

Stress Analysis Report

Document # 001

| | | | | |
|-------------|------------|--------------------|-----------|----------------|
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| Date | Rev | Description | By | Checked |

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1 SUMMARY

The analysis was performed in accordance with ASME B31.3 (2022) and included a review of nozzle loads on all connected equipment (Dryer and Cyclone). The analysis model was developed based on Microtec's design, which included isometric drawings and equipment data, as well as process information provided by Microtec.

The analysis results confirm that all piping stresses and equipment nozzle loads are within the allowable limits set by the governing code and relevant industry standards. This report summarizes the methodology and results, with supporting documentation included in the appendices.

2 ANALYSIS AND EVALUATION

The following documents, provided by Microtec, were used for this analysis:

- General Arrangement Drawing of Dryer and Cyclone

2.1 SCOPE OF ANALYSIS

A piping stress analysis was performed for the Dryer Air piping system designed and installed by Microtec at the Plant.

The scope of the analysis included the following expandable-fluid lines and inputs:

- Piping from Dryer to Cyclone as shown in Figure 1.
- Design Temperature = 170 C, Design Pressure = 0.5 bar
- Pipe/Duct Thickness = 3mm
- Pipe/Duct Material= AISI SS 316
- Wind, seismic, and equipment vibration effects are not considered in stress analysis.
- Modelling the actual rectangular cross-sections of components is time-consuming and, in some cases, impractical. Therefore, equivalent tubular cross-sections are adopted as a reasonable approximation for the stress analysis of these components.

The analysis ensures that the piping system complies with the flexibility and stress requirements of ASME B31.3 (2022) and that mechanical loads imparted to the equipment remain within acceptable limits.

Nozzle loads for the connected equipment (Dryer and Cyclone) were evaluated and compared against the allowable limits outlined in Table 1.

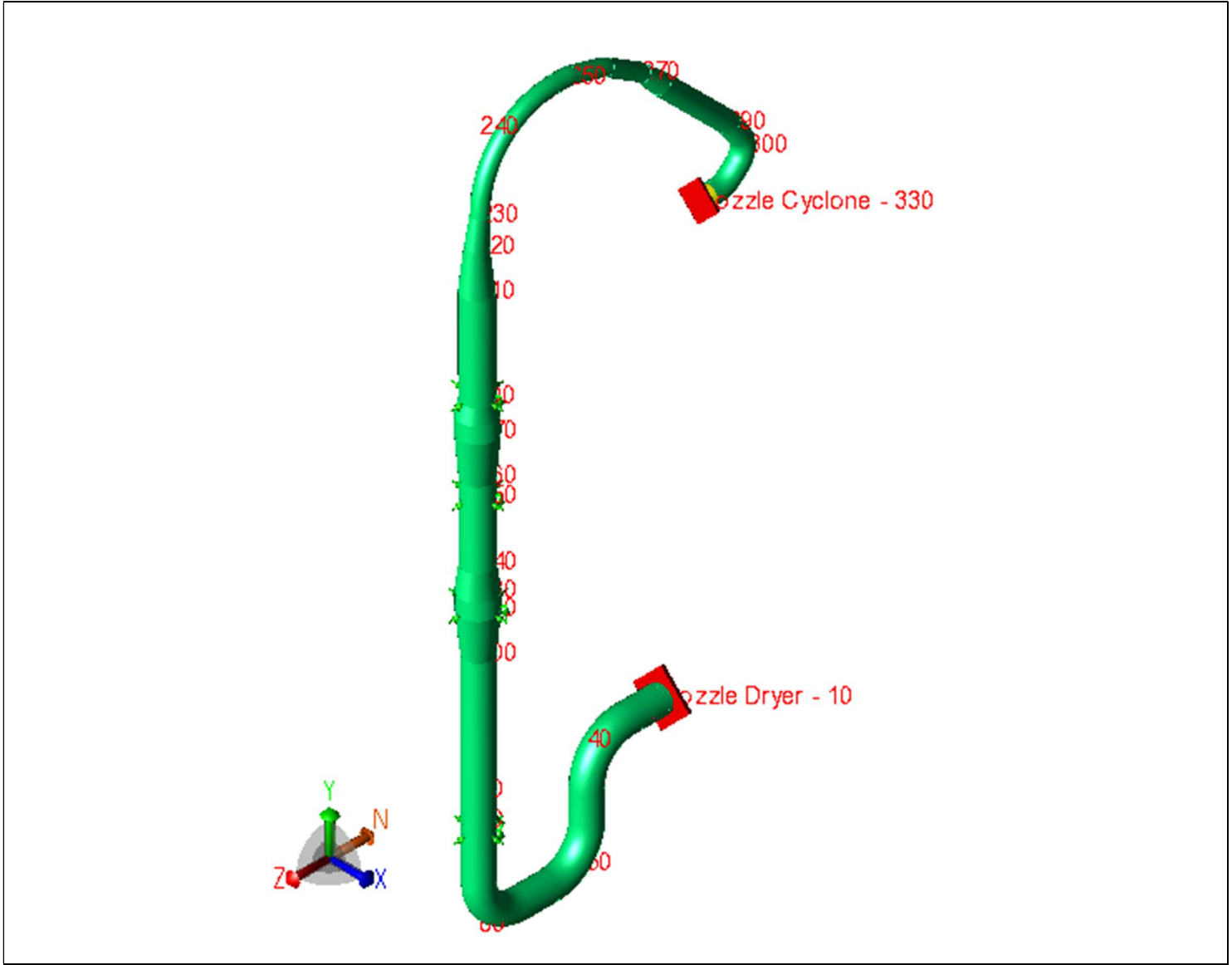


Figure 1 – Dryer to Cyclone

| Equipment | Node | Nozzle size | Nozzle Load (max) (ABS) | | | | | | | | F % of Allowable | M % of Allowable | FR (lb) | MR (ft-lbs) | Basis |
|----------------|------|-------------|-------------------------|----------|----------|----------|-------------|-------------|-------------|-------------|------------------|------------------|---------|-------------|-------------------------------------|
| | | | Fx (lbf) | Fy (lbf) | Fz (lbf) | FR (lbf) | Mx (ft-lbs) | My (ft-lbs) | Mz (ft-lbs) | MR (ft-lbs) | | | | | |
| Nozzle Dryer | 10 | 1300 mm | 0 | 8296 | 577 | 8316 | 9400 | 0 | 0 | 9400 | 88% | 99% | 9500 | 9500 | Similar Equipment Nozzle Allowables |
| Nozzle Cyclone | 330 | 604 mm | 0 | 9315 | 577 | 9326 | 8725 | 0 | 0 | 8725 | 98% | 92% | 9500 | 9500 | |

Table 1 – Nozzle loads

2.2 RESULTS

The piping design for the Air Dryer by Microtec at the Plant complies with the required code stress criteria by ASME B31.3 2022 process piping Code for Pressure Piping.

All equipment nozzle loads were evaluated and found to be within acceptable limits.

APPENDIX 1 – CAESAR II INPUT

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
Job:: DRYER CYCLONE-01A
Licensed To:: Edit name in <system>\company.txt

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LISTING OF STATIC LOAD CASES FOR THIS ANALYSIS

- 1 (OPE) W+T1+P1
- 2 (Alt-SUS) W+P1
- 3 (SUS) W+P1
- 4 (EXP) L4=L1-L3

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INPUT LISTING

Job Description:

PROJECT: 2720A Vertical Pipeworks Header

CLIENT :

ANALYST:

NOTES :

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PIPE DATA

 From 10 Nozzle Dryer To 20 DZ= .152 m.

PIPE

Dia= 1,320.800 mm Wall= 2.997 mm

GENERAL

T1= 170 C P1= .5171 bar Mat= (163)A312 TP316 E= 195,129 N/mm2

EH1= 184,593 N/mm2 EH2= 195,129 N/mm2 EH3= 195,129 N/mm2

EH4= 195,129 N/mm2 EH5= 195,129 N/mm2 EH6= 195,129 N/mm2

EH7= 195,129 N/mm2 EH8= 195,129 N/mm2 EH9= 195,129 N/mm2 v = .292

Pipe Den=8027.1997070 kg/m3 Fluid Den= 11.0719995 kg/m3

Insul Thk= .000 mm

RESTRAINTS

Node 10 X

Node 10 Y

Node 10 Z

Node 10 RX Kr= 90,384 N.m./deg

Node 10 RY

Node 10 RZ

ALLOWABLE STRESSES

B31.3 (2022) Cycle Max Switch = --- Sc= 138 N/mm2 Sh1= 99 N/mm2

Sh2= 138 N/mm2 Sh3= 138 N/mm2 Sh4= 138 N/mm2 Sh5= 138 N/mm2

Sh6= 138 N/mm2 Sh7= 138 N/mm2 Sh8= 138 N/mm2 Sh9= 138 N/mm2

Sy= 207 N/mm2

 From 20 To 30 DZ= .127 m.

 From 30 To 40 DZ= 2.286 m.

GENERAL

T1= 170 C

BEND at "TO" end

Radius= 1,981.200 mm (LONG) Bend Angle= 90.000 Angle/Node @1= 45.00 39

Angle/Node @2= .00 38

 From 40 To 50 DY= -5.436 m.

BEND at "TO" end

Radius= 1,981.200 mm (LONG) Bend Angle= 90.000 Angle/Node @1= 45.00 49

Angle/Node @2= .00 48

 From 50 To 60 DZ= 5.499 m.

BEND at "TO" end

Radius= 1,981.200 mm (LONG) Bend Angle= 90.000 Angle/Node @1= 45.00 59

Angle/Node @2= .00 58

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INPUT LISTING

 From 60 To 70 DY= 4.252 m.

RESTRAINTS

Node 70 +Y
 Node 70 Z Gap= 25.400 mm
 Node 70 X Gap= 25.400 mm

 From 70 To 80 DY= .457 m.

 From 80 To 90 DY= 1.270 m.

 From 90 To 100 DY= 6.076 m.

GENERAL

T1= 170 C

 From 100 To 110 DY= 1.999 m.

REDUCER

Diam2= 1,727.200 mm Wall12= 2.997 mm Angle= 45.00

 From 110 To 120 DY= .102 m.

PIPE

Dia= 1,727.200 mm Wall= 2.997 mm
 Insul Thk= .000 mm

RESTRAINTS

Node 120 +Y
 Node 120 Z Gap= 25.400 mm
 Node 120 X Gap= 25.400 mm

 From 120 To 130 DY= .698 m.

 From 130 To 140 DY= 1.199 m.

REDUCER

Diam2= 1,397.000 mm Wall12= 2.997 mm Angle= 45.00

 From 140 To 150 DY= 3.000 m.

PIPE

Dia= 1,397.000 mm Wall= 2.997 mm
 Insul Thk= .000 mm

RESTRAINTS

Node 150 +Y
 Node 150 X Gap= 25.400 mm
 Node 150 Z Gap= 25.400 mm

 From 150 To 160 DY= .826 m.

 From 160 To 170 DY= 1.999 m.

REDUCER

Diam2= 1,727.200 mm Wall12= 2.997 mm Angle= 45.00

 From 170 To 180 DY= .800 m.

PIPE

Dia= 1,727.200 mm Wall= 2.997 mm
 Insul Thk= .000 mm

 From 180 To 190 DY= .692 m.

REDUCER

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INPUT LISTING

```

Diam2= 1,397.000 mm   Wall2= 2.997 mm   Angle= 45.00
-----
From 190 To 200 DY= .076 m.
PIPE
  Dia= 1,397.000 mm   Wall= 2.997 mm
  Insul Thk= .000 mm
RESTRAINTS
  Node 200 +Y
  Node 200 X   Gap= 25.400 mm
  Node 200 Z   Gap= 25.400 mm
-----
From 200 To 210 DY= 4.651 m.
-----
From 210 To 220 DY= 1.948 m.
REDUCER
  Diam2= 949.960 mm   Wall2= 2.997 mm   Angle= 45.00
-----
From 220 To 230 DY= 1.356 m.   DZ= -.170 m.
PIPE
  Dia= 949.960 mm   Wall= 2.997 mm
  Insul Thk= .000 mm
REDUCER
  Diam2= 749.300 mm   Wall2= 2.997 mm   Angle= 45.00
-----
From 230 To 240 DY= 3.884 m.
PIPE
  Dia= 749.300 mm   Wall= 2.997 mm
  Insul Thk= .000 mm
BEND at "TO" end
  Radius= 3,746.500 mm (5D) a   Bend Angle= 90.000   Angle/Node @1= 45.00 239
  Angle/Node @2= .00 238
-----
From 240 To 250 DZ= -4.470 m.
BEND at "TO" end
  Radius= 1,123.950 mm (LONG)   Bend Angle= 15.524   Angle/Node @1= 7.76 249
-----
From 250 To 260 DY= -.508 m.   DZ= -1.829 m.
BEND at "TO" end
  Radius= 1,123.950 mm (LONG)   Bend Angle= 16.342   Angle/Node @1= 8.17 259
-----
From 260 To 270 DY= -1.168 m.   DZ= -1.880 m.
BEND at "TO" end
  Radius= 1,123.950 mm (LONG)   Bend Angle= 13.207   Angle/Node @1= 6.60 269
  Angle/Node @2= .00 268
-----
From 270 To 280 DY= -.996 m.   DZ= -.993 m.
REDUCER
  Diam2= 949.960 mm   Wall2= 2.997 mm   Angle= 45.00
-----
From 280 To 290 DY= -3.429 m.   DZ= -3.429 m.
PIPE
  Dia= 949.960 mm   Wall= 2.997 mm
  Insul Thk= .000 mm
BEND at "TO" end
  Radius= 949.960 mm (SHORT)   Bend Angle= 10.008   Angle/Node @1= 5.00 289
  Angle/Node @2= .00 288

