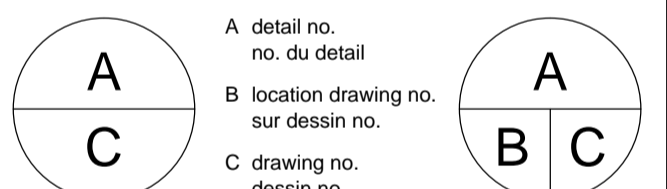




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**Contractor to verify all dimensions & conditions on site and immediately notify the engineer of all discrepancies.**

9		
8		
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3	RE-ISSUED FOR TENDER	06/10/15
2	ISSUED FOR TENDER	19/06/12
1	ISSUED FOR 33% REVIEW	17/02/12
revisions	description	date



project / projet

**SAFETY ACCESS TO TARMAC**

drawing / dessin

**STRUCTURAL GENERAL NOTES**

Designed By	F.L.	Conçu par
Date		(yyyy/mm/dd)
Drawn By	Y.W.	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	P.W.	Examiné par
Date		(yyyy/mm/dd)
Approved By		Approuvé par
Date		(yyyy/mm/dd)
Tender		Soumission
Project Manager	R. WARNER	Administrateur de projets
Project no.		No. du projet
<b>PW127689</b>		
Drawing no.		No. du dessin
<b>S001</b>		

**GENERAL**

- ALL CODES REFERENCED ARE TO BE THE LATEST VERSION AT THE DATE OF ISSUE.
- DESIGN IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2010 AND SATISFIES THE STRUCTURAL REQUIREMENTS OF ONTARIO BUILDING CODE 2006.
- PARAMETERS FOR THE DESIGN OF THE CONCRETE COMPONENTS ARE IN ACCORDANCE WITH CSA A23.4-04, CONCRETE MATERIALS AND CONCRETE TESTING REQUIREMENTS ARE TO CSA A23.3 AND A23.2 RESPECTIVELY.
- READ THESE DESIGN NOTES IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS.
- OBTAIN ENGINEER'S APPROVAL BEFORE CUTTING, BORING, OR SLEEVING LOAD-BEARING MEMBERS UNLESS NOTED OTHERWISE.
- REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SMALL OPENINGS, SLEEVES, RECESSES, DEPRESSIONS, SUMPS, TRENCHES, CURBS, HOUSEKEEPING PADS, EQUIPMENT BASES, AND SLOPES NOT INDICATED ON THE STRUCTURAL DRAWINGS.
- OPENINGS AND SLEEVES INDICATED ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE ALL OPENING LOCATIONS AND DIMENSIONS WITH THE APPROPRIATE CONSULTANT.
- REVIEW ALL DRAWINGS AND CHECK DIMENSIONS PRIOR TO IMPLEMENTING THE WORK. REPORT ANY DISCREPANCIES TO THE CONSULTANT FOR CLARIFICATION BEFORE PROCEEDING.
- COORDINATE PLACEMENT AND LOCATION OF ITEMS BY SUBSEQUENT TRADES. RELEVANT TRADES SHALL REVIEW PRIOR TO ERECTION AND/OR INSTALLATION.
- NOTIFY THE ENGINEER A MINIMUM OF 24 HOURS PRIOR TO ANY REQUIRED SITE REVIEWS.

**EXISTING STRUCTURES**

- THE STRUCTURAL DESIGN IS BASED ON INFORMATION GATHERED FROM THE RECORD DRAWINGS AND FROM LIMITED VISUAL OBSERVATIONS ON SITE.
- VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS ON SITE PRIOR TO IMPLEMENTING AFFECTED WORK.
- NOTIFY THE CONSULTANT OF ANY SITE CONDITIONS THAT DIFFER FROM THE CONTRACT DOCUMENTS OR THE RECORD DRAWINGS.
- SHORE AND UNDERPIN EXCAVATIONS AS REQUIRED TO PREVENT DISTURBANCE TO ADJACENT STRUCTURES, STREETS, SIDEWALKS AND UTILITIES.
- THE NEW STRUCTURE IS SEPERATED FROM THE ORIGINAL BUILDING WITH 75mm WIDE EXPANSION JOINT (LATERALLY AND GRAVITY LOADS).

