

8

7

6

5

4

3

2

1

3052513

CAD GENERATED DRAWING

CHANGE DESCRIPTION ZONE

SYMBOL

DESCRIPTION

NOMINAL SIZE/
RATING CLASS

UNIT
FLANGE I.D.

UNIT
FLANGE
THICKNESS

REMARKS

A-C

COMPRESSOR INLET

30" - 600#

ø29.25"

5.19"

ASME B16.47 SERIES "B" RAISED FACE (RF)

B-C

COMPRESSOR DISCHARGE

12" - 600#

ø11.75"

2.87"

RAISED FACE (RF)

E-T

TURBINE EXHAUST

18" - 150#

ø17.00"

1.69"

RAISED FACE (RF)

F-T

TURBINE INLET

10" - 300#

ø9.75"

1.88"

RAISED FACE (RF)

COMPRESSOR
32M4

TURBINE
SRV4

SUPPORT
CENTER

SUPPORT
CENTER

FLANGE FACE OF
COUPLING HUB

FLANGE FACE OF
TURBINE SHAFT END

SUPPORT
CENTER

SUPPORT
CENTER

74.52"

LATER"

SEE COUPLING
DRAWING
LATER

29.38"

61.56"

ALIGNMENT
TOLERANCE

AXIAL

±0.016"

HORIZONTAL

±0.002"

VERTICAL

±0.002"

DUE TO FABRICATION TOLERANCES DIAGRAM DIMENSIONS ABOVE SHALL BE REFERENCE ONLY AND
"AS BUILT" DIMENSIONS SHALL BE TAKEN IN THE FIELD DURING FINAL COUPLING ALIGNMENT.

CALCULATED THERMAL GROWTH DATA AT SUPPORT

EQUIPMENT	COMPRESSOR		TURBINE	
SUPPORT POSITION	SUPPORT CENTER (WOBBLE END)	SUPPORT CENTER (DRIVEN END)	SUPPORT CENTER (EXHAUST END)	SUPPORT CENTER (STEAM END)
CALCULATED THERMAL GROWTH VERTICAL "Y" DIRECTION	0.000"	0.004"	0.014"	0.011"
REFERENCE SHIM THICKNESS	0.134"	0.130"	0.120"	0.123"

COLD ALIGNMENT AND THERMAL GROWTH

NOTES:
1. AFTER INITIAL ALIGNMENT OF THE UNITS, MAKE THE NECESSARY SHIM CORRECTIONS
AT THE SUPPORT FEET TO REALIGN THE UNIT FOR OPERATING CONDITIONS.
2. CALCULATIONS ARE BASED ON AN AMBIENT TEMPERATURE OF 70°F.
3. NORMAL AXIAL SHAFT END GROWTHS IN THE "X" DIRECTION ARE AS FOLLOWS:
COMPRESSOR = +0.006" TURBINE = -0.023"

THERMAL GROWTH OF NOZZLES

NOZZLE	X	Y	Z
A-C	-0.013"	-0.011"	+0.000"
B-C	-0.005"	+0.025"	-0.005"
E-T	+0.004"	+0.037"	+0.000"
F-T	+0.073"	0.057"	-0.168"

+Y

+X

+Z

SEE SHEETS 2, 3 & 4
FOR ORIENTATION
RELATIVE TO THE UNITS

USE JACKSCREW FROM SUPPORT
FOOT IN THIS TAPPED HOLE FOR
CLAMPING KEY WHEN DRILLING
& REAMING FOR TAPER DOWELS

2 #10 TAPER DOWELS
ON EACH FOOT KEY.
KEYS SHOULD BE FITTED
& DOWELED AS SHOWN
AFTER FINAL COUPLING
ALIGNMENT IN FIELD.

CASING
SUPPORT
FOOT

KEY

BASEPLATE
PEDESTAL

DETAIL "D"
TURBINE EXHAUST FOOT
TYPICAL 2X

FIELD INSTALLATION IS TO BE MADE
WITH SPACER WASHER IN POSITION
SHOWN. SPACER TO BE FIELD FIT TO
OBTAIN 0.004" TO 0.006" CLEARANCE
WHEN NUT IS TIGHT.

CENTERLINE OF DRILLED HOLE
IN CASING SUPPORT AND TAPPED
HOLE IN BASEPLATE PEDESTAL

CASING
SUPPORT
FOOT

SPACER WASHER

SPACER

BASEPLATE
PEDESTAL

DETAIL "C"
TURBINE EXHAUST FOOT
TYPICAL 4X

PLACE .010" THICK TEFLON SHIM
BETWEEN EACH CASING SUPPORT
FOOT & REQUIRED SHIM PACK FOR
FINAL ASSEMBLY. TEFLON SHIM
MUST BE ON TOP OF SHIM PACK.

