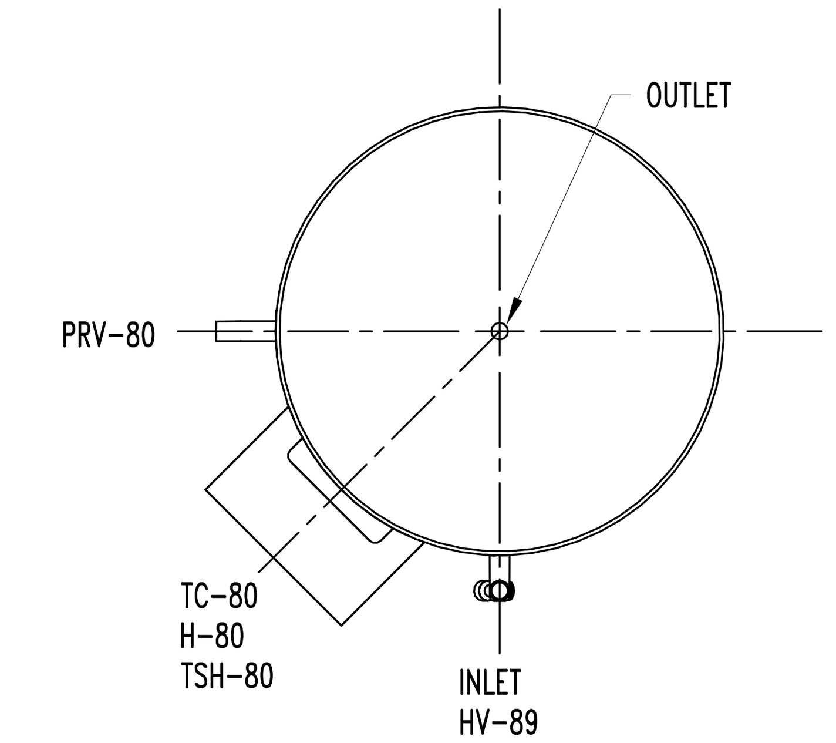
RIGHT/REAR ISOMETRIC VIEW

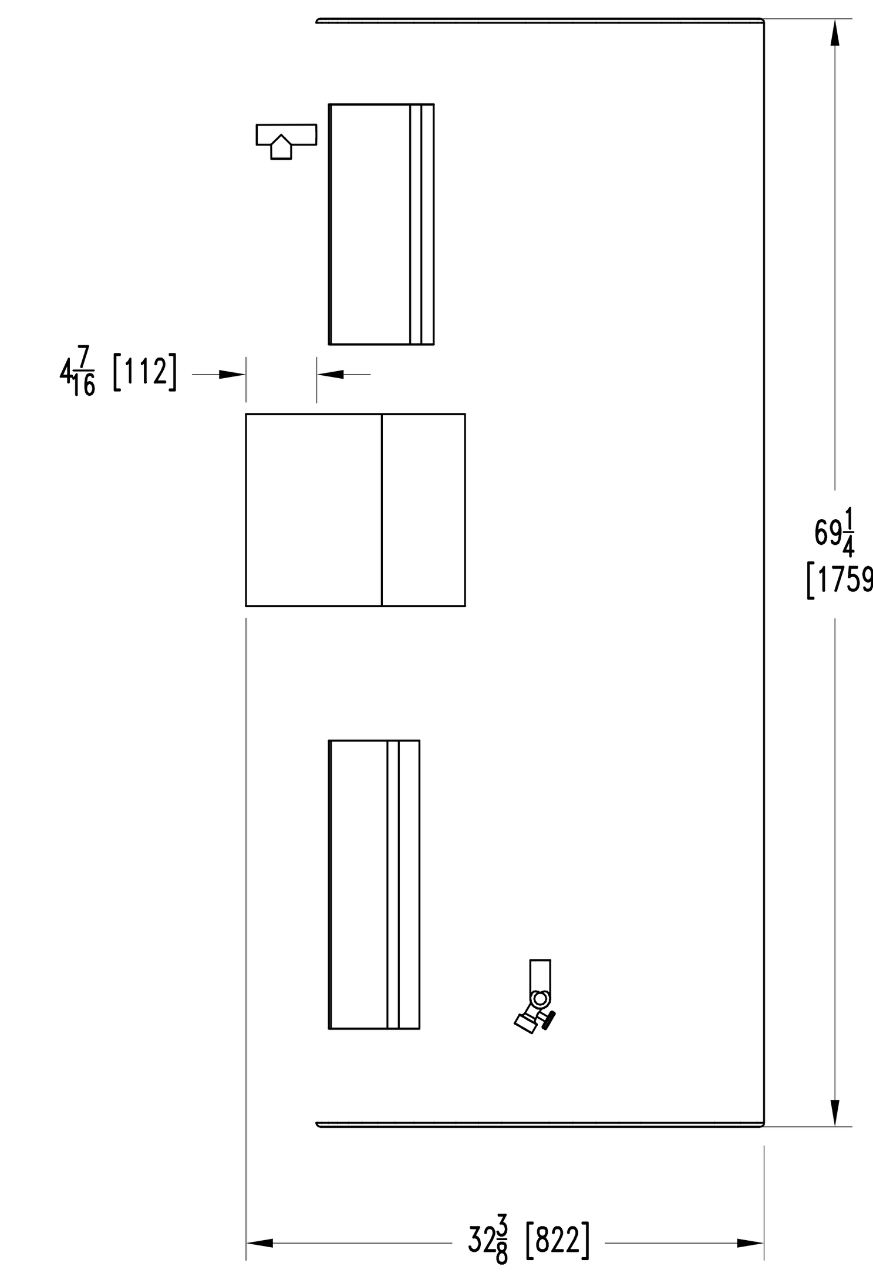
SKID LAYOUT



TOP VIEW

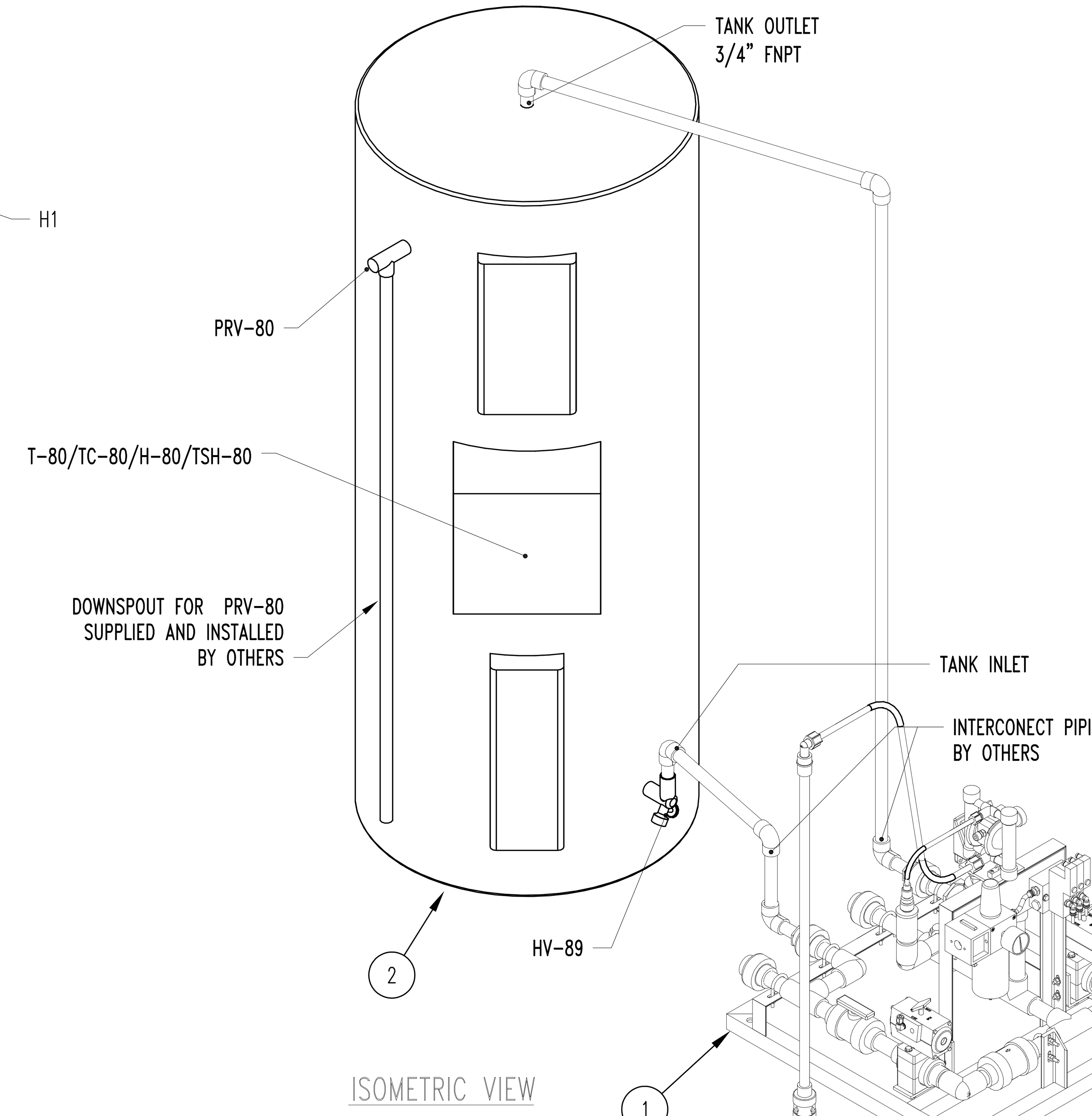
SKID ASSEMBLY LAYOUT



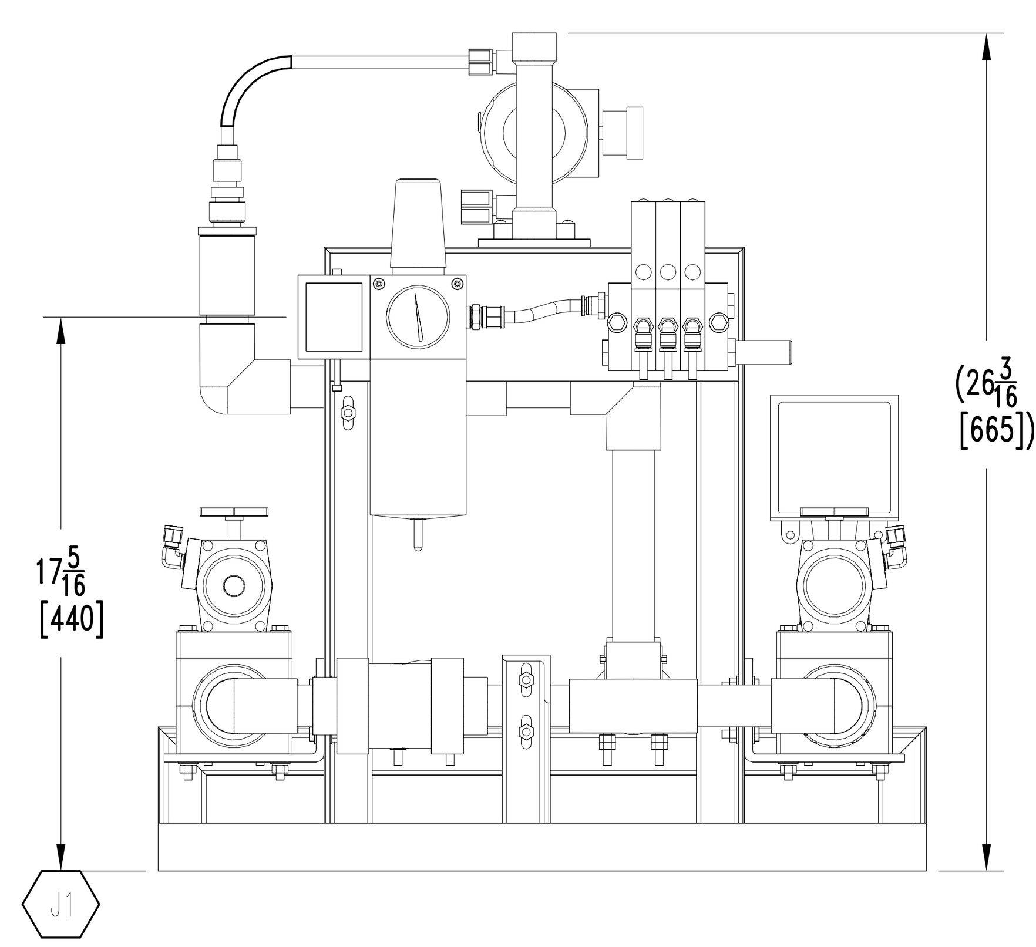


DETAIL OF ITEM 2

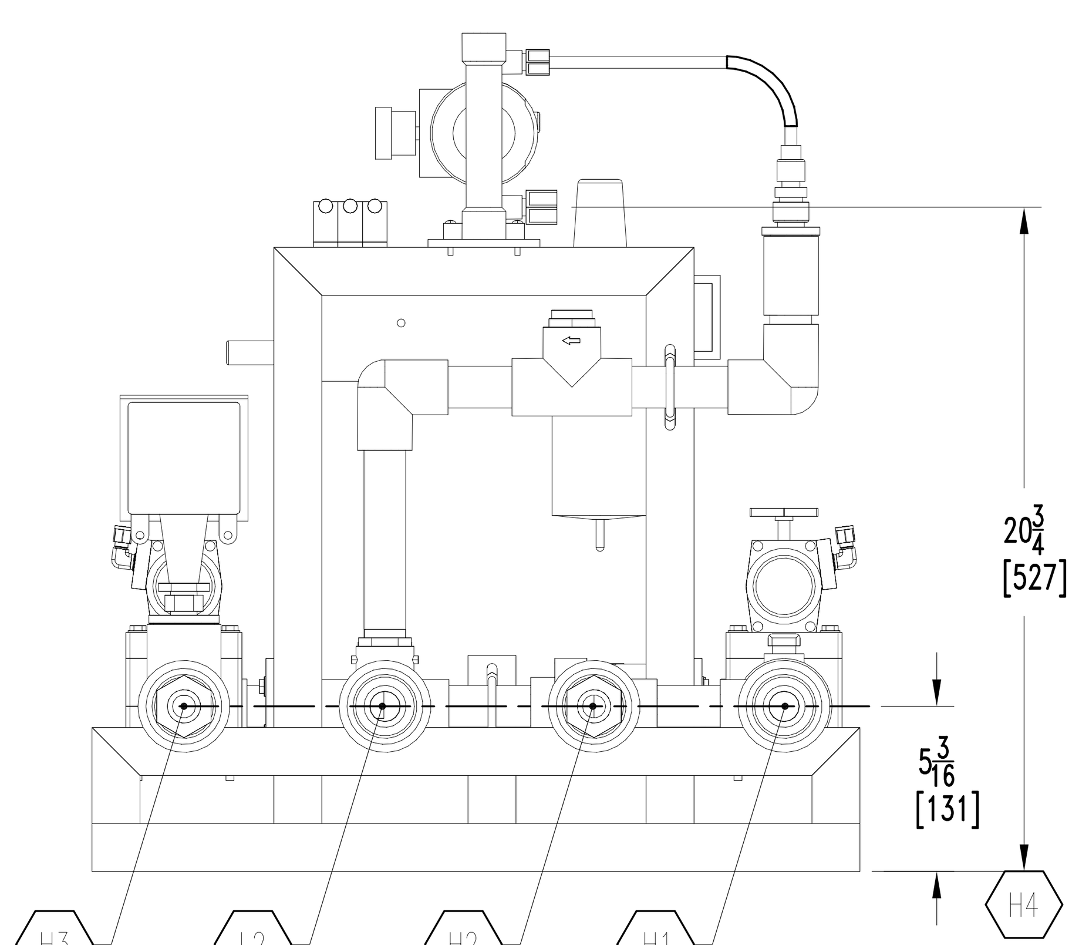
SCALE: 1"=1'



ISOMETRIC VIEW



FRONT VIEW



REAR VIEW

ITEM	DESCRIPTION	TYPE
L2	OUTLET TO AP SKID	1" [25] SW UNION
J1	COMPRESSED AIR SUPPLY	1/4" [6] FNPT
H4	FROM NaOCl DRUM	3/8" [10] TUBE
H3	HOT WATER TANK TO SKID (OUTLET)	3/4" [20] SW UNION
H2	SKID TO HOT WATER TANK (INLET)	3/4" [20] SW UNION
H1	POTABLE WATER INLET	1" [25] SW UNION

BATTERY LIMIT CONNECTIONS

NOTES:

1.) DRY WEIGHT OF SYSTEM: 650 LBS.
WET WEIGHT OF SYSTEM: 1700 LBS.
WEIGHT OF INTERCONNECT PIPING (BY OTHERS) NOT INCLUDED.

