

FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

NOTES:

1. SEE ARCHTL DRAWINGS FOR DIMENSIONS, ELEVATIONS AND SLOPES.
2. SEE ALSO " GENERAL NOTES" AND TYPICAL DETAILS ON DRAWING S4 & S5.

ASSUMED SOIL BEARING CAPACITY OF 100 KPa (SL5) & 150 KPa. (UL5) AND ASSUMED SEISMIC SITE CLASS TO BE CONFIRMED ON SITE BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

STRIP FOOTING SCHEDULE

MARK	SIZE	NOTES
SF1	1'-8" X 8" DP. + 2-15M CONT.	PROVIDE DOWELS TO MATCH WITH WALL ABOVE VERTICALS (SEE SECTIONS)
SF2	2'-0" X 8" DP. + 3-15M CONT.	PROVIDE DOWELS TO MATCH WITH WALL ABOVE VERTICALS (SEE SECTIONS)

WOOD LINTEL SCHEDULE

MARK	SIZE	BEARING PLATE	NOTES
L1	2-2X10		PROVIDE MIN. 4" BEARING ON SPF. POSTS
L2	3-2X12		PROVIDE MIN. 4" BEARING ON SPF. POSTS

WOOD POST SCHEDULE

MARK	SIZE	NOTES
P1	3-2X6 { 2 BEARING + 1 JACK }	NAILED
P2	3-2X6 { 3 BEARING }	NAILED
P3	4-2X6 { 3 BEARING + 1 JACK }	NAILED

WOOD SHEARWALL SCHEDULE

MARK	SIZE	NOTES U.N.O.
SW1	1/2" EXTERIOR GRADE PLYWOOD SHEATHING + 2 X 6 @ 16" C/C MAX. STUD WALL + 1/2" GWB TYPE 'X'	1. PROVIDE BLOCKING AT ALL UNSUPPORTED EDGES. 2. NAIL PLYWOOD SHEATHING MEMBERS WITH 0.131" DIA X Ø 2 1/2" LONG COMMON NAILS AT 6" C/C MAXIMUM ALONG PANEL EDGES AND AT 12" C/C MAXIMUM AT INTERMEDIATE SUPPORTS AT PANEL EDGES 3. NAIL SHEATHING TO EVERY WALL STUD AND PLATE. 4. SEE ALSO GENERAL NOTES.

CONCRETE FOUNDATION WALL SCHEDULE

MARK	SIZE	NOTES
FW1	8" THK. R/W 10M @ 16" C/C VERT. & HORZ. AT CENTRE OF WALL + 2-15M @ TOP & BOTTOM.	SEE ALSO SECTION

STEEL LINTEL SCHEDULE

MARK	SIZE	BEARING PLATE	NOTES
SL1	W200X27+225 X 8 THK. CONT. WELDED BOTTOM PLATE.	PROVIDE BEARING PLATE BPL1 AT E/E	(PROVIDE MIN. 200 BEARING @ E/E

BEAM BEARING PLATE SCHEDULE

MARK	SIZE	ANCHORS	NOTES:
BPL1	12" X 1/2" X 9" 12" 1 5/8" 1 1/2"	2- 3/8" Ø X 8" LONG WELDED ANCHORS	PROVIDE 16" X 10" DP. CONCRETE PAD AT BEARING PLATE LOCATIONS-TYP.

ISSUED FOR PERMIT & TENDER	JUNE 20/25	D.K
ISSUED FOR CLIENT REVIEW	MAY 09/25	D.K
No.	REVISION	DATE BY

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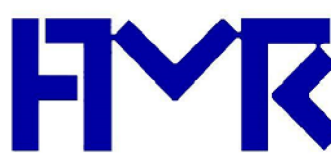
CLIENT: WILCOX ARCHITECTS INC.
74 LINDSAY ST. S. LINDSAY, ONT.

PROJECT:

