

REBIS
AutoPIPE 6.20 MODEL PAGE 1

REBIS Industrial Workgroup Software
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**
** AUTOPIPE SYSTEM INFORMATION **
**

SYSTEM NAME : 79319821_KOMPLETT

PROJECT ID : ASU KOSICE

DESCRIPTION :

PREPARED BY : _____
WEGSTEIN

CHECKED BY : _____
FRICKHOEFER

PIPING CODE : B31.3
VERTICAL AXIS : Z
AMBIENT TEMPERATURE : 20.0 deg C
COMPONENT LIBRARY : HANAU_AL
MATERIAL LIBRARY : AUTOB313
MODEL REVISION NUMBER : 3

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C O M P O N E N T D A T A L I S T I N G

*** SEGMENT A , LINE # 79319821

From A00 to A02, DX= 348.76 mm, DY= -348.76 mm, L= 493.22 mm Run

PIPE DATA (A00 to A02 N):

Pipe Id= 200MX6,4, Material= AL, Poisson= 0.300, Nom Size= 200 mm,
OD= 219.10 mm, Sch= 6.4, Wall Thk= 6.400 mm, Mill= 0.800 mm, Cor= 0 mm,
Pipe Density= 2707.12 kg/m3, Pipe Unit Wgt= 113.53 N/m, Insul Thk= 0 mm,
Lining Thk= 0 mm, Long Weld factor= 1.00, Circ Weld factor= 1.00,
Long Modulus= 0.06899 x10⁶ N/m, Hoop Modulus= 0.06899 x10⁶ N/m,
Shear Modulus= 0.02653 x10⁶ N/m, Sc= 103.4 N/mm2, Syc= 0 N/mm2

OPERATING DATA:

P1= 0 N/mm2, T1= -196.00 deg C, Expl= -3.84587 mm/m,
E1= 0.07646 x10⁶ N/m, Sh1= 71.00 N/mm2

POINT DATA:

A00, Coordinates, X= 0.00 mm, Y= 0.00 mm, Z= 0.00 mm

SUPPORT DATA:

A00, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From A02 to A04, DX= -495.07 mm, DY= -495.07 mm, L= 700.13 mm Bend

COMPONENT DATA (Bend, TIP= A02, Near= A02 N, Far= A02 F):

Elbow, Radius= 304.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 9.561, SIFI= 2.90, SIFO= 2.42

PIPE DATA (A02 N to A02 F):

Pipe Id= 200MX6.4, Nom Size= 200 mm

PIPE DATA (A02 F to A04 N):

Pipe Id= 200MX6,4, Nom Size= 200 mm

POINT DATA:

A02, Coordinates, X= 348.76 mm, Y= -348.76 mm, Z= 0.00 mm
A02 N, Coordinates, X= 133.10 mm, Y= -133.10 mm, Z= 0.00 mm
A02 F, Coordinates, X= 133.10 mm, Y= -564.42 mm, Z= 0.00 mm

From A04 to A05, DX= -482.38 mm Bend

COMPONENT DATA (Bend, TIP= A04, Near= A04 N, Far= A04 F):

Elbow, Radius= 304.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 9.561, SIFI= 2.90, SIFO= 2.42

PIPE DATA (A04 N to A04 F):

Pipe Id= 200MX6.4, Nom Size= 200 mm

PIPE DATA (A04 F to A05):

Pipe Id= 200MX6,4, Nom Size= 200 mm

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POINT DATA:

A04, Coordinates, X= -146.31 mm, Y= -843.83 mm, Z= 0.00 mm
A04 N, Coordinates, X= -56.98 mm, Y= -754.50 mm, Z= 0.00 mm
A04 F, Coordinates, X= -272.64 mm, Y= -843.83 mm, Z= 0.00 mm

From A05 to A06, DX= -152.00 mm

Redu

COMPONENT DATA (Reducer):

Length= 152.00 mm, SIF= 1.00

POINT DATA:

A05, Coordinates, X= -628.69 mm, Y= -843.83 mm, Z= 0.00 mm

From A06 to A07, DX= -229.00 mm

Run

PIPE DATA:

Pipe Id= 150MX6.0, Nom Size= 150 mm, OD= 168.30 mm, Sch= NS,
Wall Thk= 6.000 mm, Mill= 0.750 mm

POINT DATA:

A06, Coordinates, X= -780.69 mm, Y= -843.83 mm, Z= 0.00 mm

From A07 to A08, DZ= -6229.00 mm

Bend

COMPONENT DATA (Bend, TIP= A07, Near= A07 N, Far= A07 F):

Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A07, Coordinates, X= -1009.69 mm, Y= -843.83 mm, Z= 0.00 mm
A07 N, Coordinates, X= -780.70 mm, Y= -843.83 mm, Z= 0.00 mm
A07 F, Coordinates, X= -1009.69 mm, Y= -843.83 mm, Z= -228.99 mm

From A08 to A09, DZ= -771.00 mm

Run

POINT DATA:

A08, Coordinates, X= -1009.69 mm, Y= -843.83 mm, Z= -6229.00 mm

From A09 to A10, DX= 964.89 mm

Bend

COMPONENT DATA (Bend, TIP= A09, Near= A09 N, Far= A09 F):

Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A09, Coordinates, X= -1009.69 mm, Y= -843.83 mm, Z= -7000.00 mm
A09 N, Coordinates, X= -1009.69 mm, Y= -843.83 mm, Z= -6771.01 mm
A09 F, Coordinates, X= -780.70 mm, Y= -843.83 mm, Z= -7000.00 mm

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From A10 to A11, DX= 858.43 mm, DY= 858.43 mm, L= 1214.00 mm Bend

COMPONENT DATA (Bend, TIP= A10, Near= A10 N, Far= A10 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A10, Coordinates, X= -44.80 mm, Y= -843.83 mm, Z= -7000.00 mm
A10 N, Coordinates, X= -139.65 mm, Y= -843.83 mm, Z= -7000.00 mm
A10 F, Coordinates, X= 22.27 mm, Y= -776.76 mm, Z= -7000.00 mm

From A11 to A12, DY= 1131.37 mm Bend

COMPONENT DATA (Bend, TIP= A11, Near= A11 N, Far= A11 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A11, Coordinates, X= 813.63 mm, Y= 14.60 mm, Z= -7000.00 mm
A11 N, Coordinates, X= 746.56 mm, Y= -52.47 mm, Z= -7000.00 mm
A11 F, Coordinates, X= 813.63 mm, Y= 109.45 mm, Z= -7000.00 mm

From A12 to A13, DZ= -6229.00 mm Bend

COMPONENT DATA (Bend, TIP= A12, Near= A12 N, Far= A12 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A12, Coordinates, X= 813.63 mm, Y= 1145.97 mm, Z= -7000.00 mm
A12 N, Coordinates, X= 813.63 mm, Y= 916.98 mm, Z= -7000.00 mm
A12 F, Coordinates, X= 813.63 mm, Y= 1145.97 mm, Z= -7228.99 mm

From A13 to A14, DZ= -7329.00 mm Run

POINT DATA:

A13, Coordinates, X= 813.63 mm, Y= 1145.97 mm, Z= -13229.00 mm

From A14 to A15, DY= -1131.37 mm Bend

COMPONENT DATA (Bend, TIP= A14, Near= A14 N, Far= A14 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A14, Coordinates, X= 813.63 mm, Y= 1145.97 mm, Z= -20558.00 mm
A14 N, Coordinates, X= 813.63 mm, Y= 1145.97 mm, Z= -20329.01 mm
A14 F, Coordinates, X= 813.63 mm, Y= 916.98 mm, Z= -20558.00 mm

From A15 to A16, DX= -414.11 mm, DY= -414.11 mm, L= 585.64 mm Bend

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COMPONENT DATA (Bend, TIP= A15, Near= A15 N, Far= A15 F):

Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A15, Coordinates, X= 813.63 mm, Y= 14.60 mm, Z= -20558.00 mm
A15 N, Coordinates, X= 813.63 mm, Y= 109.45 mm, Z= -20558.00 mm
A15 F, Coordinates, X= 746.56 mm, Y= -52.47 mm, Z= -20558.00 mm

From A16 to A17, DZ= -5129.00 mm

Bend

COMPONENT DATA (Bend, TIP= A16, Near= A16 N, Far= A16 F):

Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A16, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -20558.00 mm
A16 N, Coordinates, X= 561.44 mm, Y= -237.59 mm, Z= -20558.00 mm
A16 F, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -20786.99 mm

From A17 to A18, DZ= -6000.00 mm

Run

POINT DATA:

A17, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -25687.00 mm

From A18 to A19, DZ= -4381.91 mm

Run

POINT DATA:

A18, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -31687.00 mm

From A19 to A20, DZ= -198.24 mm

Tee

COMPONENT DATA (Tee Header, Center= A19):

B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

POINT DATA:

A19, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -36068.91 mm

From A20 to A21, DX= 282.84 mm, DY= -282.84 mm, DZ= -1492.82 mm,

L= 1545.48 mm

Bend

COMPONENT DATA (Bend, TIP= A20, Near= A20 N, Far= A20 F):

Elbow, Radius= 229.00 mm, Bend angle= 15.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A20, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -36267.15 mm
A20 N, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -36237.00 mm
A20 F, Coordinates, X= 405.04 mm, Y= -405.03 mm, Z= -36296.27 mm

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From A21 to A22, DZ= -5193.42 mm

Bend

COMPONENT DATA (Bend, TIP= A21, Near= A21 N, Far= A21 F):

Elbow, Radius= 228.97 mm, Bend angle= 15.00 deg, End flanges= 0,
Flex= 7.909, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A21, Coordinates, X= 682.36 mm, Y= -682.35 mm, Z= -37759.97 mm

A21 N, Coordinates, X= 676.84 mm, Y= -676.83 mm, Z= -37730.85 mm

A21 F, Coordinates, X= 682.36 mm, Y= -682.35 mm, Z= -37790.11 mm

From A22 to A23, DY= -935.79 mm, DZ= -250.74 mm, L= 968.80 mm

Bend

COMPONENT DATA (Bend, TIP= A22, Near= A22 N, Far= A22 F):

Elbow, Radius= 228.99 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A22, Coordinates, X= 682.36 mm, Y= -682.35 mm, Z= -42953.39 mm

A22 N, Coordinates, X= 682.36 mm, Y= -682.35 mm, Z= -42777.68 mm

A22 F, Coordinates, X= 682.36 mm, Y= -852.07 mm, Z= -42998.87 mm

From A23 to A24, DX= 900.00 mm, DY= -900.00 mm, L= 1272.79 mm

Bend

COMPONENT DATA (Bend, TIP= A23, Near= A23 N, Far= A23 F):

Elbow, Radius= 228.99 mm, Bend angle= 46.92 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A23, Coordinates, X= 682.36 mm, Y= -1618.14 mm, Z= -43204.13 mm

A23 N, Coordinates, X= 682.36 mm, Y= -1522.15 mm, Z= -43178.41 mm

A23 F, Coordinates, X= 752.63 mm, Y= -1688.41 mm, Z= -43204.13 mm

From A24 to A25, DX= 804.68 mm

Bend

COMPONENT DATA (Bend, TIP= A24, Near= A24 N, Far= A24 F):

Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A24, Coordinates, X= 1582.36 mm, Y= -2518.14 mm, Z= -43204.13 mm

A24 N, Coordinates, X= 1515.29 mm, Y= -2451.07 mm, Z= -43204.13 mm

A24 F, Coordinates, X= 1677.21 mm, Y= -2518.14 mm, Z= -43204.13 mm

From A25 to A26, DX= 293.23 mm, DZ= -1094.35 mm, L= 1132.95 mm

Bend

COMPONENT DATA (Bend, TIP= A25, Near= A25 N, Far= A25 F):

Elbow, Radius= 228.99 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

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POINT DATA:

A25, Coordinates, X= 2387.04 mm, Y= -2518.14 mm, Z= -43204.13 mm
A25 N, Coordinates, X= 2211.33 mm, Y= -2518.14 mm, Z= -43204.13 mm
A25 F, Coordinates, X= 2432.52 mm, Y= -2518.14 mm, Z= -43373.86 mm

From A26 to A27, DX= 56.94 mm, DZ= -212.50 mm, L= 220.00 mm Valv

COMPONENT DATA (Valve):

NS, Rating= 40, Length= 220.00 mm, Weight= 65 kg, Surface factor= 0.00,
End cond= Butt welded, SIF= 1.00, Without taper, Offset= 0.000 mm

POINT DATA:

A26, Coordinates, X= 2680.27 mm, Y= -2518.14 mm, Z= -44298.48 mm

From A27 to A28, DX= -212.50 mm, DZ= -56.94 mm, L= 220.00 mm Valv

COMPONENT DATA (Valve):

