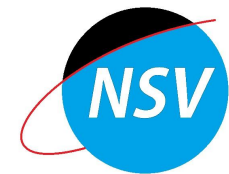
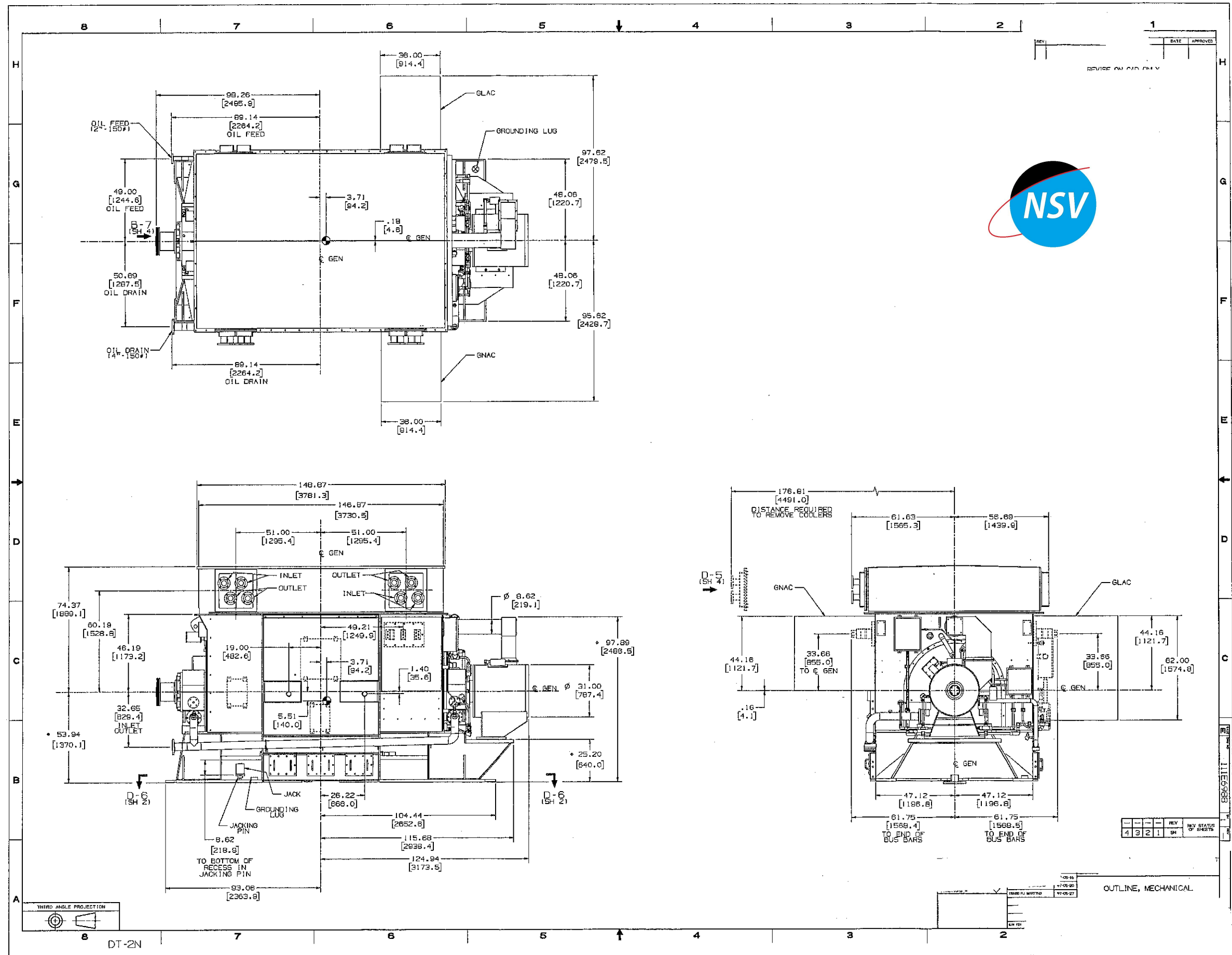
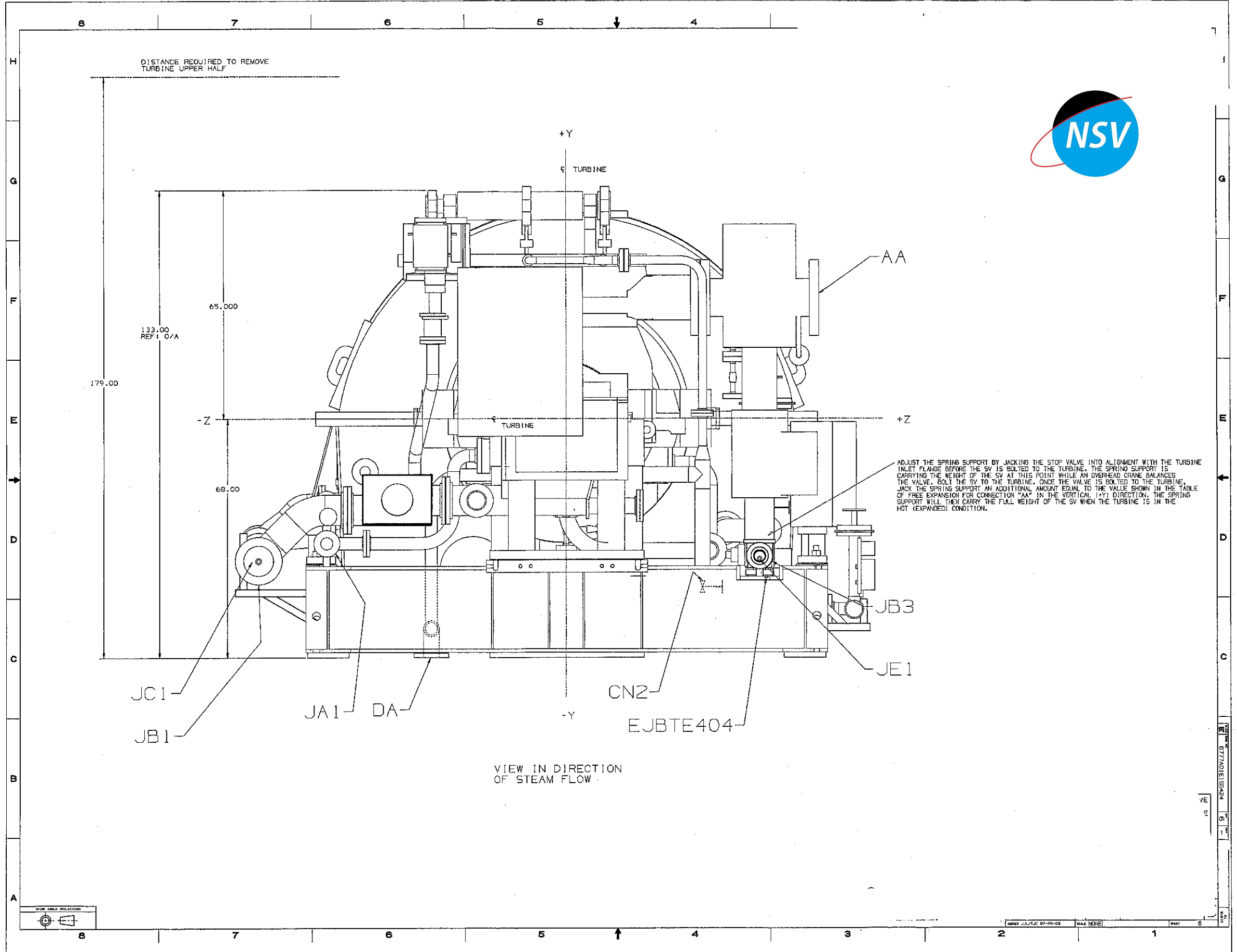
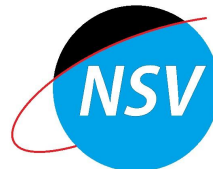