1/4

4.00

1.00

2

1.00

1.75

2X ø.56

DETAIL "E"
GROUNDING LUG
TYPE 304 STAINLESS STEEL
TYPICAL 2X

T&T VALVE WEIGHT IS
APPROXIMATE PENDING
RECEIPT OF VENDOR
CERTIFIED DRAWING

APPROXIMATE WEIGHT IN POUNDS (lb)

UNIT	WEIGHT OF UNITS	WEIGHT OF HEAVIEST PIECE FOR MAINTENANCE	WEIGHT OF ROTOR
TURBINE	19500 lb	TOP HALF WITH DIAPHRAGMS 9000 lb	1212 lb
T&T VALVE AND SUPPORT	3150 lb		
COMPRESSOR	31600 lb	TOP HALF WITH DIAPHRAGMS 12750 lb ROTOR WITH ENDWALLS 4300 lb	1022 lb
BASEPLATE	13100 lb		
PIPING & MISC.	4500 lb		
PACKAGE TOTAL	71850 lb		

BASEPLATE PAD

REMOVABLE
JACKING LUG

JACKSCREW

COMPRESSOR &
TURBINE FOOT

REMOVABLE
JACKING LUG

JACKSCREW

TYPICAL JACKING LUG ARRANGEMENT

AXIAL ALIGNMENT DATA FOR COUPLING

COUPLING LOCATION		TURBINE TO COMPRESSOR
COUPLING IDENTIFICATION		LATER MODEL: LATER
NOM. SHAFT SIZE	DRIVER	INTEGRAL
	DRIVEN	ø3.00"
AXIAL PULL-UP	DRIVER	-----
	DRIVEN	0.144"
PULL-UP TOLERANCE	DRIVER	-----
	DRIVEN	±0.005"

MASTER S.O.: 20E511A001J

UNIT	SHOP ORDER
COMPRESSOR	20E511AC01J
TURBINE	20E511AT01J
LUBE OIL CONSOLE	PRLO40001
DRY GAS SEAL PACKAGE	PRLO4002
CONTROL SYSTEM	LATER

TPCGroup

APPROVED BY
S.CONROY

DESIGNED BY
J.SHUSTER

CHECKED BY
J.SHUSTER

DRAWN BY
J.SHUSTER

PROJECT NAME
TPCH-442 CC4 DMF COMPRESSOR

END USER
TEXAS PETROCHEMICAL GROUP PASADENA, TEXAS

MASTER SHOP ORDER
20E511A001J

PURCHASER
TEXAS PETROCHEMICAL GROUP PASADENA, TEXAS

SERIAL NUMBER
20E511AT01J, 20E511AC01J

P.O. NO
150867 & 150888

SET

ITEM NO
4G-4247T, 4G-4247

MODEL
SRV4, 32M4

JOB NO
420014

SERVICE
DMF COMPRESSOR

☒ FOR APPROVAL

☐ FOR RECORD

TO MAINTAIN SHIPPING PROMISE, ONCE APPROVED PRINT
MUST BE RETURNED BY: 11-27-2020

ANY REQUESTED CHANGE OF THIS EQUIPMENT WILL RESULT IN:
1. CONTRACT PRICE ADJUSTMENT.
2. EXTENDED SHIPPING PROMISE AS THIS CONTRACT IS IN THE
MANUFACTURING PROCESS.

BY: S.CONROY

DATE: 11-13-2020

BY:

DATE:

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MAIN SKID OUTLINE
DMF COMPRESSOR 4G-4247

SRV4 TURBINE & 32M4 COMPRESSOR

SIZE
E

PROJECT
20E511A001J

3052513

REV
0

SCALE: NTS

GENERATED BY: CREO

SHEET 1 OF 7

THIRD ANGLE
PROJECTION

3052513

CAUTION!!!
HOIST RINGS (4X) ARE
FOR LIFTING TOP HALF
OF COMPRESSOR ONLY.