```

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INPUT LISTING

```
-----
From 290 To 300 DY= -1.524 m. DZ= -1.067 m.
BEND at "TO" end
  Radius= 949.960 mm (SHORT Bend Angle= 81.161 Angle/Node @1= 40.58 299
-----
From 300 To 310 DY= -1.219 m. DZ= 1.270 m.
BEND at "TO" end
  Radius= 1,424.940 mm (LONG) Bend Angle= 43.831 Angle/Node @1= 21.92 309
-----
From 310 To 320 DZ= .762 m.
-----
From 320 To 330 Nozzle Cyclone DZ= .508 m.
RESTRAINTS
  Node 330 X
  Node 330 Y
  Node 330 Z
  Node 330 RX Kr= 11,298 N.m./deg
  Node 330 RY
  Node 330 RZ
REDUCER
  Diam2= 609.600 mm Wall2= 2.997 mm Angle= 45.00
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```

```
NODENAMES
  10      20 From= Nozzle Dryer To=
  320     330 From= To= Nozzle Cyclone
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```

MATERIAL Changes:

10 Nozzle Dryer 20

```
Mat= (163)A312 TP316 E= 195,129 N/mm2 v = .292
Density= 8,027.1997 kg/m3
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JOBNAME: H:\MICROTEC\2025-12-24\DRYER CYCLONE-01A
```

ALLOWABLE STRESS Changes

10 Nozzle Dryer 20

```
B31.3 (2022) Cycle Max Switch = --- Sc= 138 N/mm2 Sh1= 99 N/mm2
Sh2= 138 N/mm2 Sh3= 138 N/mm2 Sh4= 138 N/mm2 Sh5= 138 N/mm2
Sh6= 138 N/mm2 Sh7= 138 N/mm2 Sh8= 138 N/mm2 Sh9= 138 N/mm2
Sy= 207 N/mm2
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BEND ELEMENTS

30 40

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INPUT LISTING

Diam2= 1,397.000 mm Wall12= 2.997 mm Angle= 45.00
160 170

Diam2= 1,727.200 mm Wall12= 2.997 mm Angle= 45.00
180 190

Diam2= 1,397.000 mm Wall12= 2.997 mm Angle= 45.00
210 220

Diam2= 949.960 mm Wall12= 2.997 mm Angle= 45.00
220 230

Diam2= 749.300 mm Wall12= 2.997 mm Angle= 45.00
270 280

Diam2= 949.960 mm Wall12= 2.997 mm Angle= 45.00
320 330 Nozzle Cyclone

Diam2= 609.600 mm Wall12= 2.997 mm Angle= 45.00
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RESTRAINTS

10 Nozzle Dryer 20

RESTRAINTS

| | | | | | | | |
|------|------|------|----|----------|-------------|-------|----------------|
| Node | 10 | Type | X | Dir Vec= | 1.000 | .000 | .000 |
| Node | 10 | Type | Y | Dir Vec= | .000 | 1.000 | .000 |
| Node | 10 | Type | Z | Dir Vec= | .000 | .000 | 1.000 |
| Node | 10 | Type | RX | STIF1= | 90,384 N/mm | | Dir Vec= 1.000 |
| .000 | .000 | | | | | | |
| Node | 10 | Type | RY | Dir Vec= | .000 | 1.000 | .000 |
| Node | 10 | Type | RZ | Dir Vec= | .000 | .000 | 1.000 |
| | 60 | | | | | | 70 |

RESTRAINTS

| | | | | | | | |
|----------|-------|------|-------|-----------------|------|----------|------|
| Node | 70 | Type | +Y | Dir Vec= | .000 | 1.000 | .000 |
| Node | 70 | Type | Z | Len/GAP/STIF2 = | | 25.40 mm | |
| Dir Vec= | .000 | .000 | 1.000 | | | | |
| Node | 70 | Type | X | Len/GAP/STIF2 = | | 25.40 mm | |
| Dir Vec= | 1.000 | .000 | .000 | | | | |
| | 110 | | | | | | 120 |

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INPUT LISTING

RESTRAINTS

| | | | | | | | |
|----------|-------|------|-------|-----------------|------|-------|------|
| Node | 120 | Type | +Y | Dir Vec= | .000 | 1.000 | .000 |
| Node | 120 | Type | Z | Len/GAP/STIF2 = | | 25.40 | mm |
| Dir Vec= | .000 | .000 | 1.000 | | | | |
| Node | 120 | Type | X | Len/GAP/STIF2 = | | 25.40 | mm |
| Dir Vec= | 1.000 | .000 | .000 | | | | |

140

150

RESTRAINTS

| | | | | | | | |
|----------|-------|------|-------|-----------------|------|-------|------|
| Node | 150 | Type | +Y | Dir Vec= | .000 | 1.000 | .000 |
| Node | 150 | Type | X | Len/GAP/STIF2 = | | 25.40 | mm |
| Dir Vec= | 1.000 | .000 | .000 | | | | |
| Node | 150 | Type | Z | Len/GAP/STIF2 = | | 25.40 | mm |
| Dir Vec= | .000 | .000 | 1.000 | | | | |

190

200

RESTRAINTS

| | | | | | | | |
|----------|-------|------|-------|-----------------|------|-------|------|
| Node | 200 | Type | +Y | Dir Vec= | .000 | 1.000 | .000 |
| Node | 200 | Type | X | Len/GAP/STIF2 = | | 25.40 | mm |
| Dir Vec= | 1.000 | .000 | .000 | | | | |
| Node | 200 | Type | Z | Len/GAP/STIF2 = | | 25.40 | mm |
| Dir Vec= | .000 | .000 | 1.000 | | | | |

320

330 Nozzle Cyclone

RESTRAINTS

| | | | | | | | |
|------|------|------|----|----------|--------|-------|----------------|
| Node | 330 | Type | X | Dir Vec= | 1.000 | .000 | .000 |
| Node | 330 | Type | Y | Dir Vec= | .000 | 1.000 | .000 |
| Node | 330 | Type | Z | Dir Vec= | .000 | .000 | 1.000 |
| Node | 330 | Type | RX | STIF1= | 11,298 | N/mm | Dir Vec= 1.000 |
| .000 | .000 | | | | | | |
| Node | 330 | Type | RY | Dir Vec= | .000 | 1.000 | .000 |
| Node | 330 | Type | RZ | Dir Vec= | .000 | .000 | 1.000 |

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INPUT UNITS USED...

UNITS= SI-Bar NOM/SCH INPUT= ON

| | | | | | |
|------------------|-------------|---|--------|---|-------|
| LENGTH | inches | x | 25.400 | = | mm |
| FORCE | pounds | x | 4.448 | = | N |
| MASS (dynamics) | pounds | x | 0.454 | = | kg |
| MOMENTS (INPUT) | inch-pounds | x | 0.113 | = | N.m |
| MOMENTS (OUTPUT) | inch-pounds | x | 0.113 | = | N.m |
| STRESS | lbs./sq.in. | x | 0.007 | = | N/mm2 |
| TEMP. SCALE | degrees F. | x | 0.556 | = | C |
| PRESSURE | psig | x | 0.069 | = | bar |

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INPUT LISTING

| | | | | | |
|------------------|-------------|---|-----------|---|----------|
| ELASTIC MODULUS | lbs./sq.in. | x | 0.007 | = | N/mm2 |
| PIPE DENSITY | lbs./cu.in. | x | 27680.000 | = | kg/m3 |
| INSULATION DENS. | lbs./cu.in. | x | 27680.000 | = | kg/m3 |
| FLUID DENSITY | lbs./cu.in. | x | 27680.000 | = | kg/m3 |
| TRANSL. STIF | lbs./in. | x | 0.175 | = | N/mm |
| ROTATIONAL STIF | in.lb./deg. | x | 0.113 | = | N.m./deg |
| UNIFORM LOAD | lb./in. | x | 0.175 | = | N/mm |
| G LOAD | g's | x | 1.000 | = | g's |
| WIND LOAD | lbs./sq.in. | x | 6894.757 | = | N/m2 |
| ELEVATION | inches | x | 0.025 | = | m. |
| COMPOUND LENGTH | inches | x | 0.025 | = | m. |
| DIAMETER | inches | x | 25.400 | = | mm |
| WALL THICKNESS | inches | x | 25.400 | = | mm |

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SETUP FILE PARAMETERS

```

-----
CONNECT GEOMETRY THRU CNODES =      YES
MIN ALLOWED BEND ANGLE =              5.00000
MAX ALLOWED BEND ANGLE =              95.0000
BEND LENGTH ATTACHMENT PERCENT =      1.00000
MIN ANGLE TO ADJACENT BEND PT =       5.00000
LOOP CLOSURE TOLERANCE =              25.4000    mm
THERMAL BOWING HORZ TOLERANCE =       0.100000E-03
AUTO NODE NUMBER INCREMENT=          10.0000
Z AXIS UP=                            NO
USE PRESSURE STIFFENING =              DEFAULT
ALPHA TOLERANCE =                     0.500000E-01
RESLD-FORCE =                          NO
HGR DEF RESWGT STIF =                  0.175120E+12  N/mm
DECOMP SNG TOL =                       0.100000E+11
BEND AXIAL SHAPE =                     YES
FRICT STIF =                           175120.      N/mm
FRICT NORM FORCE VAR =                  0.150000
FRICT ANGLE VAR =                      15.0000
FRICT SLIDE MULT =                     1.00000
ROD TOLERANCE =                        1.00000
ROD INC =                               2.00000
INCORE NUMERICAL CHECK =               NO
OUTCORE NUMERICAL CHECK =              NO
DEFAULT TRANS RESTRAINT STIFF=         0.175120E+12  N/mm
DEFAULT ROT RESTRAINT STIFF=           0.112980E+12  N.m./deg
IGNORE SPRING HANGER STIFFNESS =      NO
MISSING MASS ZPA =                     EXTRACTED
MIN WALL MILL TOLERANCE =              12.5000
WRC-107 VERSION =                      MAR 79 1B1/2B1
WRC-107 INTERPOLATION =                LAST VALUE
DEFAULT AMBIENT TEMPERATURE=           21.1142      C
BOURDON PRESSURE=                      NONE
COEFFICIENT OF FRICTION (MU) =         0.000000
INCLUDE SPRG STIF IN HGR OPE =         NO
INCLUDE INSULATION IN HYDROTEST =      NO
REDUCED INTERSECTION =                 B31.1 (POST1980)
USE WRC329                             NO
NO REDUCED SIF FOR RFT AND WLT        NO
B31.1 REDUCED Z FIX =                  YES

```

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INPUT LISTING

```

CLASS 1 BRANCH FLEX                NO
ALL STRESS CASES CORRODED =        NO
ADD TORSION IN SL STRESS =         DEFAULT
ADD F/A IN STRESS =                DEFAULT
OCCASIONAL LOAD FACTOR =           0.000000
DEFAULT CODE =                     B31.3 2022
B31.3 SUS CASE SIF FACTOR =        0.000000
ALLOW USERS BEND SIF =             NO
USE SCHNEIDER                       NO
YIELD CRITERION STRESS =           MAX 3D SHEAR
USE PD/4T                           NO
BASE HOOP STRESS ON ? =            ID
EN13480 USE IN OUTPLANE SIFS=      NO
LIBERAL EXPANSION ALLOWABLE=       YES
B31.3 SEC 319.2.3C SAXIAL=         Default
B31.3 WELDING/CONTOUR TEE ISB16.9 FALSE
PRESSURE VARIATION IN EXP CASE=    DEFAULT
Use Alt Rules Stress Range         NO
IMPLEMENT B313 CODE CASE 178       YES
IGNORE B31.1/B31.3 Wc FACTOR=      YES
APPLY B31J SIFS & FLEX=            DEFAULT
ENFORCE B31J SIFS ONLY=            FALSE
USE FRP SIF =                       YES
USE FRP FLEX =                      YES
BS 7159 Pressure Stiffening=       Design Strain
FRP Property Data File=            CAESAR.FRP
FRP Emod (axial) =                  22064.0      N/mm2
FRP Ratio Gmod/Emod (axial) =      0.250000
FRP Ea/Eh*Vh/a =                   0.152730
FRP Laminate Type =                THREE
FRP Alpha =                         21.5983      C
FRP Density =                       1660.80     kg/m3
EXCLUDE f2 FROM UKOOA BENDING =    NO
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```

EXECUTION CONTROL PARAMETERS

```

Rigid/ExpJt Print Flag ..... 1.000
Bourdon Option ..... .000
Loop Closure Flag ..... 2.000
Thermal Bowing Delta Temp .. .000 C
Liberal Allowable Flag ..... 1.000
Uniform Load Option ..... .000

Ambient Temperature ..... 21.114 C
Plastic (FRP) Alpha ..... 21.598
Plastic (FRP) GMOD/EMODa ... .250
Plastic (FRP) Laminate Type. 3.000
Eqn Optimizer ..... .000
Node Selection ..... .000
Eqn Ordering ..... .000
Collins ..... .000
Degree Determination ..... .000
User Eqn Control ..... .000