VE
VE



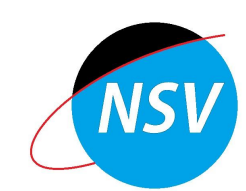
REV	DATE	APPROVED
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2	1	1
1	1	1

OUTLINE, MECHANICAL

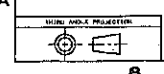


CUSTOMER CONNECTIONS		PIPE			FLG SIZE (INCHES)	ANSI RATING (LBS)	LOCATION OF CONNECTIONS			REMARKS
STEAM	BUTT (INCHES)	SOC (INCHES)	NPT (INCHES)	X			Y	Z		
AA	TRIP THROTTLE (STOP) VALVE INLET				10.00	900	-108.69	34.38	72.50	RF
AB	EXHAUST						0.00	-64.50	0.00	SEE SHEET 1
AF	FIRST EXTRACTION				4.00	300	-64.93	-13.00	-29.00	FF
AG	SECOND EXTRACTION				6.00	300	-59.50	-42.00	-11.00	FF
AH	THIRD EXTRACTION				8.00	300	-59.50	-42.00	12.00	FF
AJ	FOURTH EXTRACTION				12.00	150	-39.13	-43.00	-27.00	FF
AK	TRIP THROTTLE (STOP) VALVE HP STEM LEAKOFF				1.00	1500	-90.69	23.00	55.50	RF
AM	TRIP THROTTLE (STOP) VALVE ABOVE SEAT DRAIN				1.00	1500	-94.69	18.00	66.75	RF
AN	TRIP THROTTLE (STOP) VALVE BELOW SEAT DRAIN				1.00	1500	-95.44	5.63	47.85	RF
BU2	INLET STEAM CHEST PRESSURE			1.00			-77.44	11.63	47.85	
BX2	FIRST STAGE SHELL PRESSURE GAGE			1.00			-101.44	-31.50	15.92	
CF	FIRST STAGE CASING DRAIN			1.00	1500		-101.44	-37.50	0.00	RF
CM	STEAM SEAL SUPPLY/MAKEUP			1.00	600		-132.83	-54.24	82.67	RF
CN2	STEAM SEAL HEADER PRESSURE			0.50			-104.71	-46.67	39.00	
CO	REENTRY PIPE LOW POINT DRAIN			1.00	150		-111.94	-44.87	20.55	RF
DA	STEAM SEAL PIPING TO GLAND CONDENSER			4.00	300		-79.38	-67.98	-39.00	RF
DB	STEAM SEAL DRAIN			1.00	150		-45.44	-65.52	39.00	RF
DM	EXHAUST PRESS. BASKET TAP			1.00			4.00	-18.00	-68.38	
DN	EXHAUST PRESS. BASKET TAP			1.00			-36.00	-18.00	-51.00	
DD	EXHAUST PRESS. BASKET TAP			1.00			-36.00	-18.00	51.00	
DP	EXHAUST PRESS. BASKET TAP			1.00			4.00	-18.00	66.38	
OIL										
JA1	LUBE OIL SUPPLY				3.00	150	-160.25	-35.48	-68.94	RF
JB1	LUBE & CONTROL OIL DRAIN				8.00	150	-159.47	-40.42	-68.59	RF
JB3	LUBE & CONTROL OIL DRAIN				3.00	150	-159.95	-39.12	55.49	RF
JC1	CONTROL OIL SUPPLY						-166.29	-40.58	-68.58	1.00 TUBE CONN
JE1	OIL TRIP HEADER SUPPLY						-154.83	-39.68	55.50	.75 TUBE CONN
JJ1	GENERATOR LUBE OIL SUPPLY			2.00	150		82.40	-17.50	-23.81	RF
JJ2	GENERATOR LUBE OIL SUPPLY			2.00	150		83.00	-32.47	49.00	RF
JK1	GENERATOR DRAIN			6.00	150		88.59	-35.71	-68.60	RF
JK2	GENERATOR DRAIN			4.00	150		83.00	-32.47	-50.89	RF
AIR * 12.00										
GM1	SUPPLY TO STEAM SEAL SUPPLY AND DUMP VALVES			0.25			-118.83	-46.87	89.27	
GM2	SUPPLY TO STEAM SEAL SUPPLY AND DUMP VALVES			0.25			-66.08	-16.73	58.17	
ELECTRICAL * 12.00										
EJB1	TURBINE INSTRUMENTATION TERMINAL BOX						-172.59	-5.00	-19.25	SEE NOTE 1 BELOW
EJB3	INLET CONTROL VALVE OPERATOR/HPSV BOX						-152.46	43.12	-39.01	SEE NOTE 1 BELOW
EJB5	TURBINE LP END ACCESSORIES						53.75	-19.28	-63.00	SEE NOTE 1 BELOW
EJB70	TRIP THROTTLE (STOP) VALVE TERMINAL BOX						-102.30	-30.98	73.74	SEE NOTE 1 BELOW
EJBT404	STEAM SEAL TEMP ELEMENT			0.75			-78.59	-45.92	57.67	
EJBT500	TURBINE HP END BEARING DRAIN TEMPERATURE			0.75			-134.34	-27.00	-29.75	
EJBT501	TURBINE LP END BEARING DRAIN TEMPERATURE			0.75			53.13	-12.75	-17.24	
EJBT600	TURNING BEAR MOTOR			0.75			47.50	42.05	16.50	

