

1. GENERAL (V1.6, JUNE/2017)

1.1. DRAWINGS

- DESIGN AND CONSTRUCTION ARE IN ACCORDANCE WITH THE CURRENT ONTARIO BUILDING CODE.
- THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS WITH RESPECT TO SITE CONDITIONS AND ALL MATERIALS RELEVANT TO THE PROJECT. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MATERIAL RELEVANT TO THE PROJECT, INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
- ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE CONTRACT DOCUMENTS.
- SKETCHES OR REVISIONS MAY BE ISSUED TO ACCOMMODATE ELEVATOR AND CRANE SHOP DRAWINGS.
- DO NOT SCALE DRAWINGS.

1.2. SUBSTITUTION OF MATERIAL

- SUBSTITUTION OF MATERIALS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER. PROPOSED SUBSTITUTE MATERIAL SHALL BE SUBMITTED ALONG WITH ENGINEERING DATA FOR APPROVAL BEFORE BEING INSTALLED ON SITE. ALTERNATIVELY, THE SUBSTITUTE MATERIALS MAY BE CERTIFIED BY THE CONTRACTOR ENGINEER AS EQUAL TO THE MATERIAL SPECIFIED ON THE DRAWINGS.

1.3. CONSTRUCTION METHODS AND SEQUENCES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE METHODS AND SEQUENCES OF CONSTRUCTION. CONSTRUCTION SHALL MEET NECESSARY REQUIREMENTS FOR SAFETY AND GOOD WORKMANSHIP. WHEN NECESSARY, THE CONTRACTOR SHALL PROVIDE CERTIFICATION BY HIS ENGINEER THAT METHODS USED MEET THESE REQUIREMENTS.

2. STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL COMPLY WITH CANCSA-S16.1.
- STEEL PLATE SHALL BE GRADE A36 WITH $F_y = 248 \text{ MPa}$. HOLLOW SQUARE SECTION (HSS) SHALL BE GRADE G40.21M 350W WITH $F_y = 350 \text{ MPa}$.
- ALL OTHER STRUCTURAL STEEL SHALL BE GRADE G40.21M 350W WITH $F_y = 350 \text{ MPa}$.
- ANCHOR BOLTS SHALL COMPLY WITH A307 UNF.
- ALL OTHER BOLTS SHALL COMPLY WITH A325 UNF.
- WELDING SHALL COMPLY WITH CANCSA-W59.
- SHOP PAINT PRIMER SHALL COMPLY WITH CANCOSSB-IP-40M.
- ERECT STRUCTURAL STEEL ACCORDING TO CANCSA-S16.1, CSA S136, SHOP DRAWINGS AND APPLICABLE SAFETY CODES.

3. MASONRY

- MASONRY UNITS SHALL COMPLY TO CANCSA-165.1
- MASONRY AND GROUT WORK SHALL COMPLY TO CANCSA-A179
- CONCRETE BLOCK SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 20 MPa UNF.
- CONTROL JOINTS SHALL BE PROVIDED AT MAXIMUM 9.0m INTERVALS UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
- CONTROL JOINTS SHALL NOT BE LOCATED WITHIN 600mm OF ANY CONCENTRATED LOAD.
- MORTAR FOR EXTERIOR MASONRY:
 - LOAD BEARING: TYPE S
 - NON-LOAD BEARING: TYPE N
 - PARAPET/UNPROTECTED WALLS: TYPE S
- CRACK: 20 MPa MIN
- BOND: RUNNING
- STRETCHER:
- CUT OUT PER NAIL FOR ELECTRICAL SWITCHES, OUTLET BOXES, AND OTHER RECEIPTS OR BUILT-IN OBJECTS.
- CONCRETE BLOCK REINFORCEMENT

BLOCK WIDTH	HOR. REINFORCEMENT	VERT. REINFORCEMENT
150 mm	HMR @ 400 c/c	1-15M @ 200 c/c
190 mm	HMR @ 400 c/c	1-19M @ 1200 c/c
240 mm	HMR @ 400 c/c	1-23M @ 1200 c/c