**DESIGN LOADS**

- UNLESS NOTED OTHERWISE, THE LOADS NOTED IN TABLES AND ON DRAWINGS ARE UNFACTORED.
- CONSTRUCTION LOADS SHALL NOT EXCEED THE LOADS NOTED ON THE DRAWINGS.
- LOADS

DEAD	STRUCTURAL SELF WEIGHT	
DEAD	ROOF	1.0 kPa
DEAD	2nd	2.0 kPa
	(75mm SLAB ON 38mm STEEL DECK)	
PARTITION		1.0 kPa
OCCUPANCY (LIVE LOAD)	MAIN FLOOR	4.8 kPa
	2nd FLOOR	2.4 kPa
	EXITS & FIRE ESCAPES	4.8 kPa
SNOW (FOR SNOW PILING LOADS, SEE ROOF PLAN)	Is = 1.0 (ULS) Is = 0.9 (SLS) Ss = 2.4 kPa Sr = 0.4 kPa S = 1.0x(0.8x2.4+0.4)	Cb = 0.8 Cw = 1.0 Cs = 1.0 Ca = 1.0 = 2.32 kPa
WIND	ss Iw = 1.0 (ULS) Iw = 0.75 (SLS) p = Iw.q.Ce.Cg.Cp BASE SHEAR	q(1/50) = 0.41kPa N-S = 90.22 kN E-W = 66.53 kN N-S = 370 kN.m E-W = 273 kN.m
SEISMIC	ACCELERATION =	le = 1.0 (ULS) Sa(0.2) = 0.66 Sa(0.5) = 0.31 Sa(1.0) = 0.14 Sa(2.0) = 0.44
	SITE CLASS =	D
	SFRS = MASONRY SHEAR WALLS	
	FORCE MODIFICATION FACTORS	Rd = 1.5 Ro = 1.5 Fa = 1.15 Fv = 1.36 B < 1.7
	NO IRREGULARITIES	To = 0.05(ha) <sup>3/4</sup> = 0.24 sec
	FUNDAMENTAL LATERAL PERIOD	S(0.24) = FaSa(0.2) = 0.759
	LATERAL FORCE V = (2/3)S(0.24)leW/(RdRo)	= 0.22 W
	V <sub>bx</sub> = V <sub>by</sub>	W = 2509 kN
	WEIGHT	V = 593 kN
	BASE SHEAR (X & Y)	O/M = 3397 kN.m
	OVERTURNING MOMENT	

**DELEGATED DESIGN**

- PORTIONS OF THE DETAILED DESIGN ARE DELEGATED TO THE CONTRACTOR. RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO TO COMPLETE THE DESIGN.
- SUBMIT SHOP DRAWINGS FOR COMPONENTS REQUIRING DELEGATED DESIGN UNDER THE SEAL AND SIGNATURE OF THE ENGINEER RESPONSIBLE FOR THE DESIGN.
- THE FOLLOWING COMPONENTS REQUIRE DELEGATED DESIGN:
  - MORTAR, GROUT, AND CONCRETE MIX DESIGNS
  - STRUCTURAL STEEL CONNECTIONS
  - OPEN WEB STEEL JOISTS
  - STEEL DECK
  - LIGHTWEIGHT STRUCTURAL STEEL FRAMING
  - STEEL STUDS

- THE ENGINEER RESPONSIBLE FOR THE DESIGN IS ALSO RESPONSIBLE FOR REVIEW OF FABRICATION AND INSTALLATION OF THE COMPONENTS. UPON COMPLETION OF THE WORK, CERTIFY IN WRITING TO THE CONSULTANT THAT SUCH REVIEW HAS BEEN COMPLETED.
- REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.

