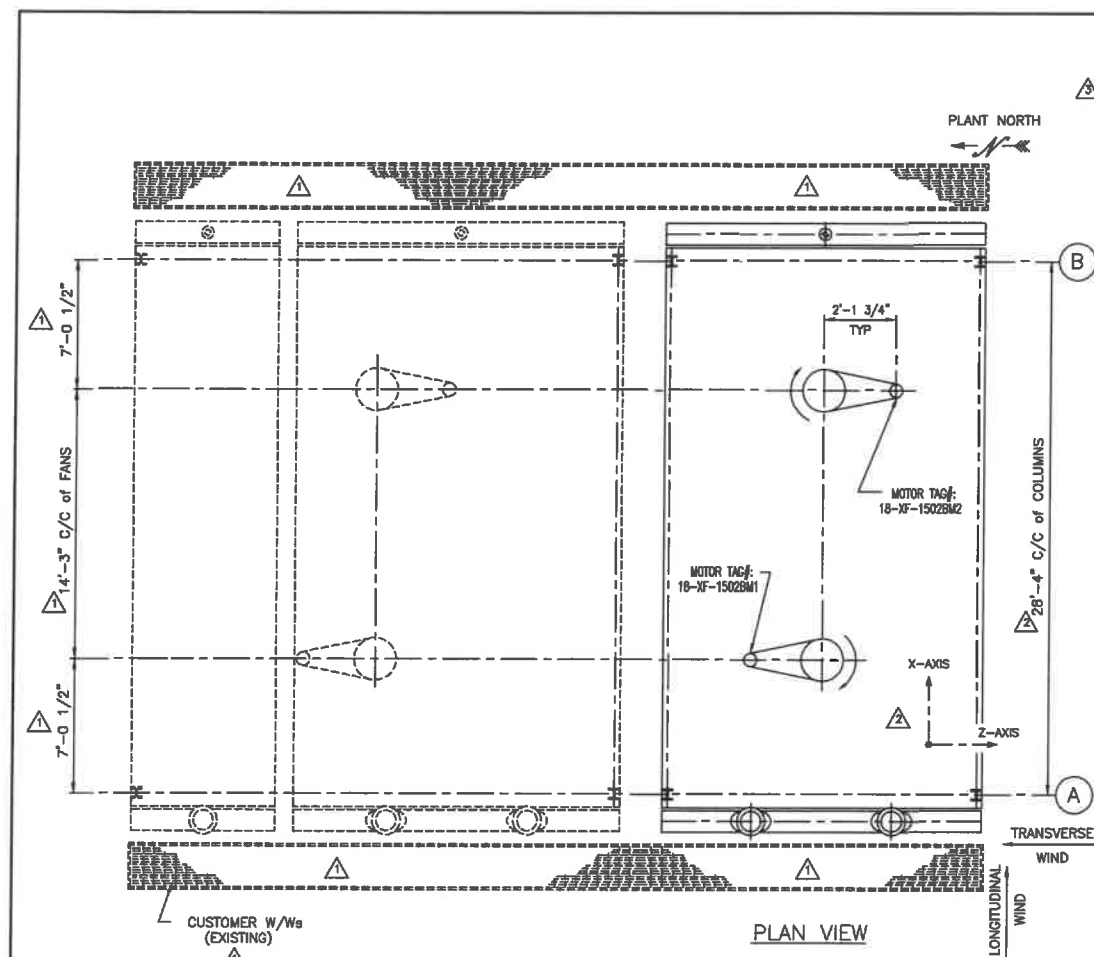
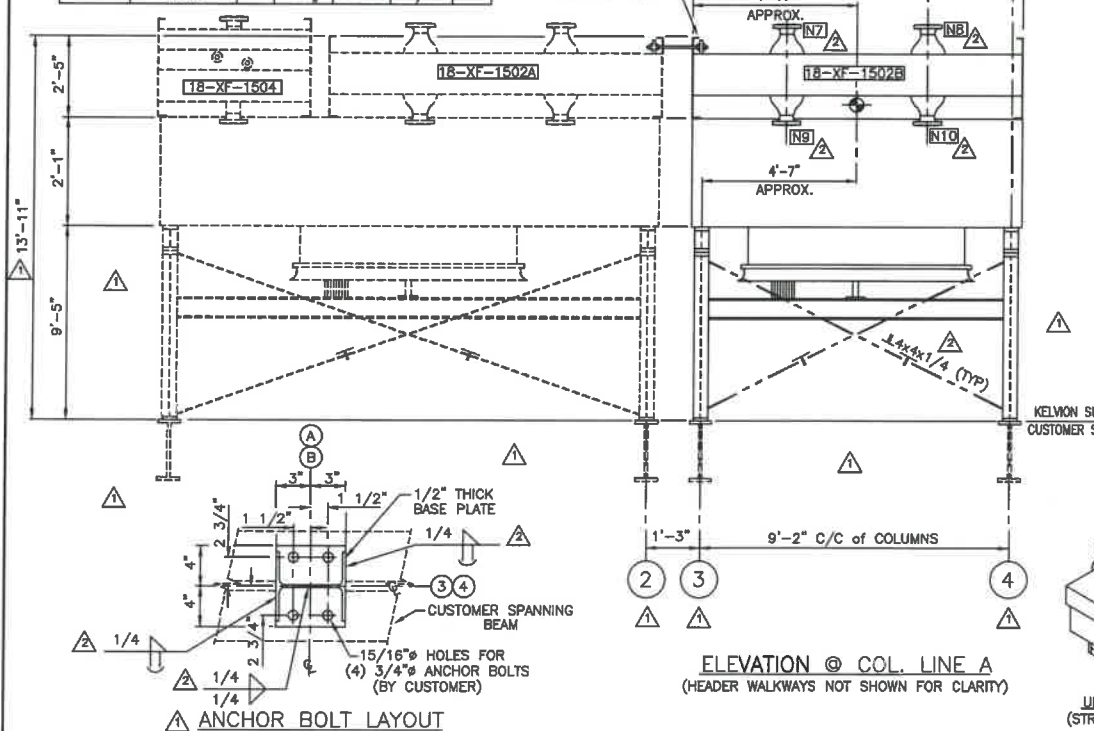