```

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INPUT LISTING

North Direction -Z
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COORDINATE REPORT

```

/----- (mm ) -----/
NODE      X      Y      Z
  10      .000    .000    .000
  20      .000    .000   152.400
  30      .000    .000   279.400
  40      .000    .000  2565.400
  50      .000  -5435.600  2565.400
  60      .000  -5435.600  8064.500
  70      .000  -1183.640  8064.500
  80      .000   -726.440  8064.500
  90      .000    543.560  8064.500
 100      .000    6619.239  8064.500
 110      .000    8618.219  8064.500
 120      .000    8719.818  8064.500
 130      .000    9418.318  8064.500
 140      .000   10617.198  8064.500
 150      .000   13616.938  8064.500
 160      .000   14442.438  8064.500
 170      .000   16441.418  8064.500
 180      .000   17241.518  8064.500
 190      .000   17933.414  8064.500
 200      .000   18009.613  8064.500
 210      .000   22660.354  8064.500
 220      .000   24608.533  8064.500
 230      .000   25964.893  7894.320
 240      .000   29848.555  7894.320
 250      .000   29848.555  3423.918
 260      .000   29340.555  1595.117
 270      .000   28172.154  -284.484
 280      .000   27176.475  -1277.624
 290      .000   23747.475  -4706.624
 300      .000   22223.475  -5773.424
 310      .000   21004.275  -4503.423
 320      .000   21004.275  -3741.423
 330      .000   21004.275  -3233.423

```

APPENDIX 2 – CAESAR II OUTPUT

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
Job:: DRYER CYCLONE-01A
Licensed To:: Edit name in <system>\company.txt

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LISTING OF STATIC LOAD CASES FOR THIS ANALYSIS

- 1 (OPE) W+T1+P1
- 2 (Alt-SUS) W+P1
- 3 (SUS) W+P1
- 4 (EXP) L4=L1-L3

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
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 Licensed To:: Edit name in <system>\company.txt

**STRESS SUMMARY (LEGACY) REPORT: Highest Stresses Mini Statement
 Various Load Cases**

LOAD CASE DEFINITION KEY

CASE 3 (SUS) W+P1
 CASE 4 (EXP) L4=L1-L3

Note: This report indicates generic stresses summary. Currently, CAESAR II does not have summary for code-defined stresses.

Piping Code: B31.3-2022 = B31.3 -2022, January 31, 2023

CODE STRESS CHECK PASSED : LOADCASE 3 (SUS) W+P1

| | | | |
|--------------------------|------|-----------------------|------|
| Highest Stresses: (N/mm2 |) | LOADCASE 3 (SUS) W+P1 | |
| Ratio (%): | 72.6 | @Node 299 | |
| Code Stress: | 71.5 | Allowable Stress: | 98.6 |
| Axial Stress: | 7.8 | @Node 120 | |
| Bending Stress: | 68.3 | @Node 299 | |
| Torsion Stress: | 0.0 | @Node 330 | |
| Hoop Stress: | 14.8 | @Node 110 | |
| Max Stress Intensity: | 73.1 | @Node 299 | |

CODE STRESS CHECK PASSED : LOADCASE 4 (EXP) L4=L1-L3

| | | | |
|--------------------------|------|---------------------------|-------|
| Highest Stresses: (N/mm2 |) | LOADCASE 4 (EXP) L4=L1-L3 | |
| Ratio (%): | 6.4 | @Node 299 | |
| Code Stress: | 14.4 | Allowable Stress: | 224.0 |
| Axial Stress: | 2.6 | @Node 80 | |
| Bending Stress: | 17.1 | @Node 249 | |
| Torsion Stress: | 0.0 | @Node 270 | |
| Hoop Stress: | 0.0 | @Node 20 | |
| Max Stress Intensity: | 17.1 | @Node 249 | |

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
 Job:: DRYER CYCLONE-01A
 Licensed To:: Edit name in <system>\company.txt

B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 3 (SUS) W+P1

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 38 | 5.66 | 0.04 | 8.19 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 13.88 | 98.60 | 14.08 | |
| 39 | 5.66 | 0.35 | 7.04 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 13.05 | 98.60 | 13.23 | |
| 39 | 5.66 | 0.35 | 7.04 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 13.05 | 98.60 | 13.23 | |
| 40 | 5.66 | 0.32 | 10.94 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 16.92 | 98.60 | 17.16 | |
| 40 | 5.66 | 0.32 | 1.59 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.57 | 98.60 | 7.67 | |
| 48 | 5.66 | 0.19 | 1.42 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.26 | 98.60 | 7.37 | |
| 48 | 5.66 | 0.19 | 9.77 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 15.62 | 98.60 | 15.84 | |
| 49 | 5.66 | 0.06 | 9.79 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 15.51 | 98.60 | 15.73 | |
| 49 | 5.66 | 0.06 | 9.79 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 15.51 | 98.60 | 15.73 | |
| 50 | 5.66 | 0.04 | 8.46 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 14.16 | 98.60 | 14.36 | |
| 50 | 5.66 | 0.04 | 1.23 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.93 | 98.60 | 7.02 | |
| 58 | 5.66 | 0.04 | 0.45 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.15 | 98.60 | 6.24 | |
| 58 | 5.66 | 0.04 | 3.13 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 8.82 | 98.60 | 8.95 | |
| 59 | 5.66 | 0.29 | 5.28 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 11.23 | 98.60 | 11.39 | |
| 59 | 5.66 | 0.29 | 5.28 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 11.23 | 98.60 | 11.39 | |
| 60 | 5.66 | 0.52 | 9.33 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 15.50 | 98.60 | 15.72 | |
| 60 | 5.66 | 0.52 | 1.36 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.53 | 98.60 | 7.64 | |
| 70 | 5.66 | 0.72 | 1.09 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.48 | 98.60 | 7.58 | |
| 70 | 5.66 | -0.44 | 1.09 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.31 | 98.60 | 6.40 | |
| 80 | 5.66 | -0.40 | 1.04 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.30 | 98.60 | 6.39 | |
| 80 | 5.66 | -0.40 | 1.04 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.30 | 98.60 | 6.39 | |

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
 Job:: DRYER CYCLONE-01A
 Licensed To:: Edit name in <system>\company.txt

B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 3 (SUS) W+P1

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out-Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 90 | 5.66 | -0.28 | 0.90 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.27 | 98.60 | 6.36 | |
| 90 | 5.66 | -0.28 | 0.90 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.27 | 98.60 | 6.36 | |
| 100 | 5.66 | 0.27 | 0.20 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.12 | 98.60 | 6.21 | |
| 100 | 5.66 | 0.27 | 0.39 | 0.00 | 2.000 | 2.000 | 1.405 | 1.000 | 6.32 | 98.60 | 6.41 | |
| 110 | 7.41 | 0.37 | 0.04 | -0.00 | 2.000 | 2.000 | 1.405 | 1.000 | 7.82 | 98.60 | 7.93 | |
| 110 | 7.41 | 0.37 | 0.02 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.80 | 98.60 | 7.91 | |
| 120 | 7.41 | 0.38 | 0.03 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.81 | 98.60 | 7.93 | |
| 120 | 7.41 | -0.21 | 0.03 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.23 | 98.60 | 7.33 | |
| 130 | 7.41 | -0.15 | 0.07 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.34 | 98.60 | 7.44 | |
| 130 | 7.41 | -0.15 | 0.15 | 0.00 | 2.000 | 2.000 | 1.485 | 1.000 | 7.41 | 98.60 | 7.52 | |
| 140 | 5.99 | -0.06 | 0.47 | -0.00 | 2.000 | 2.000 | 1.485 | 1.000 | 6.40 | 98.60 | 6.49 | |
| 140 | 5.99 | -0.06 | 0.23 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.17 | 98.60 | 6.25 | |
| 150 | 5.99 | 0.22 | 0.54 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.75 | 98.60 | 6.84 | |
| 150 | 5.99 | -0.21 | 0.54 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.32 | 98.60 | 6.41 | |
| 160 | 5.99 | -0.14 | 0.63 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.48 | 98.60 | 6.57 | |
| 160 | 5.99 | -0.14 | 1.25 | 0.00 | 2.000 | 2.000 | 1.485 | 1.000 | 7.10 | 98.60 | 7.20 | |
| 170 | 7.41 | 0.06 | 1.09 | -0.00 | 2.000 | 2.000 | 1.485 | 1.000 | 8.56 | 98.60 | 8.68 | |
| 170 | 7.41 | 0.06 | 0.54 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 8.01 | 98.60 | 8.13 | |
| 180 | 7.41 | 0.13 | 0.60 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 8.14 | 98.60 | 8.26 | |
| 180 | 7.41 | 0.13 | 1.19 | 0.00 | 2.000 | 2.000 | 1.485 | 1.000 | 8.74 | 98.60 | 8.86 | |
| 190 | 5.99 | 0.24 | 1.97 | -0.00 | 2.000 | 2.000 | 1.485 | 1.000 | 8.19 | 98.60 | 8.31 | |

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
 Job:: DRYER CYCLONE-01A
 Licensed To:: Edit name in <system>\company.txt

B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 3 (SUS) W+P1

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 190 | 5.99 | 0.24 | 0.99 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.21 | 98.60 | 7.31 | |
| 200 | 5.99 | 0.24 | 0.99 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.22 | 98.60 | 7.33 | |
| 200 | 5.99 | -1.05 | 0.99 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 5.93 | 98.60 | 6.01 | |
| 210 | 5.99 | -0.63 | 1.47 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.83 | 98.60 | 6.93 | |
| 210 | 5.99 | -0.63 | 2.94 | 0.00 | 2.000 | 2.000 | 1.205 | 1.000 | 8.30 | 98.60 | 8.42 | |
| 220 | 4.06 | -0.71 | 7.25 | -0.00 | 2.000 | 2.000 | 1.205 | 1.000 | 10.60 | 98.60 | 10.75 | |
| 220 | 4.06 | -0.71 | 7.25 | 0.00 | 2.000 | 2.000 | 1.289 | 1.000 | 10.60 | 98.60 | 10.75 | |
| 230 | 3.19 | -0.77 | 11.13 | -0.00 | 2.000 | 2.000 | 1.289 | 1.000 | 13.56 | 98.60 | 13.75 | |
| 230 | 3.19 | -0.77 | 5.57 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.99 | 98.60 | 8.11 | |
| 238 | 3.19 | -0.76 | 5.62 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 8.05 | 98.60 | 8.17 | |
| 238 | 3.19 | -0.76 | 15.99 | 0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 18.43 | 98.60 | 18.69 | |
| 239 | 3.19 | -0.40 | 8.78 | 0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 11.57 | 98.60 | 11.73 | |
| 239 | 3.19 | -0.40 | 8.78 | -0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 11.57 | 98.60 | 11.73 | |
| 240 | 3.19 | -0.07 | 5.19 | 0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 8.32 | 98.60 | 8.44 | |
| 240 | 3.19 | -0.07 | 1.82 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 4.95 | 98.60 | 5.02 | |
| 249 | 3.19 | -0.04 | 22.09 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 25.25 | 98.60 | 25.61 | |
| 249 | 3.19 | -0.04 | 22.09 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 25.25 | 98.60 | 25.61 | |
| 250 | 3.19 | -0.02 | 23.40 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 26.58 | 98.60 | 26.96 | |
| 250 | 3.19 | -0.02 | 2.85 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.03 | 98.60 | 6.11 | |
| 259 | 3.19 | -0.05 | 32.50 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 35.65 | 98.60 | 36.16 | |

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 Job:: DRYER CYCLONE-01A
 Licensed To:: Edit name in <system>\company.txt

B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 3 (SUS) W+P1

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 259 | 3.19 | -0.05 | 32.50 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 35.65 | 98.60 | 36.16 | |
| 260 | 3.19 | -0.05 | 32.87 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 36.01 | 98.60 | 36.52 | |
| 260 | 3.19 | -0.05 | 4.00 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.15 | 98.60 | 7.25 | |
| 268 | 3.19 | -0.14 | 3.78 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 6.84 | 98.60 | 6.94 | |
| 268 | 3.19 | -0.14 | 31.06 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 34.12 | 98.60 | 34.60 | |
| 269 | 3.19 | -0.15 | 30.56 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 33.60 | 98.60 | 34.08 | |
| 269 | 3.19 | -0.15 | 30.56 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 33.60 | 98.60 | 34.08 | |
| 270 | 3.19 | -0.17 | 30.11 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 33.14 | 98.60 | 33.61 | |
| 270 | 3.19 | -0.17 | 7.34 | -0.00 | 2.000 | 2.000 | 1.289 | 1.000 | 10.36 | 98.60 | 10.51 | |
| 280 | 4.06 | -0.20 | 3.57 | 0.00 | 2.000 | 2.000 | 1.289 | 1.000 | 7.43 | 98.60 | 7.53 | |
| 280 | 4.06 | -0.20 | 1.78 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 5.64 | 98.60 | 5.72 | |
| 288 | 4.06 | -0.50 | 3.76 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.33 | 98.60 | 7.43 | |
| 288 | 4.06 | -0.50 | 43.51 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 47.07 | 98.60 | 47.74 | |
| 289 | 4.06 | -0.54 | 45.14 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 48.67 | 98.60 | 49.36 | |
| 289 | 4.06 | -0.54 | 45.14 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 48.67 | 98.60 | 49.36 | |
| 290 | 4.06 | -0.57 | 46.61 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 50.09 | 98.60 | 50.80 | |
| 290 | 4.06 | -0.57 | 4.03 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 7.52 | 98.60 | 7.62 | |
| 299 | 4.06 | -0.80 | 68.29 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 71.55 | 98.60 | 72.56 | |
| 299 | 4.06 | -0.80 | 68.29 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 71.55 | 98.60 | 72.56 | |
| 300 | 4.06 | -0.56 | 54.88 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 58.38 | 98.60 | 59.21 | |
| 300 | 4.06 | -0.56 | 4.75 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 8.24 | 98.60 | 8.36 | |