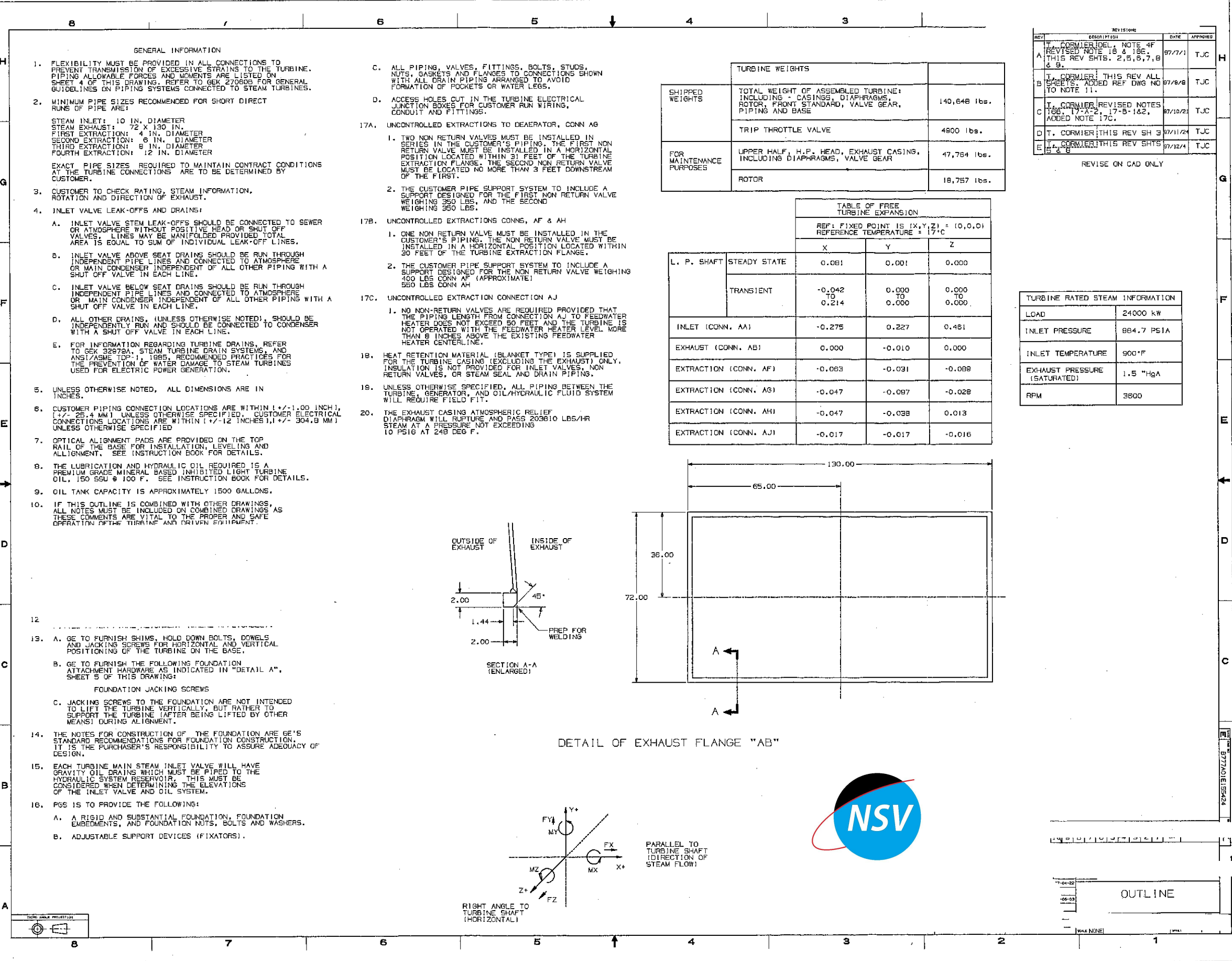
NOTE 1 - COORDINATE LOCATIONS SHOWN ARE TO BOTTOM CENTER OF BOX



SEE SHEET 1 FOR NOTES



REV 877301E15S124



GENERAL INFORMATION

1. FLEXIBILITY MUST BE PROVIDED IN ALL CONNECTIONS TO PREVENT TRANSMISSION OF EXCESSIVE STRAINS TO THE TURBINE. PIPING ALLOWABLE FORCES AND MOMENTS ARE LISTED ON SHEET 4 OF THIS DRAWING. REFER TO GEK 270808 FOR GENERAL GUIDELINES ON PIPING SYSTEMS CONNECTED TO STEAM TURBINES.
2. MINIMUM PIPE SIZES RECOMMENDED FOR SHORT DIRECT RUNS OF PIPE ARE:
 STEAM INLET: 10 IN. DIAMETER
 STEAM EXHAUST: 72 X 130 IN.
 FIRST EXTRACTION: 4 IN. DIAMETER
 SECOND EXTRACTION: 6 IN. DIAMETER
 THIRD EXTRACTION: 8 IN. DIAMETER
 FOURTH EXTRACTION: 12 IN. DIAMETER
 EXACT PIPE SIZES REQUIRED TO MAINTAIN CONTRACT CONDITIONS AT THE TURBINE CONNECTIONS ARE TO BE DETERMINED BY CUSTOMER.
3. CUSTOMER TO CHECK RATING, STEAM INFORMATION, ROTATION AND DIRECTION OF EXHAUST.
4. INLET VALVE LEAK-OFFS AND DRAINS:
 A. INLET VALVE STEM LEAK-OFFS SHOULD BE CONNECTED TO SEWER OR ATMOSPHERE WITHOUT POSITIVE HEAD OR SHUT OFF VALVES. LINES MAY BE MANIFOLDED PROVIDED TOTAL AREA IS EQUAL TO SUM OF INDIVIDUAL LEAK-OFF LINES.
 B. INLET VALVE ABOVE SEAT DRAINS SHOULD BE RUN THROUGH INDEPENDENT PIPE LINES AND CONNECTED TO ATMOSPHERE OR MAIN CONDENSER INDEPENDENT OF ALL OTHER PIPING WITH A SHUT OFF VALVE IN EACH LINE.
