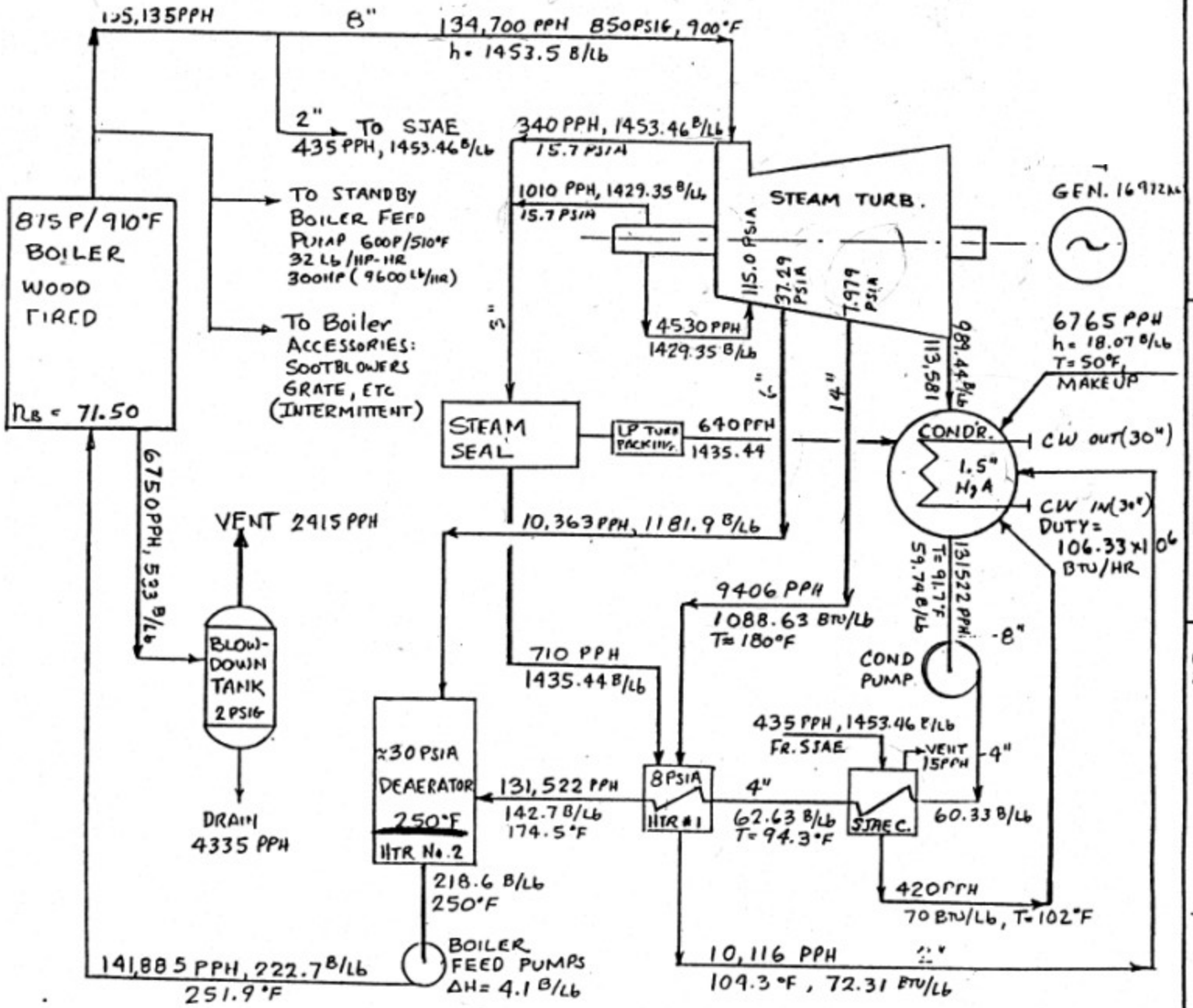
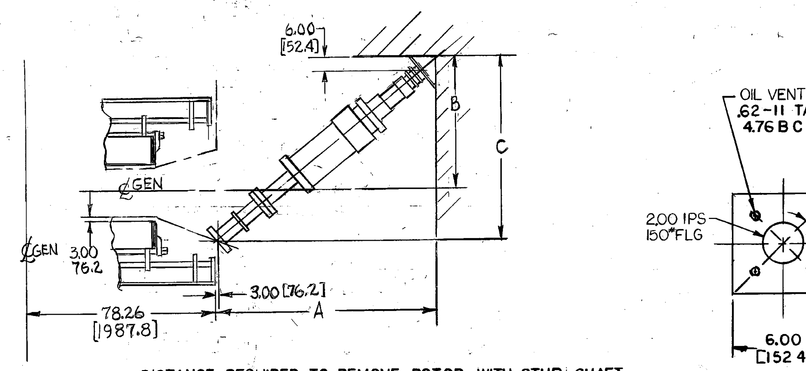


