

## BUILDING IDENTIFICATION : SKATELAND

## VERTICAL LOADS

## ROOF LOADS

|                      |       |       |      |
|----------------------|-------|-------|------|
| ROOFING              | 3.00  |       |      |
| ROOF SHEATH          | 2.00  |       |      |
| FRAMING WT SF , PLF  | 1.50  | 2.00  | 3.00 |
| SUBTOTAL ROOF DL     | 6.50  |       |      |
| CORRECTED DL , PITCH | 6.85  | 4.00  | 1.05 |
| CEILING LOAD         | 5.75  |       |      |
| TOTAL ROOF DEAD LOAD | 12.60 | PSF   |      |
| TOTAL ROOF LIVE LOAD | 30.00 | 0.030 |      |
| TOTAL ROOF LOAD      | 42.60 | 0.043 |      |

## FLOOR LOADS

|                       |       |     |  |
|-----------------------|-------|-----|--|
| Floor finish          | 4.50  |     |  |
| FLOOR                 | 2.50  |     |  |
| MECH / ELECT          | 1.32  |     |  |
| PARTITION             | 0.00  |     |  |
| CEILING - (1) 5/8 gwb | 2.80  |     |  |
| FRAMING               | 3.00  |     |  |
| INSUL                 | 1.00  |     |  |
| TOTAL FLOOR DEAD LOAD | 15.12 | PSF |  |
| TOTAL FLOOR LIVE LOAD | 40.00 |     |  |
| TOTAL FLOOR LOAD      | 55.12 |     |  |

| DUR FAC 1.25     |       |       |             |        |         |       |              |        |      |      |       |              |      |      |        |     |     |     |      |    |
|------------------|-------|-------|-------------|--------|---------|-------|--------------|--------|------|------|-------|--------------|------|------|--------|-----|-----|-----|------|----|
| ROOF AREA        |       |       | RED LL      | 24.00  | CEIL LL | 5.00  | FLOOR AREA   |        |      |      |       | BEAM & POINT |      |      | LARGER |     |     |     |      |    |
|                  |       |       | Typ DL      | 12.60  | CEIL DL | 5.75  | Typ DL 15.12 |        |      |      |       | WALL         | LOAD | DIST |        |     | MAX | MAX | MAX  |    |
|                  |       |       | TRIB        | RED LL | UNIF    | UNIF  |              |        |      |      |       | LOAD         | LIVE | DEAD |        |     |     | END | CL   | PT |
| BEAM DESCRIPTION | SPAN  | WIDTH | AREA FACTOR | LIVE   | DEAD    | WIDTH | AREA         | Factor | LIVE | DEAD | PLF   | LBS          | LBS  | a    | b      | RXN | MOM | MOM | INCH |    |
| ROOF HDR         | 14.00 | 3.00  | 42          | 1.00   | 72      |       | 0            | 1.00   | 0    | 0    |       |              |      |      | 14.00  | 0   | 0   | 0   | 0.0  |    |
| SPRINK BEAM 6    | 25.00 | 1.00  | 25          | 1.00   | 24      |       | 0            | 1.00   | 0    | 0    | 35.00 |              |      |      | 25.00  | 0   | 0   | 0   | 0.0  |    |

|                  |      |       |         |     |     |          |      |      |       | Divide by EI |     |         |      |       |      |       |           |                |       |
|------------------|------|-------|---------|-----|-----|----------|------|------|-------|--------------|-----|---------|------|-------|------|-------|-----------|----------------|-------|
| UNIFORM TOTALS   |      |       | UNIFORM |     |     | END RXNS |      |      | SMALL | SHEAR/RXN    |     | MOMENT  |      | TOTAL |      |       | UNIF      | PT             | TOTAL |
| LIVE             | DEAD | TOTAL | END     | RXN | LG  | DEAD     | DEAD | DEAD |       | UNI          | LD  | UL + PT | UNIF | MOM   | @ PT | MAX   | COEF      | COEF           | MAX   |
| LOAD             | LOAD | LOAD  | LOAD    | LB  | LB  | LB       | LB   | LB   | LB    | LB           | LB  | LB      | CNTR | LOAD  | CNTR | LOAD  | 384*w*L^4 | see aisc 8 max | C     |
| BEAM DESCRIPTION | PLF  | PLF   | PLF     | LB  | LB  | LB       | LB   | LB   | LB    | LB           | LB  | LB      | CNTR | LOAD  | CNTR | LOAD  |           |                |       |
| ROOF HDR         | 72   | 38    | 110     | 504 | 265 | 504      | 265  | 504  | 265   | 769          | 769 | 2,690   | 0    | 2,690 | 0    | 2,690 | 6E+07     | 0E+00          | 6E+07 |
| SPRINK BEAM 6    | 24   | 48    | 72      | 300 | 595 | 300      | 595  | 300  | 595   | 895          | 895 | 5,594   | 0    | 5,594 | 0    | 5,594 | 2E+08     | 0E+00          | 2E+08 |