8 HOLES (4 IN EACH
COMPRESSOR KEYBAR),
FOR #10 TAPER DOWELS.
SEE GENERAL NOTE 6

8 HOLES (2 IN EACH
COMPRESSOR FOOT),
FOR #10 TAPER DOWELS.
SEE GENERAL NOTE 6

CL UNITS

4X LEVELING PAD

55.00

17.50
TYP. 14.00

1.00

GROUNDING LUG
TYPICAL DIAGONALLY
OPPOSITE CORNER
SEE DETAIL "E" SHEET 1

37.00
LIFTING TRUNNION

101.75

"B"
SHEET 4

6X 1-1/2" NPTF
BASEPLATE DRAIN

4 HOLES (IN
TURBINE KEYBAR) FOR
#9 TAPER DOWELS.
SEE GENERAL NOTE 6

CLOSED TYPE COUPLING
GUARD AND COUPLING
PROVIDED BY ELLIOTT GROUP

APPROXIMATE
C.G. OF
PACKAGE

47.62

SEE DETAIL "C"
SHEET 1

SEE DETAIL "D"
SHEET 1

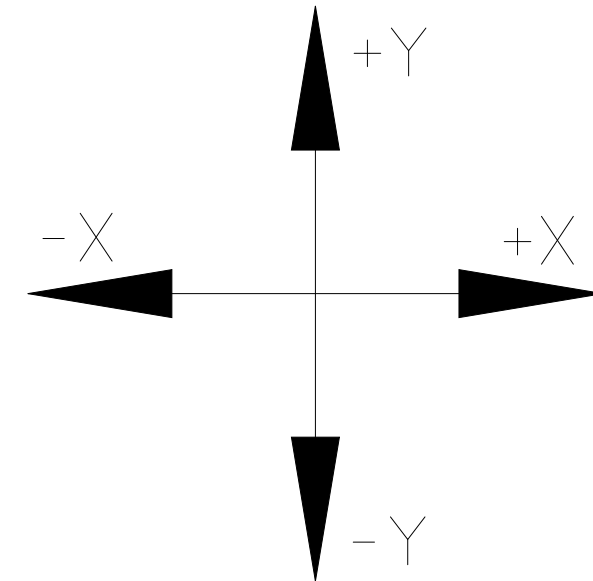
CAUTION!!!
LIFTING LUGS ARE FOR
LIFTING TOP HALF OF
TURBINE ONLY.

GROUNDING LUG
(FAR SIDE)
58.00
LIFTING TRUNNION

"A"
SHEET 4

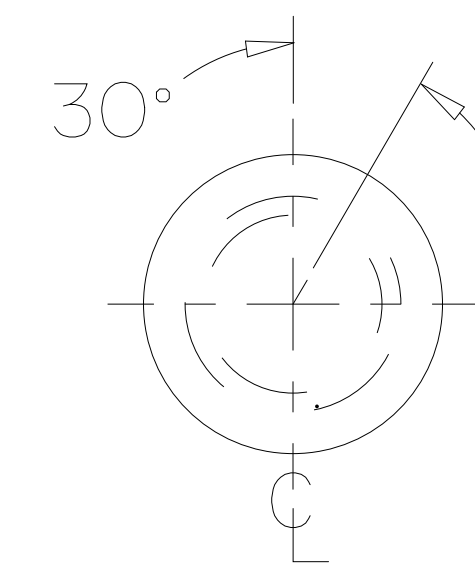
4 HOLES (IN TURBINE
BEARING HOUSING SUPPORT)
FOR #11 TAPER DOWELS.
SEE GENERAL NOTE 6

4.50
TYPICAL ANCHOR BOLT
PROJECTION ABOVE BOTTOM
BASEPLATE PADS. SEE ELLIOTT
GROUP DRAWING 3052515
FOR GROUTING INFORMATION



THERMAL GROWTH
ORIENTATION

MAXIMUM SAFE ANGLE
OF LIFT FROM VERTICAL CL
IS 30° IN ANY DIRECTION
FOR BOTH BASEPLATES AND
TOP HALVES OF MACHINES.



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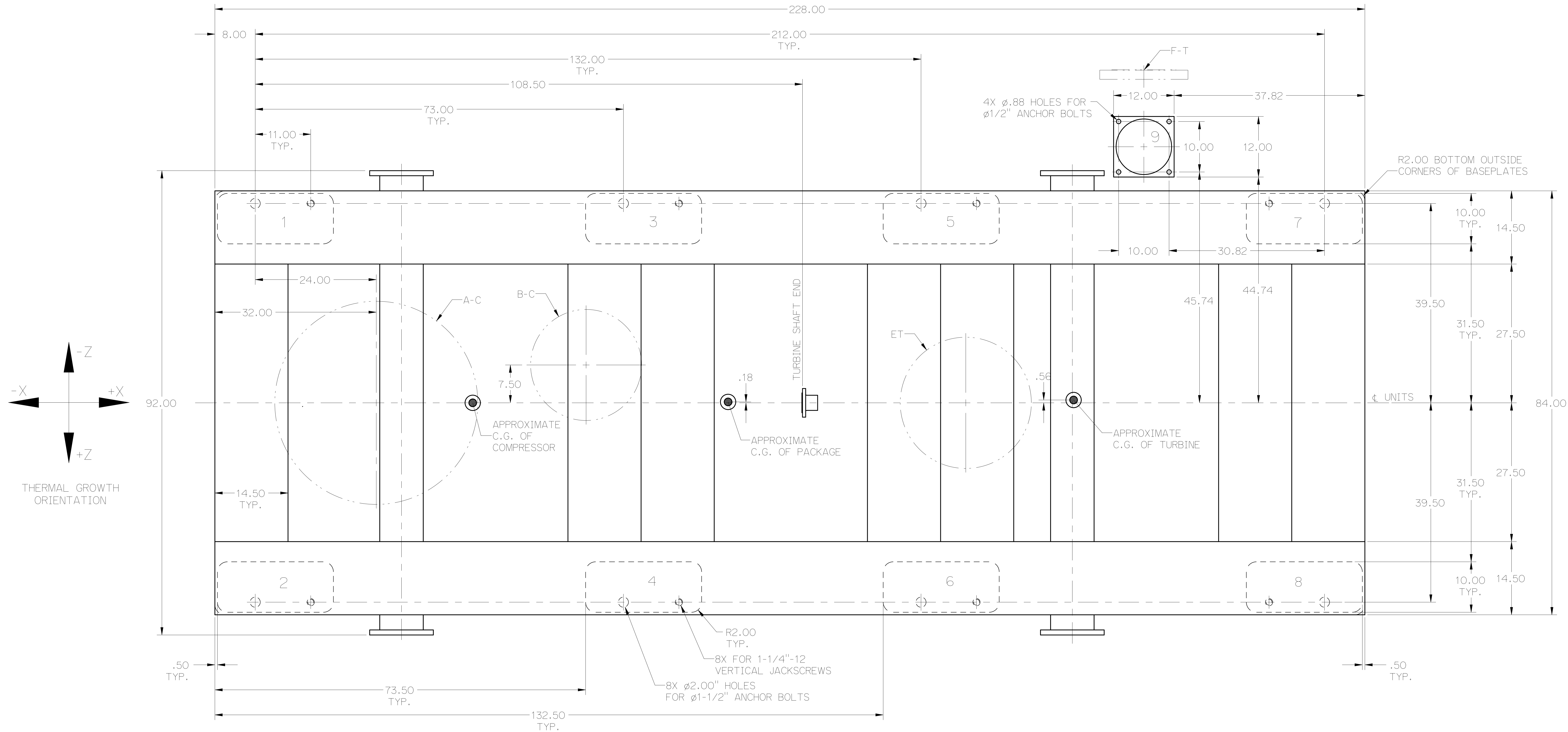
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MAIN SKID OUTLINE
DMF COMPRESSOR 4G-4247