2.) PIPING, CONNECTING TO PALL EQUIPMENT, MUST BE ADEQUATELY SUPPORTED TO PREVENT ANY NOZZLE LOADS ON THE EQUIPMENT.
DO NOT USE SKID CONNECTIONS TO SUPPORT PIPING.

3.) INTERCONNECT PIPING BETWEEN HOT WATER TANK AND SKID TO BE COMPLETED IN FIELD BY OTHERS.

ITEM	QTY	UNIT	MM NO.	DESCRIPTION
2	1	EA	26743	HEATER,HUBBELL,120 GAL,10KW,480V,3PH
2	1	EA	17003	HEATER,HUBBELL,120 GAL,10KW,240V,1PH
1	1	EA	15996	ASSY,SKID,HOT WATER/EFM,AP2,STD

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CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	S. SMITH	19APR2005
PROJECT ENGINEER	M. POOLE	19APR2005
ENGINEER	----	----
ENGINEER	----	----
ENGINEER	----	----
CHECKER	J. HOSKINS	19APR2005

--> DO NOT SCALE DRAWING <--

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN:	TOLERANCE	
INCHES [mm]	X. ±	.XXX ±
SURFACE FINISH µIN: ___ [µm]: ___	.X ±	FRACTION ± 1/8
	.XX ±	ANGLE ± 2°

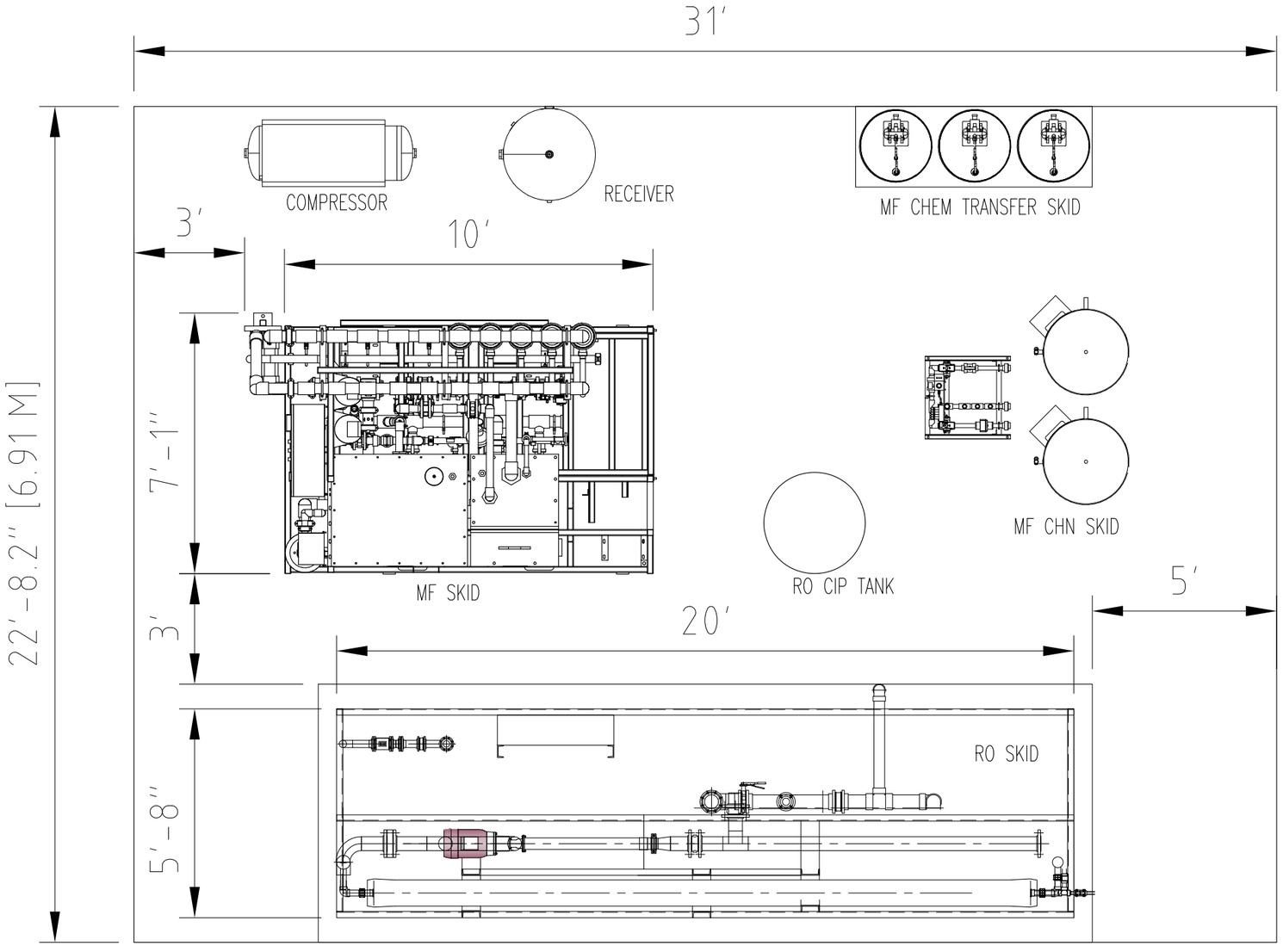
Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

DRAWING NUMBER	REVISION	DWG SIZE
10000001268	00	D

DRAWING NAME
ASSY,EFM,XX.XXXXX,CITY,STATE,AP2,H

THIRD ANGLE PROJECTION | SCALE 1/6 | MATERIAL NUMBER | SHEET 1 OF 1

PRELIMINARY NOT FOR CONSTRUCTION



PRELIMINARY
NOT FOR CONSTRUCTION

LOCATIONS AND DIMENSIONS ARE FOR REFERENCE ONLY AND MUST BE VERIFIED BEFORE FINAL CONSTRUCTION

--> DO NOT SCALE DRAWING <--

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN: [X] INCHES ONLY [ ] MILLIMETERS ONLY [ ] IN [mm] [ ] mm [IN] [ ] .

ALL FINISHED SURFACES: √ μin ___ μm ___

THIRD ANGLE PROJECTION

TOLERANCE	
X. ±	
.X ±	
.XX ±	
.XXX ±	
FRACTION ±	
ANGLE ±	°
SCALE	

CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	B. MARTIN	02NOV2010
PROJECT ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
CHECKER		

Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----
REVISION: 00
DWG SIZE: D

DRAWING NAME
SNOW LAKE
PRELIMINARY EQUIPMENT GENERAL ARANGEMENT DRAWING

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER | SHEET 1 OF 1

IMPORTANT: *BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.*

CAD SYSTEM: AUTOCAD

CAD File Name: GA - SNOW LAKE - REV 0

HARDCOPY SIGNOFF NOTIFICATION SIGNATURES REQUIRED PRIOR TO FORMAL DRAWING RELEASE
CONTROLS ENG.
SYSTEMS ENG.
APPLICATIONS ENG.
ENG. MANAGER

PALL ADVANCED SEPARATIONS SYSTEMS

PALL ARIA™ PROCESS & INSTRUMENTATION DIAGRAM

SNOW LAKE

IMPORTANT ! – PLEASE ENSURE THAT ALL NOTES ARE READ AND UNDERSTOOD.

