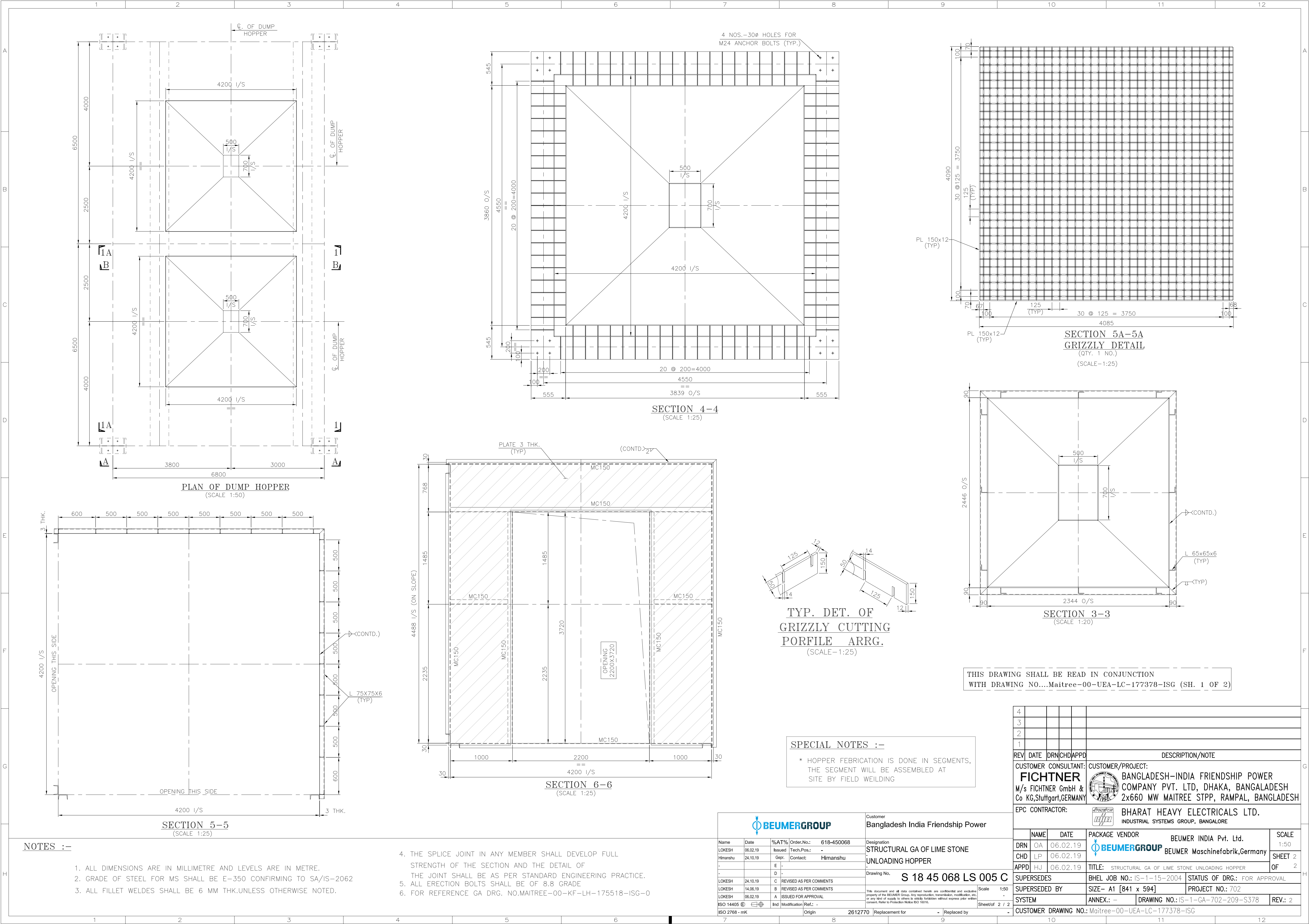


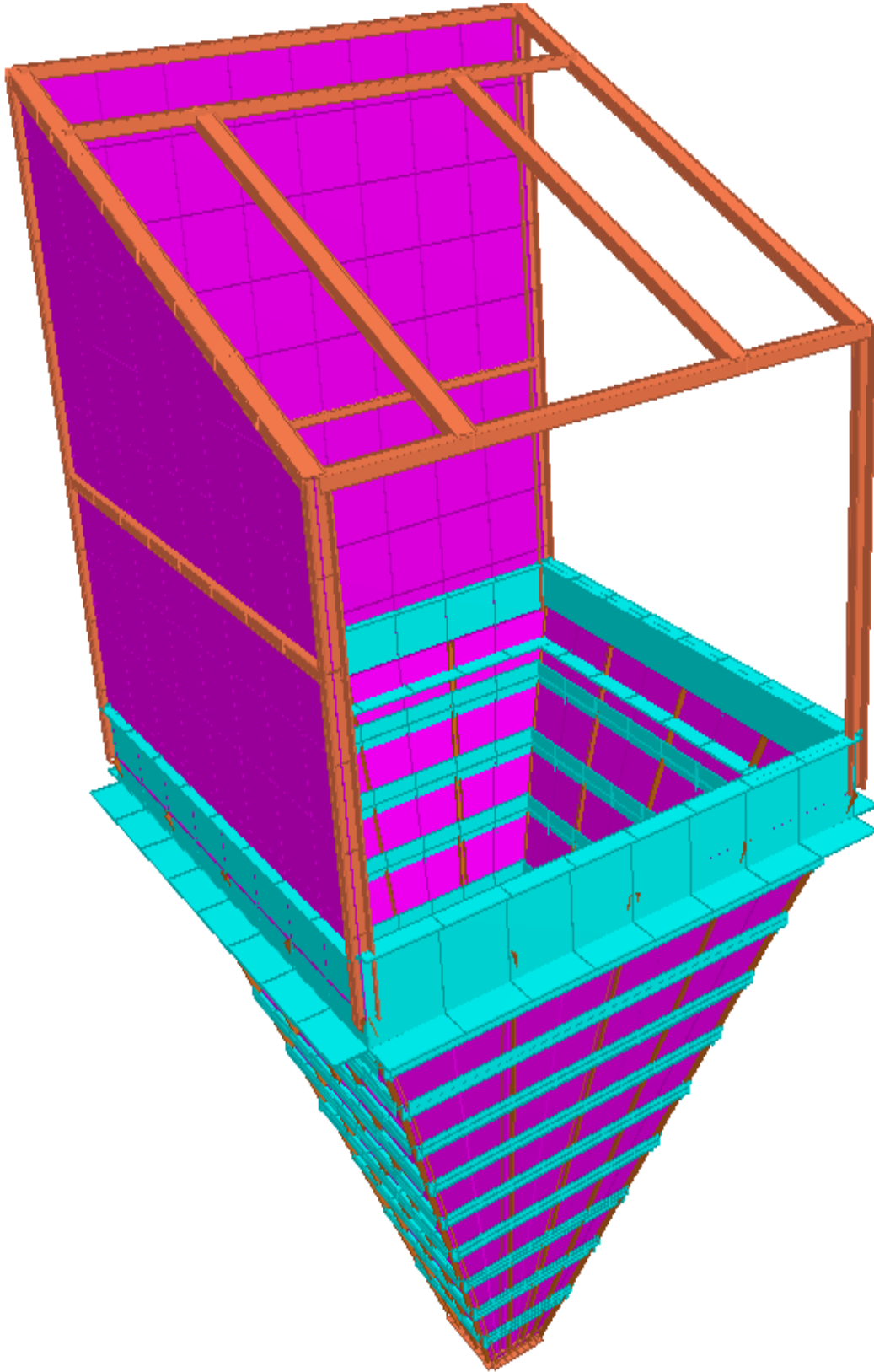


NOTES :-

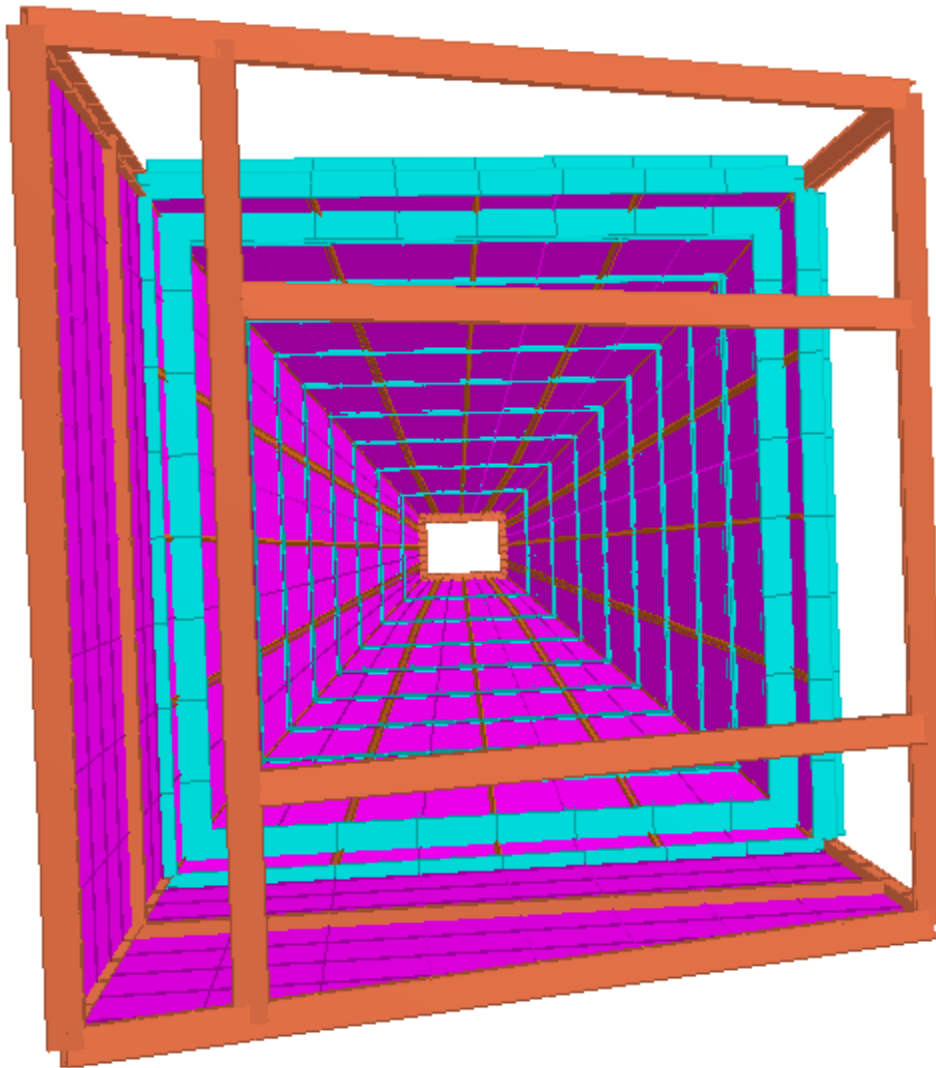
- ALL DIMENSIONS ARE IN MILLIMETRE AND LEVELS ARE IN METRE.
- GRADE OF STEEL FOR MS SHALL BE E-350 CONFIRMING TO SA/IS-2062
- ALL FILLET WELDES SHALL BE 6 MM THK.UNLESS OTHERWISE NOTED.
- THE SPLICE JOINT IN ANY MEMBER SHALL DEVELOP FULL STRENGTH OF THE SECTION AND THE DETAIL OF THE JOINT SHALL BE AS PER STANDARD ENGINEERING PRACTICE.
- ALL ERECTION BOLTS SHALL BE OF 8.8 GRADE
- FOR REFERENCE GA DRG. NO.MAITREE-00-KF-LH-175518-ISO-0

BEUMERGROUP	Customer Bangladesh India Friendship Power			
Name	Date	%AT%	Order.No.:	618-450068
LOKESH	06.02.19	Issued	Tech.Pos.:	-
Himanshu	24.10.19	Sgr.	Contact:	Himanshu
-	-	E	-	-
-	-	D	-	-
LOKESH	24.10.19	C	REVISED AS PER COMMENTS	
LOKESH	14.06.19	B	REVISED AS PER COMMENTS	
LOKESH	06.02.19	A	ISSUED FOR APPROVAL	
ISO 14405	Ind	Modification	Ref.:	-
ISO 2768 - mK	Origin	2612770	Replacement for	-
Designation STRUCTURAL GA OF LIME STONE UNLOADING HOPPER				Drawing No. S 18 45 068 LS 005 C
This document and all data contained herein are confidential and exclusive property of the BEUMER Group. Any reproduction, transmission, modification, etc. or any kind of supply to others is strictly forbidden without express prior written consent. Refer to Protection Notice ISO 16016.				Scale 1:50
Sheet/of 2 / 2				-
DRN	OA	DATE	PACKAGE VENDOR	BEUMER INDIA Pvt. Ltd.
CHD	LP	06.02.19	BEUMER	BEUMER Maschinefabrik,Germany
APPD	HJ	06.02.19	TITLE:	STRUCTURAL GA OF LIME STONE UNLOADING HOPPER
SUPERSEDES		BHFL JOB NO.:		IS-1-15-2004
SUPERSEDED BY		SIZE- A1		[841 x 594]
SYSTEM		ANNEX.: -		DRAWING NO.:
CUSTOMER DRAWING NO.:		Maitree-00-UEA-LC-177378-ISO		REV.: 2
STATUS OF DRG.:		FOR APPROVAL		PROJECT NO.: 702
REVISIONS		REV.:		2

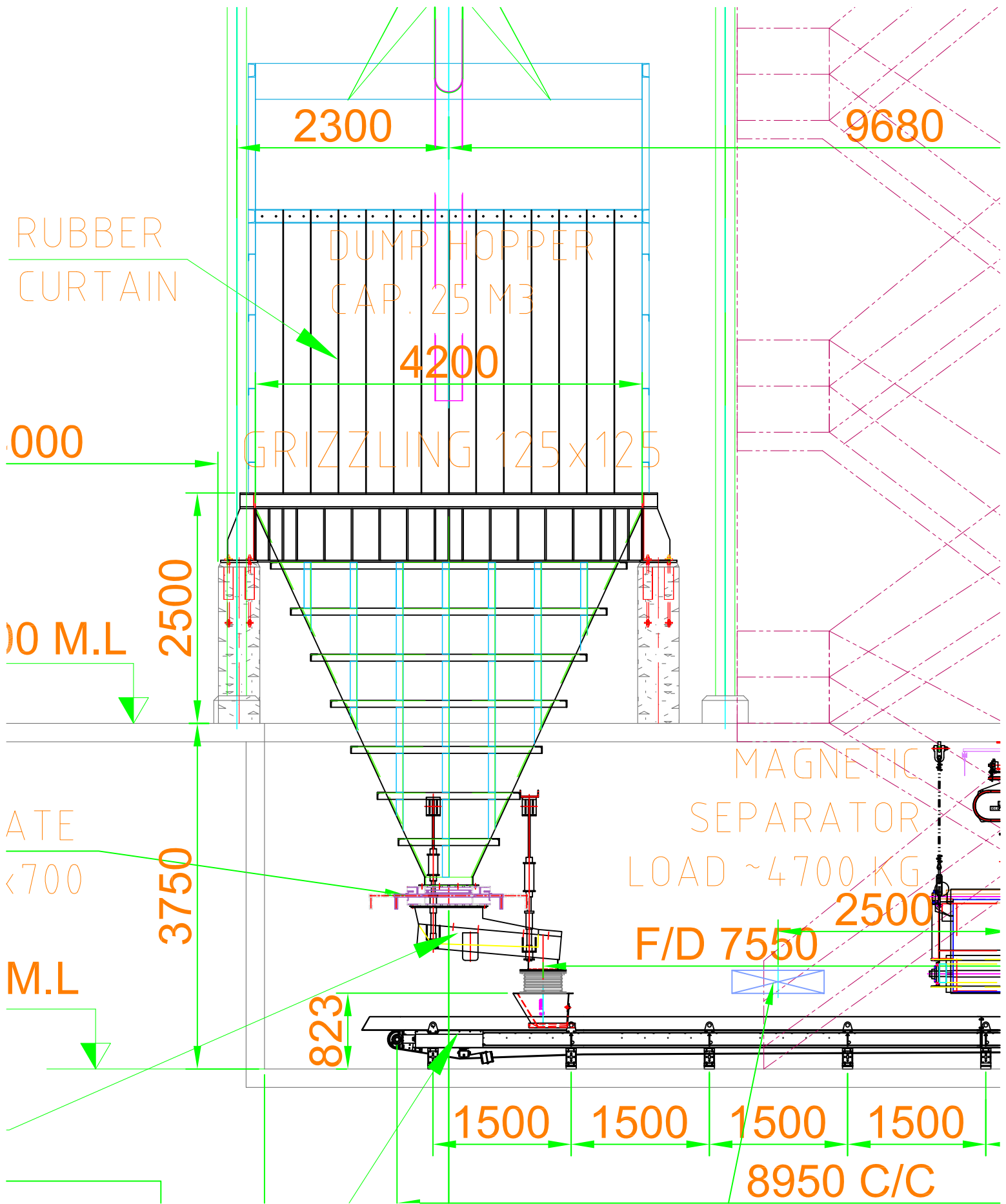
2.0 Hopper 25m³



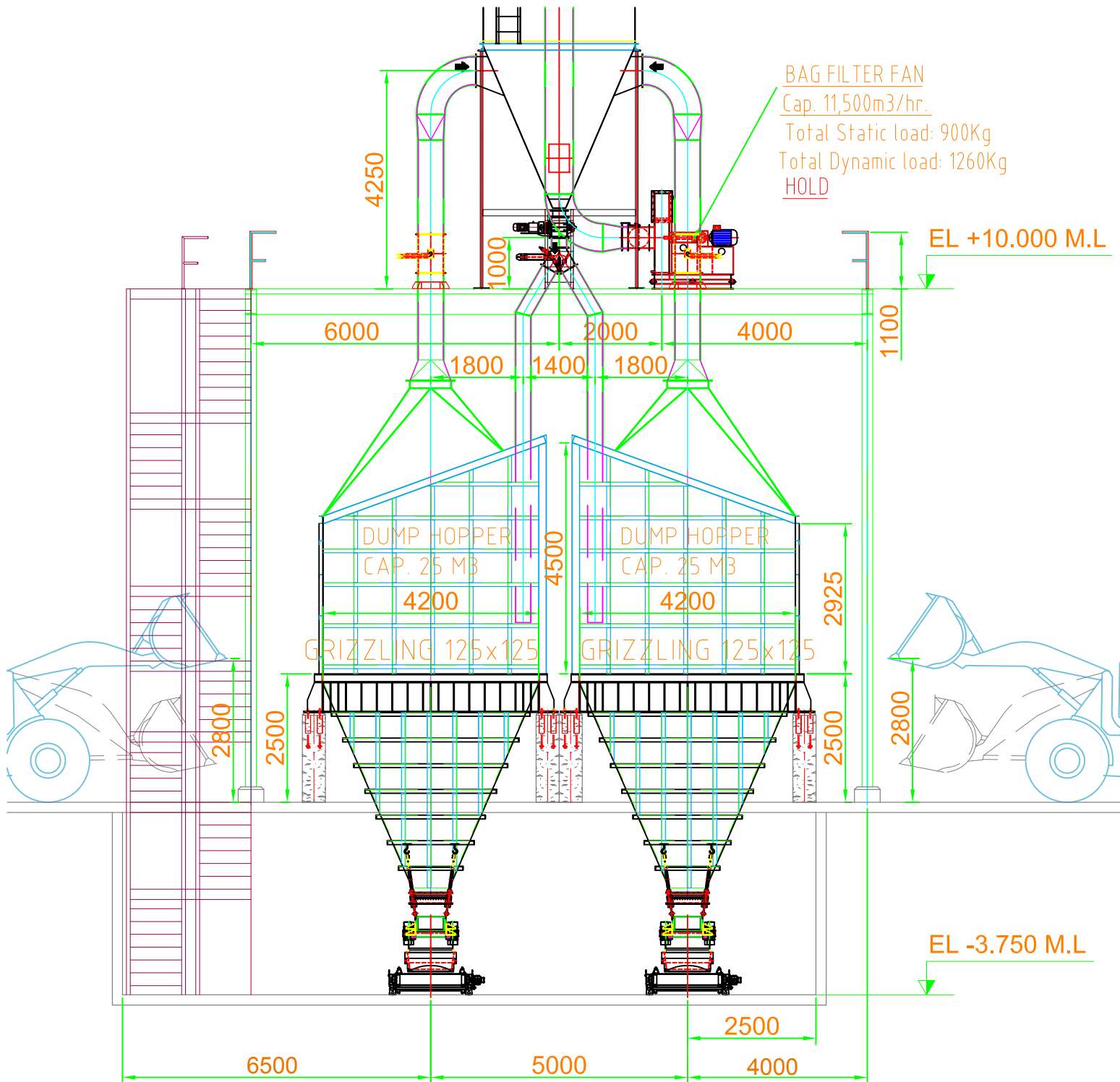
2.0 Hopper 25m³



Part copy of Mechanical Input
Drawing



Part copy of Mechanical Input Drawing



VIEW C-C

1. Dead Load

Dead Load - SELF WEIGHT

Self weight of members and plates are calculated by STAAD Pro software based on defined member size, Plate thickness, density of material