 - SMR = STANDARD MASONRY REINFORCEMENT 2 - 9 GAUGE (3.75 mm) LONGITUDINAL WIRES, 9 GAUGE CROSS OR DIAGONAL WIRES
 - HMR = HEAVY DUTY MASONRY REINFORCEMENT 2 - 7 GAUGE (4.75 mm) LONGITUDINAL WIRES, 9 GAUGE CROSS OR DIAGONAL WIRES

4. WOOD BEARING WALLS

- UNLESS OTHERWISE NOTED ON DRAWINGS THE LUMBER MATERIAL SHALL BE SPF SPECIES, NO. 2 GRADE, SOFTWOOD, AND S4S:
 - KLN DRIED SAWN LUMBER - 12% MAXIMUM MOISTURE CONTENT AT THE TIME OF DELIVERY TO THE PROJECT SITE.
 - WOOD FRAMING MATERIALS SHALL BE PREPARED IN A MANUFACTURING PROCESS. THIS INCLUDES PLYWOOD, LVL, LUMBER, PARALLEL JOISTS AND SIMILAR PRODUCTS. PROVIDER FOR MOISTURE CONTROL ON THE DELIVERED WOOD PRODUCT NOT EXCEEDING 12%.
 - ENDS OF MEMBERS SHALL BE COATED OR OTHERWISE PROTECTED FROM MOISTURE ABSORPTION DURING STORAGE, HANDLING AND INSTALLATION UNTIL PROTECTED FROM THE ENVIRONMENT BY WATER TIGHT CONSTRUCTION.
 - BEAMS AND COLUMNS SHALL BE WRAPPED FOR WEATHER PROTECTION DURING STORAGE AND HANDLING AND INSTALLATION UNTIL PROTECTED FROM THE ENVIRONMENT BY WATER TIGHT CONSTRUCTION.
- COLUMNS, BEAMS, FLOORS, AND FASTENINGS SHALL COMPLY WITH CANCSA-086.1
- LUMBER SHALL BE IDENTIFIED BY GRADE STAMP OF AN AGENCY CERTIFIED BY THE CANADIAN LUMBER STANDARDS ADMINISTRATION BOARD.

5. WINDOW / CURTAIN WALLS

- WINDOW WALL SYSTEM SHALL BE DESIGNED TO SUPPORT WIND LOADS PRESCRIBED BY THE ONTARIO BUILDING CODE WITH MAXIMUM DEFLECTION OF $L/200$.
- MULLION SECTIONS SHALL BE IN ACCORDANCE WITH CANCSA-S17 "STRENGTH DESIGN IN ALUMINIUM".
- GLASS SHALL CONFORM TO CANCOSSB-12.20 "STRUCTURAL DESIGN FOR GLASS BUILDINGS".
- CURTAIN WALL WINDOWS & PUNCHED WINDOWS HAVING A SILL LESS THAN 107mm FROM FLOOR LEVEL SHALL BE DESIGNED TO SUPPORT LOADS IN ACCORDANCE WITH ONTARIO BUILDING CODE (LOADS FOR GUARDS).
- ALL MULLIONS SHALL CARRY DOWNUP TO CONCRETE FLOOR/CEILING FOR CONNECTION.
- SHOP DRAWINGS INCLUDING MULLIONS AND CONNECTIONS SHALL BE SUBMITTED AND BEAR THE STAMP OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.
- A FINAL REPORT IS TO BE SUBMITTED SPECIFYING THAT STRUCTURAL CURTAIN WALLS HAVE BEEN INSPECTED AND INSTALLED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS BEARING THE STAMP OF A PROFESSIONAL ENGINEER IN ONTARIO.

6. GUARDS

- GUARDS AT STAIRS, BALCONIES, WALLS ACTING AS GUARDS AND HANDRAILS SHALL BE DESIGNED BY MANUFACTURER AND INSTALLED TO MEET O.B.C. 4.1.5.14, 4.1.5.19, AND 3.4.5.1(5). MANUFACTURER TO SUBMIT P.ENG. CERTIFIED SHOP DRAWINGS FOR CONSULTANT REVIEW.