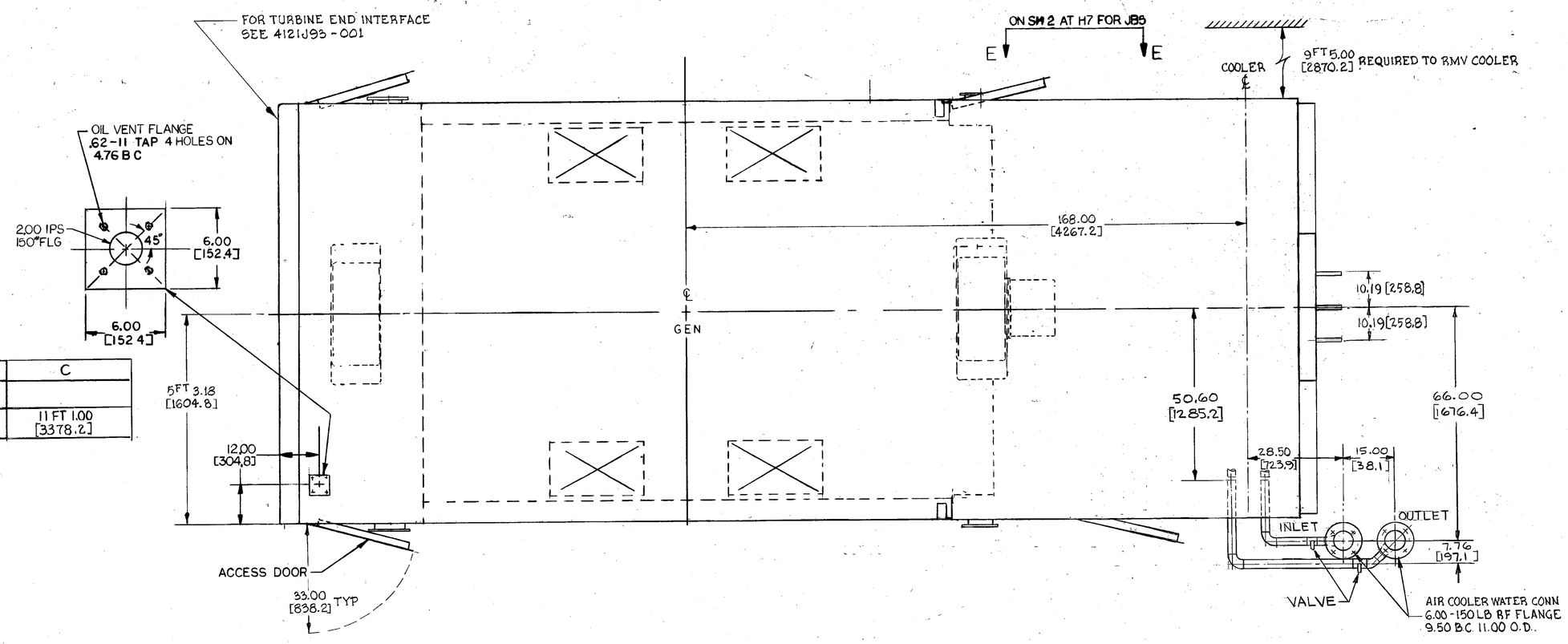
GENERAL ELECTRIC

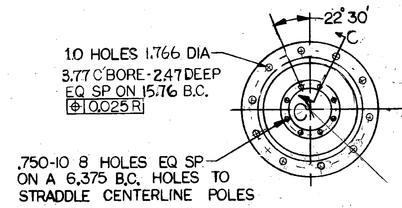
100% LOAD - 5% BLOWDOWN

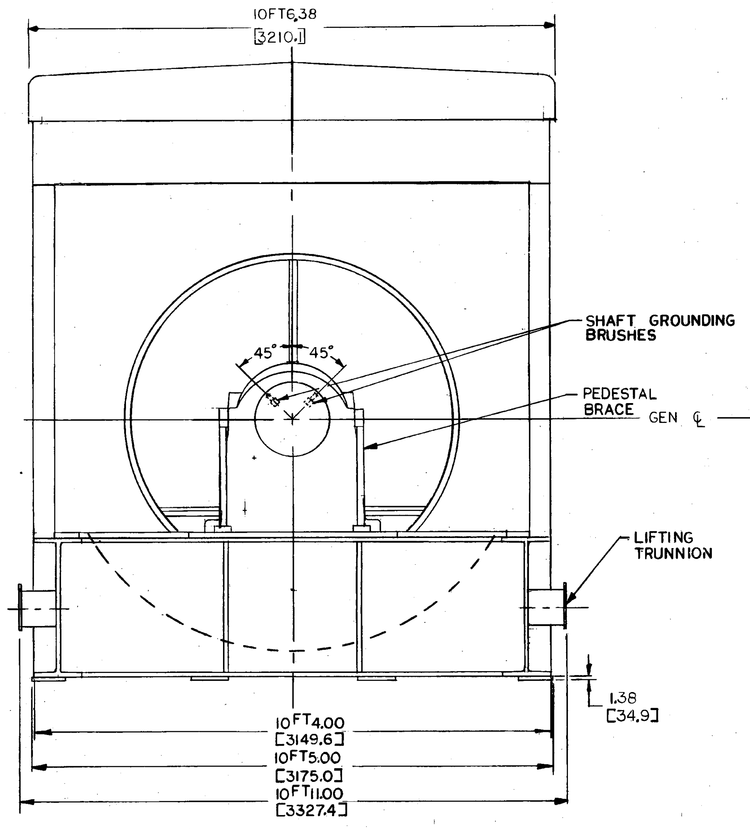
SK-M3-01

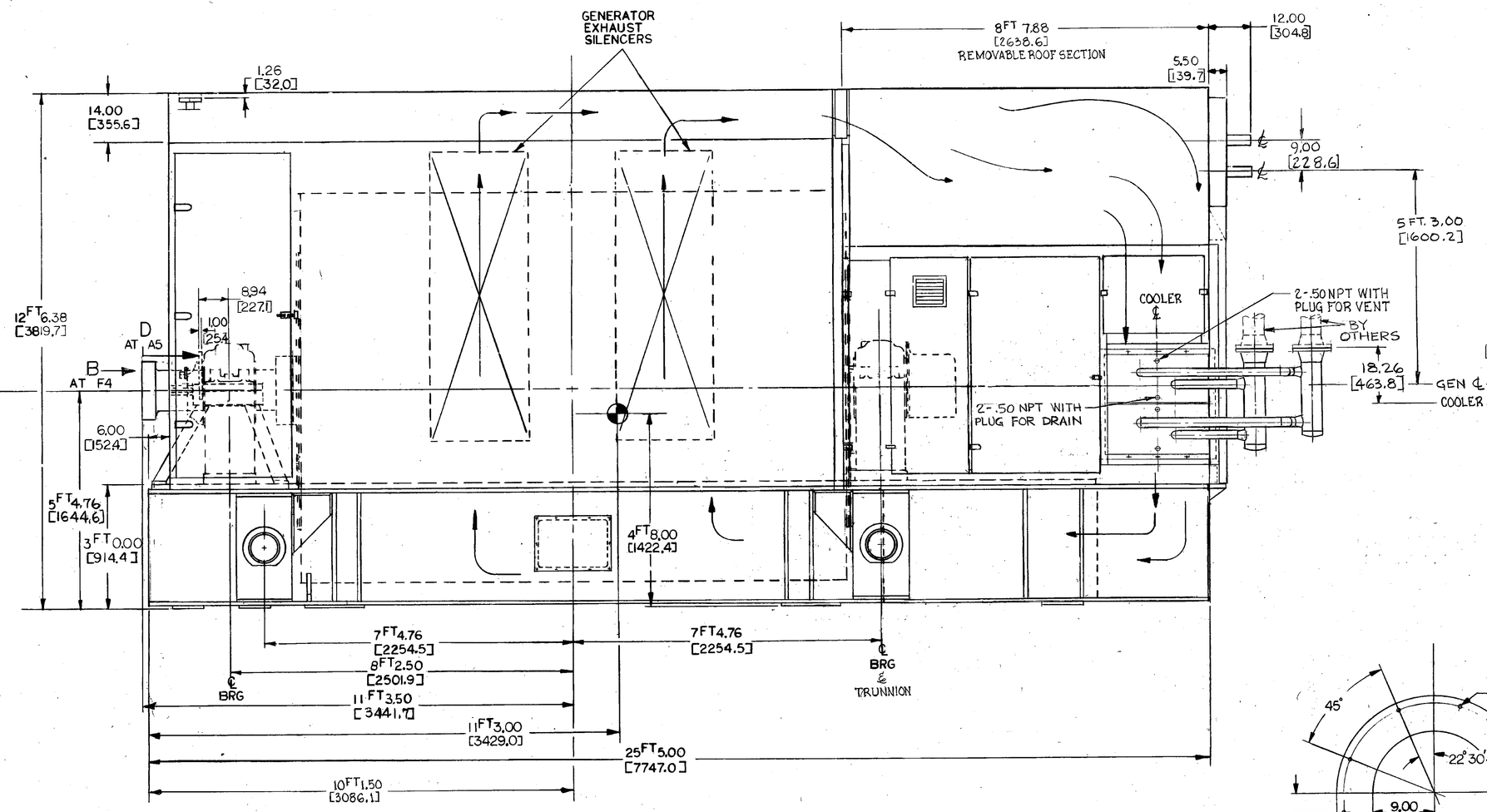


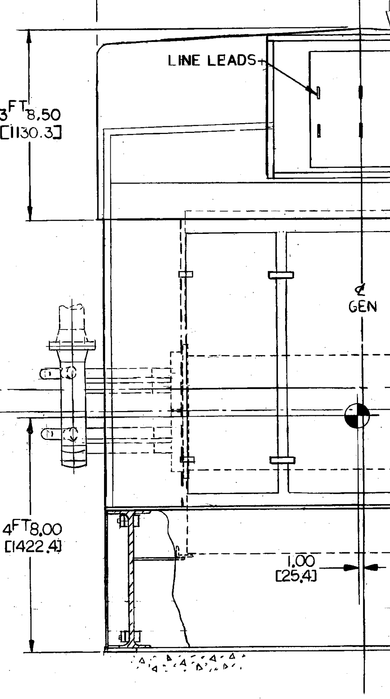
DISTANCE REQUIRED TO REMOVE ROTOR WITH STUB SHAFT			
METHOD OF REMOVAL	A	B	C
STRAIGHT PULL	20FT 10.00 [6350.0]	—	
CANTING HOR'LY	17FT 9.00 [5410.2]	8FT 4.00 [2540.0]	11 FT 1.00 [3378.2]