Choked condition :

Average 2.0m height of material

Total Load = $4.2\text{m} \times 4.2\text{m} \times 2.0\text{m} \times 1.6\text{ t/m}^3 = 56.5\text{ t}$

Load applied in ring beam

Additional load in choked condition = $56.5 / 4 \times 4.2 = 3.36\text{ t/m}$

Weight of Grizzly = 40.0 kN

Load of Grizzly on waist Beam = 2.4 kN/m

Load of 3mm thick sheet on roof = 0.24 kN/m²

3. Earthquake Load

Seismic Zone: I (Ref Bangladesh National Building Code)

Seismic Zone coefficient as per seismic study report, $Z = 0.12$

Important Factor, $I = 1.5$

Reduction Factor, R as per table 2.5.7 BNBC 2012 = 3.0

As per seismic study report, value of normalised acceleration response spectrum for 2% damping, which is function of structure building and soil type is: (Refer table 15 of seismic study report)

$$\begin{aligned}\text{Scale in STAAD Input} &= (I / R) \cdot g \\ &= (1.5/3) \cdot 9.81 \\ &= 4.905\end{aligned}$$

Height of Structure = 12.17

Base dimension in X direction = 12.15

$C_t = 0.0488$

from Table 2.5.8

$m = 0.75$

from Table 2.5.8

$$\begin{aligned}\text{Approximate fundamental Time Period, } T &= C_t (h_n)^m \\ &= 0.318\end{aligned}$$

$$1.4T = 0.445$$

Fundamental Time Period, $T_a = 0.92714$

as per STAAD Analysis

Design Time Period = 0.445

$C_s = 0.36$

from Site Spectra

$$\begin{aligned}\text{Design Horizontal Seismic Acceleration coefficient, } S_a &= C_s (I / R) \\ &= 0.18\end{aligned}$$

Total Seismic weight, W

DL = 1086.5 kN from STAAD

50%LL = 164.9 kN from STAAD

EL = 101.5 kN from STAAD

Material Load = 5070.0 kN

Sum = 6422.9 kN

Base Shear (By coefficient method) $V_{bs} = W \cdot S_a = 1156.1\text{ kN}$

X-Direction

Z-Direction

Design base shear from STAAD = $V_b = 136.3\text{ kN}$

225.5 kN

Bangladesh National Building Code 2012, Enhancement factor = $0.5 \cdot V_{bs} / V_b$

7.21 **4.36**

Time Period	Cs
0	0.108
0.01	0.121
0.015	0.127
0.02	0.133
0.03	0.146
0.04	0.158
0.05	0.171
0.06	0.184
0.075	0.202
0.09	0.221
0.1	0.234
0.15	0.297
0.2	0.36
0.3	0.36
0.4	0.36
0.5	0.36
0.6	0.36
0.75	0.36
0.8	0.36
0.9	0.316
1	0.284
1.2	0.237
1.5	0.189
2	0.129
2.5	0.091
3	0.074
4	0.052

Velocity Pressure,

$$q_z = 0.000613 K_z K_{zt} K_d V^2 I; \text{ (kN/m}^2\text{), } V \text{ in m/s}$$

K_z = Velocity pressure exposure coefficient

K_{zt} = Topographic factor

= 1.0

As per Section 2.4.9.2 of Chapter 2 Part 6 of BNBC 2012

K_d = Wind directionality factor

= 0.850

As per Table 2.4.5 of Chapter 2 Part 6 of BNBC 2012

V = Wind Speed

= 73.3 m/sec

I = Importance Factor

= 1.5

- for Building Category II

As per Table 2.4.2 of Chapter 2 Part 6 of BNBC 2012

Height =	9.1 m	21.3 m	30.5 m	48.8 m	
K_z =	0.980	1.170	1.260	1.390	- For Exposure-B
					As per Table 2.4.4 of Chapter 2 Part 6 of BNBC 2012
q_z =	4.12 kN/m ²	4.91 kN/m ²	5.29 kN/m ²	5.84 kN/m ²	

Gust Factor, G = 0.85

As per Section 2.4.10.1 of Chapter 2 Part 6 of BNBC 2012 for RIGID structure

Main Wind Force Resisting System – Method 2		All Heights	
Figure 2.4.6 (con't)	External Pressure Coefficients, C_p	Walls & Roofs	
Enclosed, Partially Enclosed Buildings			
Wall Pressure Coefficients, C_p			
Surface	L/B	C_p	Use With
Windward Wall	All values	0.8	q_z
Leeward Wall	0-1	-0.5	q_h
	2	-0.3	
	≥ 4	-0.2	
Side Wall	All values	-0.7	q_h

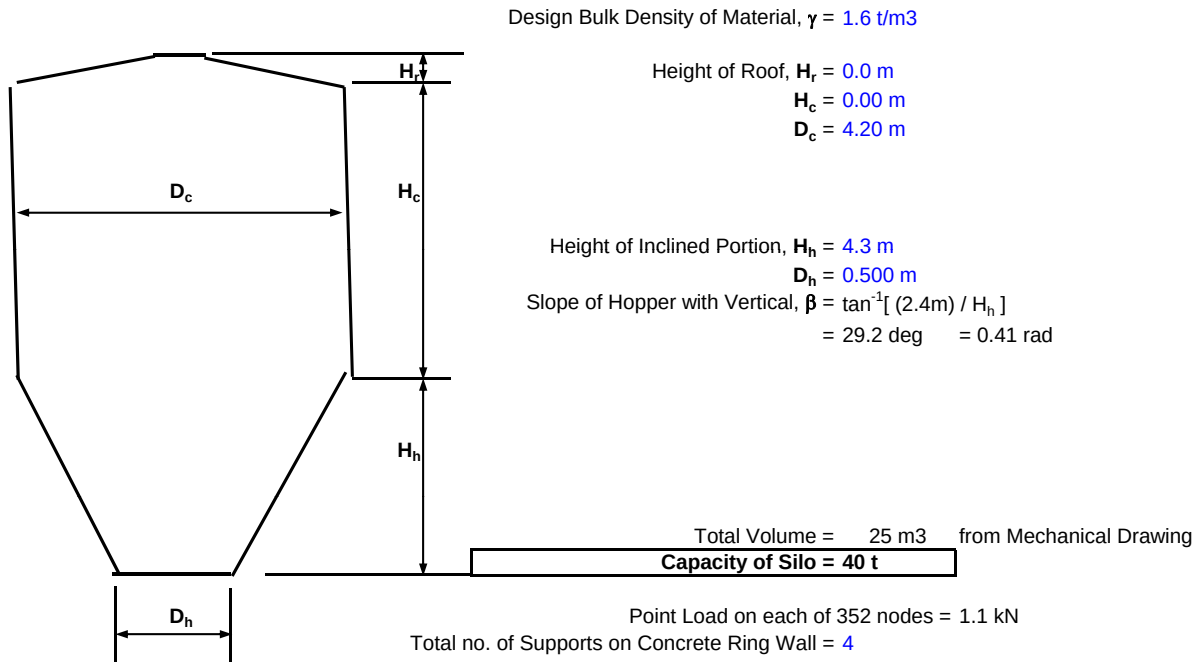
Average Height = 10m

Design, q_z = 4.12 kN/m²

	Windward	Leeward	Side
	Wall	Wall	Wall
C_p =	0.8	0.5	0.7
$G.C_p$ =	0.68	0.425	0.595
Wind Force =	2.80 kN/m ²	1.75 kN/m ²	2.45 kN/m ²

DESIGN OF RECTANGULAR LIMESTONE UNLOADING HOPPER (Load Calculation)

1. Basic Dimensions of Silo



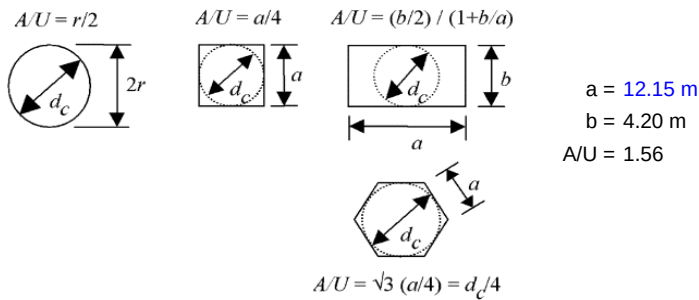
Action Assessment Class 2

- Table 2.1 EN 1991-4

5.7 Loads in rectangular silos

5.7.1 Rectangular silos

(1) The wall loads due to bulk solids in rectangular silos should be taken as defined in 5.2, 5.3 and 5.4, as appropriate.



d) Cross-section shapes

Key

- 1 Equivalent surface
- 2 Inside dimension
- 3 Transition
- 4 Surface profile for full condition
- 5 Silo centre line

Figure 1.1: Silo forms showing dimensions and pressure notation

Table E.1: Particulate solids properties

Type of particulate solid ^{d, e}	Unit weight ^b		Angle of repose ϕ_r	Angle of internal friction ϕ_i			Lateral pressure ratio K		Wall friction coefficient ^c μ ($\mu = \tan \phi_w$)				Patch load solid reference factor C_{op}
	γ_f	γ_u		ϕ_{im}	a_ϕ		K_m	a_K	Wall type D1	Wall type D2	Wall type D3	a_μ	
	Lower	Upper		Mean	Factor		Mean	Factor	Mean	Mean	Mean	Factor	
	kN/m ³	kN/m ³	degrees	degrees									
Limestone powder	11,0	13,0	36	30	1,22	0,54	1,20	0,41	0,51	0,56	1,07	0,5	

DESIGN OF RECTANGULAR LIMESTONE UNLOADING HOPPER (Load Calculation)

Table 3.1: Values of properties to be used for different wall loading assessments

Purpose:	Characteristic value to be adopted		
	Wall friction coefficient μ	Lateral pressure ratio K	Angle of internal friction ϕ_i
For the vertical wall or barrel			
Maximum normal pressure on vertical wall	Lower	Upper	Lower
Maximum frictional traction on vertical wall	Upper	Upper	Lower
Maximum vertical load on hopper or silo bottom	Lower	Lower	Upper
For the hopper wall			
Maximum hopper pressures on filling	Lower value for hopper	Lower	Lower
Maximum hopper pressures on discharge	Lower value for hopper	Upper	Upper

Above tables are taken from EN 1991-4

$$H_c/D_c = 0.00 < 0.4$$

$$< 2.0$$

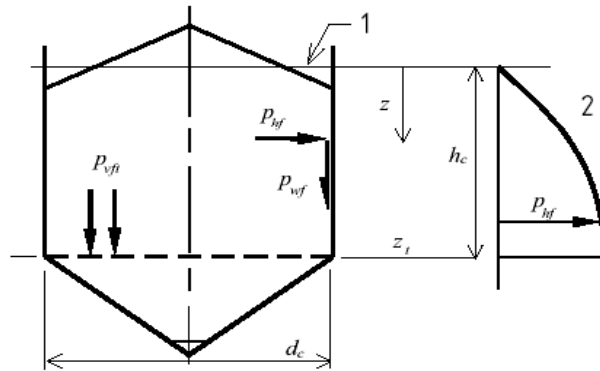
Hence this is Squat Silo

- Cl. 5.1 (2) EN 1991-4

1.5.39

squat silo

a silo where $0.4 < h_c/d_c \leq 1.0$ or that meets the additional conditions defined in 3.3. Where $h_c/d_c \leq 0.4$, the silo is squat if there is a hopper, but a retaining silo if the bottom is flat



Silo Loads during Filling

(2) The values of horizontal pressure p_{hf} and wall frictional traction p_{wf} at any depth after filling should be determined as:

$$p_{hf} = p_{ho} Y_R \quad \dots (5.71)$$

$$p_{wf} = \mu p_{hf} \quad \dots (5.72)$$

in which:

$$p_{ho} = \gamma K z_o = \gamma \frac{1}{\mu} \frac{A}{U} \quad \dots (5.73)$$

$$Y_R = \left(1 - \left[\left(\frac{z - h_o}{z_o - h_o} \right) + 1 \right]^n \right) \quad \dots (5.74)$$

DESIGN OF RECTANGULAR LIMESTONE UNLOADING HOPPER (Load Calculation)

$$z_0 = \frac{1}{K \mu} \frac{A}{U} \quad \dots (5.75)$$

$$n = - (1 + \tan \phi_r) (1 - h_0/z_0) \quad \dots (5.76)$$

(3) The value of vertical pressure p_{vf} at any depth after filling should be determined as:

$$p_{vf} = \gamma z_v \quad \dots (5.79)$$

in which:

$$z_v = h_0 - \frac{1}{(n+1)} \left(z_0 - h_0 - \frac{(z_0 - h_0)^{n+1}}{(z_0 - h_0)^n} \right) \quad \dots (5.80)$$

(2) The normal pressure p_{nf} and frictional traction p_{tf} at any point on the wall of a shallow hopper after filling (see Figure 6.2) should be determined as:

$$p_{nf} = F_f p_v \quad \dots (6.29)$$

$$p_{tf} = \mu_{heff} F_f p_v \quad \dots (6.30)$$

$$F_f = 1 - \{ b / (1 + \tan \beta / \mu_{heff}) \} \quad \dots (6.27)$$

$$\mu_{heff} = \frac{(1-K)}{2 \tan \beta} \quad \dots (6.26)$$

$$\begin{aligned} \phi_r &= 36 \\ \tan \phi_r &= 0.727 \\ \gamma &= 16.0 \text{ kN/m}^3 \\ k &= 0.54 \\ \mu &= 0.51 \\ z_0 &= 5.7 \text{ m} \\ h_0 &= \frac{r}{3} \tan \phi_r \\ &= 0.51 \\ n &= -1.57 \end{aligned}$$

$$\begin{aligned} \tan \beta &= 0.43 \\ (1-k)/2\mu &= 0.451 \\ &\text{- Steep Hoppe} \\ b &= 0.2 \\ A/U &= 1.56 \\ \mu_{heff} &= 0.535 \\ F_f &= 0.889 \\ P_{ho} &= 49.0 \end{aligned}$$

Z (m)	Y _R	P _{hf}	P _{wf}	P _{nf}	P _{tf}	P _{vf}
		kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²
0.2	-0.102	-5.0	-2.5			
0.3	-0.067	-3.3	-1.7			
1.38	0.217			18.1	9.7	20.4
2.75	0.433			31.2	16.7	35.0

Silo Loads during Discharge

(3) For silos of intermediate slenderness ($1.0 < h_c/d_c < 2.0$), the symmetrical discharge pressures p_{he} and p_{we} should be determined as:

$$p_{he} = C_h p_{hf} \quad \dots (5.82)$$

$$p_{we} = C_w p_{wf} \quad \dots (5.83)$$

(5) For intermediate slenderness silos in Action Assessment Class 2 and 3, the discharge factors should be taken as:

$$C_h = 1.0 + 0.15 C_S \quad \dots (5.85)$$

$$C_w = 1.0 + 0.1 C_S \quad \dots (5.86)$$

DESIGN OF RECTANGULAR LIMESTONE UNLOADING HOPPER (Load Calculation)

$$C_S = h_c/d_c - 1,0 \quad \dots (5.87)$$

where

C_S is the slenderness adjustment factor.