NOZZLE TABLE						
TAG NO.	SERVICE	SIZE	RATING	FACING	SCHEDULE	QTY
N7, N8	PROCESS INLET	8"	300#	RFLWN	BOXS	2
N9, N10	PROCESS OUTLET	8"	300#	RFLWN	BOXS	2
V4	VENT	2"	300#	RFLWN	N/A	2
D4	DRAIN	2"	300#	RFLWN	N/A	2



LOAD POINT	3			4		
	Fx (lb)	Fy (lb)	Fz (lb)	Fx (lb)	Fy (lb)	Fz (lb)
DEAD LOAD	3200	10775	700	3200	10775	-700
LIVE LOAD	-300	750	50	-300	750	-50
OPERATION LOAD (WATER)	300	825	75	300	825	-75
OPERATION LOAD (NOZZLE)	50	4675	475	50	4675	-475
WIND IN X DIRECTION	-1825	-875	50	-1825	-875	50
WIND IN -X DIRECTION	1775	875	-50	1775	875	-50
WIND IN Z DIRECTION	-200	-3500	-2050	250	3500	-2050
WIND IN -Z DIRECTION	250	3500	2050	-200	-3500	2050
SEISMIC-X	-18875	-15975	50	-18875	-15975	50
SEISMIC-Z	-1425	-46175	-19175	1425	46175	-19175
VERTICAL SEISMIC LOAD	750	2500	175	750	2500	-175

LOAD POINT	3			4		
	Fx (lb)	Fy (lb)	Fz (lb)	Fx (lb)	Fy (lb)	Fz (lb)
DEAD LOAD	-3200	10600	700	-3200	10600	-700
LIVE LOAD	300	750	50	300	750	-50
OPERATION LOAD (WATER)	-300	825	75	-300	825	-75
OPERATION LOAD (NOZZLE)	-50	-175	-25	-50	-175	25
WIND IN X DIRECTION	-1775	875	-50	-1775	875	50
WIND IN -X DIRECTION	1825	-875	50	1825	-875	-50
WIND IN Z DIRECTION	200	-3500	-2050	-250	3500	-2050
WIND IN -Z DIRECTION	-250	3500	2050	200	-3500	2050
SEISMIC-X	-18875	15975	-50	-18875	15975	50
SEISMIC-Z	1775	-45875	-18875	-1775	45875	-18875
VERTICAL SEISMIC LOAD	-750	2450	175	-750	2450	-175