|               |           |       |       |       |           | BEAM  | BEAM  | BEAM  |      |       |       |       |       |        |       |       |        |        |
|---------------|-----------|-------|-------|-------|-----------|-------|-------|-------|------|-------|-------|-------|-------|--------|-------|-------|--------|--------|
| ALLOW         |           | ALLOW | ALLOW | ALLOW | ALLOW     | WIDTH | DEPTH | AREA  | I    | S     | SHEAR | REQ   | REQ / | BEAR   | ALLOW | REQ / | DEFL.  | LENGTH |
| Fb            | Fv        | Fc    | per   | E     | E         | in    | in    | in^2  | in^4 | in^3  | ALLOW | SHEAR | ALLOW | LENGTH | MOM   | ALLOW | / DEFL |        |
| psi           | psi       | psi   | psi   | psi   | psi       | in    | in    | in^2  | in^4 | in^3  |       |       |       |        | FT-LB |       | in.    |        |
| ROOF HDR      | DF#2 2x12 | 1,105 | 95    | 625   | 1,600,000 | 3.00  | 11.25 | 33.75 | 356  | 63.28 | 2,138 | 666   | 31%   | 0.41   | 5,827 | 46%   | 0.109  | 1,537  |
| SPRINK BEAM 6 | LVL       | 2,900 | 285   | 650   | 2,000,000 | 1.75  | 11.88 | 20.78 | 244  | 41.13 | 3,948 | 824   | 21%   | 0.79   | 9,940 | 56%   | 0.432  | 695    |

## STUDS - EXT WITH WIND PLUS AXIAL

## DURATION ADJUSTMENT

1.00

| SPA STUD | WALL HT. | TABLE | ADJ  | SHEAR/RXN |
|----------|----------|-------|------|-----------|
|          |          | WIND  | WIND |           |

| REQ  | UNIF |
|------|------|
| UNIF | COEF |

| LOCATION DESCRIPTION | FOR WIND |       |        | PRES  | LOAD | RXN   | MOMENT | 5/384*w*L^4 |
|----------------------|----------|-------|--------|-------|------|-------|--------|-------------|
|                      | ft.      | ft.   | in.    | PSF   | PLF  | LB    | ft-lb  |             |
| DOOR JAMB            | 16.00    | 20.00 | 240.00 | 18.90 | 302  | 6,048 | 15,120 | 1.1E+09     |
| TYP FRONT WIND COL   | 12.00    | 20.00 | 240.00 | 18.90 | 227  | 4,536 | 11,340 | 8.2E+08     |
| TYP FRONT GIRT       | 5.00     | 12.00 | 144.00 | 18.90 | 95   | 1,134 | 1,701  | 4.4E+07     |
| DOOR HDR             | 5.00     | 20.00 | 240.00 | 18.90 | 95   | 1,890 | 4,725  | 3.4E+08     |
| SILL                 | 8.00     | 8.00  | 96.00  | 18.90 | 151  | 1,210 | 1,210  | 1.4E+07     |