DRAWING TABLE OF CONTENTS

--> DO NOT SCALE DRAWING <--

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN: ☐ INCHES ONLY ☐ MILLIMETERS ONLY ☐ IN [mm] ☐ mm [IN] ☐ .

ALL FINISHED SURFACES $\sqrt{}$ μin ___ μm ___

THIRD ANGLE PROJECTION

TOLERANCE	
X ±	
.X ±	
.XX ±	
.XXX ±	
FRACTION ±	
ANGLE ±	
SCALE	

CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	B. MARTIN	01NOV2010
PROJECT ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
CHECKER		

Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----
REVISION: 00
DWG SIZE: D

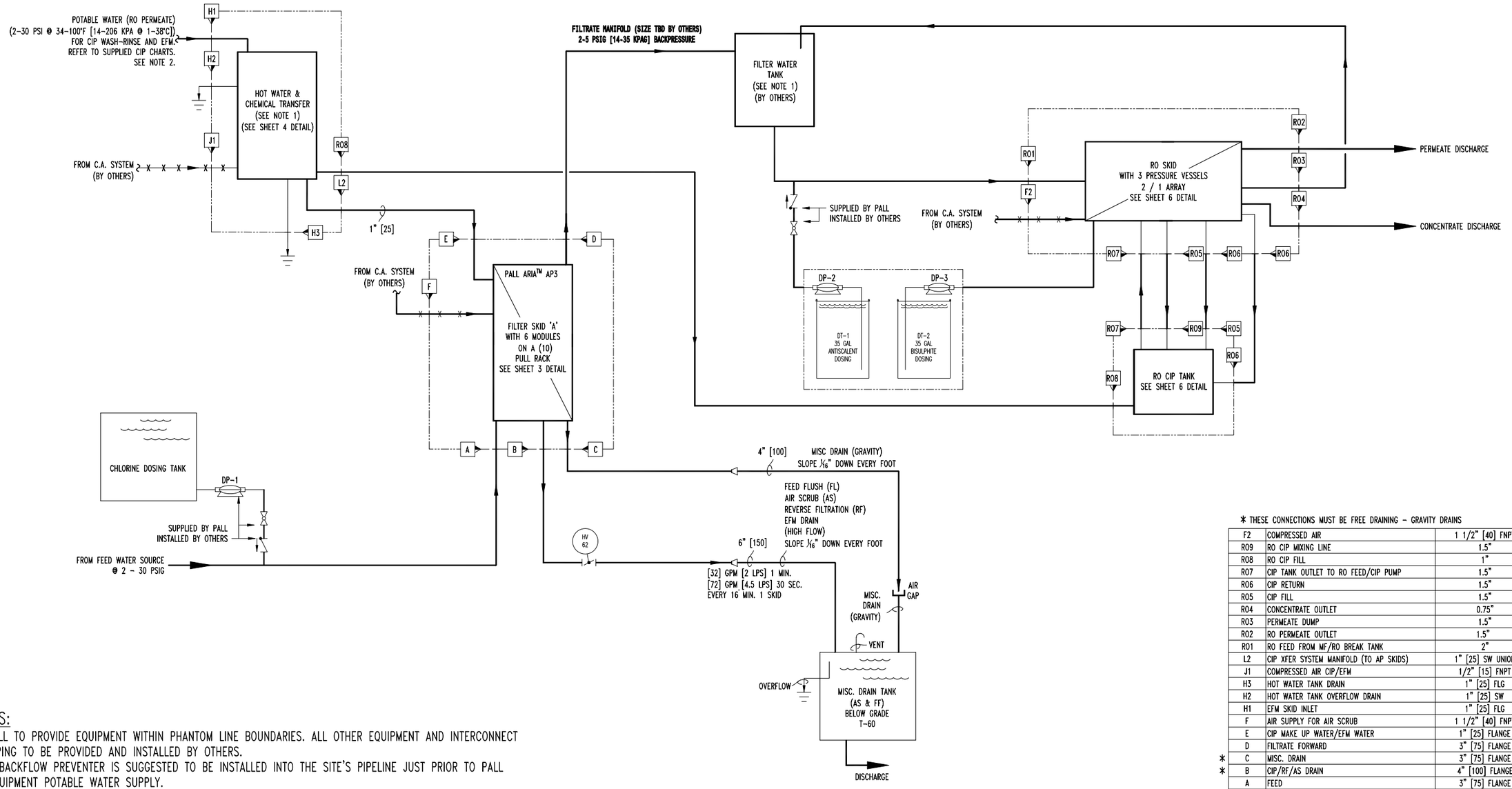
DRAWING NAME: SNOW LAKE PRELIMINARY P&ID

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER: ---- | SHEET 1 OF 6

IMPORTANT: *BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.*

CAD SYSTEM: AUTOCAD

CAD File Name: PID – SNOW LAKE – REV 0



* THESE CONNECTIONS MUST BE FREE DRAINING - GRAVITY DRAINS

	ITEM	DESCRIPTION	TYPE	MAT'L	ZONE
	F2	COMPRESSED AIR	1 1/2" [40] FNPT	SST	D3
	R09	RO CIP MIXING LINE	1.5"	PVC	C2
	R08	RO CIP FILL	1"	PVC	C3/D7
	R07	CIP TANK OUTLET TO RO FEED/CIP PUMP	1.5"	PVC	C3
	R06	CIP RETURN	1.5"	PVC	C2
	R05	CIP FILL	1.5"	PVC	C2
	R04	CONCENTRATE OUTLET	0.75"	PVC	D2
	R03	PERMEATE DUMP	1.5"	PVC	D2
	R02	RO PERMEATE OUTLET	1.5"	PVC	D2
	R01	RO FEED FROM MF/RO BREAK TANK	2"	PVC	D3
	L2	CIP XFER SYSTEM MANIFOLD (TO AP SKIDS)	1" [25] SW UNION	PVC	D5
	J1	COMPRESSED AIR CIP/EFM	1/2" [15] FNPT	SST	D5
	H3	HOT WATER TANK DRAIN	1" [25] FLG	PVC	D5
	H2	HOT WATER TANK OVERFLOW DRAIN	1" [25] SW	PVC	D6
	H1	EFM SKID INLET	1" [25] FLG	PVC	D6
	F	AIR SUPPLY FOR AIR SCRUB	1 1/2" [40] FNPT	SST	C6/C5
	E	CIP MAKE UP WATER/EFM WATER	1" [25] FLANGE	PVC	C4/C5
	D	FILTRATE FORWARD	3" [75] FLANGE	PVC	C4/C5
*	C	MISC. DRAIN	3" [75] FLANGE	PVC	C4/C5
*	B	CIP/RF/AS DRAIN	4" [100] FLANGE	PVC	C4/C5
	A	FEED	3" [75] FLANGE	PVC	C4/C5

SCOPE LIMIT TABLE

NOTES:
1.) PALL TO PROVIDE EQUIPMENT WITHIN PHANTOM LINE BOUNDARIES. ALL OTHER EQUIPMENT AND INTERCONNECT PIPING TO BE PROVIDED AND INSTALLED BY OTHERS.
2.) A BACKFLOW PREVENTER IS SUGGESTED TO BE INSTALLED INTO THE SITE'S PIPELINE JUST PRIOR TO PALL EQUIPMENT POTABLE WATER SUPPLY.
3.) REFER TO INSTALLATION CHECK LIST FOR DETAILS.
4.) THE PALL ARIA™ AP MF SKID MUST BE ABLE TO DRAIN VIA GRAVITY. THEREFORE DRAIN PIPING MUST REMAIN LOWER THAN THE AP SKID. PALL MAY BE CONTRACTED TO DEVELOP A SOLUTION IF THE AP SKID IS NOT CONNECTED TO DRAIN LINES WHICH SLOPE AWAY FROM THE AP SKID.