SRV4 TURBINE & 32M4 COMPRESSOR

SIZE E	PROJECT 20E511A001J	3052513	REV 0
SCALE: NTS	GENERATED BY: CREO	SHEET 2 OF 7	

3052513



PLAN VIEW OF ANCHOR BOLT HOLES AND CONTACT SURFACES

STATIC PAD LOADS
ALL STATIC LOADING
IS IN THE VERTICAL
DOWNWARD DIRECTION.

PAD WEIGHT IN LBS	
1	7068 lb
2	7011 lb
3	11431 lb
4	11340 lb
5	10385 lb
6	10302 lb
7	5604 lb
8	5559 lb
9	3150 lb

DYNAMIC PAD LOADS
DYNAMIC LOADING IS IN THE
VERTICAL OR HORIZONTAL
TRANSVERSE DIRECTION. ZERO
IN THE AXIAL DIRECTION.

PAD WEIGHT IN LBS	
1	±103 lb
2	±103 lb
3	±174 lb
4	±174 lb
5	±180 lb
6	±180 lb
7	±102 lb
8	±102 lb
9	±0 lb

ANCHOR BOLT TORQUE VALUES
30,000 PSI INTERNAL BOLT STRESS

NOMINAL BOLT DIAMETER (INCHES)	NUMBER OF THREADS (PER INCH)	TORQUE (FT-LB)
1-1/2	6	930
1-1/2	8	800

ALL TORQUE VALUES ARE BASED ON ANCHOR BOLTS WITH THREADS
WELL LUBRICATED WITH OIL (NOT ANTI-SEIZE COMPOUND). THE USE
OF ANTI-SEIZE COMPOUNDS WILL REDUCE THESE TORQUE VALUES.



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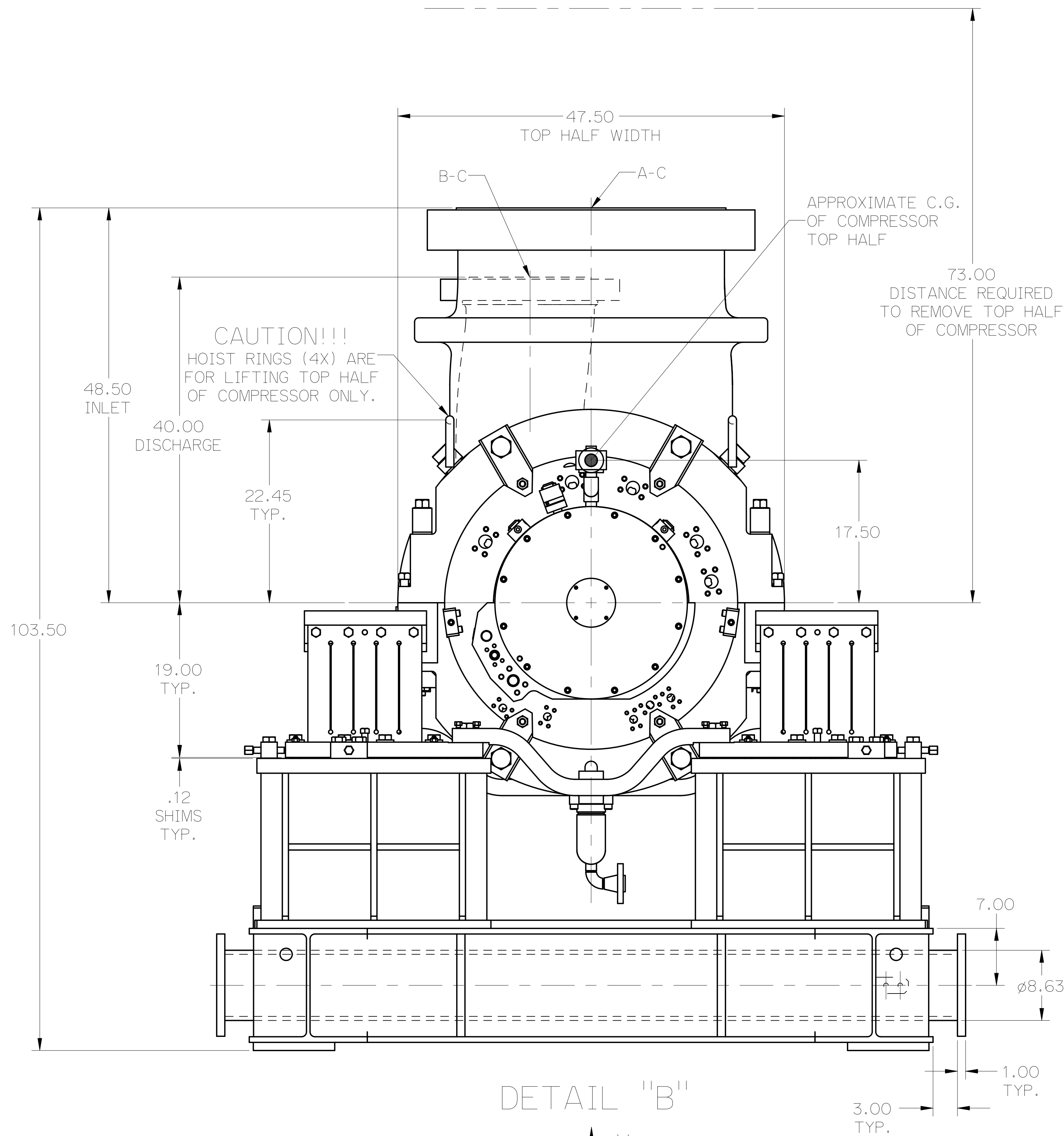
MAIN SKID OUTLINE
DMF COMPRESSOR 4G-4247