CKL KINMOUNT FIRE HALL
EXPANSION & RENOVATIONS

24 MAJESTIC STREET, KINMOUNT, ONTARIO

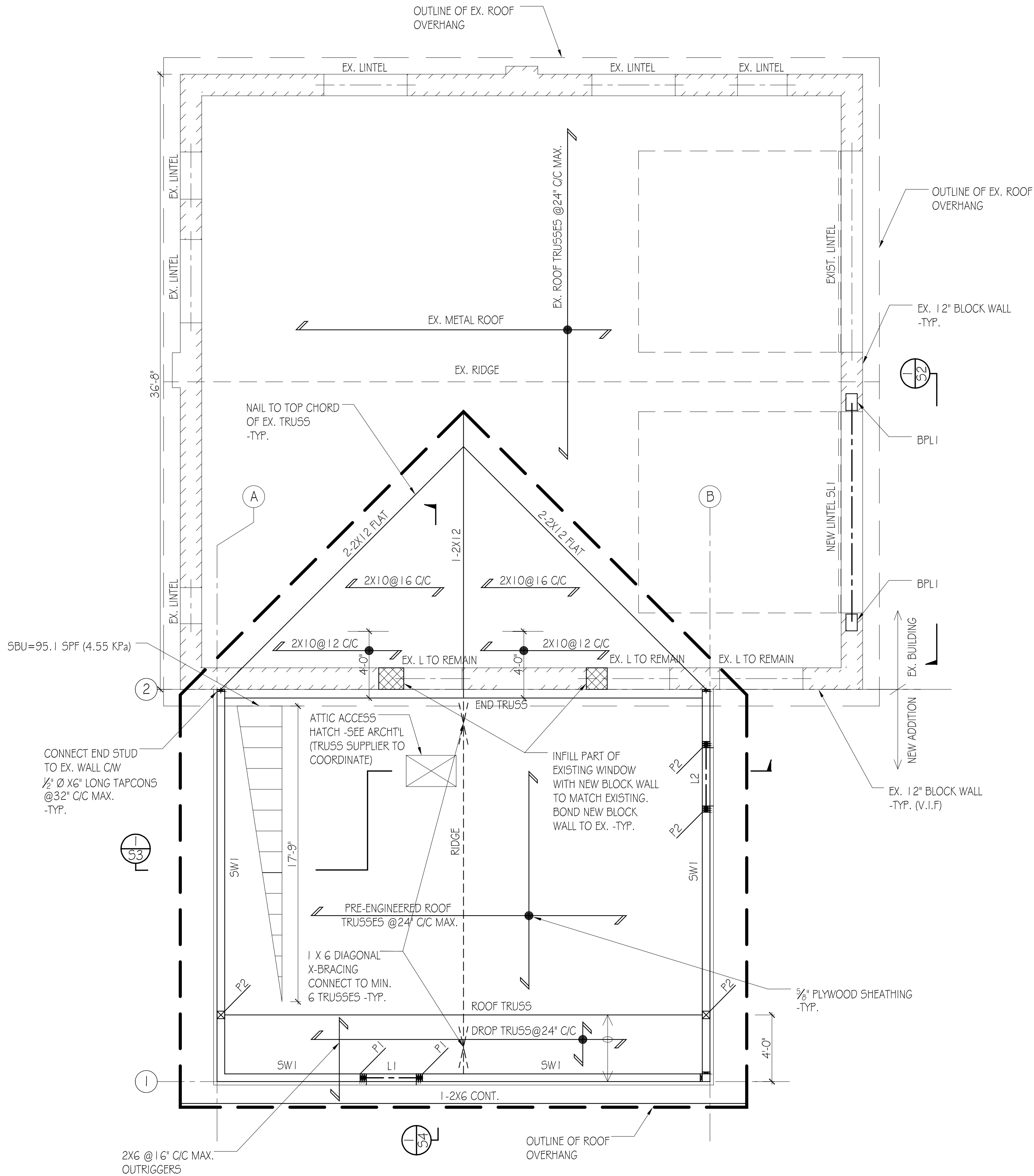
DRAWING:
FOUNDATION PLAN AND SCHEDULES



AMR ENGINEERING LTD.
STRUCTURAL ENGINEERS
920 ALNESS STREET, SUITE 205
TORONTO, ON M3J 2H7
(416) 551-1611



DRAWN BY:	M.K.	AMR PROJECT No.
CHECKED BY:	D.K.	25-2309
DATE:	JUNE 20/25	DWG. No.
SCALE:	AS NOTED	S1 OF 5



ROOF FRAMING PLAN

SCALE: $\frac{1}{4}" = 1'-0"$

NOTES :

- SEE ARCHTL DRAWINGS FOR DIMENSIONS AND ROOF SLOPES.
- SEE ALSO SCHEDULES, GENERAL NOTES AND TYPICAL DETAILS ON DRAWINGS S5.
- BUILDING IMPORTANCE CATEGORY (SNOW, WIND, AND EARTHQUAKE) IS POST DISASTER.
($I_w=1.25$, $I_s=1.25$, $I_e=1.5$)
- STIFF ELEMENTS NOT PART OF SFRS SHALL BE SEPARATED FROM THE STRUCTURE AS PER OBC CLAUSE 4.1.8.3. (6a). EXAMPLES INCLUDE BUT NOT LIMITED TO MASONRY PARTITIONS, BRICK VENEER, PRECAST CLADDING ETC. IT IS RESPONSIBILITY OF THE SUBCONTRACTOR TO PROVIDE SHOP DRAWINGS, STAMPED, SIGNED AND DATED BY AN PROFESSIONAL ENGINEER DEMONSTRATING COMPLIANCE. PROVIDE MINIMUM 15mm SEPARATION UNLESS NOTED OTHERWISE.

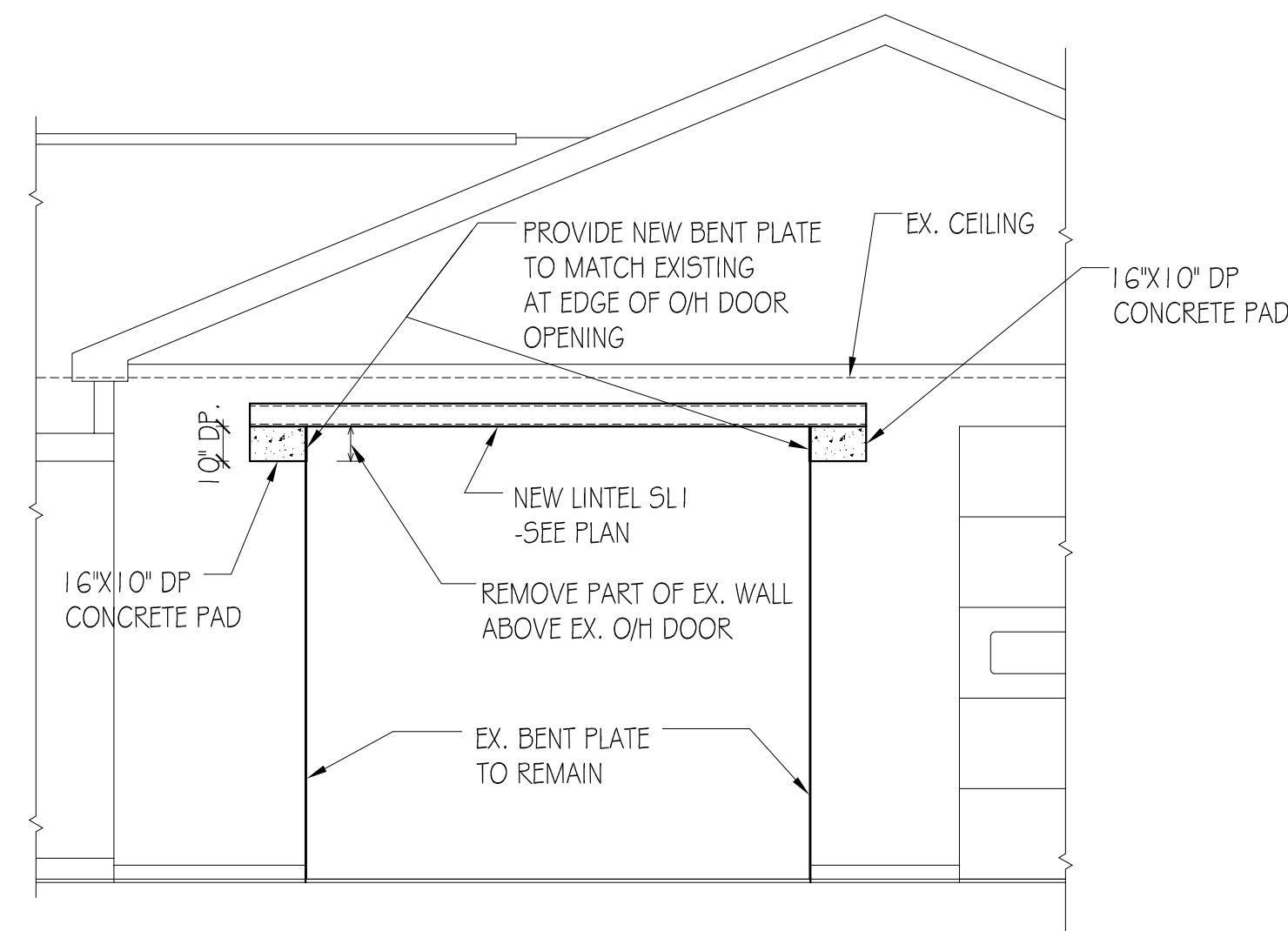
DESIGN LOADS FOR ROOF TRUSSES

TOP CHORD:	LIVE LOAD	= 66.9 PSF
	DEAD LOAD	= 7.0 PSF
BOTTOM CHORD:	LIVE LOAD	= 10.0 PSF
	DEAD LOAD	= 8.0 PSF
TOTAL LOAD		= 91.9 PSF
DESIGN TRUSS FOR WIND UPLIFT AS PER WIND UPLIFT DIAGRAM B/52		

NOTE:

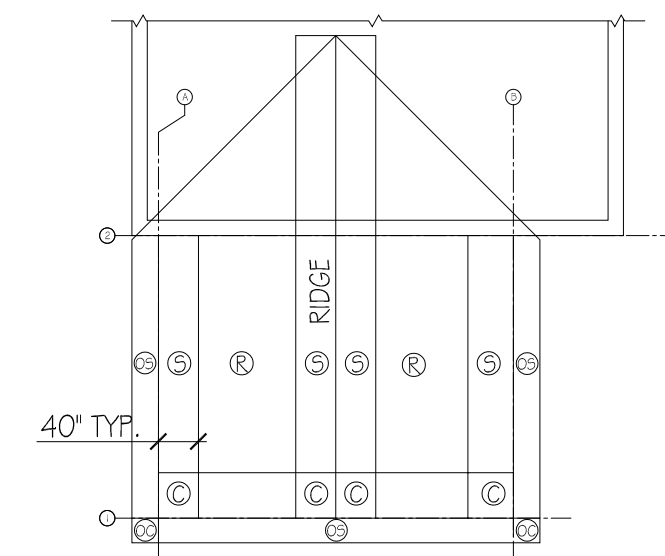
$I_s(0.2)=0.47>0.35$, SEISMIC CATEGORY SC3 (POST-DISASTER)

IT IS THE RESPONSIBILITY OF THE CONTRACTOR WHO IS SUPPLYING AND INSTALLING EQUIPMENT, THAT ALL ELEMENTS OF STRUCTURES LISTED IN TABLE 4.1.8.18 THE OBC 2024 ARE DESIGNED IN ACCORDANCE WITH CLAUSE 4.1.8.18
CONTRACTOR TO PROVIDE SHOP DRAWINGS STAMPED, SIGNED AND DATED BY PROFESSIONAL ENGINEER FOR CONNECTION OF THESE ITEMS.



EAST ELEVATION

SCALE: $\frac{1}{2}" = 1'-0"$



ROOF WIND UPLIFT (GROSS) DIAGRAM

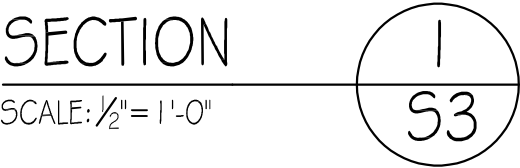
SCALE: $\frac{1}{8}" = 1'-0"$

NOTES:

C = 2.20 KPa
S = 1.70 KPa
R = 1.21 KPa
OC = 2.76 KPa
OS = 2.20 KPa

FOR CALCULATION OF NET UPLIFT ROOF
DEAD LOAD FOR ROOF = 0.50 KPa

	ISSUED FOR PERMIT & TENDER	JUNE 20/25	D.K
	ISSUED FOR CLIENT REVIEW	MAY 09/25	D.K
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CLIENT: WILCOX ARCHITECTS INC. 74 LINDSAY ST. S. LINDSAY, ONT.			
PROJECT:			
CKL KINMOUNT FIRE HALL EXPANSION & RENOVATIONS			
24 MAJESTIC STREET, KINMOUNT, ONTARIO			
DRAWING: ROOF FRAMING PLAN & WIND UPLIFT DIAGRAM AND ELEVATION			
 AMR ENGINEERING LTD. STRUCTURAL ENGINEERS 920 ALNESS STREET, SUITE 205 TORONTO, ON M3J 2H7 (416) 551-1611		 REGISTERED PROFESSIONAL ENGINEER 25-2309 D. KOTOBELLI PROVINCE OF ONTARIO	
DRAWN BY:	M.K.	AMR PROJECT No.	
CHECKED BY:	D.K.	25-2309	
DATE:	JUNE 20/25	DWG. No.	
SCALE:	AS NOTED	S1	OF 5

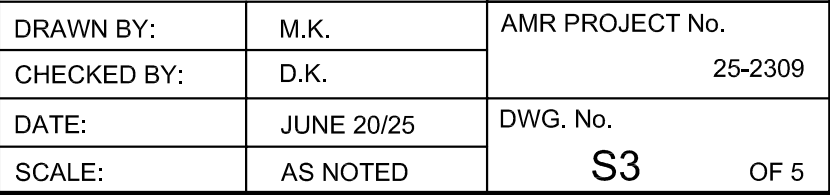


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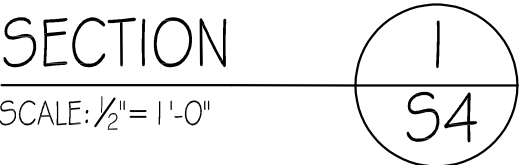
PROJECT: _____

24 MAJESTIC STREET, KINMOUNT, ONTARIO

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LIST OF STRUCTURAL DRAWINGS

S1. FOUNDATION PLAN, SECTIONS AND SCHEDULE.
S2. ROOF FRAMING PLAN & GROSS WIND UPLIFT DIAGRAM.
S3. GENERAL NOTES & TYPICAL DETAILS.
S4. GENERAL NOTES & TYPICAL DETAILS.

DESIGN CODE

1. THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE ONTARIO BUILDING CODE 2024 WHICH IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2020.

GENERAL NOTES

1. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS' COLUMN.
2. THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.
3. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
4. "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF AMR ENGINEERING LIMITED, WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
5. SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO AMR ENGINEERING LIMITED. THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.

DESIGN LOADS

1. FLOOR AND ROOF PLAN LOADING IS SHOWN ON PLANS.
CONTRACTOR CONSTRUCTION LOADS MUST NOT EXCEED THE SPECIFIED DESIGN LOADS. DESIGN LOADS MAY ONLY BE APPLIED AFTER CONCRETE REACHES ITS DESIGN STRENGTH.
2. SPECIFIED CONCENTRATED LOADS ARE AS FOLLOWS U.N.O. ON PLAN:
A. ROOFS = 1.8 kN
B. FLOORS = 4.5 kN
3. SEISMIC AND WIND DESIGN: KINMOUNT, ONTARIO
DESIGN CRITERIA:
BUILDING IMPORTANCE CATEGORY (SNOW, EARTHQUAKE AND WIND)
3a. SNOW
Ss = 2.7 Ss = 0.40 Is = 1.25
3b. EARTHQUAKE DESIGN PARAMETERS
SITE CLASSIFICATION
SITE CLASS "D" (ASSUMED)
SITE DESIGNATION "XS" (ASSUMED)
SEISMIC CATEGORY "SC3" (ASSUMED)
Is = 1.5 Ss(Ts)(0.18)(0.311)
PGA (Xc) = 0.162 Ts computed = 0.188 R = 2.0
PGV (Xc) = 0.199 M = 1
3c. WIND DESIGN PARAMETERS:
Cs, Cq and Cp ARE BASED ON OBC CL.4.1.7.
q(z) = 0.6 kPa, W = 1.25 U.S., 0.78 U.S.
WIND UPLIFT LOADS ON WOOD ROOFS SHALL BE 0.50 kPa NET UNLESS NOTED OTHERWISE ON PLAN.

NON-STRUCTURAL ELEMENTS

1. "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF AMR ENGINEERING LIMITED, WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
2. EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
A. ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, FLAG POSTS, CANOPIES, CEILING, MILLWORK, ETC.
B. LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
C. CLADDING, GLAZING, WINDOW MULLIONS, INTERIOR STUD WALLS AND EXTERIOR STUD WALLS.
D. ARCHITECTURAL PRECAST, PRECAST CLADDING.
E. MECHANICAL AND ELECTRICAL EQUIPMENT.
F. WINDOW WASHING EQUIPMENT AND ITS ATTACHMENTS.
G. ESCALATORS, ELEVATORS, AND CONVEYING SYSTEMS.
H. BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS.
I. NON-LOAD BEARING MASONRY.
J. NON-STRUCTURAL CONCRETE TOPPINGS.
3. SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO AMR ENGINEERING LIMITED. THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.
4. THE DESIGN WIND LOAD TO BE USED FOR INTERIOR STUDS AND PARTITIONS IS 0.25 kPa (UNFACTORED) UNLESS NOTED OTHERWISE.

