



EXIST FLOOR PLAN

- DESIGN DATA**
- CRANE LOAD: 50 KN
  - SOIL DESIGN BEARING CAPACITY: SLS: 150KPa  
TO BE VERIFIED BY GEOTECHNICAL ENGINEER
  - EARTHQUAKE PARAMETERS:  
SITE CLASSIFICATION: D  
Fa = 1.30  
Fv = 1.40  
  
TYPE OF SEISMIC FORCE RESISTING SYSTEM (SFRS): CONVENTIONAL CONSTRUCTION BRACED FRAME (GOVERNING R<sub>d</sub> & R<sub>o</sub> SYSTEM AND LOWER PERIOD THAN CONVENTIONAL MASONRY BLOCK SHEAR WALLS)  
  
R<sub>d</sub> = 2.0  
R<sub>o</sub> = 1.3  
T<sub>a</sub> = 0.366s (E-W)  
T<sub>a</sub> = 0.366s (N-S)  
  
SITE SPECTRAL RESPONSE ACCELERATION  
S<sub>d</sub>(0.2) = 0.210  
S<sub>d</sub>(0.5) = 0.120  
S<sub>d</sub>(1.0) = 0.063  
S<sub>d</sub>(2.0) = 0.020  
S(T<sub>a</sub>) = 0.13 (E-W)  
S(T<sub>a</sub>) = 0.13 (N-S)  
M<sub>v</sub> = 1.0  
  
TYPES OF IRREGULARITIES: 1108: No  
  
THE STATIC BASE SHEAR AND OVERTURNING MOMENT IN TWO PRINCIPAL DIRECTIONS:  
  
BASE SHEAR / MOMENTS:  
GOVERNING CONDITION: STATIC  
W = WEIGHT OF STRUCTURE (700 KN)  
VDESIGN = VMAX = 2/3 S (0.2) M<sub>v</sub> IE W/(R<sub>d</sub>R<sub>o</sub>)  
  
THE BASE SHEAR AND OVERTURNING MOMENT IN TWO PRINCIPAL DIRECTIONS USED FOR THE DESIGN OF THE STRUCTURE:  
  
BASE SHEAR:  
V<sub>d</sub> = 0.0539 x W = 37.69 kN IN E-W DIRECTION  
V<sub>d</sub> = 0.0539 x W = 37.69 kN IN N-S DIRECTION  
  
OVERTURNING MOMENT:  
M<sub>d</sub> = 185.45 kN.M ABOUT N-S DIRECTION @ FOUND. LEVEL  
M<sub>d</sub> = 188.45 kN.M ABOUT E-W DIRECTION @ FOUND. LEVEL  
  
THE SEISMIC FORCE RESISTING SYSTEM AND DIAPHRAGMS OF FLOORS AND THEIR CONNECTIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE, ARTICLE 4.1.8.15. THE SEISMIC FORCE RESISTING SYSTEM FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE, ARTICLE 4.1.8.16 AND ARTICLE 21.11 IN CAN/CSA A23.3. THE STRUCTURE HAS BEEN DESIGNED FOR DEFLECTION REQUIREMENTS IN ACCORDANCE TO THE 2012 ONTARIO BUILDING CODE, ARTICLE 4.1.3.5 AND 4.1.8.13
  - WIND DATA:  
P = I<sub>w</sub> q<sub>z</sub> / 50 C<sub>e</sub> C<sub>g</sub> C<sub>p</sub> = 0.693 kPa  
WHERE  
q<sub>z</sub> / 50 = 0.44 kPa  
I<sub>w</sub> = 1.0 (ULS)  
I<sub>w</sub> = 0.75 (SLS)  
C<sub>e</sub> = 1.05  
C<sub>g</sub> C<sub>p</sub> = IN ACCORDANCE TO FIGURE I-7 FROM THE NBCC COMMENTARY
  - SNOW DATA:  
S = I<sub>s</sub> | S<sub>s</sub> ( C<sub>b</sub> C<sub>w</sub> C<sub>s</sub> C<sub>a</sub> ) + S<sub>r</sub> | = 2.32 kPa  
WHERE  
I<sub>s</sub> = IMPORTANCE FACTOR (1.0 ULS, 0.9 SLS)  
C<sub>b</sub> = 0.8 C<sub>w</sub> = 1.0  
C<sub>s</sub> = 1.0 C<sub>a</sub> = 1.0  
S<sub>s</sub> = 2.4 kPa S<sub>r</sub> = 0.4 kPa

- GENERAL NOTES**
- ALL MEASUREMENTS ARE IN UNITS UNLESS NOTED OTHERWISE
  - CONFORM TO THE REQUIREMENTS OF THE 2012 ONTARIO BUILDING CODE, ARTICLE 4.1.8.15. THE SEISMIC FORCE RESISTING SYSTEM FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE, ARTICLE 4.1.8.16 AND ARTICLE 21.11 IN CAN/CSA A23.3. THE STRUCTURE HAS BEEN DESIGNED FOR DEFLECTION REQUIREMENTS IN ACCORDANCE TO THE 2012 ONTARIO BUILDING CODE, ARTICLE 4.1.3.5 AND 4.1.8.13
  - THE CONTRACTOR SHOULD VISIT THE SITE AND REVIEW THE EXISTING DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY CHANGES TO THE DRAWINGS MUST BE APPROVED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
  - ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS (O. REG. 213/01) LOADING.
  - THE DESIGN LOADS FOR THE BUILDING AND ALL COMPONENTS IS THE DESIGNER'S RESPONSIBILITY AND SHALL BE IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE, PART 4 AND 2018 NBC.
  - NOT TO BE USED FOR CONSTRUCTION UNLESS SPECIFIED BY ENGINEER.

REVISION	DATE
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