SRV4 TURBINE & 32M4 COMPRESSOR

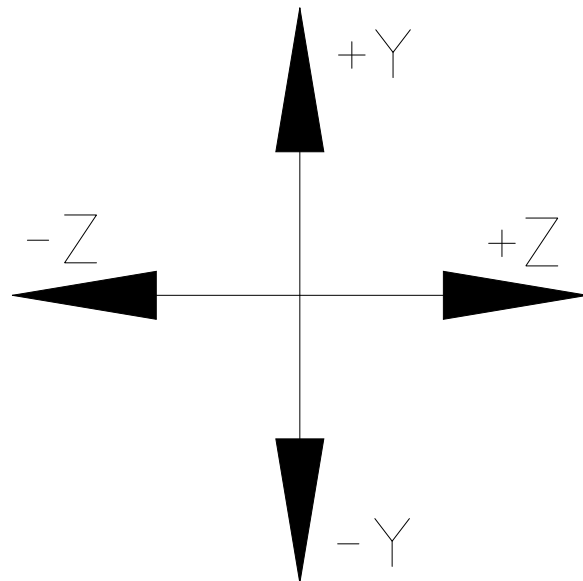
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3052513

ROTATION

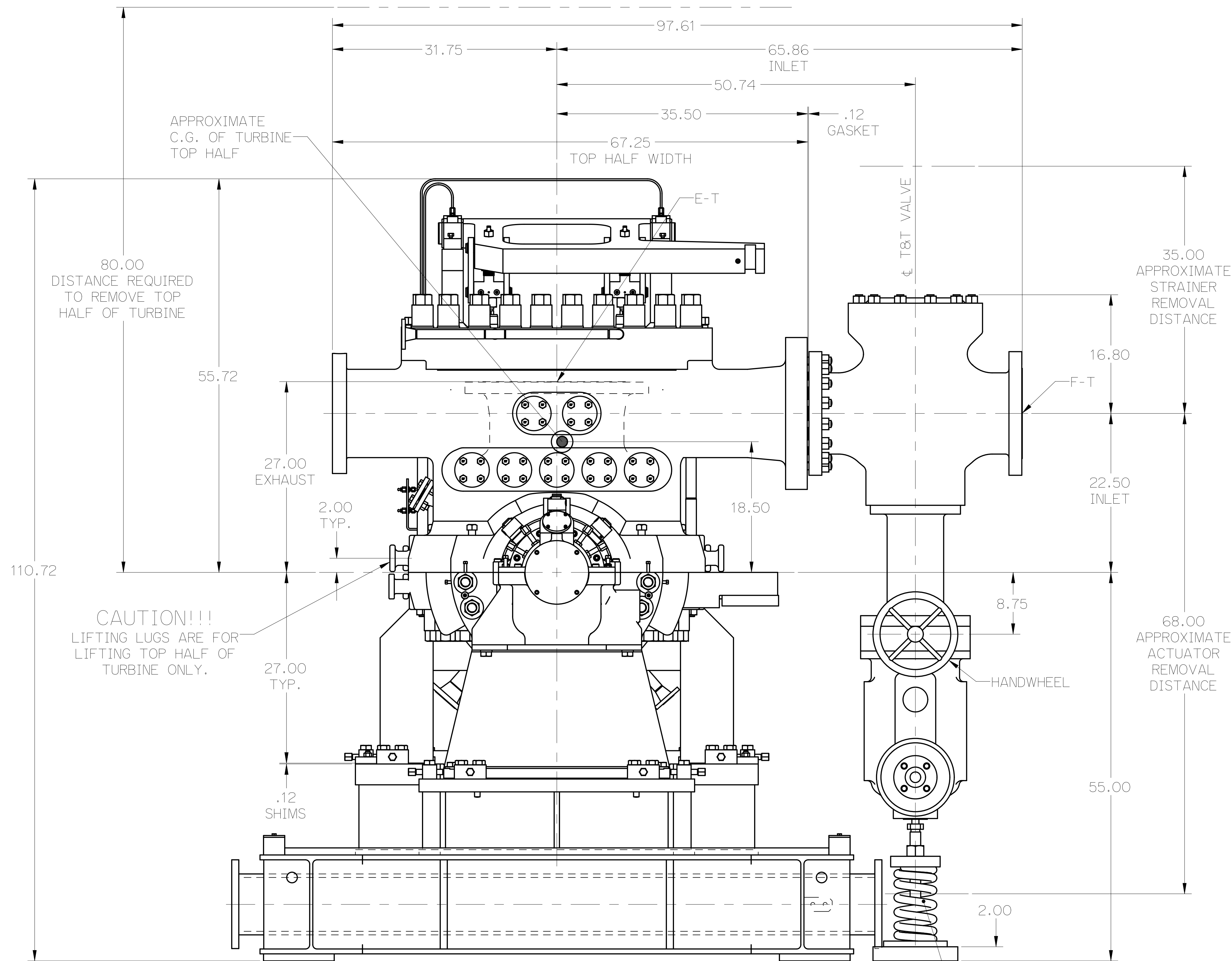


DETAIL "B"

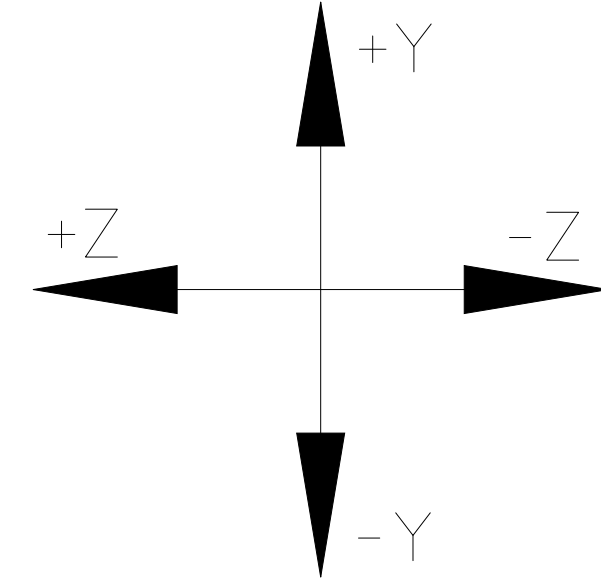


THERMAL GROWTH
ORIENTATION

ROTATION



DETAIL "A"