**FOUNDATION AND GEOTECHNICAL NOTES**

- FOUNDATION DESIGN IS BASED ON THE FOUNDATION INVESTIGATION SOILS REPORT NUMBER 140011048 PREPARED BY STANTEC, AND DATED OCT. 2011. ENSURE THAT THE REQUIREMENTS OUTLINED IN THE REPORT ARE READ AND UNDERSTOOD PRIOR TO COMMENCING WITH FOUNDATION WORK.
- SPREAD FOOTINGS HAVE BEEN DESIGNED BASED ON A SOIL BEARING PRESSURE OF 210 kPa (SLS) AND 760kPa (ULS).
- STRIP FOOTINGS HAVE BEEN DESIGNED BASED ON A SOIL BEARING PRESSURE OF 265 kPa (SLS) AND 510kPa (ULS).
- BEAR ALL FOOTINGS ON ENGINEERED FILL.
- BRING OVER-EXCAVATION AND CAVITIES IN THE FOOTING BASE UP TO THE REQUIRED LEVELS WITH 10 MPa CONCRETE.
- REMOVE ALL ORGANIC MATERIAL FROM THE BUILDING AREA AS OUTLINED IN THE GEOTECHNICAL REPORT.
- REMOVE ALL LOOSE OR SATURATED MATERIAL AND GROUNDWATER FROM THE BASE OF FOOTING EXCAVATIONS BY APPROVED METHODS PRIOR TO PLACING FOUNDATIONS.
- PROTECT EXCAVATIONS FOR FOOTINGS FROM RAIN, SNOW, FREEZING TEMPERATURES, STANDING WATER, LOSS OF MOISTURE AND DEGRADATION BY APPROVED METHODS.
- BEARING SURFACES TO BE INSPECTED IN THE FIELD BY A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO PRIOR TO PLACING CONCRETE.
- UNLESS OTHERWISE SHOWN ON PLAN, FOUNDATION ELEMENTS ARE TO BE CENTERED UNDER WALLS, GRADE BEAMS, AND COLUMNS.
- PROVIDE DOWELS FROM FOOTINGS TO MATCH ALL VERTICAL COLUMN AND WALL REINFORCEMENT OR AS NOTED ON THE DRAWINGS.
- BACKFILL MATERIAL TO CONSIST OF GRANULAR B AND BE COMPACTED TO 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY IN MAXIMUM LIFTS OF 150 mm.
- DO NOT BACKFILL BEHIND FOUNDATION WALLS UNTIL THE FLOOR SLAB(S) TO WHICH IT IS TIED ARE COMPLETE AND CONCRETE HAS REACHED 28-DAY DESIGN STRENGTH.
- BACKFILL WALLS BELOW GRADE EVENLY ON BOTH SIDES ENSURING THAT NO PORTION OF THE FILL IS PLACED MORE THAN 600 mm ABOVE ANY OTHER PORTION OF THE FILL DURING BACKFILLING.

**CAST-IN-PLACE REINFORCED CONCRETE**

- CONCRETE MATERIALS, QUALITY, MIXING, PLACING, FORMWORK AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-A23.1.
- NOTIFY CONSULTANT 24 HOURS PRIOR TO CONCRETE POURS TO ALLOW FOR REVIEW OF REINFORCEMENT.
- DO NOT USE ADMIXTURES CONTAINING CALCIUM CHLORIDE.
- FOR FLOOR SLABS, DESIGN THE CONCRETE MIX WITH AGGREGATE GRADING AND WATER TO CEMENTING MATERIALS RATIO TO MINIMIZE SHRINKAGE.
- FIELD AND LABORATORY TESTING OF CONCRETE TO BE COMPLETED BY A THIRD PARTY TESTING AND INSPECTION AGENCY APPROVED BY AND RESPONSIBLE TO THE ENGINEER. TESTING AGENCY SHALL BE CERTIFIED TO CSA-A283 AND TESTING TO BE COMPLETED IN ACCORDANCE WITH CSA-A23.2.

