Oshawa

Building Services
Structural Design Information Sheet

Description:

Permit Application Number:_____ Location:_____

Owner's Name:_____

Proposed:_____

Building Area:_____ m^2, Building Height:_____ m,Storey(s):_____ Basement(s):_____

Structural System:_____

Design Standards:

			Engineer's Initials
Ontario Regulation 332/12, as amended including O.Reg. 451/22, 2012 Ontario Building Code, Division B, Part 4 (OBC)			
Structural Commentaries on the National Building Code of Canada 2015 (NBC)			
1.	CSA-086-14	"Engineering Design in Wood"	
2.	CAN/CSA A371-14	"Masonry Construction for Buildings"	
3.	CSA S304 - 14	"Design of Masonry Structures"	
4.	CAN/CSA-A23.3-14	"Design of Concrete Structures"	
5.	CSA A23.1-14	"Concrete Materials & Methods of Concrete Construction"	
6.	CSA S413-14	"Parking Structures"	
7.	CAN/CSA-S136-16	"Cold Formed Steel Structural Members"	
8.	CAN/CSA-Z91-02	"Health and Safety Code for Suspended Equipment Operations"	
9.	CSA S367-12	"Air-, Cable-, and Frame-Membrane Supported Structures"	
10.	CSA-S16-14	"Limit States Design of Steel Structures"	
11.	CAN/CSA-S157-05/ S157.1-05	"Strength Design in Aluminum / Commentary on CSA S157-05, Strength Design in Aluminum"	
12.	CGSB CAN/CGSB-12.20-M89	"Structural Design of Glass for Buildings"	
13.	Canadian Foundation Engineering Manual 4th Edition/2006		

Loads and Effects:

a) Importance Category (Table 4.1.2.1.B) Low ☐ Normal ☐ High ☐ Post-Disaster ☐

b) Dead Loads

	Self-Weight		*Superimposed*	
Ground Floor	_____	kPa	_____	kPa
Other Floors	_____	kPa	_____	kPa
Roof	_____	kPa	_____	kPa
Mezzanine	_____	kPa	_____	kPa
Partitions	_____	kPa	_____	kPa
Parking Garages	_____	kPa	_____	kPa

Standard dead load factor _____

Overturning/uplift dead load factor _____

Engineer's initials _____

c) Live Loads Due To Use and Occupancy

Ground floor	_____	kPa	Balconies	_____	kPa
Other floors	_____	kPa	Mechanical areas	_____	kPa
Mezzanine	_____	kPa	Parking garages	_____	kPa
Concentrated loads	_____	kN	Crane capacity	_____	kN
Exit stairs	_____	kPa	Load on guards	H= V=	kN
Public corridors	_____	kPa	Fire/Garbage truck	_____	kN

Engineer's initials _____

d) Loads Due to Snow, Ice and Rain

Importance Factor (I_s)	_____		Roof Specified Snow Load	_____	kPa
Unbalanced Snow Load	_____	kPa	1/50 Ground Snow Load (S_s)	_____	kPa
1/50 Ground Rain Load (S_r)	_____	kPa	Drift Load	_____	kPa

Calculated for Height Difference of - _____ m

Snow distributions and snow loading factors applied as per OBC and NBC fig. - _____

Are the roof drains designed to retain rain water for:
(i) Storm water management? Yes ☐ No ☐ (ii)Controlled flow within 24 hr period Yes ☐ No ☐

Engineer's initials _____

e) Loads Due to Wind

Importance factor (I_w)
1/50 Hourly wind pressure for structural components (q)_____kPa
Wind load applied as per OBC and NBC Fig. –_____
Factored horizontal force at base in _____ direction V =_____ kN
Factored horizontal force at base in _____ direction V =_____ kN

f) Full and Partial Loadings

Applied as per the OBC and NBC Engineer's initials _____

g) Loads Due to Earthquakes

$S_a(0.2)$ =_____ $S_a(0.5)$ =_____ $S_a(1.0)$=_____ $S_a(2.0)$ =_____
$S_a(5.0)$ =_____ $S_a(10.0)$ =_____ PGA =_____ PGV =_____
Site Class (Table 4.1.8.4.A) =_____ PGA_{ref} =_____ Fa (Table 4.1.8.4.B) =_____
Fv (Table 4.1.8.4.D) =_____ Ie (Table 4.1.8.5) =_____ IeFaSa (0.2) =_____
Type of Irregularities:_____

Method of Analysis: Static ☐ Dynamic ☐ Software Used ☐
For Equivalent Static Force Procedure:
B = _____ Ta = _____ Mv = _____ J = _____

Type of SFRS (1st Dir.) _____ as per Standard No. _____ Clause _____
(Table 4.1.8.9.) R_d= _____ R_o= _____
Type of SFRS (2nd Dir.) _____ as per Standard No. _____ Clause _____
(Table 4.1.8.9.) R_d= _____ R_o= _____

Important Note: SFRS shall be clearly shown on the floor plans and section:

1st Direction	Base shear V or Vd	=
	Moment at base M	=
	Max. interstorey deflection	=
2nd Direction	Base shear V or Vd	=
	Moment at base M	=
	Max. interstorey deflection	=

Weight of the building as per
4.1.8.2. (1) W = _____kN

h) Elements of Structures, Non-Structural Components and Equipment

Applied as per Article 4.1.8.18 Engineer's initials _____
Typical details of connections of non-structural elements shall be shown on the permit plans. Engineer's initials _____

i) Other Effects

Applied as per Articles 4.1.5.10. through 4.1.6.4. of OBC Engineer's initials _____

j) Limit States Design (working stress design not permitted)

Safety Check for Strength and Stability as per OBC, 4.1.3.2. Engineer's initials _____
Fatigue, Serviceability, Deflection and Vibration as per OBC 4.1.3.3. through 4.1.3.6.. Engineer's initials _____

k) Fire Resistive Designs

Load restricted factors as per Certifications Laboratories Engineer's initials _____

Foundation System (Limited States Design):

(OBC, 4.1.3., 4.2.) Engineer's initials _____

Description: _____
Factored bearing resistance (ULS):_____kPa
Bearing pressure for settlement (SLS))_____kPa
Retaining structures: p = k (yh + q) =_____ (____ x ____ + ____) =_____
Soil investigation report by_____Dated_____

Professional Seal

Signature _____
Name _____
Title _____
Organization _____
Address _____
Email Address _____
Phone / Fax No. _____
Date _____