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48

Job:: DRYER CYCLONE-01A

Licensed To:: Edit name in <system>\company.txt

B31.3-2022 STRESSES REPORT: Stresses on Elements

CASE 3 (SUS) W+P1

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|----------------------------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 309 | 4.06 | -0.30 | 14.84 | 0.00 | 8.072 | 6.727 | 1.000 | 1.000 | 18.60 | 98.60 | 18.86 | |
| 309 | 4.06 | -0.30 | 14.84 | -0.00 | 8.072 | 6.727 | 1.000 | 1.000 | 18.60 | 98.60 | 18.86 | |
| 310 | 4.06 | 0.05 | 2.97 | 0.00 | 8.072 | 6.727 | 1.000 | 1.000 | 7.08 | 98.60 | 7.18 | |
| 310 | 4.06 | 0.05 | 0.37 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 4.48 | 98.60 | 4.54 | |
| 320 | 4.06 | 0.05 | 1.17 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 5.28 | 98.60 | 5.35 | |
| 320 | 4.06 | 0.05 | 2.34 | -0.00 | 2.000 | 2.000 | 1.064 | 1.000 | 6.45 | 98.60 | 6.54 | |
| 330 (Nozzle Cyclone) | 2.59 | 0.08 | 16.51 | 0.00 | 2.000 | 2.000 | 1.064 | 1.000 | 19.19 | 98.60 | 19.46 | |

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
 Job:: DRYER CYCLONE-01A
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B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 4 (EXP) L4=L1-L3

Piping Code (1 of 1): B31.3 -2022, January 31, 2023

The SLP column shows the longitudinal pressure stress.

Stresses Evaluation CHECK PASSED : LOADCASE 4 (EXP) L4=L1-L3

Highest Stresses: (N/mm2)
 Ratio (%): 6.4 @Node 299
 Code: 14.4 Allowable: 224.0
 F/A 5.3 @Node 100
 Bending 17.1 @Node 249
 Torsion 0.0 @Node 270
 SIF/Index In-Plane 11.6 @Node 288
 SIF/Index Out-Plane 9.6 @Node 288
 SIF/Index Torsion 1.5 @Node 130
 SIF/Index Axial 2.0 @Node 100

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|-------------------------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 10 (Nozzle Dryer) | | 0.01 | 0.09 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.10 | 287.62 | 0.04 | |
| 20 | | 0.01 | 0.10 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.11 | 287.92 | 0.04 | |
| 20 | | 0.01 | 0.10 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.11 | 287.92 | 0.04 | |
| 30 | | 0.01 | 0.11 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.12 | 288.17 | 0.04 | |
| 30 | | 0.01 | 0.11 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.12 | 288.17 | 0.04 | |
| 38 | | 0.01 | 0.12 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.13 | 288.74 | 0.04 | |
| 38 | | 0.01 | 0.83 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 0.84 | 281.74 | 0.30 | |

CAESAR II Ver.14.00.00.0910, (Build 231113) Date: DEC 24, 2025 Time: 13:48
 Job:: DRYER CYCLONE-01A
 Licensed To:: Edit name in <system>\company.txt

B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 4 (EXP) L4=L1-L3

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 39 | | 0.02 | 1.15 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 1.17 | 282.58 | 0.41 | |
| 39 | | 0.02 | 1.15 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 1.17 | 282.58 | 0.41 | |
| 40 | | 0.01 | 1.07 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 1.09 | 278.71 | 0.39 | |
| 40 | | 0.01 | 0.16 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.17 | 288.06 | 0.06 | |
| 48 | | 0.01 | 0.12 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.13 | 288.36 | 0.05 | |
| 48 | | 0.01 | 0.80 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 0.82 | 280.01 | 0.29 | |
| 49 | | 0.02 | 0.72 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 0.74 | 280.11 | 0.26 | |
| 49 | | 0.02 | 0.72 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 0.74 | 280.11 | 0.26 | |
| 50 | | 0.01 | 1.04 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 1.05 | 281.46 | 0.37 | |
| 50 | | 0.01 | 0.15 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.16 | 288.70 | 0.06 | |
| 58 | | 0.01 | 0.22 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.23 | 289.47 | 0.08 | |
| 58 | | 0.01 | 1.51 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 1.52 | 286.80 | 0.53 | |
| 59 | | -0.00 | 2.05 | -0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 2.05 | 284.38 | 0.72 | |
| 59 | | -0.00 | 2.05 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 2.05 | 284.38 | 0.72 | |
| 60 | | -0.01 | 2.48 | 0.00 | 6.885 | 5.737 | 1.000 | 1.000 | 2.49 | 280.10 | 0.89 | |
| 60 | | -0.01 | 0.36 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.37 | 288.09 | 0.13 | |
| 70 | | -0.01 | 0.42 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.44 | 288.14 | 0.15 | |
| 70 | | -2.64 | 0.42 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.06 | 289.31 | 1.06 | |
| 80 | | -2.64 | 0.43 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.07 | 289.32 | 1.06 | |
| 80 | | -2.64 | 0.43 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.07 | 289.32 | 1.06 | |
| 90 | | -2.64 | 0.47 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.10 | 289.35 | 1.07 | |

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B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 4 (EXP) L4=L1-L3

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out-Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 90 | | -2.64 | 0.47 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.10 | 289.35 | 1.07 | |
| 100 | | -2.64 | 0.63 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.27 | 289.50 | 1.13 | |
| 100 | | -5.28 | 1.26 | -0.00 | 2.000 | 2.000 | 1.405 | 2.000 | 6.53 | 289.30 | 2.26 | |
| 110 | | -4.03 | 0.80 | 0.00 | 2.000 | 2.000 | 1.405 | 2.000 | 4.83 | 287.81 | 1.68 | |
| 110 | | -2.02 | 0.40 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.41 | 287.83 | 0.84 | |
| 120 | | -2.02 | 0.40 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.42 | 287.81 | 0.84 | |
| 120 | | -1.43 | 0.40 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.83 | 288.40 | 0.63 | |
| 130 | | -1.43 | 0.41 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.84 | 288.28 | 0.64 | |
| 130 | | -2.86 | 0.82 | -0.00 | 2.000 | 2.000 | 1.485 | 2.000 | 3.68 | 288.21 | 1.28 | |
| 140 | | -3.53 | 1.31 | 0.00 | 2.000 | 2.000 | 1.485 | 2.000 | 4.84 | 289.22 | 1.67 | |
| 140 | | -1.77 | 0.66 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.42 | 289.46 | 0.84 | |
| 150 | | -1.77 | 0.73 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.49 | 288.88 | 0.86 | |
| 150 | | -1.33 | 0.73 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.06 | 289.31 | 0.71 | |
| 160 | | -1.33 | 0.75 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.08 | 289.15 | 0.72 | |
| 160 | | -2.67 | 1.49 | -0.00 | 2.000 | 2.000 | 1.485 | 2.000 | 4.16 | 288.52 | 1.44 | |
| 170 | | -2.16 | 1.04 | 0.00 | 2.000 | 2.000 | 1.485 | 2.000 | 3.20 | 287.07 | 1.11 | |
| 170 | | -1.08 | 0.52 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.60 | 287.61 | 0.56 | |
| 180 | | -1.08 | 0.53 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.61 | 287.48 | 0.56 | |
| 180 | | -2.16 | 1.06 | -0.00 | 2.000 | 2.000 | 1.485 | 2.000 | 3.22 | 286.88 | 1.12 | |
| 190 | | -2.67 | 1.66 | 0.00 | 2.000 | 2.000 | 1.485 | 2.000 | 4.33 | 287.43 | 1.51 | |

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B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 4 (EXP) L4=L1-L3

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 190 | | -1.33 | 0.83 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.16 | 288.42 | 0.75 | |
| 200 | | -1.33 | 0.83 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.17 | 288.40 | 0.75 | |
| 200 | | -0.04 | 0.83 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.87 | 289.70 | 0.30 | |
| 210 | | -0.04 | 0.94 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.98 | 288.79 | 0.34 | |
| 210 | | -0.08 | 1.88 | -0.00 | 2.000 | 2.000 | 1.205 | 2.000 | 1.96 | 287.32 | 0.68 | |
| 220 | | -0.11 | 4.29 | 0.00 | 2.000 | 2.000 | 1.205 | 2.000 | 4.40 | 285.03 | 1.54 | |
| 220 | | -0.12 | 4.29 | -0.00 | 2.000 | 2.000 | 1.289 | 2.000 | 4.40 | 285.03 | 1.54 | |
| 230 | | -0.15 | 7.00 | 0.00 | 2.000 | 2.000 | 1.289 | 2.000 | 7.15 | 282.07 | 2.53 | |
| 230 | | -0.07 | 3.50 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.57 | 287.63 | 1.24 | |
| 238 | | -0.07 | 3.51 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 3.58 | 287.57 | 1.25 | |
| 238 | | -0.07 | 10.00 | -0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 10.07 | 277.20 | 3.63 | |
| 239 | | -0.06 | 9.41 | -0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 9.48 | 284.06 | 3.34 | |
| 239 | | -0.06 | 9.41 | 0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 9.48 | 284.06 | 3.34 | |
| 240 | | -0.02 | 6.74 | -0.00 | 2.848 | 2.373 | 1.000 | 1.000 | 6.76 | 287.28 | 2.35 | |
| 240 | | -0.02 | 2.37 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.38 | 290.66 | 0.82 | |
| 249 | | -0.01 | 17.13 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 17.14 | 270.32 | 6.34 | |
| 249 | | -0.01 | 17.13 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 17.14 | 270.32 | 6.34 | |
| 250 | | 0.00 | 16.63 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 16.64 | 268.99 | 6.19 | |
| 250 | | 0.00 | 2.03 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 2.03 | 289.59 | 0.70 | |
| 259 | | 0.01 | 10.96 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 10.98 | 259.94 | 4.22 | |
| 259 | | 0.01 | 10.96 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 10.98 | 259.94 | 4.22 | |

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B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 4 (EXP) L4=L1-L3

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 260 | | 0.02 | 10.46 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 10.49 | 259.58 | 4.04 | |
| 260 | | 0.02 | 1.27 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.30 | 288.47 | 0.45 | |
| 268 | | 0.02 | 0.56 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.58 | 288.78 | 0.20 | |
| 268 | | 0.02 | 4.57 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 4.59 | 261.49 | 1.76 | |
| 269 | | 0.03 | 4.18 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 4.21 | 262.01 | 1.61 | |
| 269 | | 0.03 | 4.18 | 0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 4.21 | 262.01 | 1.61 | |
| 270 | | 0.04 | 3.81 | -0.00 | 8.209 | 6.841 | 1.000 | 1.000 | 3.85 | 262.48 | 1.47 | |
| 270 | | 0.08 | 0.93 | 0.00 | 2.000 | 2.000 | 1.289 | 2.000 | 1.01 | 285.26 | 0.35 | |
| 280 | | 0.06 | 0.05 | -0.00 | 2.000 | 2.000 | 1.289 | 2.000 | 0.11 | 288.20 | 0.04 | |
| 280 | | 0.03 | 0.02 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.06 | 289.98 | 0.02 | |
| 288 | | 0.03 | 0.96 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.99 | 288.29 | 0.34 | |
| 288 | | 0.03 | 11.11 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 11.14 | 248.51 | 4.48 | |
| 289 | | 0.04 | 11.31 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 11.34 | 246.91 | 4.59 | |
| 289 | | 0.04 | 11.31 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 11.34 | 246.91 | 4.59 | |
| 290 | | 0.04 | 11.49 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 11.52 | 245.49 | 4.69 | |
| 290 | | 0.04 | 0.99 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.03 | 288.10 | 0.36 | |
| 299 | | 0.06 | 14.34 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 14.40 | 224.03 | 6.43 | |
| 299 | | 0.06 | 14.34 | 0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 14.40 | 224.03 | 6.43 | |
| 300 | | 0.05 | 13.89 | -0.00 | 11.564 | 9.637 | 1.000 | 1.000 | 13.94 | 237.19 | 5.88 | |
| 300 | | 0.05 | 1.20 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 1.25 | 287.38 | 0.43 | |
| 309 | | 0.03 | 8.52 | -0.00 | 8.072 | 6.727 | 1.000 | 1.000 | 8.55 | 277.00 | 3.09 | |

