




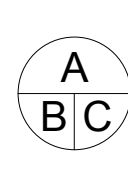
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STEEL NOTES		
1.	STRUCTURAL STEEL	
1.	DESIGN, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH CAN/CSA-S16-09, LIMIT STATES DESIGN OF STEEL STRUCTURES, AND THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.	
2.	MATERIAL REQUIREMENTS -WVWf SHAPES: CAN/CSA-G40.20-04/G40.21-04(R2009) GRADE 350W -HSS SECTIONS: CAN/CSA-G40.20-04/G40.21-04(R2009) GRADE 350W -OTHER STRUCTURAL SHAPES AND PLATES: CAN/CSA-G40.20-04/G40.21-04(RW009) GRADE 300W -HEADED STUD ANCHORS: REFER TO NOTE 7 -ANCHOR RODS: REFER TO NOTE 8 -BOLTS ASSEMBLY: REFER TO NOTE. 8 -SHOP PRIMER AND FIELD TOUCHUP PRIMER: REFER TO SPECIFICATION AND ALSO NOTE. 13	
3.	CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR'S ENGINEER FOR THE LOADS INDICATED ON THE DRAWING. DESIGN CONNECTIONS IN ACCORDANCE WITH CAN/CSA-S16-09, UNLESS NOTED OTHERWISE. SELECT FRAMED BEAM SHEAR CONNECTIONS FROM THE CISC HANDBOOK OF TEEL CONSTRUCTION FOR NON-COMPOSITE BEAMS. IF SHEAR VALUES ARE NOT INDICATED, SELECT OR DESIGN CONNECTIONS TO SUPPORT REACTION FROM 67% OF MAXIMUM UNIFORMLY DISTRIBUTED LOAD THAT CAN BE SAFELY SUPPORTED BY BEAM IN BENDING, PROVIDED NO POINT LOADS ACT ON BEAM. DESIGN BRACE CONNECTIONS, SO DESIGNATED, FOR THE LOADS SHOWN ON THE DRAWINGS. USE A MINIMUM OF 2 BOLTS IN EACH BOLTED CONNECTION.	
4.	WELDING SHALL CONFORM TO CSA W59-03(R2008).	
5.	WELDING MATERIALS: TO CSA W59-03(R2008), CSA W48-06(R2011) AND CERTIFIED BY CWB.	
6.	ANCHOR RODS, BOLTS, NUTS, AND WASHERS: AS FOLLOWS: UNHEADED ANCHOR RODS: ASTM F1554-07aæ1 GRADE 55 BOLTS: ASTM A325-10 NUTS: ASTM A325-10 WASHERS: ASTM F436M FINISH: PLAIN, UNCOATED.	
7.	ALL BOLTED STEEL CONNECTIONS SHALL BE MADE ACCORDING TO 'TURN OF A NUT'. ALL BOLTED MOMENT CONNECTIONS AND VBF CONNECTIONS SHALL BE RETENSIONED BOLTS USED IN SLIP CRITICAL CONNECTIONS WITH CLASS 'A' CONTACT SURFACES ACCORDING TO CAN/CSA-S16-09.	
8.	PROVIDE SHOP DRAWINGS USING CISC STANDARD DRAFTING PRACTICES; DETAILING FABRICATION OF STRUCTURAL STEEL COMPONENTS INCLUDING, BUT NOT LIMITED TO: DETAILS OF CUTS, CONNECTIONS, SPLICES, CAMBER, HOLES, AND OTHER PERTINENT DATA. INDICATE WELDS USING CWB SYMBOLS, DISTINGUISHING BETWEEN SHOP AND FIELD WELDS, AND SHOW SIZE, LENGTH, AND TYPE OF EACH WELD. TYPE, SIZE, AND LENGTH OF BOLTS, DISTINGUISHING BETWEEN SHOP AND FIELD BOLTS; HIGH STRENGTH BOLTED SLIP CRITICAL, DIRECT TENSION, OR TENSIONED SHEAR/BEARING CONNECTIONS. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER QUALIFIED IN THE PROVINCE OF THE WORK, AND WHO WAS RESPONSIBLE FOR THEIR PREPARATION.	
9.	FABRICATE AND ASSEMBLE STRUCTURAL STEEL IN SHOP TO GREATEST EXTENT POSSIBLE. FABRICATE BEAMS, COLUMNS AND OTHER MEMBERS OF CONTINUOUS SECTIONS IN ACCORDANCE WITH CAN/CSA S16-09; DO NOT SPLICE PIECES UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR WITH AUTHORIZATION OF CONSULTANT.	
