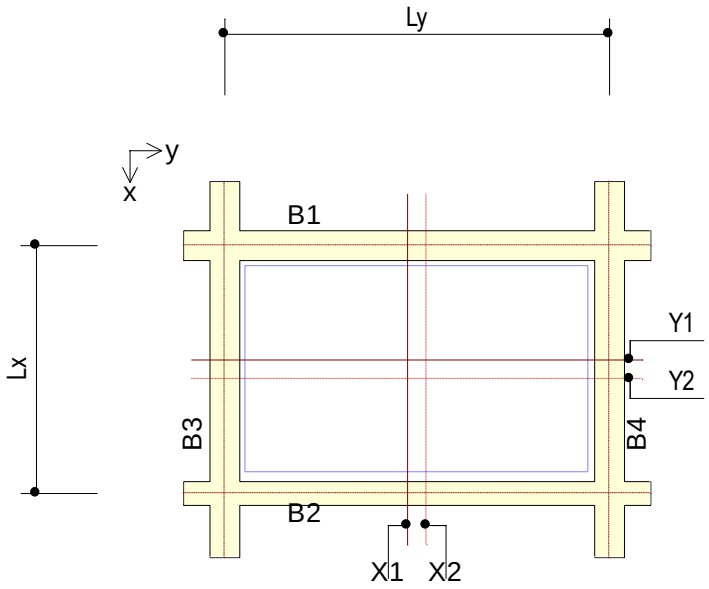
■ MEMBER NAME : S-01

1. General Information

(1) Design Code : NSR-10
(2) Code Unit : N, mm

2. Material

(1) F'_c : 28.00MPa
(2) F_y : 420MPa



3. Design Load

(1) Dead Load : 1.961KPa
(2) Live Load : 1.800KPa

4. Section Size

(1) Span(X) : 2.080m
(2) Span(Y) : 3.230m
(3) Thickness : 100mm
(4) Cover : 30.00mm
(5) Use clear span : Yes

5. Slab Type & Support

(1) Slab Type : 2-Way Slab
(2) Support Type : Case-2
(3) Boundary Beams : B1 : 250 x 300 / B2 : 200 x 300 / B3 : 250 x 300 / B4 : 250 x 300

6. Determine the design type of slab

(1) Calculate span ratio [Use clear span]

- L_x = 1.855m
- L_y = 2.980m
- Span Ratio(L_x / L_y) = 0.622 > = 0.5 -> 2-Way Slab

7. Check Load

(1) Calculate factored load

- LCB01 = 2.746KPa (1.4D)
- LCB02 = 5.234KPa (1.2D+1.6L)
- ω_u = 5.234KPa

8. Check Thickness of Slab

(1) Calculate factors

- $\beta = l_{ny} / l_{nx}$ = 1.606
- α_m = 3.870 (α_1 = 4.943, α_2 = 4.173, α_3 = 3.183, α_4 = 3.183)

(2) Calculate minimum thickness required

- $h_{req} = \dfrac{l_n \left(0.8 + \left(f_y / 1400 \right) \right)}{36 + 9\beta}$ = 90.00mm
- h = 100mm > h_{req} = 90.00mm → O.K

9. Check Capacity of Slab

(1) Calculate Moment & Shear [Direction X]

Check Items	TOP	MIDDLE	BOTTOM
Bar-1	#3@450	#3@450	#3@450
Bar-2	#3@450	#3@450	#3@450
Bar-3	-	-	-
Moment Coefficient (DL)	0.000	0.0331	0.000
Moment Coefficient (LL)	0.000	0.0558	0.000
Moment Coefficient (FL)	0.0792	0.000	0.0792
Shear Coefficient	0.872	0.000	0.872
M_u (kN·m/m)	1.427	0.821	1.427
V_u (kN/m)	4.235	0.000	4.235
ϕM_n (kN·m/m)	3.806	3.806	3.806
ϕV_n (kN/m)	44.01	44.01	44.01
$M_u / \phi M_n$	0.375	0.216	0.375
$V_u / \phi V_n$	0.0962	0.000	0.0962

(2) Calculate Moment & Shear [Direction Y]

Check Items	LEFT	CENTER	RIGHT
Bar-1	#3@450	#3@450	#3@450
Bar-2	#3@450	#3@450	#3@450
Bar-3	-	-	-
Moment Coefficient (DL)	0.000	0.00488	0.000
Moment Coefficient (LL)	0.000	0.00832	0.000
Moment Coefficient (FL)	0.0118	0.000	0.0118
Shear Coefficient	0.128	0.000	0.128
M_u (kN·m/m)	0.547	0.315	0.547
V_u (kN/m)	0.995	0.000	0.995
ϕM_n (kN·m/m)	3.238	3.238	3.238
ϕV_n (kN/m)	37.59	37.59	37.59
$M_u / \phi M_n$	0.169	0.0972	0.169
$V_u / \phi V_n$	0.0265	0.000	0.0265