

ITEM	QTY	MAT'L	PART NO.	DESCRIPTION
1	1	ICM	D-503070	ROTOR STEAM 65 1/2 TORUS DISC
2	1	ICM	D-503051	60MM T.D. ROTOR JOURNAL DRIVE
3	1	ICM	D-503052	65 1/2 T.D. ROTOR JOURNAL TAIL
4	1	ICM	D-503056	FLOW PLACEMENT
5	2	WITON-A		10-RING NUT 3000
6	150	ICM		1/8\"/>
7	150	ICM		1/8\"/>
8	12	SVS		LOCKWIRE

61831

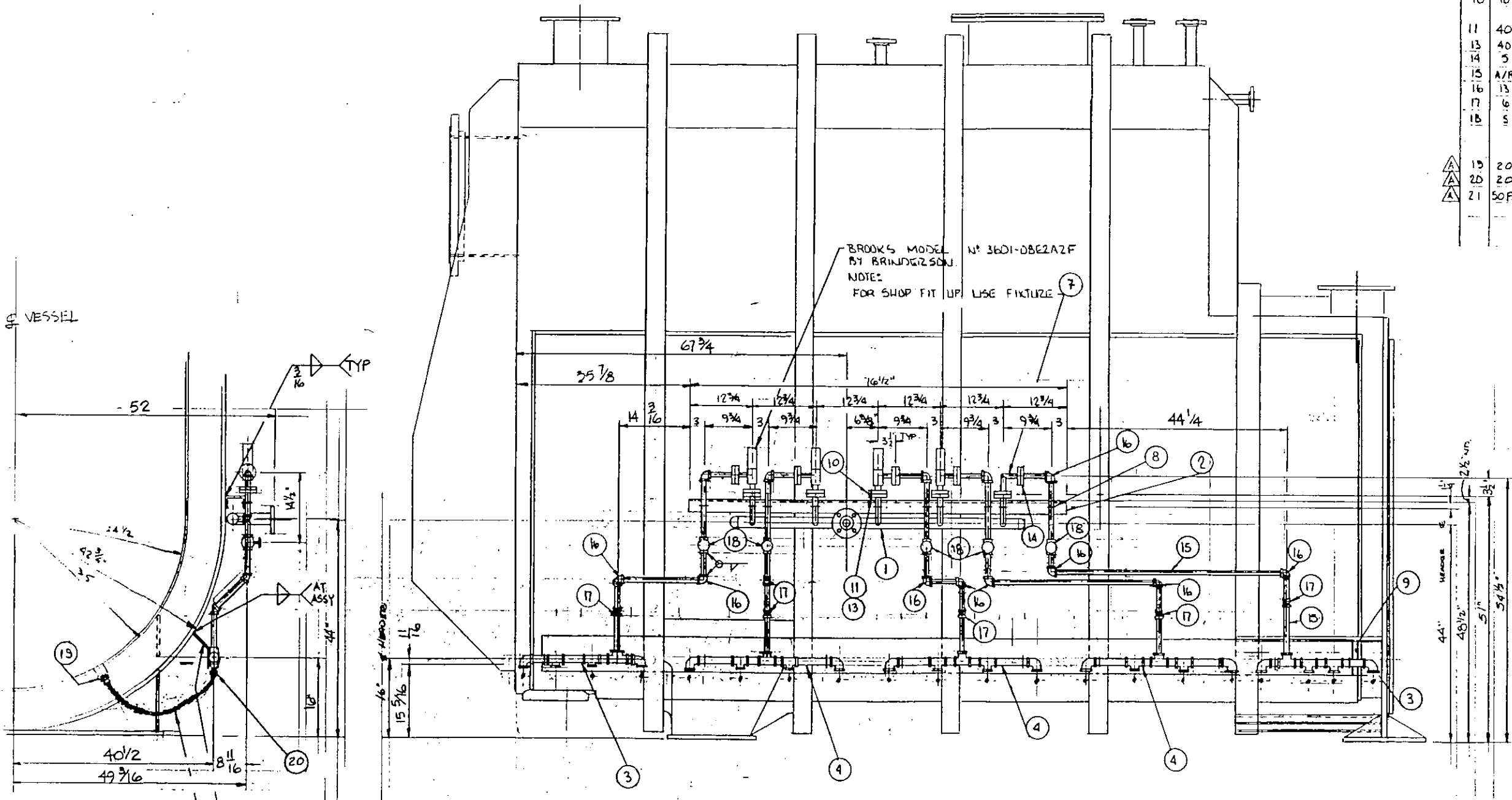
~~61831~~
 61831
~~61831~~

CERTIFIED DRAWING
 BEPEX CORP.
 DATE 11/11/88 PER [Signature]
 FOR Engineering 11/11/88