7. PRE-ENGINEERED WOOD JOISTS, TRUSSES AND BEAMS

- MATERIAL:
 - SOFTWOOD LUMBER: CANCSA-O141
 - O.S.B.: CANCSA-O325
 - GYP-SUM BOARD: ASTM-C26
 - PLYWOOD: CANCSA-O151
 - L.V.L. BEAMS: TYPE 1.0E MICROLAM OVER LVL
- LUMBER SHALL BE IDENTIFIED BY GRADE STAMP OF AN AGENCY CERTIFIED BY THE CANADIAN LUMBER STANDARDS ADMINISTRATION BOARD.
- UNLESS OTHERWISE SPECIFIED, SOFTWOOD LUMBER SHALL BE S4S WITH MOISTURE CONTENT OF 12% OR LESS AT TIME OF FABRICATION AND IN ACCORDANCE TO CANCSA-O141 AND NATIONAL LUMBER GRADING ASSOCIATION (NLGA) STANDARD GRADING RULES FOR CANADIAN LUMBER.
- TRUSSES SHALL BE STORED ON JOB SITE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PROVIDE BEARING SUPPORTS AND BRACING TO PREVENT BENDING, WARPING AND OVERTURNING OF TRUSSES.

5. ANY WOOD STRUCTURE GREATER THAN 3 STOREYS SHALL HAVE LVL (1.3E) DOUBLE TOP PLATE IN PLACE OF DIMENSIONAL LUMBER.

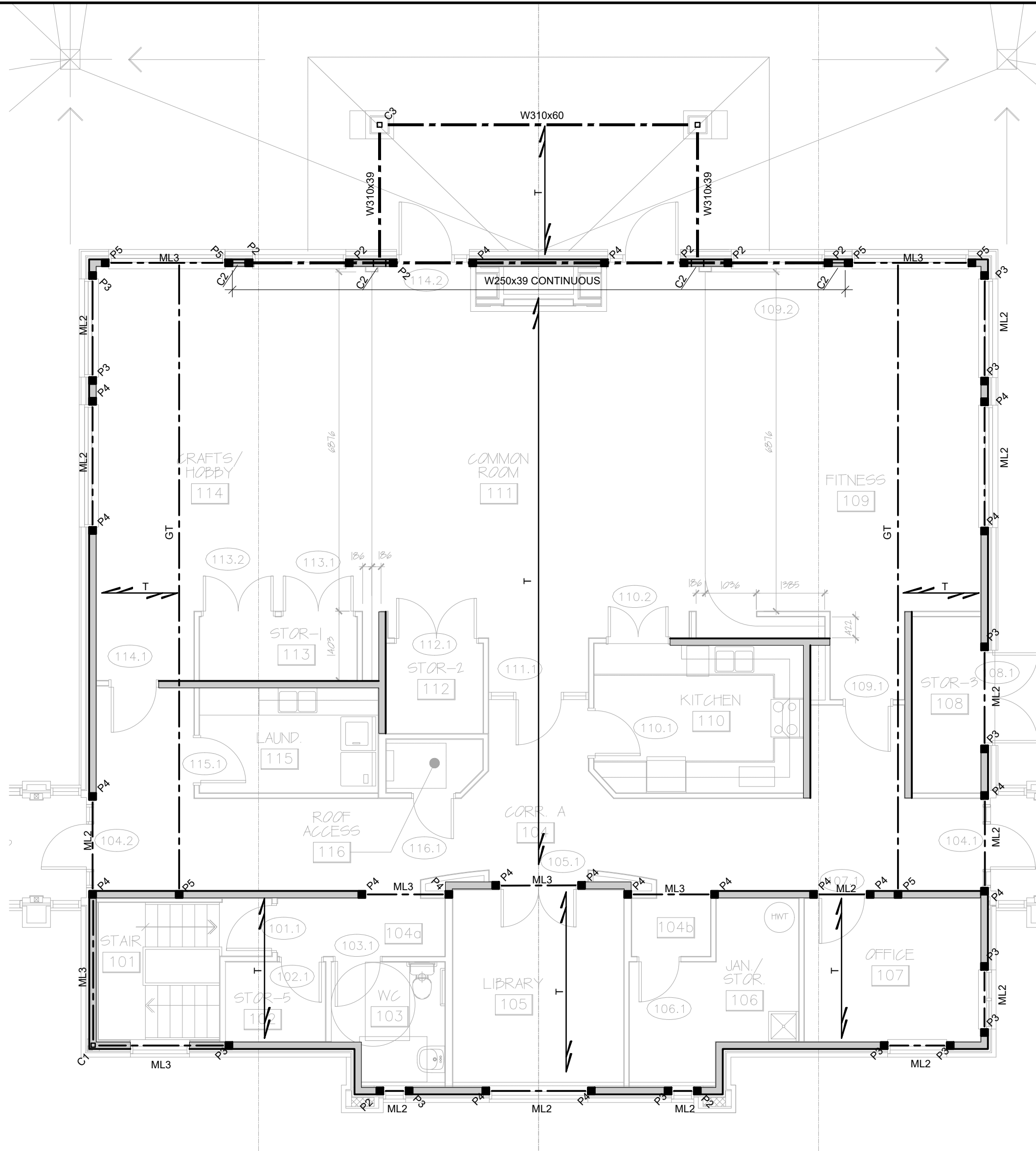
6. ROOF TRUSSES TO BE ANCHORED TO STRUCTURE TO RESIST WIND UPLIFT IN ACCORDANCE WITH O.B.C.