NS, Rating= 40, Length= 220.00 mm, Weight= 65 kg, Surface factor= 0.00,
End cond= Butt welded, SIF= 1.00, Without taper, Offset= 0.000 mm

POINT DATA:

A27, Coordinates, X= 2737.21 mm, Y= -2518.14 mm, Z= -44510.98 mm

SUPPORT DATA:

A27, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From A28 to A29, DX= -787.50 mm, DZ= -211.01 mm, L= 815.28 mm Run

POINT DATA:

A28, Coordinates, X= 2524.71 mm, Y= -2518.14 mm, Z= -44567.92 mm

From A29 to A30, DZ= -1600.00 mm Bend

COMPONENT DATA (Bend, TIP= A29, Near= A29 N, Far= A29 F):

Elbow, Radius= 228.99 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A29, Coordinates, X= 1737.21 mm, Y= -2518.14 mm, Z= -44778.93 mm
A29 N, Coordinates, X= 1906.93 mm, Y= -2518.14 mm, Z= -44733.45 mm
A29 F, Coordinates, X= 1737.21 mm, Y= -2518.14 mm, Z= -44954.64 mm

From A30 to A31, DY= 2425.00 mm, DZ= -1149.78 mm, L= 2683.77 mm Bend

COMPONENT DATA (Bend, TIP= A30, Near= A30 N, Far= A30 F):

Elbow, Radius= 228.99 mm, Bend angle= 64.63 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

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A30, Coordinates, X= 1737.21 mm, Y= -2518.14 mm, Z= -46378.93 mm
A30 N, Coordinates, X= 1737.21 mm, Y= -2518.14 mm, Z= -46234.08 mm
A30 F, Coordinates, X= 1737.21 mm, Y= -2387.25 mm, Z= -46440.99 mm

From A31 to A32, DX= -1040.12 mm, DZ= -278.70 mm, L= 1076.81 mm Bend

COMPONENT DATA (Bend, TIP= A31, Near= A31 N, Far= A31 F):
Elbow, Radius= 228.99 mm, Bend angle= 83.63 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A31, Coordinates, X= 1737.21 mm, Y= -93.14 mm, Z= -47528.71 mm
A31 N, Coordinates, X= 1737.21 mm, Y= -278.25 mm, Z= -47440.94 mm
A31 F, Coordinates, X= 1539.33 mm, Y= -93.14 mm, Z= -47581.73 mm

From A32 to A33, DZ= -1375.72 mm Bend

COMPONENT DATA (Bend, TIP= A32, Near= A32 N, Far= A32 F):
Elbow, Radius= 228.99 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A32, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -47807.41 mm
A32 N, Coordinates, X= 866.81 mm, Y= -93.14 mm, Z= -47761.93 mm
A32 F, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -47983.12 mm

From A33 to A34, DZ= -140.00 mm Run

COMPONENT DATA (Run):
Rigid, Include weight= Yes, Include expansion= Yes

POINT DATA:

A33, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -49183.13 mm

From A34 to A35, DZ= -6000.00 mm Run

POINT DATA:

A34, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -49323.13 mm
A34, Added Weight= 10.00 kg

From A35 to A36, DZ= -2942.65 mm Run

POINT DATA:

A35, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -55323.13 mm

From A36 to A37, DX= 466.51 mm, DY= -125.00 mm, L= 482.97 mm Bend

COMPONENT DATA (Bend, TIP= A36, Near= A36 N, Far= A36 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,

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Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A36, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -58265.78 mm
A36 N, Coordinates, X= 697.09 mm, Y= -93.14 mm, Z= -58036.79 mm
A36 F, Coordinates, X= 918.28 mm, Y= -152.41 mm, Z= -58265.78 mm

From A37 to A38, DX= 4679.55 mm

Bend

COMPONENT DATA (Bend, TIP= A37, Near= A37 N, Far= A37 F):

Elbow, Radius= 228.99 mm, Bend angle= 15.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A37, Coordinates, X= 1163.60 mm, Y= -218.14 mm, Z= -58265.78 mm
A37 N, Coordinates, X= 1134.48 mm, Y= -210.34 mm, Z= -58265.78 mm
A37 F, Coordinates, X= 1193.75 mm, Y= -218.14 mm, Z= -58265.78 mm

*** SEGMENT B , LINE # 79319821

From A19 to B01, DX= 119.95 mm

Tee

COMPONENT DATA (Tee Branch, Center= A19):

B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

PIPE DATA:

Pipe Id= 50MMX3.9, Nom Size= 50 mm, OD= 60.300 mm, Sch= 3.9,
Wall Thk= 3.900 mm, Mill= 0.487 mm

POINT DATA:

A19, Coordinates, X= 399.52 mm, Y= -399.51 mm, Z= -36068.91 mm
B01, Coordinates, X= 519.47 mm, Y= -399.51 mm, Z= -36068.91 mm

*** SEGMENT C , LINE # 79319821

From C00 to C01, DY= 500.00 mm

Run

PIPE DATA:

Pipe Id= 150MX7.1, Nom Size= 150 mm, OD= 168.30 mm, Sch= 7.1,
Wall Thk= 7.100 mm, Mill= 0.887 mm

POINT DATA:

C00, Coordinates, X= 7718.63 mm, Y= -90.91 mm, Z= -58265.78 mm

SUPPORT DATA:

C00, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

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From C01 to C02, DX= -329.00 mm Bend

COMPONENT DATA (Bend, TIP= C01, Near= C01 N, Far= C01 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 6.593, SIFI= 2.27, SIFO= 1.89

POINT DATA:

C01, Coordinates, X= 7718.63 mm, Y= 409.09 mm, Z= -58265.78 mm
C01 N, Coordinates, X= 7718.63 mm, Y= 180.10 mm, Z= -58265.78 mm
C01 F, Coordinates, X= 7489.64 mm, Y= 409.09 mm, Z= -58265.78 mm

From C02 to C03, DX= -517.48 mm Tee

COMPONENT DATA (Tee Header, Center= C02):
Bl6.9 welding tee, SIFI= 1.85, SIFO= 2.14

POINT DATA:

C02, Coordinates, X= 7389.63 mm, Y= 409.09 mm, Z= -58265.78 mm

From C03 to C04, DX= -529.00 mm Tee

COMPONENT DATA (Tee Header, Center= C03):
Bl6.9 welding tee, SIFI= 1.85, SIFO= 2.14

POINT DATA:

C03, Coordinates, X= 6872.15 mm, Y= 409.09 mm, Z= -58265.78 mm

From C04 to C05, DY= -627.23 mm Bend

COMPONENT DATA (Bend, TIP= C04, Near= C04 N, Far= C04 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 6.593, SIFI= 2.27, SIFO= 1.89

POINT DATA:

C04, Coordinates, X= 6343.15 mm, Y= 409.09 mm, Z= -58265.78 mm
C04 N, Coordinates, X= 6572.14 mm, Y= 409.09 mm, Z= -58265.78 mm
C04 F, Coordinates, X= 6343.15 mm, Y= 180.10 mm, Z= -58265.78 mm

From C05 to A38, DX= -500.00 mm Bend

COMPONENT DATA (Bend, TIP= C05, Near= C05 N, Far= C05 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 6.593, SIFI= 2.27, SIFO= 1.89

POINT DATA:

C05, Coordinates, X= 6343.15 mm, Y= -218.14 mm, Z= -58265.78 mm
C05 N, Coordinates, X= 6343.15 mm, Y= 10.85 mm, Z= -58265.78 mm
C05 F, Coordinates, X= 6114.16 mm, Y= -218.14 mm, Z= -58265.78 mm

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C O M P O N E N T D A T A L I S T I N G

*** SEGMENT D , LINE #

From C02 to D01, DY= 119.95 mm

Tee

COMPONENT DATA (Tee Branch, Center= C02):

B16.9 welding tee, SIFI= 1.85, SIFO= 2.14

PIPE DATA:

Pipe Id= 50MMX3.9, Nom Size= 50 mm, OD= 60.300 mm, Sch= 3.9,

Wall Thk= 3.900 mm, Mill= 0.487 mm

POINT DATA:

C02, Coordinates, X= 7389.63 mm, Y= 409.09 mm, Z= -58265.78 mm

*** SEGMENT E , LINE #

From C03 to E01, DY= 133.82 mm, DZ= 9.36 mm, L= 134.15 mm

Tee

COMPONENT DATA (Tee Branch, Center= C03):

B16.9 welding tee, SIFI= 1.85, SIFO= 2.14

PIPE DATA:

Pipe Id= 25MMX3.4, Nom Size= 25 mm, OD= 33.400 mm, Sch= 3.4,

Wall Thk= 3.400 mm, Mill= 0.425 mm

POINT DATA:

C03, Coordinates, X= 6872.15 mm, Y= 409.09 mm, Z= -58265.78 mm

E01, Coordinates, X= 6872.15 mm, Y= 542.91 mm, Z= -58256.43 mm

*** SEGMENT F , LINE #

From F00 to F01, DY= -74.60 mm

Run

COMPONENT DATA (Run):

Rigid, Include weight= Yes, Include expansion= Yes

PIPE DATA:

Pipe Id= 25MMX3.4, Nom Size= 25 mm

POINT DATA:

F00, Coordinates, X= 7389.63 mm, Y= 806.60 mm, Z= -58139.78 mm

*** SEGMENT G , LINE #

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C O M P O N E N T D A T A L I S T I N G

From G00 to G01, DX= 700.00 mm

Junc

PIPE DATA:

Pipe Id= 50MMX3.9, Nom Size= 50 mm, OD= 60.300 mm, Sch= 3.9,
Wall Thk= 3.900 mm, Mill= 0.487 mm

POINT DATA:

G00, Coordinates, X= 5843.15 mm, Y= -1543.41 mm, Z= -57580.18 mm

From G01 to G02, DY= 2775.41 mm

Bend

COMPONENT DATA (Bend, TIP= G01, Near= G01 N, Far= G01 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G01, Coordinates, X= 6543.15 mm, Y= -1543.41 mm, Z= -57580.18 mm
G01 N, Coordinates, X= 6467.16 mm, Y= -1543.41 mm, Z= -57580.18 mm
G01 F, Coordinates, X= 6543.15 mm, Y= -1467.42 mm, Z= -57580.18 mm

From G02 to G03, DZ= -238.73 mm

Bend

COMPONENT DATA (Bend, TIP= G02, Near= G02 N, Far= G02 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G02, Coordinates, X= 6543.15 mm, Y= 1232.00 mm, Z= -57580.18 mm
G02 N, Coordinates, X= 6543.15 mm, Y= 1156.01 mm, Z= -57580.18 mm
G02 F, Coordinates, X= 6543.15 mm, Y= 1232.00 mm, Z= -57656.17 mm

From G03 to G04, DX= 702.88 mm

Bend

COMPONENT DATA (Bend, TIP= G03, Near= G03 N, Far= G03 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G03, Coordinates, X= 6543.15 mm, Y= 1232.00 mm, Z= -57818.91 mm
G03 N, Coordinates, X= 6543.15 mm, Y= 1232.00 mm, Z= -57742.92 mm
G03 F, Coordinates, X= 6619.14 mm, Y= 1232.00 mm, Z= -57818.91 mm

From G04 to G05, DX= 845.00 mm

Run

COMPONENT DATA (Run):

Rigid, Include weight= Yes, Include expansion= Yes

POINT DATA:

G04, Coordinates, X= 7246.03 mm, Y= 1232.00 mm, Z= -57818.91 mm

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C O M P O N E N T D A T A L I S T I N G

From G05 to G06, DX= 747.50 mm

Run

POINT DATA:

G05, Coordinates, X= 8091.03 mm, Y= 1232.00 mm, Z= -57818.91 mm

From G06 to G07, DY= -500.00 mm

Bend

COMPONENT DATA (Bend, TIP= G06, Near= G06 N, Far= G06 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G06, Coordinates, X= 8838.53 mm, Y= 1232.00 mm, Z= -57818.91 mm

G06 N, Coordinates, X= 8762.54 mm, Y= 1232.00 mm, Z= -57818.91 mm

G06 F, Coordinates, X= 8838.53 mm, Y= 1156.01 mm, Z= -57818.91 mm

From G07 to G08, DX= -1448.90 mm

Bend

COMPONENT DATA (Bend, TIP= G07, Near= G07 N, Far= G07 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G07, Coordinates, X= 8838.53 mm, Y= 732.00 mm, Z= -57818.91 mm