**CONCRETE REINFORCEMENT**

- REINFORCEMENT STEEL TO CONFORM TO CSA-G30.18 GRADE 400.
- DO NOT WELD REINFORCEMENT UNLESS APPROVED IN WRITING BY THE ENGINEER.
- NOTIFY THE ENGINEER PRIOR TO CONCRETE PLACEMENT TO ALLOW FOR REVIEW OF REINFORCING.
- SUBMIT SHOP DRAWINGS AND DETAILS FOR ALL REINFORCEMENT FOR REVIEW PRIOR TO FABRICATION.
- SIDEWALKS AND SMALL SLABS TO BE REINFORCED WITH 10M AT 300 mm ON CENTRE UNLESS NOTED OTHERWISE.
- OPENINGS IN WALLS AND SLABS - PROVIDE TWO 15M BARS EACH SIDE, ONE EACH FACE, EXTENDING 600 mm PAST THE OPENINGS, PLUS TWO 15M DIAGONAL BARS 1.5 TIMES THE LENGTH OF SHORTEST SIDE OF OPENING OR MINIMUM 500 mm AND MAXIMUM 1500 mm IN LENGTH AT EACH CORNER.
- DO NOT CUT REINFORCEMENT AT OPENINGS WHERE IT CAN BE SPREAD CONTINUOUS AROUND OPENING.
- TYPICAL BEAM REINFORCEMENT UNLESS OTHERWISE NOTED - TOP REINFORCEMENT TO BE CONTINUOUS OVER SUPPORTS; SPLICE 450 mm AT MIDSPAN. BOTTOM REINFORCEMENT TO BE CONTINUOUS BETWEEN SUPPORTS; SPLICE 450 mm AT SUPPORTS.
- ALL REINFORCEMENT TO BE SUPPORTED AT 900 mm MAXIMUM SPACING.

**CONCRETE FORMWORK**

- DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CAN/CSA-S269.3.
- PROVIDE VOID FORM BELOW ALL STRUCTURAL SLABS AT GRADE, WALLS, GRADE BEAMS, PILE CAP, AND WHERE SHOWN ON THE DRAWINGS PRIOR TO INSTALLATION OF REINFORCEMENT.
- LEAVE FORMS IN PLACE OR PROVIDE SHORING FOR ALL SLABS, BEAMS, AND GIRDERS UNTIL CONCRETE HAS REACHED SPECIFIED 28-DAY COMPRESSIVE STRENGTH.
- REFER TO SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR CHAMFERS ON CORNERS FOR BEAMS, COLUMNS, AND WALLS.

**STRUCTURAL STEEL**

- DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-S16 AND THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.