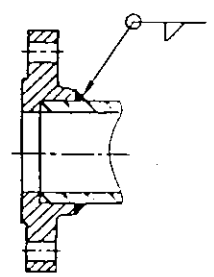
- A. Project: Carver Greenfield Sludge Dehydration & BRS
- B. Owner: L.A. County Sanitary Dist. #2
- C. Engineer: Foster Wheeler
- D. Contractor: Brinderson Corporation
- E. Sub Contractor: Beplex Corporation
- F. Sub Contractor No: 86000510
- G. Supplier's Purchase Agreement No: 60-14-100000
- H. Manufacturer's Name: To Follow
- I. Contract Drawing Reference: 11K, 1M-DR, 1M-DR-1G1
- J. Applicable Specifications: 11K
- K. Description of location where the facility being constructed, where installation is intended: At Site 107-01

REV	DATE	BY	NO	DESCRIPTION	DR	CHK
THIS DRAWING IS THE PROPERTY OF BEPEX CORPORATION AND IS LOANED TO YOU FOR YOUR USE ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN CONSENT OF BEPEX CORPORATION.						
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS: \pm DECIMALS: \pm ANGLES: \pm				TITLE: <u>11K-1M-DR-1G1</u> MANUFACTURING DRAWING ROTOR DRIVE ASSEMBLY		
ISO 270 METHOD A		MACH FIN. UNLESS NOTED		DATE: <u>11/11/88</u> BY: <u>[Signature]</u> CHECKED BY: <u>[Signature]</u> APPROVED BY: <u>[Signature]</u>		

ITEM	QTY	MAT'L	PART NO.	DESCRIPTION
1	1		B-5032B2	STEAM INLET MANIFOLD DETAIL
2	1		B-5032B3	SUPPORT CHANNEL DETAIL
3	2		A-503308	STEAM OUTLET HEADER DETAIL
4	3		A-503309	STEAM OUTLET HEADER DETAIL
5	1		A503288	STEAM OUTLET HEADER SUPPORT ANGLE
6				
7	1		B-503512	WELDING FIXTURE
8	20	M/S		1/8" UNC U-BOLT FOR 1/2" PIPE COMPLETE W/ HEX NUT
9	10	M/S		3/8" UNC U-BOLT FOR 1" PIPE COMPLETE W/ HEX NUT
10	10		GASKET	1/2" -150# (.115 THK.) FLEXITE SUPER NON ASB. 20455 WINDING & C.S. OUTER RING
11	40	SA-193-B7		1/2" UNC HEX BOLT X 2" LG.
13	40	SA-194-2H		1/2" UNC HEX NUT
14	5	SA-105		1/2" -150# R.F.S.W. FLG.
15	A/R	SA-106	B-SMLS	1/2" SCH 40 PIPE
16	13	SA-105		1/2" 3000# SOCKET WELD 90° ELBOW
17	6	SA-105		1/2" 3000# SOCKET WELD 45° ELBOW
18	5	FORGED	STEEL	1/2" GLOBE VALVE SOCKET WELD W/ NON ASBESTOS PACKING TO SEE 351
				STEAM & VOGAT # SW-12141
19	20	STEEL		SWAGelok # S-810-1-8 MALE CONN.
20	20	STEEL		SWAGelok # S-810-7-8 FEMALE CONN.
21	50 FT	STEEL		TUBE 1/2" OD X .065 WALL TUBE SAE J-524 SOFT ANNEALED



61831



5 - PIPE SUPPORT - LOCATE AT ASSY.
 DRILL HOLES FOR PIPE SUPPORT
 U BOLTS AT ASSY.

NOTE:
 1. HYDRO TEST AT 225 PSIG AFTER WELDING.
 2. ALL WELDING TO BE DONE USING ASME CODE WELD PROCEDURES.