 C. INLET VALVE BELOW SEAT DRAINS SHOULD BE RUN THROUGH INDEPENDENT PIPE LINES AND CONNECTED TO ATMOSPHERE OR MAIN CONDENSER INDEPENDENT OF ALL OTHER PIPING WITH A SHUT OFF VALVE IN EACH LINE.
 D. ALL OTHER DRAINS, (UNLESS OTHERWISE NOTED), SHOULD BE INDEPENDENTLY RUN AND SHOULD BE CONNECTED TO CONDENSER WITH A SHUT OFF VALVE IN EACH LINE.
 E. FOR INFORMATION REGARDING TURBINE DRAINS, REFER TO GEK 32672A, STEAM TURBINE DRAIN SYSTEMS, AND ANSI/ASME (DP-1), 1985, RECOMMENDED PRACTICES FOR THE PREVENTION OF WATER DAMAGE TO STEAM TURBINES USED FOR ELECTRIC POWER GENERATION.
5. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN INCHES.
6. CUSTOMER PIPING CONNECTION LOCATIONS ARE WITHIN ± 1.00 INCH, (± 25.4 MM) UNLESS OTHERWISE SPECIFIED, CUSTOMER ELECTRICAL CONNECTIONS ARE WITHIN ± 12 INCHES, (± 304.8 MM) UNLESS OTHERWISE SPECIFIED.
7. OPTICAL ALIGNMENT PADS ARE PROVIDED ON THE TOP RAIL OF THE BASE FOR INSTALLATION, LEVELING AND ALIGNMENT. SEE INSTRUCTION BOOK FOR DETAILS.
8. THE LUBRICATION AND HYDRAULIC OIL REQUIRED IS A PREMIUM GRADE MINERAL BASED INHIBITED LIGHT TURBINE OIL, 150 SSV @ 100 F. SEE INSTRUCTION BOOK FOR DETAILS.
9. OIL TANK CAPACITY IS APPROXIMATELY 1500 GALLONS.
10. IF THIS OUTLINE IS COMBINED WITH OTHER DRAWINGS, ALL NOTES MUST BE INCLUDED ON COMBINED DRAWINGS AS THESE COMMENTS ARE VITAL TO THE PROPER AND SAFE OPERATION OF THE TURBINE AND DRIVEN EQUIPMENT.