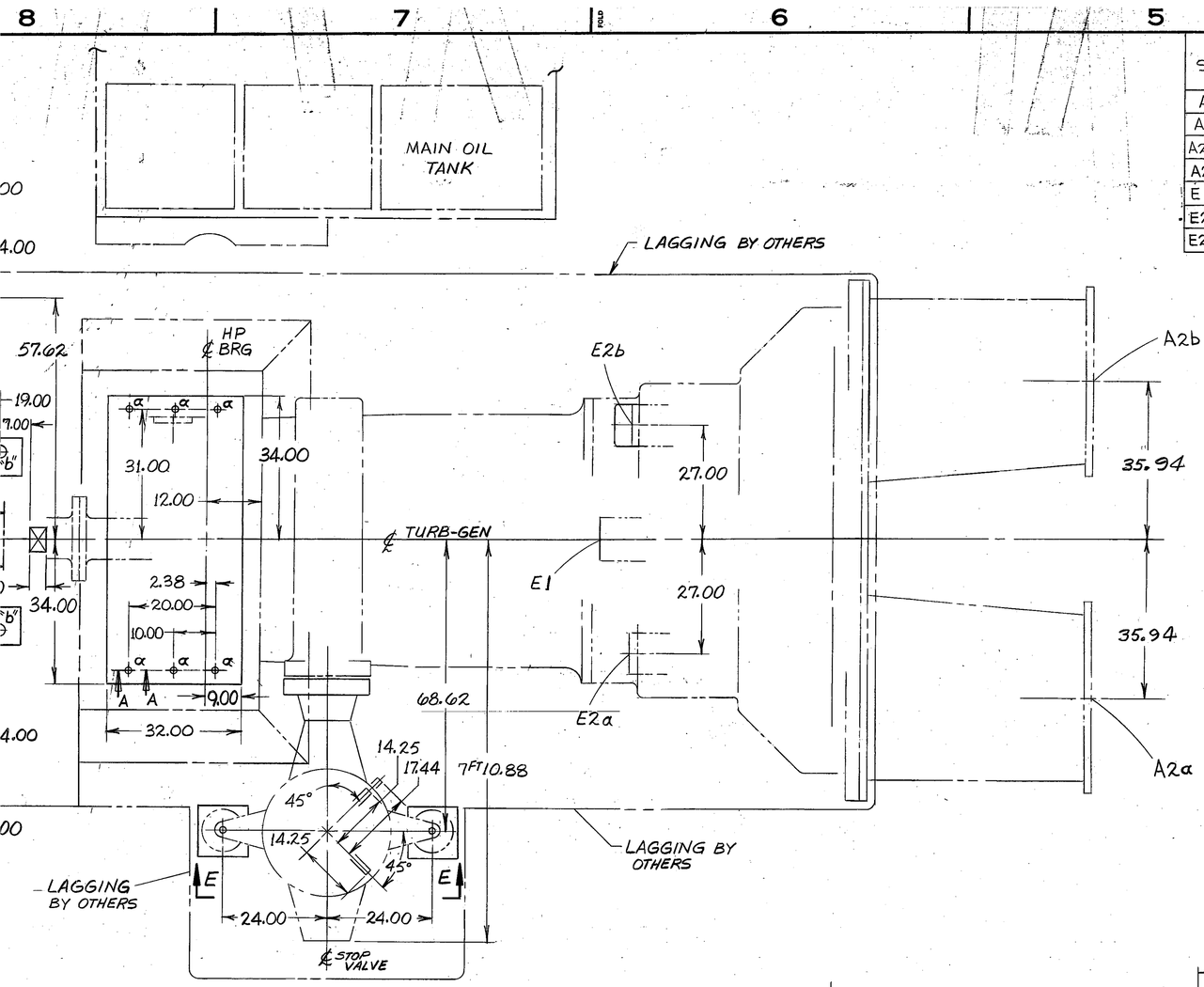
Sheet 18

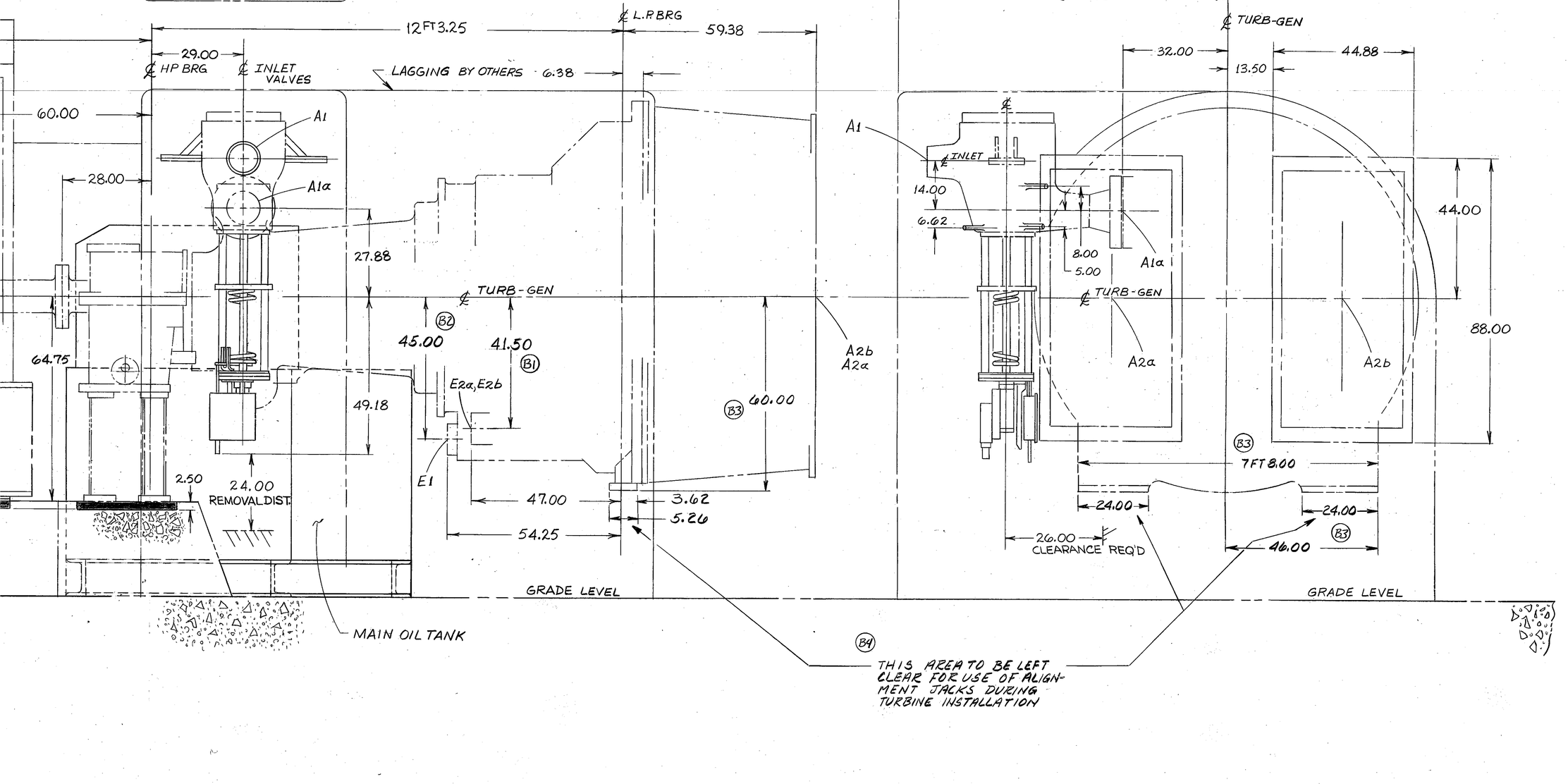
SYMBOL		MAIN CONNECTION	MAX LOAD TEMP °F	MAX LOAD PRESS PSIG	MAX TEMP LIGHT LOAD °F	O.D.	DIA. B.C.	BOLTS OR STUDS NO	BOLTS OR STUDS SIZE	FLANGE THICK	FLANGE FACE	STUDS & NUTS SUPPLIED BY	COMPAN FLANGE SUPPLIE BY
A1	10.00	INLET STOP VALVE	900	850	857	FOR WELD PREP SEE TCPL LINE 006						OTHERS	
A1a	10.00	INLET AT H.P HEAD	900	850	857							G.E. CO.	
A2a	——	STEAM EXHAUST	115	1.5 ABS.	176	FOR FLANGE CONN. SEE TCPL LINE 011						G.E. CO.	
A2b	——	STEAM EXHAUST	115	1.5 ABS	176	FOR FLANGE CONN. SEE TCPL LINE 011						G.E. CO.	
E1	10.00	UNC EXTRACTION	319	4.7	227	FOR WELD PREP SEE TCPL LINE 006						——	
E2a	10.00	UNC EXTRACTION	192	9.7 ABS	101	FOR WELD PREP SEE TCPL LINE 006						——	
E2b	10.00	UNC EXTRACTION	192	9.7 ABS	101	PIPE IS CAPPED BY G.E. CO.						——	