G07 N, Coordinates, X= 8838.53 mm, Y= 807.99 mm, Z= -57818.91 mm

G07 F, Coordinates, X= 8762.54 mm, Y= 732.00 mm, Z= -57818.91 mm

From G08 to F01, DZ= -320.87 mm

Bend

COMPONENT DATA (Bend, TIP= G08, Near= G08 N, Far= G08 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G08, Coordinates, X= 7389.63 mm, Y= 732.00 mm, Z= -57818.91 mm

G08 N, Coordinates, X= 7465.62 mm, Y= 732.00 mm, Z= -57818.91 mm

G08 F, Coordinates, X= 7389.63 mm, Y= 732.00 mm, Z= -57894.90 mm

From F01 to G10, DZ= -126.00 mm

Tee

COMPONENT DATA (Tee Header, Center= F01):

B16.9 welding tee, SIFI= 1.44, SIFO= 1.58

POINT DATA:

F01, Coordinates, X= 7389.63 mm, Y= 732.00 mm, Z= -58139.78 mm

From G10 to D01, DY= -202.96 mm

Bend

COMPONENT DATA (Bend, TIP= G10, Near= G10 N, Far= G10 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,

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C O M P O N E N T D A T A L I S T I N G

Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

G10, Coordinates, X= 7389.63 mm, Y= 732.00 mm, Z= -58265.78 mm
G10 N, Coordinates, X= 7389.63 mm, Y= 732.00 mm, Z= -58189.79 mm
G10 F, Coordinates, X= 7389.63 mm, Y= 656.01 mm, Z= -58265.78 mm

*** SEGMENT H , LINE #

From H00 to H01, DX= 69.95 mm

Run

PIPE DATA:

Pipe Id= 40MMX5.1, Nom Size= 40 mm, OD= 48.300 mm, Sch= 5.1,
Wall Thk= 5.100 mm, Mill= 0.637 mm

POINT DATA:

H00, Coordinates, X= 4423.20 mm, Y= -1818.51 mm, Z= -57056.48 mm

*** SEGMENT I , LINE #

From I00 to I01, DY= 301.50 mm

Run

PIPE DATA:

Pipe Id= 50MMXP, Nom Size= 50 mm, OD= 60.300 mm, Sch= NS,
Wall Thk= 3.900 mm, Mill= 0.488 mm

POINT DATA:

I00, Coordinates, X= -2228.19 mm, Y= -4916.16 mm, Z= -55268.92 mm

SUPPORT DATA:

I00, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From I01 to I02, DY= 206.00 mm

Run

COMPONENT DATA (Run):

Rigid (I01 to I02 N), Include weight= Yes, Include expansion= Yes

PIPE DATA:

Pipe Id= 50MMX3.9, Nom Size= 50 mm, Sch= 3.9, Mill= 0.487 mm

POINT DATA:

I01, Coordinates, X= -2228.19 mm, Y= -4614.66 mm, Z= -55268.92 mm

From I02 to I03, DZ= -800.00 mm

Bend

COMPONENT DATA (Bend, TIP= I02, Near= I02 N, Far= I02 F):

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C O M P O N E N T D A T A L I S T I N G

Elbow, Radius= 75.50 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.456, SIFI= 1.75, SIFO= 1.45

POINT DATA:

I02, Coordinates, X= -2228.19 mm, Y= -4408.66 mm, Z= -55268.92 mm
I02 N, Coordinates, X= -2228.19 mm, Y= -4484.16 mm, Z= -55268.92 mm
I02 F, Coordinates, X= -2228.19 mm, Y= -4408.66 mm, Z= -55344.42 mm

From I03 to I04, DX= 2321.34 mm

Bend

COMPONENT DATA (Bend, TIP= I03, Near= I03 N, Far= I03 F):

Elbow, Radius= 75.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

I03, Coordinates, X= -2228.19 mm, Y= -4408.66 mm, Z= -56068.92 mm
I03 N, Coordinates, X= -2228.19 mm, Y= -4408.66 mm, Z= -55992.93 mm
I03 F, Coordinates, X= -2152.20 mm, Y= -4408.66 mm, Z= -56068.92 mm

From I04 to I05, DX= 703.14 mm, DY= 703.14 mm, L= 994.39 mm

Bend

COMPONENT DATA (Bend, TIP= I04, Near= I04 N, Far= I04 F):

Elbow, Radius= 75.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

POINT DATA:

I04, Coordinates, X= 93.15 mm, Y= -4408.66 mm, Z= -56068.92 mm
I04 N, Coordinates, X= 61.67 mm, Y= -4408.66 mm, Z= -56068.92 mm
I04 F, Coordinates, X= 115.41 mm, Y= -4386.40 mm, Z= -56068.92 mm

From I05 to I06, DY= 1887.01 mm

Bend

COMPONENT DATA (Bend, TIP= I05, Near= I05 N, Far= I05 F):

Elbow, Radius= 75.15 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 4.477, SIFI= 1.75, SIFO= 1.46

POINT DATA:

I05, Coordinates, X= 796.29 mm, Y= -3705.52 mm, Z= -56068.92 mm
I05 N, Coordinates, X= 774.28 mm, Y= -3727.53 mm, Z= -56068.92 mm
I05 F, Coordinates, X= 796.29 mm, Y= -3674.39 mm, Z= -56068.92 mm

From I06 to I07, DX= 3696.86 mm

Bend

COMPONENT DATA (Bend, TIP= I06, Near= I06 N, Far= I06 F):

Elbow, Radius= 75.50 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.456, SIFI= 1.75, SIFO= 1.45

POINT DATA:

I06, Coordinates, X= 796.29 mm, Y= -1818.51 mm, Z= -56068.92 mm
I06 N, Coordinates, X= 796.29 mm, Y= -1894.01 mm, Z= -56068.92 mm
I06 F, Coordinates, X= 871.79 mm, Y= -1818.51 mm, Z= -56068.92 mm

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C O M P O N E N T D A T A L I S T I N G

From I07 to H01, DZ= -987.56 mm

Bend

COMPONENT DATA (Bend, TIP= I07, Near= I07 N, Far= I07 F):
Elbow, Radius= 75.50 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.456, SIFI= 1.75, SIFO= 1.45

POINT DATA:

I07, Coordinates, X= 4493.15 mm, Y= -1818.51 mm, Z= -56068.92 mm
I07 N, Coordinates, X= 4417.65 mm, Y= -1818.51 mm, Z= -56068.92 mm
I07 F, Coordinates, X= 4493.15 mm, Y= -1818.51 mm, Z= -56144.42 mm

From H01 to I09, DZ= -177.64 mm

Tee

COMPONENT DATA (Tee Header, Center= H01):
B16.9 welding tee, SIFI= 1.44, SIFO= 1.58

POINT DATA:

H01, Coordinates, X= 4493.15 mm, Y= -1818.51 mm, Z= -57056.48 mm

From I09 to I10, DY= -277.28 mm

Bend

COMPONENT DATA (Bend, TIP= I09, Near= I09 N, Far= I09 F):
Elbow, Radius= 75.50 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.456, SIFI= 1.75, SIFO= 1.45

POINT DATA:

I09, Coordinates, X= 4493.15 mm, Y= -1818.51 mm, Z= -57234.12 mm
I09 N, Coordinates, X= 4493.15 mm, Y= -1818.51 mm, Z= -57158.62 mm
I09 F, Coordinates, X= 4493.15 mm, Y= -1894.01 mm, Z= -57234.12 mm

From I10 to I11, DY= -15.88 mm, DZ= -59.27 mm, L= 61.36 mm

Bend

COMPONENT DATA (Bend, TIP= I10, Near= I10 N, Far= I10 F):
Elbow, Radius= 75.99 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 4.428, SIFI= 1.74, SIFO= 1.45

PIPE DATA (I10 F to I11):

Pipe Id= 50MMXPN, Nom Size= 50 mm, Sch= NS, Mill= 0.488 mm

POINT DATA:

I10, Coordinates, X= 4493.15 mm, Y= -2095.79 mm, Z= -57234.12 mm
I10 N, Coordinates, X= 4493.15 mm, Y= -2037.48 mm, Z= -57234.12 mm
I10 F, Coordinates, X= 4493.15 mm, Y= -2110.88 mm, Z= -57290.44 mm

From I11 to I12, DY= -33.63 mm, DZ= -125.52 mm, L= 129.95 mm

Valv

COMPONENT DATA (Valve):
NS, Rating= 10, Length= 129.95 mm, Weight= 11 kg, Surface factor= 0.00,
End cond= Butt welded, SIF= 1.00, Without taper, Offset= 0.000 mm

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C O M P O N E N T D A T A L I S T I N G

POINT DATA:

I11, Coordinates, X= 4493.15 mm, Y= -2111.67 mm, Z= -57293.39 mm

From I12 to I13, DY= 128.47 mm, DZ= -34.42 mm, L= 133.00 mm Valv

COMPONENT DATA (Valve):

NS, Rating= 10, Length= 133.00 mm, Weight= 11 kg, Surface factor= 0.00,
End cond= Butt welded, SIF= 1.00, Without taper, Offset= 0.000 mm

POINT DATA:

I12, Coordinates, X= 4493.15 mm, Y= -2145.30 mm, Z= -57418.91 mm

SUPPORT DATA:

I12, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From I13 to I14, DY= 72.45 mm, DZ= -19.41 mm, L= 75.00 mm Run

PIPE DATA:

Pipe Id= 50MMX3.9, Nom Size= 50 mm, Sch= 3.9, Mill= 0.487 mm

POINT DATA:

I13, Coordinates, X= 4493.15 mm, Y= -2016.83 mm, Z= -57453.33 mm

From I14 to I15, DY= 400.97 mm, DZ= -107.44 mm, L= 415.12 mm Tee

COMPONENT DATA (Tee Header, Center= I14):

B16.9 welding tee, SIFI= 1.44, SIFO= 1.58

POINT DATA:

I14, Coordinates, X= 4493.15 mm, Y= -1944.38 mm, Z= -57472.74 mm

From I15 to G00, DX= 1350.00 mm Bend

COMPONENT DATA (Bend, TIP= I15, Near= I15 N, Far= I15 F):

Elbow, Radius= 75.50 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 4.456, SIFI= 1.75, SIFO= 1.45

POINT DATA:

I15, Coordinates, X= 4493.15 mm, Y= -1543.41 mm, Z= -57580.18 mm

I15 N, Coordinates, X= 4493.15 mm, Y= -1616.34 mm, Z= -57560.64 mm

I15 F, Coordinates, X= 4568.65 mm, Y= -1543.41 mm, Z= -57580.18 mm

*** SEGMENT J , LINE #

From I14 to J01, DX= -70.00 mm Tee

COMPONENT DATA (Tee Branch, Center= I14):

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C O M P O N E N T D A T A L I S T I N G

B16.9 welding tee, SIFI= 1.44, SIFO= 1.58

PIPE DATA:

Pipe Id= 50MMX3.9, Nom Size= 50 mm

POINT DATA:

I14, Coordinates, X= 4493.15 mm, Y= -1944.38 mm, Z= -57472.74 mm

J01, Coordinates, X= 4423.15 mm, Y= -1944.38 mm, Z= -57472.74 mm

Number of points in the system: 167

Weight of Empty Pipes + Weight of Contents = Total Weight of System
856.0 kg + 0.0 kg = 856.0 kg

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COORDINATES DATA LISTING

POINT NAME	-----X-----	COORDINATE (mm) Y	Z
*** SEGMENT A , LINE # 79319821			
A00	0.00	0.00	0.00
A02 N	133.10	-133.10	0.00
A02	348.76	-348.76	0.00
A02 F	133.10	-564.42	0.00
A04 N	-56.98	-754.50	0.00
A04	-146.31	-843.83	0.00
A04 F	-272.64	-843.83	0.00
A05	-628.69	-843.83	0.00
A06	-780.69	-843.83	0.00
A07 N	-780.70	-843.83	0.00
A07	-1009.69	-843.83	0.00
A07 F	-1009.69	-843.83	-228.99
A08	-1009.69	-843.83	-6229.00
A09 N	-1009.69	-843.83	-6771.01
A09	-1009.69	-843.83	-7000.00
A09 F	-780.70	-843.83	-7000.00
A10 N	-139.65	-843.83	-7000.00
A10	-44.80	-843.83	-7000.00
A10 F	22.27	-776.76	-7000.00
A11 N	746.56	-52.47	-7000.00
A11	813.63	14.60	-7000.00
A11 F	813.63	109.45	-7000.00
A12 N	813.63	916.98	-7000.00
A12	813.63	1145.97	-7000.00
A12 F	813.63	1145.97	-7228.99
A13	813.63	1145.97	-13229.00
A14 N	813.63	1145.97	-20329.01
A14	813.63	1145.97	-20558.00
A14 F	813.63	916.98	-20558.00
A15 N	813.63	109.45	-20558.00
A15	813.63	14.60	-20558.00
A15 F	746.56	-52.47	-20558.00
A16 N	561.44	-237.59	-20558.00
A16	399.52	-399.51	-20558.00
A16 F	399.52	-399.51	-20786.99
A17	399.52	-399.51	-25687.00
A18	399.52	-399.51	-31687.00
A19	399.52	-399.51	-36068.91
A20 N	399.52	-399.51	-36237.00
A20	399.52	-399.51	-36267.15
A20 F	405.04	-405.03	-36296.27
A21 N	676.84	-676.83	-37730.85
A21	682.36	-682.35	-37759.97
A21 F	682.36	-682.35	-37790.11
A22 N	682.36	-682.35	-42777.68
A22	682.36	-682.35	-42953.39
A22 F	682.36	-852.07	-42998.87
A23 N	682.36	-1522.15	-43178.41
A23	682.36	-1618.14	-43204.13
A23 F	752.63	-1688.41	-43204.13
A24 N	1515.29	-2451.07	-43204.13

