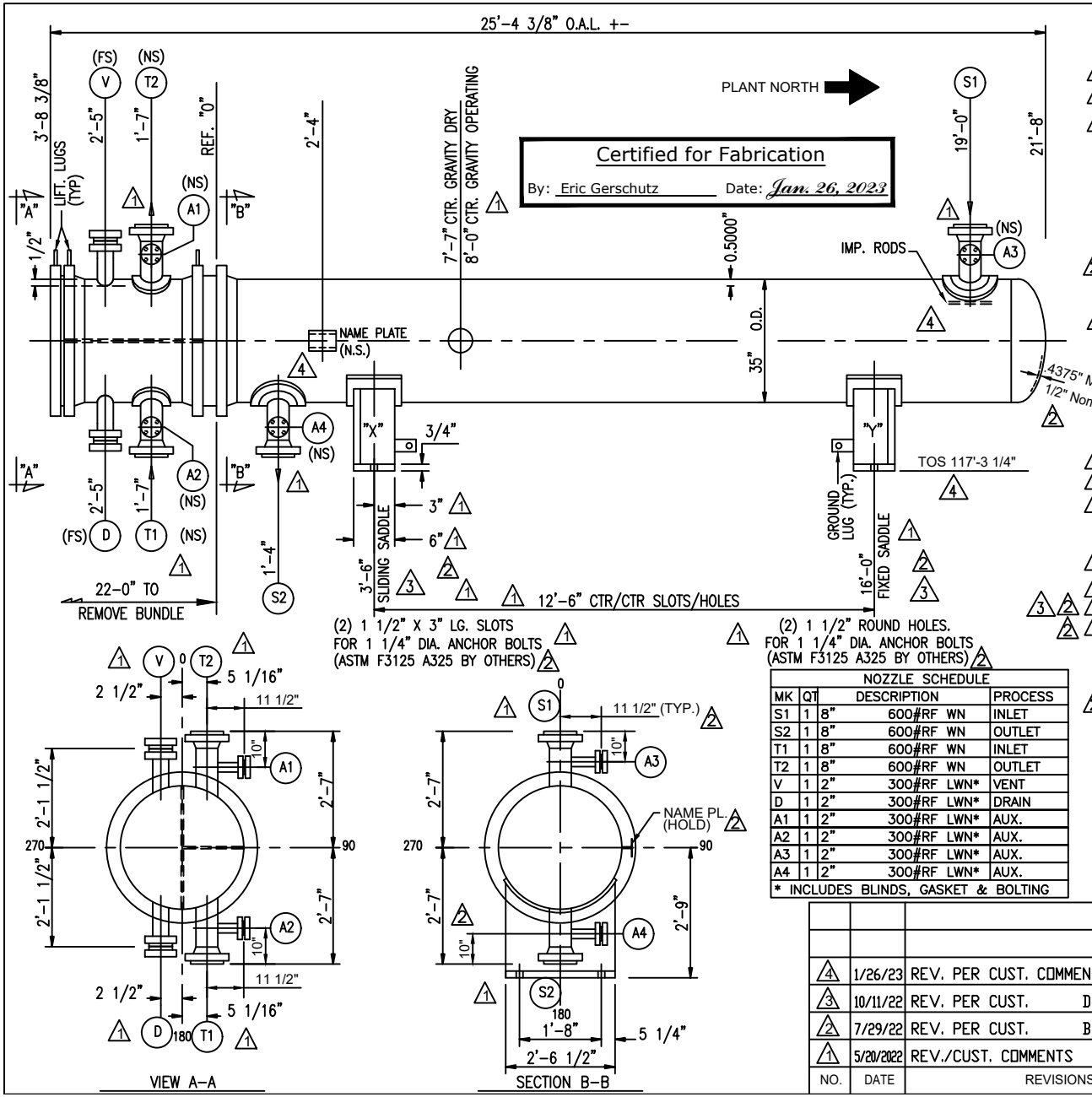


VIEW A-A

SECTION B-B

NOZZLE SCHEDULE				
MK	QT	DESCRIPTION		PROCESS
S1	1	8"	600#RF WN	INLET
S2	1	8"	600#RF WN	OUTLET
T1	1	8"	600#RF WN	INLET
T2	1	8"	600#RF WN	OUTLET
V	1	2"	300#RF LWN*	VENT
D	1	2"	300#RF LWN*	DRAIN
A1	1	2"	300#RF LWN*	AUX.
A2	1	2"	300#RF LWN*	AUX.
A3	1	2"	300#RF LWN*	AUX.
A4	1	2"	300#RF LWN*	AUX.

* INCLUDES BLINDS, GASKET & BOLTING

DESIGN DATA	SHELL	TUBE
DESIGN PRESSURE P.S.I.G.	360	280
M.A.W.P. P.S.I.G.	364	307
M.A.P. P.S.I.G.	404	316
LIMITED BY	2:1 ELLIP. HEAD	CHANNEL COVER
VACUUM PRESSURE P.S.I.G.	15 @ 300° F.	N/A
TEST PRESSURE P.S.I.G.	SHOP-525/FIELD-473	SHOP-410/FIELD-399
DESIGN TEMP. Deg.F.	400	150
MDMT Deg. F.	-45	32
CORROSION ALLOWANCE	1/8"	1/8"
NUMBER OF PASSES	1	4
RADIOGRAPHY	SPOT/UW-11(a)(5)(b)	SPOT/UW-11(a)(5)(b)
HEAT TREAT REQUIRED	NO	NO

ESTIMATED WEIGHTS, LBS.