- STEEL TO BE FABRICATED AND ERECTED BY A SHOP CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA-W47.1, DIVISION 1 OR 2.1 ONLY.
- SUBMIT SHOP DRAWINGS SHOWING ALL STRUCTURAL STEEL MEMBERS FOR REVIEW PRIOR TO FABRICATION. WELDING TO CONFORM TO CSA-W59.
- WELDING TO REINFORCEMENT STEEL ONLY BY A SHOP CERTIFIED TO CSA-W186 WITH REINFORCEMENT CONFORMING TO CSA-G30.18.
- SHOP GALVANIZING TO CONFORM TO CAN/CSA-G164.
- ALL EXPOSED WELDS TO BE CONTINUOUS. GRIND ALL EXPOSED WELDS SMOOTH, INCLUDING PAINTED STEEL.
- SHEAR STUD CONNECTORS TO CONFORM TO ASTM-A108 AND SHALL BE APPLIED BY ELECTRICAL RESISTANCE WELDING ONLY.
- CONNECTIONS NOT DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED AND DETAILED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO AT THE STEEL FABRICATOR'S EXPENSE.
- PROVIDED A MINIMUM OF 2 BOLTS IN BOLTED CONNECTIONS.
- PROVIDE 10 mm PLATE STIFFENERS EACH SIDE OF BEAM AT ALL BEARING CONNECTIONS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- DO NOT SPLICE MATERIAL WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- PROVIDE 10 mm WEEP HOLES AT TOP AND BOTTOM OF ALL HSS COLUMNS.
- ALL GROUT UNDER BEARING PLATES AND BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK TYPE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 50 MPa, INSTALLED IN ACCORDANCE WITH THE SPECIFICATION AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE GROUT WEEP HOLES IN COLUMN BASE PLATES WHERE SHOWN.
- SQUARE CUT OR FULL STRENGTH WELD ALL COLUMNS AT BASE PLATES AND AT TOP WHERE BEARING UNDER CONTINUOUS BEAMS.
- CLEAN, PREPARE AND PRIME ALL STRUCTURAL STEEL AND ANCHOR PLATES. DO NOT PRIME ANCHOR BOLTS OR SURFACES IN CONTACT WITH CONCRETE.
- CLEAN ALL INTERIOR STRUCTURAL STEEL NOT TO BE FINISH PAINTED BY WIRE BRUSHING. REMOVE ALL RUST, DIRT, MILL SCALE, WELD SPATTER AND ALL OTHER EXTRANEOUS MATERIAL IN ACCORDANCE WITH SSPC SPECIFICATIONS SP2 BEFORE APPLYING ONE-COAT PAINT TO ALL SURFACES EXCEPT THOSE TO BE IN CONTACT WITH CONCRETE OR TO BE FIRE-SPRAY PROTECTED. REFER TO ARCHITECTURAL ROOM FINISH SCHEDULES FOR EXTENT.
- CLEAN ALL INTERIOR STRUCTURAL STEEL THAT IS TO BE FINISH PAINTED BY COMMERCIAL BLAST IN ACCORDANCE WITH SSPC SPECIFICATIONS SP6 TO ENSURE BASE STEEL IS THOROUGHLY CLEANED OF ALL RUST, DIRT, MILL SPATTER AND ALL OTHER EXTRANEOUS MATERIAL FOLLOWED BY SOLVENT CLEANING BEFORE APPLYING PRIMER. REFER TO ARCHITECTURAL ROOM FINISH SCHEDULE FOR EXTENT. CONFIRM COMPATIBILITY BETWEEN PAINT AND PRIMER.
- TOUCH-UP FIELD WELDS, CONNECTIONS AND ABRASIONS TO MATCH THE SHOP PRIMER.
- SHOP AND FIELD INSPECTION OF STEEL FABRICATION AND ERECTION TO BE COMPLETED BY A THIRD PARTY TESTING AND INSPECTION AGENCY APPROVED BY AND RESPONSIBLE TO THE ENGINEER. TESTING AGENCY SHALL BE CERTIFIED TO CSA-W178.