SKID LIMIT

LEGEND
(PALL) ▼ (PURCHASER) BATTERY LIMIT - PIPING AND TUBING

VOLTAGE 575V/3PH/50HZ

PRELIMINARY
NOT FOR CONSTRUCTION
LOCATIONS AND DIMENSIONS ARE FOR REFERENCE ONLY AND MUST BE VERIFIED BEFORE FINAL CONSTRUCTION

PALL SYSTEM - OVERVIEW

--> DO NOT SCALE DRAWING <--
UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN: TOLERANCE
☐ INCHES ONLY — X. ±
☐ MILLIMETERS ONLY — .X ±
☒ IN [mm] ☐ mm [IN] — .XX ±
☐ . — .XXX ±
ALL FINISHED SURFACES — FRACTION ±
µIN: ___ µM: ___ — ANGLE ±
THIRD ANGLE PROJECTION — SCALE

	NAME	DATE
CODE IDENT. NO. 17238		
DRAWN BY	B. MARTIN	01NOV2010
PROJECT ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
CHECKER		

Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----
REVISION: 00
DWG SIZE: D

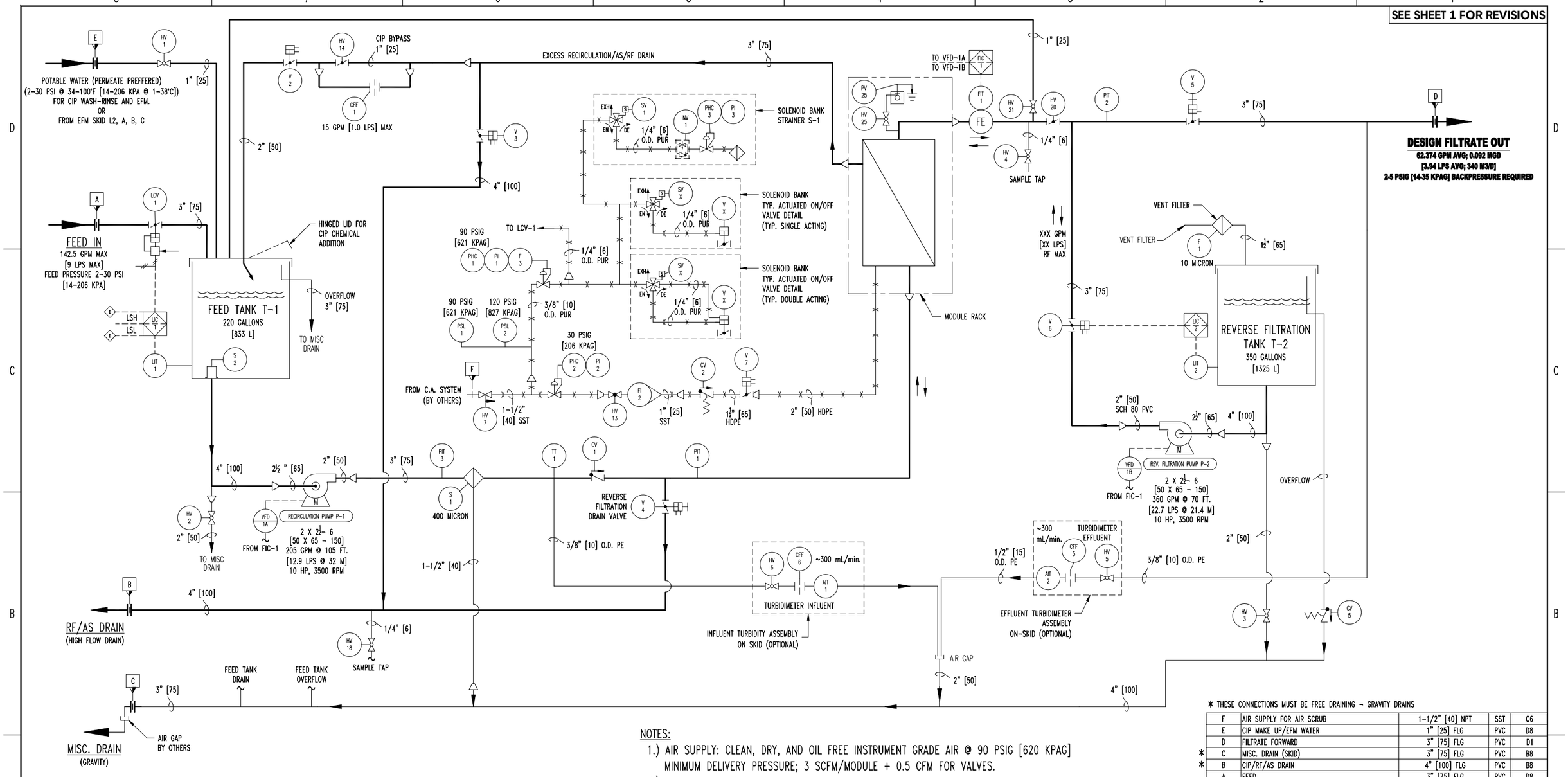
DRAWING NAME
SNOW LAKE
PRELIMINARY P&ID

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER: ---- | SHEET 2 OF 6

IMPORTANT: BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.

CAD SYSTEM: AUTOCAD
CAD File Name: PID - SNOW LAKE - REV 0

SEE SHEET 1 FOR REVISIONS



NOTES:

1.) AIR SUPPLY: CLEAN, DRY, AND OIL FREE INSTRUMENT GRADE AIR @ 90 PSIG [620 KPAG] MINIMUM DELIVERY PRESSURE; 3 SCFM/MODULE + 0.5 CFM FOR VALVES.
2.) ALL FLOWS SHOWN ARE MAXIMUM.
3.) ALL PIPING IS SCHEDULE 80 PVC UNLESS OTHERWISE NOTED.
4.) AIR GAP IS REQUIRED BETWEEN FLOOR DRAIN AND TANK DRAINS.
5.) DRAIN CONNECTIONS B AND C SHALL NOT BE CONNECTED TO A COMMON DRAIN.
6.) ALL EQUIPMENT ON THIS SHEET IS SUPPLIED BY PALL PER LEGEND.
7.) PUMP INFORMATION REPRESENTS MAXIMUM FLOW THROUGH AP SKID, NOT ACTUAL PUMP CURVE.
8.) ONE SKID SHOWN; MULTIPLE SKIDS WILL BE TAGGED A, B ,C ETC.

* THESE CONNECTIONS MUST BE FREE DRAINING - GRAVITY DRAINS

	ITEM	DESCRIPTION	TYPE	MAT'L	ZONE
	F	AIR SUPPLY FOR AIR SCRUB	1-1/2" [40] NPT	SST	C6
	E	CIP MAKE UP/EFM WATER	1" [25] FLG	PVC	D8
	D	FILTRATE FORWARD	3" [75] FLG	PVC	D1
*	C	MISC. DRAIN (SKID)	3" [75] FLG	PVC	B8
*	B	CIP/RF/AS DRAIN	4" [100] FLG	PVC	B8
	A	FEED	3" [75] FLG	PVC	D8

SCOPE LIMIT TABLE

SKID LIMIT

LEGEND
(PALL) ▼ (PURCHASER) BATTERY LIMIT - PIPING AND TUBING

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VOLTAGE 575V/3PH/50HZ

PALL ARIA™ AP-3 MICROFILTRATION SYS.