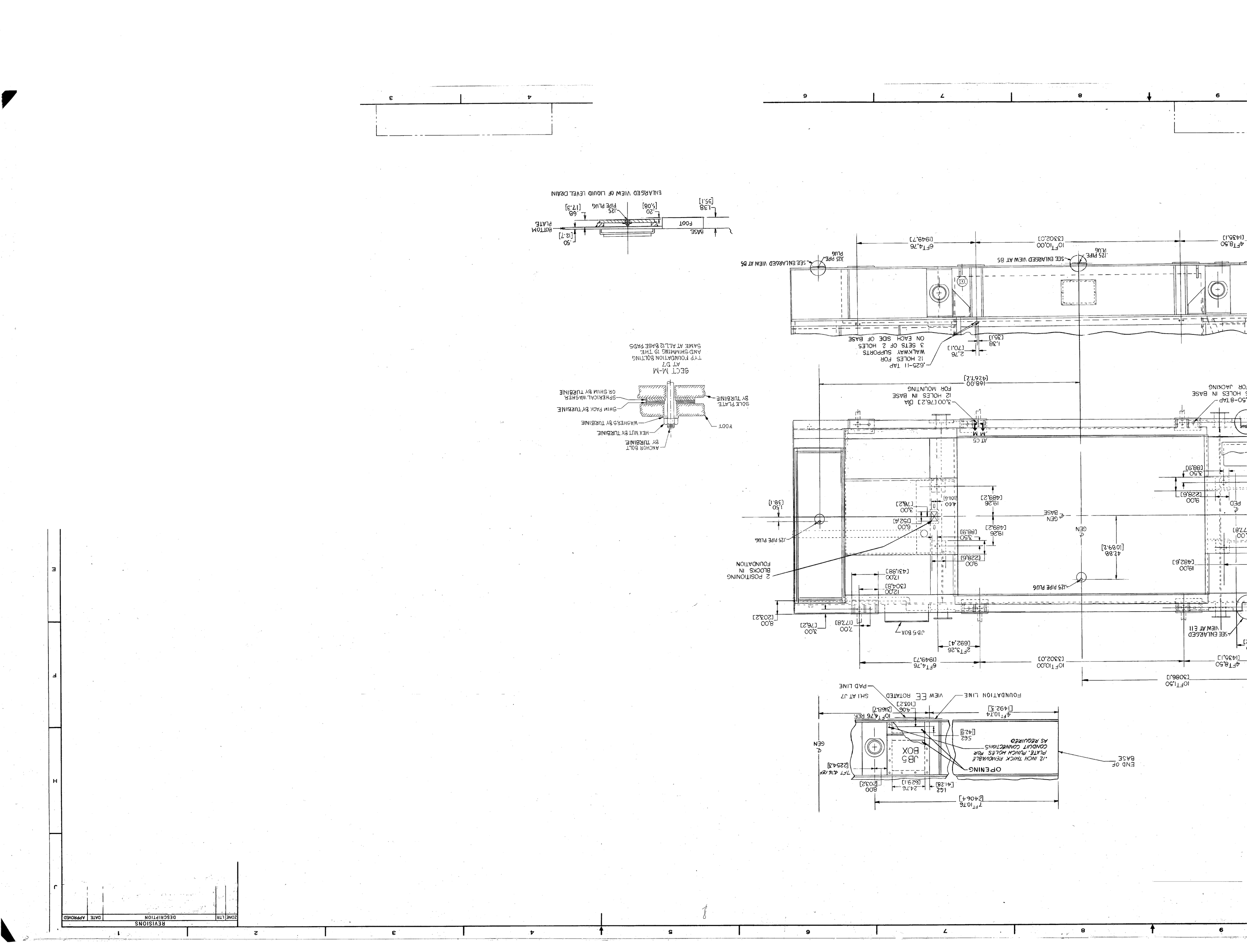
WEIGHTS		
TURBINE		POUNDS
SHIPPED WEIGHTS	TOTAL WEIGHT OF ASSEMBLED TURBINE H.P HEAD, EXHAUST CASING INCLUDING DIAPHRAGMS, FRONT STANDARD, ROTOR AND HIGH PRESSURE VALVE GEAR	91,900
UPPER HALF FOR LIFTING	UPPER HALF, H.P. HEAD, EXHAUST CASING INCLUDING DIAPHRAGMS	34,700
	STOP VALVE	6,000
	ROTOR	16,400
	FRONT STANDARD	8500
	EXHAUST COND CONN.	7500
	GENERATOR	
	ROTOR	24,500
	G.A.C.	28,000
	STATOR COMPLETE	170,000

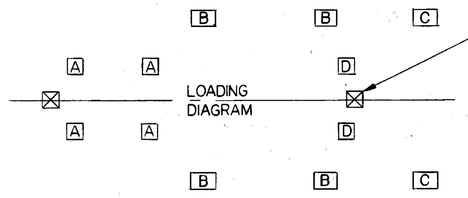
DISTANCE REQ'D TO REMOVE GEN ROTOR		
METHOD OF REMOVAL	A	B
STRAIGHT PULL	20FT 10.00	——
CANTING HORIZONTALLY	16FT 7.00	10FT 3.00

LIFTING DATA	LOAD ON CRANE HK.	℄ DIM TO CLEAR GEN LENGTHWISE	℄ DIM TO CLEAR TURB SIDEWAYS
ROTOR	SEE WT	26FT 10.50	22 FT 5.00
TURB U.H.	TABLE	25FT 5.75	23 FT 6.88



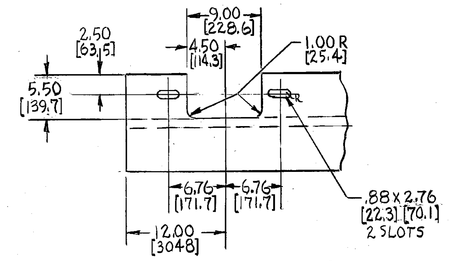



REVISIONS
ZONE LTR
DESCRIPTION
DATE
APPROVED
SECT M-M
AT D7
TYP FOUNDATION BOLTING
AND SHIMMING IS THE
SAME AT ALL 12 BASE PADS
ANCHOR BOLT
BY TURBINE
HEX NUT BY TURBINE
WASHERS BY TURBINE
SHIM PACK BY TURBINE
SPHERICAL WASHER
OR SHIM BY TURBINE
SOLE PLATE
BY TURBINE
FOOT
ENLARGED VIEW OF LIQUID LEVEL DRAIN
BASE
FOOT
.125 PIPE PLUG
BOTTOM PLATE
SEE ENLARGED VIEW AT B5
.125 PIPE PLUG
.625-11 TAP
12 HOLES FOR
WALKWAY SUPPORTS
3 SETS OF 2 HOLES
ON EACH SIDE OF BASE
.125 PIPE PLUG
.125 PIPE PLUG
2 POSITIONING
BLOCKS IN
FOUNDATION
JB5 BOX
SEE ENLARGED
VIEW AT E11
.50-13TAP
5 HOLES IN BASE
FOR JACKING
3.00 DIA
12 HOLES IN BASE
FOR MOUNTING
AT C5
OPENING
.12 INCH THICK REMOVABLE
PLATE. PUNCH HOLES FOR
CONDUIT CONNECTIONS
AS REQUIRED
JB5
BOX
END OF
BASE
FOUNDATION LINE
VIEW EE ROTATED
PAD LINE
SHI AT J7