10.	IN ADDITION TO THE REQUIREMENTS INDICATED, ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL BE FABRICATED WITH EXPOSED SURFACES SMOOTH, SQUARE, AND FREE OF SURFACE BLEMISHES, INCLUDING PITTING, RUST AND SCALE. SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, AND ROUGHNESS, REMOVE BLEMISHES BY FILLING, GRINDING, OR BY WELDING AND GRINDING. PRIOR TO CLEANING, TREATING, AND SHOP PRIMING IN ACCORDANCE WITH WELD APPEARANCE FOR AESTHETICALLY EXPOSED STEEL CRITERIA SET FORTH BY THE CONSULTANT.	
11.	PROVIDE SHOP-APPLIED PRIMER IN ACCORDANCE WITH ASTM A780-09 AND CGSB-1-GP 40M AND TOUCH UP AFTER ERECTION.	
12.	ALL EXPOSED STEEL AND WHERE INDICATED ON DRAWINGS TO HAVE A HOT DIP GALVANIZED FINISH IN ACCORDANCE WITH ASTM A123/A123M-12.	
13.	ERECT STRUCTURAL STEEL IN ACCORDANCE WITH CAN/CSA S16-09. PROVIDE TEMPORARY SHORES, GUYS, BRACES, AND OTHER SUPPORTS DURING ERECTION TO KEEP STRUCTURAL STEEL SECURE, PLUMB, AND IN ALIGNMENT AGAINST TEMPORARY CONSTRUCTION LOADS AND LOADS EQUAL IN INTENSITY TO DESIGN LOADS. REMOVE TEMPORARY SUPPORTS WHEN PERMANENT STRUCTURAL STEEL, CONNECTIONS, AND BRACING ARE IN PLACE.	
14.	SITE TOUCH-UP AND REPAIR SHOP PRIMER AND GALVANIZED FINISHES AT BOLTS, WELDS AND BURNED OR SCRATCHED SURFACES USING SAME PRIMER AS APPLIED IN SHOP AND ZINC PAINT IN ACCORDANCE WITH ASTM A780-09.	
15.	THE QUALITY ASSURANCE LABORATORY WILL REVIEW MILL TEST REPORTS, PERFORM FABRICATOR'S PLANT CHECKS AND QUALITY ASSURANCE SAMPLING AND TESTING FOR STRUCTURAL STEEL ERECTION, PLUMBNESS, CONNECTIONS, REVIEW OF SHOP WELDING PROCEDURES, REPAIR CHECK OF STRUCTURAL STEEL MEMBER SIZES, CUT LENGTHS AND FIT UP, 100% VISUAL OF FIELD WELDS AND WORKMANSHIP, FABRICATOR CERTIFICATION BY CWB TO CSA W47.1, DIVISION 1 OR 2.1, AND INSTALLER CWB CERTIFICATION. QUALITY ASSURANCE TESTING SHALL BE PERFORMED BY A TECHNICIAN CERTIFIED BY CSA AND PAID FOR BY THE DEPARTMENT REPRESENTATIVE	
16.	GROUT UNDER COLUMNS SHALL BE NON-SHRINK, NON-STAIN AND PLACED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE MINIMUM COMPRESSIVE STRENGTH OF GROUT SHALL BE 30 MPa [4286 psi] AT 7 DAYS.	
2.	STEEL OPEN WEB STEEL JOISTS	
1.	DESIGN AND SUPPLY JOISTS INCLUDING JOISTS REQUIRING MODIFICATION BY THE MANUFACTURER TO SUPPORT NON-UNIFORM, UNEQUAL, OR SPECIAL LOADING CONDITIONS THAT INVALIDATE STANDARD LOAD AND WEIGHT TABLES.	
2.	DESIGN JOISTS AND ANCHORAGES FOR EXPECTED UPLIFT FORCES. LOADS INDICATED ON DRAWINGS ARE NOT FACTORED, UNLESS SPECIFICALLY INDICATED OTHERWISE.	
3.	UNLESS NOTED OTHERWISE, LIMIT LIVE LOAD DEFLECTION AND DEFLECTION DUE TO SPECIFIED TOTAL LOAD AS FOLLOWS: ROOF JOIST MAXIMUM LIVE LOAD DEFLECTION IS L/360. MAXIMUM TOTAL DEFLECTION FOR JOISTS IS L/240.	
4.	DESIGN AND DETAIL OF CONNECTIONS AND BEARINGS ARE NOT SHOWN ON THE DRAWINGS; THIS IS THE RESPONSIBILITY OF JOIST MANUFACTURER.	