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DIMENSIONS ARE IN: ☐ INCHES ONLY ☐ MILLIMETERS ONLY ☒ IN [mm] ☐ mm [IN] ☐ .
ALL FINISHED SURFACES: µin: __ µm: __
THIRD ANGLE PROJECTION
TOLERANCE: X. ± / X ± / .XX ± / .XXX ± / FRACTION ± / ANGLE ±
SCALE

CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY	B. MARTIN	01NOV2010
PROJECT ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
CHECKER		

PALL Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----
REVISION: 00
DWG SIZE: D

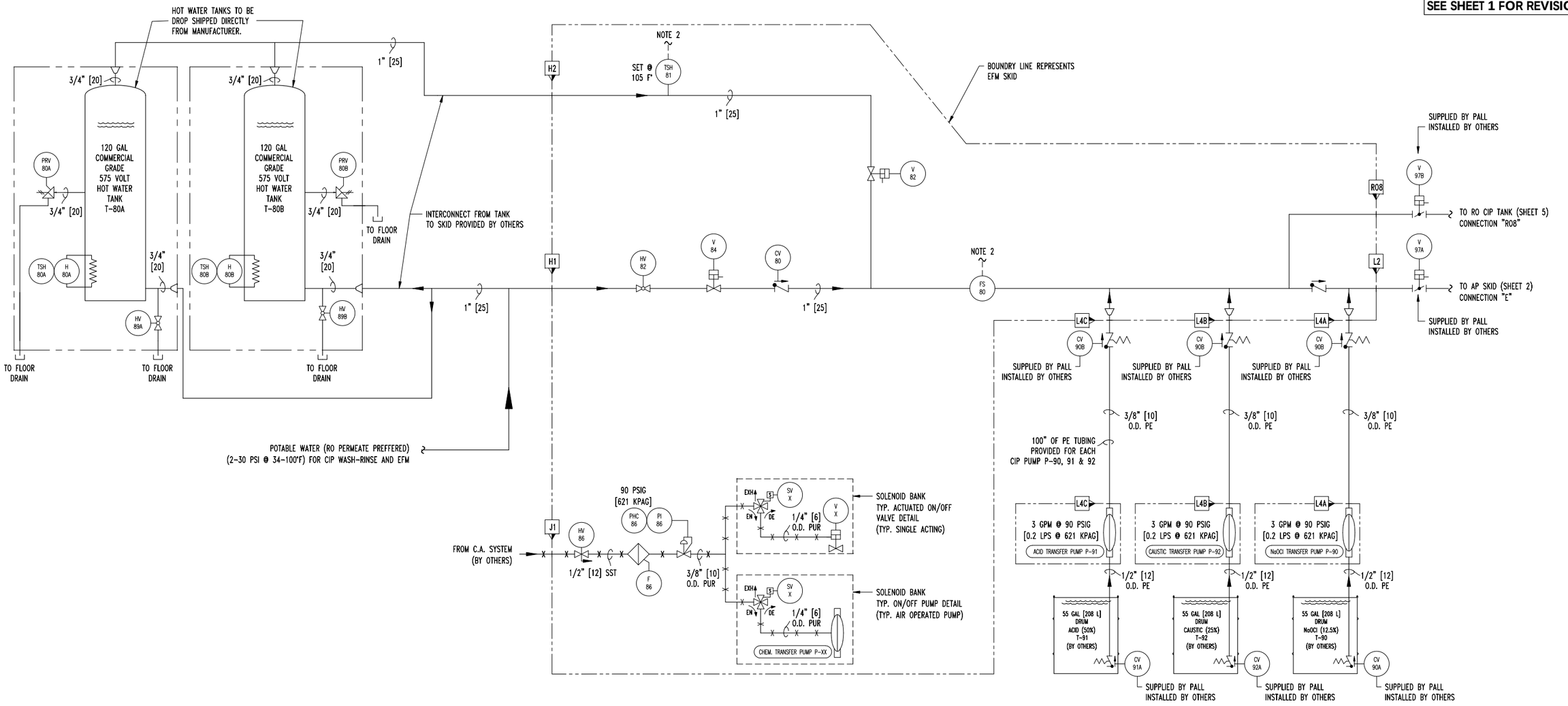
DRAWING NAME
SNOW LAKE
PRELIMINARY P&ID

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER: ---- | SHEET 3 OF 6

IMPORTANT: *BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.*

CAD SYSTEM: AUTOCAD
CAD File Name: PID - SNOW LAKE - REV 0

SEE SHEET 1 FOR REVISIONS



ITEM	DESCRIPTION	TYPE	MAT'L	ZONE
R08	HOT WATER SKID OUTLET (TO RO CIP TANK)	1" [25] SW	PVC	C1
L4A/B/C	EFM INJECTION FROM CIP SKID (P-90, 91, 92)	3/8" [10] TUBE	PE	C2,3
L2	HOT WATER SKID OUTLET (TO AP2 SKID)	1" [25] SW	PVC	C1
J1	COMPRESSED AIR SUPPLY FOR EFM	1/4" [6] FNPT	SST	B6
H2	HOT WATER SKID OUTLET TO TANK	1" [25] SW UNION	PVC	D6
H1	HOT WATER SKID INLET (POTABLE WATER)	1" [25] SW UNION	PVC	C6

SCOPE LIMIT TABLE

NOTES:
1.) FIELD CONNECTIONS OF AIR TUBING REQUIRED.
2.) ALL INSTRUMENTS AND OR EQUIPMENT TO BE CONNECTED TO AP PANEL.

SKID LIMIT

LEGEND
(PALL) ▼ (PURCHASER) BATTERY LIMIT - PIPING AND TUBING

VOLTAGE 575V/3PH/50HZ

PRELIMINARY
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DIMENSIONS ARE IN: ☐ INCHES ONLY ☐ MILLIMETERS ONLY ☒ IN [mm] ☐ mm [IN] ☐ .
TOLERANCE: .X ± / .X ± / .XX ± / .XXX ± / FRACTION ± / ANGLE ±
ALL FINISHED SURFACES: √ µin. / √ µm
THIRD ANGLE PROJECTION
SCALE

	CODE IDENT. NO. 17238	NAME	DATE
DRAWN BY		B. MARTIN	01NOV2010
PROJECT ENGINEER		---	---
ENGINEER		---	---
ENGINEER		---	---
ENGINEER		---	---
CHECKER			

PALL Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----
REVISION: 00
DWG SIZE: D

DRAWING NAME
SNOW LAKE
PRELIMINARY P&ID

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER: ---- | SHEET 4 OF 6

IMPORTANT: *BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.*

CAD SYSTEM: AUTOCAD
CAD File Name: PID - SNOW LAKE - REV 0

PALL ARIA™ EFM/CIP SYSTEM

SEE SHEET 1 FOR REVISIONS

RO FEED/CIP PUMP

RO CARTRIDGE FILTER
2 micron rating

RO HIGH PRESSURE FEED PUMP

PALL RO SYSTEM
ARRAY : 2 : 1 (5 ELEMENTS EACH)
OF MEMBRANES : 12
TYPE : TORAY TMG20-400 OR EQUI.
HOUSING : FRP / GRP
RECOVERY : 75-80 %

BI-SULFITE DOSING

FEED WATER FROM MF/RO BREAK TANK

R01

TIA H L

AIA H L

AIA H L

AIT COND.