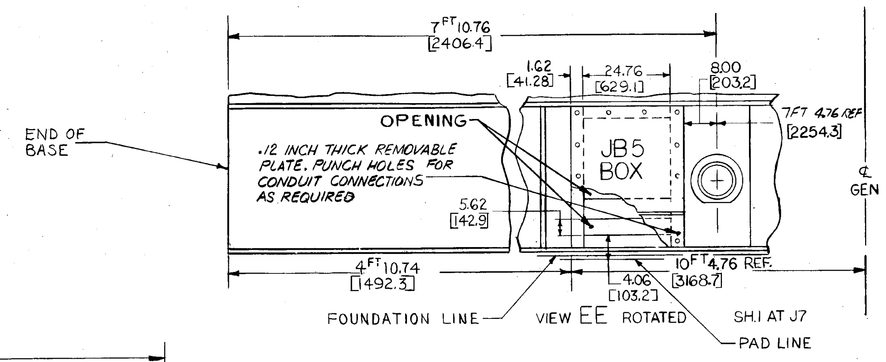


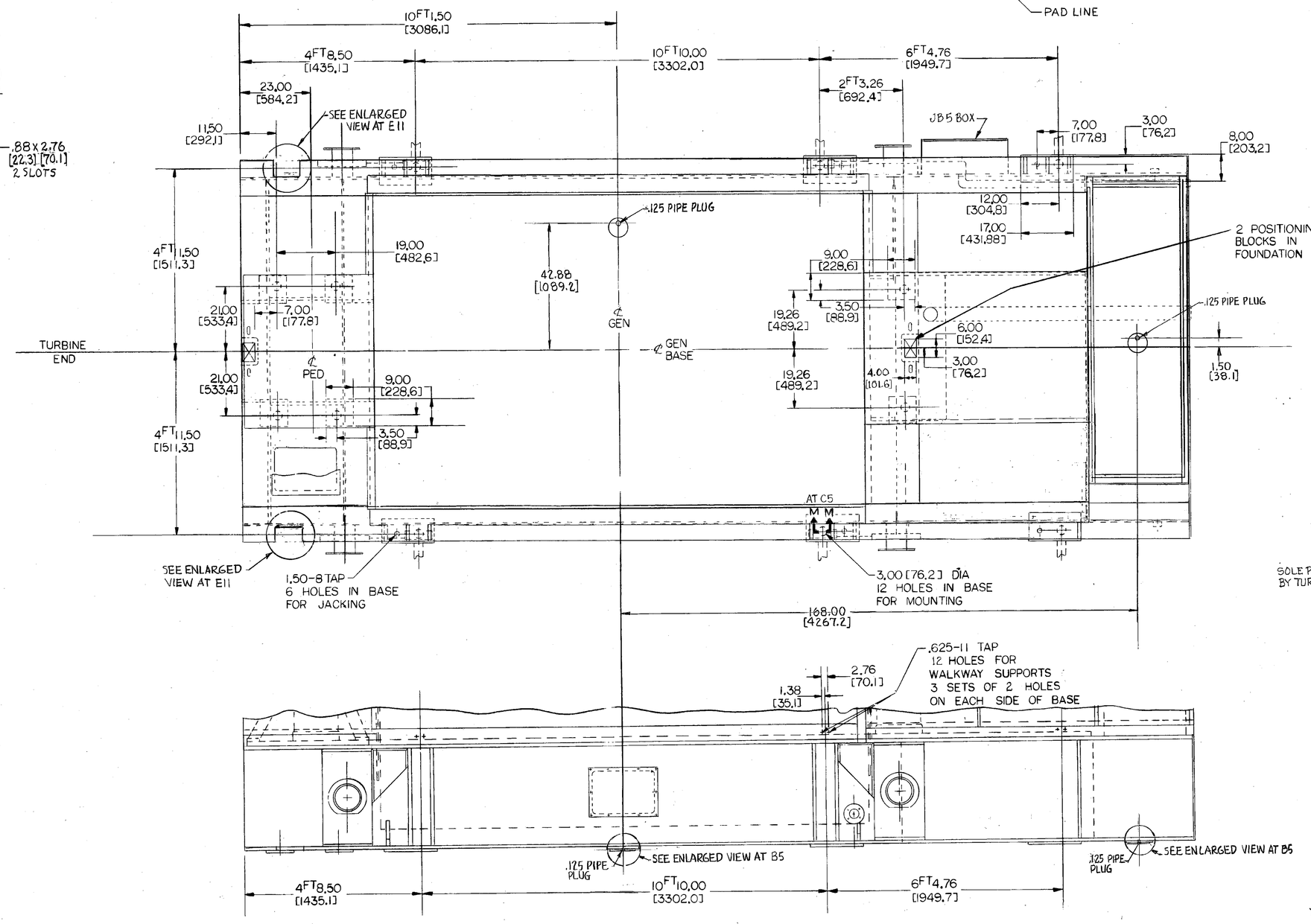
POSITIONING BLOCKS ARE TO BE DESIGNED TO WITHSTAND 24,500 LBS 11,113 KGS LATERAL THRUST WITH MAXIMUM DEFLECTION AT TRANSVERSE KEY OF .002 [0,051] EACH KEY EACH WAY

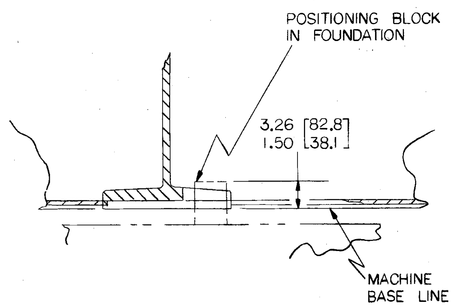
APPROXIMATE FOUNDATION LOADS				
LOAD DESCRIPTION	A	B	C	D
STATIC POUNDS	5210	26960	5840	14820
STATIC KILOGRAMS	2363	12229	2649	6722
LOADING FROM SHORT CIRCUIT TORQUE	STATIC ±3600 POUNDS / ±1633 KILOGRAMS (ON EACH MTG PAD)			
AXIAL LOAD	30% OF STATIC LOAD			
LATERAL LOAD	30% OF STATIC LOAD			
SEISMIC HORIZ.	12% OF STATIC LOAD			
SEISMIC VERT.	108% OF STATIC LOAD			



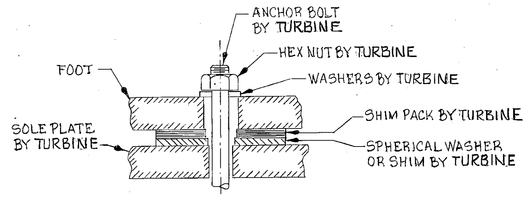
ENLARGED VIEW OF CUTOUT



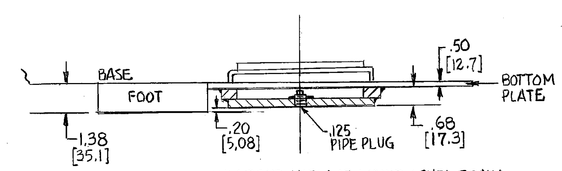




TYPICAL KEY DETAIL



SECT M-M
AT D7
TYP FOUNDATION BOLTING AND SHIMMING IS THE SAME AT ALL 12 BASE PADS



ENLARGED VIEW OF LIQUID LEVEL DRAIN

17.00 APPROX.

17.00 APPROX.

F F F F

F-F

ANCHOR BOLTS
Ø MARKED "b"
REQD SUPPLIED BY CUST.