8. SHOP DRAWINGS

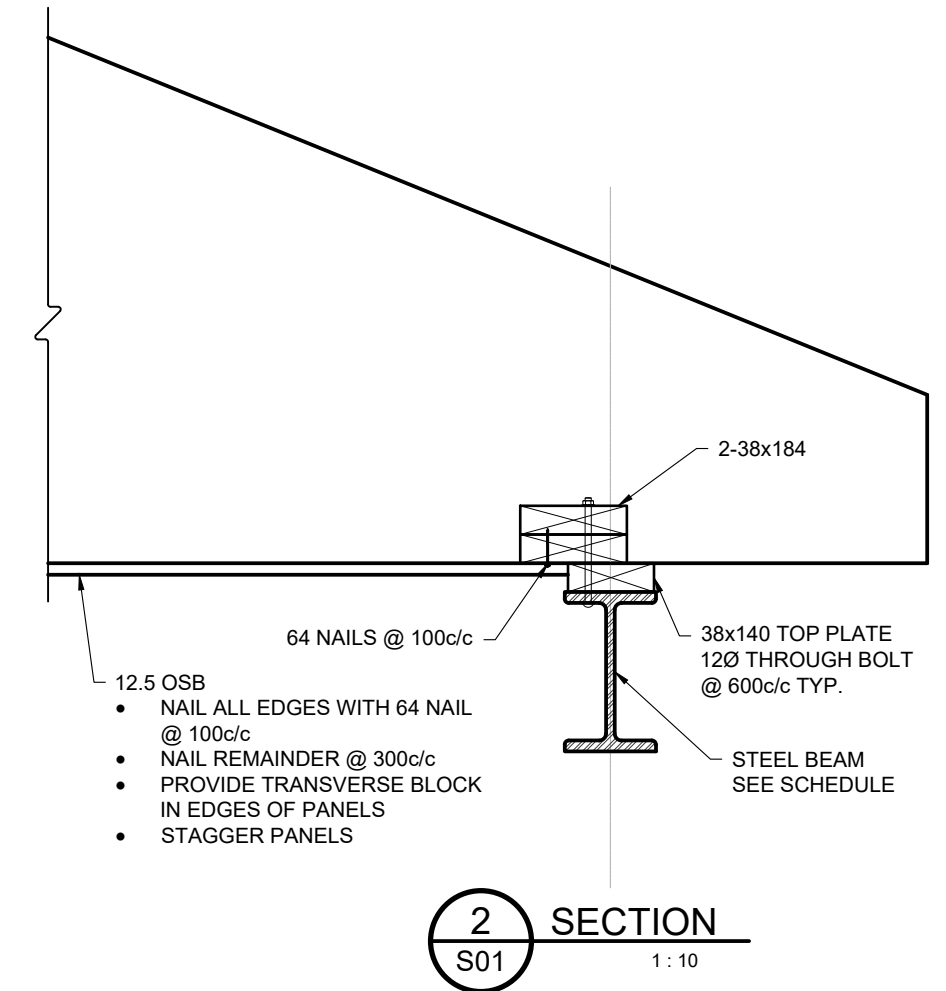
- SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE STRUCTURAL ENGINEER'S OFFICE PRIOR TO COMMENCEMENT OF INSTALLATIONS.
- STRUCTURAL ENGINEER'S OFFICE SHALL BE GIVEN 10 WORKING DAYS TO REVIEW AND RETURN DRAWINGS.
- THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED BEARING AN ONTARIO P. ENG. STAMP:
 - STEEL ERECTION DRAWINGS
 - STEEL CONNECTIONS, BRACE FRAME AND MOMENT CONNECTIONS DETAILS
 - OPEN WEB STEEL JOIST (OWS) AND THE JOISTS DESIGN DRAWINGS
 - STEEL STUD DRAWINGS ALONG WITH MASONRY CONNECTORS
 - RAILING DRAWINGS
 - GUARDRAIL DRAWINGS
 - STEEL STAIR DRAWINGS
 - CURTAIN WALL/WINDOW WALL SHOP DRAWINGS
 - PRE-ENGINEERED JOISTS, TRUSSES AND BEAMS INCLUDING:
 - STRESS DIAGRAM OR PRINTOUT OF COMPUTER DESIGN INDICATING LOAD FOR EACH TRUSS MEMBER, INDICATE ALLOWABLE LOAD AND STRESS INCREASE.
 - JOIST AND/OR TRUSSES SIZE AND LAYOUT
 - BRIDGING AND BLOCKING REQUIREMENTS
 - JOIST HANGER DESIGN