AIT PH

AIT ORP

AE

PSL

FC

FIT

M

VFD

PI

PIA H

PIT

PDIA H

SAMPLING VALVE

R02 RO PERMEATE OUTLET

R03 PERMEATE DUMP

R04 RO CONCENTRATE TO DRAIN

R05

R06

R08

PVC SS

CIP FILL FROM CHN SKID

R07

VENT

TRENCH

150 GAL RO CIP TANK

LIT

TRENCH

SUPPLIED BY PALL INSTALLED BY OTHERS

90 PSIG [621 KPAG]

PHC 86

PI 86

HV 86

F 86

1/2" [12] SST

3/8" [10] O.D. PUR

EXH

EN

DE

SV X

V X

1/4" [6] O.D. PUR

SOLENOID BANK
TYP. ACTUATED ON/OFF VALVE DETAIL
(TYP. SINGLE ACTING)

F2

FROM C.A. SYSTEM (BY OTHERS)

ITEM	DESCRIPTION	TYPE	MAT'L	ZONE
F2	COMPRESSED AIR	1 1/2" [40] FNPT	SST	A6
R08	RO CIP MIXING LINE	1.5"	PVC	B7
R07	RO CIP FILL	1"	PVC	B8
R06	CIP TANK OUTLET TO RO FEED/CIP PUMP	1.5"	PVC	B6
R05	CIP RETURN	1.5"	PVC	B6
R04	CONCENTRATE OUTLET	0.75"	PVC	B1
R03	PERMEATE DUMP	1.5"	PVC	C1
R02	RO PERMEATE OUTLET	1.5"	PVC	C1
R01	RO FEED FROM MF/RO BREAK TANK	2"	PVC	C8

BATTERY LIMIT TABLE

SKID LIMIT

LEGEND

(PALL) ▼ (PURCHASER) BATTERY LIMIT - PIPING AND TUBING

PRELIMINARY
NOT FOR CONSTRUCTION

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RO SKID

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TOLERANCE: X. ± / .X ± / .XX ± / .XXX ± / FRACTION ± / ANGLE ±

ALL FINISHED SURFACES μin ___ / μm ___

THIRD ANGLE PROJECTION

SCALE

	NAME	DATE
CODE IDENT. NO. 17238		
DRAWN BY	B. MARTIN	01NOV2010
PROJECT ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
ENGINEER	---	---
CHECKER		

Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----

REVISION: 00

DWG SIZE: D

DRAWING NAME: SNOW LAKE PRELIMINARY P&ID

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER: ---- | SHEET 5 OF 6

IMPORTANT: *BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.*

CAD SYSTEM: AUTOCAD

CAD File Name: P&D - SNOW LAKE - REV 0

VALVE SYMBOLS

- GATE VALVE OR MISCELLANEOUS
- GLOBE VALVE
- CHECK VALVE
- SPRING LOADED CHECK VALVE
- PLUG VALVE
- 3-WAY PLUG VALVE
- MANUAL ROTARY/BALL VALVE
- ACTUATED ROTARY/BALL VALVE
- MANUAL 3-WAY BALL VALVE
- ACTUATED 3-WAY BALL VALVE
- MANUAL BUTTERFLY VALVE
- ACTUATED BUTTERFLY VALVE
- BUTTERFLY VALVE (W/ FIXED ORIFICE IN DISC)
- NEEDLE VALVE
- ANGLE VALVE
- CONTROL VALVE
- FLOAT VALVE
- AIR RELEASE VALVE
- CORPORATION STOP VALVE/INJECTOR
- BACKFLOW PREVENTER
- DIAPHRAGM VALVE
- SAFETY RELIEF VALVE
- 2 WAY SOLENOID VALVE
- 3 WAY SOLENOID VALVE (DE, EX)
- 4 WAY SOLENOID VALVE
- PNEUMATIC ACTUATOR CONTROL VALVE
- PRESSURE REDUCING VALVE (REGULATOR)

TYPICAL SYMBOLS

- GENERIC ACTUATOR W/ & W/O TRAVEL STOPS
- ACTUATOR, AIR TO CLOSE (SPRING RETURN) W/ & W/O TRAVEL STOPS
- ACTUATOR, AIR TO OPEN (SPRING RETURN) W/ & W/O TRAVEL STOPS
- ACTUATOR, AIR TO ACTUATE (DOUBLE ACTING) W/ & W/O TRAVEL STOPS
- TRAVEL STOP
- PNEUMATIC VALVE ACTUATOR
- SECONDARY CONTAINMENT
- UNDEFINED SIGNAL
- PNEUMATIC SIGNAL
- COMPRESSED AIR PIPING
- ELECTRIC SIGNAL
- FIELD MOUNTED DEVICE
- PANEL FACE MOUNTED DEVICE
- INSIDE OF PANEL MOUNTED DEVICE
- DEVICE MOUNTED ON AUXILIARY PANEL FACE
- DEVICE MOUNTED INSIDE OF AUXILIARY PANEL
- PROGRAMMABLE LOGIC CONTROLLER IN MAIN PANEL
- PROGRAMMABLE LOGIC CONTROLLER IN AUXILIARY PANEL
- DISPLAY ON MAIN PANEL
- COMPUTER FUNCTION PRIMARY LOCATION
- COMPUTER FUNCTION AUXILIARY LOCATION
- SUMMATION
- MESSAGE DISPLAY ON CRT (CRT DISPLAY)
- ELECTRIC OPERATOR (M)
- INTERLOCK (I)
- VENTURI TUBE FLOWMETER
- MAGNETIC FLOWMETER W/ INTEGRAL ELECTRONICS (FIT / M)
- VARIABLE AREA FLOWMETER (FI)
- THERMAL MASS FLOWMETER (FIT)

TYPICAL SYMBOLS

- TWO (2) ITEMS IN ONE (1) DEVICE GUAGE (PRESSURE)
- FLOW CONVERTER (ADD IDENTIFYING INFORMATION OUTSIDE BALLOON TO CLARIFY FUNCTION OF ITEM INSIDE BALLOON, EXT. I/P: CURRENT TO PNEUMATIC CONVERTER). (FY, I/P)
- PULSATION DAMPENER
- AIR GAP/GRAVITY DRAIN
- STATIC MIXER
- "Y" STRAINER
- STRAINER/FILTER
- BATTERY DATUM (E)
- MECHANICAL BATTERY LIMIT (CUSTOMER) (PALL)
- ELECTRICAL BATTERY LIMIT (CUSTOMER) (PALL)
- SPRAY BALL
- VENT
- LINE SIZE
- LINE BREAK
- FLOW ARROW
- SLOPE (SLOPE SLOPE)
- PROXIMITY ULTRASOUND SENSOR
- SWING ELBOW
- SIGHT GLASS & CALIBRATION COLUMN
- EDUCTOR (W/ GATE VALVE & FUNNEL)
- ITEM OR EQUIPMENT NO.

TYPICAL SYMBOLS

- ANTIFOAM INLET
- SNUBBER
- THERMOWELL
- DIAPHRAGM SEAL
- SLIP JOINT/EXPANSION CONNECTION
- CONSTANT FLOW FITTING
- FLEXIBLE CONNECTOR/ EXPANSION JOINT
- ECCENTRIC REDUCERS
- FLEXIBLE REDUCER
- CONCENTRIC REDUCER
- AIR GAP
- FLANGED CONNECTION
- AIR GAP
- CAPPED OR PLUGGED CONNECTION
- PRESSURE CALIBRATION MANIFOLD (SINGLE UNIT)
- FLOWMETER-GEAR DISPLACEMENT
- DIGITAL POSITIONER (I/P)
- MUFFLER
- AIR RECEIVER
- DRYER
- COMPRESSOR
- DIFFERENTIAL (FLOW)
- HEATER (TANK) (H)

TYPICAL SYMBOLS

- TANK MIXER (M)
- TOTE/SINGLE/STACKED
- STORAGE TANK

PUMP SYMBOLS

- GENERIC PUMP
- CENTRIFUGAL PUMP
- ROTARY PUMP (M)
- (TUBING) PERISTALTIC PUMP (M)
- DOUBLE HEAD PERISTALTIC PUMP (M)
- MOTORIZED DIAPHRAGM PUMP (M)
- PNEUMATIC DIAPHRAGM PUMP
- METERING PUMP (M)
- VERTICAL PUMP
- SUBMERGED PUMP PUMP (GENERIC)
- INLINE PUMP

PRELIMINARY
NOT FOR CONSTRUCTION USE

FLOW INSTRUMENTS

FC	FLOW CONTROLLER (BLIND)
FCV	FLOW CONTROL VALVE
FD	FLOW DIRECTION
FE	FLOW ELEMENT
FFC	FLOW RATIO CONTROLLER
FG	FLOW SIGHT GLASS
FI	FLOW INDICATOR
FIC	FLOW INDICATOR CONTROLLER
FIT	FLOW INDICATOR TRANSMITTER
FM	FLOW METER
FQ	FLOW TOTALIZER
FQC	FLOW TOTALIZER CONTROLLER
FR	FLOW RECORDER
FRC	FLOW RECORDER CONTROLLER
FSH	FLOW SWITCH HIGH
FSHH	FLOW SWITCH HIGH HIGH
FSLL	FLOW SWITCH LOW LOW
FX	FLOW INTEGRATOR

