

Figure 1: Plan view of the silo layout. The diagram shows a rectangular area with dimensions 6000 by 6000. A central 'SILOS ROW B' CATWALK AXIS' is shown. Two vertical 'SILOS SB63 CATWALK AXIS' and 'SILOS SB64 CATWALK AXIS' are also indicated. Four corner silo groups (C1, C2, C3, C4) are shown, each with a 3x3 grid of silos and a central 'X' mark. Dimensions for the silo groups are 350 by 350. A coordinate system (x, y) is shown at the center.

[illegible][illegible]

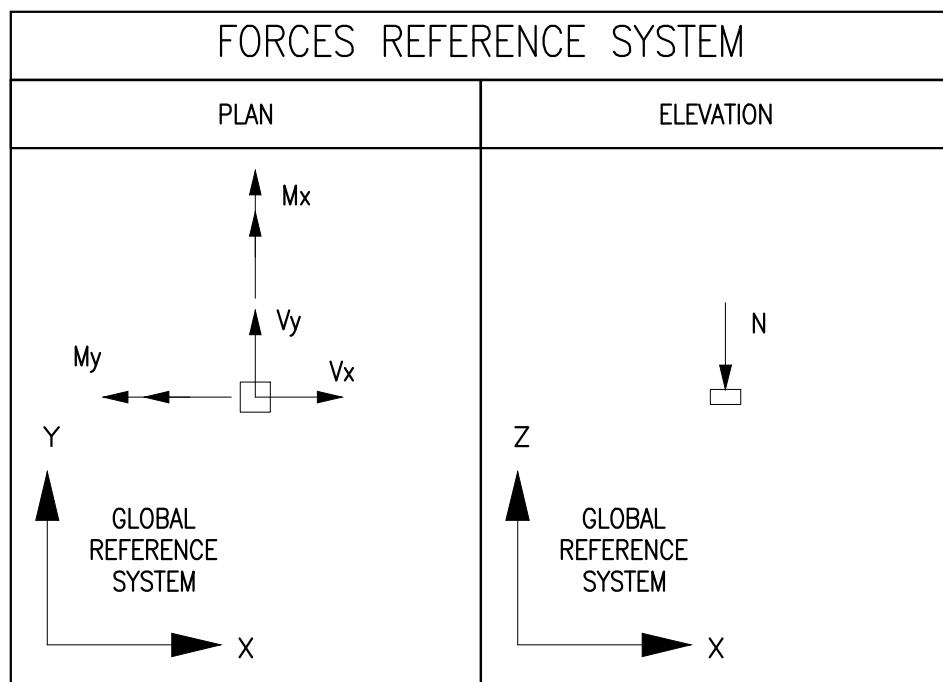
Technical drawing of a square plate with the following specifications:

- Material: JIG PL5 900x900
- Overall dimensions: 900 mm x 900 mm
- Central hole: Diameter  $\varnothing 500$
- Corner holes: Diameter  $\varnothing 53$
- Dimensions from center to corner hole center: 450 mm (horizontal) and 450 mm (vertical)
- Dimensions from center to side hole center: 350 mm (horizontal) and 350 mm (vertical)
- Dimensions from center to edge: 100 mm (horizontal) and 100 mm (vertical)

**NOTE:**

- ALL THE COLUMNS MUST BE LEVEL AND REST FIRMLY ON THE CONCRETE.
- THE CONCRETE MINIMUM CYLINDRICAL STRENGTH IS  $f_{ck}=25\text{MPa}$

THE DATA PRESENTED IN THIS DRAWING INDICATES THE BASE REACTIONS DERIVED FROM THE ANALYSIS MODEL OF THE SUPERSTRUCTURES. THIS IMPLIES THAT, FOR INSTANCE, A GROUND COMPRESSION FORCE IS ASSIGNED A POSITIVE SIGN IN THE ATTACHED TABLES.



ENVIRONMENTAL LOADS		
SERVICE	kN/m <sup>2</sup>	2,00
GROUND SNOW	kN/m <sup>2</sup>	2,00
GUSTED WIND SPEED	km/h	160
EARTHQUAKE PGA	g	0,2