6.4.3 Discharge loads

(1) In shallow hoppers under discharge conditions (see Figure 6.4), the normal pressure and frictional traction may be taken as identical to the values on filling (see 6.4.2).

$$C_s = -1.00$$

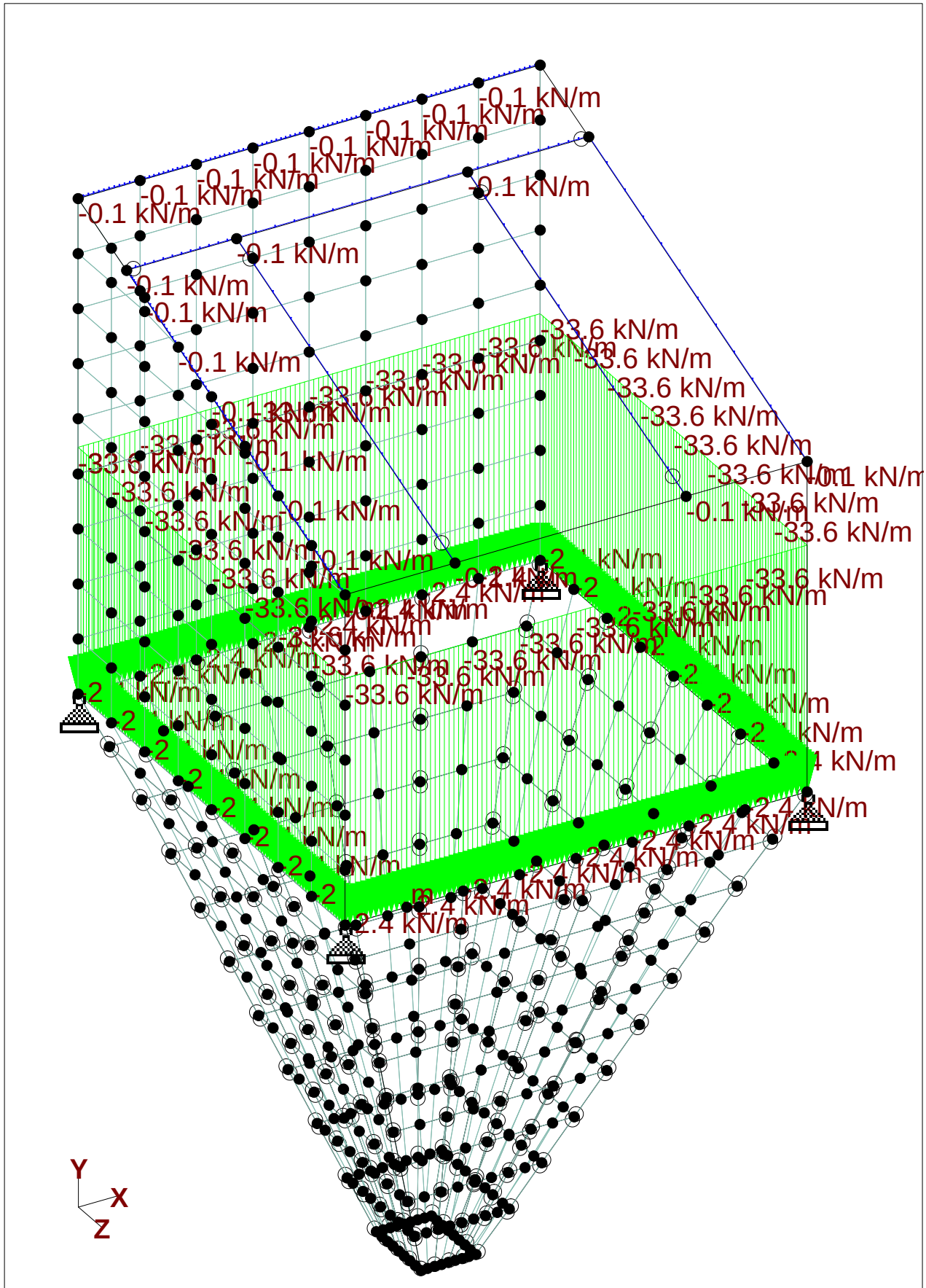
$$C_h = 0.850$$

$$C_w = 0.900$$

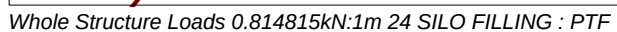
Z (m)	Y_R	P_{he}	P_{we}	P_{ne}	P_{te}
		kN/m ²	kN/m ²	kN/m ²	kN/m ²
0.2	-0.102	-4.2	-2.3		
0.3	-0.067	-2.8	-1.5		
1.38	0.217			18.1	9.7
2.75	0.433			31.2	16.7

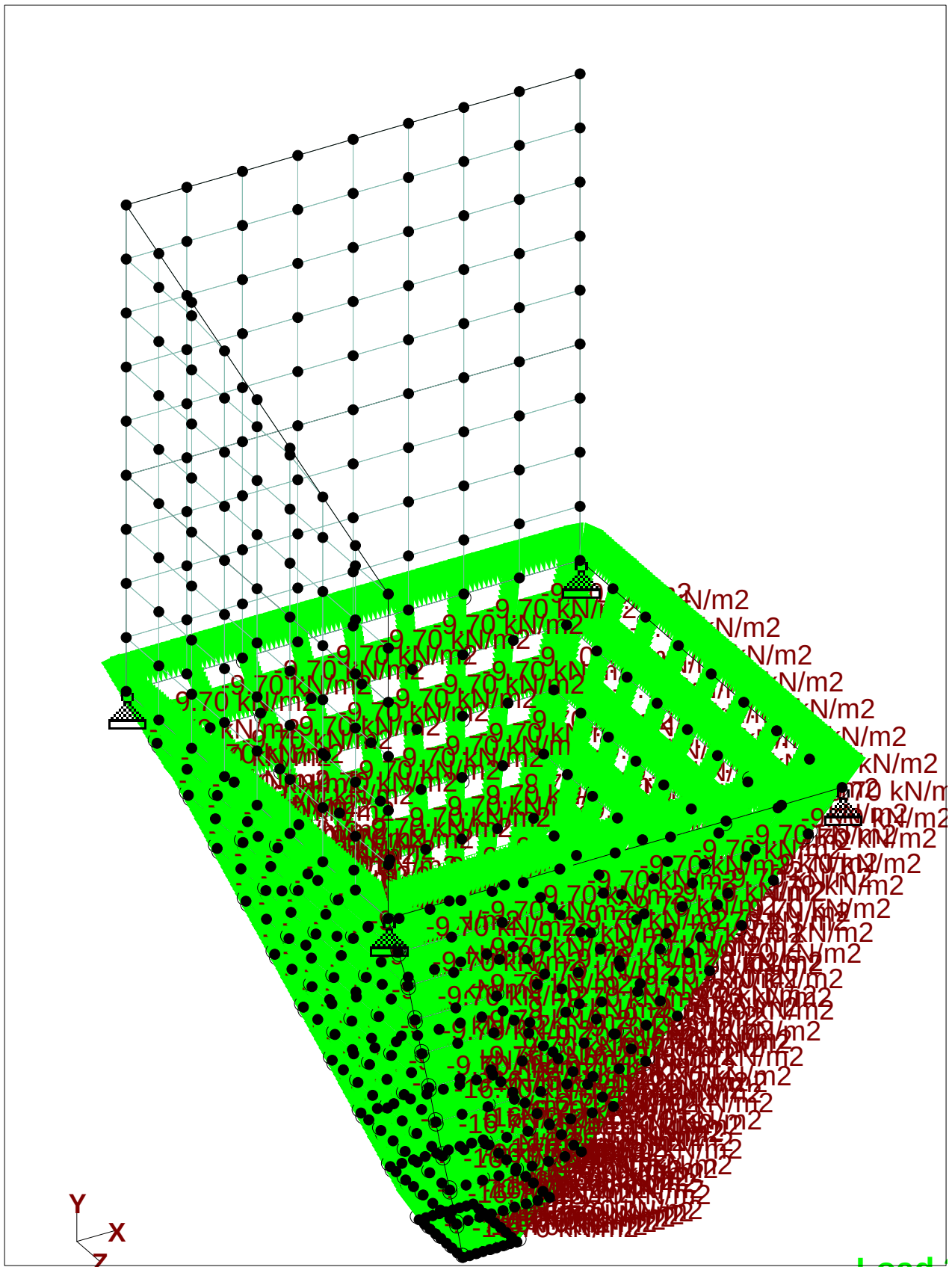
Primary Load Cases

Number	Name	Type
1	SEISMIC LOAD X-DIRECTION (SLX)	None
2	SEISMIC LOAD Z-DIRECTION (SLZ)	None
11	DEAD LOAD (DL)	None
12	LIVE LOAD (LL)	None
13	EQUIPMENT LOAD (EL)	None
21	SILO FILLING : PHF	None
22	SILO FILLING : PWF	None
23	SILO FILLING : PNF	None
24	SILO FILLING : PTF	None
31	SILO DISCHARGE : PHE	None
32	SILO DISCHARGE : PWE	None
33	SILO DISCHARGE : PNE	None
34	SILO DISCHARGE : PTE	None
61	WIND LOAD X-DIRECTION (WLX)	None
62	WIND LOAD Z-DIRECTION (WLZ)	None

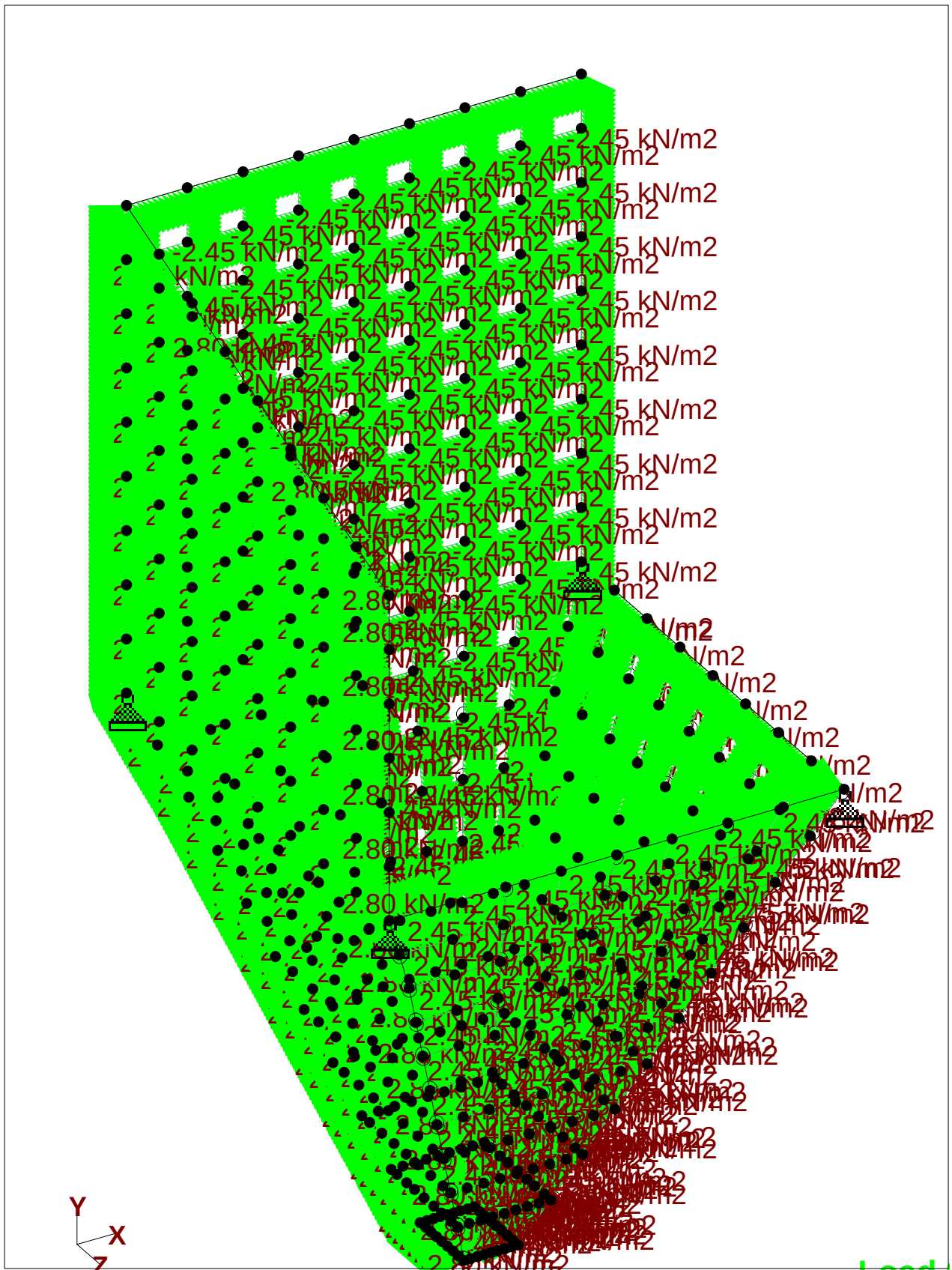


Whole Structure Loads 0.773549kN:1m 11 DEAD LOAD (DL)

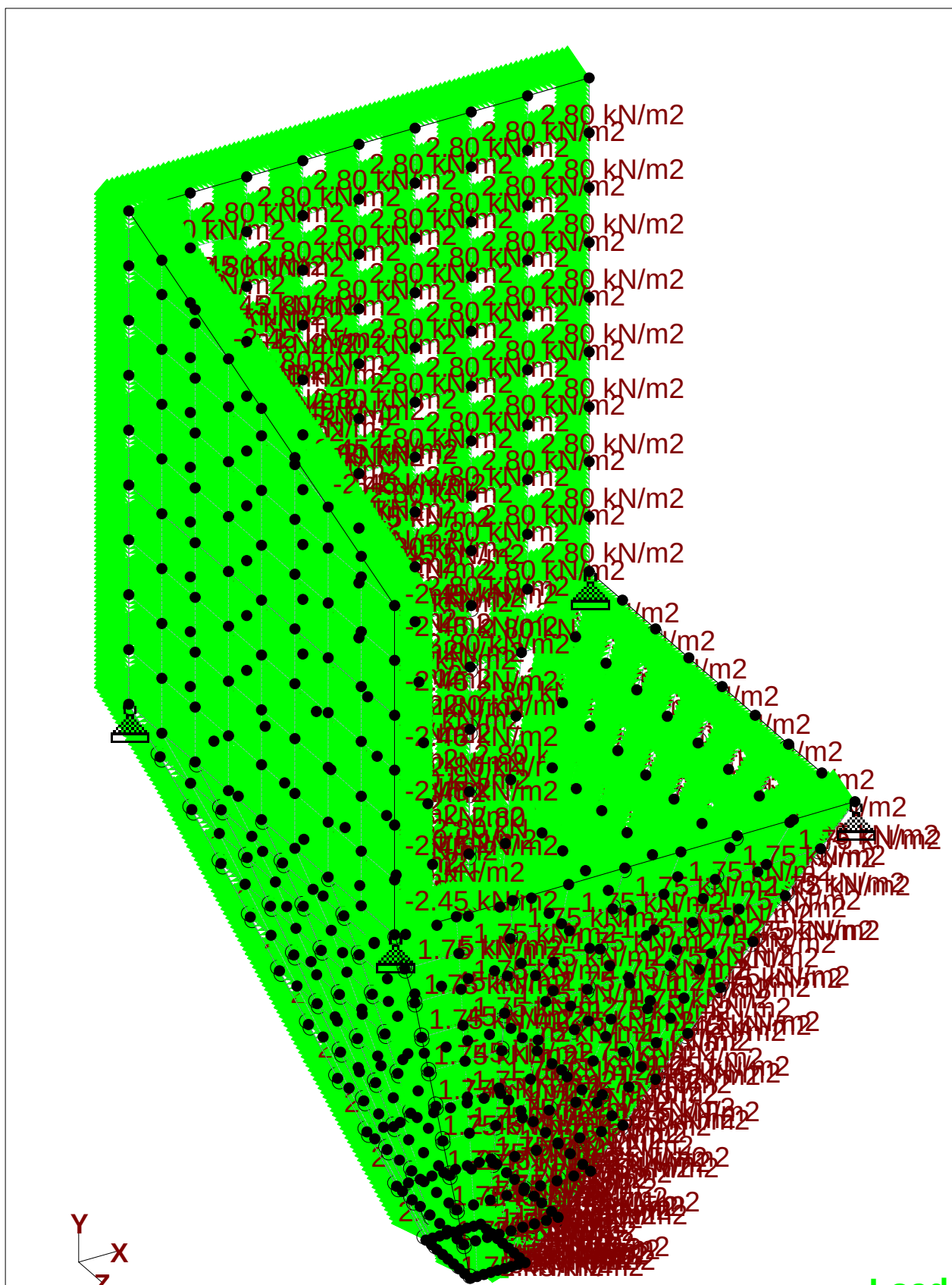




Whole Structure Loads 0.814815kN:1m 34 SILO DISCHARGE : PTE



Whole Structure Loads 0.814815kN:1m 61 WIND LOAD X-DIRECTION (WLX)



Whole Structure Loads 0.814815kN:1m 62 WIND LOAD Z-DIRECTION (WLZ)

Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	0.75
144	DL+LL+SILO FILLING+EQZ	11	DEAD LOAD (DL)	0.75
		12	LIVE LOAD (LL)	0.75
		13	EQUIPMENT LOAD (EL)	0.75
		21	SILO FILLING : PHF	0.75
		22	SILO FILLING : PWF	0.75
		23	SILO FILLING : PNF	0.75
		24	SILO FILLING : PTF	0.75
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	-0.75
145	DL+LL+SILO DISCHARGE+EQX	11	DEAD LOAD (DL)	0.75
		12	LIVE LOAD (LL)	0.75
		13	EQUIPMENT LOAD (EL)	0.75
		31	SILO DISCHARGE : PHE	0.75
		32	SILO DISCHARGE : PWE	0.75
		33	SILO DISCHARGE : PNE	0.75
		34	SILO DISCHARGE : PTE	0.75
		61	WIND LOAD X-DIRECTION (WLX)	0.75
146	DL+LL+SILO DISCHARGE+EQX	11	DEAD LOAD (DL)	0.75
		12	LIVE LOAD (LL)	0.75
		13	EQUIPMENT LOAD (EL)	0.75
		31	SILO DISCHARGE : PHE	0.75
		32	SILO DISCHARGE : PWE	0.75
		33	SILO DISCHARGE : PNE	0.75
		34	SILO DISCHARGE : PTE	0.75
		1	SEISMIC LOAD X-DIRECTION (SLX)	-0.75
147	DL+LL+SILO DISCHARGE+EQZ	11	DEAD LOAD (DL)	0.75
		12	LIVE LOAD (LL)	0.75
		13	EQUIPMENT LOAD (EL)	0.75
		31	SILO DISCHARGE : PHE	0.75
		32	SILO DISCHARGE : PWE	0.75
		33	SILO DISCHARGE : PNE	0.75
		34	SILO DISCHARGE : PTE	0.75
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	0.75
148	DL+LL+SILO DISCHARGE+EQZ	11	DEAD LOAD (DL)	0.75
		12	LIVE LOAD (LL)	0.75
		13	EQUIPMENT LOAD (EL)	0.75
		31	SILO DISCHARGE : PHE	0.75
		32	SILO DISCHARGE : PWE	0.75
		33	SILO DISCHARGE : PNE	0.75
		34	SILO DISCHARGE : PTE	0.75
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	-0.75
151	DL+WLX	11	DEAD LOAD (DL)	0.60
		61	WIND LOAD X-DIRECTION (WLX)	1.00
152	DL-WLX	11	DEAD LOAD (DL)	0.60
		61	WIND LOAD X-DIRECTION (WLX)	-1.00
153	DL+WLZ	11	DEAD LOAD (DL)	0.60
		62	WIND LOAD Z-DIRECTION (WLZ)	1.00
154	DL-WLZ	11	DEAD LOAD (DL)	0.60
		62	WIND LOAD Z-DIRECTION (WLZ)	-1.00
161	DL+EQX	11	DEAD LOAD (DL)	0.60
		61	WIND LOAD X-DIRECTION (WLX)	1.00
162	DL-EQX	11	DEAD LOAD (DL)	0.60
		61	WIND LOAD X-DIRECTION (WLX)	-1.00
163	DL+EQZ	11	DEAD LOAD (DL)	0.60
		62	WIND LOAD Z-DIRECTION (WLZ)	1.00
164	DL-EQZ	11	DEAD LOAD (DL)	0.60
		62	WIND LOAD Z-DIRECTION (WLZ)	-1.00
501	DL+LL	11	DEAD LOAD (DL)	1.50

Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		13	EQUIPMENT LOAD (EL)	1.50
		12	LIVE LOAD (LL)	1.50
504	DL+LL+SILO FILLING	11	DEAD LOAD (DL)	1.50
		12	LIVE LOAD (LL)	1.50
		13	EQUIPMENT LOAD (EL)	1.50
		21	SILO FILLING : PHF	1.50
		22	SILO FILLING : PWF	1.50
		23	SILO FILLING : PNF	1.50
		24	SILO FILLING : PTF	1.50
505	DL+LL+SILO DISCHARGE	11	DEAD LOAD (DL)	1.50
		12	LIVE LOAD (LL)	1.50
		13	EQUIPMENT LOAD (EL)	1.50
		31	SILO DISCHARGE : PHE	1.50
		32	SILO DISCHARGE : PWE	1.50
		33	SILO DISCHARGE : PNE	1.50
		34	SILO DISCHARGE : PTE	1.50
511	DL+SILO FILLING	11	DEAD LOAD (DL)	1.20
		13	EQUIPMENT LOAD (EL)	1.50
		21	SILO FILLING : PHF	1.50
		22	SILO FILLING : PWF	1.50
		23	SILO FILLING : PNF	1.50
		24	SILO FILLING : PTF	1.50
512	DL+BL+SILO DISCHARGE	11	DEAD LOAD (DL)	1.20
		13	EQUIPMENT LOAD (EL)	1.50
		31	SILO DISCHARGE : PHE	1.50
		32	SILO DISCHARGE : PWE	1.50
		33	SILO DISCHARGE : PNE	1.50
		34	SILO DISCHARGE : PTE	1.50
531	DL+LL+SILO FILLING+WLX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		61	WIND LOAD X-DIRECTION (WLX)	1.20
532	DL+LL+SILO FILLING+WLX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		61	WIND LOAD X-DIRECTION (WLX)	-1.20
533	DL+LL+SILO FILLING+WLZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		62	WIND LOAD Z-DIRECTION (WLZ)	1.20
534	DL+LL+SILO FILLING+WLZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		62	WIND LOAD Z-DIRECTION (WLZ)	-1.20
535	DL+LL+SILO DISCHARGE+WLX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20

Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		61	WIND LOAD X-DIRECTION (WLX)	1.20
536	DL+LL+SILO DISCHARGE+WLX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		61	WIND LOAD X-DIRECTION (WLX)	-1.20
537	DL+LL+SILO DISCHARGE+WLZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		62	WIND LOAD Z-DIRECTION (WLZ)	1.20
538	DL+LL+SILO DISCHARGE+WLZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		62	WIND LOAD Z-DIRECTION (WLZ)	-1.20
541	DL+LL+SILO FILLING+EQX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		1	SEISMIC LOAD X-DIRECTION (SLX)	1.20
542	DL+LL+SILO FILLING+EQX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		1	SEISMIC LOAD X-DIRECTION (SLX)	-1.20
543	DL+LL+SILO FILLING+EQZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	1.20
544	DL+LL+SILO FILLING+EQZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		21	SILO FILLING : PHF	1.20
		22	SILO FILLING : PWF	1.20
		23	SILO FILLING : PNF	1.20
		24	SILO FILLING : PTF	1.20
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	-1.20
545	DL+LL+SILO DISCHARGE+EQX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20

Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		1	SEISMIC LOAD X-DIRECTION (SLX)	1.20
546	DL+LL+SILO DISCHARGE+EQX	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		1	SEISMIC LOAD X-DIRECTION (SLX)	-1.20
547	DL+LL+SILO DISCHARGE+EQZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	1.20
548	DL+LL+SILO DISCHARGE+EQZ	11	DEAD LOAD (DL)	1.20
		12	LIVE LOAD (LL)	1.20
		31	SILO DISCHARGE : PHE	1.20
		32	SILO DISCHARGE : PWE	1.20
		33	SILO DISCHARGE : PNE	1.20
		34	SILO DISCHARGE : PTE	1.20
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	-1.20
551	DL+WLX	11	DEAD LOAD (DL)	0.90
		61	WIND LOAD X-DIRECTION (WLX)	1.50
552	DL-WLX	11	DEAD LOAD (DL)	0.90
		61	WIND LOAD X-DIRECTION (WLX)	-1.50
553	DL+WLZ	11	DEAD LOAD (DL)	0.90
		62	WIND LOAD Z-DIRECTION (WLZ)	1.50
554	DL-WLZ	11	DEAD LOAD (DL)	0.90
		62	WIND LOAD Z-DIRECTION (WLZ)	-1.50
561	DL+EQX	11	DEAD LOAD (DL)	0.90
		1	SEISMIC LOAD X-DIRECTION (SLX)	1.50
562	DL-EQX	11	DEAD LOAD (DL)	0.90
		1	SEISMIC LOAD X-DIRECTION (SLX)	-1.50
563	DL+EQZ	11	DEAD LOAD (DL)	0.90
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	1.50
564	DL-EQZ	11	DEAD LOAD (DL)	0.90
		2	SEISMIC LOAD Z-DIRECTION (SLZ)	-1.50

For Hopper Portion : Plate Thickness 10 MM

Plate	L/C	Principal		Von Mis		Tresca	
		Top N/mm2	Bottom N/mm2	Top N/mm2	Bottom N/mm2	Top N/mm2	Bottom N/mm2
Max Principal (top)	522 504 DL+LL+SILO FILLING	55.253	56.231	58.706	57.065	61.638	57.865
Min Principal (top)	438 553 DL+WLZ	-28.186	7.863	25.189	20.094	28.186	22.837
Max Principal (bottom)	522 504 DL+LL+SILO FILLING	55.253	56.231	58.706	57.065	61.638	57.865
Min Principal (bottom)	438 554 DL-WLZ	7.749	-24.797	21.633	22.159	24.44	24.797
Max Von Mis (Top)	522 504 DL+LL+SILO FILLING	55.253	56.231	58.706	57.065	61.638	57.865
Min Von Mis (top)	593 101 DL+LL+EL	-0.011	0.043	0.016	0.052	0.019	0.058
Max Von Mis (Bottom)	522 504 DL+LL+SILO FILLING	55.253	56.231	58.706	57.065	61.638	57.865
Min Von Mis (bottom)	508 101 DL+LL+EL	0.042	-0.012	0.047	0.018	0.051	0.021
Max Tresca (top)	522 504 DL+LL+SILO FILLING	55.253	56.231	58.706	57.065	61.638	57.865
Min Tresca (top)	593 101 DL+LL+EL	-0.011	0.043	0.016	0.052	0.019	0.058
Max Tresca (bottom)	522 504 DL+LL+SILO FILLING	55.253	56.231	58.706	57.065	61.638	57.865
Min Tresca (bottom)	508 101 DL+LL+EL	0.042	-0.012	0.047	0.018	0.051	0.021
Maximum		55.25	56.23	58.71	57.07	61.64	57.87