| STUD DESCRIPTION       | SELECTED STUD | ALLOW Fb | ALLOW Fv | ALLOW Fc per | ALLOW Fc | ALLOW E   | BEAM WIDTH | BEAM DEPTH | BEAM AREA | I      | S     | le/d  | K     | (le/d)/K | F'c   | J     | fb    |
|------------------------|---------------|----------|----------|--------------|----------|-----------|------------|------------|-----------|--------|-------|-------|-------|----------|-------|-------|-------|
|                        |               | psi      | psi      | psi          | psi      | psi       | in         | in         | in^2      | in^4   | in^3  |       |       |          |       |       | psi   |
| DOOR JAMB LVL          |               | 2,900    | 285      | 650          | 1,650    | 2,000,000 | 3.50       | 11.88      | 41.56     | 488.41 | 82.26 | 20.21 | 23.36 | 0.87     | 1,342 | 0.75  | 2,206 |
| TYP FRONT WIND COL LVL |               | 2,900    | 285      | 650          | 1,650    | 2,000,000 | 3.50       | 11.88      | 41.56     | 488.41 | 82.26 | 20.21 | 23.36 | 0.87     | 1,342 | 0.75  | 1,654 |
| TYP FRONT GIRT 4x10    |               | 1,000    | 75       | 405          | 1,250    | 1,700,000 | 3.50       | 9.25       | 32.38     | 230.84 | 49.91 | 15.57 | 24.75 | 0.63     | 1,185 | 0.33  | 409   |
| DOOR HDR LVL           |               | 2,900    | 285      | 650          | 1,650    | 2,000,000 | 1.75       | 11.88      | 20.78     | 244.21 | 41.13 | 20.21 | 23.36 | 0.87     | 1,342 | 0.75  | 1,379 |
| SILL 2x12              |               | 1,000    | 95       | 650          | 1,250    | 1,600,000 | 1.50       | 11.25      | 16.88     | 177.98 | 31.64 | 8.53  | 24.01 | 0.36     | 1,250 | -0.19 | 459   |

Note: Bending due to wind has 1/3 incr. This apply to axial only

Note: Roof 125% duration removed from combinations

|                    |  |           |              | DUR FAC 1.25 | FLOOR AREA |       |      | HALF  | PER MEMB |       | STRESS fc for Load Comb. |       |         |     |      |        |       |          |
|--------------------|--|-----------|--------------|--------------|------------|-------|------|-------|----------|-------|--------------------------|-------|---------|-----|------|--------|-------|----------|
| WALL AXIAL LOADS   |  | ROOF AREA | RED LL 24.00 |              | LL 40.00   |       | ht   | UPPER |          | ROOF/ | UBC 2303 (f)             |       |         |     |      | Stress |       |          |
|                    |  |           | Typ DL       | LOAD         | Typ DL     | 15.12 | WALL | WALL  | DEAD     | FLOOR | SNOW                     | TOTAL | DL + LL | (1) | (2)  | (3)    | (4)   | Incr     |
|                    |  |           | UNIF         | UNIF         | UNIF       | UNIF  | LOAD | LOAD  | LOAD     | LIVE  | LOAD                     | LL    |         |     |      |        |       | on Axial |
| DESCRIPTION        |  | SPAN      | WIDTH        | LIVE         | DEAD       | WIDTH | LIVE | DEAD  | PLF      | PLF   |                          |       |         | RLL | WIND | W+S/2  | W/2+S | or Comb  |
| DOOR JAMB          |  | 2.00      |              | 0            | 0          |       | 0    | 0     |          |       | 0                        | 0     | 0       | 0   | 0    | 0      | 0     | 1.33     |
| TYP FRONT WIND COL |  | 1.33      |              | 0            | 0          |       | 0    | 0     |          | 1     | 0                        | 0     | 0       | 1   | 0    | 0      | 0     | 1.33     |
| TYP FRONT GIRT     |  | 1.33      |              | 0            | 0          |       | 0    | 0     | 0        | 0     | 0                        | 0     | 0       | 0   | 0    | 0      | 0     | 1.33     |
| DOOR HDR           |  | 1.33      |              | 0            | 0          |       | 0    | 0     | 0        | 0     | 0                        | 0     | 0       | 0   | 0    | 0      | 0     | 1.33     |
| SILL               |  | 1.33      |              | 0            | 0          |       | 0    | 0     | 0        | 240   | 319                      | 0     | 0       | 319 | 19   | 19     | 19    | 1.33     |