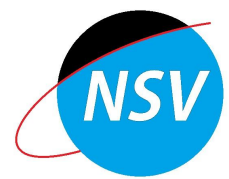
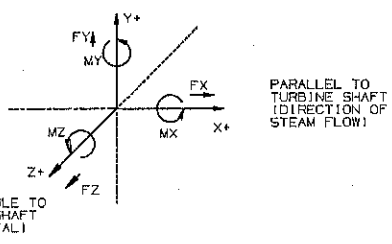
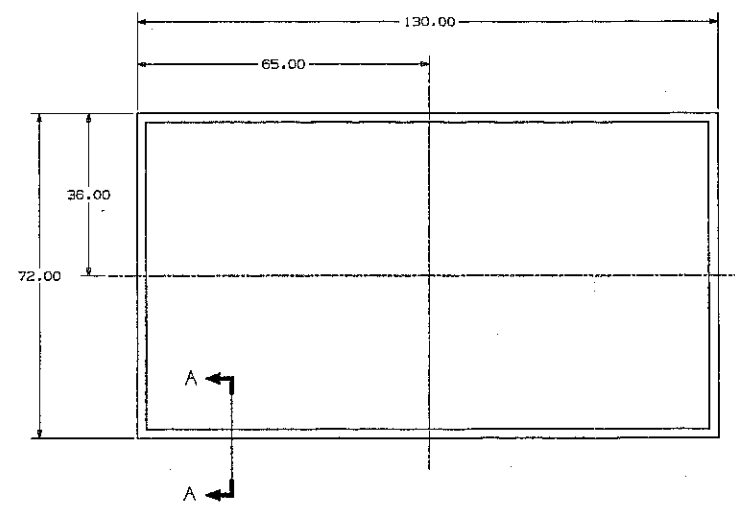
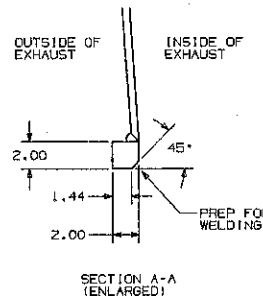
- C. ALL PIPING, VALVES, FITTINGS, BOLTS, STUDS, NUTS, GASKETS AND FLANGES TO CONNECTIONS SHOWN WITH ALL DRAIN PIPING ARRANGED TO AVOID FORMATION OF POCKETS OR WATER LEGS.
- D. ACCESS HOLES CUT IN THE TURBINE ELECTRICAL JUNCTION BOXES FOR CUSTOMER RUN WIRING, CONDUIT AND FITTINGS.
- 17A. UNCONTROLLED EXTRACTIONS TO DEAERATOR, CONN AG
 1. TWO NON RETURN VALVES MUST BE INSTALLED IN SERIES IN THE CUSTOMER'S PIPING. THE FIRST NON RETURN VALVE MUST BE INSTALLED IN A HORIZONTAL POSITION LOCATED WITHIN 31 FEET OF THE TURBINE EXTRACTION FLANGE. THE SECOND NON RETURN VALVE MUST BE LOCATED NO MORE THAN 3 FEET DOWNSTREAM OF THE FIRST.
 2. THE CUSTOMER PIPE SUPPORT SYSTEM TO INCLUDE A SUPPORT DESIGNED FOR THE FIRST NON RETURN VALVE WEIGHING 350 LBS, AND THE SECOND WEIGHING 350 LBS.
- 17B. UNCONTROLLED EXTRACTIONS CONNS, AF & AH
 1. ONE NON RETURN VALVE MUST BE INSTALLED IN THE CUSTOMER'S PIPING. THE NON RETURN VALVE MUST BE INSTALLED IN A HORIZONTAL POSITION LOCATED WITHIN 30 FEET OF THE TURBINE EXTRACTION FLANGE.
 2. THE CUSTOMER PIPE SUPPORT SYSTEM TO INCLUDE A SUPPORT DESIGNED FOR THE NON RETURN VALVE WEIGHING 400 LBS CONN AF (APPROXIMATE) 550 LBS CONN AH.
- 17C. UNCONTROLLED EXTRACTION CONNECTION AJ
 1. NO NON-RETURN VALVES ARE REQUIRED PROVIDED THAT THE PIPING LENGTH FROM CONNECTION AJ TO FEEDWATER HEATER DOES NOT EXCEED 90 FEET AND THE TURBINE IS NOT OPERATED WITH THE FEEDWATER HEATER LEVEL MORE THAN 8 INCHES ABOVE THE EXISTING FEEDWATER HEATER CENTERLINE.
18. HEAT RETENTION MATERIAL (BLANKET TYPE) IS SUPPLIED FOR THE TURBINE CASING (EXCLUDING THE EXHAUST) ONLY. INSULATION IS NOT PROVIDED FOR INLET VALVES, NON RETURN VALVES, OR STEAM SEAL AND DRAIN PIPING.
19. UNLESS OTHERWISE SPECIFIED, ALL PIPING BETWEEN THE TURBINE, GENERATOR, AND OIL/HYDRAULIC FLUID SYSTEM WILL REQUIRE FIELD FIT.
20. THE EXHAUST CASING ATMOSPHERIC RELIEF DIAPHRAGM WILL RUPTURE AND PASS 203610 LBS/HR STEAM AT A PRESSURE NOT EXCEEDING 10 PSIG AT 248 DEG F.

