

GENERAL

1. THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE STRUCTURAL SPECIFICATIONS AND WITH THE DRAWINGS AND SPECIFICATIONS FROM ALL OTHER CONSULTANTS. ANY DISCREPANCIES NOTED SHALL BE REPORTED IMMEDIATELY FOR CLARIFICATION.
2. THIS SET OF DRAWINGS SHOWS THE COMPLETED STRUCTURE AND DOES NOT SHOW WORK WHICH MAY BE REQUIRED FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR GENERAL SAFETY ON AND ABOUT THE JOB SITE DURING THE CONSTRUCTION PERIOD AND FOR DESIGN AND ERECTION OF ALL FALSEWORK, SHORING, BRACING ETC. TO ENSURE THE SAFETY OF ALL CONSTRUCTION TEMPORARY LOADS AND TO COMPLETE THE WORK. ALL TEMPORARY WORKS AND SHORING ETC. SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN BRITISH COLUMBIA. ADHERE STRICTLY TO ALL REQUIREMENTS OF THE WORKSAFE BRITISH COLUMBIA.
3. ALL CODE REFERENCES ARE TO LATEST EDITIONS AS REFERENCED IN THE NBC 2015.

FIELD REVIEW:

1. DEPARTMENTAL REPRESENTATIVE PROVIDES FIELD REVIEW FOR THE WORK SHOWN ON THE STRUCTURAL DRAWINGS PREPARED BY DEPARTMENTAL REPRESENTATIVE. THIS REVIEW IS A PERIODIC REVIEW AT THE PROFESSIONAL JUDGMENT OF DEPARTMENTAL REPRESENTATIVE. THE PURPOSE IS TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY DEPARTMENTAL REPRESENTATIVE AND TO FULFILL THE REQUIREMENTS FOR THE COMPLETION OF LETTERS OF ASSURANCE REQUIRED BY THE APPLICABLE BUILDING CODE.
2. ALL NON-CONFORMING WORKS THAT REQUIRE REMEDIAL ACTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY EXTRA TIME OR COST INCURRED TO DEPARTMENTAL REPRESENTATIVE TO ASSIST OR ADVISE THE CONTRACTOR IN RECTIFYING THE WORK SHALL BE BORNE BY THE CONTRACTOR.
3. ENSURE THAT WORK TO BE INSPECTED IS COMPLETE AT THE TIME OF INSPECTION AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ADDITIONAL INSPECTIONS REQUIRED DUE TO THE INCOMPLETE WORK OR POORLY EXECUTED WORK, AS JUDGED BY DEPARTMENTAL REPRESENTATIVE, AS WELL AS ADDITIONAL DESIGN OR REMEDIAL WORK CAUSED BY DEVIATIONS FROM THESE DRAWINGS MAY BE CHARGED TO THE GENERAL CONTRACTOR AT THE DISCRETION OF DEPARTMENTAL REPRESENTATIVE.
4. A MINIMUM 48 HOURS NOTICE SHALL BE GIVEN BY THE CONTRACTOR FOR ANY INSPECTION TO BE CARRIED OUT BY DEPARTMENTAL REPRESENTATIVE.

SHOP DRAWINGS:

1. DESIGNERS & MANUFACTURERS OF ALL STRUCTURAL ELEMENTS/COMPONENTS/CONNECTIONS SHALL SUBMIT COMPLETE SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW PRIOR TO FABRICATION. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SPECIFICATIONS AND TO ALLOW MINIMUM TWO WEEKS FOR REVIEW. THIS SUBMISSION OR ITS REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR PROVIDING PROPER ENGINEERING DESIGN, METHODS, EQUIPMENT, WORKMANSHIP, SAFETY PRECAUTION AND PRIOR REVIEW OF THESE ELEMENTS. THE PROFESSIONAL ENGINEER SEALING THE SHOP DRAWINGS SHALL BE RESPONSIBLE FOR INSPECTION OF HIS DESIGN COMPONENTS FOR CONFORMANCE WITH HIS DESIGN AND SHOP DRAWINGS.
2. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CONFIRM AND COORDINATE DIMENSIONS, LOCATIONS AND NUMBER OF THE STRUCTURAL ELEMENTS FOR WHICH SHOP DRAWINGS ARE TO BE PRODUCED.