DRY: 20550 BUNDLE: 11750 WET/HYDRO: 28900 SHELL: 5250 CHAN.CVR.: 450 CHAN.: 3100

SPECIFICATIONS

ASME Code Section VIII, Division 1, 2021 Ed. (Stamp: Yes)
TEMA Class R 10th Ed.; & Natl. Bd. Reg. is Req'd. API-660 9th Ed.
Design Reviewed For Compliance With The Requirements of UG-120(d).
Impact Test Exempt per UCS-66(a),(c),(g), Fig. UCS-66 Gen. Note (c) & UCS-67.

MATERIAL

CHANNEL: SA-516-70N BAFFLES: SA-516-70
SHELL: SA-516-70N TUBES: SA-334-6 (SMLS)
TUBESHEETS: SA-350LF2CL1
REFER TO BILL OF MATERIAL FOR REMAINING MAT'L.
(372) U's 3/4" O.D.X 0.083" (min.) X 20'-0" LG.
TUBE PITCH 1" ☐ 90° SURFACE 2873 (EFF) SQ.FT.

GENERAL NOTES

ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.
NO INSULATION REQUIRED.
STRESS RELIEVE U-BENDS PLUS 1'-0" OF STRAIGHT LENGTH
SEAL WELD & EXPAND TUBES TO TUBESHEET
FIRE PROOFING ON SUPPORTS: N/A
SHELLSIDE; TOXIC & FLAMMABLE SERVICE ; TUBESIDE:---

GASKETS: .1750" THK. 304 SPIRAL WOUND GPHT FILLED W/ 304 S.S. INNER & OUTER COMP. RINGS
2 SETS OF SPARE GASKETS REQUIRED.
10% SPARE BOLTING FOR BODY FLG'S.
PAINT: SEE SHT. -1A

PROJECT NAME: WORLD ENERGY RENEWABLES PROJECT
EQUIPMENT OWNER: AIR PRODUCTS MANUFACTURING LLC
SERVICE: ***DEPROPANIZER OVERHEAD CONDENSER***
LOCATION: WORLD ENERGY, PARAMOUNT, CA. USA
PRODUCT: DEPROPANIZER OVERHEAD CONDENSER
ITEM NO.: 18-X-375
AIR PRODUCTS P.O. NO.:4505600058 / A8KM-4-402-PO-3
AP PROJECT NO: EN-20-7120
VDR CODE NO.: HC09
SERIAL NO.: S21-13258-12
ENGINEER: EG
CUSTOMER / CLIENT: WORLD ENERGY PARAMOUNT

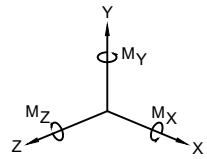
NO.	DATE	REVISIONS
4	1/26/23	REV. PER CUST. COMMENTS DD/DG
3	10/11/22	REV. PER CUST. DD/DG
2	7/29/22	REV. PER CUST. B.W./DD
1	5/20/2022	REV./CUST. COMMENTS EMG