TURBINE WEIGHTS		
SHIPPED WEIGHTS	TOTAL WEIGHT OF ASSEMBLED TURBINE INCLUDING CASINGS, DIAPHRAGMS, ROTOR, FRONT STANDARD, VALVE GEAR, PIPING AND BASE	140,648 lbs.
	TRIP THROTTLE VALVE	4800 lbs.
FOR MAINTENANCE PURPOSES	UPPER HALF, H.P. HEAD, EXHAUST CASING, INCLUDING DIAPHRAGMS, VALVE GEAR	47,784 lbs.
	ROTOR	18,757 lbs.

TABLE OF FREE TURBINE EXPANSION
 REF: FIXED POINT IS (X,Y,Z) = (0,0,0)
 REFERENCE TEMPERATURE = 17°C

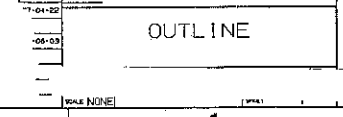
L. P. SHAFT	STEADY STATE	X	Y	Z
		0.081	0.001	0.000
	TRANSIENT	-0.042 TO 0.214	0.000 TO 0.000	0.000 TO 0.000
INLET (CONN. AA)		-0.275	0.227	0.451
EXHAUST (CONN. AB)		0.000	-0.010	0.000
EXTRACTION (CONN. AF)		-0.063	-0.031	-0.088
EXTRACTION (CONN. AS)		-0.047	-0.097	-0.028
EXTRACTION (CONN. AH)		-0.047	-0.038	0.013
EXTRACTION (CONN. AJ)		-0.017	-0.017	-0.016