 - ARRANGEMENT OF WEBS OR OTHER MEMBERS TO ACCOMMODATE DUCTS AND OTHER SPECIALTIES.
 - LIFTING POINTS FOR STORAGE, HANDLING, AND ERECTION.
 - LOCATION OF LATERAL BRACING FOR COMPRESSION MEMBERS
- THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED WITH OR WITHOUT P. ENG. STAMP:
 - CONCRETE REINFORCING DRAWINGS TO SCHEMATICALLY AND NUMERICALLY SPECIFY INSTALLATION AND GEOMETRY, INCLUDING ILLUSTRATED BAR LENGTHS AND STEEL PLACEMENT. DRAWINGS SHALL BE TO SCALE.
 - ELEVATOR DRAWINGS

9. LEGEND

- B = BOTTOM
- BP1 = COLUMN BASE PLATE NUMBER
- BL = BOTTOM LOWER LAYER
- B.O. = BOTTOM OF
- BLU = BOTTOM UPPER LAYER
- C1 = COLUMN NUMBER
- CL = CENTERLINE
- E/E = EACH END
- E/F = EACH FACE
- OF = OUTSIDE FACE
- ES = EACH SIDE
- EW = EACH WAY
- IF = INSIDE FACE
- F1 = FOOTING NUMBER
- H = HORIZONTAL
- OC = ON CENTRE
- PC = PILECAP
- RD = ROOF DRAIN
- RA = ROOF ANCHOR
- SC1 = STEEL COLUMN NUMBER
- T = TOP
- T.L. = TOP LOWER LAYER
- T.O. = TOP OF
- T.U. = TOP UPPER LAYER
- UN = UNLESS NOTED OTHERWISE
- US = UNDERSIDE
- V = VERTICAL