Max VON Stress = 58.71 N/mm²

Corrosion Allowance = 0.00 mm

Design Plate Thickness = 10.00 mm

γm= 1.5

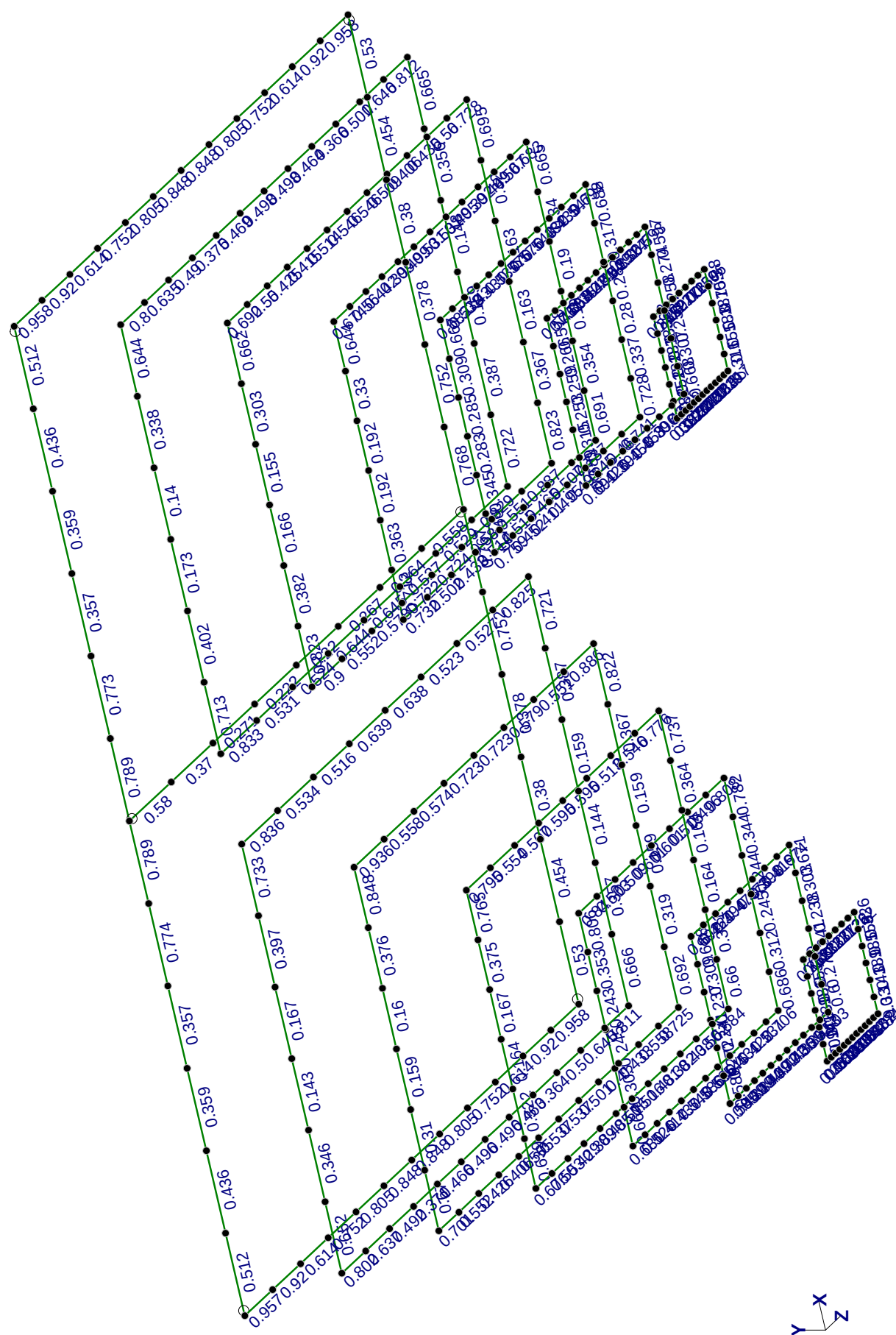
Modified Max Von Stress : 58.7 N/mm²

Plate Strength = 136.7 N/mm²

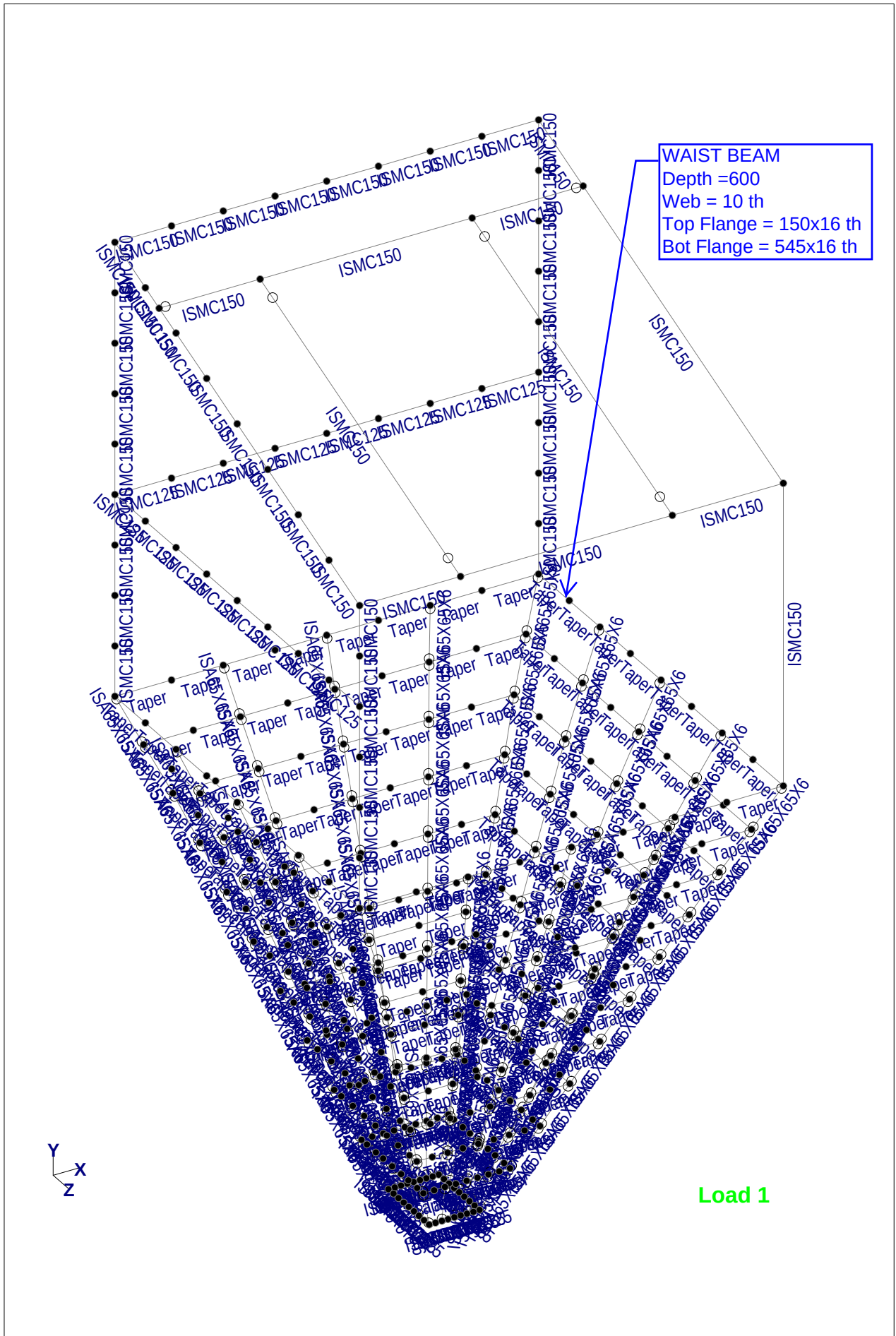
Factor of Safety = 2.33 SAFE

Hopper Plate 10 mm SS304

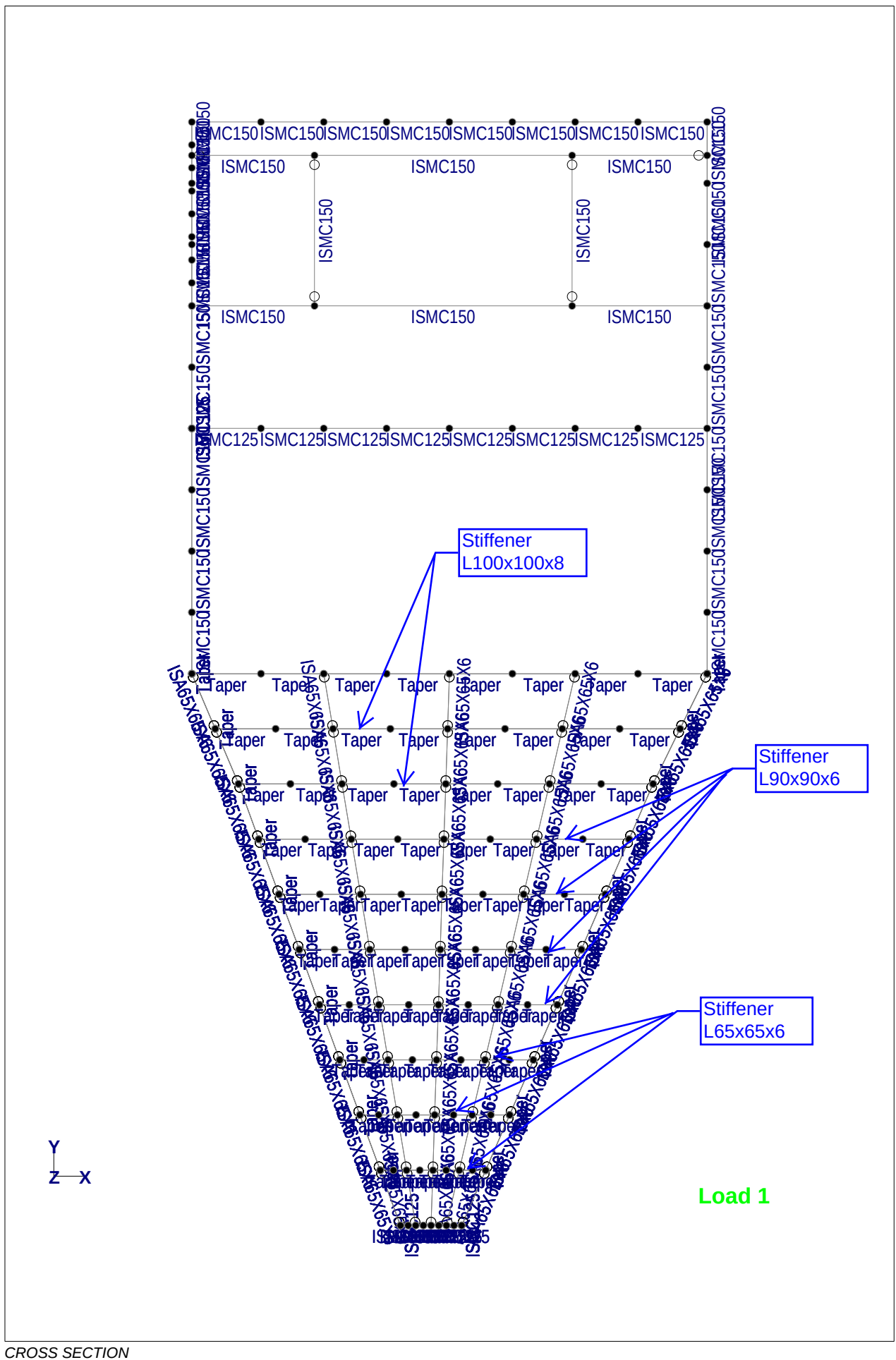
Plate Fy = 205 N/mm2

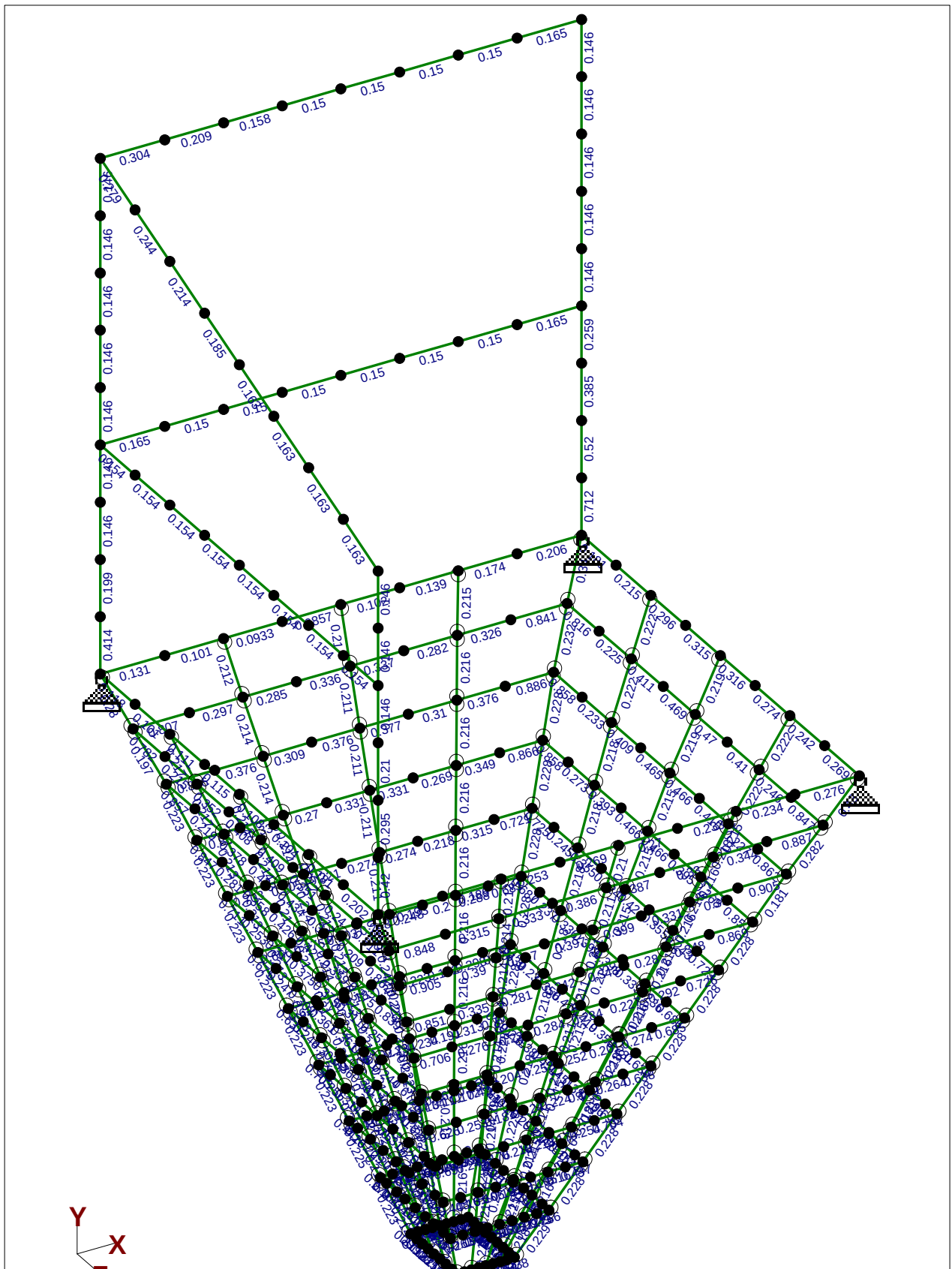


Horizontal Stiffening Beams of Bottom Portion : Code Check Ratio

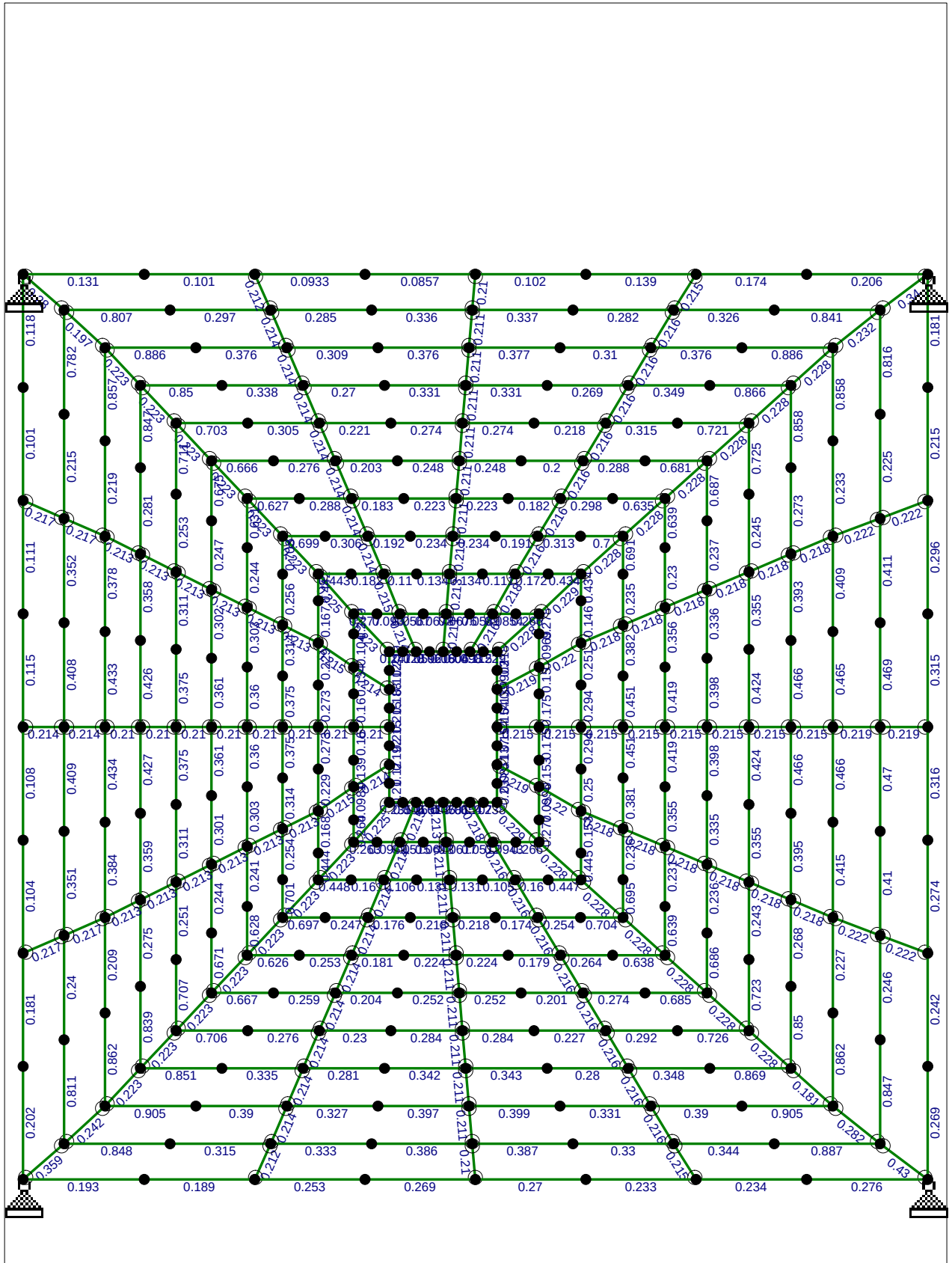


MEMBER SIZE





CODE CHECK RATIO



CODE CHECK RATIO

Support Reaction : Basic Load Cases

Reactions

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
2	1:SEISMIC LO	22.74	33.47	19.80	0.000	0.000	0.000
	2:SEISMIC LO	10.20	19.29	12.65	0.000	0.000	0.000
	11:DEAD LOA	17.45	163.52	-39.41	0.000	0.000	0.000
	12:LIVE LOAD	0.00	0.00	0.00	0.000	0.000	0.000
	13:EQUIPMEN	0.00	0.00	0.00	0.000	0.000	0.000
	21:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	22:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	23:SILO FILLIN	25.24	95.40	-11.93	0.000	0.000	0.000
	24:SILO FILLIN	57.59	126.10	-63.66	0.000	0.000	0.000
	31:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	32:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	33:SILO DISC	25.24	95.40	-11.93	0.000	0.000	0.000
	34:SILO DISC	57.59	126.10	-63.66	0.000	0.000	0.000
	61:WIND LOA	-29.25	0.13	26.29	0.000	0.000	0.000
	62:WIND LOA	18.52	0.36	-27.58	0.000	0.000	0.000
3	1:SEISMIC LO	22.48	33.54	19.77	0.000	0.000	0.000
	2:SEISMIC LO	13.13	20.23	13.30	0.000	0.000	0.000
	11:DEAD LOA	42.72	159.66	39.13	0.000	0.000	0.000
	12:LIVE LOAD	0.00	0.00	0.00	0.000	0.000	0.000
	13:EQUIPMEN	0.00	0.00	0.00	0.000	0.000	0.000
	21:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	22:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	23:SILO FILLIN	43.68	95.05	11.74	0.000	0.000	0.000
	24:SILO FILLIN	73.96	125.77	63.46	0.000	0.000	0.000
	31:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	32:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	33:SILO DISC	43.68	95.05	11.74	0.000	0.000	0.000
	34:SILO DISC	73.96	125.77	63.46	0.000	0.000	0.000
	61:WIND LOA	-1.76	-2.41	-10.54	0.000	0.000	0.000
	62:WIND LOA	-19.35	-18.09	-14.94	0.000	0.000	0.000
4	1:SEISMIC LO	20.47	33.12	15.83	0.000	0.000	0.000
	2:SEISMIC LO	8.35	18.35	11.94	0.000	0.000	0.000
	11:DEAD LOA	-17.17	166.26	-14.60	0.000	0.000	0.000
	12:LIVE LOAD	0.00	0.00	0.00	0.000	0.000	0.000
	13:EQUIPMEN	0.00	0.00	0.00	0.000	0.000	0.000
	21:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	22:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	23:SILO FILLIN	-25.05	95.99	-0.78	0.000	0.000	0.000
	24:SILO FILLIN	-52.99	129.53	-50.63	0.000	0.000	0.000
	31:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	32:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	33:SILO DISC	-25.05	95.99	-0.78	0.000	0.000	0.000
	34:SILO DISC	-52.99	129.53	-50.63	0.000	0.000	0.000
	61:WIND LOA	-14.11	24.62	-3.02	0.000	0.000	0.000
	62:WIND LOA	-6.77	-8.90	-17.76	0.000	0.000	0.000
5	1:SEISMIC LO	20.62	32.74	15.74	0.000	0.000	0.000
	2:SEISMIC LO	11.20	19.18	12.81	0.000	0.000	0.000
	11:DEAD LOA	-43.00	163.56	14.88	0.000	0.000	0.000
	12:LIVE LOAD	0.00	0.00	0.00	0.000	0.000	0.000
	13:EQUIPMEN	0.00	0.00	0.00	0.000	0.000	0.000
	21:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	22:SILO FILLIN	0.00	0.00	0.00	0.000	0.000	0.000
	23:SILO FILLIN	-43.86	96.34	0.96	0.000	0.000	0.000
	24:SILO FILLIN	-69.72	129.84	50.77	0.000	0.000	0.000
	31:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	32:SILO DISC	0.00	0.00	0.00	0.000	0.000	0.000
	33:SILO DISC	-43.86	96.34	0.96	0.000	0.000	0.000

Reactions Cont...

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	34:SILO DISC	-69.72	129.84	50.77	0.000	0.000	0.000
	61:WIND LOA	-53.61	-22.34	33.90	0.000	0.000	0.000
	62:WIND LOA	45.49	26.64	-42.92	0.000	0.000	0.000

Support Reaction Summary : Unfactored Load Cases

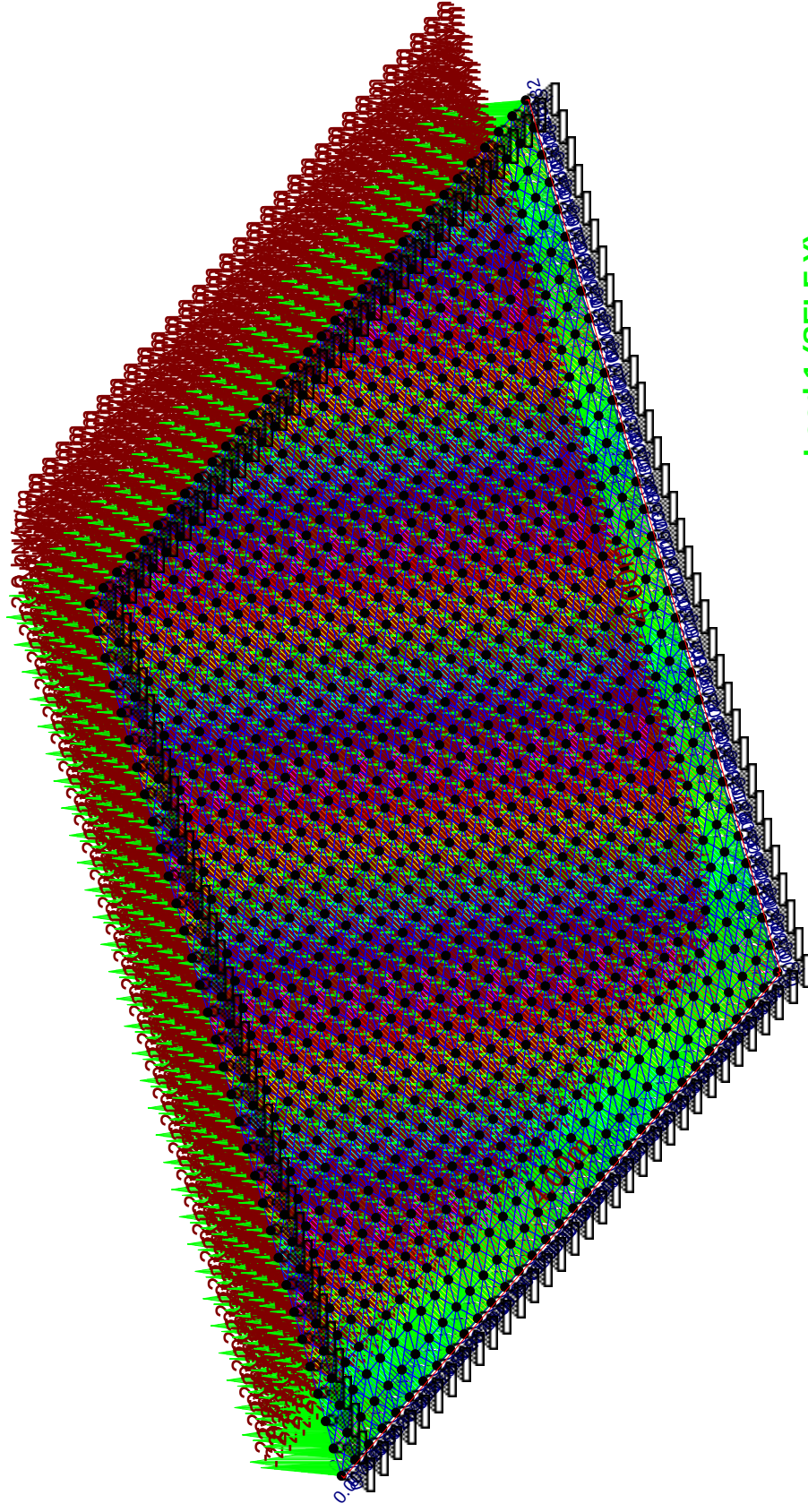
Reaction Summary

			Horizontal	Vertical	Horizontal	Moment		
	Node	L/C	FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
Max FX	3	104:DL+LL+SII	160.37	380.48	114.33	0.000	0.000	0.000
Min FX	5	131:DL+LL+SII	-157.64	275.55	75.39	0.000	0.000	0.000
Max FY	4	104:DL+LL+SII	-95.21	391.78	-66.01	0.000	0.000	0.000
Min FY	5	154:DL-WLZ	-71.29	71.49	51.85	0.000	0.000	0.000
Max FZ	3	104:DL+LL+SII	160.37	380.48	114.33	0.000	0.000	0.000
Min FZ	2	104:DL+LL+SII	100.27	385.03	-115.00	0.000	0.000	0.000
Max MX	2	101:DL+LL+EL	17.45	163.52	-39.41	0.000	0.000	0.000
Min MX	2	101:DL+LL+EL	17.45	163.52	-39.41	0.000	0.000	0.000
Max MY	2	101:DL+LL+EL	17.45	163.52	-39.41	0.000	0.000	0.000
Min MY	2	101:DL+LL+EL	17.45	163.52	-39.41	0.000	0.000	0.000
Max MZ	2	101:DL+LL+EL	17.45	163.52	-39.41	0.000	0.000	0.000
Min MZ	2	101:DL+LL+EL	17.45	163.52	-39.41	0.000	0.000	0.000

Support Reaction Summary : Factored Load Cases

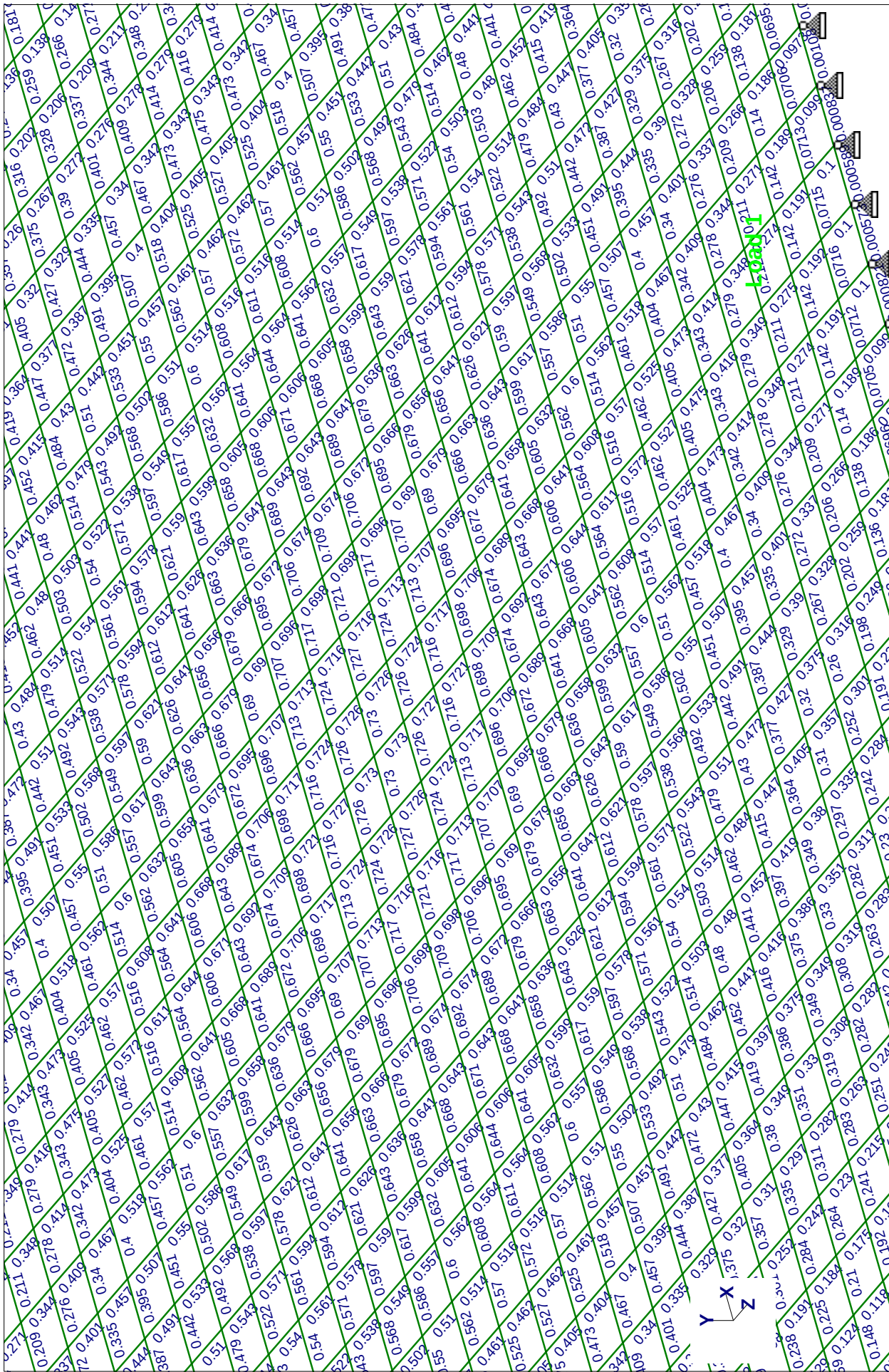
Reaction Summary

	Node	L/C	Horizontal	Vertical	Horizontal	Moment		
			FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
Max FX	3	504:DL+LL+SII	240.55	570.72	171.50	0.000	0.000	0.000
Min FX	5	531:DL+LL+SII	-252.23	440.88	120.62	0.000	0.000	0.000
Max FY	4	504:DL+LL+SII	-142.82	587.67	-99.01	0.000	0.000	0.000
Min FY	3	562:DL-EQX	4.74	93.38	5.57	0.000	0.000	0.000
Max FZ	3	504:DL+LL+SII	240.55	570.72	171.50	0.000	0.000	0.000
Min FZ	2	504:DL+LL+SII	150.41	577.54	-172.50	0.000	0.000	0.000
Max MX	2	501:DL+LL	26.17	245.29	-59.12	0.000	0.000	0.000
Min MX	2	501:DL+LL	26.17	245.29	-59.12	0.000	0.000	0.000
Max MY	2	501:DL+LL	26.17	245.29	-59.12	0.000	0.000	0.000
Min MY	2	501:DL+LL	26.17	245.29	-59.12	0.000	0.000	0.000
Max MZ	2	501:DL+LL	26.17	245.29	-59.12	0.000	0.000	0.000
Min MZ	2	501:DL+LL	26.17	245.29	-59.12	0.000	0.000	0.000