A		11/1/18	Items # 19, 20 & 21 were Hose Bands & Clamps Item # 21 was Rubber Hose	DR	CHK
REV.	DATE	ECN. NO.	DESCRIPTION	DR	CHK
THIS DRAWING IS THE PROPERTY OF BEPEX CORPORATION AND IS TRANSMITTED IN CONFIDENCE. THE REPRODUCTION, USE, OR DISCLOSURE IN WHOLE OR IN PART, OF THE DESIGN CONTAINED HEREIN IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF BEPEX CORPORATION.			bepex corporation		
TOLERANCES: UNLESS OTHERWISE SPECIFIED		ISO 128 METHOD A	TITLE 1K-1L-1M-DR-101		
FRACTIONS	2		STEAM SPARGE MANIFOLD ASSY.		
DECIMALS	XX 1		TRUS DISC		
ANGLES	XXX 2		APP	SCALE 1" = 12"	
HOLES	+ .010 - .005		CHK	DATE 5-9-06	DRAWING NO.
USED ON			DR	DR TARR	8-18-15
PART NO.			NEXT ASSY	DS03295	REV A
	SIM. TO		ORIG. JOB NO.		SHEET OF

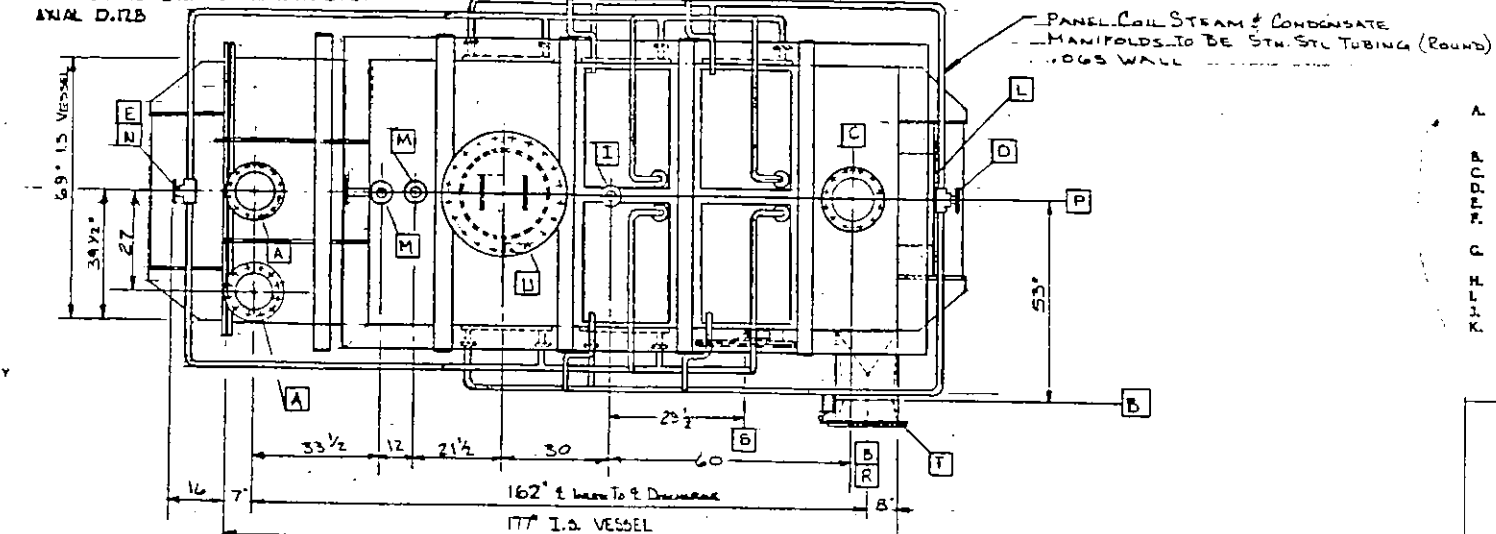
NOZZEL LIST

Mark	Size	Rating	Service	Qty	Px lbs	M lb ft	Mx lb ft
A	10"	150# FF Drilled	Feed Inlet 1/2" Tk Plate	2	1700	1300	8500
B	12"	150# FF Drilled	Solids Outlet 1/2" Tk Plate	1	1400	1200	10000
C	10"	150# FF Drilled	Vapor Outlet 1/2" Tk Plate	1	1700	1300	8500
D	1 1/2"	150# R.F.	Sparge Header Steam Inlet	1	330	200	430
E	1 1/2"	300# R.F.	Jacket Header Steam Inlet	1	400	250	300
F	3/4"	300# R.F.	Jacket Condensate Outlet	1	300	100	200
G	2"	300# R.F.	Rotor Steam Inlet	1	See Note (1)		
H	3/4"	300# R.F.	Rotor Condensate Outlet	1	See Note (1)		
I	1 1/2"	150# R.F.	TE	3	330	200	430
J	3/4"	300# P.F.	Jacket Vent w/Blind Flg	2	300	100	200
K	1 1/2"	150# R.F.	Snuffing Steam	1	330	200	430
L	2"	150# R.F.	PSE	1	2500	3000	40000
M	1 1/2"	150# R.F.	Spare w/Blind Flg	2	330	200	430
N	1 1/2"	300# R.F.	Panel Coil Header Steam Inlet	1	330	200	430
O	3/4"	300# R.F.	Panel Coil Header Cond Outlet	1	125	50	100
P	3/4"	150# R.F.	Nitrogen to Trough	1	125	50	100
Q	3/4"	150# R.F.	Nitrogen to Seals	1	125	50	100
R	8"	150# Drill	Vessel Cleanout w/Flush Plug	1	N/A	N/A	N/A