GROUND FLOOR BACKGROUND with ROOF FRAMING



ROOF DIAPHRAGM

- 12.5mm OSB DIRECTLY FASTENED TO US TRUSSES ON INTERIOR ONLY
- NAIL ALL EDGES WITH 64 NAIL @ 100c/c
- NAIL REMAINDER @ 300c/c
- PROVIDE TRANSVERSE BLOCK IN EDGES OF PANELS
- STAGGER PANELS

STEEL COLUMN SCHEDULE

MARK	SIZE	BEARING PLATE
C1	HSS 89x89x6.4 EXISTING COLUMN	EXISTING
C2	W250x39	BPL 2
C2	HSS 102x102x6.4 (A500)	BPL 3

WOOD POSTS
SPF SELECT STRUCTURAL

MARK	SIZE
P2	2 - 2"x6" (2-38x140)
P3	3 - 2"x6" (3-38x140)
P4	4 - 2"x6" (4-38x140)
P5	5 - 2"x6" (5-38x140)

*IF COLUMN DAMAGED AT ANY POINT ALONG LENGTH REPAIR OR REPLACE AFFECTED PORTION. WELD NEW 150x150x6 SADDLE BRACKETS TO SUPPORT NEW ML3 BEAM

ROOF FRAMING SCHEDULE

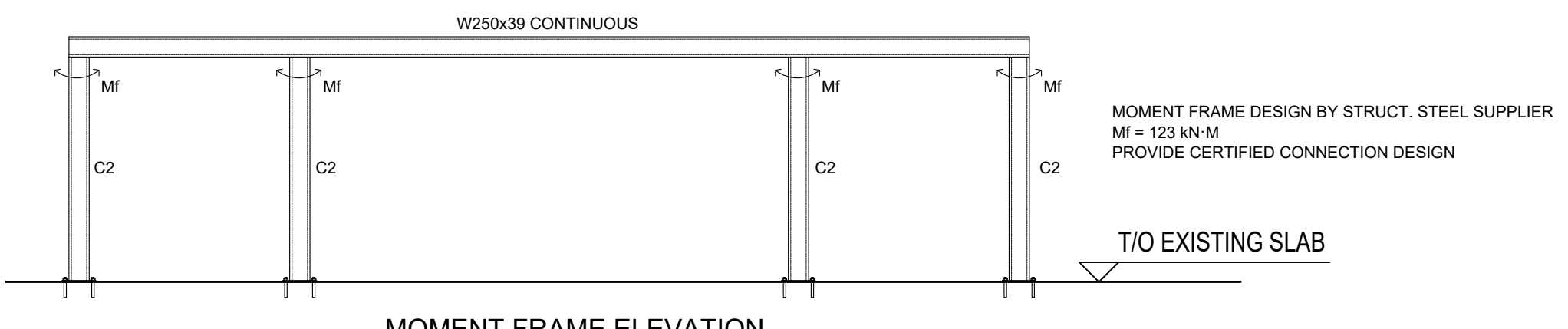
MARK	SIZE
T	PRE-ENGINEERED TRUSSES @ 610c/c
GT	PRE-ENGINEERED GIRDER TRUSS

MICROLAM LVL SCHEDULE
(2.0 E)