Load 1 (SELF Y)

Load : 32 kN/m²
Member Size : Flat 150x10



GRIZZLY : Code Check Ratio

STAAD Input File

STAAD SPACE

START JOB INFORMATION

ENGINEER DATE 22-Oct-19

END JOB INFORMATION

INPUT WIDTH 79

UNIT METER KN

JOINT COORDINATES

2 2.15 0 -2.1; 3 2.15 0 2.1; 4 -2.05 0 -2.1; 5 -2.05 0 2.1; 6 0.15 -4.5 -0.35;
7 0.15 -4.5 0.35; 8 -0.35 -4.5 -0.35; 9 -0.35 -4.5 0.35; 10 -1.4875 0 -2.1;
11 -0.975 0 -2.1; 12 -0.4625 0 -2.1; 13 0.05 0 -2.1; 14 0.5625 0 -2.1;
15 1.075 0 -2.1; 16 1.5875 0 -2.1; 17 -1.86 -0.45 -1.935; 18 -1.67 -0.9 -1.76;
19 -1.505 -1.35 -1.585; 20 -1.34 -1.8 -1.41; 21 -1.175 -2.25 -1.235;
22 -1.01 -2.7 -1.06; 23 -0.845 -3.15 -0.885; 24 -0.68 -3.6 -0.71;
25 -0.515 -4.05 -0.525; 26 0.345 -4.05 -0.525; 27 0.54 -3.6 -0.71;
28 0.735 -3.15 -0.885; 29 0.93 -2.7 -1.06; 30 1.125 -2.25 -1.235;
31 1.32 -1.8 -1.41; 32 1.515 -1.35 -1.585; 33 1.71 -0.9 -1.76;
34 1.93 -0.45 -1.935; 35 -0.2875 -4.5 -0.35; 36 -0.225 -4.5 -0.35;
37 -0.1625 -4.5 -0.35; 38 -0.1 -4.5 -0.35; 39 -0.0375 -4.5 -0.35;
40 0.025 -4.5 -0.35; 41 0.0875 -4.5 -0.35; 42 -1.3675 -0.45 -1.935;
43 -0.9 -0.45 -1.935; 44 -0.4325 -0.45 -1.935; 45 0.0349998 -0.45 -1.935;
46 0.5025 -0.45 -1.935; 47 0.97 -0.45 -1.935; 48 1.4375 -0.45 -1.935;
49 -1.2475 -0.9 -1.76; 50 -0.825 -0.9 -1.76; 51 -0.4025 -0.9 -1.76;
52 0.02 -0.9 -1.76; 53 0.4425 -0.9 -1.76; 54 0.865 -0.9 -1.76;
55 1.2875 -0.9 -1.76; 56 -1.1275 -1.35 -1.585; 57 -0.75 -1.35 -1.585;
58 -0.3725 -1.35 -1.585; 59 0.005 -1.35 -1.585; 60 0.3825 -1.35 -1.585;
61 0.76 -1.35 -1.585; 62 1.1375 -1.35 -1.585; 63 -1.0075 -1.8 -1.41;
64 -0.675 -1.8 -1.41; 65 -0.3425 -1.8 -1.41; 66 -0.00999999 -1.8 -1.41;
67 0.3225 -1.8 -1.41; 68 0.655 -1.8 -1.41; 69 0.9875 -1.8 -1.41;
70 -0.8875 -2.25 -1.235; 71 -0.6 -2.25 -1.235; 72 -0.3125 -2.25 -1.235;
73 -0.025 -2.25 -1.235; 74 0.2625 -2.25 -1.235; 75 0.55 -2.25 -1.235;
76 0.8375 -2.25 -1.235; 77 -0.7675 -2.7 -1.06; 78 -0.525 -2.7 -1.06;
79 -0.2825 -2.7 -1.06; 80 -0.04 -2.7 -1.06; 81 0.2025 -2.7 -1.06;
82 0.445 -2.7 -1.06; 83 0.6875 -2.7 -1.06; 84 -0.6475 -3.15 -0.885;
85 -0.45 -3.15 -0.885; 86 -0.2525 -3.15 -0.885; 87 -0.055 -3.15 -0.885;
88 0.1425 -3.15 -0.885; 89 0.34 -3.15 -0.885; 90 0.5375 -3.15 -0.885;
91 -0.5275 -3.6 -0.71; 92 -0.375 -3.6 -0.71; 93 -0.2225 -3.6 -0.71;
94 -0.07 -3.6 -0.71; 95 0.0825 -3.6 -0.71; 96 0.235 -3.6 -0.71;
97 0.3875 -3.6 -0.71; 98 -0.4075 -4.05 -0.525; 99 -0.3 -4.05 -0.525;
100 -0.1925 -4.05 -0.525; 101 -0.085 -4.05 -0.525; 102 0.0225 -4.05 -0.525;
103 0.13 -4.05 -0.525; 104 0.2375 -4.05 -0.525; 105 -1.4875 0 2.1;
106 -0.975 0 2.1; 107 -0.4625 0 2.1; 108 0.05 0 2.1; 109 0.5625 0 2.1;
110 1.075 0 2.1; 111 1.5875 0 2.1; 112 -1.86 -0.45 1.935; 113 -1.67 -0.9 1.76;
114 -1.505 -1.35 1.585; 115 -1.34 -1.8 1.41; 116 -1.175 -2.25 1.235;
117 -1.01 -2.7 1.06; 118 -0.845 -3.15 0.885; 119 -0.68 -3.6 0.71;
120 -0.515 -4.05 0.535; 121 0.345 -4.05 0.535; 122 0.54 -3.6 0.71;
123 0.735 -3.15 0.885; 124 0.93 -2.7 1.06; 125 1.125 -2.25 1.235;
126 1.32 -1.8 1.41; 127 1.515 -1.35 1.585; 128 1.71 -0.9 1.76;
129 1.93 -0.45 1.935; 130 -0.2875 -4.5 0.35; 131 -0.225 -4.5 0.35;
132 -0.1625 -4.5 0.35; 133 -0.1 -4.5 0.35; 134 -0.0375 -4.5 0.35;
135 0.025 -4.5 0.35; 136 0.0875 -4.5 0.35; 137 -1.3675 -0.45 1.935;
138 -0.9 -0.45 1.935; 139 -0.4325 -0.45 1.935; 140 0.0349998 -0.45 1.935;
141 0.5025 -0.45 1.935; 142 0.97 -0.45 1.935; 143 1.4375 -0.45 1.935;
144 -1.2475 -0.9 1.76; 145 -0.825 -0.9 1.76; 146 -0.4025 -0.9 1.76;
147 0.02 -0.9 1.76; 148 0.4425 -0.9 1.76; 149 0.865 -0.9 1.76;
150 1.2875 -0.9 1.76; 151 -1.1275 -1.35 1.585; 152 -0.75 -1.35 1.585;
153 -0.3725 -1.35 1.585; 154 0.005 -1.35 1.585; 155 0.3825 -1.35 1.585;
156 0.76 -1.35 1.585; 157 1.1375 -1.35 1.585; 158 -1.0075 -1.8 1.41;
159 -0.675 -1.8 1.41; 160 -0.3425 -1.8 1.41; 161 -0.00999999 -1.8 1.41;
162 0.3225 -1.8 1.41; 163 0.655 -1.8 1.41; 164 0.9875 -1.8 1.41;
165 -0.8875 -2.25 1.235; 166 -0.6 -2.25 1.235; 167 -0.3125 -2.25 1.235;
168 -0.025 -2.25 1.235; 169 0.2625 -2.25 1.235; 170 0.55 -2.25 1.235;
171 0.8375 -2.25 1.235; 172 -0.7675 -2.7 1.06; 173 -0.525 -2.7 1.06;
174 -0.2825 -2.7 1.06; 175 -0.04 -2.7 1.06; 176 0.2025 -2.7 1.06;
177 0.445 -2.7 1.06; 178 0.6875 -2.7 1.06; 179 -0.6475 -3.15 0.885;
180 -0.45 -3.15 0.885; 181 -0.2525 -3.15 0.885; 182 -0.055 -3.15 0.885;
183 0.1425 -3.15 0.885; 184 0.34 -3.15 0.885; 185 0.5375 -3.15 0.885;
186 -0.5275 -3.6 0.71; 187 -0.375 -3.6 0.71; 188 -0.2225 -3.6 0.71;
189 -0.07 -3.6 0.71; 190 0.0825 -3.6 0.71; 191 0.235 -3.6 0.71;
192 0.3875 -3.6 0.71; 193 -0.4075 -4.05 0.535; 194 -0.3 -4.05 0.535;
195 -0.1925 -4.05 0.535; 196 -0.085 -4.05 0.535; 197 0.0225 -4.05 0.535;
198 0.13 -4.05 0.535; 199 0.2375 -4.05 0.535; 200 -2.05 0 -1.575;
201 -2.05 0 -1.05; 202 -2.05 0 -0.525; 203 -2.05 0 0; 204 -2.05 0 0.525;
205 -2.05 0 1.05; 206 -2.05 0 1.575; 207 -0.35 -4.5 -0.2625;
208 -0.35 -4.5 -0.175; 209 -0.35 -4.5 -0.0875; 210 -0.35 -4.5 0;
211 -0.35 -4.5 0.0875; 212 -0.35 -4.5 0.175; 213 -0.35 -4.5 0.2625;
214 -1.86 -0.45 -1.45125; 215 -1.86 -0.45 -0.9675; 216 -1.86 -0.45 -0.48375;

214 -1.86 -0.45 -1.45125; 215 -1.86 -0.45 -0.9675; 216 -1.86 -0.45 -0.48375;
217 -1.86 -0.45 0; 218 -1.86 -0.45 0.48375; 219 -1.86 -0.45 0.9675;
220 -1.86 -0.45 1.45125; 221 -1.67 -0.9 -1.3275; 222 -1.67 -0.9 -0.885;
223 -1.67 -0.9 -0.4425; 224 -1.67 -0.9 0; 225 -1.67 -0.9 0.4425;
226 -1.67 -0.9 0.885; 227 -1.67 -0.9 1.3275; 228 -1.505 -1.35 -1.20375;
229 -1.505 -1.35 -0.8025; 230 -1.505 -1.35 -0.40125; 231 -1.505 -1.35 0;
232 -1.505 -1.35 0.40125; 233 -1.505 -1.35 0.8025; 234 -1.505 -1.35 1.20375;
235 -1.34 -1.8 -1.08; 236 -1.34 -1.8 -0.72; 237 -1.34 -1.8 -0.36;
238 -1.34 -1.8 0; 239 -1.34 -1.8 0.36; 240 -1.34 -1.8 0.72;
241 -1.34 -1.8 1.08; 242 -1.175 -2.25 -0.95625; 243 -1.175 -2.25 -0.6375;
244 -1.175 -2.25 -0.31875; 245 -1.175 -2.25 0; 246 -1.175 -2.25 0.31875;
247 -1.175 -2.25 0.6375; 248 -1.175 -2.25 0.95625; 249 -1.01 -2.7 -0.8325;
250 -1.01 -2.7 -0.555; 251 -1.01 -2.7 -0.2775; 252 -1.01 -2.7 0;
253 -1.01 -2.7 0.2775; 254 -1.01 -2.7 0.555; 255 -1.01 -2.7 0.8325;
256 -0.845 -3.15 -0.70875; 257 -0.845 -3.15 -0.4725; 258 -0.845 -3.15 -0.23625;
259 -0.845 -3.15 0; 260 -0.845 -3.15 0.23625; 261 -0.845 -3.15 0.4725;
262 -0.845 -3.15 0.70875; 263 -0.68 -3.6 -0.585; 264 -0.68 -3.6 -0.39;
265 -0.68 -3.6 -0.195; 266 -0.68 -3.6 0; 267 -0.68 -3.6 0.195;
268 -0.68 -3.6 0.39; 269 -0.68 -3.6 0.585; 270 -0.515 -4.05 -0.43125;
271 -0.515 -4.05 -0.2775; 272 -0.515 -4.05 -0.15375; 273 -0.515 -4.05 0;
274 -0.515 -4.05 0.15375; 275 -0.515 -4.05 0.2775; 276 -0.515 -4.05 0.43125;
277 2.15 0 -1.575; 278 2.15 0 -1.05; 279 2.15 0 -0.525; 280 2.15 0 0;
281 2.15 0 0.525; 282 2.15 0 1.05; 283 2.15 0 1.575; 284 0.15 -4.5 -0.2625;
285 0.15 -4.5 -0.175; 286 0.15 -4.5 -0.0875; 287 0.15 -4.5 0;
288 0.15 -4.5 0.0875; 289 0.15 -4.5 0.175; 290 0.15 -4.5 0.2625;
291 1.93 -0.45 -1.45125; 292 1.93 -0.45 -0.9675; 293 1.93 -0.45 -0.48375;
294 1.93 -0.45 0; 295 1.93 -0.45 0.48375; 296 1.93 -0.45 0.9675;
297 1.93 -0.45 1.45125; 298 1.71 -0.9 -1.3275; 299 1.71 -0.9 -0.885;
300 1.71 -0.9 -0.4425; 301 1.71 -0.9 0; 302 1.71 -0.9 0.4425;
303 1.71 -0.9 0.885; 304 1.71 -0.9 1.3275; 305 1.515 -1.35 -1.20375;
306 1.515 -1.35 -0.8025; 307 1.515 -1.35 -0.40125; 308 1.515 -1.35 0;
309 1.515 -1.35 0.40125; 310 1.515 -1.35 0.8025; 311 1.515 -1.35 1.20375;
312 1.32 -1.8 -1.08; 313 1.32 -1.8 -0.72; 314 1.32 -1.8 -0.36; 315 1.32 -1.8 0;
316 1.32 -1.8 0.36; 317 1.32 -1.8 0.72; 318 1.32 -1.8 1.08;
319 1.125 -2.25 -0.95625; 320 1.125 -2.25 -0.6375; 321 1.125 -2.25 -0.31875;
322 1.125 -2.25 0; 323 1.125 -2.25 0.31875; 324 1.125 -2.25 0.6375;
325 1.125 -2.25 0.95625; 326 0.93 -2.7 -0.8325; 327 0.93 -2.7 -0.555;
328 0.93 -2.7 -0.2775; 329 0.93 -2.7 0; 330 0.93 -2.7 0.2775;
331 0.93 -2.7 0.555; 332 0.93 -2.7 0.8325; 333 0.735 -3.15 -0.70875;
334 0.735 -3.15 -0.4725; 335 0.735 -3.15 -0.23625; 336 0.735 -3.15 0;
337 0.735 -3.15 0.23625; 338 0.735 -3.15 0.4725; 339 0.735 -3.15 0.70875;
340 0.54 -3.6 -0.585; 341 0.54 -3.6 -0.39; 342 0.54 -3.6 -0.195;
343 0.54 -3.6 0; 344 0.54 -3.6 0.195; 345 0.54 -3.6 0.39; 346 0.54 -3.6 0.585;
347 0.345 -4.05 -0.43125; 348 0.345 -4.05 -0.2775; 349 0.345 -4.05 -0.15375;
350 0.345 -4.05 0; 351 0.345 -4.05 0.15375; 352 0.345 -4.05 0.2775;
353 0.345 -4.05 0.43125; 354 -2.05 4.5 -2.1; 355 -1.4875 4.5 -2.1;
356 -0.975 4.5 -2.1; 357 -0.4625 4.5 -2.1; 358 0.05 4.5 -2.1;
359 0.5625 4.5 -2.1; 360 1.075 4.5 -2.1; 361 1.5875 4.5 -2.1;
362 2.15 4.5 -2.1; 363 -2.05 0.5 -2.1; 364 -2.05 1 -2.1; 365 -2.05 1.5 -2.1;
366 -2.05 2 -2.1; 367 -2.05 2.5 -2.1; 368 -2.05 3 -2.1; 369 -2.05 3.5 -2.1;
370 -2.05 4 -2.1; 371 2.15 0.5 -2.1; 372 2.15 1 -2.1; 373 2.15 1.5 -2.1;
374 2.15 2 -2.1; 375 2.15 2.5 -2.1; 376 2.15 3 -2.1; 377 2.15 3.5 -2.1;
378 2.15 4 -2.1; 379 -1.4875 4 -2.1; 380 -0.975 4 -2.1; 381 -0.4625 4 -2.1;
382 0.05 4 -2.1; 383 0.5625 4 -2.1; 384 1.075 4 -2.1; 385 1.5875 4 -2.1;
386 -1.4875 3.5 -2.1; 387 -0.975 3.5 -2.1; 388 -0.4625 3.5 -2.1;
389 0.05 3.5 -2.1; 390 0.5625 3.5 -2.1; 391 1.075 3.5 -2.1;
392 1.5875 3.5 -2.1; 393 -1.4875 3 -2.1; 394 -0.975 3 -2.1; 395 -0.4625 3 -2.1;
396 0.05 3 -2.1; 397 0.5625 3 -2.1; 398 1.075 3 -2.1; 399 1.5875 3 -2.1;
400 -1.4875 2.5 -2.1; 401 -0.975 2.5 -2.1; 402 -0.4625 2.5 -2.1;
403 0.05 2.5 -2.1; 404 0.5625 2.5 -2.1; 405 1.075 2.5 -2.1;
406 1.5875 2.5 -2.1; 407 -1.4875 2 -2.1; 408 -0.975 2 -2.1; 409 -0.4625 2 -2.1;
410 0.05 2 -2.1; 411 0.5625 2 -2.1; 412 1.075 2 -2.1; 413 1.5875 2 -2.1;
414 -1.4875 1.5 -2.1; 415 -0.975 1.5 -2.1; 416 -0.4625 1.5 -2.1;
417 0.05 1.5 -2.1; 418 0.5625 1.5 -2.1; 419 1.075 1.5 -2.1;
420 1.5875 1.5 -2.1; 421 -1.4875 1 -2.1; 422 -0.975 1 -2.1; 423 -0.4625 1 -2.1;
424 0.05 1 -2.1; 425 0.5625 1 -2.1; 426 1.075 1 -2.1; 427 1.5875 1 -2.1;
428 -1.4875 0.5 -2.1; 429 -0.975 0.5 -2.1; 430 -0.4625 0.5 -2.1;
431 0.05 0.5 -2.1; 432 0.5625 0.5 -2.1; 433 1.075 0.5 -2.1;
434 1.5875 0.5 -2.1; 497 -2.05 3 2.1; 498 -2.05 3.1875 1.575;
499 -2.05 3.375 1.05; 500 -2.05 3.5625 0.525; 501 -2.05 3.75 0;
502 -2.05 3.9375 -0.525; 503 -2.05 4.125 -1.05; 504 -2.05 4.3125 -1.575;
505 -2.05 0.5 2.1; 506 -2.05 1 2.1; 507 -2.05 1.5 2.1; 508 -2.05 2 2.1;
509 -2.05 2.5 2.1; 510 -2.05 0.5 -1.575; 511 -2.05 0.5 -1.05;
512 -2.05 0.5 -0.525; 513 -2.05 0.5 0; 514 -2.05 0.5 0.525; 515 -2.05 0.5 1.05;
516 -2.05 0.5 1.575; 517 -2.05 1 -1.575; 518 -2.05 1 -1.05; 519 -2.05 1 -0.525;
520 -2.05 1 0; 521 -2.05 1 0.525; 522 -2.05 1 1.05; 523 -2.05 1 1.575;