5.	CONFIRM THAT THERE IS ADEQUATE CLEARANCE FOR DUCTS REQUIRED TO PASS THROUGH THE JOISTS BEFORE MANUFACTURE.	
6.	PROVIDE SHOP DRAWINGS USING CISC STANDARD DRAFTING PRACTICES; INDICATING LAYOUT, MARK, NUMBER, TYPE, LOCATION, AND SPACING OF JOISTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: JOINING AND ANCHORAGE DETAILS, BRACING, BRIDGING, ACCESSORIES; SPLICE AND CONNECTION LOCATIONS AND DETAILS; DEFLECTION AND CAMBER, AND ATTACHMENTS TO OTHER CONSTRUCTION, LOCATIONS AND DETAILS OF ANCHORAGE DEVICES AND BEARING PLATES EMBEDDED IN OTHER CONSTRUCTION; COMPREHENSIVE ENGINEERING ANALYSIS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER IN THE PROVINCE OF WORK RESPONSIBLE FOR ITS PREPARATION.	
7.	FABRICATE STEEL JOISTS AND ACCESSORIES IN ACCORDANCE WITH CAN/CSA S16-09 AND CAN/CSA S136-07 AND IN ACCORDANCE WITH REVIEWED SHOP DRAWINGS.	
8.	COMPLY WITH CSA W59, CSA W59S1 AND CWB REQUIREMENTS AND PROCEDURES FOR SHOP WELDING, APPEARANCE, QUALITY OF WELDS, AND METHODS USED IN CORRECTING WELDING WORK.	
9.	PROVIDE HOLES IN CHORD MEMBERS FOR CONNECTING AND SECURING OTHER CONSTRUCTION TO JOISTS.	
10.	PROVIDE TOP AND BOTTOM CHORD EXTENSIONS WHERE INDICATED AND AS NECESSARY FOR ERECTION.	
11.	PROVIDE DIAGONAL AND HORIZONTAL BRIDGING AND ANCHORAGES AS REQUIRED BY CAN/CSA S16-09.	
12.	BEAR JOIST SEATS 100mm [4"] ON STEEL SUPPORTS. FOR BEAMS ON WHICH JOISTS FRAME IN FROM ONE SIDE ONLY, LOCATE THE CENTRE OF THE BEARING SHOE WITHIN THE MIDDLE THIRD OF THE BEAM FLANGE.	
13.	TO ACCOMMODATE MISCELLANEOUS SUSPENDED EQUIPMENT, DESIGN ALL JOISTS TO CARRY AN ADDITIONAL SPECIFIED DEAD LOAD OF 2.2 kN [0.5 kip] FROM THE TOP OR BOTTOM CHORD AT ANY ONE PANEL POINT ALONG THE JOIST SPAN.	
14.	DESIGN JOISTS FOR ADDITIONAL PIPING AND LARGE MECHANICAL LOADS AS SHOWN ON THE DRAWINGS.	
15.	ERECT STEEL JOISTS AND BRIDGING IN ACCORDANCE WITH CAN/CSA S16-09 AND CSA S136-07.	
16.	HANDLE STEEL JOISTS TO AVOID DAMAGE; DO NOT USE JOISTS WITH BENT MEMBERS; HEAT STRAIGHTENING IS NOT PERMITTED.	
17.	DO NOT INSTALL JOISTS UNTIL SUPPORTING CONSTRUCTION IS IN PLACE AND SECURED.	
18.	OBTAIN DEPARTMENT REPRESENTATIVE ACCEPTANCE PRIOR TO FIELD CUTTING OR ALTERING OF JOISTS AND BRIDGING THAT ARE NOT SHOWN ON SHOP DRAWINGS.	
19.	SET SHOES LEVEL; WELD OR BOLT TO THE SUPPORTS.	
20.	BOLT JOISTS TO SUPPORTING STEEL FRAMEWORK USING CARBON STEEL BOLTS.	
21.	INSTALL AND CONNECT BRIDGING CONCURRENTLY WITH JOIST ERECTION, BEFORE CONSTRUCTION LOADS ARE APPLIED; ANCHOR ENDS OF BRIDGING LINES AT TOP AND BOTTOM CHORDS IF TERMINATING AT WALLS OR BEAMS.	
3.	METAL DECK	
1.	DELEGATED DESIGN PROFESSIONAL ENGINEER: THE PROFESSIONAL ENGINEER HIRED OR CONTRACTED TO THE FABRICATOR OR MANUFACTURER TO PRODUCE DELEGATED DESIGN SUBMITTALS AND SHOP DRAWINGS TO MEET THE REQUIREMENTS OF THE PROJECT, AND REGISTERED IN THE PROVINCE OF THE WORK, AND WHO IS NOT THE CONSULTANT.	
2.	DESIGN DECK OF A DEPTH AND MINIMUM BASE STEEL NOMINAL THICKNESS AS INDICATED ON THE DRAWINGS. INCREASE THICKNESS IF NECESSARY TO SUPPORT THE REQUIRED DEAD AND LIVE LOADS. MAXIMUM LIVE LOAD DEFLECTION (FOR FLOOR AND ROOF DECK) SHALL BE LESS THAN L/360 OF THE SPAN.	