S	20"	Special	Vessel Access Opening 1/2" Pl	1	N/A	N/A	N/A
T	17x30	Special	Weir Access Opng w/Cover	1	N/A	N/A	N/A
U	24"	Special	Dome Access w/Cover 3/4" Pl	1	N/A	N/A	N/A

NOTES:

- VESSEL, JACKET & ROTOR; MATERIAL OF CONSTRUCTION IS CARBON STEEL. (DISCS & VESSEL SA 516-70, ROTOR PIPE SA 106 B)
- INTERNAL BAFFLE, MATERIAL OF CONSTRUCTION IS 304SS.
- GASKET & O-RINGS ARE VITON.
- VESSEL, JACKET & ROTOR ARE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASME CODE SECTION VIII CURRENT ISSUE, AND ASME LABELED VESSEL DESIGN PRESSURE IS (15) PSIG AT 285°F AND FULL VACUUM. HYDROTEST AT 22 1/2 PSIG. VACUUM TEST RED'D ON VESSEL AT A VACUUM PRESSURE OF 1 PSIA MAX. PRESSURE DECAY SHALL NOT EXCEED 0.3 PSI PER HOUR FOR 24 HOURS. JACKET & ROTOR DESIGN PRESSURE IS 190 PSIG AT 385°F HYDROTEST AT 285 PSIG. **NO ADJUSTMENT TO HYDROTEST PRESS IS TO COMPENSATE FOR OPERATING TIME**
- UNIT HAS BEEN DESIGNED TO INCLUDE 1% CORROSION ALLOWANCE. Shell Trough 1/8" TOTAL, JACKET PLATE 1/8" TOTAL, ROTOR LIP 1/8" TOTAL.
- ROTOR'S LEADING & TRAILING EDGES PLUS PADDLES, LEADING EDGES ARE HARD FACED.
- ALL FLG BOLTING TO STRADDLE 2" UNLESS NOTED OTHERWISE.
- APPROX VESSEL & ROTOR WT. 65,000 LBS. APPROX ROTOR WT. 31,000 LBS. APPROX DRIVE WT. 6,000 LBS. (GEAR BOX, MTR & BASE)
- APPROX CHAIN & SPRT WT. 2,000 LBS. APPROX LIVE LOAD 1/2" CU FT @ 50#/CF. 13,000 LBS. APPROX TOTAL WEIGHT 86,000 LBS.
- PAINT PER F.W. SPEC. 9A-7 12A B ORC
- * THESE LOADS DO NOT INCLUDE DYNAMIC LOADS RESULTING FROM DRIVE CHAIN PULL.
- HEAT TRANSFER AREA ROTOR = 1070 SQ FT. JACKET = 164.5 SQ FT. PANEL COILS TO COVER 25% OF VAPOR DOME SURFACE
- NOISE NOT TO EXCEED 85 dBA AT 3 FT.
- THERMAL EXPAN--LONGIT. 0.34"

AXIAL D. 17.8"



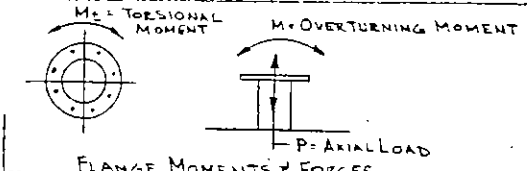
ITEM	QTY	MAT'L	PART NO.	DESCRIPTION
------	-----	-------	----------	-------------

SNMP TEST PROCEDURES:

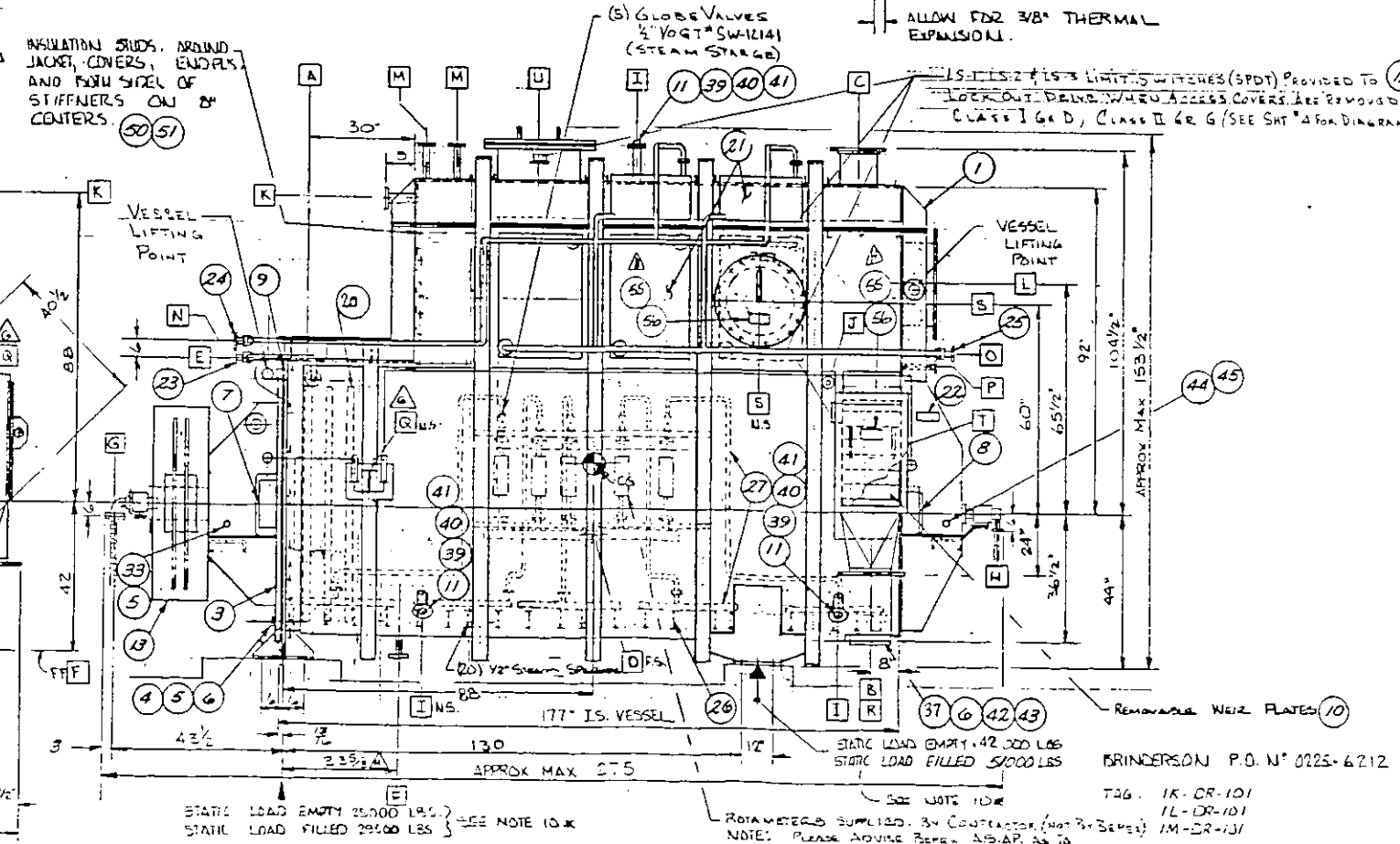
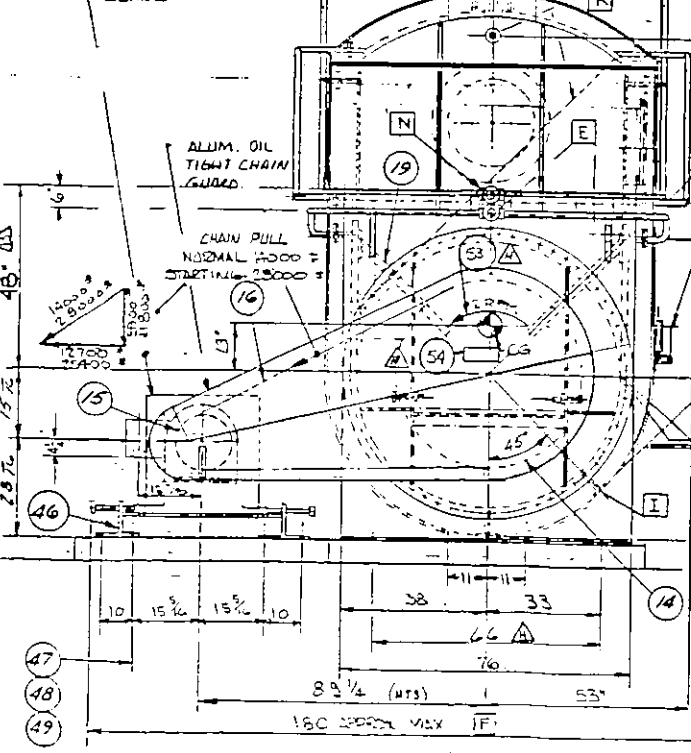
- VACUUM TEST VESSEL AT 1PSIA, MAX DECAY 0.3 PSI / HR FOR 24 HR PERIOD
- HYDRO TEST VESSEL AT 22.5 PSIG
- HYDRO TEST ROTOR AT 28.5 PSIG
- HYDRO TEST JACKET AT 28.5 PSIG
- MANUALLY TURN ROTOR A MIN. OF 10 COMPLETE REVOLUTIONS TO CHECK FOR INTERFERENCE.
- INSTALL & REMOVE WEIR RATES TO INSURE PROPER FIT.