SLAB ON GRADE REINF. & CONTROL JOINTS

1. SLAB ON GRADE SHALL BE PLACED ON SOIL CAPABLE OF SUSTAINING 25.0 kPa MIN. WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOOTINGS. IN AREAS WHERE S.O.G. USED TO SUPPORT TEMPORARY SHORING LOADS, LARGER SUBGRADE CAPACITIES MAY BE REQUIRED PER LOADS SUPPLIED BY TEMPORARY WORKS ENGINEER.
2. U.N.O REINFORCE SLAB ON GRADE WITH FIBRE MESH EQUIVALENT MASTERFIBER MAC MATRIX FIBRES WITH A DOSAGE OF 0.9 KG/M3 OR AN APPROVED EQUAL.
3. UNLESS MORE RIGOROUS REQUIREMENTS ARE INDICATED ELSEWHERE ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS, SPACE CONTROL JOINTS AT 6500 mm O.C. MAXIMUM.
4. SAWCUT JOINTS 5mm WIDE AND 25 mm DEEP AS SOON AS PRACTICAL, BUT NO LATER THAN 24 HOURS AFTER PLACEMENT OF SLAB. USE EQUIPMENT THAT DOES NOT "TRAVEL" THE EDGES OF THE CUT, SEAL AS REQUIRED.
5. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, RUN ANY SLAB ON GRADE REINFORCEMENT THROUGH THE JOINTS.
6. UNLESS NOTED OTHERWISE, SAWCUT DIAMOND PATTERN AROUND COLUMNS, 150 mm CLEAR OF COLUMNS.
7. UNLESS NOTED OTHERWISE, FORM A DIAMOND SHAPE AROUND COLUMNS, 150 mm CLEAR, AND DO NOT RUN REINFORCEMENT THROUGH PLACE INFILL AROUND COLUMN 28 DAYS AFTER SLAB ON GRADE PLACED.
COLUMN BASE PL.
DIAMOND PANEL SHALL BE CAST AFTER SURROUNDING SLABS HAVE BEEN CAST AND SAW CUTS AND CONSTRUCTION JOINTS HAVE BEEN MADE
FORM AND PROVIDE 13mm JOINT FILLER ALL SIDES
SAWCUT CONTROL JOINT
INTERIOR STEEL COLUMN

FOUNDATIONS

1. FOOTINGS HAVE BEEN DESIGNED FOR THE FOLLOWING ASSUMED BEARING RESISTANCE:
A. STRIP FOOTINGS: ULS: 150 kPa, SLS: 100 kPa
B. SPREAD FOOTINGS: ULS: 150 kPa, SLS: 100 kPa
2. BEARING SURFACES MUST BE APPROVED BY THE SOILS ENGINEER IMMEDIATELY BEFORE FOOTING CONCRETE IS PLACED. AMR IS NOT RESPONSIBLE FOR CONFIRMING BEARING CAPACITIES OF SOILS.
3. UNLESS OTHERWISE SHOWN, CENTER FOOTINGS UNDER COLUMNS AND WALLS.
4. DOWELS SHALL BE PLACED BEFORE CONCRETE IS PLACED. TEMPLATES SHALL BE USED TO ENSURE CORRECT PLACEMENT OF DOWELS.
5. PROVIDE 50 mm GROUND SEAL/ SKIM COAT, MUD SLAB UNDER FOOTINGS AS REQUIRED BY SOIL CONDITIONS.
6. FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, SEE ARCHITECTS DRAWINGS.
7. VARY FOOTING ELEVATIONS WHERE REQUIRED IN ACCORDANCE WITH DETAIL FOR "TYPICAL STEPPED FOOTINGS(S.D.F.)", SHOWN ON STRUCTURAL DRAWINGS.
8. FOOTINGS MAY HAVE TO BE LOWERED TO ACCOMMODATE MECHANICAL OR ELECTRICAL SERVICES. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ELEVATIONS OF SAME. FOOTINGS ARE NOT TO BE DETERMINED BY EXCAVATIONS FOR SERVICES, PITS, ETC.
9. FOOTING ELEVATIONS, IF SHOWN, ARE FOR PRICE ESTIMATING PURPOSES ONLY. ARE NOT FINAL, AND MAY VARY ACCORDING TO SITE CONDITIONS OR AS REQUIRED BY SERVICES. ALL FOOTINGS MUST BE TAKEN TO A BEARING LAYER APPROVED BY THE SOILS ENGINEER.
10. BEARING SURFACES MUST BE PROTECTED FROM FREEZING BEFORE AND AFTER FOOTINGS ARE POURED.
11. SUB-BASE DESIGN OF SOIL UNDER THE SLAB ON GRADE SHALL BE IN ACCORDANCE WITH THE SOIL REPORT.
12. CONCRETE PLACED UNDER WATER SHALL CONFORM TO CAN/CSA-A23.1.
13. WHERE A FOUNDATION WALL RETAINS SOIL ON EACH SIDE, PLACE BACKFILL ON BOTH SIDES SIMULTANEOUSLY.
14. FOUNDATION WALLS RETAINING EARTH BETWEEN SLABS AT DIFFERENT LEVELS SHALL BE SHORED UNTIL THE SLAB AT HIGHER LEVEL IS IN PLACE AND HAS REACHED ITS REQUIRED STRENGTH.
15. DESIGN AND FIELD REVIEW OF EXCAVATION SHORING AND BACKFILL IS NOT DONE BY AMR.
16. FOOTINGS CAST DIRECTLY INTO EXCAVATIONS (WITHOUT SIDE FORMS) SHALL NOT BE LARGER THAN SHOWN BELOW.

TYPICAL PIPE UNDER WALL FOOTING DETAIL

50mm APPROVED COMPRESSIBLE MATERIAL AROUND PIPE RUNS
UNDISTURBED SOIL
PROVIDE 15 MPa CONC. BACKFILL WHERE EXCAVATION RUNS ACROSS AND UNDER WALL FTG.
SOIL SLOPE PER GEOTECHNICAL ENGINEER
EDGE OF ADJACENT EXCAVATION FOR FOOTINGS, SUMPS, BASEMENT, SITE SERVICES, ETC.

TYPICAL FOOTING ADJACENT TO EXCAVATION

APPROVED BEARING MATERIALS BY SOILS ENGINEER
LINE OF UNDISTURBED SOIL MUST BE ABOVE SLOPE LINE
MAX. SLOPE PER GEOTECHNICAL SOIL CONDITION

TYPICAL STEPPED FOOTINGS ON SOIL (WALLS)

ALTERNATE - SLOPE TOP OF FOOTING
TYPE NO. 1
TYPE NO. 2
NOTE: IF TOTAL STEPPING "H" EXCEEDED PROVIDE INTERMEDIATE FLAT HORIZONTAL SECTION BETWEEN SLOPED FOOTINGS U.N.O. ON PLAN

TYPICAL SLAB ON GRADE THICKENING UNDER NON-LOAD BEARING BLOCK PARTITION - U.N.O.