THERMAL GROWTH
ORIENTATION

ALL DIMENSIONS FOR
T&T VALVE ARE
PRELIMINARY PENDING
RECEIPT OF VENDOR
CERTIFIED DRAWING

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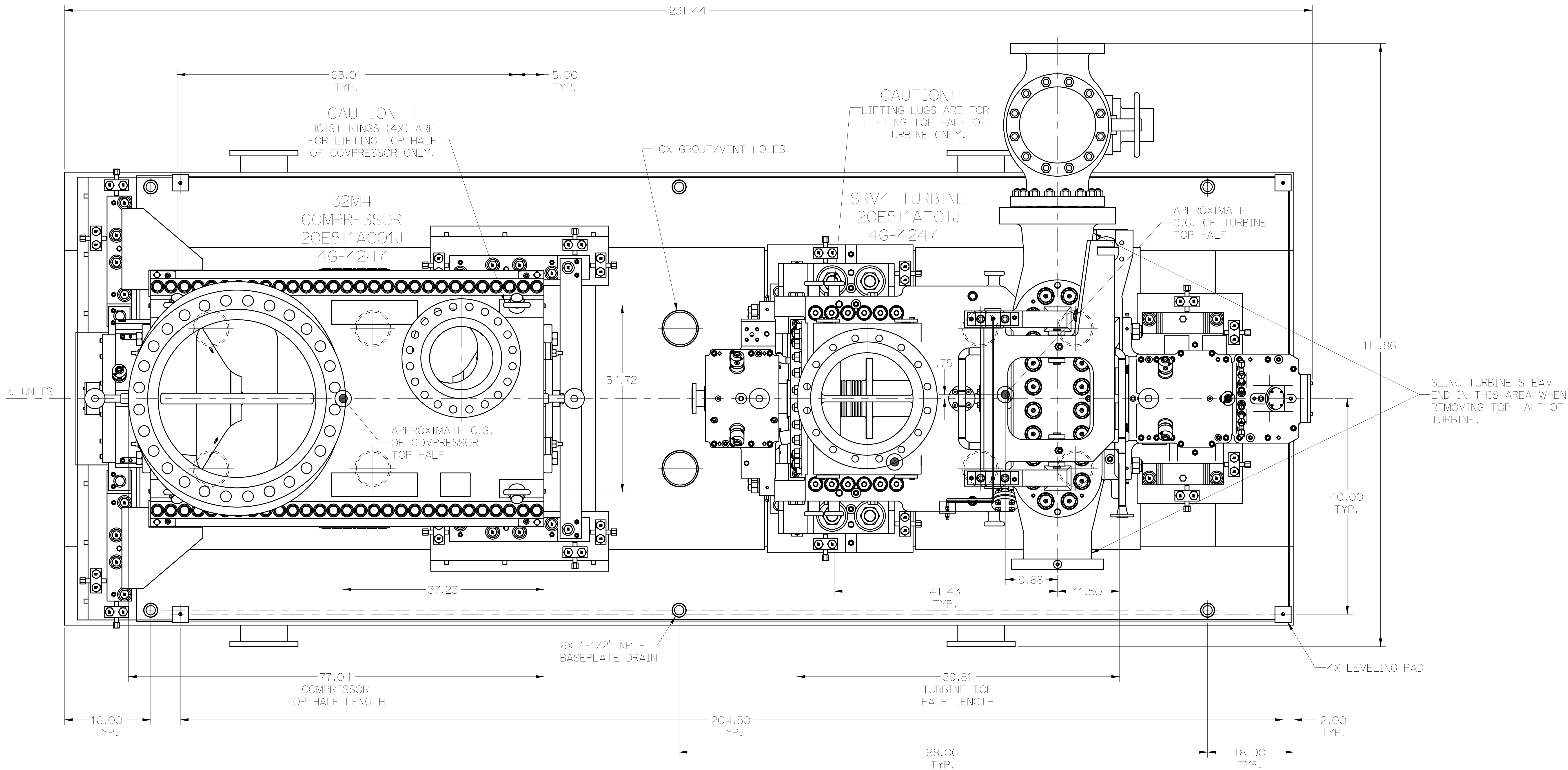
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DMF COMPRESSOR 4G-4247

SRV4 TURBINE & 32M4 COMPRESSOR