DELETED
Y-AXIS IS VERTICALLY UPWARD

DEAD, LIVE, WIND AND SEISMIC LOADS INCLUDE LOADS FROM CUSTOMER WALKWAYS (EXISTING).

ADDITIONAL DETAIL NOTES:
- ALL CROSS BRACING CONNECTIONS SHALL BE BOLTED AT INTERSECTION W/ (1) BOLT MIN. FOR ANGLES & (2) BOLT MIN. FOR TEES.
- ALL GUSSETS SHALL BE AT LEAST 3/8" THICK.

SPECIAL NOTE: THE WEIGHTS SHOWN ARE ESTIMATED WEIGHTS. THE UNIT SHALL BE WEIGHED BY CERTIFIED SCALE & THE VALUES SHALL BE REPORTED TO THE ENGINEERING DEPARTMENT FOR REVISION OF THIS DRAWING.

NOTES FOR LOADING CHART:

- ALL LOADS ARE IN POUNDS.
- ALL LOADS ARE BASED ON CUSTOMER'S SPECIFICATIONS: ABKM-PP-000-200001-A & ABKM-PP-000-400002-A.
- LIVE LOADS INCLUDE WALKWAY LOADS BASED ON 60 PSF PER SPEC.: ABKM-PP-000-400002-A.
- OPERATING LOADS INCLUDE LOAD OF HEADERS & TUBES FULL OF WATER & DOWNWARD NOZZLE LOADS PER API-661, 7th ED., 2013, FIGURE 6 & TABLE 4.
- WIND LOADS ARE PER ASCE/SEI 7-16 EDITION AND THE ABOVE SPECIFICATIONS, USING:
 $q_z = (0.00256)(K_z)(K_{zt})(K_d)(V)^2$
 $WIND PRESSURE = (q_z)(G)(C_f)$
 $F = (q_z)(G)(C_f)(A_f)$
 $K_z = 1.04$
 $K_{zt} = 1.0$
 $K_d = 0.85$
 $V = 101 MPH$
 $A_f = AREA PROJECTED TO WIND$
 $G = 0.85$
 $C_f = 1.3$
 $C = EXPOSURE CATEGORY$
 $F = DESIGN WIND FORCE$

(VERTICAL WIND LOADS RESULTS FROM OVERTURNING MOMENT)

- SEISMIC LOADS ARE PER ASCE/SEI 7-16 EDITION AND THE ABOVE SPECIFICATIONS, USING:
 $S_{DS} = 1.818g$
 $S_{D1} = 1.077$
 $S_{M1} = 0.996$
 $S_{M2} = 0.996$
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Date	2/26/2024	Rev.	5	By	ckha
Proposal	33295CKHA	Item No.	2		
Job No.	R-12961	Item No.	2.A		