#### COMBINED STRESS - UNITY FORMULA

|                    |       |       |       |        |        |       |       |        |    | (1)     | (2)    | (3)    | (4)    | Not Code |
|--------------------|-------|-------|-------|--------|--------|-------|-------|--------|----|---------|--------|--------|--------|----------|
|                    |       |       |       |        |        |       |       |        |    | D+ FLL+ | D+FLL+ | D+FLL+ | D+FLL+ | Req.     |
|                    |       |       |       |        |        |       |       |        |    | D+ FLL+ | D+FLL+ | D+FLL+ | D+FLL+ | D+FLL+   |
|                    |       |       |       |        |        |       |       |        |    | LL      | WIND   | W+S/2  | W/2+S  | W + S    |
| DESCRIPTION        | SHEAR | REQ   | REQ / | BEAR   | ALLOW  | REQ / | DEFL. | LENGTH |    |         |        |        |        |          |
|                    | ALLOW | SHEAR | ALLOW | LENGTH | MOM    | ALLOW | in.   | / DEFL |    |         |        |        |        |          |
|                    |       |       |       |        | FT-LB  |       |       |        |    |         |        |        |        |          |
| DOOR JAMB          | 7,897 | 5,749 | 73%   | 2.66   | 19,879 | 76%   | 1.114 | 215    | OK | 0.00    | 0.76   | 0.76   | 0.38   | 0.76 OK  |
| TYP FRONT WIND COL | 7,897 | 4,312 | 55%   | 1.99   | 19,879 | 57%   | 0.836 | 287    | OK | 0.00    | 0.57   | 0.57   | 0.29   | 0.57 OK  |
| TYP FRONT GIRT     | 1,619 | 1,061 | 66%   | 0.80   | 4,159  | 41%   | 0.112 | 1,282  | OK | 0.00    | 0.41   | 0.41   | 0.20   | 0.41 OK  |
| DOOR HDR           | 3,948 | 1,796 | 45%   | 1.66   | 9,940  | 48%   | 0.697 | 345    | OK | 0.00    | 0.48   | 0.48   | 0.24   | 0.48 OK  |
| SILL               | 1,069 | 1,068 | 100%  | 1.24   | 2,637  | 46%   | 0.049 | 1,962  | OK | 0.02    | 0.47   | 0.47   | 0.24   | 0.47 OK  |

Notes: (1) at 100%, except roof @ 125%, all other combinations at 133%

ASSUMPTION:

Permit Number: 19-04179

Raw Factor 0.69  
Redundancy Factor 1.00

LEEWARD 228.00 20.00 6.51 29.69 114.00 3384  
LEEWARD 0.00 0.00 0 102.14 11644.4 114.00

## SEISMIC

|     | V per<br>Level<br>(kips) | Xcf-s<br>(ft) | Ycf-s<br>(ft) |
|-----|--------------------------|---------------|---------------|
| 5TH | 0.00                     |               |               |
| 4TH | 0.00                     |               |               |
| 3RD | 0.00                     | 0.0           | 0.0           |
| 2ND | 0.00                     | 0.0           | 0.0           |
| 1ST | 25.47                    | 50.0          | 114.0         |

| WIND<br>Y<br>DIRECT | V per<br>Level<br>(kips) | Xcf-w<br>(ft) | WIND<br>X<br>DIRECT | V per<br>Level<br>(kips) | Ycf-w<br>(ft) |
|---------------------|--------------------------|---------------|---------------------|--------------------------|---------------|
| 3RD                 | 0.00                     | 0.00          | 3RD                 | 0.00                     | 0.00          |
| 2ND                 | 0.00                     | 0.00          | 2ND                 | 0.00                     | 0.00          |
| 1ST                 | 22.40                    | 50.00         | 1ST                 | 51.07                    | 114.00        |