STAAD Input File

520 -2.05 1 0; 521 -2.05 1 0.525; 522 -2.05 1 1.05; 523 -2.05 1 1.575;
524 -2.05 1.5 -1.575; 525 -2.05 1.5 -1.05; 526 -2.05 1.5 -0.525;
527 -2.05 1.5 0; 528 -2.05 1.5 0.525; 529 -2.05 1.5 1.05; 530 -2.05 1.5 1.575;
531 -2.05 2 -1.575; 532 -2.05 2 -1.05; 533 -2.05 2 -0.525; 534 -2.05 2 0;
535 -2.05 2 0.525; 536 -2.05 2 1.05; 537 -2.05 2 1.575; 538 -2.05 2.5 -1.575;
539 -2.05 2.5 -1.05; 540 -2.05 2.5 -0.525; 541 -2.05 2.5 0;
542 -2.05 2.5 0.525; 543 -2.05 2.5 1.05; 544 -2.05 2.5 1.575;
545 -2.05 3 -1.575; 546 -2.05 3 -1.05; 547 -2.05 3 -0.525; 548 -2.05 3 0;
549 -2.05 3 0.525; 550 -2.05 3 1.05; 551 -2.05 3 1.575; 552 -2.05 3.5 -1.575;
553 -2.05 3.5 -1.05; 554 -2.05 3.5 -0.525; 555 -2.05 3.5 0;
556 -2.05 3.5 0.525; 557 -2.05 4 -1.575; 558 -2.05 4 -1.05;
MEMBER INCIDENCES
1 2 277; 2 4 200; 3 4 10; 4 5 105; 5 6 284; 6 8 207; 7 8 35; 8 9 130; 10 10 11;
11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 2; 18 17 42; 19 18 49;
20 19 56; 21 20 63; 22 21 70; 23 22 77; 24 23 84; 25 24 91; 26 25 98; 27 35 36;
28 36 37; 29 37 38; 30 38 39; 31 39 40; 32 40 41; 33 41 6; 34 42 43; 35 43 44;
36 44 45; 37 45 46; 38 46 47; 39 47 48; 40 48 34; 41 49 50; 42 50 51; 43 51 52;
44 52 53; 45 53 54; 46 54 55; 47 55 33; 48 56 57; 49 57 58; 50 58 59; 51 59 60;
52 60 61; 53 61 62; 54 62 32; 55 63 64; 56 64 65; 57 65 66; 58 66 67; 59 67 68;
60 68 69; 61 69 31; 62 70 71; 63 71 72; 64 72 73; 65 73 74; 66 74 75; 67 75 76;
68 76 30; 69 77 78; 70 78 79; 71 79 80; 72 80 81; 73 81 82; 74 82 83; 75 83 29;
76 84 85; 77 85 86; 78 86 87; 79 87 88; 80 88 89; 81 89 90; 82 90 28; 83 91 92;
84 92 93; 85 93 94; 86 94 95; 87 95 96; 88 96 97; 89 97 27; 90 98 99;
91 99 100; 92 100 101; 93 101 102; 94 102 103; 95 103 104; 96 104 26;
97 105 106; 98 106 107; 99 107 108; 100 108 109; 101 109 110; 102 110 111;
103 111 3; 104 130 131; 105 131 132; 106 132 133; 107 133 134; 108 134 135;
109 135 136; 110 136 7; 112 17 214; 113 18 221; 114 19 228; 115 20 235;
116 21 242; 117 22 249; 118 23 256; 119 24 263; 120 25 270; 121 200 201;
122 201 202; 123 202 203; 124 203 204; 125 204 205; 126 205 206; 127 206 5;
128 207 208; 129 208 209; 130 209 210; 131 210 211; 132 211 212; 133 212 213;
134 213 9; 135 214 215; 136 215 216; 137 216 217; 138 217 218; 139 218 219;
140 219 220; 141 220 112; 142 221 222; 143 222 223; 144 223 224; 145 224 225;
146 225 226; 147 226 227; 148 227 113; 149 228 229; 150 229 230; 151 230 231;
152 231 232; 153 232 233; 154 233 234; 155 234 114; 156 235 236; 157 236 237;
158 237 238; 159 238 239; 160 239 240; 161 240 241; 162 241 115; 163 242 243;
164 243 244; 165 244 245; 166 245 246; 167 246 247; 168 247 248; 169 248 116;
170 249 250; 171 250 251; 172 251 252; 173 252 253; 174 253 254; 175 254 255;
176 255 117; 177 256 257; 178 257 258; 179 258 259; 180 259 260; 181 260 261;
182 261 262; 183 262 118; 184 263 264; 185 264 265; 186 265 266; 187 266 267;
188 267 268; 189 268 269; 190 269 119; 191 270 271; 192 271 272; 193 272 273;
194 273 274; 195 274 275; 196 275 276; 197 276 120; 199 34 291; 200 33 298;
201 32 305; 202 31 312; 203 30 319; 204 29 326; 205 28 333; 206 27 340;
207 26 347; 208 277 278; 209 278 279; 210 279 280; 211 280 281; 212 281 282;
213 282 283; 214 283 3; 215 284 285; 216 285 286; 217 286 287; 218 287 288;
219 288 289; 220 289 290; 221 290 7; 222 291 292; 223 292 293; 224 293 294;
225 294 295; 226 295 296; 227 296 297; 228 297 129; 229 298 299; 230 299 300;
231 300 301; 232 301 302; 233 302 303; 234 303 304; 235 304 128; 236 305 306;
237 306 307; 238 307 308; 239 308 309; 240 309 310; 241 310 311; 242 311 127;
243 312 313; 244 313 314; 245 314 315; 246 315 316; 247 316 317; 248 317 318;
249 318 126; 250 319 320; 251 320 321; 252 321 322; 253 322 323; 254 323 324;
255 324 325; 256 325 125; 257 326 327; 258 327 328; 259 328 329; 260 329 330;
261 330 331; 262 331 332; 263 332 124; 264 333 334; 265 334 335; 266 335 336;
267 336 337; 268 337 338; 269 338 339; 270 339 123; 271 340 341; 272 341 342;
273 342 343; 274 343 344; 275 344 345; 276 345 346; 277 346 122; 278 347 348;
279 348 349; 280 349 350; 281 350 351; 282 351 352; 283 352 353; 284 353 121;
285 354 355; 286 355 356; 287 356 357; 288 357 358; 289 358 359; 290 359 360;
291 360 361; 292 361 362; 293 4 363; 294 2 371; 295 363 364; 296 364 365;
297 365 366; 298 366 367; 299 367 368; 300 368 369; 301 369 370; 302 370 354;
303 371 372; 304 372 373; 305 373 374; 306 374 375; 307 375 376; 308 376 377;
309 377 378; 310 378 362; 325 497 498; 326 498 499; 327 499 500; 328 500 501;
329 501 502; 330 502 503; 331 503 504; 332 504 354; 333 5 505; 334 505 506;
335 506 507; 336 507 508; 337 508 509; 338 509 497; 339 366 407; 340 407 408;
341 408 409; 342 409 410; 343 410 411; 344 411 412; 345 412 413; 346 413 374;
355 366 531; 356 531 532; 357 532 533; 358 533 534; 359 534 535; 360 535 536;
361 536 537; 362 537 508; 363 112 137; 364 137 138; 365 138 139; 366 139 140;
367 140 141; 368 141 142; 369 142 143; 370 143 129; 371 113 144; 372 144 145;
373 145 146; 374 146 147; 375 147 148; 376 148 149; 377 149 150; 378 150 128;
379 114 151; 380 151 152; 381 152 153; 382 153 154; 383 154 155; 384 155 156;
385 156 157; 386 157 127; 387 115 158; 388 158 159; 389 159 160; 390 160 161;
391 161 162; 392 162 163; 393 163 164; 394 164 126; 395 116 165; 396 165 166;
397 166 167; 398 167 168; 399 168 169; 400 169 170; 401 170 171; 402 171 125;
403 117 172; 404 172 173; 405 173 174; 406 174 175; 407 175 176; 408 176 177;
409 177 178; 410 178 124; 411 118 179; 412 179 180; 413 180 181; 414 181 182;
415 182 183; 416 183 184; 417 184 185; 418 185 123; 419 119 186; 420 186 187;
421 187 188; 422 188 189; 423 189 190; 424 190 191; 425 191 192; 426 192 122;
427 120 193; 428 193 194; 429 194 195; 430 195 196; 431 196 197; 432 197 198;

427 120 193; 428 193 194; 429 194 195; 430 195 196; 431 196 197; 432 197 198;
433 198 199; 434 199 121; 957 13 45; 958 45 52; 959 52 59; 960 59 66;
961 66 73; 962 73 80; 963 80 87; 964 87 94; 965 94 101; 966 101 38; 967 15 47;
968 47 54; 969 54 61; 970 61 68; 971 68 75; 972 75 82; 973 82 89; 974 89 96;
975 96 103; 976 103 40; 977 11 43; 978 43 50; 979 50 57; 980 57 64; 981 64 71;
982 71 78; 983 78 85; 984 85 92; 985 92 99; 986 99 36; 987 6 26; 988 26 27;
989 27 28; 990 28 29; 991 29 30; 992 30 31; 993 31 32; 994 32 33; 995 33 34;
996 34 2; 997 8 25; 998 25 24; 999 24 23; 1000 23 22; 1001 22 21; 1002 21 20;
1003 20 19; 1004 19 18; 1005 18 17; 1006 17 4; 1007 285 348; 1008 348 341;
1009 341 334; 1010 334 327; 1011 327 320; 1012 320 313; 1013 313 306;
1014 306 299; 1015 299 292; 1016 292 278; 1017 287 350; 1018 350 343;
1019 343 336; 1020 336 329; 1021 329 322; 1022 322 315; 1023 315 308;
1024 308 301; 1025 301 294; 1026 294 280; 1027 289 352; 1028 352 345;
1029 345 338; 1030 338 331; 1031 331 324; 1032 324 317; 1033 317 310;
1034 310 303; 1035 303 296; 1036 296 282; 1037 7 121; 1038 121 122;
1039 122 123; 1040 123 124; 1041 124 125; 1042 125 126; 1043 126 127;
1044 127 128; 1045 128 129; 1046 129 3; 1047 135 198; 1048 198 191;
1049 191 184; 1050 184 177; 1051 177 170; 1052 170 163; 1053 163 156;
1054 156 149; 1055 149 142; 1056 142 110; 1057 133 196; 1058 196 189;
1059 189 182; 1060 182 175; 1061 175 168; 1062 168 161; 1063 161 154;
1064 154 147; 1065 147 140; 1066 140 108; 1067 131 194; 1068 194 187;
1069 187 180; 1070 180 173; 1071 173 166; 1072 166 159; 1073 159 152;
1074 152 145; 1075 145 138; 1076 138 106; 1077 9 120; 1078 120 119;
1079 119 118; 1080 118 117; 1081 117 116; 1082 116 115; 1083 115 114;
1084 114 113; 1085 113 112; 1086 112 5; 1087 212 275; 1088 275 268;
1089 268 261; 1090 261 254; 1091 254 247; 1092 247 240; 1093 240 233;
1094 233 226; 1095 226 219; 1096 219 205; 1097 210 273; 1098 273 266;
1099 266 259; 1100 259 252; 1101 252 245; 1102 245 238; 1103 238 231;
1104 231 224; 1105 224 217; 1106 217 203; 1107 208 271; 1108 271 264;
1109 264 257; 1110 257 250; 1111 250 243; 1112 243 236; 1113 236 229;
1114 229 222; 1115 222 215; 1116 215 201;

ELEMENT INCIDENCES SHELL

435 17 42 10 4; 436 42 43 11 10; 437 43 44 12 11; 438 44 45 13 12;
439 45 46 14 13; 440 46 47 15 14; 441 47 48 16 15; 442 48 34 2 16;
443 18 49 42 17; 444 49 50 43 42; 445 50 51 44 43; 446 51 52 45 44;
447 52 53 46 45; 448 53 54 47 46; 449 54 55 48 47; 450 55 33 34 48;
451 19 56 49 18; 452 56 57 50 49; 453 57 58 51 50; 454 58 59 52 51;
455 59 60 53 52; 456 60 61 54 53; 457 61 62 55 54; 458 62 32 33 55;
459 20 63 56 19; 460 63 64 57 56; 461 64 65 58 57; 462 65 66 59 58;
463 66 67 60 59; 464 67 68 61 60; 465 68 69 62 61; 466 69 31 32 62;
467 21 70 63 20; 468 70 71 64 63; 469 71 72 65 64; 470 72 73 66 65;
471 73 74 67 66; 472 74 75 68 67; 473 75 76 69 68; 474 76 30 31 69;
475 22 77 70 21; 476 77 78 71 70; 477 78 79 72 71; 478 79 80 73 72;
479 80 81 74 73; 480 81 82 75 74; 481 82 83 76 75; 482 83 29 30 76;
483 23 84 77 22; 484 84 85 78 77; 485 85 86 79 78; 486 86 87 80 79;
487 87 88 81 80; 488 88 89 82 81; 489 89 90 83 82; 490 90 28 29 83;
491 24 91 84 23; 492 91 92 85 84; 493 92 93 86 85; 494 93 94 87 86;
495 94 95 88 87; 496 95 96 89 88; 497 96 97 90 89; 498 97 27 28 90;
499 25 98 91 24; 500 98 99 92 91; 501 99 100 93 92; 502 100 101 94 93;
503 101 102 95 94; 504 102 103 96 95; 505 103 104 97 96; 506 104 26 27 97;
507 8 35 98 25; 508 35 36 99 98; 509 36 37 100 99; 510 37 38 101 100;
511 38 39 102 101; 512 39 40 103 102; 513 40 41 104 103; 514 41 6 26 104;
515 112 137 105 5; 516 137 138 106 105; 517 138 139 107 106;
518 139 140 108 107; 519 140 141 109 108; 520 141 142 110 109;
521 142 143 111 110; 522 143 129 3 111; 523 113 144 137 112;
524 144 145 138 137; 525 145 146 139 138; 526 146 147 140 139;
527 147 148 141 140; 528 148 149 142 141; 529 149 150 143 142;
530 150 128 129 143; 531 114 151 144 113; 532 151 152 145 144;
533 152 153 146 145; 534 153 154 147 146; 535 154 155 148 147;
536 155 156 149 148; 537 156 157 150 149; 538 157 127 128 150;
539 115 158 151 114; 540 158 159 152 151; 541 159 160 153 152;
542 160 161 154 153; 543 161 162 155 154; 544 162 163 156 155;
545 163 164 157 156; 546 164 126 127 157; 547 116 165 158 115;
548 165 166 159 158; 549 166 167 160 159; 550 167 168 161 160;
551 168 169 162 161; 552 169 170 163 162; 553 170 171 164 163;
554 171 125 126 164; 555 117 172 165 116; 556 172 173 166 165;
557 173 174 167 166; 558 174 175 168 167; 559 175 176 169 168;
560 176 177 170 169; 561 177 178 171 170; 562 178 124 125 171;
563 118 179 172 117; 564 179 180 173 172; 565 180 181 174 173;
566 181 182 175 174; 567 182 183 176 175; 568 183 184 177 176;
569 184 185 178 177; 570 185 123 124 178; 571 119 186 179 118;
572 186 187 180 179; 573 187 188 181 180; 574 188 189 182 181;
575 189 190 183 182; 576 190 191 184 183; 577 191 192 185 184;
578 192 122 123 185; 579 120 193 186 119; 580 193 194 187 186;
581 194 195 188 187; 582 195 196 189 188; 583 196 197 190 189;
584 197 198 191 190; 585 198 199 192 191; 586 199 121 122 192;