PRESSURE INSTRUMENTS

DSPI	DIFFERENTIAL SET POINT INDICATOR
PC	PRESSURE CONTROLLER (BLIND)
PDC	PRESSURE DIFFERENTIAL CONTROLLER
PDH	DIFFERENTIAL PRESSURE HIGH
PDHH	DIFFERENTIAL PRESSURE HIGH HIGH
PDI	DIFFERENTIAL PRESSURE INDICATOR
PDIC	PRESSURE DIFFERENTIAL INDICATING CONTROLLER
PDS	DIFFERENTIAL PRESSURE SWITCH
PHC	PRESSURE HAND CONTROL (REGULATOR)
PI	PRESSURE INDICATOR
PIC	PRESSURE INDICATING CONTROLLER
PIS	PRESSURE INDICATING SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PLH	PRESSURE LIMIT HIGH
PR	PRESSURE RECORDER
PRC	PRESSURE RECORDER CONTROLLER
PRV	PRESSURE REDUCING VALVE
PSH	PRESSURE SWITCH HIGH
PSHH	PRESSURE SWITCH HIGH HIGH
PSL	PRESSURE SWITCH LOW
PSLL	PRESSURE SWITCH LOW LOW
PT	PRESSURE TRANSMITTER (BLIND)

LEVEL INSTRUMENTS

LC	LEVEL CONTROLLER (BLIND)
LCV	LEVEL CONTROL VALVE
LE	LEVEL ELEMENT
LG	LEVEL GAGE GLASS
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LIT	LEVEL INDICATING TRANSMITTER
LR	LEVEL RECORDER
LRC	LEVEL RECORDING CONTROLLER
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH HIGH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW LOW
LSM	LEVEL SWITCH MID
LT	LEVEL TRANSMITTER (BLIND)

TEMPERATURE INSTRUMENTS

TC	TEMPERATURE CONTROLLER (BLIND)
TCV	TEMPERATURE CONTROL VALVE
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
TIC	TEMPERATURE INDICATING CONTROLLER
TIT	TEMPERATURE INDICATING TRANSMITTER
TLH	TEMPERATURE LIMIT HIGH
TRC	TEMPERATURE RECORDER CONTROLLER
TSH	TEMPERATURE SWITCH HIGH
TSHH	TEMPERATURE SWITCH HIGH HIGH
TSL	TEMPERATURE SWITCH LOW
TSLL	TEMPERATURE SWITCH LOW LOW
TT	TEMPERATURE TRANSMITTER

SEE SHEET 1 FOR REVISIONS

MISCELLANEOUS

A	ANALYTICAL INSTRUMENT
AC	AIR COMPRESSOR
AE	ANALYTICAL ELEMENT
AFF	ABOVE FINISHED FLOOR
AIT	ANALYTICAL INSTRUMENT TRANSMITTER
A.S.	AIR SUPPLY
A.T.A.	AIR TO ACTIVATE
A.T.C.	AIR TO CLOSE
A.T.O.	AIR TO OPEN
BR	BACKWASH DISCHARGE
BS	BACKWASH SUPPLY
BT	BULK TOTE
CA	CITRIC ACID
CIP	CLEAN-IN-PLACE
CIPR	CLEAN-IN-PLACE RETURN
CIPS	CLEAN-IN-PLACE SUPPLY
CLS	SODIUM HYPOCHOLRITE
CV	CHECK VALVE
DE	DE-ENERGIZE
DPI	DIFFERENTIAL PRESSURE INDICATOR
E	ENERGIZE
EX	EXHAUST
FT	FILTRATE
FW	FINISHED WATER
FP	FEED PUMP
H	HEATER
HTR	HEATER
HV	HAND VALVE (MANUAL)
I/P	CURRENT TO PNEUMATIC TRANSDUCER
LS	LIMIT SWITCH
M	MECHANICAL DEVICE/MISCELLANEOUS
MEM	MEMBRANE
MV	MISCELLANEOUS VALVE
MX	MIXER
N.C.	NORMALLY CLOSED
NEU	NEUTRALIZATION
N.O.	NORMALLY OPEN
O/C/A	OPEN-CLOSE-AUTO
ORP	OXIDATION REDUCTION POTENTIAL
P	PUMP
PA	PLANT AIR
P/A	PULSE TO ANALOG
PD	PROCESS DRAIN
P/I	PNEUMATIC TO CURRENT TRANSDUCER
PRD	PRESSURE RUPTURE DISK
PRV	PRESSURE RELIEF VALVE
PS	PUMP SPEED
PVC	POLYVINYL CHLORIDE
QA	FAIL ALARM SYSTEM
RCVR	RECEIVER
REV.	REVERSING
RF	REVERSE FILTRATION
S or STRN	STRAINER
SBS	SODIUM BISULFITE
SC	SPEED CONTROL
SG	SIGHT GLASS
SH	SODIUM HYDROXIDE
S.P.	SET POINT
SS	SELECTOR SWITCH
SSTL	STAINLESS STEEL
SW	SETTLED WATER
T	TANK
TP	TRANSFER PUMP
TR	TRAIN
TS	TRAVEL STOP
TW	TREATED WATER
UA	MULTIVARIABLE ALARM
UON	UNLESS OTHERWISE NOTED
V	VALVE (ACTUATED)
VFC	VOLT FREE CONTACT
VFD	VARIABLE FREQUENCY DRIVE
WIT	WEIGHT INDICATING TRANSMITTER
XR	EXCESS RECIRCULATION
Y	CONVERTER
YC	LOAD/UNLOAD SIGNAL
ZS	LIMIT SWITCH OPEN & CLOSED
ZSC	LIMIT SWITCH CLOSED
ZSO	LIMIT SWITCH OPEN

NOTES:

1. SOME SYMBOLS ON THIS SHEET MAY NOT APPEAR ON THIS PARTICULAR SYSTEM P&ID.

--> DO NOT SCALE DRAWING <--

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING INFORMATION PERTAINS ONLY TO THIS SHEET

DIMENSIONS ARE IN: ☐ INCHES ONLY ☐ MILLIMETERS ONLY ☐ IN [mm] ☐ mm [IN] ☐ .

TOLERANCE: X. ± / .X ± / .XX ± / .XXX ± / FRACTION ± / ANGLE ±

ALL FINISHED SURFACES ✓ μin ___ μm ___

THIRD ANGLE PROJECTION

SCALE

CODE IDENT. NO. 17238	NAME	DATE	
DRAWN BY	B. MARTIN	01NOV2010	
PROJECT ENGINEER	---	---	
ENGINEER	---	---	
ENGINEER	---	---	
ENGINEER	---	---	
CHECKER			

PALL Pall Corporation
Pall Advanced Separations Systems
Cortland, New York

PS FILE NUMBER: ----
REVISION: 00
DWG SIZE: D

DRAWING NAME: SNOW LAKE
PRELIMINARY P&ID

PROJECT NUMBER | MATERIAL NUMBER | DOC NUMBER: ---- | SHEET 6 OF 6

IMPORTANT: BEFORE ATTEMPTING TO OPERATE OR INSTALL THIS SYSTEM, IT IS ESSENTIAL TO READ AND UNDERSTAND THIS PRODUCT'S OPERATION AND MAINTENANCE MANUAL (SHIPPED UNDER SEPARATE COVER). FAILURE TO READ THE OPERATION AND MAINTENANCE MANUAL BEFORE ATTEMPTING TO OPERATE ANY PALL CORPORATION EQUIPMENT MAY RESULT IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE, AND MAY VOID ANY AND/OR ALL WARRANTIES.

CAD SYSTEM: AUTOCAD

CAD File Name: PID - SNOW LAKE - REV 0