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B31.3-2022 STRESSES REPORT: Stresses on Elements
 CASE 4 (EXP) L4=L1-L3

| Node | SLP N/mm2 | F/A N/mm2 | Bending N/mm2 | Torsion N/mm2 | SIF/Index In-Plane | SIF/Index Out- Plane | SIF/Index Torsion | SIF/Index Axial | Code N/mm2 | Allowable N/mm2 | Ratio % | |
|----------------------------|--------------|--------------|------------------|------------------|-----------------------|----------------------------|----------------------|--------------------|---------------|--------------------|---------|--|
| 309 | | 0.03 | 8.52 | 0.00 | 8.072 | 6.727 | 1.000 | 1.000 | 8.55 | 277.00 | 3.09 | |
| 310 | | 0.01 | 7.53 | -0.00 | 8.072 | 6.727 | 1.000 | 1.000 | 7.54 | 288.54 | 2.61 | |
| 310 | | 0.01 | 0.93 | 0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.94 | 291.14 | 0.32 | |
| 320 | | 0.01 | 0.89 | -0.00 | 1.000 | 1.000 | 1.000 | 1.000 | 0.90 | 290.34 | 0.31 | |
| 320 | | 0.02 | 1.77 | 0.00 | 2.000 | 2.000 | 1.064 | 2.000 | 1.80 | 289.18 | 0.62 | |
| 330 (Nozzle Cyclone) | | 0.04 | 3.73 | -0.00 | 2.000 | 2.000 | 1.064 | 2.000 | 3.77 | 276.44 | 1.36 | |

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RESTRAINT SUMMARY REPORT: Loads On Restraints
 Various Load Cases

LOAD CASE DEFINITION KEY

CASE 1 (OPE) W+T1+P1
 CASE 3 (SUS) W+P1

| Node | Load Case | FX N | FY N | FZ N | MX N.m | MY N.m | MZ N.m |
|-------------------|-----------|---|-----------|--------|---------|--------|--------|
| 10 (Nozzle Dryer) | | TYPE=Rigid X; Rigid Y; Rigid Z; Flex RX; Rigid RY; Rigid RZ; | | | | | |
| | 1(OPE) | -0 | -8296 | 577 | 9014 | -0 | -0 |
| | 3(SUS) | -0 | -8116 | 469 | 9400 | -0 | -0 |
| | MAX | -0/L3 | -8296/L1 | 577/L1 | 9400/L3 | -0/L3 | -0/L1 |
| 70 | | TYPE=Rigid +Y; Rigid Z w/gap; Rigid X w/gap; | | | | | |
| | 1(OPE) | 0 | -46972 | 0 | 0 | 0 | 0 |
| | 3(SUS) | 0 | -14426 | 0 | 0 | 0 | 0 |
| | MAX | | -46972/L1 | | | | |
| 120 | | TYPE=Rigid +Y; Rigid Z w/gap; Rigid X w/gap; | | | | | |
| | 1(OPE) | 0 | 0 | 0 | 0 | 0 | 0 |
| | 3(SUS) | 0 | -9550 | 0 | 0 | 0 | 0 |
| | MAX | | -9550/L3 | | | | |
| 150 | | TYPE=Rigid +Y; Rigid X w/gap; Rigid Z w/gap; | | | | | |
| | 1(OPE) | 0 | 0 | 0 | 0 | 0 | 0 |
| | 3(SUS) | 0 | -5660 | 0 | 0 | 0 | 0 |
| | MAX | | -5660/L3 | | | | |
| 200 | | TYPE=Rigid +Y; Rigid X w/gap; Rigid Z w/gap; | | | | | |
| | 1(OPE) | 0 | 0 | 0 | 0 | 0 | 0 |

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RESTRAINT SUMMARY REPORT: Loads On Restraints
 Various Load Cases

| Node | Load Case | FX N | FY N | FZ N | MX N.m | MY N.m | MZ N.m |
|----------------------------|-----------|---|-----------|---------|----------|--------|--------|
| | 3(SUS) | 0 | -17010 | 0 | 0 | 0 | 0 |
| | MAX | | -17010/L3 | | | | |
| | | | | | | | |
| 330 (Nozzle Cyclone) | | TYPE=Rigid X; Rigid Y; Rigid Z; Flex RX; Rigid RY; Rigid RZ; | | | | | |
| | 1(OPE) | 0 | -8808 | -577 | -8725 | 0 | -0 |
| | 3(SUS) | 0 | -9315 | -469 | -7116 | 0 | -0 |
| | MAX | 0/L3 | -9315/L3 | -577/L1 | -8725/L1 | 0/L3 | -0/L3 |

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 Job:: DRYER CYCLONE-01A
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DISPLACEMENTS REPORT: Nodal Movements
 CASE 4 (EXP) L4=L1-L3

| Node | DX mm | DY mm | DZ mm | RX deg. | RY deg. | RZ deg. |
|----------------------|--------|---------|---------|---------|---------|---------|
| 10 (Nozzle Dryer) | 0.000 | -0.000 | 0.000 | -0.0043 | 0.0000 | -0.0000 |
| 20 | 0.000 | 0.011 | 0.380 | -0.0043 | 0.0000 | -0.0000 |
| 30 | 0.000 | 0.021 | 0.697 | -0.0043 | 0.0000 | -0.0000 |
| 38 | 0.000 | 0.043 | 1.458 | -0.0043 | 0.0000 | -0.0000 |
| 39 | 0.000 | -1.237 | 5.036 | -0.0101 | 0.0000 | 0.0000 |
| 40 | 0.000 | -4.608 | 6.818 | -0.0167 | 0.0000 | -0.0000 |
| 48 | 0.000 | -8.286 | 7.249 | -0.0168 | 0.0000 | -0.0000 |
| 49 | 0.000 | -11.584 | 9.157 | -0.0210 | 0.0000 | -0.0000 |
| 50 | -0.000 | -12.462 | 12.882 | -0.0258 | 0.0000 | -0.0000 |
| 58 | -0.000 | -11.767 | 16.718 | -0.0260 | 0.0000 | -0.0000 |
| 59 | -0.000 | -9.573 | 19.887 | -0.0361 | 0.0000 | -0.0000 |
| 60 | -0.000 | -5.668 | 20.289 | -0.0492 | 0.0000 | -0.0000 |
| 70 | -0.000 | -0.000 | 18.331 | -0.0496 | 0.0000 | -0.0000 |
| 80 | -0.000 | 1.135 | 17.935 | -0.0497 | 0.0000 | -0.0000 |
| 90 | -0.000 | 4.288 | 16.832 | -0.0499 | 0.0000 | -0.0000 |
| 100 | 0.000 | 19.372 | 11.463 | -0.0514 | 0.0000 | -0.0000 |
| 110 | 0.000 | 24.338 | 9.662 | -0.0518 | 0.0000 | -0.0000 |
| 120 | 0.000 | 24.590 | 9.570 | -0.0518 | 0.0000 | -0.0000 |
| 130 | 0.000 | 26.329 | 8.937 | -0.0519 | 0.0000 | -0.0000 |
| 140 | 0.000 | 29.312 | 7.849 | -0.0522 | 0.0000 | -0.0000 |
| 150 | 0.000 | 36.772 | 5.096 | -0.0530 | 0.0000 | -0.0000 |
| 160 | 0.000 | 38.827 | 4.331 | -0.0533 | 0.0000 | -0.0000 |
| 170 | 0.000 | 43.805 | 2.463 | -0.0538 | 0.0000 | -0.0000 |
| 180 | 0.000 | 45.798 | 1.711 | -0.0539 | 0.0000 | -0.0000 |
| 190 | 0.000 | 47.520 | 1.060 | -0.0541 | 0.0000 | -0.0000 |
| 200 | 0.000 | 47.710 | 0.988 | -0.0541 | 0.0000 | -0.0000 |
| 210 | 0.000 | 59.318 | -3.472 | -0.0558 | 0.0000 | -0.0000 |
| 220 | 0.000 | 64.181 | -5.390 | -0.0573 | 0.0000 | -0.0000 |
| 230 | 0.000 | 67.392 | -7.198 | -0.0600 | 0.0000 | -0.0000 |
| 238 | 0.000 | 67.735 | -7.342 | -0.0603 | 0.0000 | -0.0000 |
| 239 | 0.000 | 71.886 | -15.130 | -0.1626 | 0.0000 | -0.0000 |
| 240 | 0.000 | 64.929 | -25.455 | -0.2472 | 0.0000 | -0.0000 |
| 249 | 0.000 | 61.757 | -27.212 | -0.2629 | 0.0000 | -0.0000 |
| 250 | 0.000 | 60.978 | -27.438 | -0.2771 | 0.0000 | -0.0000 |
| 259 | 0.000 | 51.626 | -29.297 | -0.2892 | 0.0000 | -0.0000 |
| 260 | 0.000 | 50.712 | -29.268 | -0.2987 | 0.0000 | -0.0000 |
| 268 | 0.000 | 39.648 | -28.038 | -0.3000 | 0.0000 | -0.0000 |
| 269 | 0.000 | 38.904 | -27.909 | -0.3032 | 0.0000 | -0.0000 |
| 270 | 0.000 | 38.175 | -27.692 | -0.3060 | 0.0000 | -0.0000 |
| 280 | 0.000 | 31.103 | -25.112 | -0.3062 | 0.0000 | -0.0000 |
| 288 | 0.000 | 4.699 | -15.534 | -0.3048 | 0.0000 | -0.0000 |
| 289 | 0.000 | 4.250 | -15.352 | -0.2998 | 0.0000 | -0.0000 |
| 290 | 0.000 | 3.824 | -15.136 | -0.2946 | 0.0000 | -0.0000 |
| 299 | 0.000 | -3.393 | -9.901 | -0.2424 | 0.0000 | -0.0000 |
| 300 | 0.000 | -3.821 | -6.932 | -0.1901 | -0.0000 | -0.0000 |

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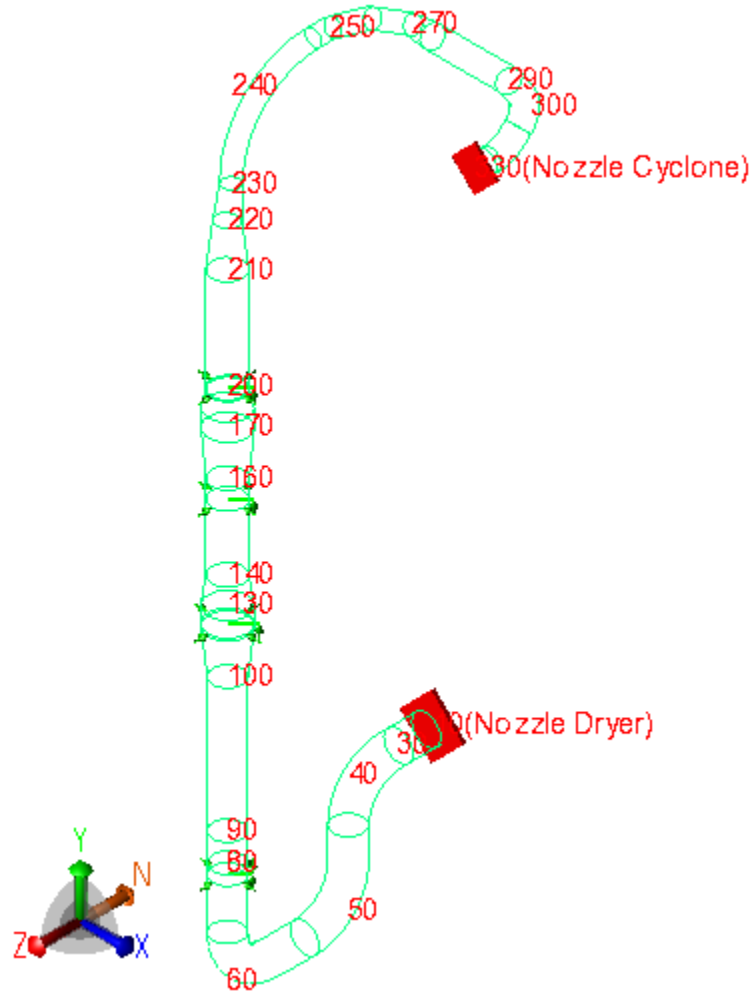
DISPLACEMENTS REPORT: Nodal Movements