## CENTER OF RIGIDITY Y direction

| ENTER OF RIGIDITY Y direction |                |        |        |        |        |       |       |       | WORST CASE |        | SHEAR / FT |        | ALLOW   |        | REQ/ALLOW |      | END    | DEFL. | ri*10/lw<br>(KIPS) |    |     |
|-------------------------------|----------------|--------|--------|--------|--------|-------|-------|-------|------------|--------|------------|--------|---------|--------|-----------|------|--------|-------|--------------------|----|-----|
| ID                            |                | W-TYPE | WALL   | WALL   | X      | R     | R X   | R X^2 | SEISMIC    | WIND   | SEISMIC    | WIND   | SEISMIC | WIND   | SEISMIC   | WIND | RXN    |       |                    |    | in. |
|                               |                | P=PLY  | LENGTH | HEIGHT |        |       |       |       | (KIPS)     | (KIPS) | (K/FT)     | (K/FT) | (K/FT)  | (K/FT) | %         | %    | (KIPS) |       |                    |    |     |
|                               |                | G=GWB  | (FT)   | (FT)   |        |       |       |       |            |        |            |        |         |        |           |      |        |       |                    |    |     |
| 1                             | LEFT X BRACES  | P      | 50.00  | 8.00   | 0.00   | 335.5 | 00E+0 | 00E+0 | 12.84      | 11.30  | 0.26       | 0.23   | 0.38    | 0.38   | 68%       | 59%  | 2.07   | 0.46  | 2.57               | OK |     |
| 2                             | RIGHT X BRACES | P      | 50.00  | 8.00   | 100.00 | 335.5 | 3E+4  | 3E+6  | 12.84      | 11.30  | 0.26       | 0.23   | 0.38    | 0.38   | 68%       | 59%  | 2.07   | 0.46  | 2.57               | OK |     |
|                               |                |        |        |        |        |       |       |       | 25.69      | 22.59  |            |        |         |        |           |      |        |       |                    |    |     |

## CENTER OF RIGIDITY X direction

| ENTER OF RIGIDITY X direction |             |        |        |        |       |        |       |       | WORST CASE |        | SHEAR / FT |        | ALLOW  |        | REQ/ALLOW |      | END    | FACT  |          |    |
|-------------------------------|-------------|--------|--------|--------|-------|--------|-------|-------|------------|--------|------------|--------|--------|--------|-----------|------|--------|-------|----------|----|
| ID                            |             | W-TYPE | WALL   | WALL   | R     | Y      | R Y   | R Y^2 | SEIMIC     | WIND   | SEIMIC     | WIND   | SEIMIC | WIND   | SEIMIC    | WIND | RXN    | DEFL. | ri*10/lw |    |
|                               |             | P=PLY  | LENGTH | HEIGHT |       |        |       |       | (KIPS)     | (KIPS) | (K/FT)     | (K/FT) | (K/FT) | (K/FT) | %         | %    | (KIPS) | in.   | (KIPS)   |    |
|                               |             | G=GWB  | (FT)   | (FT)   |       |        |       |       |            |        |            |        |        |        |           |      |        |       |          |    |
| 1                             | FRONT FRAME | P      | 40.00  | 8.00   | 291.7 | 0.00   | 00E+0 | 00E+0 | 4.55       | 9.12   | 0.11       | 0.23   | 0.26   | 0.26   | 44%       | 88%  | 1.84   | 0.38  | 1.14     | OK |
| 2                             | MID         | P      | 40.00  | 8.00   | 324.1 | 50.00  | 2E+4  | 81E+4 | 4.70       | 9.42   | 0.12       | 0.24   | 0.26   | 0.26   | 45%       | 91%  | 1.90   | 0.35  | 1.17     | OK |
| 3                             | MID         | P      | 40.00  | 8.00   | 324.1 | 100.00 | 3E+4  | 3E+6  | 4.35       | 8.72   | 0.11       | 0.22   | 0.26   | 0.26   | 42%       | 84%  | 1.75   | 0.32  | 1.09     | OK |
| 4                             | MID         | P      | 40.00  | 8.00   | 388.9 | 150.00 | 6E+4  | 9E+6  | 5.01       | 10.05  | 0.13       | 0.25   | 0.26   | 0.26   | 48%       | 97%  | 2.02   | 0.31  | 1.25     | OK |
| 5                             | MID         | P      | 40.00  | 8.00   | 324.1 | 200.00 | 6E+4  | 13E+6 | 4.18       | 8.37   | 0.10       | 0.21   | 0.26   | 0.26   | 40%       | 81%  | 1.69   | 0.31  | 1.04     | OK |
| 6                             | REAR        | P      | 40.00  | 8.00   | 324.1 | 228.00 | 7E+4  | 17E+6 | 4.18       | 8.37   | 0.10       | 0.21   | 0.26   | 0.26   | 40%       | 81%  | 1.69   | 0.31  | 1.04     | OK |
|                               |             |        |        |        |       |        |       |       | 26.96      | 54.05  |            |        |        |        |           |      |        |       |          |    |