SIZE E	PROJECT 20E511A001J	3052513	REV 0
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EQUIPMENT PLAN VIEW



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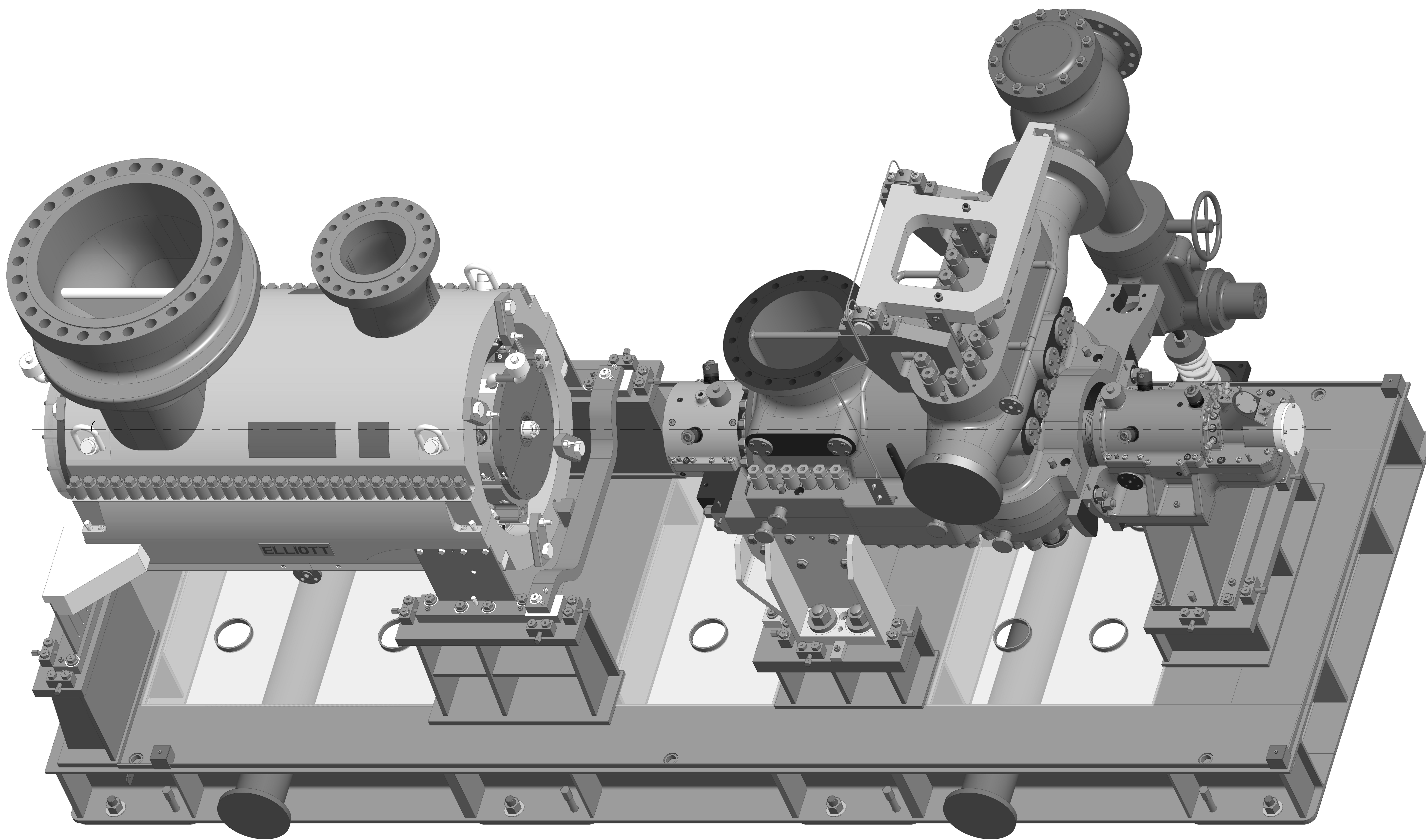
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SRV4 TURBINE & 32M4 COMPRESSOR