3.	DESIGN DECK TO SUPPORT THE SUPERIMPOSED DEAD LOADS SHOWN ON THE DRAWINGS AND LIVE LOADS AS REQUIRED BY THE BUILDING CODE AND CURRENT SUPPLEMENTS (IF ANY).	
4.	GALVANIZED STEEL SHEET: COLD ROLLED SHEET STEEL IN ACCORDANCE WITH CAN/CSA S136-07 AND ASTM A653/A653M-11, STRUCTURAL STEEL (SS), GRADE 230 (33) HAVING Z275 (G90) ZINC COATING.	
5.	SIDELAP FASTENERS: CORROSION-RESISTANT, HEXAGONAL WASHER HEAD; SELF-DRILLING, CARBON-STEEL SCREWS, NO. 10 (4.8mm) [3/16"] MINIMUM DIAMETER.	
6.	WELD DECK THROUGH THE FLUTE CORRUGATIONS TO SUPPORTING STEEL, AS FOLLOWS UNLESS NOTED DIFFERENTLY ON DRAWINGS. ROOF DECK: -20mm [3/4"] DIAMETER FUSION WELDS IN [914/7"] PATTERN. REFER TO TYPICAL DETAIL [S06]. -BUTTON PUNCH SIDE LAPS AT [600] mm c/c [24"] MAXIMUM. COMPOSITE FLOOR DECK: -20mm [3/4"] DIAMETER FUSION WELDS IN [914/4"] PATTERN. REFER TO TYPICAL DETAIL [S06]. -BUTTON PUNCH SIDE LAPS AT [600] mm c/c [24"] MAXIMUM.	
7.	TOUCH UP WELDS WITH ZINC PAINT.	
8.	WHEREVER STRUCTURAL FRAMING PERMITS, SPAN THE DECK CONTINUOUSLY OVER 3 OR MORE SPANS.	
9.	PROVIDE CLOSURES AND FLASHINGS AT SLAB EDGES, WALLS, COLUMNS AND OPENINGS FOR COMPOSITE DECK.	
10.	PROVIDE COVER PLATES FOR ACCESS HOLES AND WHERE DECK UNITS ABUT OR CHANGE DIRECTION, AND WHERE NOTED SPECIFICALLY ON THE DRAWINGS.	
11.	PLACE DECK PANELS ON SUPPORTING FRAME AND ADJUST TO FINAL POSITION WITH ENDS ACCURATELY ALIGNED AND BEARING ON SUPPORTING FRAME BEFORE BEING PERMANENTLY FASTENED; DO NOT STRETCH OR CONTRACT SIDELAP INTERLOCKS. PLACE DECK PANELS FLAT AND SQUARE AND FASTEN TO SUPPORTING FRAME WITHOUT WARP OR DEFLECTION. CUT AND NEATLY FIT DECK PANELS AND ACCESSORIES AROUND OPENINGS AND OTHER WORK PROJECTING THROUGH OR ADJACENT TO DECKING.	
4.	METAL STAIR AND LANDING	
1.	RETAIN A PROFESSIONAL ENGINEER, REGISTERED IN THE PROVINCE OF WORK, TO DESIGN DETAILS AND CONNECTIONS OF STEEL STAIRS AND LANDINGS, AND ASCERTAIN THAT THE FOLLOWING WILL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE AND THE CONTRACT DOCUMENTS: SELECTION AND DESIGN OF CONNECTIONS NOT DETAILED ON THE CONTRACT DOCUMENTS; FABRICATION OF COMPONENTS; AND ERECTION OF THE WORK OF THIS SECTION.	
2.	DESIGN DETAILS AND CONNECTIONS IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA S16.1, AND APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION, AND TO RESIST FORCES, (MOMENTS AND, SHEARS) AND ALLOW FOR MOVEMENTS INDICATED.	
3.	DESIGN GRATINGS FOR 4.8 kPa [100 PSF] OR A CONCENTRATED LOAD OF 4.8 kN [1.1 kips] AT ANY POINT ON THE STANDARD GRATING WIDTH.	
4.	DESIGN STAIR AND LANDING SECTIONS, ATTACHMENTS AND CONNECTIONS, EXCEPT WHERE MEMBERS ARE SPECIFICALLY SIZED ON THE DRAWINGS, TO SUPPORT A MINIMUM LIVE LOAD OF 4.8 kPa [100 PSF] OR A CONCENTRATED LOAD OF 2.0 kN [0.45 kip] AT ANY POINT ON INDICATED TREAD WIDTHS IN ACCORDANCE WITH BUILDING CODE.	
5.	DESIGN RAILING ASSEMBLIES TO WITHSTAND A MINIMUM UNIFORM LOAD OF 0.75kN/m [51.4 PLF] OR A CONCENTRATED LOAD OF 1.0 kN [0.22 kip] AT ANY POINT APPLIED HORIZONTALLY TO TOP RAIL AND A MINIMUM OF 1.5 kN/m [100 PLF] APPLIED VERTICALLY TO TOP RAIL, WITH INDIVIDUAL ELEMENTS WITHIN THE ASSEMBLY DESIGNED FOR A CONCENTRATED LOAD OF 0.5 kN [0.11 kip] AT ANY POINT IN THE ELEMENT IN ACCORDANCE WITH THE BUILDING CODE.	