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COORDINATES DATA LISTING

POINT NAME	-----COORDINATE (mm)----- X	Y	Z
A24	1582.36	-2518.14	-43204.13
A24 F	1677.21	-2518.14	-43204.13
A25 N	2211.33	-2518.14	-43204.13
A25	2387.04	-2518.14	-43204.13
A25 F	2432.52	-2518.14	-43373.86
A26	2680.27	-2518.14	-44298.48
A27	2737.21	-2518.14	-44510.98
A28	2524.71	-2518.14	-44567.92
A29 N	1906.93	-2518.14	-44733.45
A29	1737.21	-2518.14	-44778.93
A29 F	1737.21	-2518.14	-44954.64
A30 N	1737.21	-2518.14	-46234.08
A30	1737.21	-2518.14	-46378.93
A30 F	1737.21	-2387.25	-46440.99
A31 N	1737.21	-278.25	-47440.94
A31	1737.21	-93.14	-47528.71
A31 F	1539.33	-93.14	-47581.73
A32 N	866.81	-93.14	-47761.93
A32	697.09	-93.14	-47807.41
A32 F	697.09	-93.14	-47983.12
A33	697.09	-93.14	-49183.13
A34	697.09	-93.14	-49323.13
A35	697.09	-93.14	-55323.13
A36 N	697.09	-93.14	-58036.79
A36	697.09	-93.14	-58265.78
A36 F	918.28	-152.41	-58265.78
A37 N	1134.48	-210.34	-58265.78
A37	1163.60	-218.14	-58265.78
A37 F	1193.75	-218.14	-58265.78
A38	5843.15	-218.14	-58265.78

*** SEGMENT B , LINE # 79319821
A19 399.52 -399.51 -36068.91
B01 519.47 -399.51 -36068.91

*** SEGMENT C , LINE # 79319821
C00 7718.63 -90.91 -58265.78
C01 N 7718.63 180.10 -58265.78
C01 7718.63 409.09 -58265.78
C01 F 7489.64 409.09 -58265.78
C02 7389.63 409.09 -58265.78
C03 6872.15 409.09 -58265.78
C04 N 6572.14 409.09 -58265.78
C04 6343.15 409.09 -58265.78
C04 F 6343.15 180.10 -58265.78
C05 N 6343.15 10.85 -58265.78
C05 6343.15 -218.14 -58265.78
C05 F 6114.16 -218.14 -58265.78
A38 5843.15 -218.14 -58265.78

*** SEGMENT D , LINE #
C02 7389.63 409.09 -58265.78

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C O O R D I N A T E S D A T A L I S T I N G

POINT NAME	-----COORDINATE (mm)----- X	Y	Z
D01	7389.63	529.04	-58265.78
*** SEGMENT E , LINE #			
C03	6872.15	409.09	-58265.78
E01	6872.15	542.91	-58256.43
*** SEGMENT F , LINE #			
F00	7389.63	806.60	-58139.78
F01	7389.63	732.00	-58139.78
*** SEGMENT G , LINE #			
G00	5843.15	-1543.41	-57580.18
G01 N	6467.16	-1543.41	-57580.18
G01	6543.15	-1543.41	-57580.18
G01 F	6543.15	-1467.42	-57580.18
G02 N	6543.15	1156.01	-57580.18
G02	6543.15	1232.00	-57580.18
G02 F	6543.15	1232.00	-57656.17
G03 N	6543.15	1232.00	-57742.92
G03	6543.15	1232.00	-57818.91
G03 F	6619.14	1232.00	-57818.91
G04	7246.03	1232.00	-57818.91
G05	8091.03	1232.00	-57818.91
G06 N	8762.54	1232.00	-57818.91
G06	8838.53	1232.00	-57818.91
G06 F	8838.53	1156.01	-57818.91
G07 N	8838.53	807.99	-57818.91
G07	8838.53	732.00	-57818.91
G07 F	8762.54	732.00	-57818.91
G08 N	7465.62	732.00	-57818.91
G08	7389.63	732.00	-57818.91
G08 F	7389.63	732.00	-57894.90
F01	7389.63	732.00	-58139.78
G10 N	7389.63	732.00	-58189.79
G10	7389.63	732.00	-58265.78
G10 F	7389.63	656.01	-58265.78
D01	7389.63	529.04	-58265.78
*** SEGMENT H , LINE #			
H00	4423.20	-1818.51	-57056.48
H01	4493.15	-1818.51	-57056.48
*** SEGMENT I , LINE #			
I00	-2228.19	-4916.16	-55268.92
I01	-2228.19	-4614.66	-55268.92
I02 N	-2228.19	-4484.16	-55268.92
I02	-2228.19	-4408.66	-55268.92
I02 F	-2228.19	-4408.66	-55344.42
I03 N	-2228.19	-4408.66	-55992.93
I03	-2228.19	-4408.66	-56068.92
I03 F	-2152.20	-4408.66	-56068.92
I04 N	61.67	-4408.66	-56068.92

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COORDINATES DATA LISTING

POINT NAME	-----COORDINATE (mm)----- X	Y	Z
I04	93.15	-4408.66	-56068.92
I04 F	115.41	-4386.40	-56068.92
I05 N	774.28	-3727.53	-56068.92
I05	796.29	-3705.52	-56068.92
I05 F	796.29	-3674.39	-56068.92
I06 N	796.29	-1894.01	-56068.92
I06	796.29	-1818.51	-56068.92
I06 F	871.79	-1818.51	-56068.92
I07 N	4417.65	-1818.51	-56068.92
I07	4493.15	-1818.51	-56068.92
I07 F	4493.15	-1818.51	-56144.42
H01	4493.15	-1818.51	-57056.48
I09 N	4493.15	-1818.51	-57158.62
I09	4493.15	-1818.51	-57234.12
I09 F	4493.15	-1894.01	-57234.12
I10 N	4493.15	-2037.48	-57234.12
I10	4493.15	-2095.79	-57234.12
I10 F	4493.15	-2110.88	-57290.44
I11	4493.15	-2111.67	-57293.39
I12	4493.15	-2145.30	-57418.91
I13	4493.15	-2016.83	-57453.33
I14	4493.15	-1944.38	-57472.74
I15 N	4493.15	-1616.34	-57560.64
I15	4493.15	-1543.41	-57580.18
I15 F	4568.65	-1543.41	-57580.18
G00	5843.15	-1543.41	-57580.18
*** SEGMENT J , LINE #			
I14	4493.15	-1944.38	-57472.74
J01	4423.15	-1944.38	-57472.74

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P I P E D A T A L I S T I N G

Pipe ID/ Material	Nom/ Sch	O.D. mm	-----Thickness(mm)----- W.Th. Corr Mill Insu Ling	Spec Grav	Weight(N/m) Pipe Other Total	ZL/ ZC
200MX6,4 AL	200 6.4	219.10	6.400 0 0.80 0 0	0	114 0 114	1.00 1.00
200MX6.4 AL	200 6.4	219.10	6.400 0 0.80 0 0	0	114 0 114	1.00 1.00
150MX6.0 AL	150 NS	168.30	6.000 0 0.75 0 0	0	81.22 0 81.22	1.00 1.00
50MMX3.9 AL	50 3.9	60.300	3.900 0 0.49 0 0	0	18.35 0 18.35	1.00 1.00
150MX7.1 AL	150 7.1	168.30	7.100 0 0.89 0 0	0	95.46 0 95.46	1.00 1.00
25MMX3.4 AL	25 3.4	33.400	3.400 0 0.43 0 0	0	8.51 0 8.51	1.00 1.00
40MMX5.1 AL	40 5.1	48.300	5.100 0 0.64 0 0	0	18.38 0 18.38	1.00 1.00
50MMXPN AL	50 NS	60.300	3.900 0 0.49 0 0	0	18.35 0 18.35	1.00 1.00

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M A T E R I A L D A T A L I S T I N G

Material Name	Pipe ID	Density kg/m3	Pois. Ratio	Temper. deg C	Modulus x10 ⁶ N/			Expans. mm/m
					Axial	Hoop	Shear	
AL	200MX6,4	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	200MX6.4	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	150MX6.0	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	50MMX3.9	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	150MX7.1	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	25MMX3.4	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	40MMX5.1	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459
AL	50MMXPN	2707.1	0.30	20.0 -196.0	0.06899 0.07646	0.06899	0.02653	-3.8459

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M A T E R I A L A L L O W A B L E D A T A L I S T I N G

Material Name	Pipe ID	Temper. deg C	Allow. N/mm2	Yield N/mm2
AL	200MX6,4	20.0 -196.0	103.42 71.00	0.00
AL	200MX6.4	20.0 -196.0	103.42 71.00	0.00
AL	150MX6.0	20.0 -196.0	103.42 71.00	0.00
AL	50MMX3.9	20.0 -196.0	103.42 71.00	0.00
AL	150MX7.1	20.0 -196.0	103.42 71.00	0.00
AL	25MMX3.4	20.0 -196.0	103.42 71.00	0.00
AL	40MMX5.1	20.0 -196.0	103.42 71.00	0.00
AL	50MMXPN	20.0 -196.0	103.42 71.00	0.00

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TEMPERATURE AND PRESSURE DATA

-----C A S E 1-----				-----C A S E 2-----			-----C A S E 3-----		
POINT	PRESS.	TEMPER	EXPAN.	PRESS.	TEMPER	EXPAN.	PRESS.	TEMPER	EXPAN.
NAME	N/mm2	deg C	mm/m	N/mm2	deg C	mm/m	N/mm2	deg C	mm/m
*** SEGMENT A , LINE # 79319821									
A00	0	-196	-3.846						
A38	0	-196	-3.846						
*** SEGMENT B , LINE # 79319821									
A19	0	-196	-3.846						
B01	0	-196	-3.846						
*** SEGMENT C , LINE # 79319821									
C00	0	-196	-3.846						
A38	0	-196	-3.846						
*** SEGMENT D , LINE #									
C02	0	-196	-3.846						
D01	0	-196	-3.846						
*** SEGMENT E , LINE #									
C03	0	-196	-3.846						
E01	0	-196	-3.846						
*** SEGMENT F , LINE #									
F00	0	-196	-3.846						
F01	0	-196	-3.846						
*** SEGMENT G , LINE #									
G00	0	-196	-3.846						
D01	0	-196	-3.846						
*** SEGMENT H , LINE #									
H00	0	-196	-3.846						
H01	0	-196	-3.846						
*** SEGMENT I , LINE #									
I00	0	-196	-3.846						
G00	0	-196	-3.846						
*** SEGMENT J , LINE #									
I14	0	-196	-3.846						
J01	0	-196	-3.846						

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H O T M O D U L U S (x10⁶ N/)

POINT NAME	CASE 1	CASE 2	CASE 3
*** SEGMENT A , LINE # 79319821			
A00	0.07646		
A38	0.07646		
*** SEGMENT B , LINE # 79319821			
A19	0.07646		
B01	0.07646		
*** SEGMENT C , LINE # 79319821			
C00	0.07646		
A38	0.07646		
*** SEGMENT D , LINE #			
C02	0.07646		
D01	0.07646		
*** SEGMENT E , LINE #			
C03	0.07646		
E01	0.07646		
*** SEGMENT F , LINE #			
F00	0.07646		
F01	0.07646		
*** SEGMENT G , LINE #			
G00	0.07646		
D01	0.07646		
*** SEGMENT H , LINE #			
H00	0.07646		
H01	0.07646		
*** SEGMENT I , LINE #			
I00	0.07646		
G00	0.07646		
*** SEGMENT J , LINE #			
I14	0.07646		
J01	0.07646		