CONCRETE BLOCK NON-LOAD BEARING PARTITION WALL
HOOKED DOWELS, TO MATCH VERTICAL WALL REINFORCEMENT SPACING (IF REINFORCED MASONRY WALL) ALTERNATE HOOK DIRECTION OR DRILL AND EMBED 125 mm WITH EPOXY GROUT
2-15M BOTTOM CONTINUOUS SEE DRAWINGS FOR S.O.G. THICKNESS
100M@400
100 400 100

THICKENING SLAB ON GRADE AT STAIRS

STAIR STRINGER BY OTHERS
3-10M BOTTOM CONT. S.O.G. REINF. PER PLAN
300 TYP.
300 300 300

WALL CONSTRUCTION JOINT

(CONSTRUCTION JOINT CAN REPLACE CONTROL JOINT)
IF ARCHITECTURAL DRAWINGS AND SPECIFICATIONS DO NOT REQUIRE A WATERSTOP FOR WALLS BELOW GRADE, PROVIDE A 20 mm WIDE X 25 mm DEEP NOTCH AND FILL NOTCH WITH CAULKING OR DAMP PROOFING TO ARCHITECTS REQUIREMENTS.
WATERSTOP IF REQUIRED, SEE ARCHITECTURAL SPECIFICATIONS
KEY FROM 38x89
INSIDE FACE OF WALL
ALL HORIZONTAL BARS TO BE CONTINUOUS THROUGH JOINT OR TENSION SPLICE
PLAN

WALL CONTROL JOINT

UNLESS NOTED OTHERWISE FOR EXTERIOR WALLS BELOW GRADE AND EXTERIOR WALLS EXPOSED TO WEATHER ABOVE GRADE.
SPACE AT 800 mm CENTERS MAXIMUM UNLESS OTHERWISE NOTED ON PLAN.
FOR WALLS BELOW GRADE FILL NOTCH WITH CAULKING OR DAMP-PROOFING TO ARCHITECTS SPECIFICATIONS
INSIDE FACE OF WALL
ALL HORIZONTAL BARS TO BE CONTINUOUS THROUGH JOINT
PLAN

TYPICAL ADDITIONAL REINFORCEMENT FOR WALL OPENINGS UP TO 750mm x 750mm SIZE

HOOK HORIZONTAL AND VERTICAL TYPICAL REINFORCEMENT OR ALTERNATIVELY PROVIDE U-BARS CORRESPONDING TO WALL HORIZONTAL AND VERTICAL REINFORCEMENT, PROVIDE CLASS B LAP SPLICE
WALL HORIZONTAL REINFORCING
WALL VERTICAL REINFORCEMENT
PROVIDE BARS EQUIVALENT IN AREA TO WALL VERTICAL REINFORCING INTERRUPTED BY OPENING (HALF EACH SIDE OF OPENING BUT MIN 2-15M EACH SIDE) EXTEND MIN. 600 BEYOND EDGE OF OPENING.
NOTE: FOR LARGER OPENINGS SEE REINFORCEMENT ON WALL ELEVATIONS.
NOTE: FOR LARGER OPENINGS SEE REINFORCEMENT ON WALL ELEVATIONS.

CONCRETE

1. CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN TABLE 5 OF CAN/CSA-A23.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONCRETE SUPPLIER TO ENSURE THAT THE PLASTIC AND HARDENED MIX PROPERTIES MEET SITE REQUIREMENTS FOR PLACING, FINISHING, AND THE OWNERS' SPECIFIED PERFORMANCE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL MEET THE DOCUMENTATION AND QUALITY CONTROL REQUIREMENTS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF CAN/CSA-A23.
3. THE SUPPLIER SHALL MEET ALL CERTIFICATION AND DOCUMENTATION REQUIREMENTS AS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF CAN/CSA-A23.
4. THE CONCRETE SUPPLIER SHALL BE CERTIFIED BY THE READY MIXED CONCRETE ASSOCIATION OF ONTARIO.
5. PORTLAND CEMENT SHALL BE TYPE GU UNLESS NOTED OTHERWISE.
6. CONCRETE SHALL HAVE A UNIT WEIGHT OF 23±1 kN/m³ (145±5 PCF) UNLESS NOTED OTHERWISE.
7. CONCRETE PROPERTIES:
STRUCTURAL CONCRETE REQUIREMENTS
FOOTINGS 25 MPA N N/A N/A
FOUNDATION WALLS 25 MPA F-2 4-7% 0.55
SLAB ON GRADE 25 MPA N N/A 0.45
COLUMNS 25 MPA N N/A 0.55
FOUNDATION WALLS 25 MPA N N/A N/A
SLAB ON GRADE 32 MPA C-2 5-8% 0.45
FOUNDATION WALLS 25 MPA F-2 4-7% 0.55
SIDE WALK / PAVEMENT 32 MPA C-2 5-8% 0.45
SLABS / BEAMS / COL. / WALLS 35 MPA C-1 5-8% 0.45
NOTES:
1. HIGHER GRADES OF CONCRETE WILL BE NOTED ON STRUCTURAL DRAWING WHERE REQUIRED.
8. SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
9. MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN TABLE 2, 4 AND 20 OF CAN/CSA-A23.
10. DO NOT USE CALCIUM CHLORIDE OR OTHER CHLORIDE PRODUCTS IN CONCRETE.
11. FOR CONCRETE TOPPING USE PEA SIZE AGGREGATE (MAX. 10mm DIAMETER).
12. CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CLAUSE 7.4.1.7 AS WELL AS TABLES 2 AND 20 OF CAN/CSA-A23.
13. CONCRETE REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS:
A. CAN/CSA-G30.1BR - GRADE 400 MPa - 10M AND LARGER (U.N.O.)
B. CSA STANDARD G30.5 - GRADE 400 MPa - WELDED WIRE REINFORCEMENT
C. CAN/CSA-G30.1BW - GRADE 400 MPa - ALL REINFORCING THAT WILL BE WELDED OR IS PART OF THE SEISMIC RESISTING ELEMENTS: REINFORCING FOR SHEAR WALLS, HEADERS AND ZONES (INCLUDING ZONE TIES AND HEADER TIES (STIRRUPS)) AND MOMENT FRAME COLUMNS AND BEAMS (INCLUDING COLUMN TIES AND BEAM STIRRUPS).
D. CSA STANDARD G279 - PRESTRESSING STRANDS
E. EPOXY REINFORCING - ASTM A775M AND ASTM D3963
14. TENSION AND COMPRESSION EMBEDMENT AND SPLICE LENGTHS SHALL CONFORM TO CAN/CSA-A23.3.
15. DO NOT SUBSTITUTE DEFORMED WIRE FOR REINFORCING BARS WITHOUT PRIOR APPROVAL OF THE AMR.
16. SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES, OR REINFORCING BARS AS REQUIRED. BARS USED AS SUPPORT BARS SHALL BE CONSIDERED AS ACCESSORIES.
17. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN CONCRETE COVER AS SPECIFIED. ALL SUPPORTS AND BARS MUST BE TIED TOGETHER TO MAINTAIN REINFORCING STEEL SECURELY IN PLACE DURING CONCRETE PLACEMENT.
CONCRETE COVER TO REINFORCEMENT
FOOTINGS TOP 50 MM BOTTOM 75 MM SIDES 75 MM
FOUNDATION WALLS INSIDE SIDE 30 MM SOL SIDE 40 MM
COLUMNS SIDES 40 MM
SLABS / BEAMS UNDERSIDE (NOT EXPOSED) 25 MM UNDERSIDE (EXPOSED) 40 MM
16. DETAIL REINFORCING IN ACCORDANCE WITH REINFORCING STEEL MANUAL OF STANDARD PRACTICE RSIC IAC.
17. SUBMIT SHOP DRAWINGS FOR CONCRETE REINFORCEMENT, BAR SUPPORT AND ACCESSORIES FOR REVIEW BY AMR PRIOR TO PLACEMENT OF REBAR. CLEARLY INDICATE BAR SIZES, GRADES, SPACINGS, LOCATION AND QUANTITIES OF REINFORCING MESH, BAR SUPPORTS AND ACCESSORIES AND IDENTIFYING CODE MARKS TO PERMIT CORRECT PLACEMENT WITHOUT REFERENCE TO STRUCTURAL DRAWINGS. PLACING DRAWINGS AND BAR LISTS WILL BE REVIEWED FOR NUMBER AND SIZE OF BARS ONLY, AND THIS REVIEW SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR CARRYING OUT THE WORK IN ACCORDANCE WITH THE DRAWINGS. SUBSTITUTION OF IMPERIAL REINFORCING SIZES AND GRADES WILL ONLY BE ACCEPTED IF PLACING DRAWINGS SHOWING IMPERIAL SIZES ARE SUBMITTED TO THE CONSULTANT FOR REVIEW. APPROVAL MUST BE OBTAINED BEFORE ANY WORK IS COMMENCED.

EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS

BASED ON CAN/CSA-A23.3-04
WHERE EMBEDMENT OR SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.
WHERE THE DRAWINGS INDICATE A COMPRESSION EMBEDMENT, IT IS A COMPRESSION EMBEDMENT LENGTH AND IT SHALL BE AS NOTED BELOW.
WHERE THE DRAWINGS INDICATE A TENSION EMBEDMENT, IT IS A TENSION EMBEDMENT LENGTH AND SHALL BE AS NOTED BELOW.
WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND SPLICE LENGTHS ARE SHOWN IN BRACKETS.
ALL LENGTHS ARE FOR Fy = 400 MPa REBAR.
ALL TENSION SPLICE LENGTHS ARE CLASS "B" (1.3 Ld).
COMPRESSION EMBEDMENT AND SPLICE LENGTHS
COMPRESSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE THE "COMPRESSION DEVELOPMENT LENGTH" AS DEFINED IN CAN/CSA-A23.3-04 CLAUSE 12.2.3.
SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A COMPRESSION SPLICE AS DEFINED IN CAN/CSA-A23.3-04 CLAUSE 12.16.1.
TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CAN/CSA-A23.3-04 TABLE 12.1 (0.45 kN/m³ kN/m³ kN/m³ kN/m³ kN/m³ kN/m³) ARE TO BE AS PER THE FOLLOWING TABLE FOR CASE 1 CONDITIONS
CASE 1 CONDITIONS
TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CAN/CSA-A23.3-04 TABLE 12.1 (0.45 kN/m³ kN/m³ kN/m³ kN/m³ kN/m³ kN/m³) ARE TO BE AS PER THE FOLLOWING TABLE FOR CASE 2 CONDITIONS
CASE 2 CONDITIONS
TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CAN/CSA-A23.3-04 TABLE 12.1 (0.6 kN/m³ kN/m³ kN/m³ kN/m³ kN/m³ kN/m³) ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING CASE 1 CONDITIONS AS SET OUT ABOVE, FOR EXAMPLE:
ONE WAY SLAB TOP BARS (SEE TOP BAR NOTE).
BARS (EXCLUDING THE SPLICE) SPACED CLOSER TOGETHER THAN 2 BAR DIAMETERS.
STIRRUPS IN BEAMS, GIRDERS AND TRANSFER SLABS.
SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.
CONCRETE STRENGTH FUNCTION REBAR DESIGNATION
20 MPa EMBEDMENT 430 645 860 1345 1610 1680 (SPLICE) (560) (840) (1120) (1745) (2095) (2445)
25 MPa EMBEDMENT 385 590 770 1200 1440 1680 (SPLICE) (500) (750) (1000) (1500) (1875) (2185)
30 MPa EMBEDMENT 355 530 705 1100 1315 1535 (SPLICE) (460) (685) (915) (1425) (1710) (1995)
35 MPa EMBEDMENT 325 490 650 1015 1220 1420 (SPLICE) (425) (635) (845) (1320) (1585) (1850)
40 MPa EMBEDMENT 305 460 610 950 1140 1330 (SPLICE) (395) (595) (790) (1235) (1480) (1730)
45 MPa EMBEDMENT 300 430 575 895 1075 1255 (SPLICE) (390) (560) (745) (1165) (1400) (1630)
50 MPa EMBEDMENT 300 410 545 850 1020 1190 (SPLICE) (390) (530) (710) (1100) (1325) (1545)
55 MPa EMBEDMENT 300 390 520 810 975 1135 (SPLICE) (390) (505) (675) (1055) (1265) (1475)
60 MPa EMBEDMENT 300 375 500 775 930 1085 (SPLICE) (390) (485) (645) (1010) (1210) (1410)
65 MPa & GREATER EMBEDMENT 300 360 480 750 900 1050 (SPLICE) (390) (470) (625) (975) (1170) (1365)
NOTE: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS
"TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.
NOTE: EPOXY COATED REINFORCEMENT INCREASE THESE TABLE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