A. Project:	Carver Greenfield Sludge Dehydration & ERS
B. Owner:	L.A. County Sanitary Dist. #2
C. Engineer:	Foster Wheeler
D. Contractor:	Brinderson Corporation
E. Sub Contractor:	Bepex Corporation
F. Sub Contractor No.:	86000510
G. Supplier's Purchase Agreement No.:	60-14 TorusDisc
H. Manufacturer's Name:	To Follow
I. Contract Drawing Reference:	Moorehead Boiler & Mach. Co. 101-11, 101-14, 101-201, 101-203
J. Applicable Specifications:	11K
K. Description of location within the facility being constructed, where installation is intended:	Between 3-11 & 8-6 At Elev. 102'-0"

61831



17/18 100 HP, 1800 RPM CLASS I GROUP D, DIV 2 AND CLASS II GROUP G, DIV 2 3-60 460 V MOTOR, TEFC 1.15 S.F. W/ A 50 RPM OUTPUT CLASS II GEAR BOX N/A. 1.5 S.F. COMPLETE W/ SLIDE BASE & HIGH SPEED CPLG. GUARD



CERTIFIED DRAWING
 BEPEX CORP.
 DATE 11/16/86 PER [Signature]
 FOR [Signature]

REV	DATE	ECN NO.	DESCRIPTION	DR	CHK
H	12-2-86		STEAM SPARGER VALVES WERE JENNINGS	KL	
E	8-14-86		ADDED ITEM'S 53 & 54 TO VAS 60; 33% VAS 30	DES	
			ADDED BILL OF MATERIAL	DES	
			ADDED SHEETS 3 & 4		
C	7-16-86		REVISED PER SEISMIC DATA ENHANCED LOCATION		
B	6-12-86		REVISED PER APPROVAL 2-45-86 TT	DES	
A	12-9-80		REDESIGN	DR	

THIS DRAWING IS THE PROPERTY OF BEPEX CORPORATION AND IS TRANSMITTED IN CONFIDENCE. THE REPRODUCTION, USE, OR DISCLOSURE IN WHOLE OR IN PART OF THE DESIGN CONTAINED HEREIN IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF BEPEX CORPORATION.

bepex corporation

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS 1/16, DECIMALS .XXX, ANGLES .5, HOLES .010 - .015, USED ON PART NO. 1 SIM. TO 1 ORIG JOB NO.

METHOD A
 W/CH FIN UNLESS NOTED
 UNLESS NOTED
 1/8" SCALE
 1/8" DRAWING
 1/8" DRAWING
 1/8" DRAWING

TITLE 1st STAGE HYDROEXTRACTOR
 TORUS DISC
 1K DR 101, 1L DR 101, 1M DR 101

BRINDERSON P.O. NO. 0225-6212

TAG. 1K-DR-101
 1L-DR-101
 1M-DR-101

NOTE: ROTAMETERS SUPPLIED BY CONTRACTOR (NOT BY BEPEX). PLEASE ADVISE BEPEX AS TO THE TYPE OF METAL BEING SUPPLIED.