* Non-standard material

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POINT NAME	C A S E 1			H O T A L L O W A B L E S (N/mm2)			C A S E 2			C A S E 3		
	ALLOW	NOT USED	NOT USED	ALLOW	NOT USED	NOT USED	ALLOW	NOT USED	NOT USED	ALLOW	NOT USED	NOT USED

*** SEGMENT A , LINE # 79319821
A00 71.00*
A38 71.00*

*** SEGMENT B , LINE # 79319821
A19 71.00*
B01 71.00*

*** SEGMENT C , LINE # 79319821
C00 71.00*
A38 71.00*

*** SEGMENT D , LINE #
C02 71.00*
D01 71.00*

*** SEGMENT E , LINE #
C03 71.00*
E01 71.00*

*** SEGMENT F , LINE #
F00 71.00*
F01 71.00*

*** SEGMENT G , LINE #
G00 71.00*
D01 71.00*

*** SEGMENT H , LINE #
H00 71.00*
H01 71.00*

*** SEGMENT I , LINE #
I00 71.00*
G00 71.00*

*** SEGMENT J , LINE #
I14 71.00*
J01 71.00*

< User-defined code allowable
* Non-code material

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THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (mm)	DY (mm)	DZ (mm)	RX (deg)	RY (deg)	RZ (deg)
A00	Thermal 1	-2.80	2.80	-232.10	0.000	0.000	0.000
C00	Thermal 1	0.00	-3.50	34.30	0.000	0.000	0.000

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AutoPIPE 6.20 RESULT PAGE 1

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
*** Segment A begin *** Line # 79319821							
A00	T1	-2.800	2.800-232.100		0.000	0.000	0.000
A02 N	T1	-3.312	3.312-232.102		0.002	0.001	0.000
A02 F	T1	-3.316	4.971-232.312		0.054	0.011	-0.001
A04 N	T1	-2.588	5.705-232.459		0.061	0.014	-0.001
A04 F	T1	-1.760	6.050-232.527		0.073	0.007	0.000
A05	T1	-0.390	6.050-232.483		0.083	0.006	0.000
A06	T1	0.194	6.050-232.467		0.090	0.005	0.000
A07 N	T1	0.194	6.050-232.467		0.090	0.005	0.000
A07 F	T1	1.224	6.626-231.656		0.178	-0.066	-0.038
A08	T1	18.056	41.382-208.566		0.478	-0.265	-0.023
A09 N	T1	20.664	46.023-206.480		0.503	-0.286	-0.021
A09 F	T1	21.084	48.202-204.185		0.579	-0.387	0.016
A10 N	T1	18.619	48.384-199.772		0.617	-0.397	0.017
A10 F	T1	17.976	48.174-197.898		0.636	-0.412	0.018
A11 N	T1	14.970	45.609-184.536		0.670	-0.383	0.017
A11 F	T1	14.667	45.006-182.209		0.665	-0.370	0.014
A12 N	T1	14.476	41.900-172.865		0.655	-0.328	0.012
A12 F	T1	15.592	43.379-169.507		0.549	-0.266	0.036
A13	T1	32.225	87.308-146.417		0.282	-0.061	0.009
A14 N	T1	28.481	99.622-119.094		-0.094	0.108	-0.024
A14 F	T1	27.840	99.894-117.434		-0.248	0.141	-0.043
A15 N	T1	27.214	103.000-113.726		-0.272	0.159	-0.045
A15 F	T1	27.341	103.677-112.735		-0.290	0.170	-0.048
A16 N	T1	27.898	104.544-111.238		-0.291	0.173	-0.048
A16 F	T1	27.676	104.169-109.044		-0.278	0.175	-0.054

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AutoPIPE 6.20 RESULT PAGE 2

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
A17	T1	13.278	81.759	-90.187	-0.251	0.155	-0.058
A18	T1	0.579	55.339	-67.097	-0.261	0.078	-0.062
A19	T1	-2.072	34.177	-50.234	-0.297	-0.014	-0.066
A20 N	T1	-2.025	33.303	-49.587	-0.299	-0.018	-0.066
A20 F	T1	-2.028	33.007	-49.327	-0.304	-0.030	-0.065
A21 N	T1	-2.243	25.984	-42.120	-0.313	-0.059	-0.067
A21 F	T1	-2.205	25.675	-41.856	-0.313	-0.066	-0.067
A22 N	T1	7.399	-2.273	-22.662	-0.334	-0.161	-0.070
A22 F	T1	7.913	-2.936	-20.793	-0.346	-0.197	-0.054
A23 N	T1	7.919	-1.434	-16.087	-0.336	-0.217	-0.055
A23 F	T1	7.597	-1.002	-14.793	-0.305	-0.216	-0.049
A24 N	T1	4.020	1.287	-8.112	-0.240	-0.229	-0.048
A24 F	T1	3.342	1.413	-7.275	-0.203	-0.184	-0.046
A25 N	T1	1.287	0.986	-5.624	-0.154	-0.167	-0.046
A25 F	T1	0.722	0.544	-4.496	-0.069	-0.054	0.005
A26	T1	0.219	0.000	-0.817	0.000	0.000	0.000
A27	T1	0.000	0.000	0.000	0.000	0.000	0.000
A28	T1	0.817	0.000	0.219	0.000	0.000	0.000
A29 N	T1	3.214	0.010	0.778	-0.006	-0.013	-0.003
A29 F	T1	4.010	-0.015	1.546	-0.014	-0.053	-0.003
A30 N	T1	5.398	-0.448	6.466	-0.025	-0.071	-0.009
A30 F	T1	5.726	-1.070	7.177	-0.043	-0.091	-0.020
A31 N	T1	8.341	-9.975	9.346	-0.041	-0.121	-0.019
A31 F	T1	9.473	-10.694	9.343	-0.030	-0.129	-0.023
A32 N	T1	12.470	-10.517	8.502	-0.021	-0.131	-0.020
A32 F	T1	13.629	-10.512	8.963	-0.007	-0.130	-0.023

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D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
C02	T1	1.238	-5.478	34.531	0.019	0.050	0.012
D01	T1	1.213	-5.940	34.579	0.027	0.035	0.011
*** Segment D end *** Line #							
*** Segment E begin *** Line #							
C03	T1	3.228	-5.594	35.039	0.018	0.062	0.014
E01	T1	3.206	-6.112	35.046	0.018	0.062	0.014
*** Segment E end *** Line #							
*** Segment F begin *** Line #							
F00	T1	1.184	-7.154	34.332	0.078	-0.008	0.003
F01	T1	1.188	-6.868	34.230	0.078	-0.008	0.003
*** Segment F end *** Line #							
*** Segment G begin *** Line #							
G00	T1	-5.112	-2.116	4.624	0.209	-0.210	-0.026
G01 N	T1	-7.511	-2.743	7.055	0.271	-0.234	-0.095
G01 F	T1	-7.614	-3.197	7.756	0.300	-0.252	-0.169
G02 N	T1	2.398	-13.285	23.763	0.351	-0.330	-0.138
G02 F	T1	2.972	-13.129	24.511	0.329	-0.317	-0.083
G03 N	T1	3.453	-12.633	24.845	0.325	-0.318	-0.064
G03 F	T1	3.583	-12.256	25.559	0.326	-0.317	-0.014
G04	T1	1.172	-11.913	28.969	0.277	-0.304	0.071
G05	T1	-2.078	-10.865	33.450	0.277	-0.304	0.071
G06 N	T1	-4.660	-9.960	36.703	0.226	-0.248	0.077
G06 F	T1	-4.861	-9.572	36.719	0.218	-0.221	0.062
G07 N	T1	-4.536	-8.234	35.452	0.200	-0.176	0.042
G07 F	T1	-4.207	-7.963	34.995	0.175	-0.137	0.001
G08 N	T1	0.782	-7.392	33.047	0.110	-0.047	-0.027

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D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
G08 F	T1	1.117	-7.232	33.288	0.092	-0.024	-0.010
F01	T1	1.188	-6.868	34.230	0.078	-0.008	0.003
G10 N	T1	1.194	-6.801	34.422	0.075	-0.004	0.006
G10 F	T1	1.191	-6.428	34.648	0.036	0.021	0.008
D01	T1	1.213	-5.940	34.579	0.027	0.035	0.011
*** Segment G end *** Line #							
*** Segment H begin *** Line #							
H00	T1	-0.701	-1.813	-1.340	0.121	-0.189	0.166
H01	T1	-0.970	-1.611	-1.109	0.121	-0.189	0.166
*** Segment H end *** Line #							
*** Segment I begin *** Line #							
I00	T1	0.000	0.000	0.000	0.000	0.000	0.000
I01	T1	0.056	-1.159	0.035	0.014	-0.045	-0.016
I02 N	T1	0.093	-1.661	0.067	0.014	-0.045	-0.016
I02 F	T1	0.197	-1.909	0.390	0.042	-0.077	-0.019
I03 N	T1	1.211	-1.344	2.884	0.048	-0.083	0.015
I03 F	T1	1.008	-1.260	3.247	0.040	-0.036	0.023
I04 N	T1	-7.502	-2.912	1.653	-0.075	0.091	-0.209
I04 F	T1	-7.611	-3.222	1.534	-0.080	0.098	-0.273
I05 N	T1	-5.872	-10.026	-0.758	-0.110	0.103	-0.455
I05 F	T1	-5.516	-10.410	-0.902	-0.113	0.104	-0.493
I06 N	T1	9.258	-17.255	-4.323	-0.089	0.096	-0.318
I06 F	T1	9.301	-17.813	-4.552	-0.073	0.089	-0.137
I07 N	T1	-4.330	-4.399	-5.122	0.137	-0.140	0.312
I07 F	T1	-4.382	-3.825	-4.617	0.139	-0.202	0.285
H01	T1	-0.970	-1.611	-1.109	0.121	-0.189	0.166

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Point name	Load combination	TRANSLATIONS (mm)			ROTATIONS (deg)		
		X	Y	Z	X	Y	Z
I09 N	T1	-0.646	-1.401	-0.716	0.113	-0.174	0.153
I09 F	T1	-0.300	-0.984	-0.534	0.063	-0.102	0.094
I10 N	T1	-0.086	-0.433	-0.673	0.048	-0.068	0.075
I10 F	T1	0.000	-0.133	-0.494	0.001	-0.001	0.001
I11	T1	0.000	-0.130	-0.483	0.000	0.000	0.000
I12	T1	0.000	0.000	0.000	0.000	0.000	0.000
I13	T1	0.000	-0.494	0.133	0.000	0.000	0.000
I14	T1	0.003	-0.771	0.213	0.008	-0.012	-0.001
I15 N	T1	0.061	-1.995	0.691	0.040	-0.062	0.003
I15 F	T1	-0.211	-2.244	0.956	0.080	-0.109	0.014
G00	T1	-5.112	-2.116	4.624	0.209	-0.210	-0.026

*** Segment J begin *** Line #

J01	T1	0.272	-0.770	0.198	0.008	-0.012	-0.001
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*** Segment J end *** Line #

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R E S T R A I N T R E A C T I O N S

Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result
A00	Anchor T1	-19	15	523	524	216	186	-9	285
A27	Anchor T1	51	1	-631	633	-925	-1078	-60	1422
C00	Anchor T1	-70	-45	94	126	58	377	93	392
I00	Anchor T1	88	41	-11	97	14	-38	-31	51
I12	Anchor T1	-50	-12	25	57	82	-119	49	153

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G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result

*** Segment A begin *** Line # 79319821									
A00	T1	19	-15	-523	524	-216	-186	9	285
A02 N	T1	19	-15	-523	524	-286	-255	8	383
A02 F	T1	19	-15	-523	524	-511	-255	0	572
A04 N	T1	19	-15	-523	524	-611	-156	-7	630
A04 F	T1	19	-15	-523	524	-658	-43	-12	659
A05	T1	19	-15	-523	524	-658	143	-17	673
A06	T1	19	-15	-523	524	-658	222	-20	694
A07 N	T1	19	-15	-523	524	-658	222	-20	694
A07 F	T1	19	-15	-523	524	-654	347	-23	741
A08	T1	19	-15	-523	524	-561	462	-23	727
A09 N	T1	19	-15	-523	524	-553	472	-23	727
A09 F	T1	19	-15	-523	524	-549	357	-20	655
A10 N	T1	19	-15	-523	524	-549	21	-10	550
A10 F	T1	19	-15	-523	524	-514	-63	-6	518
A11 N	T1	19	-15	-523	524	-135	-442	19	463
A11 F	T1	19	-15	-523	524	-51	-477	23	480
A12 N	T1	19	-15	-523	524	372	-477	39	606
A12 F	T1	19	-15	-523	524	495	-473	43	686
A13	T1	19	-15	-523	524	588	-358	43	689
A14 N	T1	19	-15	-523	524	698	-221	43	733
A14 F	T1	19	-15	-523	524	582	-217	39	622
A15 N	T1	19	-15	-523	524	159	-217	23	270
A15 F	T1	19	-15	-523	524	75	-182	19	198
A16 N	T1	19	-15	-523	524	-22	-85	13	89
A16 F	T1	19	-15	-523	524	-103	4	7	104