584 197 198 191 190; 585 198 199 192 191; 586 199 121 122 192;
587 9 130 193 120; 588 130 131 194 193; 589 131 132 195 194;
590 132 133 196 195; 591 133 134 197 196; 592 134 135 198 197;
593 135 136 199 198; 594 136 7 121 199; 595 112 220 206 5; 596 220 219 205 206;
597 219 218 204 205; 598 218 217 203 204; 599 217 216 202 203;
600 216 215 201 202; 601 215 214 200 201; 602 214 17 4 200;
603 113 227 220 112; 604 227 226 219 220; 605 226 225 218 219;
606 225 224 217 218; 607 224 223 216 217; 608 223 222 215 216;
609 222 221 214 215; 610 221 18 17 214; 611 114 234 227 113;
612 234 233 226 227; 613 233 232 225 226; 614 232 231 224 225;
615 231 230 223 224; 616 230 229 222 223; 617 229 228 221 222;
618 228 19 18 221; 619 115 241 234 114; 620 241 240 233 234;
621 240 239 232 233; 622 239 238 231 232; 623 238 237 230 231;
624 237 236 229 230; 625 236 235 228 229; 626 235 20 19 228;
627 116 248 241 115; 628 248 247 240 241; 629 247 246 239 240;
630 246 245 238 239; 631 245 244 237 238; 632 244 243 236 237;
633 243 242 235 236; 634 242 21 20 235; 635 117 255 248 116;
636 255 254 247 248; 637 254 253 246 247; 638 253 252 245 246;
639 252 251 244 245; 640 251 250 243 244; 641 250 249 242 243;
642 249 22 21 242; 643 118 262 255 117; 644 262 261 254 255;
645 261 260 253 254; 646 260 259 252 253; 647 259 258 251 252;
648 258 257 250 251; 649 257 256 249 250; 650 256 23 22 249;
651 119 269 262 118; 652 269 268 261 262; 653 268 267 260 261;
654 267 266 259 260; 655 266 265 258 259; 656 265 264 257 258;
657 264 263 256 257; 658 263 24 23 256; 659 120 276 269 119;
660 276 275 268 269; 661 275 274 267 268; 662 274 273 266 267;
663 273 272 265 266; 664 272 271 264 265; 665 271 270 263 264;
666 270 25 24 263; 667 9 213 276 120; 668 213 212 275 276; 669 212 211 274 275;
670 211 210 273 274; 671 210 209 272 273; 672 209 208 271 272;
673 208 207 270 271; 674 207 8 25 270; 675 34 291 277 2; 676 291 292 278 277;
677 292 293 279 278; 678 293 294 280 279; 679 294 295 281 280;
680 295 296 282 281; 681 296 297 283 282; 682 297 129 3 283; 683 33 298 291 34;
684 298 299 292 291; 685 299 300 293 292; 686 300 301 294 293;
687 301 302 295 294; 688 302 303 296 295; 689 303 304 297 296;
690 304 128 129 297; 691 32 305 298 33; 692 305 306 299 298;
693 306 307 300 299; 694 307 308 301 300; 695 308 309 302 301;
696 309 310 303 302; 697 310 311 304 303; 698 311 127 128 304;
699 31 312 305 32; 700 312 313 306 305; 701 313 314 307 306;
702 314 315 308 307; 703 315 316 309 308; 704 316 317 310 309;
705 317 318 311 310; 706 318 126 127 311; 707 30 319 312 31;
708 319 320 313 312; 709 320 321 314 313; 710 321 322 315 314;
711 322 323 316 315; 712 323 324 317 316; 713 324 325 318 317;
714 325 125 126 318; 715 29 326 319 30; 716 326 327 320 319;
717 327 328 321 320; 718 328 329 322 321; 719 329 330 323 322;
720 330 331 324 323; 721 331 332 325 324; 722 332 124 125 325;
723 28 333 326 29; 724 333 334 327 326; 725 334 335 328 327;
726 335 336 329 328; 727 336 337 330 329; 728 337 338 331 330;
729 338 339 332 331; 730 339 123 124 332; 731 27 340 333 28;
732 340 341 334 333; 733 341 342 335 334; 734 342 343 336 335;
735 343 344 337 336; 736 344 345 338 337; 737 345 346 339 338;
738 346 122 123 339; 739 26 347 340 27; 740 347 348 341 340;
741 348 349 342 341; 742 349 350 343 342; 743 350 351 344 343;
744 351 352 345 344; 745 352 353 346 345; 746 353 121 122 346;
747 6 284 347 26; 748 284 285 348 347; 749 285 286 349 348;
750 286 287 350 349; 751 287 288 351 350; 752 288 289 352 351;
753 289 290 353 352; 754 290 7 121 353; 755 370 379 355 354;
756 379 380 356 355; 757 380 381 357 356; 758 381 382 358 357;
759 382 383 359 358; 760 383 384 360 359; 761 384 385 361 360;
762 385 378 362 361; 763 369 386 379 370; 764 386 387 380 379;
765 387 388 381 380; 766 388 389 382 381; 767 389 390 383 382;
768 390 391 384 383; 769 391 392 385 384; 770 392 377 378 385;
771 368 393 386 369; 772 393 394 387 386; 773 394 395 388 387;
774 395 396 389 388; 775 396 397 390 389; 776 397 398 391 390;
777 398 399 392 391; 778 399 376 377 392; 779 367 400 393 368;
780 400 401 394 393; 781 401 402 395 394; 782 402 403 396 395;
783 403 404 397 396; 784 404 405 398 397; 785 405 406 399 398;
786 406 375 376 399; 787 366 407 400 367; 788 407 408 401 400;
789 408 409 402 401; 790 409 410 403 402; 791 410 411 404 403;
792 411 412 405 404; 793 412 413 406 405; 794 413 374 375 406;
795 365 414 407 366; 796 414 415 408 407; 797 415 416 409 408;
798 416 417 410 409; 799 417 418 411 410; 800 418 419 412 411;
801 419 420 413 412; 802 420 373 374 413; 803 364 421 414 365;
804 421 422 415 414; 805 422 423 416 415; 806 423 424 417 416;
807 424 425 418 417; 808 425 426 419 418; 809 426 427 420 419;
810 427 372 373 420; 811 363 428 421 364; 812 428 429 422 421;
813 429 430 423 422; 814 430 431 424 423; 815 431 432 425 424;

STAAD Input File

```

813 429 430 423 422; 814 430 431 424 423; 815 431 432 425 424;
816 432 433 426 425; 817 433 434 427 426; 818 434 371 372 427;
819 4 10 428 363; 820 10 11 429 428; 821 11 12 430 429; 822 12 13 431 430;
823 13 14 432 431; 824 14 15 433 432; 825 15 16 434 433; 826 16 2 371 434;
892 4 200 510 363; 893 200 201 511 510; 894 201 202 512 511;
895 202 203 513 512; 896 203 204 514 513; 897 204 205 515 514;
898 205 206 516 515; 899 206 5 505 516; 900 363 510 517 364;
901 510 511 518 517; 902 511 512 519 518; 903 512 513 520 519;
904 513 514 521 520; 905 514 515 522 521; 906 515 516 523 522;
907 516 505 506 523; 908 364 517 524 365; 909 517 518 525 524;
910 518 519 526 525; 911 519 520 527 526; 912 520 521 528 527;
913 521 522 529 528; 914 522 523 530 529; 915 523 506 507 530;
916 365 524 531 366; 917 524 525 532 531; 918 525 526 533 532;
919 526 527 534 533; 920 527 528 535 534; 921 528 529 536 535;
922 529 530 537 536; 923 530 507 508 537; 924 366 531 538 367;
925 531 532 539 538; 926 532 533 540 539; 927 533 534 541 540;
928 534 535 542 541; 929 535 536 543 542; 930 536 537 544 543;
931 537 508 509 544; 932 367 538 545 368; 933 538 539 546 545;
934 539 540 547 546; 935 540 541 548 547; 936 541 542 549 548;
937 542 543 550 549; 938 543 544 551 550; 939 544 509 497 551;
940 368 545 552 369; 941 545 546 553 552; 942 546 547 554 553;
943 547 548 555 554; 944 548 549 556 555; 945 549 550 499 556;
946 550 551 498 499; 947 551 497 497 498; 948 369 552 557 370;
949 552 553 558 557; 950 553 554 502 558; 951 554 555 501 502;
952 555 556 500 501; 953 370 557 504 354; 954 557 558 503 504; 955 558 502 503;
956 556 499 500;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 2.05e+008
POISSON 0.3
DENSITY 78.5
ALPHA 1.2e-005
DAMP 0.03
ISOTROPIC CONCRETE
E 2.17185e+007
POISSON 0.17
DENSITY 24
ALPHA 1e-005
DAMP 0.05
END DEFINE MATERIAL
*****
ELEMENT PROPERTY
755 TO 826 892 TO 956 THICKNESS 0.003
435 TO 754 THICKNESS 0.008
*****
MEMBER PROPERTY INDIAN
957 TO 1116 TABLE ST ISA65X65X6
5 TO 8 27 TO 33 104 TO 110 128 TO 134 215 TO 221 285 TO 310 325 TO 346 355 -
356 TO 362 TABLE ST ISMC125
MEMBER PROPERTY INDIAN
1 TO 4 10 TO 16 97 TO 103 121 TO 127 208 TO 213 -
214 TAPERED 0.6 0.01 0.6 0.15 0.016 0.5 0.016
MEMBER PROPERTY INDIAN
24 TO 26 76 TO 96 118 TO 120 177 TO 197 205 TO 207 264 TO 284 411 TO 433 -
434 TAPERED 0.073 0.006 0.073 0.25 0.008 0.065 0.006
20 TO 23 48 TO 75 114 TO 117 149 TO 176 201 TO 204 236 TO 263 379 TO 409 -
410 TAPERED 0.098 0.006 0.098 0.25 0.008 0.09 0.006
18 19 34 TO 47 112 113 135 TO 148 199 200 222 TO 235 363 TO 377 -
378 TAPERED 0.108 0.008 0.108 0.25 0.008 0.1 0.008
*****
CONSTANTS
BETA 90 MEMB 18 TO 26 34 TO 96 199 TO 207 222 TO 292 325 TO 332 339 TO 346 -
355 TO 362
BETA 270 MEMB 112 TO 120 135 TO 197 363 TO 434
MATERIAL STEEL ALL
*****
SUPPORTS
2 TO 5 PINNED
*****
*****
MEMBER RELEASE
957 TO 1116 START MY MZ
957 TO 1116 END MY MZ
CUT OFF MODE SHAPE 250
*****
LOAD 1 SEISMIC LOAD X-DIRECTION (SLX)

```

STAAD Input File

LOAD 1 SEISMIC LOAD X-DIRECTION (SLX)

SELFWEIGHT X -1

SELFWEIGHT Y -1

SELFWEIGHT Z -1

JOINT LOAD

2 TO 353 FX 1.1 FY 1.1 FZ 1.1

SPECTRUM CQC X 7.21 ACC SCALE 4.905 DAMP 0.02

0 0.108; 0.01 0.121; 0.015 0.127; 0.02 0.133; 0.03 0.146; 0.04 0.158;
0.05 0.171; 0.06 0.184; 0.075 0.202; 0.09 0.221; 0.1 0.234; 0.15 0.297;
0.2 0.36; 0.3 0.36; 0.4 0.36; 0.5 0.36; 0.6 0.36; 0.7 0.36; 0.75 0.36;
0.8 0.36; 0.9 0.316; 1 0.284; 1.2 0.237; 1.5 0.189; 2 0.129; 2.5 0.091;
3 0.074; 4 0.052;

LOAD 2 SEISMIC LOAD Z-DIRECTION (SLZ)

SPECTRUM CQC Z 4.36 ACC SCALE 4.905 DAMP 0.02

0 0.108; 0.01 0.121; 0.015 0.127; 0.02 0.133; 0.03 0.146; 0.04 0.158;
0.05 0.171; 0.06 0.184; 0.075 0.202; 0.09 0.221; 0.1 0.234; 0.15 0.297;
0.2 0.36; 0.3 0.36; 0.4 0.36; 0.5 0.36; 0.6 0.36; 0.7 0.36; 0.75 0.36;
0.8 0.36; 0.9 0.316; 1 0.284; 1.2 0.237; 1.5 0.189; 2 0.129; 2.5 0.091;
3 0.074; 4 0.052;

LOAD 11 DEAD LOAD (DL)

SELFWEIGHT Y -1

MEMBER LOAD

1 TO 4 10 TO 16 97 TO 103 121 TO 127 208 TO 214 UNI GY -33.6

LOAD 12 LIVE LOAD (LL)

LOAD 13 EQUIPMENT LOAD (EL)

LOAD 21 SILO FILLING : PHF

LOAD 22 SILO FILLING : PWF

LOAD 23 SILO FILLING : PNF

ELEMENT LOAD

515 TO 554 PR 18.1

435 TO 474 595 TO 634 675 TO 714 PR -18.1

555 TO 594 PR 31.2

475 TO 514 635 TO 674 715 TO 754 PR -31.2

LOAD 24 SILO FILLING : PTF

ELEMENT LOAD

435 TO 474 515 TO 554 595 TO 634 675 TO 714 PR LY -9.7

475 TO 514 555 TO 594 635 TO 674 715 TO 754 PR LY -16.7

LOAD 31 SILO DISCHARGE : PHE

LOAD 32 SILO DISCHARGE : PWE

LOAD 33 SILO DISCHARGE : PNE

ELEMENT LOAD

515 TO 554 PR 18.1

435 TO 474 595 TO 634 675 TO 714 PR -18.1

555 TO 594 PR 31.2

475 TO 514 635 TO 674 715 TO 754 PR -31.2

LOAD 34 SILO DISCHARGE : PTE

ELEMENT LOAD

435 TO 474 515 TO 554 595 TO 634 675 TO 714 PR LY -9.7

STAAD Input File

```

435 TO 474 515 TO 554 595 TO 634 675 TO 714 PR LY -9.7
475 TO 514 555 TO 594 635 TO 674 715 TO 754 PR LY -16.7
*****
LOAD 61 WIND LOAD X-DIRECTION (WLX)
*****
ELEMENT LOAD
595 TO 674 892 TO 956 PR GX 2.8
675 TO 754 PR GX 1.75
515 TO 539 541 TO 594 PR GZ 2.45
435 TO 511 513 514 755 TO 826 PR GZ -2.45
*****
LOAD 62 WIND LOAD Z-DIRECTION (WLZ)
*****
ELEMENT LOAD
595 TO 674 892 TO 956 PR GX -2.45
675 TO 754 PR GX 2.45
515 TO 539 541 TO 594 PR GZ 1.75
435 TO 511 513 514 755 TO 826 PR GZ 2.8
*****
* Load Combination - PLATE DESIGN
*****
LOAD COMB 101 DL+LL+EL
11 1.0 12 1.0 13 1.0
****
LOAD COMB 104 DL+LL+SILO FILLING
11 1.0 12 1.0 13 1.0 21 1.0 22 1.0 23 1.0 24 1.0
LOAD COMB 105 DL+LL+SILO DISCHARGE
11 1.0 12 1.0 13 1.0 31 1.0 32 1.0 33 1.0 34 1.0
****
LOAD COMB 111 DL+SILO FILLING
11 1.0 13 1.0 21 1.0 22 1.0 23 1.0 24 1.0
LOAD COMB 112 DL+SILO DISCHARGE
11 1.0 13 1.0 31 1.0 32 1.0 33 1.0 34 1.0
***
LOAD COMB 131 DL+LL+SILO FILLING+WLX
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 61 0.75
LOAD COMB 132 DL+LL+SILO FILLING+WLX
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 61 -0.75
LOAD COMB 133 DL+LL+SILO FILLING+WLZ
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 62 0.75
LOAD COMB 134 DL+LL+SILO FILLING+WLZ
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 62 -0.75
LOAD COMB 135 DL+LL+SILO DISCHARGE+WLX
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 61 0.75
LOAD COMB 136 DL+LL+SILO DISCHARGE+WLX
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 61 -0.75
LOAD COMB 137 DL+LL+SILO DISCHARGE+WLZ
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 62 0.75
LOAD COMB 138 DL+LL+SILO DISCHARGE+WLZ
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 62 -0.75
****
LOAD COMB 141 DL+LL+SILO FILLING+EQX
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 1 0.75
LOAD COMB 142 DL+LL+SILO FILLING+EQX
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 1 -0.75
LOAD COMB 143 DL+LL+SILO FILLING+EQZ
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 2 0.75
LOAD COMB 144 DL+LL+SILO FILLING+EQZ
11 0.75 12 0.75 13 0.75 21 0.75 22 0.75 23 0.75 24 0.75 2 -0.75
LOAD COMB 145 DL+LL+SILO DISCHARGE+EQX
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 61 0.75
LOAD COMB 146 DL+LL+SILO DISCHARGE+EQX
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 1 -0.75
LOAD COMB 147 DL+LL+SILO DISCHARGE+EQZ
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 2 0.75
LOAD COMB 148 DL+LL+SILO DISCHARGE+EQZ
11 0.75 12 0.75 13 0.75 31 0.75 32 0.75 33 0.75 34 0.75 2 -0.75
*****
LOAD COMB 151 DL+WLX
11 0.6 61 1.0
LOAD COMB 152 DL-WLX
11 0.6 61 -1.0
LOAD COMB 153 DL+WLZ
11 0.6 62 1.0
LOAD COMB 154 DL-WLZ
11 0.6 62 -1.0

```

STAAD Input File

```

11 0.6 62 -1.0
*****
LOAD COMB 161 DL+EQX
11 0.6 61 1.0
LOAD COMB 162 DL-EQX
11 0.6 61 -1.0
LOAD COMB 163 DL+EQZ
11 0.6 62 1.0
LOAD COMB 164 DL-EQZ
11 0.6 62 -1.0
*****
* Load Combination - STEEL MEMBER DESIGN
*****
LOAD COMB 501 DL+LL
11 1.5 13 1.5 12 1.5
*****
LOAD COMB 504 DL+LL+SILO FILLING
11 1.5 12 1.5 13 1.5 21 1.5 22 1.5 23 1.5 24 1.5
LOAD COMB 505 DL+LL+SILO DISCHARGE
11 1.5 12 1.5 13 1.5 31 1.5 32 1.5 33 1.5 34 1.5
*****
LOAD COMB 511 DL+SILO FILLING
11 1.2 13 1.5 21 1.5 22 1.5 23 1.5 24 1.5
LOAD COMB 512 DL+BL+SILO DISCHARGE
11 1.2 13 1.5 31 1.5 32 1.5 33 1.5 34 1.5
*****
LOAD COMB 531 DL+LL+SILO FILLING+W LX
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 61 1.2
LOAD COMB 532 DL+LL+SILO FILLING+W LX
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 61 -1.2
LOAD COMB 533 DL+LL+SILO FILLING+W LZ
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 62 1.2
LOAD COMB 534 DL+LL+SILO FILLING+W LZ
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 62 -1.2
LOAD COMB 535 DL+LL+SILO DISCHARGE+W LX
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 61 1.2
LOAD COMB 536 DL+LL+SILO DISCHARGE+W LX
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 61 -1.2
LOAD COMB 537 DL+LL+SILO DISCHARGE+W LZ
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 62 1.2
LOAD COMB 538 DL+LL+SILO DISCHARGE+W LZ
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 62 -1.2
*****
LOAD COMB 541 DL+LL+SILO FILLING+EQX
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 1 1.2
LOAD COMB 542 DL+LL+SILO FILLING+EQX
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 1 -1.2
LOAD COMB 543 DL+LL+SILO FILLING+EQZ
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 2 1.2
LOAD COMB 544 DL+LL+SILO FILLING+EQZ
11 1.2 12 1.2 21 1.2 22 1.2 23 1.2 24 1.2 2 -1.2
LOAD COMB 545 DL+LL+SILO DISCHARGE+EQX
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 1 1.2
LOAD COMB 546 DL+LL+SILO DISCHARGE+EQX
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 1 -1.2
LOAD COMB 547 DL+LL+SILO DISCHARGE+EQZ
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 2 1.2
LOAD COMB 548 DL+LL+SILO DISCHARGE+EQZ
11 1.2 12 1.2 31 1.2 32 1.2 33 1.2 34 1.2 2 -1.2
*****
LOAD COMB 551 DL+W LX
11 0.9 61 1.5
LOAD COMB 552 DL-W LX
11 0.9 61 -1.5
LOAD COMB 553 DL+W LZ
11 0.9 62 1.5
LOAD COMB 554 DL-W LZ
11 0.9 62 -1.5
*****
LOAD COMB 561 DL+EQX
11 0.9 1 1.5
LOAD COMB 562 DL-EQX
11 0.9 1 -1.5
LOAD COMB 563 DL+EQZ
11 0.9 2 1.5
LOAD COMB 564 DL-EQZ

```

STAAD Input File

LOAD COMB 564 DL-EQZ

11 0.9 2 -1.5

PERFORM ANALYSIS

LOAD LIST 501 504 505 511 512 541 TO 548 561 TO 564

PARAMETER 1

CODE IS800 LSD

FYLD 250000 ALL

FU 410000 ALL

TRACK 0 MEMB 1 TO 8 10 TO 16 18 TO 110 112 TO 197 199 TO 310 325 TO 346 355 -

356 TO 434 957 TO 986

NSF 1 MEMB 1 TO 8 10 TO 16 18 TO 110 112 TO 197 199 TO 284 293 TO 298 303 -

325 TO 327 333 TO 341 355 TO 434 957 TO 1116

BEAM 1 ALL

CHECK CODE ALL

STEEL TAKE OFF ALL

FINISH