NON-STRUCTURAL COMPONENTS:

1. NON-STRUCTURAL COMPONENTS ARE NOT THE RESPONSIBILITY OF DEPARTMENTAL REPRESENTATIVE SUCH COMPONENTS OF THE PROJECT ARE DESIGNED, DETAILED, SPECIFIED AND REVIEWED IN THE FIELD BY OTHERS. LETTERS OF CERTIFICATION OF ADEQUACY, INSTALLATION ETC. OF SUCH COMPONENTS ARE BY OTHERS.
2. MANUFACTURERS OF NON-STRUCTURAL COMPONENTS WHICH AFFECT THE STRUCTURAL FRAMING SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND DEPARTMENTAL REPRESENTATIVE FOR REVIEW. THE SHOP DRAWINGS SHALL CLEARLY INDICATE LOADS IMPOSED ON THE STRUCTURE. REVIEW WILL BE LIMITED TO THE EFFECT OF THE COMPONENTS ON THE STRUCTURAL FRAMING.
3. EXAMPLES OF NON-STRUCTURAL COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO:
- ARCHITECTURAL COMPONENTS SUCH AS HANDRAILS, GUARDRAILS, RAILINGS, FLAG POST, REMOVABLE CANOPIES, CEILINGS, VEHICLE PROTECTION SYSTEMS, ORNAMENTAL COMPONENTS, ETC.
 - ARCHITECTURAL PRECAST CONCRETE AND ITS ATTACHMENTS.
 - ARCHITECTURAL GLASS BLOCKS AND THEIR ATTACHMENTS.
 - BRICK AND BLOCK VENEERS, THEIR REINFORCING IF ANY AND TIES
 - LANDSCAPING COMPONENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
 - CURTAIN WALL SYSTEMS, CLADDING, SKYLIGHT, WINDOW MULLIONS, ETC.
 - INTERIOR AND EXTERIOR NON-LOAD BEARING STEEL STUD WALLS.
 - SUPPORT AND BRACING OF MECHANICAL AND ELECTRICAL SYSTEMS AND EQUIPMENTS FOR NON-GRAVITY AND SEISMIC LOADS.
 - WINDOW WASHING EQUIPMENTS AND ITS ATTACHMENT.
 - ELEVATORS, ESCALATORS AND OTHER CONVEYING SYSTEMS, INCLUDING PROPRIETARY SUPPORT BEAMS AND THEIR ATTACHMENTS.
 - NON-STRUCTURAL MASONRY.

DESIGN LOADS:

1. THIS STRUCTURE HAS BEEN DESIGNED FOR SNOW, WIND AND SEISMIC FORCES IN SUBSTANTIAL COMPLIANCE WITH THE PROVISIONS SET FORTH IN THE NATIONAL BUILDING CODE 2015. IMPORTANT CATEGORY-NORMAL.
- GROUND SNOW: Ss = 2.4 kPa
RAIN LOAD: Sr = 0.2 kPa
- IMPORTANCE FACTORS FOR SNOW Is = 1.0 FOR STRENGTH
Is = 0.9 FOR SERVICEABILITY
- WIND LOAD: PROBABILITY 1/10 = 0.34 kPa
PROBABILITY 1/50 = 0.44 kPa
- IMPORTANCE FACTORS FOR WIND Iw = 1.0 FOR STRENGTH
Iw = 0.75 FOR SERVICEABILITY
- EARTHQUAKE FACTORS:
- | | | | | | |
|---------|---------|---------|---------|---------|----------|
| Sa(0.2) | Sa(0.5) | Sa(1.0) | Sa(2.0) | Sa(5.0) | Sa(10.0) |
| 0.772 | 0.674 | 0.387 | 0.236 | 0.076 | 0.027 |
- I_E = 1.0 FOR STRENGTH
I_E = 1.0 FOR SERVICEABILITY
- PGA_{ref} = 0.335
F(0.2) = 0.97 F(0.5) = 1.18
R_d = 1.5 R_O = 1.5

SITE CLASS D

2. SPECIFIED UNIFORM SUPERIMPOSED DEAD LOADS ON ROOF AND FLOORS:
- ROOF 1.0 kPa
MAIN FLOOR 1.0 kPa
MECHANICAL & ELECTRICAL ROOMS (GENERAL) 1.0 kPa
EXTERIOR WALLS ACTUAL WEIGHT
- UPPER FLOORS AND MAIN FLOOR LOADS INCLUDE GENERAL PARTITION LOAD OF 1.0kPa AND NON-STRUCTURAL CONCRETE TOPPING. FOR MASONRY PARTITIONS, ACTUAL WEIGHTS SHALL BE USED.
- THESE LOADS DO NOT INCLUDE SELFWEIGHT OF STRUCTURE, WEIGHT OF MASONRY PARTITIONS, WEIGHTS OF MECHANICAL EQUIPMENT AND CONCRETE EQUIPMENT PADS.
3. SPECIFIED UNIFORM LIVE LOADS ON FLOORS:
- MAIN FLOOR 4.8 kPa
4. DESIGN SPECIFIED CONCENTRATED LIVE LOADS ON ROOF AND FLOORS:
- ROOF 1.3 kN
5. WORST CASE OF UNIFORM OR CONCENTRATED LIVE LOADS WILL BE USED FOR DESIGN OF STRUCTURAL MEMBERS.