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G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result
A17	T1	19	-15	-523	524	-27	98	7	102
A18	T1	19	-15	-523	524	65	213	7	223
A19 -	T1	19	-15	-523	524	133	297	7	326
A19 +	T1	19	-15	-523	524	133	297	7	326
A20 N	T1	19	-15	-523	524	136	300	7	330
A20 F	T1	19	-15	-523	524	134	298	7	327
A21 N	T1	19	-15	-523	524	14	184	6	184
A21 F	T1	19	-15	-523	524	12	182	6	183
A22 N	T1	19	-15	-523	524	89	278	6	292
A22 F	T1	19	-15	-523	524	4	282	3	282
A23 N	T1	19	-15	-523	524	-344	285	-10	447
A23 F	T1	19	-15	-523	524	-430	249	-12	497
A24 N	T1	19	-15	-523	524	-829	-150	-15	843
A24 F	T1	19	-15	-523	524	-864	-234	-14	895
A25 N	T1	19	-15	-523	524	-864	-514	-5	1005
A25 F	T1	19	-15	-523	524	-861	-626	-2	1065
A26	T1	19	-15	-523	524	-847	-738	2	1123
A27 -	T1	19	-15	-523	524	-844	-764	3	1138
A27 +	T1	-32	-16	108	114	81	314	63	330
A28	T1	-32	-16	108	114	82	289	59	306
A29 N	T1	-32	-16	108	114	85	217	49	238
A29 F	T1	-32	-16	108	114	89	191	46	216
A30 N	T1	-32	-16	108	114	110	150	46	192
A30 F	T1	-32	-16	108	114	99	143	42	179
A31 N	T1	-32	-16	108	114	-113	111	-26	161
A31 F	T1	-32	-16	108	114	-131	85	-35	160

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G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result
A32 N	T1	-32	-16	108	114	-128	7	-46	136
A32 F	T1	-32	-16	108	114	-125	-19	-49	135
A33	T1	-32	-16	108	114	-105	-57	-49	129
A34 -	T1	-32	-16	108	114	-103	-62	-49	129
A34 +	T1	-32	-16	108	114	-103	-62	-49	129
A35	T1	-32	-16	108	114	-4	-255	-49	260
A36 N	T1	-32	-16	108	114	40	-342	-49	348
A36 F	T1	-32	-16	108	114	50	-326	-43	332
A37 N	T1	-32	-16	108	114	57	-302	-38	310
A37 F	T1	-32	-16	108	114	57	-296	-37	303
A38	T1	-32	-16	108	114	57	208	40	220
*** Segment A end *** Line # 79319821									
*** Segment B begin *** Line # 79319821									
A19	T1	0	0	0	0	0	0	0	0
B01	T1	0	0	0	0	0	0	0	0
*** Segment B end *** Line # 79319821									
*** Segment C begin *** Line # 79319821									
C00	T1	70	45	-94	126	-58	-377	-93	392
C01 N	T1	70	45	-94	126	-32	-377	-74	385
C01 F	T1	70	45	-94	126	-10	-355	-48	359
C02 -	T1	70	45	-94	126	-10	-346	-44	349
C02 +	T1	32	16	-108	114	11	-376	-45	379
C03 -	T1	32	16	-108	114	11	-320	-36	322
C03 +	T1	32	16	-108	114	11	-320	-36	322
C04 N	T1	32	16	-108	114	11	-287	-31	289
C04 F	T1	32	16	-108	114	-14	-262	-35	265

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G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result
C05 N	T1	32	16	-108	114	-33	-262	-40	267
C05 F	T1	32	16	-108	114	-57	-238	-44	248
A38	T1	32	16	-108	114	-57	-208	-40	220
*** Segment C end *** Line # 79319821									
*** Segment D begin *** Line #									
C02	T1	38	28	14	49	-21	30	1	37
D01	T1	38	28	14	49	-23	30	6	38
*** Segment D end *** Line #									
*** Segment E begin *** Line #									
C03	T1	0	0	0	0	0	0	0	0
E01	T1	0	0	0	0	0	0	0	0
*** Segment E end *** Line #									
*** Segment F begin *** Line #									
F00	T1	0	0	0	0	0	0	0	0
F01	T1	0	0	0	0	0	0	0	0
*** Segment F end *** Line #									
*** Segment G begin *** Line #									
G00	T1	-38	-28	-14	49	-26	17	28	42
G01 N	T1	-38	-28	-14	49	-26	9	46	54
G01 F	T1	-38	-28	-14	49	-25	8	45	52
G02 N	T1	-38	-28	-14	49	12	8	-53	55
G02 F	T1	-38	-28	-14	49	15	5	-56	59
G03 N	T1	-38	-28	-14	49	18	2	-56	59
G03 F	T1	-38	-28	-14	49	20	-2	-54	58
G04	T1	-38	-28	-14	49	20	-11	-36	43
G05	T1	-38	-28	-14	49	20	-23	-12	33

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G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result
G06 N	T1	-38	-28	-14	49	20	-32	7	38
G06 F	T1	-38	-28	-14	49	19	-33	12	40
G07 N	T1	-38	-28	-14	49	14	-33	25	44
G07 F	T1	-38	-28	-14	49	13	-32	26	43
G08 N	T1	-38	-28	-14	49	13	-14	-11	22
G08 F	T1	-38	-28	-14	49	15	-16	-13	26
F01 -	T1	-38	-28	-14	49	22	-25	-13	36
F01 +	T1	-38	-28	-14	49	22	-25	-13	36
G10 N	T1	-38	-28	-14	49	23	-27	-13	38
G10 F	T1	-38	-28	-14	49	24	-30	-11	40
D01	T1	-38	-28	-14	49	23	-30	-6	38
*** Segment G end *** Line #									
*** Segment H begin *** Line #									
H00	T1	0	0	0	0	0	0	0	0
H01	T1	0	0	0	0	0	0	0	0
*** Segment H end *** Line #									
*** Segment I begin *** Line #									
I00	T1	-88	-41	11	97	-14	38	31	51
I01	T1	-88	-41	11	97	-17	38	5	42
I02 N	T1	-88	-41	11	97	-18	38	-7	43
I02 F	T1	-88	-41	11	97	-16	31	-13	38
I03 N	T1	-88	-41	11	97	10	-25	-13	31
I03 F	T1	-88	-41	11	97	13	-31	-10	36
I04 N	T1	-88	-41	11	97	13	-7	80	81
I04 F	T1	-88	-41	11	97	13	-6	80	82
I05 N	T1	-88	-41	11	97	6	1	49	50

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Point name	Load combination	FORCES (N)				MOMENTS (Nm)			
		X	Y	Z	Result	X	Y	Z	Result
I05 F	T1	-88	-41	11	97	5	1	45	46
I06 N	T1	-88	-41	11	97	-14	1	-111	112
I06 F	T1	-88	-41	11	97	-15	2	-114	115
I07 N	T1	-88	-41	11	97	-15	41	30	53
I07 F	T1	-88	-41	11	97	-12	35	33	50
H01 -	T1	-88	-41	11	97	25	-45	33	61
H01 +	T1	-88	-41	11	97	25	-45	33	61
I09 N	T1	-88	-41	11	97	29	-54	33	70
I09 F	T1	-88	-41	11	97	33	-61	40	80
I10 N	T1	-88	-41	11	97	35	-61	53	87
I10 F	T1	-88	-41	11	97	38	-65	59	96
I11	T1	-88	-41	11	97	38	-66	59	96
I12 -	T1	-88	-41	11	97	43	-77	62	108
I12 +	T1	-38	-28	-14	49	-39	42	13	59
I13	T1	-38	-28	-14	49	-36	41	8	55
I14 -	T1	-38	-28	-14	49	-34	40	5	53
I14 +	T1	-38	-28	-14	49	-34	40	5	53
I15 N	T1	-38	-28	-14	49	-27	37	-7	47
I15 F	T1	-38	-28	-14	49	-26	35	-8	44
G00	T1	-38	-28	-14	49	-26	17	28	42
*** Segment I end		*** Line #							
*** Segment J begin		*** Line #							
I14	T1	0	0	0	0	0	0	0	0
J01	T1	0	0	0	0	0	0	0	0
*** Segment J end		*** Line #							

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ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		Code Stress	Code Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type			
*** Segment A begin *** Line # 79319821										
A00	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	284	9	22	1.00	1.00	(17) DISP	1	147	
A02 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	383	8	22	1.00	1.00	(17) DISP	2	147	
A02 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.90	2.42	(18) SUST	0	71	
	Cold to T1	8	383	22	2.90	2.42	(17) DISP	4	147	
A02 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.90	2.42	(18) SUST	0	71	
	Cold to T1	0	181	542	2.90	2.42	(17) DISP	3	147	
A02 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	181	0	542	1.00	1.00	(17) DISP	3	147	
A04 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	322	7	542	1.00	1.00	(17) DISP	3	147	
A04 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.90	2.42	(18) SUST	0	71	
	Cold to T1	7	322	542	2.90	2.42	(17) DISP	4	147	
A04 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.90	2.42	(18) SUST	0	71	
	Cold to T1	12	43	658	2.90	2.42	(17) DISP	3	147	
A04 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	43	12	658	1.00	1.00	(17) DISP	3	147	
A05	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	143	17	658	1.00	1.00	(17) DISP	3	147	
A06	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	222	20	658	1.00	1.00	(17) DISP	6	147	
A07 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	222	20	658	1.00	1.00	(17) DISP	6	147	

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ASME B31.3b (2001) CODE COMPLIANCE										
Point name	Load combination	(Moments in Nm)			(Stress in N/mm2)			Eq. Load no. type	Code Stress	Code Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out				
A07 N+	Max P						(3a) HOOP		0	71
	Max P	0	0		2.56	2.13	(18) SUST		0	71
	Cold to T1	222	20	658	2.56	2.13	(17) DISP		7	147
A07 F-	Max P						(3a) HOOP		0	71
	Max P	0	0		2.56	2.13	(18) SUST		0	71
	Cold to T1	347	654	23	2.56	2.13	(17) DISP		14	147
A07 F+	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	347	654	23	1.00	1.00	(17) DISP		6	147
A08	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	462	561	23	1.00	1.00	(17) DISP		6	147
A09 N-	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	472	553	23	1.00	1.00	(17) DISP		6	147
A09 N+	Max P						(3a) HOOP		0	71
	Max P	0	0		2.56	2.13	(18) SUST		0	71
	Cold to T1	472	553	23	2.56	2.13	(17) DISP		14	147
A09 F-	Max P						(3a) HOOP		0	71
	Max P	0	0		2.56	2.13	(18) SUST		0	71
	Cold to T1	357	20	549	2.56	2.13	(17) DISP		9	147
A09 F+	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	357	20	549	1.00	1.00	(17) DISP		5	147
A10 N-	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	21	10	549	1.00	1.00	(17) DISP		5	147
A10 N+	Max P						(3a) HOOP		0	71
	Max P	0	0		2.56	2.13	(18) SUST		0	71
	Cold to T1	10	21	549	2.56	2.13	(17) DISP		5	147
A10 F-	Max P						(3a) HOOP		0	71
	Max P	0	0		2.56	2.13	(18) SUST		0	71
	Cold to T1	6	319	408	2.56	2.13	(17) DISP		7	147
A10 F+	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	319	6	408	1.00	1.00	(17) DISP		4	147
A11 N-	Max P						(3a) HOOP		0	71
	Max P	0	0		1.00	1.00	(18) SUST		0	71
	Cold to T1	217	19	408	1.00	1.00	(17) DISP		4	147