EXCAVATIONS AND EARTHWORK

1. ALL EXCAVATION WORK TO BE CARRIED OUT IN ACCORDANCE WITH RECOMMENDATIONS OF SOIL ENGINEER.
2. BEFORE COMMENCING WORK, CONTRACTOR SHALL ESTABLISH THE LOCATION OF ALL BURIED SERVICES ON THE SITE AND ARRANGE WITH APPROPRIATE AUTHORITY FOR RELOCATION OF BURIED SERVICES.
3. SHORE AND BRACE EXCAVATIONS, PROTECT SLOPES AND BANKS AND PERFORM ALL WORK IN ACCORDANCE WITH PROVINCIAL AND MUNICIPAL REGULATIONS.
4. PROTECT EXCAVATIONS FROM FREEZING. KEEP EXCAVATIONS CLEAN, FREE OF STANDING WATER AND LOOSE SOIL.
5. BACKFILL MATERIAL AND SPACES TO BE REVIEWED AND APPROVED BY SOIL CONSULTANT. REMOVE SNOW, ICE, CONSTRUCTION DEBRIS, ORGANIC SOIL AND STANDING WATER FROM SPACES TO BE FILLED. MAINTAIN EVEN LEVELS OF BACKFILL AROUND STRUCTURES AS WORK PROGRESSES, TO EQUALIZE EARTH PRESSURES.
6. TESTING OF COMPACTION TO BE CARRIED OUT BY TESTING LABORATORY DESIGNATED BY THE SOIL CONSULTANT.
CONCRETE COLD WEATHER REQUIREMENTS
(SEE ALSO CAN/CSA-A23.1, CLAUSE 7.4.2.5, EXCEPT THE FOLLOWING MINIMUM REQUIREMENTS MUST ALSO BE MET)
1. FORECASTED AIR TEMPERATURE AT OR BELOW 5°C
A. THE AGGREGATE OR MIXING WATER SHALL BE HEATED TO MAINTAIN A MINIMUM CONCRETE TEMPERATURE OF 10°C
B. CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A TEMPERATURE LESS THAN 5°C.
C. CONTRACTOR SHALL BE PREPARED TO COVER SLAB IF UNEXPECTED DROP IN AIR TEMPERATURE SHOULD OCCUR.
D. CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR AT LEAST 7 DAYS OR UNTIL THE CONCRETE REACHES 70% OF SPECIFIED STRENGTH.
2. FORECASTED AIR TEMPERATURE BELOW 2°C BUT NOT BELOW -4°C
(NOTE - FOR THESE CONDITIONS STRUCTURAL CONCRETE TOPPINGS ON METAL DECK SHALL SATISFY THE REQUIREMENTS OF 3).
A. FORMS AND STEEL SHALL BE FREE FROM ICE AND SNOW.
B. THE AGGREGATE OR MIXING WATER SHALL BE HEATED TO GIVE A MINIMUM CONCRETE TEMPERATURE OF 10°C AT POINT OF POUR.
C. CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A TEMPERATURE OF LESS THAN 5°C.
D. SLABS SHALL BE COVERED WITH CANVAS OR SIMILAR, KEPT A FEW INCHES CLEAR OF SURFACE.
E. PROTECTION SHALL BE MAINTAINED FOR AT LEAST THE SPECIFIED CURING PERIOD.
F. CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR AT LEAST THE SPECIFIED CURING PERIOD.
3. FORECASTED AIR TEMPERATURE BELOW -4°C
A, B, C, D, AS UNDER POINT 2.
E. WORK AREA SHALL BE ENCLOSED AND ARTIFICIAL HEAT PROVIDED. HEATING TO BE STARTED AT LEAST ONE HOUR AHEAD OF POURING AND MAINTAINED FOR A MINIMUM OF THE SPECIFIED CURING PERIOD.
F. TEMPERATURE OF THE CONCRETE AT ALL SURFACES SHALL BE KEPT AT A MINIMUM OF 20°C FOR 3 DAYS, OR 10°C FOR 7 DAYS. CONCRETE SHALL BE KEPT ABOVE FREEZING TEMPERATURES UNTIL IT REACHES 70% OF ITS SPECIFIED STRENGTH
G. ENCLOSURE MUST BE CONSTRUCTED SO THAT AIR CAN CIRCULATE OUTSIDE THE OUTER EDGES AND MEMBERS.
H. REINFORCING TO BE COVERED AND WARMED TO MAINTAIN ITS TEMPERATURE AT 0°C OR HIGHER AT THE TIME OF CONCRETE PLACEMENT.

CONCRETE FORMWORK STRIPPING

1. THE DESIGN AND FIELD REVIEW OF FORMWORK, SHORING AND RESHORING IS THE RESPONSIBILITY OF THE CONTRACTOR. RESHORING DRAWINGS SHALL BE SUBMITTED TO AMR FOR THE EFFECT ON THE BASE BUILDING STRUCTURE ONLY.
2. NO COLUMN OR WALL FORMS SHALL BE REMOVED BEFORE CONCRETE HAS REACHED 75% OF THE 28 DAY STRENGTH BEFORE STRIPPING/ RE-SHORING.
3. NO SLAB FORMS OR BEAM FORMS SHALL BE REMOVED BEFORE CONCRETE HAS REACHED 75% OF THE 28 DAY STRENGTH BEFORE STRIPPING/ RE-SHORING.
4. STRENGTH OF CONCRETE FOR STRIPPING TO BE DETERMINED USING CYLINDERS STORED ON SITE IN A PROTECTED ENCLOSURE THAT MAINTAINS A SIMILAR TEMPERATURE AND HUMIDITY AS THE STRUCTURAL ELEMENTS REPRESENTED. ALTERNATE METHODS, IF ACCEPTABLE TO AMR, MAY BE USED.
5. ALL SLABS, BEAMS, WALLS, ETC. TO BE SHORED UNTIL CONCRETE REACHES DESIGN STRENGTH.
6. NO CONCRETE MAY BE REMOVED WITH PERCUSSIVE METHODS SUCH AS CHIPPING OR JACK-HAMMERING WITHOUT PRIOR APPROVAL OF AMR.

CONCRETE WALLS

1. DETAILS OF HORIZONTAL REINFORCEMENT AT CORNERS
STANDARD ROOM
STANDARD ROOM
TENSION SPLICE 600 MIN
TENSION SPLICE 600 MIN
THESE BARS TO HAVE STANDARD HOOKS
2. PLACE HORIZONTAL REINFORCEMENT IN OUTER LAYERS OF THE CURTAINS AND VERTICALS AS 2ND INSIDE LAYER (BEHIND HORIZONTALS).
3. ALL WALL REINFORCING SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS USED AT ALL WALL JUNCTIONS. EXTEND HOOKS TO FAR FACE OF WALL. CORNER BARS TO BE LOCATED ON OUTSIDE FACE OR CENTER OF WALL.
4. ENDS OF ALL WALLS SHALL HAVE 2-15M VERTICAL LAPPED 600 UNLESS OTHERWISE NOTED ON DRAWINGS.
5. ADD 2-15M PARALLEL TO ALL EDGES AND EXTENDING 625 BEYOND CORNERS AT OPENINGS IN WALLS.

ISSUED FOR PERMIT & TENDER

JUNE 20/25

D.K

ISSUED FOR CLIENT REVIEW

MAY 09/25

D.K

REVISION

DATE

BY

PROJECT NORTH

CLIENT: WILCOX ARCHITECTS INC. 74 LINDSAY ST. S. LINDSAY, ONT.

PROJECT: CKL KINMOUNT FIRE HALL EXPANSION & RENOVATIONS

24 MAJESTIC STREET, KINMOUNT, ONTARIO

DRAWING: GENERAL NOTES AND TYPICAL DETAILS

AMR ENGINEERING LTD. STRUCTURAL ENGINEERS 920 AUNESS STREET, SUITE 205 TORONTO, ON M3J 2H7 (416) 551-1611

REGISTERED PROFESSIONAL ENGINEER 25-2309 D. KOTOBELLI PROVINCE OF ONTARIO

DRAWN BY: M.K.

AMR PROJECT No.

25-2309

DATE: JUNE 20/25

DWG. No.

SCALE: AS NOTED

S5

OF 6

WOOD FRAMING

GENERAL

1. ALL DESIGN, DETAILS, MATERIALS AND CONSTRUCTION PROCEDURES SHALL CONFORM TO CURRENT EDITIONS OF THE FOLLOWING AS A MINIMUM:

- ONTARIO BUILDING CODE 2024 - PART 9
- CANCSA-086 - ENGINEERING DESIGN IN WOOD
- CSA 0121 - DOUGLAS FIR PLYWOOD
- CANCSA-LO 4000 - PARALLAMS AND MICROLAMS
- CANCSA-0122 - STRUCTURAL GLUED-LAMINATED TIMBER
- CSA 0437 SERIES - STANDARDS FOR OSB AND WAFFERBOARD
- CSA B111 - WIRE NAILS, SPIKES AND STAPLES
- CANCSA-634 - MISCELLANEOUS BOLTS AND SCREWS
- CANADIAN WOOD-FRAME HOUSE CONSTRUCTION-CMHC
- "WOOD DESIGN MANUAL" - CANADIAN WOOD COUNCIL

ANY CHANGES TO THE FRAMING SHOWN ON THESE DRAWINGS SHALL HAVE PRIOR WRITTEN APPROVAL OF AMR. FRAMING CHANGES WHICH HAVE NOT BEEN SO APPROVED WILL BE REJECTED.