ASSEMBLY AND SPECIFICATIONS FOR
ONE 34-240 A E U

DWN. BY EMG
DATE 12-14-21
CKD. BY GS

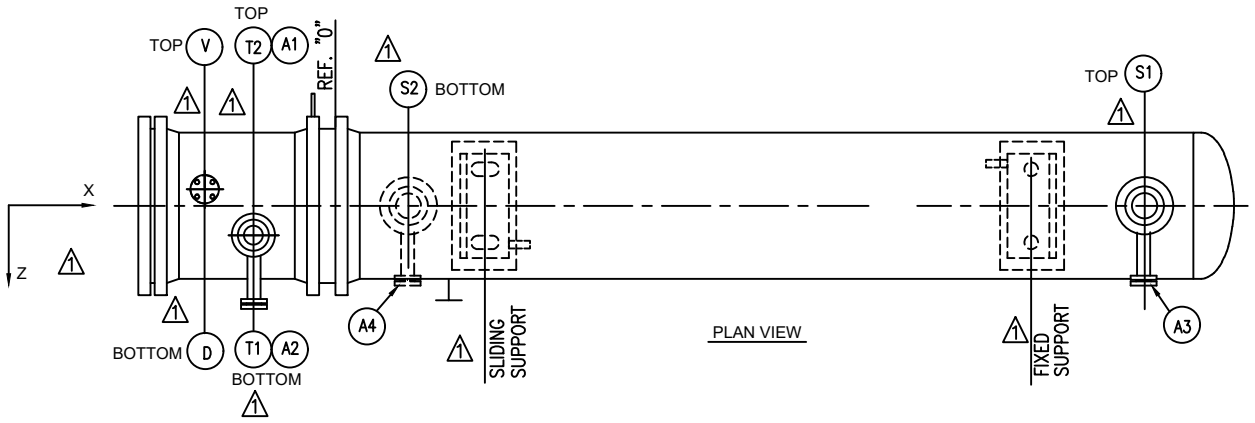
Fabsco
SHELL & TUBE, LLC

DWG.NO. S21-13258-12-1
REV. 4



NOZZLE LOADS

MK.	$M_{X\ LBF-FT}$	$M_{Y\ LBF-FT}$	$M_{Z\ LBF-FT}$	$F_{X\ LBF}$	$F_{Y\ LBF}$	$F_{Z\ LBF}$	LOAD BASES
S1	9020	14600	11460	4560	3640	4560	8"-300#; 2 x API-660
S2	9020	14600	11460	4560	3640	4560	8"-300#; 2 x API-660
T1	9020	14600	11460	4560	3640	4560	8"-300#; 2 x API-660
T2	9020	14600	11460	4560	3640	4560	8"-300#; 2 x API-660



DESIGN DATA	SHELL	TUBE
OPERATING PRESSURE PSIG	240.0	50.0
OPERATING TEMP. °F.	IN: 125 OUT: 110.7	IN: 80 OUT: 104
HYDROTEST TEMP. °F.	40°F. (MIN.)	40°F. (MIN.)
JOINT EFF.	1	1
FLUID NAME	PROPANE	COOLING WATER
FLUID DENSITY lb/ft^3	OUT: 28.95	OUT: 61.952
LETHAL SERVICE	NO	NO
DESIGN DUTY Btu/hr	8724000	
WIND CODE	ASCE 7-16 WIND SPEED: 101 MPH IMP. FACTOR: 1	
SEISMIC CODE	ASCE 7-16 IMP. FACTOR: 1.5 Fa: 1 Fv: 1.721	
	Ss: 1.616 S_1: 0.579 Site Class: D Sd_1: 0.996	

PAINT: (PAINT SYSTEM #1)
SOLVENT CLEAN PER SSPC-SP1
SANDBLAST PER SSPC-SP10 (1.5-2.5 MILS ANCHOR PROFILE)
PRIMER: ONE COAT SHERWIN WILLIAMS ZINC CLAD II (2.5-4.0 MILS DFT)
INTERM: ONE COAT SHERWIN WILLIAMS MACROPOXY 646 (4.0-6.0 MILS DFT)
(COLOR: MILLWHITE)
FINISH COAT: ONE COAT SHERWIN WILLIAMS ACROLON 218HS
(2.0-3.0 MILS DFT)
(COLOR: LIGHT GRAY RAL #7035)

APPLICABLE SPECIFICATIONS :

3-11-10, 4-11-11, 4WEQ-1051, 4WGN-10001,
4WPI-670210, A8KM-PP-000-40002-A,
A8KM-PP-000-50720-A, A8KM-PP-000-200001-A,
A8KM-PP-000-500005-A, A8KM-PP-000-500510-A,
A8KM-PP-000-500512-A, A8KM-PP-000-500520-A,
A8KM-PP-000-500550-A, FORM 8232,
SPEC-ENG-DOC001, SPEC-ENG-DOC002,
SPEC-ENG-MQ042, SPEC-ENG-MQ057,
SPEC-MED-DOC001

FOUNDATION LOADS

SADDLE MARK	SUP'T "X"	SUP'T "Y"
TRANSVERSE SHEAR LOAD	7827 LBS.	7827 LBS.
LONGITUDINAL SHEAR LOAD	15653 LBS.	15653 LBS.
VERTICAL LOAD	45862 LBS.	38132 LBS.

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AP PROJECT NO: EN-20-7120
VDR CODE NO.: HC09
SERIAL NO.: S21-13258-12
ENGINEER: EG
CUSTOMER / CLIENT: WORLD ENERGY PARAMOUNT

2 CHANNEL COVER TO CHANNEL FLANGE BOLTING INFO
STUD DIAMETER: 1 1/8" O.D.
NUMBER STUDS: (48)
STUD MATERIAL: SA-193-B7
BOLT TORQUE RANGE TO BE ACHIEVED: 760.3-778.4 FT. LBS

2 CHAN. FLG./T'SHT./SHELL FLG. BOLTING INFO
STUD DIAMETER: 1 1/8" O.D.
NUMBER STUDS: (48)
STUD MATERIAL: SA-193-B7
BOLT TORQUE RANGE TO BE ACHIEVED: 628.9-778.4 FT. LBS.

NO.	DATE	REVISIONS
4	1/26/23	REV.PER CUST. COMMENTS DD/DG
3	11/8/22	REV. PER CUST. DD/DG
2	10/11/22	REV. PER CUST. DD/DG
1	7/29/22	REV. PER CUST. B.W./DD

SUPPLEMENTAL INFORMATION
ONE 34 - 240 A E U

DWN. BY: EMG
DATE: 5/20/2022
CKD. BY: *DiCarlo*

Fabsco
SHELL & TUBE, LLC

DWG.NO. S21-13258-12-1A
REV. 4