6.	PROVIDE SHOP DRAWINGS INCLUDING, BUT NOT BE LIMITED TO, THE FOLLOWING: SECTIONS AND PLANS OF STAIRS, RAILINGS AND LADDERS INDICATING DIMENSIONS AND ASSEMBLY OF COMPONENTS; INDICATE FASTENERS, WELDS AND CONNECTION DETAILS BETWEEN STRINGERS; TREADS; RISERS; HEADERS; NEWELS; PLATFORMS; STRUTS, COLUMNS AND HANGERS; RAILINGS; HANDRAILS; BRACKETS; REINFORCEMENTS; ANCHORS; AND WELDED AND BOLTED CONNECTIONS.	
7.	VERIFY DIMENSIONS BY FIELD MEASUREMENTS BEFORE FABRICATION AND INDICATE MEASUREMENTS ON SHOP DRAWINGS WHERE METAL FABRICATIONS ARE INDICATED TO FIT WALLS AND OTHER CONSTRUCTION.	
8.	ESTABLISH DIMENSIONS AND PROCEED WITH FABRICATING METAL FABRICATIONS WHERE FIELD MEASUREMENTS CANNOT BE MADE WITHOUT DELAYING THE WORK; ALLOW FOR TRIMMING AND FITTING.	
5.	STEEL CONSTRUCTION TOLERANCES	
1.	EDGE OF STEEL WALL SUPPORTS	
2.	MASONRY LINTELS - VERTICAL AND HORIZONTAL LOCATION ±12mm [1/2"]	
3.	OTHER TOLERANCES IN ACCORDANCE WITH CAN/CSA-S16-01 AND AS REQUIRED FOR ARCHITECTURALLY EXPOSED STEEL. REFER TO SPECIFICATION (05 70 00).	
6.	WIND LOAD BEARING (LIGHT GAUGE) STEEL STUD FRAMING	
1.	DELEGATED DESIGN PROFESSIONAL ENGINEER: PROFESSIONAL ENGINEER HIRED OR CONTRACTED TO FABRICATOR OR MANUFACTURER TO DESIGN SPECIALTY ELEMENTS, PRODUCE DELEGATED DESIGN SUBMITTALS AND SHOP DRAWINGS TO MEET REQUIREMENTS OF THE PROJECT; WHO IS REGISTERED IN THE PROVINCE OF THE WORK; AND NOT THE CONSULTANT.	
2.	DESIGN AND CONSTRUCTION OF LIGHT GAUGE STUDS TO CONFORM TO CAN/CGSB 7.1-98; LIGHTWEIGHT STEEL WALL FRAMING COMPONENTS, CSSBI 51-06; LIGHTWEIGHT STEEL FRAMING DESIGN MANUAL, CSSBI S5-04, GUIDE SPECIFICATION FOR WIND BEARING STEEL STUDS, CSSBI S8-04, GUIDE SPECIFICATION FOR LIGHTWEIGHT STEEL FRAMING AND CAN/CSA S136-07, COLD FORMED STEEL STRUCTURAL MEMBERS.	
3.	SUBMIT SHOP DRAWINGS CLEARLY INDICATING ALL CONSTRUCTION DETAILS INCLUDING CONNECTIONS AND ANCHOR REQUIREMENTS. INDICATE TYPE, SIZE AND SPACING OF FASTENING DEVICES. INDICATE DESIGN LOADS; INCLUDE SEAL AND SIGNATURE OF PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF THE WORK FOR SHOP DRAWINGS REQUIRING STRUCTURAL DESIGN.	