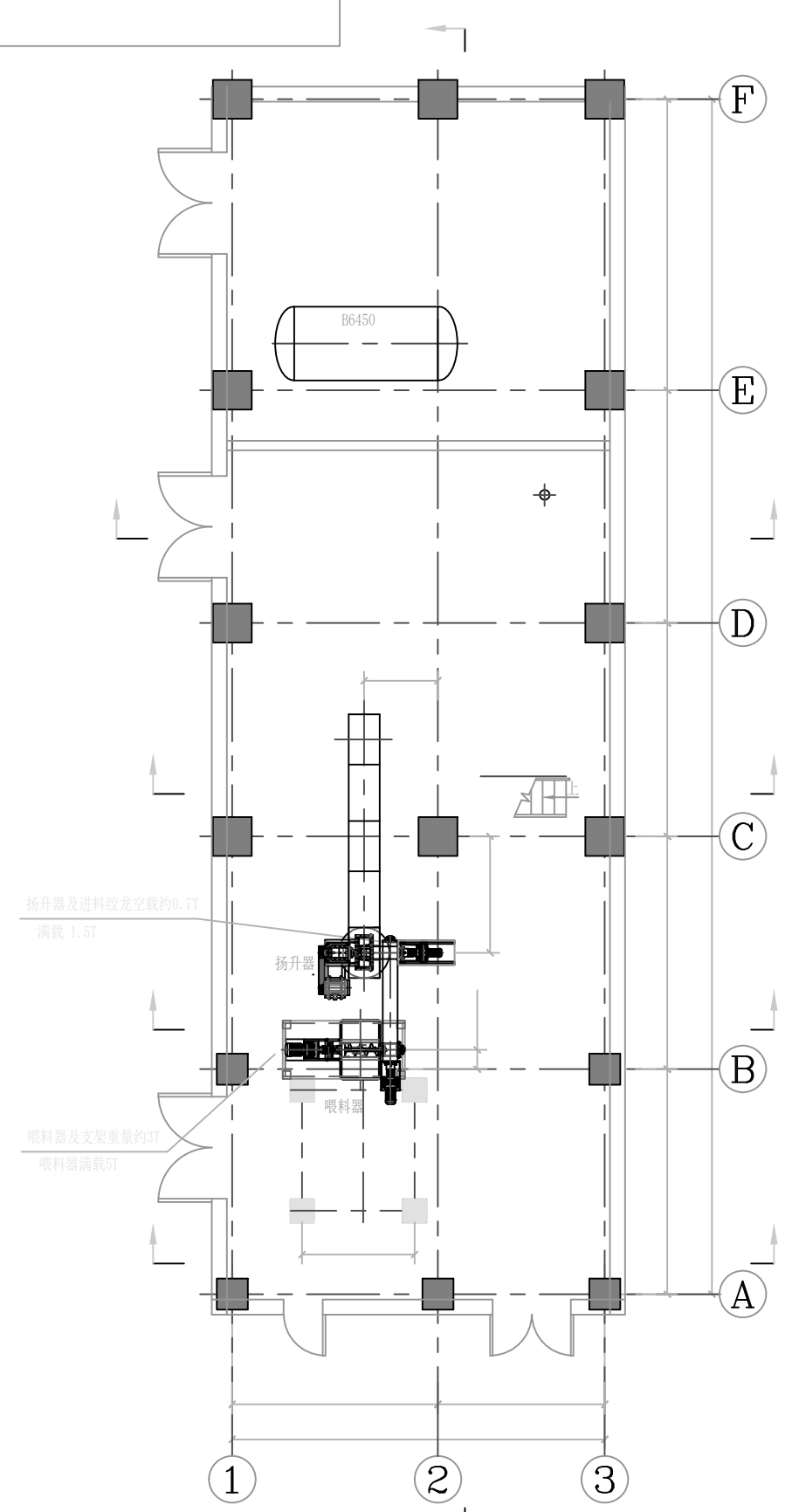
CASE 4 (EXP) L4=L1-L3

| Node | DX mm | DY mm | DZ mm | RX deg. | RY deg. | RZ deg. |
|-------------------------|--------|--------|--------|---------|---------|---------|
| 309 | 0.000 | -2.904 | -3.350 | -0.1652 | -0.0000 | -0.0000 |
| 310 | 0.000 | -1.735 | -1.739 | -0.1430 | -0.0000 | 0.0000 |
| 320 | 0.000 | -1.264 | -1.268 | -0.1429 | -0.0000 | 0.0000 |
| 330 (Nozzle Cyclone) | -0.000 | 0.000 | -0.000 | -0.1424 | -0.0000 | 0.0000 |

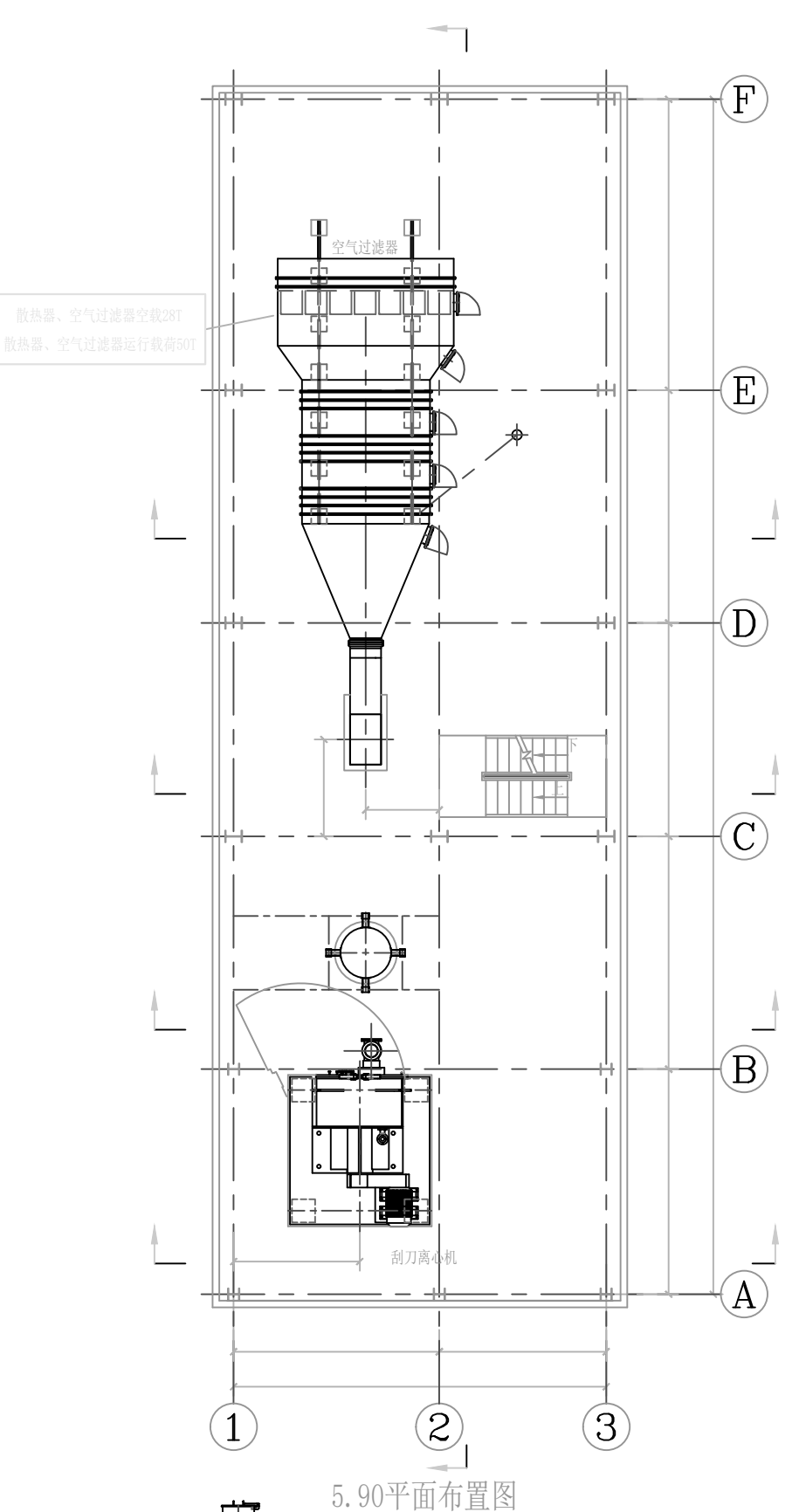
APPENDIX 3 – DRAWINGS AND SKETCHES

(Nodes & Numbers)