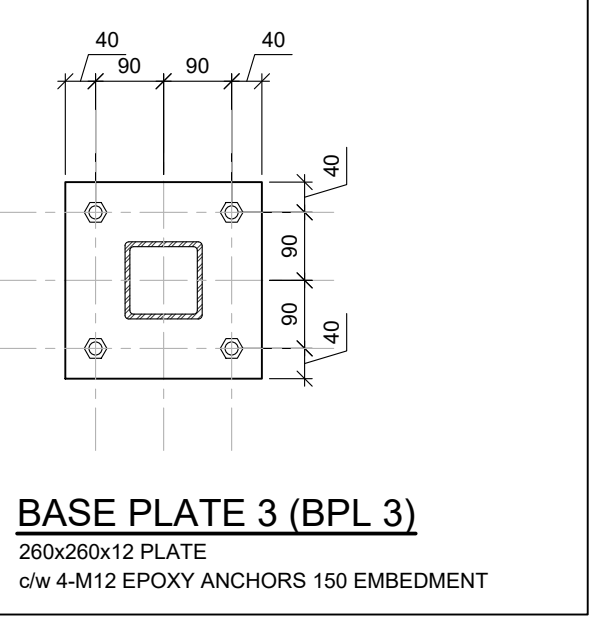
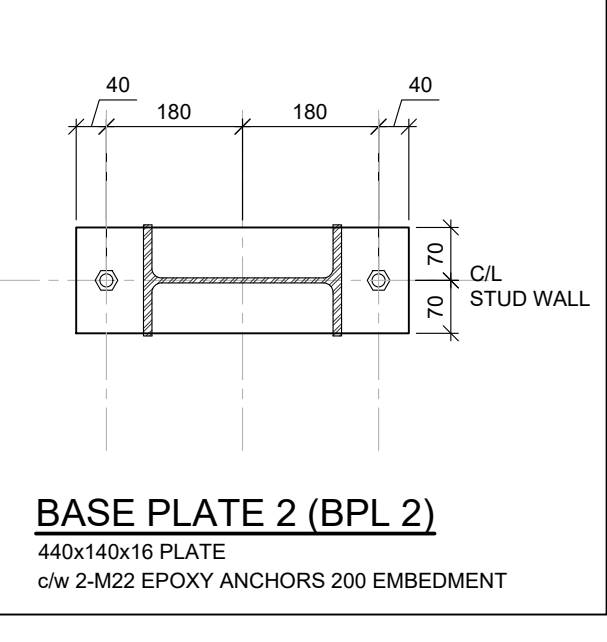
MARK	SIZE
ML2	2PLY 1 1/2"x6 3/4" LVL (2 - 44x241)
ML3	3PLY 1 1/2"x6 3/4" LVL (3 - 44x241)

WALLS SCHEDULE

WALL TYPE	STUD	SHEATHING
INTERIOR BEARING WALL	2"x6" @ 16" c/c (38x140 @ 406c/c) SELECT STRUCT. SPF	15.5mm OSB DIRECTLY NAILED TO STUDS • @ 3"(76) NAILS @ 75mm c/c ALONG ALL PANELS EDGE • @ 3"(76) NAILS @ 150c/c ALONG INTERMEDIATE STUDS + GYPSUM PER ARCH'L WGS
EXTERIOR BEARING WALL	2"x6" @ 16" c/c (38x140 @ 406c/c) SELECT STRUCT. SPF	11mm OSB DIRECTLY NAILED TO OUTSIDE FACE OF STUDS • @ 3"(76) NAILS @ 75mm c/c ALONG ALL PANELS EDGE • @ 3"(76) NAILS @ 150c/c ALONG INTERMEDIATE STUDS + GYPSUM PER ARCH'L WGS
NON-BEARING WALL	44x89 LSL @ 16"(406) c/c	GYPSUM PER ARCH'L DWGS



MOMENT FRAME ELEVATION



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- DO NOT SCALE DRAWINGS.

NO.	REVISION	DATE
3	ISSUED FOR TENDER	FEB. 2/19
2	ISSUED FOR PERMIT	FEB. 11/19
1	ISSUED FOR COORDINATION	FEB. 06/19

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Drawing: **ROOF FRAMING**

Client: **BARRY J. HOBIN AND ASSOC. ARCHITECTS**

Project: **NEW COMMUNITY BUILDING TO REPLACE FIRE DAMAGED BUILDING**

Drawn: T.M./Y.L. | Checked: P.A.G.
Date: 02/25/2019
Scale: 1:75 / U.N.
Project Number: 18-085
SHEET: **S01**