CONSTRUCTION LOADS:

1. CONSTRUCTION LOADS ON COMPLETED FLOORS MUST NOT EXCEED THE LOAD CARRYING CAPACITY OF FLOOR AT THE TIME OF THE LOADING UNLESS IT IS PROPERLY SHORED TO SUPPORT THE INTENDED LOAD. MOVING OF HEAVY EQUIPMENT AND PILING UP OF MATERIAL SHALL NOT BE PERMITTED UNLESS DESIGNED SHORING IS IN PLACE.
2. SHORING DESIGN BY CONTRACTOR. INFORM DEPARTMENTAL REPRESENTATIVE PRIOR TO LOAD APPLICATION.

FOUNDATION AND SITE WORK

1. REFER TO GEOTECHNICAL REPORT PREPARED BY JECTH CONSULTANTS INC. DATED AUG. 10, 2017 AND ALL ITS SUPPLEMENTS AND AMENDMENTS FOR EXCAVATION, BACKFILLING, FILL MATERIALS, COMPACTION, FROST PROTECTION AND OTHER SITE PREPARATION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.
2. ASSUMED DESIGN SOIL BEARING CAPACITIES:
- STRIP & PAD FOOTING SLS = 95 kPa
ULS = 145 kPa
ULS = 190 kPa (SEISMIC)
3. ANY FOOTING ELEVATIONS INDICATED ON THE DRAWINGS ARE GENERAL AND SHALL BE USED FOR ESTIMATING AND BIDDING PURPOSES. FOOTINGS MAY HAVE TO BE PLACED AT DIFFERENT ELEVATIONS AS A RESULT OF LOCAL SOILS CONDITIONS, UNDERGROUND SERVICES AND TO ACCOMMODATE OTHER MECHANICAL AND ELECTRICAL SERVICES. FOLLOW TYPICAL DETAILS SHOWN ON THESE DRAWINGS FOR FOOTING PLACEMENT RELATIVE TO ADJACENT FOOTINGS, SUMP AND OTHER EXCAVATED STRUCTURES AND LOCATE AS DIRECTED BY DEPARTMENTAL REPRESENTATIVE ENGINEER.
4. THE BASES OF FOUNDATIONS SHALL BE PROTECTED FROM RAIN, SNOW AND ANY WATER INFILTRATION.
5. NO FOUNDATIONS MAY BE POURED BEFORE THE BEARING MATERIAL HAS BEEN INSPECTED BY THE GEOTECHNICAL ENGINEER. NOTIFY THE DEPARTMENTAL REPRESENTATIVE ENGINEER MINIMUM 24 HOURS BEFORE INSTALLATION OF FOOTING REINFORCEMENT.
6. IMMEDIATELY AFTER INSPECTION AND APPROVAL BY THE DEPARTMENTAL REPRESENTATIVE ENGINEER, THE BEARING SURFACE SHALL BE COVERED BY A 50mm THICK CONCRETE GROUND SEAL OF 10MPa STRENGTH.
7. COORDINATE CONSTRUCTION WITH UNDERSLAB SERVICES AS SHOWN ON MECHANICAL, ELECTRICAL, ARCHITECTURAL AND LANDSCAPING DRAWINGS.
8. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SITE DRAINAGE, GROUND ELEVATIONS AND DRAINAGE SLOPES.
9. CENTRE ALL FOOTINGS UNDER COLUMNS OR WALLS UNLESS NOTED OTHERWISE.
10. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WATERPROOFING AND SEALING REQUIREMENTS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY SUPPORT OF THE PALISADE WALL DURING CONSTRUCTION. UNDERPINNING OR BRACING SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER, REGISTERED IN BRITISH COLUMBIA. SUBMIT 4 COPIES OF DESIGN DRAWINGS, SEALED BY A PROFESSIONAL ENGINEER, TO THE ARCHITECT FOR REVIEW OF CONFORMANCE WITH GENERAL DESIGN CRITERIA.

REINFORCED CONCRETE

1. REFER TO SPECIFICATIONS FOR CONCRETE STRENGTH, EXPOSURE CLASS & OTHER REQUIREMENTS.
2. REINFORCING BARS f = 400 mPa. ALL DOWELS ANCHOR BOLTS AND INSERTS SHALL BE PLACED BEFORE THE CONCRETE IS POURED.
3. PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT AS FOLLOWS:
- CAST AGAINST EARTH 75mm
EXPOSED TO EARTH OR WEATHER: 50mm
ELSEWHERE: 40mm
4. MINIMUM SPLICE LENGTH SHALL BE CLASS B AS FOLLOWS, UNLESS NOTED OTHERWISE:
- BAR TENSION SPLICE
25MPa 30MPa 32MPa
- 10M 450 400 400
15M 600 550 500
20M 750 700 650
- * ALL SPLICES SHALL BE TENSION SPLICES, EXCEPT SPLICES FOR COLUMNS WHICH SHALL BE COMPRESSION SPLICES UNLESS NOTED ON DRAWINGS.
* INCREASE LENGTHS BY 33% FOR BOTTOM BARS IN BEAMS WITHOUT STIRRUPS.
* INCREASE LENGTHS BY 30% FOR BARS WITH DEPTH OF CONCRETE CAST BELOW GREATER THAN 300mm (TOP BARS).
* ALL INCREASES ABOVE ARE CUMULATIVE.