4.	DESIGN WALL FRAMING SYSTEM CAPABLE OF WITHSTANDING DESIGN LOADS WITHIN LIMITS AND UNDER DESIGN LOADS INDICATED ON DRAWINGS, AND AS FOLLOWS:  DEAD LOADS: WEIGHTS OF MATERIALS AND CONSTRUCTION AS SPECIFIED ON THE DRAWINGS.  WIND LOADS: WIND LOADS: Q(50) FOR DEFLECTION AND FOR STRENGTH, MODIFIED BY THE APPROPRIATE IMPORTANCE FACTOR, EXPOSURE, GUST EFFECT FACTORS, AND PRESSURE COEFFICIENTS (INTERNAL AND EXTERNAL) IN ACCORDANCE WITH COMMENTARY "I" OF THE NBC 2010 STRUCTURAL COMMENTARIES.  EARTHQUAKE LOADS: DESIGN PARAMETERS AS SPECIFIED ON THE DRAWINGS. DESIGN FRAMING SYSTEMS TO PROVIDE FOR MOVEMENT OF FRAMING MEMBERS WITHOUT DAMAGE OR OVERSTRESSING, SHEATHING FAILURE, CONNECTION FAILURE, UNDUE STRAIN ON FASTENERS AND ANCHORS, OR OTHER DETRIMENTAL EFFECTS WHEN SUBJECT TO A MAXIMUM AMBIENT TEMPERATURE CHANGE OF 70C.  DESIGN FRAMING SYSTEM TO MAINTAIN CLEARANCES AT OPENINGS, TO ALLOW FOR CONSTRUCTION TOLERANCES, AND TO ACCOMMODATE LIVE LOAD DEFLECTION OF PRIMARY BUILDING STRUCTURE UPWARD AND DOWNWARD MOVEMENT OF 25mm [1"]; OR LARGER GAP AS MAY BE REQUIRED TO ACCOMMODATE STRUCTURAL MOVEMENT.  DESIGN DEFLECTION DETAIL SO THAT FREE FLOATING VERTICAL MEMBERS ARE RESTRAINED FROM HORIZONTAL MOVEMENT BY MEANS OF CONTINUOUS BRIDGING, NESTED OR BOXED TRACKS, OR SLIDING OR FLEXIBLE WEB CONNECTIONS.  MAXIMUM ALLOWABLE DEFLECTION UNDER Q(50) SUSTAINED WIND LOADING (WITH THE APPROPRIATE IMPORTANCE FACTORS FOR ULS AND SLS SHALL BE AS FOLLOWS: BEHIND ALUMINUM COMPOSITE WALL PANELS AND DRYWALLED PARTITIONS - STUD DEFLECTION LIMITED TO L/360. BEHIND MASONRY VENEER - STUD DEFLECTION LIMITED TO L/480  ALLOW FOR MOVEMENT OF STRUCTURE; DESIGN LIGHTWEIGHT STEEL FRAMING END CONNECTIONS TO ACCOMMODATE FLOOR AND ROOF DEFLECTIONS SUCH THAT STUDS ARE NOT LOADED AXIALLY; LIMIT FREE PLAY AND MOVEMENT IN CONNECTIONS PERPENDICULAR TO THE PLANE OF FRAMING TO 0.50mm [0.02"] RELATIVE TO THE BUILDING STRUCTURE.	
5.	DESIGN CONNECTIONS BETWEEN LIGHT STEEL FRAMING MEMBERS USING BOLTS, WELDING OR SHEET METAL SCREWS.	
6.	THE INSTALLATION OF EXTERIOR STEEL STUD WALLS SHALL BE INSPECTED PERIODICALLY BY THE DELEGATED DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR COMPONENT SELECTION AND CONNECTION DESIGNS FOR CONFORMANCE TO SHOP DRAWINGS AND THE DESIGN INTENT. COPIES OF INSPECTION REPORTS SHALL BE FORWARDED TO DEPARTMENT REPRESENTATIVE AND THE TRADE CONTRACTOR RESPONSIBLE FOR THE WORK AND THE CONSTRUCTION MANAGER. PRIOR TO DECLARATION OF SUBSTANTIAL PERFORMANCE, DELEGATED DESIGN PROFESSIONAL ENGINEER SHALL SUBMIT A LETTER OF COMPLIANCE, SIGNED AND SEALED CONFIRMING THE COMPLETED WORK.	
SHORING NOTES:		
1.	EXISTING CONDITIONS ARE ASSUMED. SITE VERIFY ALL ASSUMED EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE DEPARTMENT REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK.	
2.	VISIT THE SITE AND THOROUGHLY FAMILIARIZE YOURSELF WITH THE EXISTING CONDITIONS BEFORE PROCEEDING WITH THE WORK. TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING STRUCTURE FROM DAMAGE DURING CONSTRUCTION.	
3.	THE SHORING CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN, REMOVE AND ASSUME ANY SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS INCLUDING SHORING REQUIRED FOR THE SAFE COMPLETE EXECUTION OF THE WORKS.	
4.	SHORING CONTRACTOR MUST PROVIDE SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENG. WHICH WILL INCLUDE LAYOUT, ELEVATIONS, SCHEDULES AND DETAILS AS REQUIRED FOR CONSTRUCTION.	
5.	FOR THE ENTIRE DURATION OF THE CONTRACT, MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT.	
6.	ACCESS OF HEAVY CONSTRUCTION EQUIPMENT AND ACCUMULATION OF CONSTRUCTION MATERIALS WITHIN THE WORK AREA ARE NOT PERMITTED, UNLESS SUCH HAVE BEEN CATERED FOR IN THE CONTRACTOR'S SHORING DESIGN.	