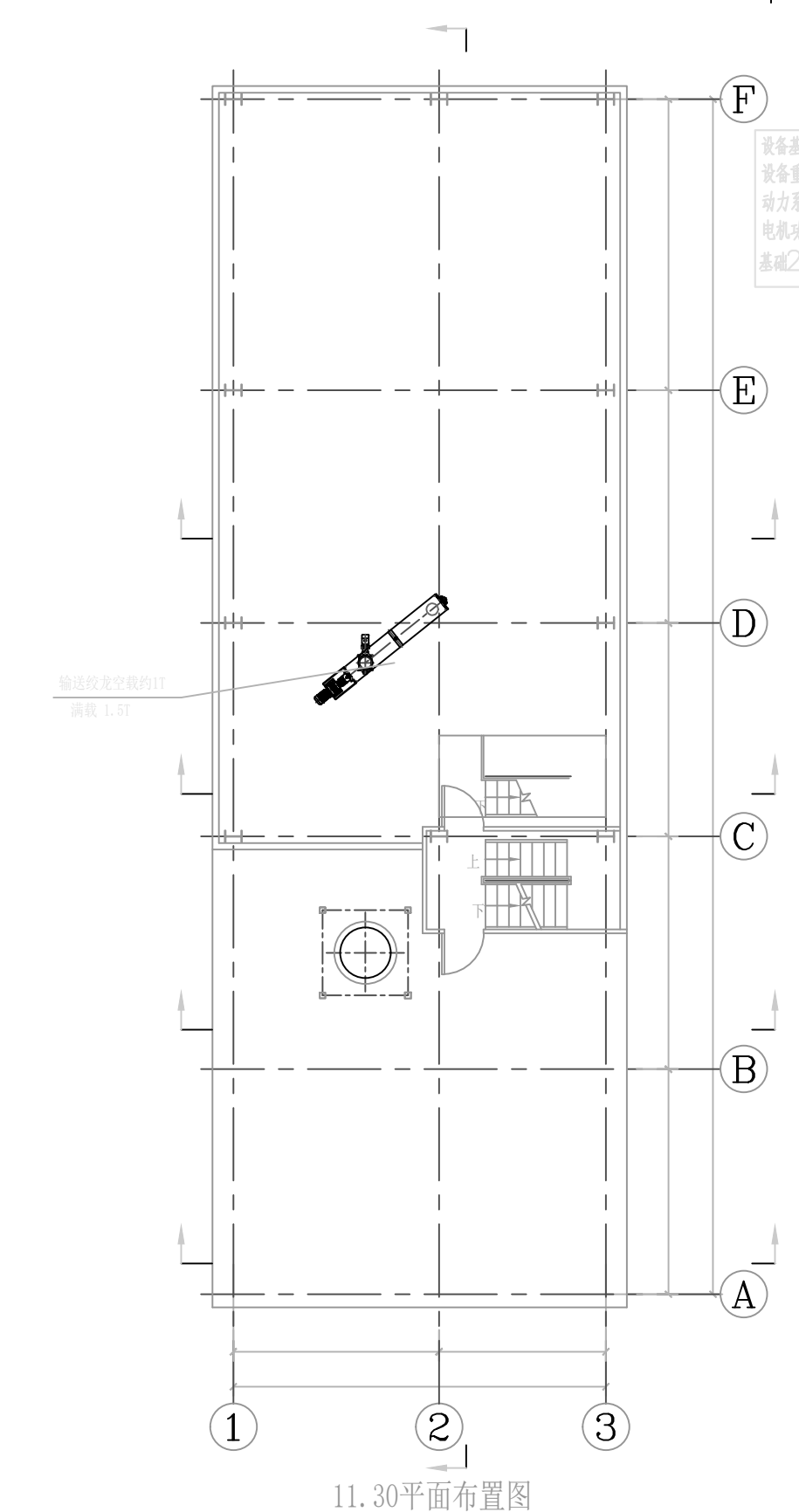




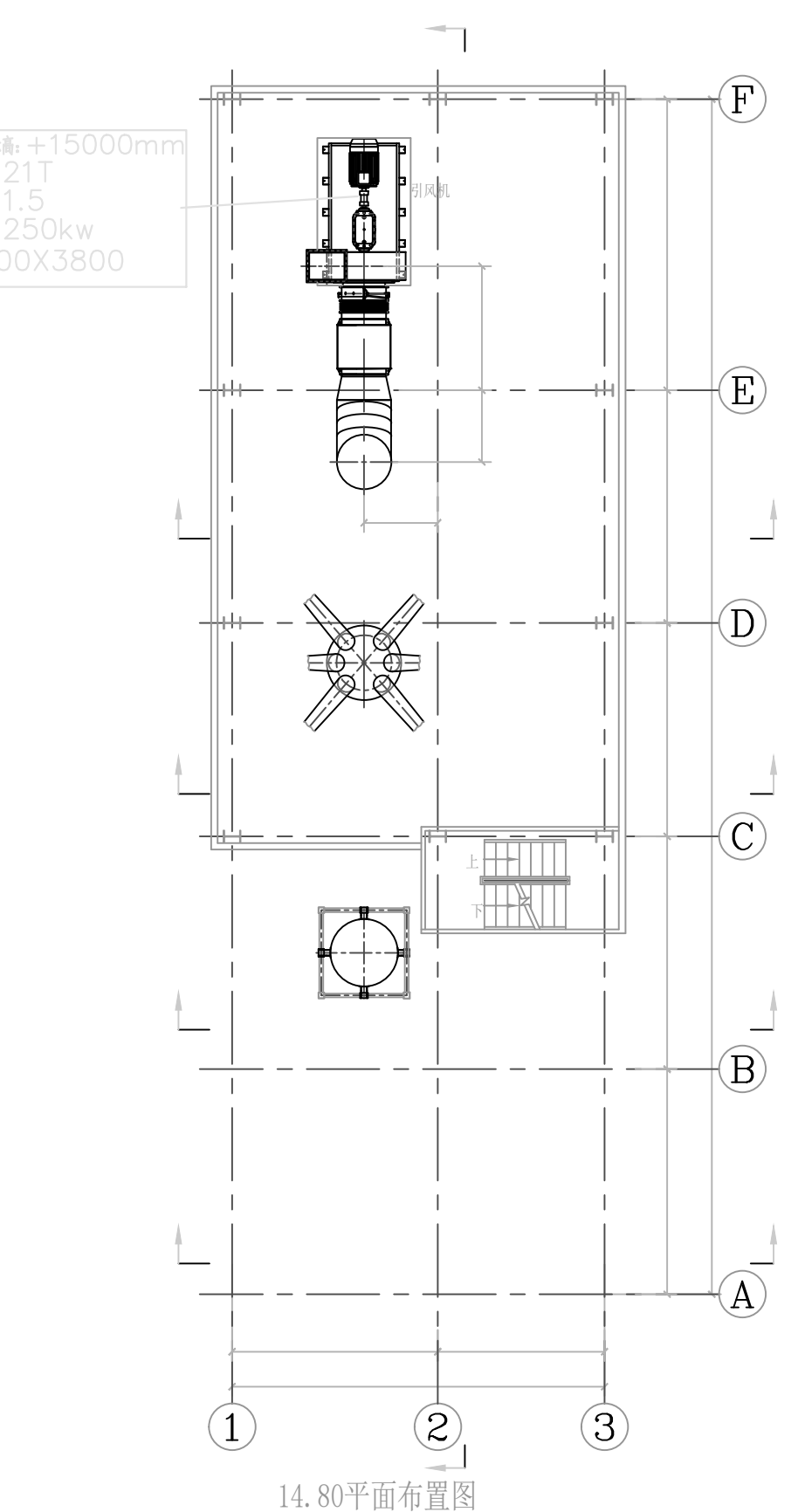
0.00平面布置图



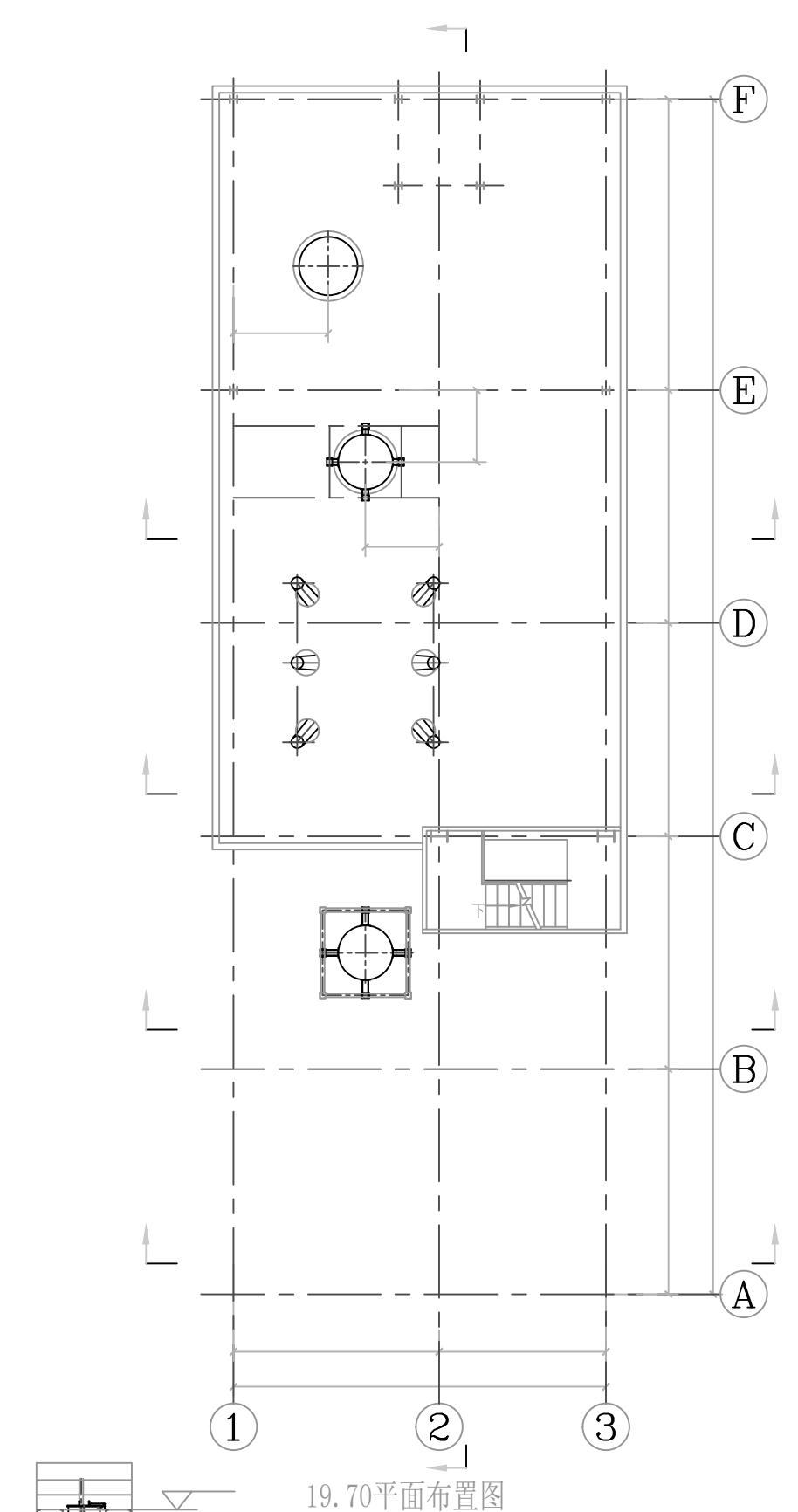
5.90平面布置图



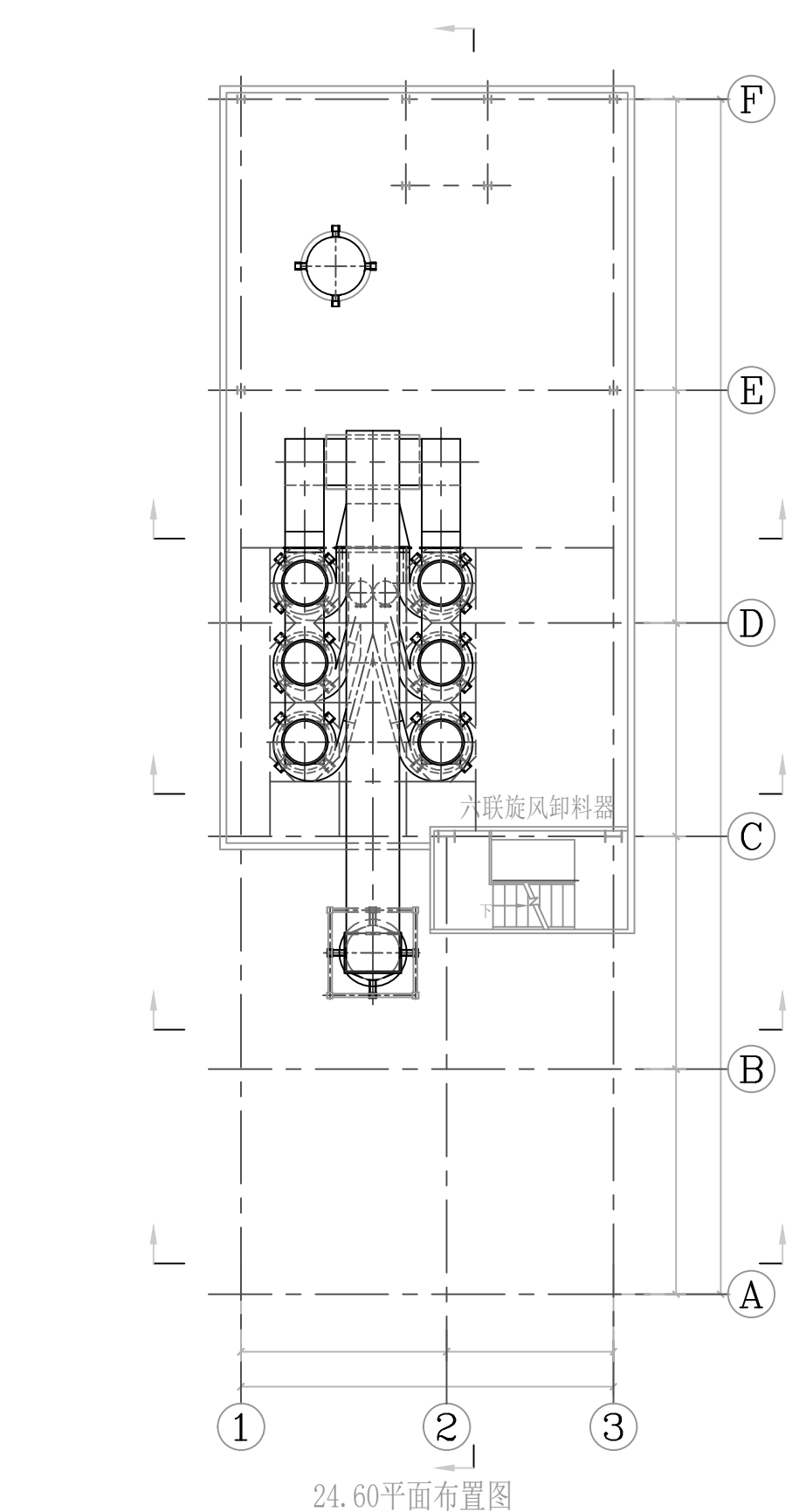
11.30平面布置图



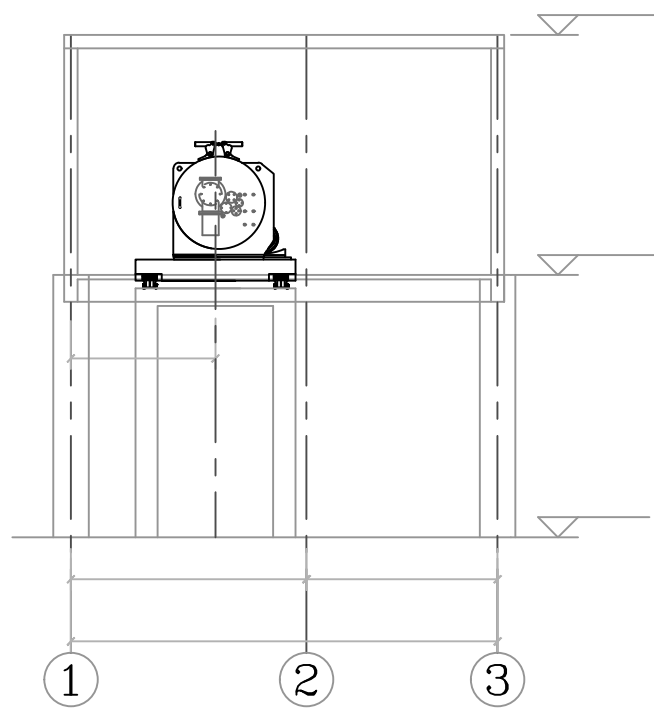
14.80平面布置图



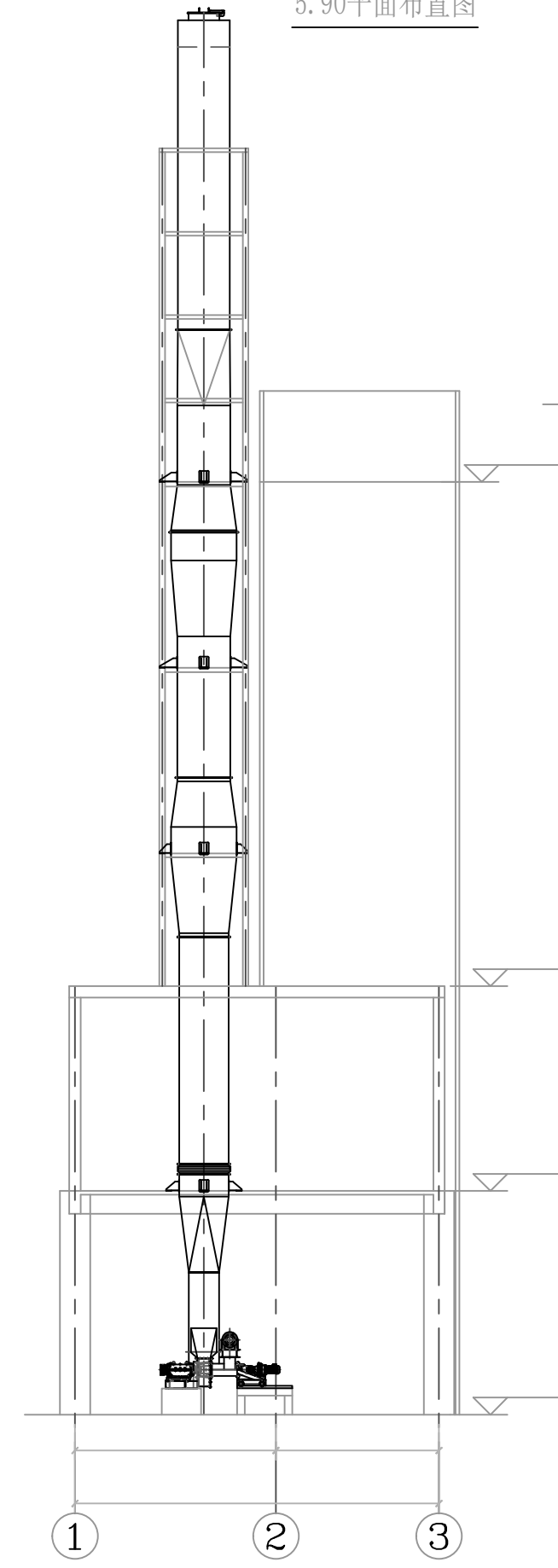
19.70平面布置图



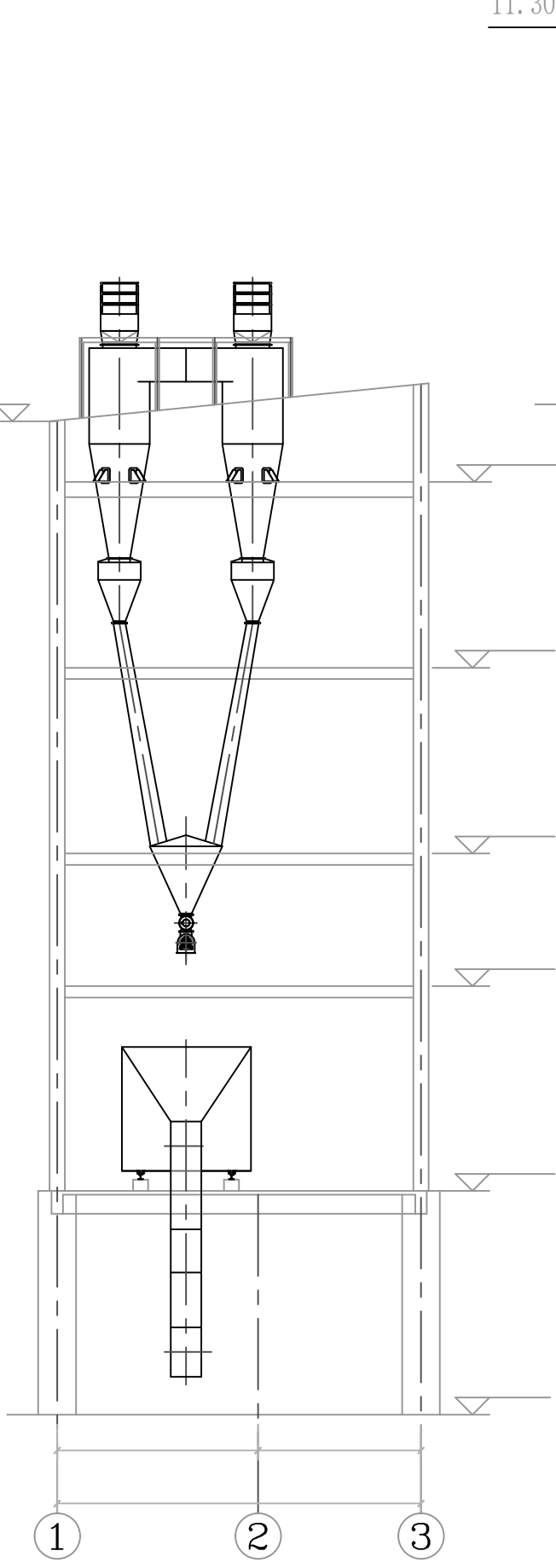
24.60平面布置图



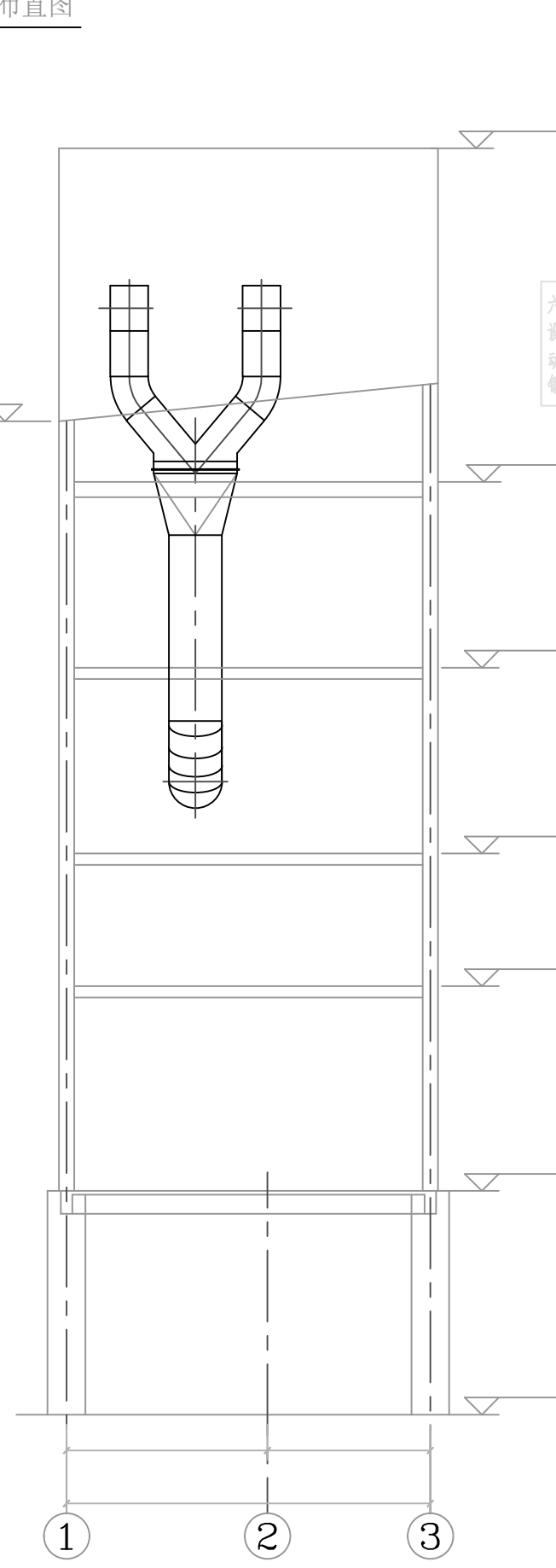