NUTS BY CUST
SHERS BY CUST

3.00 Ø HOLE

64.75

7.50

1.75

SOLEPLATE
BY G.E. CO.

℄ TURB-GEN

VIEW IN DIRECTION OF ARROWS C-C APPLYS TO 12 PLACES (ZONE G-8)

G.A.C.

HEX NUT BY OTHERS

SHIMS BY G.E.

ANCHOR BOLT 1.00 Ø MKD "C" (4) REQ'D

5.50

VIEW IN DIRECTION OF ARROW D APPLYS TO 4 PLACES (ZONE F12)

6.00

3.00

17.50 MAX
15.75 MIN

12.00

ON OF
ZONE G-8)
4) LOC.

2.00

7.00

14.00

2.00

2.50 GRADE LEVEL

PLATE
16.00 x 16.00 x 1.00 THK
BY OTHERS

DIRECTION OF
F-F
G15)

℄ COOLER CONNS

16FT0.50

76.75

℄ OUTLET

13.00

℄ INLET

TYPICAL JACKING BOLT LOC.

6FT11.00

13FT10.00

62.00

ACCESS PIT

℄ TURB-GEN

60.62

57.00

70.50

41.00

59.50

6.00

60.00

50.00

30.00

SHIM PACKS BY G.E.

6FT4.75

℄ GEN

8 FT 10.50

65.00

8FT2.50

7FT7.00

7FT8.25

℄ BRG

57.62

HP ℄ BRG

34.00

31.00

12.00

32.00

LAGGING BY OTHERS

45°

14.25

24.00

℄ STOP VALVE

18FT3.00

7.00

8FT7.88

13FT2.50

7FT4.75

29.00

℄ HP BRG

℄ INLET VALVE

60.00

28.00

12FT4.00

12FT6.38

℄ COOLER CONNS

℄ COOLER

29.50

14FT0.00

22.88

64.75

7FT10.75

2.50

24.00
REMOVAL DIST.

SHIM PACK BY G.E.

ACCESS PIT

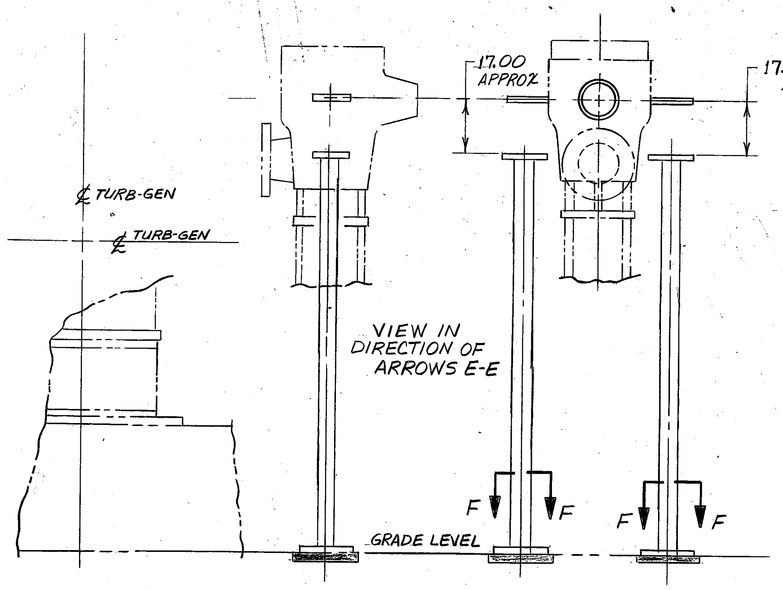
30.00

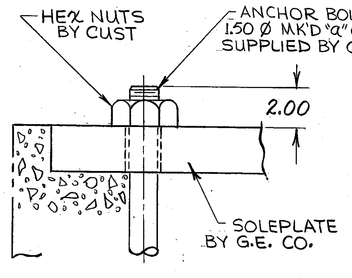
6.00

2.50

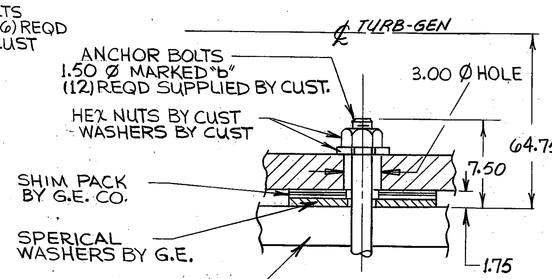
16FT0.62

GRADE LEVEL

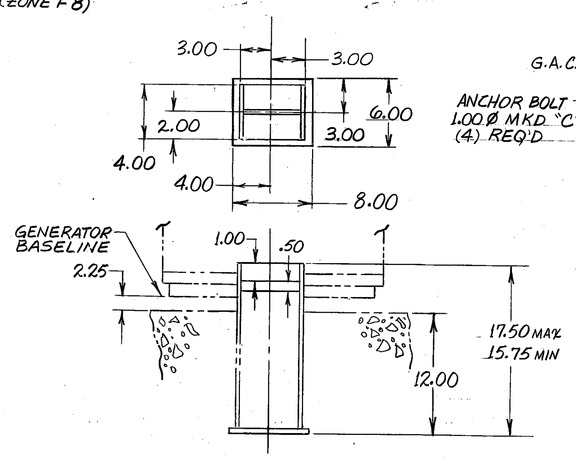




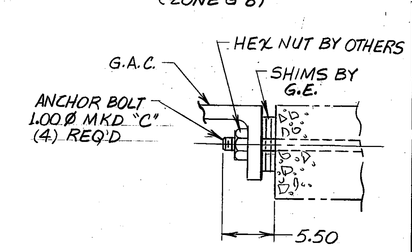
VIEW IN DIRECTION OF ARROWS A-A (ZONE F8)



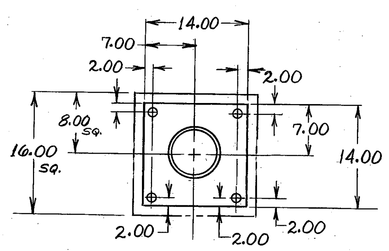
VIEW IN DIRECTION OF ARROWS C-C APPLYS TO 12 PLACES (ZONE G-8)

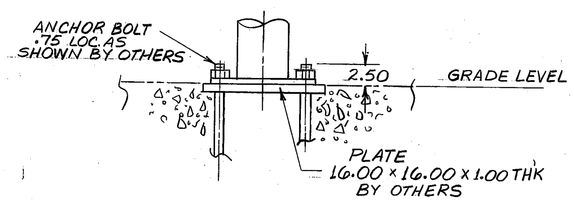


VIEW IN DIRECTION OF ARROWS B-B (ZONE G-8) THIS APPLYS TO (4) LOC.