1	Customer	AIR PRODUCT MANUFACTURING, LLC	Cust. PO No.	SM00002003.
2	Address	PARAMOUNT, CA	Plant Location	PARAMOUNT, CA

3	Service	PRODUCT FRACTIONATOR OVERHEAD CONDENSER							Weight/Bay	34,900 lb			
4	1	Model	1-1030T108		Forced Draft		No. of Bays	1	No. of Fan Cells / Bay	2			
5	Dimensions	L	30' 8"	W	9' 10"	H	13' 11"	Structure Mounted c/c 20'		Shop Assembled Unit(s)			
6	PERFORMANCE												
7	Customer Item			18-XF-1502B									
8	Fluid Circulated			PRODUCT FRACTIONATOR OVERHEAD VAPOR									
9	Heat Exchanged		Btu/hr	11,930,000.0									
10	U External - Bare		Btu/hr-ft²·°F	2.79 / 4.42 / 3.62									
11	CLMTD		°F	72.1									
12	External Surface		ft²	59,407.0									
13	Bare Tube Surface		ft²	2,857.0									
14	TUBE SIDE												
15	Total Flow		lbs/hr	73,414.00									
16				IN				OUT					
17	Vapor		"	73,414.00				12,713.00					
18	Liquid		"	0.00				60,701.00					
19	Steam		"	0.00				0.00					
20	Non-Condensable		"	0.00				0.00					
21	Temperature		°F	249.5				150.0					
22	Pressure		psia	36.7				32.6					
23	Pressure Drop		psi	Allowed:		4.5		Calculated:		4.1			
24	Density		L V	lbs/ft³		0.4220		39.2		0.2830			
25	Viscosity		L V	cP		0.0090		0.226		0.0100			
26	Vapor Molecular Weight		82.1				56.3						
27	Specific Heat		L V	Btu/lb·°F		0.510		0.567		0.469			
28	Thermal Conductivity		L V	Btu/hr-ft·°F		0.0140		0.0570		0.0180			
29	Fouling Resistance IS		hr-ft²·°F/Btu	0.00200									
30	AIR SIDE												
31	Temperature In - Out		°F		90.0 - 156.3				(Min. Amb. = 35.0)				
32	Elev	69 ft	Air Quantity	lbs/hr	750,300.0								
33	CONSTRUCTION												
34	Design Press.		psig	- Temp.	°F		125 - 385 / FV - 385		(MDMT = 32.0)				
35	Codes			ASME VIII/1,API 7th Ed.									
36	No. Bundles - Tubes / Bundle			1 - 372									
37	No. Rows - Passes / Bundle			8 - 2 (1 PASS IN TOP 5 ROWS)									
38	Header Type - Corrosion Allowance			PLUG BOX- 1/8"									
39	Header Material			SA-516 GR 70 - SPOT XR									
40	Shoulder Plug /Gasket Material			SA-105N / A-1008.									
41	Nozzles In - Out - Series / Bundle			8"(2) - 8"(2) - 300# RF WN, Vent 2"(1) - Drain 2"(1) - 300# LWNRF W/BLD									
42	Tube Material			SA-179 SMLS									
43	Tube O.D. - BWG - Length			1" - 0.083" MIN -30.000'									
44	Fin Material - Bond Type			ALUMINUM - EXTRUDED									
45	Fin Height - No. Fins / Inch		Tri	Pitch	5/8" - 10.0 - 2-1/2"								
46													
47	FAN		MECHANICAL EQUIPMENT				MISCELLANEOUS						
48	Mfr.	MOORE-HD EC		SPEED REDUCER			DRIVER		1) Guards: Fan, Belt				
49	Model	10K-42VE MAN ADJ		Type	POLY CHN		Type	ELECTRIC MOTOR		2) VibAccel/fan: Wilcoxon 786AD2.			
50	hp/fan	15.49	No. of Fans	2	Mfr.	GATES		Mfr.	GE		3) StrucPrep: Galva. All Cold Metal		
51	Dia.	9.0	No. of Blades	7	Model No.	14MGT-3136-20		hp/Driver	25.0		4) -40f Dew Point, Weight Cert		
52	RPM	245	Pitch	17.1°	Ratio	7.14::1		Enclosure	TEFC 841		5) Strength Weld, Light Exp		
53	Tip Speed	6,927.0	ft/min		Service Factor	1.80		Service Factor	6) 10% HDR Plugs & Gask				
54	ACFM/Fan	86,800.0		No. of Belts	2		RPM	1,750		7) 2 Sets Blind Gask			
55	Blade Material	ALUMINUM		Support:	Suspended		V	460	P	3	C	60	8) PE Stamp-California
56	Static Pressure	0.769	inH2O					Cl. 1, Div. 2, Gr B,C, D, T3C		9) ADD: Seal Plate between			
57	SPL/Fan @ 3 ft = 76.0 dBA						1 motor only VFD rated,VFD by others			the two units A & B/ No Louvers			