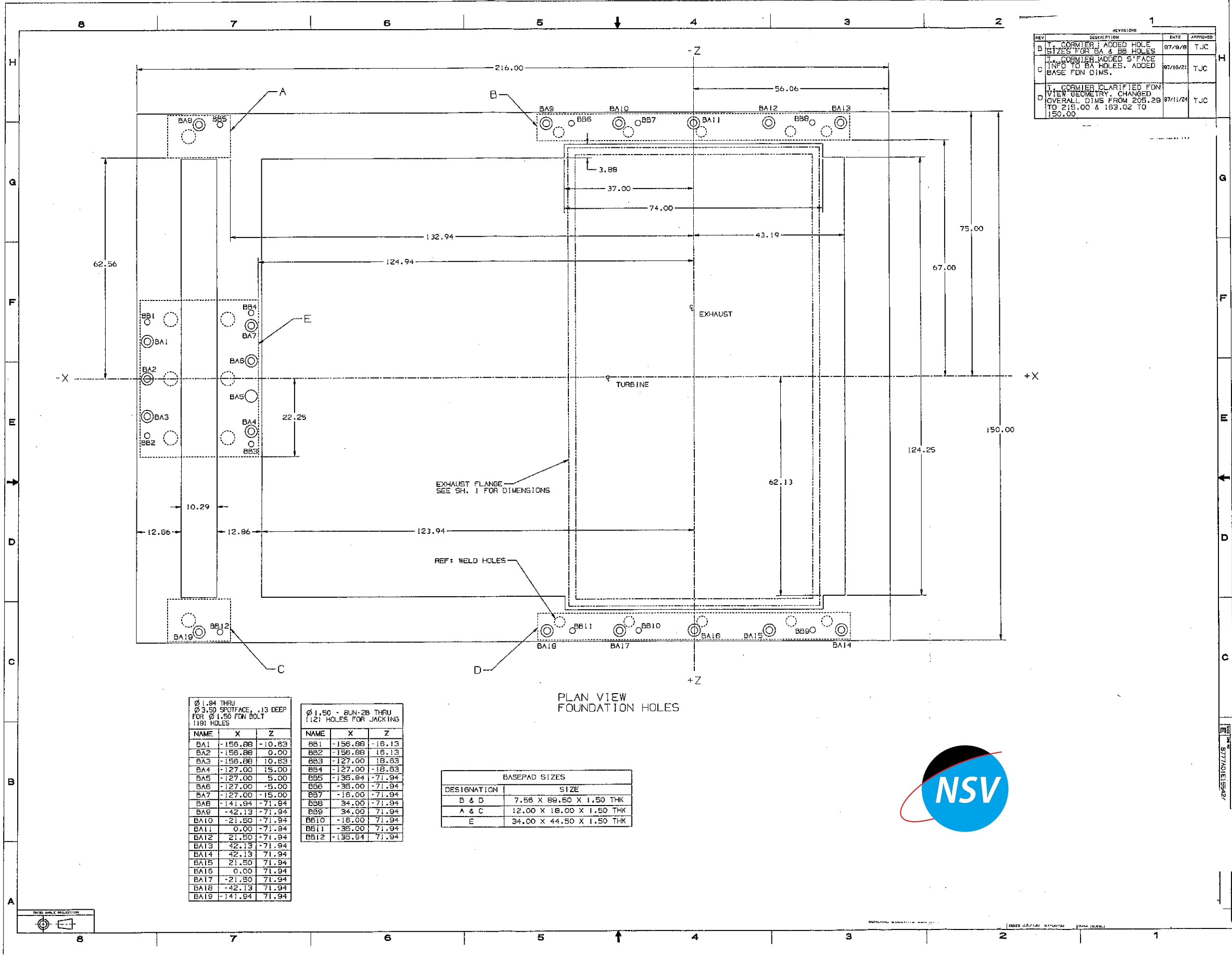
TURBINE RATED STEAM INFORMATION	
LOAD	24000 kW
INLET PRESSURE	864.7 PSIA
INLET TEMPERATURE	900°F
EXHAUST PRESSURE (SATURATED)	1.5 "HgA
RPM	3600



REV	DESCRIPTION	DATE	APPROVED
T	CORMIER DEL. NOTE 4F REVISED NOTE 18 & 18E, THIS REV SHTS. 2,5,6,7,8 & 9.	87/7/1	TJC
B	T. CORMIER THIS REV ALL SHEETS. ADDED REF DWG NO TO NOTE 11.	87/6/8	TJC
C	T. CORMIER REVISED NOTES 18E, 17-A, 2, 17-B, 1&2, ADDED NOTE 17C.	87/10/2	TJC
D	T. CORMIER THIS REV SH 3	87/11/24	TJC
E	T. CORMIER THIS REV SHTS 4 & 8	87/12/4	TJC

REVISE ON CAD ONLY





REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
T	CORNER: ADDED HOLE SIZES FOR BA & BB HOLES	07/19/08	TJC
C	T. CORNER ADDED SURFACE INFO TO BA HOLES, ADDED BASE FDN DIMS.	07/10/21	TJC
D	T. CORNER CLARIFIED FDN VIEW GEOMETRY, CHANGED OVERALL DIMS FROM 205.28 TO 215.00 & 163.02 TO 150.00	07/11/24	TJC

Ø 1.94 THRU
Ø 3.50 SPOTFACE, .13 DEEP
FOR Ø 1.50 FDN BOLT
(19) HOLES

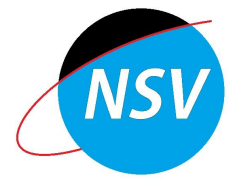
NAME	X	Z
BA1	-156.88	-10.63
BA2	-156.88	0.00
BA3	-156.88	10.63
BA4	-127.00	15.00
BA5	-127.00	5.00
BA6	-127.00	-5.00
BA7	-127.00	-15.00
BA8	-141.94	-71.94
BA9	-42.13	-71.94
BA10	-21.50	-71.94
BA11	0.00	-71.94
BA12	21.50	-71.94
BA13	42.13	-71.94
BA14	42.13	71.94
BA15	21.50	71.94
BA16	0.00	71.94
BA17	-21.50	71.94
BA18	-42.13	71.94
BA19	-141.94	71.94

Ø 1.50 - BUN-2B THRU
(12) HOLES FOR JACKING

NAME	X	Z
BB1	-156.88	-18.13
BB2	-156.88	18.13
BB3	-127.00	18.63
BB4	-127.00	-18.63
BB5	-135.84	-71.94
BB6	-35.00	-71.94
BB7	-16.00	-71.94
BB8	34.00	-71.94
BB9	34.00	71.94
BB10	-16.00	71.94
BB11	-35.00	71.94
BB12	-135.84	71.94