7.	ANY CONSTRUCTION SEQUENCE SHOWN OR IMPLIED ON THESE DRAWINGS SHALL BE PART OF THE TEMPORARY SHORING DESIGN AND ARE FOR THE CONTRACTOR'S CONSIDERATION ONLY.	
8.	SHORING CONTRACTOR TO BE RESPONSIBLE FOR CO-ORDINATION WITH MECHANICAL AND STRUCTURAL DRAWINGS AS TO DIMENSIONS AND ELEVATIONS, AND TO ENSURE NO INTERFERENCE WITH THE EXISTING PERMANENT AND PROPOSED CONSTRUCTION.	
9.	REFER TO THE GEOTECHNICAL REPORT AND / OR RETAIN A GEOTECHNICAL ENGINEER TO INVESTIGATE AND PROVIDE ALL NECESSARY DESIGN INFORMATION FOR THE DESIGN AND INSTALLATION OF THE REQUIRED SHORING.	
10.	SHORING CONTRACTOR TO BE RESPONSIBLE FOR SCOPE OF WORK AS DEFINED IN THE TENDER DOCUMENTS, BUT NOT LIMITED IN SCOPE TO THE FOLLOWING: a. CHECK ALL DIMENSIONS PRIOR TO INSTALLATION OF SHORING SYSTEM. b. LOCATE AND IDENTIFY ALL BURIED OR ABOVE GROUND SERVICES THAT MAY INTERFERE W/ INSTALLATION OF SHORING SYSTEM (INCLUDING ALL PUBLIC UTILITIES); PROVIDE CO-ORDINATION OF MECHANICAL & ELECTRICAL SERVICES WITH SHORING AND EXCAVATION WORK TO ENSURE NO DISRUPTION OF SERVICES. MAKE ADJUSTMENT TO SERVICES OR SHORING SYSTEM TO SUIT BEFORE PROCEEDING WITH INSTALLATION. REFER TO GEOTECHNICAL REPORT AND FIELD REVIEW. c. SURVEY OF EXISTING CONDITION OF ALL ADJACENT BUILDINGS PRIOR TO ANY EXCAVATING OR INSTALLATION OF SHORING, AND VERIFY FOUNDING LEVELS OF ADJACENT BUILDING FOOTINGSTO ENSURE NO DISRUPTION OF SERVICES. d. SHORE AND BRACE EXCAVATIONS, PROTECT SLOPES AND BANKS. PROTECT EXISTING ADJACENT STRUCTURES (WHICH INCLUDE BUT ARE NOT LIMITED TO ADJACENT EXISTING BUILDINGS AND SECURITY FENCES) AND PERFORM WORK IN ACCORDANCE WITH PROVINCIAL AND MUNICIPAL REGULATIONS, WHICHEVER IS MORE STRINGENT. EXCAVATIONS MUST BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (OHS) AND REGULATIONS FOR CONSTRUCTION PROJECTS. THESE REGULATIONS DESIGNATE FOUR BROAD CLASSIFICATIONS OF SOILS TO STIPULATE APPROPRIATE MEASURES FOR EXCAVATION SAFETY. WHERE WORKMEN MUST ENTER A TRENCH OR EXCAVATION CARRIED DEEPER THAN 1.2 M (4 FEET), THE TRENCH OR EXCAVATION MUST BE SUITABLY SLOPED AND/OR BRACED IN CCORDANCE WITH THE REGULATION REQUIREMENTS WHICH STIPULATE MAXIMUM SLOPES OF EXCAVATION BY SOIL TYPE. REFER ALSO TO GEOTECHNICAL REPORT e. MINIMUM SUPPORT SYSTEM REQUIREMENTS FOR STEEPER EXCAVATIONS ARE STIPULATED IN SECTION 234 THROUGH 242 OF THE ACT AND REGULATIONS AND INCLUDE PROVISIONS FOR TIMBERING, SHORING AND MOVEABLE TRENCHES f. ADEQUATE PROTECTION TO THE SHORING SYSTEM, BEAMS AND FOOTINGS OF ADJOINING BUILDINGS FROM THE EFFECTS OF WEATHER, INCLUDING FROST. g. VERIFY FOUNDING LEVELS OF ADJACENT BUILDING FOOTINGS WITH SHORING AND EXCAVATION WORK TO ENSURE NO DISRUPTION OF SERVICES. h. DEWATER AS REQUIRED.	
11.	SUPERVISION OF EXCAVATION AND BACKFILL SHALL BE COMPLETED BY OTHER PROFESSIONAL ENGINEERS RETAINED BY THE SHORING CONTRACTOR.	
EPOXY ADHESIVE ANCHOR MINIMUM REQUIREMENTS		
1.	ALL ANCHORS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS. ALL HOLES SHALL BE PROPERLY DRILLED AND CLEANED PRIOR TO INSTALLATION OF THE EPOXY ANCHORS. PROVIDE ADEQUATE CURING TIME (SEE MANUFACTURER'S RECOMMENDATIONS) PRIOR TO LOADING THE ANCHORS.	