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CAD GENERATED DRAWING
CHANGE DESCRIPTION ZONE



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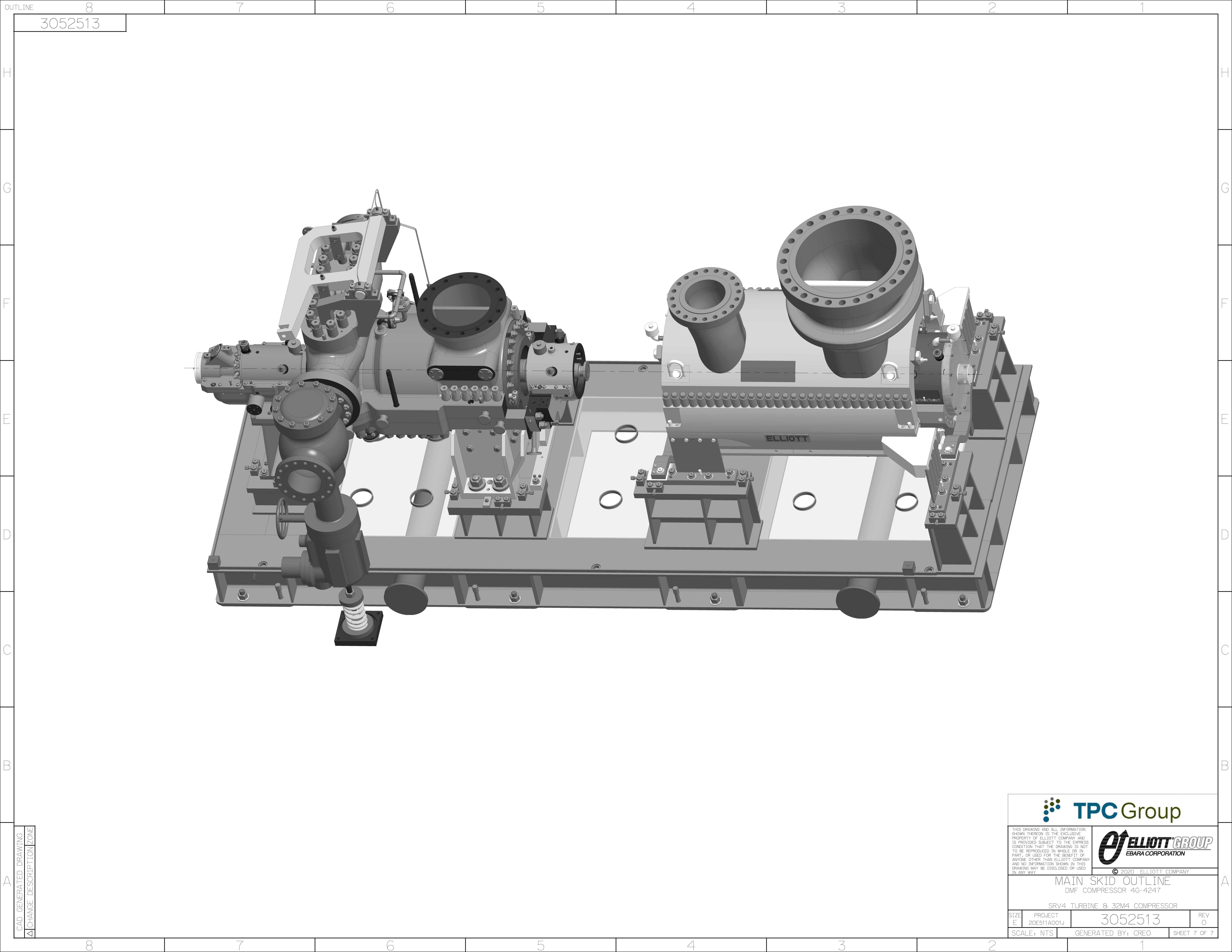


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SRV4 TURBINE 8 32M4 COMPRESSOR

SIZE E	PROJECT 20E511A001J	3052513	REV 0
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SRV4 TURBINE 8 32M4 COMPRESSOR

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SCALE: NTS		GENERATED BY: CREO	SHEET 7 OF 7