BASEPAD SIZES

DESIGNATION	SIZE
B & D	7.56 X 89.50 X 1.50 THK
A & C	12.00 X 18.00 X 1.50 THK
E	34.00 X 44.50 X 1.50 THK



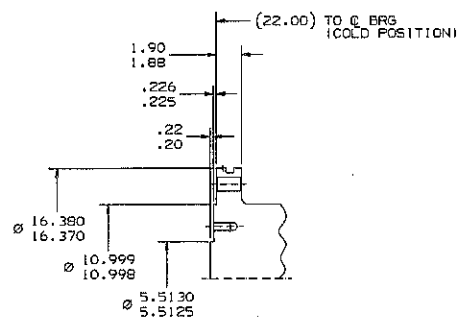
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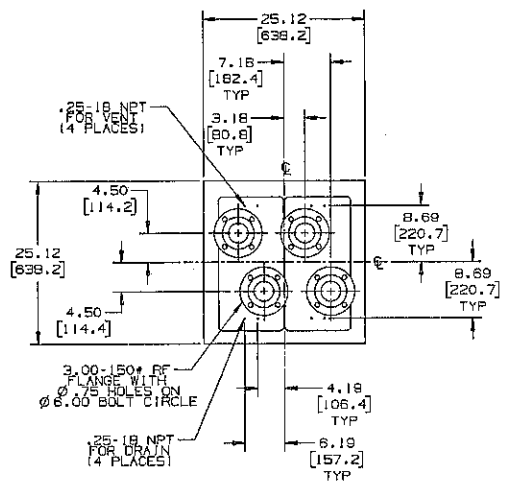
WEIGHTS:

WEIGHT OF GENERATOR ASSY. (INCLUDING ROTOR AND LIFTING DEVICES, NO COOLER ROOF OR TERMINAL ENCLOSURES)	140,000 LBS
ROTOR	27,000 LBS
ROTOR & EXCITER PEDESTAL ASSY	30,500 LBS
COOLER ROOF AND COOLERS	6,000 LBS
ONE COOLER (EMPTY)	1,950 LBS
COOLER (ALL COOLERS FULL)	5,050 LBS
LINE AND NEUTRAL TERMINAL ENCLOSURES	4,000 LBS
FOUNDATION PLATES (ALL)	1,500 LBS
TOTAL ASSEMBLED WEIGHT	150,000 LBS

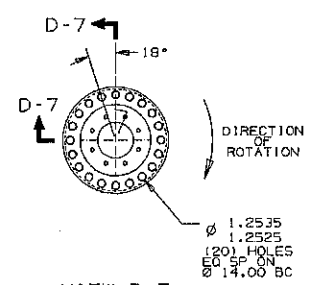
*HEAVIEST TYPICAL MAINTENANCE LIFT



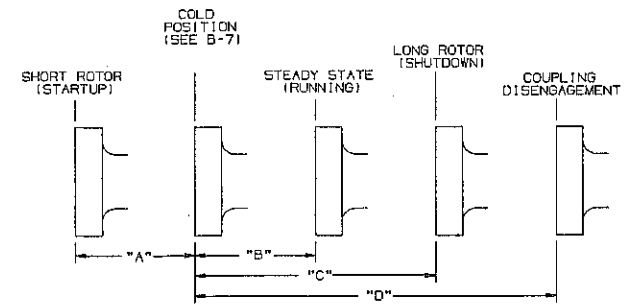
SECTION D-7 (C-7)



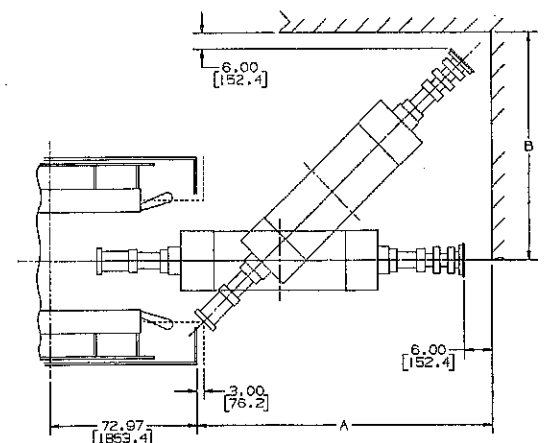
VIEW D-5 (C-3, SH 1)



VIEW B-7 (F-7, SH 1)



SYM	TURBINE COUPLING EXCURSION FROM COLD POSITION DESCRIPTION	DIM
A	MAXIMUM TOWARD TURBINE	.000 [0.00]
B	STEADY STATE TOWARD GENERATOR	.005 [0.13]
C	MAXIMUM TOWARD GENERATOR	.015 [0.38]
D	MOVEMENT TO DISENGAGE COUPLING RABBIT	.750 [19.05]
	GEN SHAFT THERMAL EXP FROM COUPLING TO CE BRG C	.130 [3.30]



METHOD OF REMOVAL	DISTANCE REQUIRED TO REMOVE ROTOR	
	A	B
STRAIGHT PULL PAST OVER FRAME	243.00 [6,172.2]	
HORIZONTAL CANTED PULL	207.00 [5,257.8]	115.00 [2,921.6]

OVERALL ROTOR LENGTH : APPROX. 222.00 [5,638.8]
LARGEST DIAMETER OF ROTOR BODY = APPROX. 34.20 [868.7]

8 7 6 5 4 3 2 1

REF ID: A11166988 4