		BASE REACTIONS AT EACH TOWER COLUMN (UNFACTORED)																			
		C1					C2					C3					C4				
		N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m	N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m	N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m	N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m
SW	256	6	-3	-11	-4	277	-29	3	-16	0	261	3	3	12	-4	312	-23	17	2	1	
SDL_DL	273	3	0	-14	-4	185	-30	2	-12	-2	292	0	0	15	-5	237	-25	23	6	-1	
SDL_LL	92	-5	0	-16	-3	78	-16	2	-6	-1	101	-5	0	5	-2	101	-11	16	-7	-1	
SDL_PL	4	-4	0	-1	-1	38	-7	2	-4	-1	7	-4	0	1	-1	56	-6	9	-4	-1	
LL_CatH	236	6	-1	-11	-3	195	-27	3	-12	-1	244	2	1	12	-3	243	-21	16	-1	0	
Ice	311	3	-3	-15	-6	370	-44	8	-24	-1	321	-1	3	16	-6	434	-34	28	-1	0	
S	51	-2	0	-3	-2	82	-15	2	-7	-1	57	-3	1	3	-2	119	-12	13	-4	-1	
T	447	244	-26	58	75	-113	156	-198	185	-10	358	250	10	-48	70	-728	134	-168	81	-15	
T	-274	-150	16	-35	-46	69	-96	121	-113	6	-219	-153	-6	30	-43	446	-82	103	-50	9	
Wx+	-1856	-289	-13	77	-34	1815	-284	46	-103	-29	-2362	-340	-29	-68	-29	2405	-275	48	56	-25	
Wx-	1860	289	14	-78	34	-1819	286	-46	103	29	2365	340	29	69	29	-2408	275	-48	-56	25	
Wy+	2251	105	-295	140	-13	2228	-81	-307	148	19	-2232	-86	-296	131	17	-2241	79	-315	149	-19	
Wy-	-2193	-102	289	-137	13	-2431	91	325	-154	-20	2180	85	289	-129	-17	2437	-85	333	-155	20	
Wx_ice	-1344	-210	-8	55	-24	1313	-208	31	-73	-21	-1655	-245	-18	-50	-21	1687	-199	33	39	-19	
Wx_ice	1346	210	8	-55	24	-1315	209	-31	73	21	1657	245	18	50	21	-1689	199	-33	-39	19	
Wy_ice	1654	77	-217	102	-10	1647	-89	-231	112	14	-1640	-63	-218	97	12	-1657	58	-236	113	-14	
Wy_ice	-1619	-75	213	-101	10	-1768	65	241	-116	-14	1608	62	214	-95	-12	1775	-62	247	-117	15	
Ex	1011	99	12	46	10	958	97	21	46	9	1232	117	12	52	10	1276	96	21	57	11	
Ey	1179	42	125	53	14	1269	84	105	52	8	1292	52	128	47	13	1159	60	108	53	10	
Ez	59	15	4	5	3	95	21	10	9	2	63	14	4	3	3	102	15	13	8	2	

		ULS BASE REACTIONS AT EACH TOWER COLUMN																			
		C1					C2					C3					C4				
		N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m	N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m	N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m	N (F3) KN	Vx (F1) KN	Vy (F2) KN	Mx (M1) KN-m	My (M2) KN-m
MAX		5630	679	444	256	140	5190	513	612	406	54	6062	739	448	286	127	6589	488	697	294	56
MIN		-3996	-572	-470	-304	-122	-4121	-643	-634	-430	-66	-4498	-660	-447	-224	-113	-5011	-590	-586	-303	-52

GLOBAL BASE REACTIONS						
TW6B(UNFACTORED)						
	N (F3)	Vx (F1)	Vy (F2)	Mx (M1)	My (M2)	
	KN	KN	KN	KN-m	KN-m	KN-m
SW	1106	-42	20	-13	-7	
SDL_DL	966	-53	25	-17	-11	
SDL_LL	372	-38	18	-13	-8	
SDL_FL	106	-21	10	-7	-3	
LL_Cath	919	-40	19	-12	-7	
IceH	1436	-77	37	-25	-11	
S	309	-32	16	-10	-5	
T4	-36	785	-382	275	120	
T-	22	-481	234	-169	-74	
Wx+	0	-1188	52	-39	-117	
Wx-	0	1191	-52	38	117	
Wy+	0	17	-1213	569	4	
Wy-	0	-11	1237	-575	-3	
Wx+_ice	0	-861	39	-28	-86	
Wx-_ice	0	862	-38	28	86	
Wy+_ice	0	13	-901	424	3	
Wy-_ice	0	-9	915	-428	-2	
Ex	4468	409	66	201	40	
Ey	4899	239	467	204	45	
Ez	319	65	31	25	11	

	LOAD CASES DESCRIPTION
<b>SW</b>	Self-weight of the steel structures
<b>SDL_DL</b>	Self-weight of gratings and equipment
<b>SDL_LL</b>	Equipment working load
<b>SDL_PL</b>	Equipment load in plug conditions
<b>LL_CatH</b>	Service live load
<b>Ice</b>	Ice weight in iced towers condition
<b>S</b>	Snow Load
<b>T+</b>	Thermal action (positive temperature change)
<b>T-</b>	Thermal action (negative temperature change)
<b>Wx+</b>	Wind action global direction X (positive)
<b>Wx-</b>	Wind action global direction X (negative)
<b>Wy+</b>	Wind action global direction Y (positive)
<b>Wy-</b>	Wind action global direction Y (negative)
<b>Wx+_ice</b>	Wind action global direction X (positive) in frozen condition
<b>Wx-_ice</b>	Wind action global direction X (negative) in frozen condition
<b>Wy+_ice</b>	Wind action global direction Y (positive) in frozen condition
<b>Wy-_ice</b>	Wind action global direction Y (negative) in frozen condition
<b>Ex</b>	Earthquake action global direction X
<b>Ey</b>	Earthquake action global direction Y
<b>Ez</b>	Earthquake action global direction Z