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ASME B31.3b (2001) CODE COMPLIANCE									
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type	Code Stress	Code Allow.
A11 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	19	217	408	2.56	2.13	(17) DISP	5	147
A11 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	23	51	477	2.56	2.13	(17) DISP	4	147
A11 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	51	23	477	1.00	1.00	(17) DISP	4	147
A12 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	372	39	477	1.00	1.00	(17) DISP	5	147
A12 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	372	39	477	2.56	2.13	(17) DISP	9	147
A12 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	495	473	43	2.56	2.13	(17) DISP	14	147
A12 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	473	495	43	1.00	1.00	(17) DISP	6	147
A13	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	358	588	43	1.00	1.00	(17) DISP	6	147
A14 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	221	698	43	1.00	1.00	(17) DISP	6	147
A14 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	698	221	43	2.56	2.13	(17) DISP	15	147
A14 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	582	39	217	2.56	2.13	(17) DISP	13	147
A14 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	582	39	217	1.00	1.00	(17) DISP	5	147
A15 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	159	23	217	1.00	1.00	(17) DISP	2	147

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ASME B31.3b (2001) CODE COMPLIANCE									
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type	Code Stress	Code Allow.
A15 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	23	159	217	2.56	2.13	(17) DISP	3	147
A15 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	19	181	76	2.56	2.13	(17) DISP	3	147
A15 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	181	19	76	1.00	1.00	(17) DISP	2	147
A16 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	45	13	76	1.00	1.00	(17) DISP	1	147
A16 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	45	13	76	2.56	2.13	(17) DISP	1	147
A16 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	76	70	7	2.56	2.13	(17) DISP	2	147
A16 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	4	103	7	1.00	1.00	(17) DISP	1	147
A17	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	98	27	7	1.00	1.00	(17) DISP	1	147
A18	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	213	65	7	1.00	1.00	(17) DISP	2	147
A19 -	Max P						(3a) HOOP	0	71
	Max P	0	0		2.05	2.40	(18) SUST	0	71
	Cold to T1	297	133	7	2.05	2.40	(17) DISP	6	147
A19 +	Max P						(3a) HOOP	0	71
	Max P	0	0		2.05	2.40	(18) SUST	0	71
	Cold to T1	297	133	7	2.05	2.40	(17) DISP	6	147
A20 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	300	136	7	1.00	1.00	(17) DISP	3	147
A20 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	308	116	7	2.56	2.13	(17) DISP	7	147

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ASME B31.3b (2001) CODE COMPLIANCE										
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		Code Stress	Code Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. no.	Load type		
A20 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	306	111	37	2.56	2.13	(17)	DISP	7	147
A20 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	306	111	37	1.00	1.00	(17)	DISP	3	147
A21 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	140	114	37	1.00	1.00	(17)	DISP	2	147
A21 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	140	114	37	2.56	2.13	(17)	DISP	4	147
A21 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	137	120	6	2.56	2.13	(17)	DISP	4	147
A21 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	182	12	6	1.00	1.00	(17)	DISP	2	147
A22 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	278	89	6	1.00	1.00	(17)	DISP	2	147
A22 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	89	278	6	2.56	2.13	(17)	DISP	5	147
A22 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	4	70	273	2.56	2.13	(17)	DISP	3	147
A22 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	4	70	273	1.00	1.00	(17)	DISP	2	147
A23 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	344	84	273	1.00	1.00	(17)	DISP	4	147
A23 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	5	354	273	2.56	2.13	(17)	DISP	7	147
A23 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	34	124	480	2.56	2.13	(17)	DISP	5	147

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ASME B31.3b (2001) CODE COMPLIANCE										
Point name	Load combination	(Moments in Nm)			(Stress in N/mm2)					
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F		Eq. Load no. type	Code Stress	Code Allow.	
A23 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	128	12	480	1.00	1.00	(17) DISP	4	147	
A24 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	692	15	480	1.00	1.00	(17) DISP	7	147	
A24 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	15	692	480	2.56	2.13	(17) DISP	13	147	
A24 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	14	234	864	2.56	2.13	(17) DISP	8	147	
A24 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	234	14	864	1.00	1.00	(17) DISP	7	147	
A25 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	514	5	864	1.00	1.00	(17) DISP	8	147	
A25 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	514	5	864	2.56	2.13	(17) DISP	13	147	
A25 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	626	833	221	2.56	2.13	(17) DISP	20	147	
A25 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	626	833	221	1.00	1.00	(17) DISP	9	147	
A26	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	738	818	221	1.00	1.00	(17) DISP	9	147	
A28	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	289	36	95	1.00	1.00	(17) DISP	3	147	
A29 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	217	25	95	1.00	1.00	(17) DISP	2	147	
A29 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	217	25	95	2.56	2.13	(17) DISP	5	147	

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ASME B31.3b (2001) CODE COMPLIANCE									
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		Code Stress
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type	Code Allow.	
A29 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	191	89	46	2.56	2.13	(17) DISP	4	147
A29 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	191	89	46	1.00	1.00	(17) DISP	2	147
A30 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	150	110	46	1.00	1.00	(17) DISP	2	147
A30 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	110	150	46	2.56	2.13	(17) DISP	4	147
A30 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	99	100	112	2.56	2.13	(17) DISP	3	147
A30 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	99	100	112	1.00	1.00	(17) DISP	1	147
A31 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	113	24	112	1.00	1.00	(17) DISP	1	147
A31 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	50	104	112	2.56	2.13	(17) DISP	2	147
A31 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	36	77	136	2.56	2.13	(17) DISP	2	147
A31 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	85	0	136	1.00	1.00	(17) DISP	1	147
A32 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	7	11	136	1.00	1.00	(17) DISP	1	147
A32 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	7	11	136	2.56	2.13	(17) DISP	1	147
A32 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.56	2.13	(18) SUST	0	71
	Cold to T1	19	125	49	2.56	2.13	(17) DISP	2	147

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ASME B31.3b (2001) CODE COMPLIANCE										
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		Code Stress	Code Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type			
A32 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	19	125	49	1.00	1.00	(17) DISP	1	147	
A33	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	57	105	49	1.00	1.00	(17) DISP	1	147	
A34	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	62	103	49	1.00	1.00	(17) DISP	1	147	
A35	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	255	4	49	1.00	1.00	(17) DISP	2	147	
A36 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	342	40	49	1.00	1.00	(17) DISP	3	147	
A36 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	320	127	49	2.56	2.13	(17) DISP	7	147	
A36 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	302	43	133	2.56	2.13	(17) DISP	7	147	
A36 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	302	43	133	1.00	1.00	(17) DISP	3	147	
A37 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	277	38	133	1.00	1.00	(17) DISP	3	147	
A37 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	38	277	133	2.56	2.13	(17) DISP	5	147	
A37 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		2.56	2.13	(18) SUST	0	71	
	Cold to T1	37	296	57	2.56	2.13	(17) DISP	5	147	
A37 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	296	37	57	1.00	1.00	(17) DISP	3	147	
A38	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	208	40	57	1.00	1.00	(17) DISP	2	147	

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ASME B31.3b (2001) CODE COMPLIANCE									
			(Moments in Nm)			(Stress in N/mm2)			
Point	Load	In-Pl.	Out-Pl.	Torsion	S.I.F		Eq. Load	Code	Code
name	combination	Moment	Moment	Moment	In	Out	no. type	Stress	Allow.
*** Segment B begin *** Line # 79319821									
A19	Max P						(3a) HOOP	0	71
	Max P	0	0		2.05	2.40	(18) SUST	0	71
	Cold to T1	0	0	0	2.05	2.40	(17) DISP	0	147
B01	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	0	0	0	1.00	1.00	(17) DISP	0	147
*** Segment B end *** Line # 79319821									
*** Segment C begin *** Line # 79319821									
C00	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	58	93	377	1.00	1.00	(17) DISP	3	147
C01 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	32	74	377	1.00	1.00	(17) DISP	3	147
C01 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.27	1.89	(18) SUST	0	71
	Cold to T1	74	32	377	2.27	1.89	(17) DISP	3	147
C01 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.27	1.89	(18) SUST	0	71
	Cold to T1	48	355	10	2.27	1.89	(17) DISP	5	147
C01 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	355	48	10	1.00	1.00	(17) DISP	3	147
C02 -	Max P						(3a) HOOP	0	71
	Max P	0	0		1.85	2.14	(18) SUST	0	71
	Cold to T1	44	346	10	1.85	2.14	(17) DISP	5	147
C02 +	Max P						(3a) HOOP	0	71
	Max P	0	0		1.85	2.14	(18) SUST	0	71
	Cold to T1	45	376	11	1.85	2.14	(17) DISP	6	147
C03 -	Max P						(3a) HOOP	0	71
	Max P	0	0		1.85	2.14	(18) SUST	0	71
	Cold to T1	14	321	11	1.85	2.14	(17) DISP	5	147
C03 +	Max P						(3a) HOOP	0	71
	Max P	0	0		1.85	2.14	(18) SUST	0	71
	Cold to T1	14	321	11	1.85	2.14	(17) DISP	5	147

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		ASME B31.3b (2001)			CODE COMPLIANCE				
		(Moments in Nm)					(Stress in N/mm2)		
Point name	Load combination	In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. Load no. type	Code Stress	Code Allow.
C04 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	287	31	11	1.00	1.00	(17) DISP	2	147
C04 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.27	1.89	(18) SUST	0	71
	Cold to T1	31	287	11	2.27	1.89	(17) DISP	4	147
C04 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.27	1.89	(18) SUST	0	71
	Cold to T1	35	14	262	2.27	1.89	(17) DISP	2	147
C04 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	14	35	262	1.00	1.00	(17) DISP	2	147
C05 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	33	40	262	1.00	1.00	(17) DISP	2	147
C05 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		2.27	1.89	(18) SUST	0	71
	Cold to T1	40	33	262	2.27	1.89	(17) DISP	2	147
C05 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		2.27	1.89	(18) SUST	0	71
	Cold to T1	44	238	57	2.27	1.89	(17) DISP	3	147
C05 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	238	44	57	1.00	1.00	(17) DISP	2	147
A38	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	208	40	57	1.00	1.00	(17) DISP	2	147

*** Segment C end *** Line # 79319821

*** Segment D begin *** Line #

C02	Max P						(3a) HOOP	0	71
	Max P	0	0		1.85	2.14	(18) SUST	0	71
	Cold to T1	1	21	30	1.85	2.14	(17) DISP	4	147
D01	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	23	6	30	1.00	1.00	(17) DISP	4	147

*** Segment D end *** Line #

*** Segment E begin *** Line #

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ASME B31.3b (2001) CODE COMPLIANCE									
		(Moments in Nm)			(Stress in N/mm2)				
Point name	Load combination	In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. Load no. type	Code Stress	Code Allow.
C03	Max P						(3a) HOOP	0	71
	Max P	0	0		1.85	2.14	(18) SUST	0	71
	Cold to T1	0	0	0	1.85	2.14	(17) DISP	0	147
E01	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	0	0	0	1.00	1.00	(17) DISP	0	147
*** Segment E end *** Line #									
*** Segment F begin *** Line #									
*** Segment F end *** Line #									
*** Segment G begin *** Line #									
G00	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	17	28	26	1.00	1.00	(17) DISP	5	147
G01 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	9	46	26	1.00	1.00	(17) DISP	6	147
G01 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	46	9	26	1.74	1.45	(17) DISP	9	147
G01 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	45	25	8	1.74	1.45	(17) DISP	9	147
G01 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	25	45	8	1.00	1.00	(17) DISP	6	147
G02 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	12	53	8	1.00	1.00	(17) DISP	6	147
G02 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	12	53	8	1.74	1.45	(17) DISP	9	147
G02 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	15	5	56	1.74	1.45	(17) DISP	7	147
G02 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	5	15	56	1.00	1.00	(17) DISP	6	147

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ASME B31.3b (2001) CODE COMPLIANCE										
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)			
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type	Code Stress	Code Allow.	
G03 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	2	18	56	1.00	1.00	(17)	DISP	6	147
G03 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.74	1.45	(18)	SUST	0	71
	Cold to T1	2	18	56	1.74	1.45	(17)	DISP	7	147
G03 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.74	1.45	(18)	SUST	0	71
	Cold to T1	2	54	20	1.74	1.45	(17)	DISP	9	147
G03 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	2	54	20	1.00	1.00	(17)	DISP	6	147
G04	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	11	36	20	1.00	1.00	(17)	DISP	5	147
G05	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	23	12	20	1.00	1.00	(17)	DISP	4	147
G06 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	32	7	20	1.00	1.00	(17)	DISP	4	147
G06 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.74	1.45	(18)	SUST	0	71
	Cold to T1	7	32	20	1.74	1.45	(17)	DISP	6	147
G06 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.74	1.45	(18)	SUST	0	71
	Cold to T1	12	19	33	1.74	1.45	(17)	DISP	5	147
G06 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	19	12	33	1.00	1.00	(17)	DISP	4	147
G07 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	14	25	33	1.00	1.00	(17)	DISP	5	147
G07 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.74	1.45	(18)	SUST	0	71
	Cold to T1	25	14	33	1.74	1.45	(17)	DISP	6	147
G07 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.74	1.45	(18)	SUST	0	71
	Cold to T1	26	32	13	1.74	1.45	(17)	DISP	7	147