WOOD PRODUCTS

1. REFER TO SPECIFICATIONS FOR TIMBER GRADE, CODE REFERENCES. AND OTHER REQUIREMENTS.
2. PROVIDE 2x BLOCKING AT MIDHEIGHT OF STUDS OVER 2400 IN HEIGHT.
3. 2x SOLID BLOCK SHALL BE PLACED BETWEEN ALL JOISTS AND RAFTERS AT SUPPORTS.
4. PLACE 2x SOLID BLOCK OR METAL CROSS BRIDGING OF EQUAL STRENGTH AS FOLLOWS:
- FLOOR JOIST OVER 185 NOMINAL DEPTH AND OVER 3000 SPAN, SPACE BRIDGING AT 3000 O/C OR PLACE AT MIDSPAN IF SPAN LESS THAN 6000.
5. DOUBLE UP ALL TRIMMER JOISTS AROUND ALL ROOF & FLOOR OPENINGS, I.E., CHIMNEY ETC.
6. ALL FLUSH FRAMED MEMBERS TO BE SECURED WITH APPROVED METAL JOIST HANGER.
7. NAILS SHALL BE PLACED NOT LESS THAN 9mm FROM THE PANEL EDGE AND SHALL NOT BE OVER-DRIVEN MORE THAN 15% OF THE PANEL THICKNESS.

STEEL:

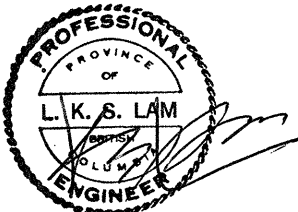
1. FABRICATION, ERECTION, STRUCTURAL DETAILING OF ALL STRUCTURAL STEEL AND CONNECTIONS SHALL BE IN ACCORDANCE WITH CAN/CSA-S16.
2. STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA-G40.20 FOR GENERAL REQUIREMENTS AND CAN/CSA-G40.21 FOR QUALITY.
3. GRADE OF MATERIAL: 300W


ABBREVIATIONS

A.BOLT	ANCHOR BOLT	HDG	HOT DIPPED GALVANIZED
ALT.	ALTERNATE	L.V.	LENGTH VARIES
ARCH.	ARCHITECTURAL	L.G.	LONG
BLDG.	BUILDING	LL	LOW LEVEL
BOT.	BOTTOM	LLV	LONG LEG VERTICAL
BTW.	BETWEEN	LLH	LONG LEG HORIZONTAL
C/C	CENTER TO CENTER	LONG.	LONGITUDINAL
C/W	COMPLETE WITH	MAX.	MAXIMUM
C.I.P.	CAST IN PLACE	MECH.	MECHANICAL
CANT.	CANTILEVER	MIN.	MINIMUM
CL.	CLEAR	N/A	NOT AVAILABLE
C.N.	COMMON NAIL	N.S.	NEAR SIDE
COL.	COLUMN	N.STUD	NELSON STUD
CONC.	CONCRETE	N.T.S.	NOT TO SCALE
CONT.	CONTINUOUS	O/C	ON CENTRES
DL	DEAD LOAD	OPP.	OPPOSITE HAND
DN	DOWN	OWSJ	OPEN WEB STEEL JOIST
DO.	DITTO	P.C.	PRECAST CONCRETE
DP.	DEEP	PL	PLATE
DWG.	DRAWING	PLY.	PLYWOOD
E.W.	EACH WAY	PROJ.	PROJECTION

DRAWING LIST (STRUCTURAL)

S101	GENERAL NOTES
S201	NEW GROUND FLOOR PLAN
S202	ROOF PLAN
S301	NEW BUILDING SECTION & DETAILS

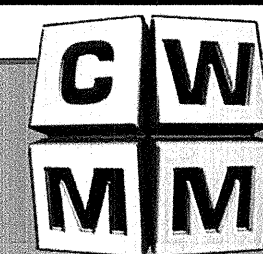




Public Works and
Government Services
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REAL PROPERTY SERVICES
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SERVICES IMMOBILIERS
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Drawn by/Dessiné par J.N		
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Regional Manager, Architectural and Engineering Services Gestionnaire régional, Services d'architecture et de génie, TPSGC FREETIPAL PAUL		
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