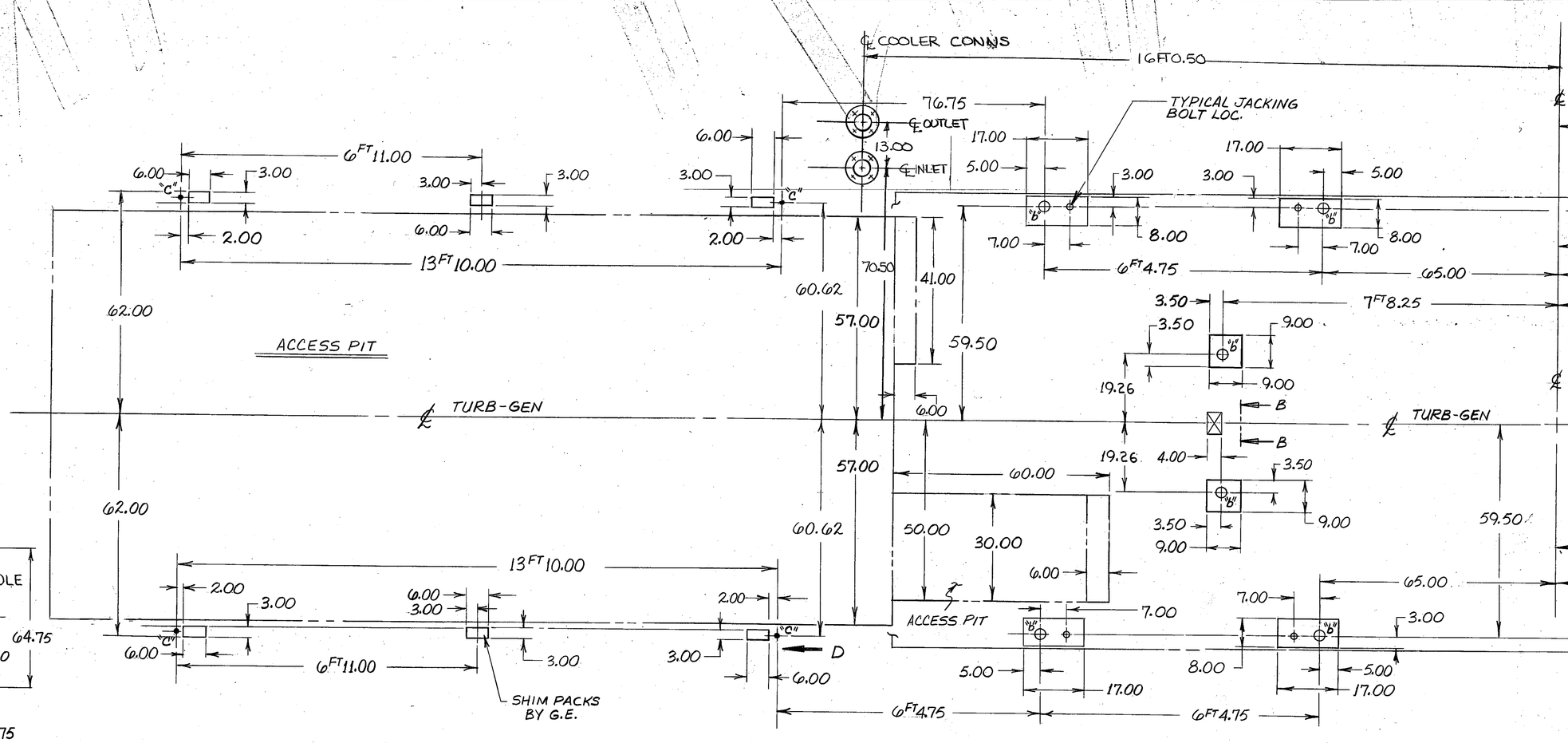


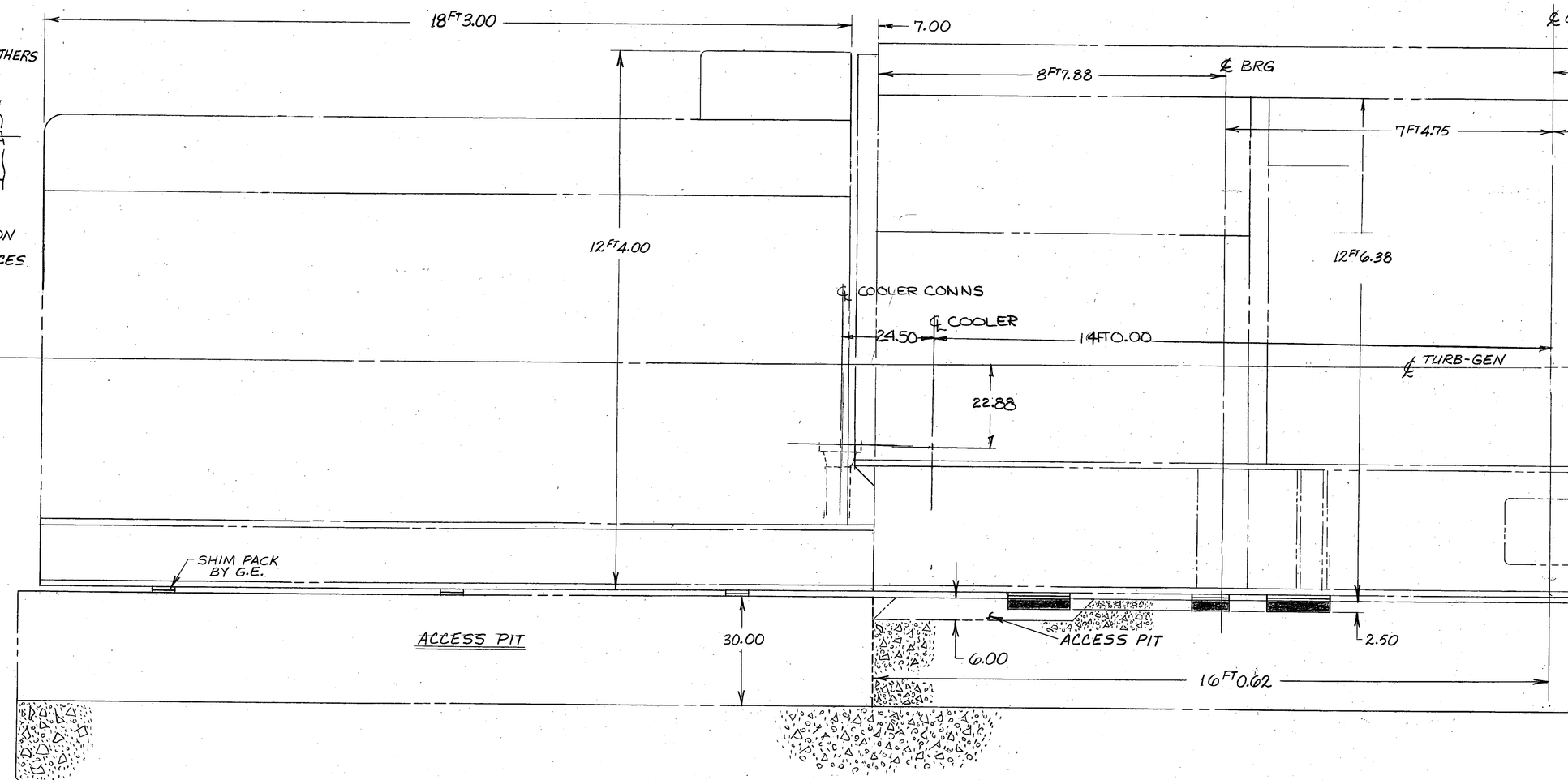
VIEW IN DIRECTION OF ARROW D APPLYS TO 4 PLACES (ZONE F12)





VIEW IN DIRECTION OF ARROWS F-F (ZONE G15)





TURBINE END INTERFACE
21J93-001

ON SH 2 AT H7 FOR JB5

E E

COOLER ℄

9FT 5.00 [2870.2] REQUIRED TO REMV COOLER

168.00 [4267.2]

℄ GEN

10.19 [258.8]

10.19 [258.8]

50.60 [1285.2]

66.00 [1676.4]

28.50 [723.9]

15.00 [381]

INLET

OUTLET

7.76 [197.1]

VALVE

AIR COOLER WATER CONN
6.00-150 LB RF FLANGE
9.50 B.C. 11.00 O.D.