**OPEN WEB STEEL JOISTS**

- DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-S16 AND CAN/CSA-S136.
- JOISTS TO BE FABRICATED AND ERECTED BY A SHOP CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA-W47.1, DIVISION 1 OR 2.1 ONLY.
- WELDING TO CONFORM TO CSA-W59.
- DO NOT SPLICE MATERIAL WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. WHERE GRANTED, A COMPLETE NON-DESTRUCTIVE EXAMINATION WILL BE MANDATORY AND PAID FOR BY THE CONTRACTOR.
- UNLESS NOTED OTHERWISE, LIMIT DEFLECTION FOR ROOF JOISTS TO THE FOLLOWING:  
 - TOTAL LOAD - SPAN/240
- WHERE POINT LOADS ON JOISTS DO NOT OCCUR AT PANEL POINTS, STRENGTHEN CHORDS AS REQUIRED. INDICATE ALL POINT LOADS ON SHOP DRAWINGS.
- TO ACCOMMODATE MISCELLANEOUS SUSPENDED ITEMS, DESIGN JOISTS TO SUPPORT AN ADDITIONAL SPECIFIED LIVE LOAD OF 2.2 kN FROM THE TOP OR BOTTOM CHORD AT ANY ONE PANEL POINT ALONG THE SPAN.
- CAMBER ALL JOISTS FOR SPECIFIED DEAD LOAD PLUS HALF OF SPECIFIED LIVE LOAD (MINIMUM 12 mm) ACCORDING TO CSA-S16 UNLESS NOTED OTHERWISE.
- PROVIDE BRIDGING IN ACCORDANCE WITH CSA-S16.
- DO NOT SPLICE MATERIAL WITHOUT THE WRITTEN APPROVAL OF THE CONSULTANT. WHERE GRANTED, A COMPLETE NON-DESTRUCTIVE EXAMINATION WILL BE MANDATORY AND PAID FOR BY THE CONTRACTOR.
- ELEVATIONS SHOWN ON PLAN ARE BASED ON A JOIST SEAT DEPTH OF 100 mm UNLESS NOTED OTHERWISE.
- CLEAN ALL INTERIOR STRUCTURAL STEEL NOT TO BE FINISH PAINTED BY WIRE BRUSHING AND REMOVING ALL RUST, DIRT, MILL SCALE, WELD SPATTER AND ALL OTHER EXTRANEOUS MATERIAL IN ACCORDANCE WITH SSPC SPECIFICATIONS SP2 BEFORE APPLYING ONE-COAT PAINT TO ALL SURFACES EXCEPT THOSE TO BE IN CONTACT WITH CONCRETE OR TO BE FIRE-SPRAY PROTECTED. REFER TO ARCHITECTURAL ROOM FINISH SCHEDULES FOR EXTENT.
- CLEAN ALL INTERIOR STRUCTURAL STEEL THAT IS TO BE FINISH PAINTED BY COMMERCIAL BLAST IN ACCORDANCE WITH SSPC SPECIFICATIONS SP6 TO ENSURE BASE STEEL IS THOROUGHLY CLEANED OF ALL RUST, DIRT, MILL SPATTER AND ALL OTHER EXTRANEOUS MATERIAL FOLLOWED BY SOLVENT CLEANING BEFORE APPLYING PRIMER. REFER TO ARCHITECTURAL ROOM FINISH SCHEDULE FOR EXTENT. CONFIRM COMPATIBILITY BETWEEN PAINT AND PRIMER.
- TOUCH-UP FIELD WELDS, CONNECTIONS AND ABRASIONS TO MATCH THE SHOP PRIMER.

**STEEL DECK**

- DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CAN/CSA-S136.
- WELDING TO CONFORM TO CSA-W59. PLATE WASHERS MAY BE ELIMINATED ONLY IF WELDERS OR WELDING OPERATORS HAVE BEEN CERTIFIED BY THE CANADIAN WELDING BUREAU WITH QUALIFIED PROCEDURES FOR WELDING METAL DECK.
- SHEET STEEL TO CONFORM TO ASTM A653/A653M.
- BASE METAL THICKNESS OF DECK INDICATED ON DRAWINGS IS MINIMUM TO SATISFY DIAPHRAGM REQUIREMENTS. INCREASE THICKNESS AS REQUIRED TO SUPPORT GRAVITY LOADS AND TO SATISFY DEFLECTION LIMITS ABOVE.
- DECK UNITS TO BE CONTINUOUS OVER AT LEAST THREE SUPPORTS WHERE STRUCTURAL FRAMING PERMITS.
- PROVIDE L64x64x6.4 ANGLE TO SUPPORT ALL EDGES OF DECK. PROVIDE CLOSURE STRIPS AS REQUIRED FOR UNSUPPORTED FLUTE EDGES.
- PROVIDE L76x76x6.4 ANGLE TO SUPPORT DECK EDGES AT ALL OPENINGS UP TO 400 mm IN SIZE.
- STEEL DECK TO BE FASTERNED TO ALL SUPPORTING MEMBERS WITH 19mm FUSION WELDS IN A 36/11 PATTERN AND #10 SCREW SIDE LAP FASTERNED AT 300mm ON CENTER.