2.	INFLUENCE FACTORS FOR SPACING AND/OR EDGE DISTANCES SHALL BE CONSIDERED IN SELECTING ANCHORS AND ANY REDUCTION IN STRENGTH TO BE CONSIDERED IN THE ANCHOR SELECTION.	
3.	THE ALLOWABLE 25 MPa CONCRETE/BOND CAPACITIES USING EPOXY ADHESIVE SHALL MEET THE FOLLOWING MINIMUM VALUES USING THREAD BARS OR RE-BARS:	
4.	10mm DIAMETER ANCHOR X 90mm EMBEDMENT TO HAVE 10KN TENSION AND 5 KN SHEAR CAPACITIES.	
5.	12mm DIAMETER ANCHOR X 120mm EMBEDMENT TO HAVE 20KN TENSION AND 10 KN SHEAR CAPACITIES.	
6.	16mm DIAMETER ANCHOR X 150mm EMBEDMENT TO HAVE 30KN TENSION AND 15 KN SHEAR CAPACITIES.	
7.	19mm DIAMETER ANCHOR X 175mm EMBEDMENT TO HAVE 40KN TENSION AND 20 KN SHEAR CAPACITIES.	
8.	22mm DIAMETER ANCHOR X 200mm EMBEDMENT TO HAVE 60KN TENSION AND 30 KN SHEAR CAPACITIES.	
9.	25mm DIAMETER ANCHOR X 230mm EMBEDMENT TO HAVE 70KN TENSION AND 40 KN SHEAR CAPACITIES.	
CONCRETE WEDGE ANCHOR MINIMUM REQUIREMENTS		
1.	USE CARBON STEEL ANCHORS WITH ZINC ELECTROPLATED COATING TO A MINIMUM THICKNESS OF 5µm. ALL ANCHORS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS. ALL HOLES SHALL BE PROPERLY DRILLED AND CLEANED PRIOR TO INSTALLATION OF THE ANCHORS.	
2.	INFLUENCE FACTORS FOR SPACING AND/OR EDGE DISTANCES SHALL BE CONSIDERED IN SELECTING ANCHORS AND ANY REDUCTION IN STRENGTH TO BE CONSIDERED IN THE ANCHOR SELECTION.	
3.	10mm DIAMETER ANCHOR X 70mm EMBEDMENT TO HAVE 8KN TENSION AND 5 KN SHEAR CAPACITIES.	
4.	12mm DIAMETER ANCHOR X 90mm EMBEDMENT TO HAVE 10KN TENSION AND 10 KN SHEAR CAPACITIES.	
5.	16mm DIAMETER ANCHOR X 110mm EMBEDMENT TO HAVE 15KN TENSION AND 20 KN SHEAR CAPACITIES.	
6.	19mm DIAMETER ANCHOR X 125mm EMBEDMENT TO HAVE 20KN TENSION AND 30 KN SHEAR CAPACITIES.	
7.	25mm DIAMETER ANCHOR X 150mm EMBEDMENT TO HAVE 30KN TENSION AND 40 KN SHEAR CAPACITIE	
MINIMUM SLAB REINFORCEMENT TABLE		
SLAB THICKNESS (mm)	INTERIOR SLABS (As = .002xAg)	EXTERIOR SLABS (As = .0025xAg)
≤100	10M @ 450	10M @ 400
100 - 125	10M @ 400	10M @ 320
126 - 150	10M @ 330	10M @ 265
151 - 175	10M @ 285	10M @ 225
176 - 200	10M @ 250	10M @ 400 (T&B)
201 - 250	10M @ 400 (T&B)	10M @ 320 (T&B)
251 - 300	10M @ 325 (T&B)	10M @ 265 (T&B)
TABLE NOTES:		
1.	PROVIDE MINIMUM REINFORCING EACH WAY IN SLABS AND TOPPINGS WITHOUT SPECIFIED REINFORCING.	
2.	PROVIDE MINIMUM REINFORCEMENT PERPENDICULAR TO PRINCIPAL REINFORCEMENT IN ALL SLABS. PLACE ALTERNATING TOP AND BOTTOM WHERE TOP REINFORCING SPECIFIED.	



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Do not scale drawings Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies		
	A detail no. no. du détail B drawing no. - where detail required dessin no. - où détail exigé C drawing no. - where detailed dessin no. - où détaillé	
project title titre du projet		
GRAND VALLEY INSTITUTION FOR WOMEN 1575 HOMER WATSON BLVD. KITCHENER, ONTARIO, N2P2C5		
PRINCIPAL ENTRANCE BUILDING		
drawing title titre du dessin		
GENERAL NOTES		
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designed by conc par	NM	
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