33.00 TYP [838.2]

3.94 [100.1]

20.005 [508.1]
19.995 [507.8] Ø

17.62 [447.5] Ø

13.88 [352.5] Ø

12.12 [307.8] Ø

1.468 [37.3]

1.26R [32.0]

1.50 [38.1]

.25 [6.35]

SPHERICAL BOTTOM

7.236 [183.8]
7.235 [183.7] Ø

4.775 [121.3]
4.765 [121.0] Ø

.21 [5.33]

℄ 6.00 [165.1]

22°30'

10 HOLES 1.766 DIA
3.77 C'BORE-2.47 DEEP
EQ SP ON 15.76 B.C.
⌖ .002 S R

.750-10 8 HOLES EQ SP
ON A 6.375 B.C. HOLES TO
STRADDLE CENTERLINE POLES

VIEW B
AT C9

ENLARGED SECTION C-C
AT H4

GENERATOR EXHAUST SILENCERS

8FT 7.88 [2638.6]
REMOVABLE ROOF SECTION

12.00 [304.8]

5.50 [139.7]

1.26 [32.0]

℄ 9.00 [228.6]

5FT 3.00 [1600.2]

8.94 [227.1]

1.00 [25.4]

COOLER ℄

2-.50 NPT WITH PLUG FOR VENT BY OTHERS

2-.50 NPT WITH PLUG FOR DRAIN

18.26 [463.8]

6.50 [165.1]

GEN ℄

COOLER ℄

4FT 8.00 [1422.4]

7FT 4.76 [2254.5]

7FT 4.76 [2254.5]

8FT 2.50 [2501.9]

11FT 3.50 [3441.7]

11FT 3.00 [3429.0]

25FT 5.00 [7747.0]

10FT 1.50 [3086.1]

℄ BRG

℄ BRG & TRUNNION

10FT 6.00 [3200.4]

23.00 [584.2] DUCT

LINE LEADS

GROUND CONNECTOR

INTERFACING

3FT 8.50 [1130.3]

2°

℄ GEN

124.68 [3166.9]

123.38 [3133.9]

8.00 [203.2]

4FT 8.00 [1422.4]

1.00 [25.4]

JB5 BOX - SEE ELECT CONN DWG 7597E54 SH2

FOUNDATION

45°

.76 CL HOLE
6 HOLES

13.00 RAD

22°30'

9.00 [228.6]

2.76 [70.1]

14.00 [355.6]

13.00 [330.2]

5.00

2. APPROXIMATE WEIGHTS

	LB.	KG.
GEN. STATOR	94,500	42,865.20
GEN. ROTOR	24,500	11,113.20
MISC.	4,000	1,814.40
PEDESTAL'S TWO	6,000	2,712.50
MOUNTING BASE	28,000	12,700.80
HOUSING	10,000	4,536.80
SILENCERS	3,000	1,360.80
COOLERS	3,000	1,360.80
GEN. PACKAGE TOTAL	173,000	78,464.50

1. DIMENSIONS IN BRACKETS [XXX] ARE MILLIMETERS.

NOTES:

Sheet 1B

SECTION 2

DESCRIPTION OF SURFACE CONDENSER

SIZE AND TYPE

The surface condenser supplied to this installation is a two pass, nondivided type. The shell section is rectangular in shape.

TUBE ARRANGEMENT

The tubes were expanded in the tube sheets at each end. Tubes at both ends are flush with the tube sheets. An arrangement of the tube ends with respect to the tube sheets can be found on the condenser General Arrangement Drawing E-32F-RG-501X1.

The diagrammatic tube sheet drawing (SC-23375) also will aid recording of leaky or plugged tubes.

SHELL EXPANSION ELEMENT

The shell is constructed with a diaphragm-type expansion element which will accommodate expansion or contraction movements of the tubes, and relieve unequal expansion strains between the shell and tube bundles.

INTERNAL SHELL ARRANGEMENT

The tube bundle is designed such that steam enters from periphery and center lane areas of the unit. It then passes through the tube array until it reaches a common area near the center of the bundle before entering the openings in the support plates (See CM-1129). The arrangement of tubes allows effective feeding of steam to all tubes. It creates a decreasing cross-sectional area of the steam lanes; such that, as steam penetrates the tube bundle, brisk velocities are maintained, maximum condensing efficiency is assured, and air blanketing is eliminated.

The tube support plates divide the condenser into a number of small compartments, which act as short length condensers placed end to end with each compartment having its own steam inlet. They are arranged so that the air and non-condensible vapors will be processed from the circulating water outlet end to the circulating water inlet end of the condenser. The air and non-condensible vapors from the outlet end compartment flow through the cutout in the support plate entering into the next compartment. From here this flow merges with the air and non-condensible vapors again exiting through the cutout in the next support plate. This same process occurs from compartment to compartment along the entire length of the condenser until the flow reaches the coldest end (circulating water inlet end.) In the circulating water inlet end compartment the processed mixture is

merged with the air and non-condensible vapors of this compartment and are finally led into the terminal cooler. In passing through the compartments the air and non-condensible vapors are cooled and a large part of the water vapor is condensed. This reduces the partial vapor pressure of the mixture. In this state it is drawn into the air removal equipment where it is eventually compressed to atmospheric pressure.

Each condenser is provided with air vapor outlet connections. These connections originate in the terminal cooler at the coldest end of the condenser. For all condensers it is recommended that permanent metal tags bearing proper designations be affixed to valve handwheels in the respective air vapor lines in order to avoid confusion when taking a half or quarter section of the condenser out of service.

HOTWELL

The hotwell measures approximately 7'-4" wide X 21'-3" long and will maintain a storage of 780 gallons. Refer to General Arrangement Drawing for condensate level. There is a 20" diameter access openings on the end wall.

WATERBOXES

The waterboxes are of the ring type construction on the inlet-outlet and bonnet on the return end. Circulating nozzles are 30" diameter. The waterboxes were designed for a pressure of 75 psig and shop tested at 112 psig. Waterboxes have vent and drain connections plus two 20" diameter quick-opening manholes per waterbox for inspection and cleaning.

The waterboxes have been coated internally with coal tar epoxy, Carbomastic #3 and #14. All protective coatings have certain application and operating limitations. They are subject to mechanical damage and we recommend periodic inspections. The coating should be completely covered and protected from damage during any tube work or cleaning. No welding or burning should be done on the waterboxes since this will damage the coating. The coating should be thoroughly inspected and tested for leaks or damage when all internal work is completed and just prior to placing the unit in service.

CONNECTING PIECE

The connecting piece has two direct bolted flanges for direct turbine mounting. Access can be made into the connecting piece through a 20" diameter manway located on top. This area provides a smooth transition from the turbine exhaust to the condenser tube bundle.

DESIGN DATA

Tubes

1.	Supplied by		Ecolaire
2.	Installed by		Ecolaire
3.	Main Section -	O.D./BWG Quanity/Mat'l	3/4"/18BWG 3,668/ASTM B111/443 (Admiralty)
4.	Total Number of Tubes		3,668
5.	Length for Ordering		22'-5"
6.	Tolerance for Ordering		+3/16, -0

Performance

1.	Surface Area - (Sq. Ft.)	16,030
2.	Steam Load - (Lb./Hr.)	130,151
3.	Heat Load - (BTU/Hr.)	108,400,000
4.	Absolute Pressure - (In. Hg. Abs.)	1.5
5.	Cleanliness Factor - (%)	85
6.	Inlet Circ. Water Temp. - (^{O} F)	70.5
7.	Circulating Water Flow - (Gal./Min.)	13,366
8.	Water Velocity thru Tubes - (Ft./Sec.)	7.0
9.	Condenser Friction - (Ft. of Water)	17.45
10.	Effective Tube Length	22'-3"
11.	Tube Sheet Material	ASTM B171/365 (Muntz)
12.	Number of Support Plates	8
13.	Cooling Water Side Volume-(Gal.) Flooded Condition	3,254.24
14.	Steam/Condensate Side Volume-(Gal.) Flooded Condition	11,573.11

EXPECTED CONDENSER PERFORMANCE

1. CIRC. WATER TEMPS. 65, 70½, 75, 81
2. CLEANLINESS FACTOR: 85%
3. 100 PERCENT UNIT HEAT LOAD: 108,400,000 #/HR
4. CIRC. WATER FLOW: 13366 GPM
5. EFFECTIVE SURFACE AREA: 16,030 FT²