**LIGHTWEIGHT STRUCTURAL STEEL FRAMING**

- DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CAN/CSA-S136.
- WELDING TO CONFORM TO CSA-W59.
- SHEET STEEL TO CONFORM TO ASTM A653/A653M, GRADE A STRUCTURAL QUALITY TYPE GRADE 230. GALVANIZED WITH ZINC COATING AS DESIGNATED BY ASTM A653/A653M.

**MASONRY**

- DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-S304.1 AND CAN/CSA-A371.
- CONCRETE BLOCK TO CONFORM TO CAN/CSA-A165 WITH A MINIMUM COMPRESSIVE STRENGTH OF 15 MPa BASED ON THE NET CROSS-SECTIONAL AREA OF THE UNITS WITH VOIDS.
- FILL CELLS CONTAINING VERTICAL REINFORCEMENT WITH CONCRETE DESIGNATED AS MASONRY COREFILL IN CONTROLLED CONCRETE TABLE.
- PUDDLE OR VIBRATE MASONRY COREFILL IN LIFTS NOT EXCEEDING 1200 mm.
- FORM HORIZONTAL JOINTS BY STOPPING POUR 40 mm BELOW THE TOP OF UNIT.
- USE ONLY TYPE S MORTAR CONFORMING TO CSA-A179. DO NOT USE MASONRY CEMENT. USE PORTLAND CEMENT AND LIME ONLY.
- PROVIDE CLEAN-OUT OPENINGS AT THE BOTTOM OF EACH LIFT FOR ALL CELLS BEING FILLED. THE INSIDE OF THE CELL IS TO BE FREE FROM DEBRIS AND OBSTRUCTION.
- ALTERNATE HORIZONTAL JOINT REINFORCING TO BOND ADJOINING WALLS.
- MASONRY WALLS TO BE RUNNING BOND UNLESS NOTED OTHERWISE.
- EXTEND VERTICAL REINFORCEMENT TO WITHIN 50 mm OF TOP OF WALLS.
- PROVIDE VERTICAL DOWELS INTO SUPPORTING CONCRETE TO MATCH
- PROVIDE 200 mm DEEP BOND BEAMS AT THE TOP, MIDDLE AND BOTTOM OF ALL WALLS REINFORCED WITH 1-15M. USE SPECIAL BOND BEAM UNITS TO PROVIDE CONTINUITY OF HORIZONTAL REINFORCEMENT. LAP SPLICE 800 mm MINIMUM. PROVIDE CORNER BARS AT WALL INTERSECTIONS.
- PROVIDE VERTICAL REINFORCEMENT AS NOTED ON DRAWINGS. PROVIDE ADDITIONAL COREFILLS WITH DESIGNATED REINFORCEMENT AT ENDS OF WALLS, WALL INTERSECTIONS, CORNERS, AND EACH SIDE OF WINDOW OPENING, DOOR OPENINGS, AND CONTROL JOINTS.
- PROVIDE MASONRY LINTELS ABOVE OPENINGS AS NOTED ON DRAWINGS. USE 400 mm DEEP LINTEL BLOCKS FOR 2 COURSE LINTELS. USE A 400 mm DEEP LINTEL BLOCK WITH AN UPSIDE DOWN BOND BEAM BLOCK ON TOP FOR 3 COURSE LINTELS. LINTELS TO CONTINUE MINIMUM 400 mm PAST EACH SIDE OF OPENINGS. BLOCK VOIDS BELOW BEARING ENDS TO BE CORE FILLED AND REINFORCED WITH 2 - 15M BARS VERTICALLY EXTENDING INTO LINTELS UNLESS NOTED OTHERWISE.
- INSTALL VERTICAL CONTROL JOINTS AT 9000 mm MAX. LOCATE JOINTS AT LATERAL SUPPORTS PROVIDED BY COLUMNS, PILASTERS, CORNERS, AND INTERSECTING WALLS.