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ASME B31.3b (2001) CODE COMPLIANCE									
(Moments in Nm)					(Stress in N/mm2)				
Point name	Load combination	In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. Load no. type	Code Stress	Code Allow.
G07 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	32	26	13	1.00	1.00	(17) DISP	5	147
G08 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	14	11	13	1.00	1.00	(17) DISP	2	147
G08 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	14	11	13	1.74	1.45	(17) DISP	4	147
G08 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	16	15	13	1.74	1.45	(17) DISP	4	147
G08 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	16	15	13	1.00	1.00	(17) DISP	3	147
F01 -	Max P						(3a) HOOP	0	71
	Max P	0	0		1.44	1.58	(18) SUST	0	71
	Cold to T1	22	25	13	1.44	1.58	(17) DISP	6	147
F01 +	Max P						(3a) HOOP	0	71
	Max P	0	0		1.44	1.58	(18) SUST	0	71
	Cold to T1	22	25	13	1.44	1.58	(17) DISP	6	147
G10 N-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	27	23	13	1.00	1.00	(17) DISP	4	147
G10 N+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	23	27	13	1.74	1.45	(17) DISP	6	147
G10 F-	Max P						(3a) HOOP	0	71
	Max P	0	0		1.74	1.45	(18) SUST	0	71
	Cold to T1	24	11	30	1.74	1.45	(17) DISP	6	147
G10 F+	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	24	11	30	1.00	1.00	(17) DISP	4	147
D01	Max P						(3a) HOOP	0	71
	Max P	0	0		1.00	1.00	(18) SUST	0	71
	Cold to T1	23	6	30	1.00	1.00	(17) DISP	4	147

*** Segment G end *** Line #

*** Segment H begin *** Line #

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ASME B31.3b (2001) CODE COMPLIANCE										
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		Eq. Load no. type	Code Code Stress Allow.
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out				
H00	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP		0 147
H01	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.44	1.58	(18)	SUST		0 71
	Cold to T1	0	0	0	1.44	1.58	(17)	DISP		0 147
*** Segment H end *** Line #										
*** Segment I begin *** Line #										
I00	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	14	31	38	1.00	1.00	(17)	DISP		6 147
I01	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	17	5	38	1.00	1.00	(17)	DISP		5 147
I02 N	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.75	1.45	(18)	SUST		0 71
	Cold to T1	18	7	38	1.75	1.45	(17)	DISP		6 147
I02 F-	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.75	1.45	(18)	SUST		0 71
	Cold to T1	16	31	13	1.75	1.45	(17)	DISP		6 147
I02 F+	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	31	16	13	1.00	1.00	(17)	DISP		4 147
I03 N-	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	25	10	13	1.00	1.00	(17)	DISP		3 147
I03 N+	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.74	1.45	(18)	SUST		0 71
	Cold to T1	25	10	13	1.74	1.45	(17)	DISP		5 147
I03 F-	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.74	1.45	(18)	SUST		0 71
	Cold to T1	31	10	13	1.74	1.45	(17)	DISP		6 147
I03 F+	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	31	10	13	1.00	1.00	(17)	DISP		4 147
I04 N-	Max P						(3a)	HOOP		0 71
	Max P	0	0		1.00	1.00	(18)	SUST		0 71
	Cold to T1	7	80	13	1.00	1.00	(17)	DISP		9 147

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ASME B31.3b (2001) CODE COMPLIANCE									
Point name	Load combination	(Moments in Nm)			S.I.F		(Stress in N/mm2)		Code Stress
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	In	Out	Eq. Load no. type	Code Allow.	
I04 N+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.74	1.45		(18) SUST	0	71
	Cold to T1	80	7	13	1.74	1.45	(17) DISP	15	147
I04 F-	Max P						(3a) HOOP	0	71
	Max P	0	0	1.74	1.45		(18) SUST	0	71
	Cold to T1	80	14	5	1.74	1.45	(17) DISP	15	147
I04 F+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.00	1.00		(18) SUST	0	71
	Cold to T1	14	80	5	1.00	1.00	(17) DISP	9	147
I05 N-	Max P						(3a) HOOP	0	71
	Max P	0	0	1.00	1.00		(18) SUST	0	71
	Cold to T1	3	49	5	1.00	1.00	(17) DISP	5	147
I05 N+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.75	1.46		(18) SUST	0	71
	Cold to T1	49	3	5	1.75	1.46	(17) DISP	9	147
I05 F-	Max P						(3a) HOOP	0	71
	Max P	0	0	1.75	1.46		(18) SUST	0	71
	Cold to T1	45	5	1	1.75	1.46	(17) DISP	9	147
I05 F+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.00	1.00		(18) SUST	0	71
	Cold to T1	5	45	1	1.00	1.00	(17) DISP	5	147
I06 N-	Max P						(3a) HOOP	0	71
	Max P	0	0	1.00	1.00		(18) SUST	0	71
	Cold to T1	14	111	1	1.00	1.00	(17) DISP	12	147
I06 N+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.75	1.45		(18) SUST	0	71
	Cold to T1	111	14	1	1.75	1.45	(17) DISP	21	147
I06 F-	Max P						(3a) HOOP	0	71
	Max P	0	0	1.75	1.45		(18) SUST	0	71
	Cold to T1	114	2	15	1.75	1.45	(17) DISP	22	147
I06 F+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.00	1.00		(18) SUST	0	71
	Cold to T1	2	114	15	1.00	1.00	(17) DISP	13	147
I07 N-	Max P						(3a) HOOP	0	71
	Max P	0	0	1.00	1.00		(18) SUST	0	71
	Cold to T1	41	30	15	1.00	1.00	(17) DISP	6	147
I07 N+	Max P						(3a) HOOP	0	71
	Max P	0	0	1.75	1.45		(18) SUST	0	71
	Cold to T1	41	30	15	1.75	1.45	(17) DISP	9	147

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ASME B31.3b (2001) CODE COMPLIANCE									
		(Moments in Nm)			(Stress in N/mm2)				
Point	Load	In-Pl.	Out-Pl.	Torsion	S.I.F	Eq. Load	Code	Code	
name	combination	Moment	Moment	Moment	In Out	no. type	Stress	Allow.	
I07 F-	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.75 1.45	(18) SUST	0	71	
	Cold to T1	35	12	33	1.75 1.45	(17) DISP	8	147	
I07 F+	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.00 1.00	(18) SUST	0	71	
	Cold to T1	35	12	33	1.00 1.00	(17) DISP	5	147	
H01 -	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.44 1.58	(18) SUST	0	71	
	Cold to T1	45	25	33	1.44 1.58	(17) DISP	9	147	
H01 +	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.44 1.58	(18) SUST	0	71	
	Cold to T1	45	25	33	1.44 1.58	(17) DISP	9	147	
I09 N-	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.00 1.00	(18) SUST	0	71	
	Cold to T1	54	29	33	1.00 1.00	(17) DISP	8	147	
I09 N+	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.75 1.45	(18) SUST	0	71	
	Cold to T1	29	54	33	1.75 1.45	(17) DISP	11	147	
I09 F-	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.75 1.45	(18) SUST	0	71	
	Cold to T1	33	40	61	1.75 1.45	(17) DISP	11	147	
I09 F+	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.00 1.00	(18) SUST	0	71	
	Cold to T1	33	40	61	1.00 1.00	(17) DISP	9	147	
I10 N-	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.00 1.00	(18) SUST	0	71	
	Cold to T1	35	53	61	1.00 1.00	(17) DISP	10	147	
I10 N+	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.74 1.45	(18) SUST	0	71	
	Cold to T1	35	53	61	1.74 1.45	(17) DISP	12	147	
I10 F-	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.74 1.45	(18) SUST	0	71	
	Cold to T1	38	78	40	1.74 1.45	(17) DISP	15	147	
I10 F+	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.00 1.00	(18) SUST	0	71	
	Cold to T1	38	78	40	1.00 1.00	(17) DISP	10	147	
I11	Max P					(3a) HOOP	0	71	
	Max P	0	0		1.00 1.00	(18) SUST	0	71	
	Cold to T1	38	79	40	1.00 1.00	(17) DISP	11	147	

ASME B31.3b (2001) CODE COMPLIANCE										
		(Moments in Nm)				(Stress in N/mm2)				
Point	Load	In-Pl.	Out-Pl.	Torsion	S.I.F		Eq. Load	Code	Code	
name	combination	Moment	Moment	Moment	In	Out	no. type	Stress	Allow.	
I13	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	36	18	38	1.00	1.00	(17) DISP	6	147	
I14	- Max P						(3a) HOOP	0	71	
	Max P	0	0		1.44	1.58	(18) SUST	0	71	
	Cold to T1	15	34	38	1.44	1.58	(17) DISP	8	147	
I14	+ Max P						(3a) HOOP	0	71	
	Max P	0	0		1.44	1.58	(18) SUST	0	71	
	Cold to T1	15	34	38	1.44	1.58	(17) DISP	8	147	
I15 N-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	27	2	38	1.00	1.00	(17) DISP	5	147	
I15 N+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.75	1.45	(18) SUST	0	71	
	Cold to T1	2	27	38	1.75	1.45	(17) DISP	6	147	
I15 F-	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.75	1.45	(18) SUST	0	71	
	Cold to T1	1	36	26	1.75	1.45	(17) DISP	6	147	
I15 F+	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	35	8	26	1.00	1.00	(17) DISP	5	147	
G00	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	17	28	26	1.00	1.00	(17) DISP	5	147	
*** Segment I end *** Line #										
*** Segment J begin *** Line #										
I14	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.44	1.58	(18) SUST	0	71	
	Cold to T1	0	0	0	1.44	1.58	(17) DISP	0	147	
J01	Max P						(3a) HOOP	0	71	
	Max P	0	0		1.00	1.00	(18) SUST	0	71	
	Cold to T1	0	0	0	1.00	1.00	(17) DISP	0	147	
*** Segment J end *** Line #										

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S Y S T E M S U M M A R Y

Maximum displacements (mm)

Maximum X :	32.225	Point :	A13	Load Comb.:	T1
Maximum Y :	104.544	Point :	A16 N	Load Comb.:	T1
Maximum Z :	-232.527	Point :	A04 F	Load Comb.:	T1
Max. total:	232.612	Point :	A04 F	Load Comb.:	T1

Maximum rotations (deg)

Maximum X :	0.670	Point :	A11 N	Load Comb.:	T1
Maximum Y :	-0.412	Point :	A10 F	Load Comb.:	T1
Maximum Z :	-0.493	Point :	I05 F	Load Comb.:	T1
Max. total:	0.772	Point :	A11 N	Load Comb.:	T1

Maximum restraint forces (N)

Maximum X :	88	Point :	I00	Load Comb.:	T1
Maximum Y :	-45	Point :	C00	Load Comb.:	T1
Maximum Z :	-631	Point :	A27	Load Comb.:	T1
Max. total:	633	Point :	A27	Load Comb.:	T1

Maximum restraint moments (Nm)

Maximum X :	-925	Point :	A27	Load Comb.:	T1
Maximum Y :	-1078	Point :	A27	Load Comb.:	T1
Maximum Z :	93	Point :	C00	Load Comb.:	T1
Max. total:	1422	Point :	A27	Load Comb.:	T1

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S Y S T E M S U M M A R Y

Maximum pipe forces (N)

Maximum X :	-88	Point : I00	Load Comb.: T1
Maximum Y :	45	Point : C00	Load Comb.: T1
Maximum Z :	-523	Point : A00	Load Comb.: T1
Max. total:	524	Point : A00	Load Comb.: T1

Maximum pipe moments (Nm)

Maximum X :	-864	Point : A24 F	Load Comb.: T1
Maximum Y :	-764	Point : A27	Load Comb.: T1
Maximum Z :	-114	Point : I06 F	Load Comb.: T1
Max. total:	1138	Point : A27	Load Comb.: T1

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S Y S T E M S U M M A R Y

Maximum displacement stress

Point	:	I06 F
Stress	N/mm2	: 22
Allowable	N/mm2	: 147
Ratio	:	0.15
Load combination	:	Cold to T1

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S Y S T E M S U M M A R Y

Maximum displacement stress ratio

Point : I06 F
Stress N/mm2 : 22
Allowable N/mm2 : 147
Ratio : 0.15
Load combination : Cold to T1

* * * The system satisfies ASME B31.3 code requirements * * *
* * * for the selected options * * *