A-A剖立面布置图



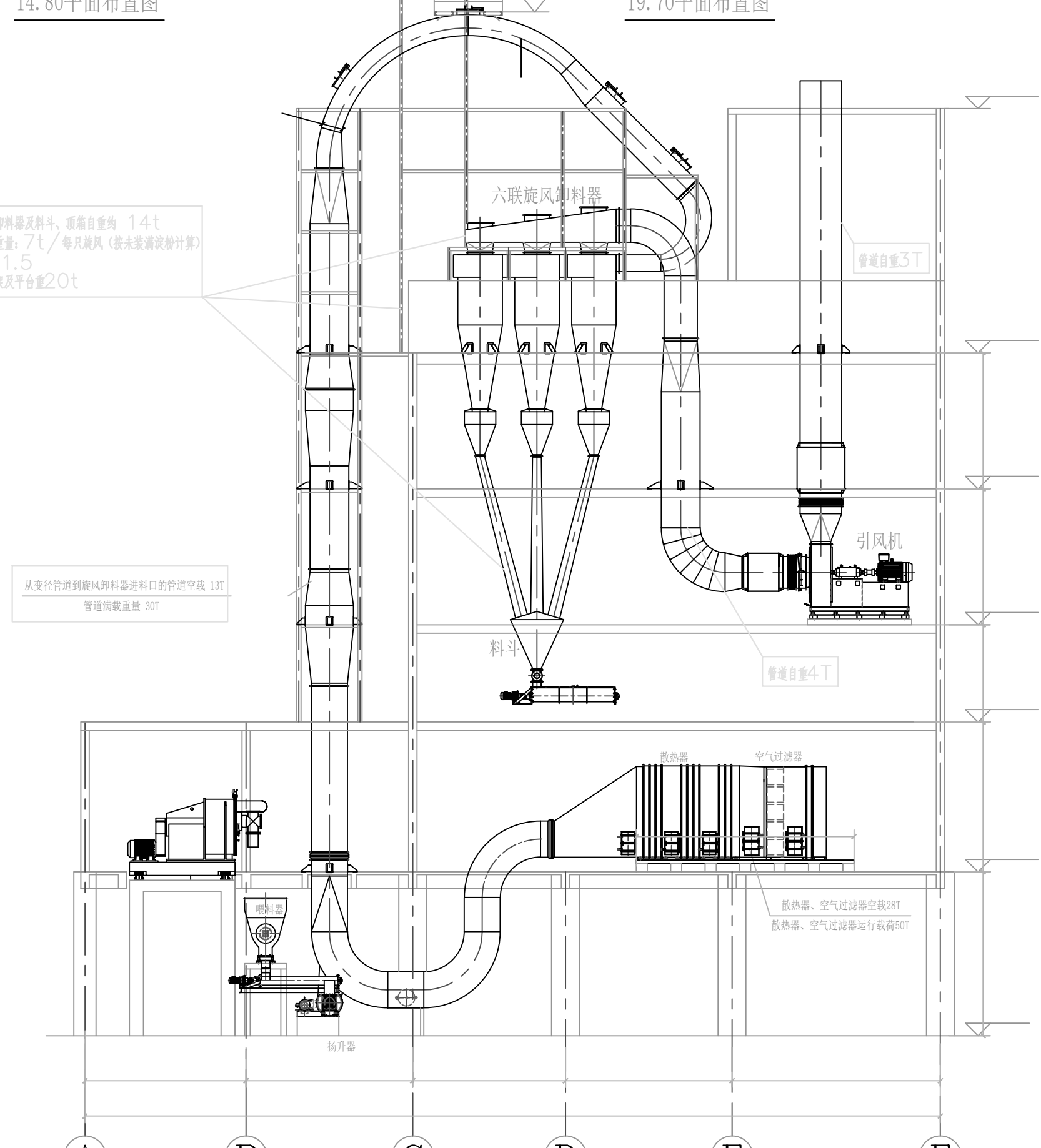
B-B剖立面布置图



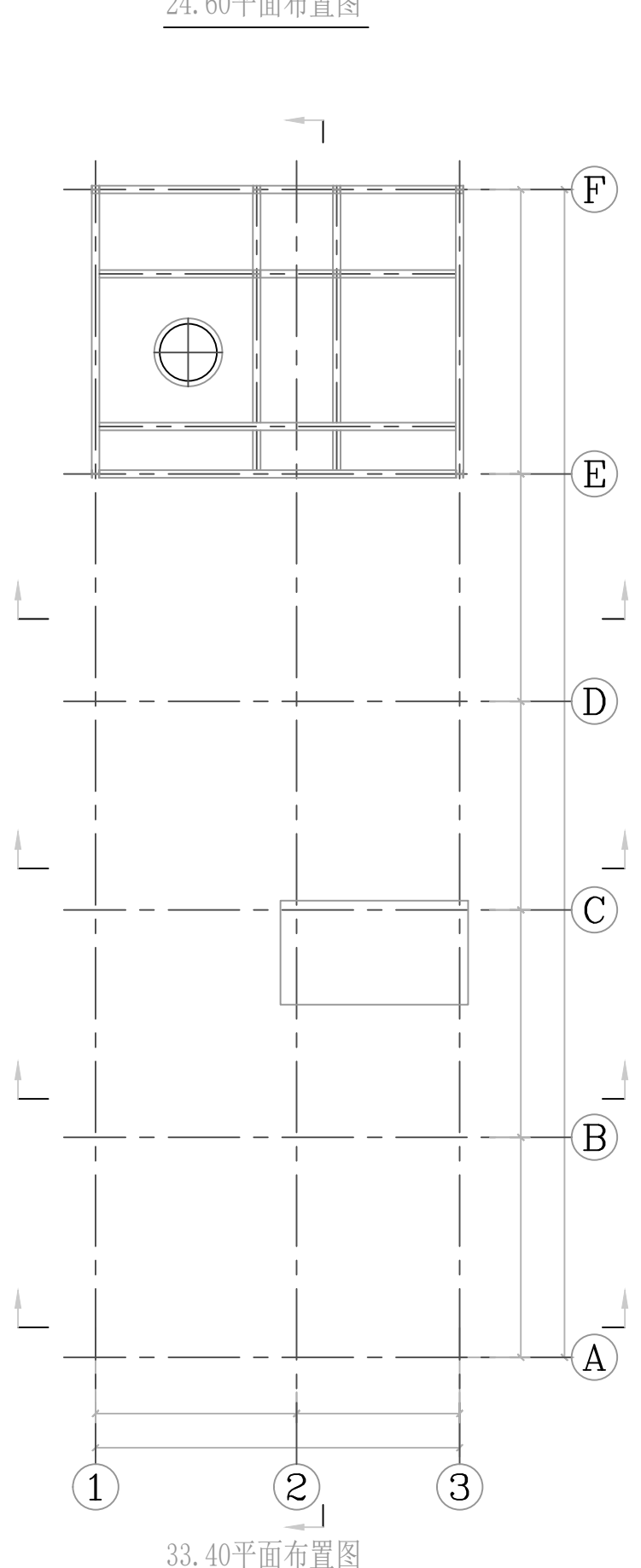
C-C剖立面布置图



D-D剖立面布置图



E-E剖立面布置图



33.40平面布置图

设备基础标高: +15000mm
设备重量: 21T
功率: 1.5
电压: 250kw
规格: 2400X3800

六联旋风分离器, 塔筒自重 1.4t
设备运行重量: 7t / 每只旋风 (按未安装设计)
功率: 1.5
物料支架及平台重 20t

从皮带输送机到旋风分离器进口的管道空载 1.2T
管道满载重量 30T

BODA 博大 郑州博大浓缩干燥设备有限公司
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| 项目 | |
| 编号 | |
| 比例 | |