CONFIRM ALL DIMENSIONS AND OUTLINES WITH THE ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS, ELEVATIONS AND DETAILS.

2. ANY TIMBER NOT GRADE MARKED WILL BE REJECTED.

3. FINISHES SHALL BE DETAILED TO ACCOMMODATE SHRINKAGE OF THE TIMBER OVER TIME.

4. DO NOT COVER WOOD FRAMING WITH FINISHES UNTIL AMR'S FRAMING REVIEW IS COMPLETE. PROVIDE 48 HOURS ADVANCE NOTIFICATION WHEN FRAMING REVIEWS ARE REQUIRED.

5. NOTCHING AND DRILLING OF STRUCTURAL ELEMENTS SHALL FOLLOW THE GUIDELINES SET FORTH IN THE BUILDING CODE PART 9, UNLESS OTHERWISE APPROVED IN WRITING BY AMR.

6. ALL TIMBER ELEMENTS ARE DESIGNED FOR DRY-SERVICE CONDITIONS. SEE ARCHITECTURAL DRAWINGS FOR WATERPROOFING AND VENTILATION DETAILS.

7. ANY TIMBER NOT GRADE MARKED WILL BE REJECTED. TIMBER SHALL BE DRY SPRUCE #1 OR #2 CONFORMING TO CSA-086-14 UN1 OTHERWISE.

8. TRUS JOISTS AND MICRO LAM BEAMS (MLB) SHALL BE AS MANUFACTURED BY TRUS JOIST CANADA LTD. OR AN APPROVED EQUAL.

9. ALL LOAD BEARING STUDS SHALL HAVE ONE ROW OF SOLID BLOCKING AT MID-HEIGHT UNLESS NOTED OTHERWISE.

10. PROVIDE 38x38 BRIDGING AT 2000 C/C MAXIMUM FOR FLOOR JOISTS.

11. BRIDGING FOR TRUSS JOISTS SHALL BE AS RECOMMENDED BY THE MANUFACTURER. HOWEVER, PROVIDE A MINIMUM ONE ROW OF BRIDGING AT MID-SPAN FOR JOIST SPANS > 4800.

12. PROVIDE ADEQUATE TEMPORARY BRACING FOR ALL STUD WALLS DURING CONSTRUCTION.

13. ALL CONNECTIONS, UNLESS NOTED OTHERWISE, TO BE IN ACCORDANCE WITH O.B.C 2024, TABLE 9.23.3.4 & TABLE 9.23.3.5

14. ALL WOOD FRAME CONSTRUCTION SHALL SATISFY THE FOLLOWING CONSTRUCTION TOLERANCES AS A MINIMUM. REFER TO ARCHITECTURAL AND WARRANTY REQUIREMENTS FOR ADDITIONAL TOLERANCE SPECIFICATIONS:

A. FLOORS	-	NOT MORE THAN 6 mm IN 3 m OUT OF LEVEL.
B. WALLS	-	NOT MORE THAN 6 mm IN 2.4 m OUT OF PLUMB NOT MORE THAN 6 mm IN 3 m FOR ANY BOWING.
C. OVERALL	-	BUILDING WALLS AND FLOORS SHALL NOT BE MORE THAN 10 mm DIFFERENCE IN MEASUREMENT FROM DIMENSIONS SHOWN ON CONTRACT DOCUMENTS.

MATERIALS

1. STUDS AND BUILT-UP POSTS TO BE S-P-F #2 GRADE OR BETTER U.N.O.

2. JOISTS TO BE S-P-F #2 GRADE OR BETTER.

3. BUILT-UP BEAMS AND HEADERS TO BE S-P-F #2 GRADE OR BETTER.

4. WALL PLATES TO BE S-P-F #2 GRADE. WALL PLATES SHALL BE KILN-DRIED AND MAY BE FINGER JOINTED EXCEPT IN SHEAR WALLS.

5. BEAMS TO BE S-P-F #2 GRADE OR BETTER.

6. ALL DIMENSION LUMBER TO BE SURFACED FOUR SIDES (S4S).

7. PLYWOOD TO BE DOUGLAS FIR SHEATHING GRADE.

8. O.S.B. TO CONFORM TO CSA 0325.

9. TIMBER CONNECTION HARDWARE TO BE SIMPSON STRONG-TIE, OR EQUIVALENT APPROVED BY AMR. COMPLETE WITH NAILS SUPPLIED BY MANUFACTURER. DO NOT USE P.NAILS.

10. NAILS SHALL BE COMMON ROUND STEEL WIRE NAILS. NAILS ARE CALLED UP BY LENGTH AND SHALL CONFORM TO THE FOLLOWING TABLE:

LENGTH	DIAMETER	PENNY-WEIGHT
50 mm (2")	2.84 mm (0.113")	6d
65 mm (2 1/2")	3.25 mm (0.131")	8d
75 mm (3")	3.66 mm (0.148")	10d
80 mm (3 1/4")	3.66 mm (0.148")	12d
90 mm (3 1/2")	4.06 mm (0.162")	16d
100 mm (4")	4.88 mm (0.192")	20d
115 mm (4 1/2")	5.38 mm (0.225")	30d
125 mm (5")	5.89 mm (0.244")	40d

NOTE: SPIRAL OR PNEUMATIC NAILS MAY BE USED IF THEY CONFORM TO THE TABLE ABOVE.

11. MISCELLANEOUS STEEL TO BE CAN/CSA-G40-21 OR APPROVED EQUAL.

12. ANCHOR BOLTS SHALL BE ASTM F1554 OR ASTM A36 OR APPROVED EQUAL. ANCHOR BOLTS SHALL BE DEFORMED, THREADED ABOVE THEIR FULL LENGTH OR HOOKED 40 mm AT THE BOTTOM.

13. BOLTS SHALL BE ASTM A307 OR APPROVED EQUAL. USED WITH STANDARD OUT STEEL WASHERS UNLESS NOTED OTHERWISE ON DRAWINGS.

14. MOISTURE CONTENT OF ALL TIMBER ELEMENTS SHALL NOT EXCEED 19% AT THE TIME OF CONSTRUCTION OR FABRICATION.

15. ALL FASTENERS AND CONNECTION HARDWARE THROUGH PRESERVATIVE TREATED MATERIALS OR OUTSIDE OF THE MOISTURE BARRIER TO BE HOT DIPPED GALVANIZED OR STAINLESS STEEL STEEL AS SPECIFIED.

NAILING

1. NAILING SHALL CONFORM TO THE BUILDING CODE PART 9, AND "WOOD BUILDING TECHNOLOGY" PUBLISHED BY THE CANADIAN WOOD COUNCIL. NAILING CALLED UP ON THESE DRAWINGS (I.E. FOR SHEATHING) IS BASED ON COMMON NAILS. SEE NOTE 10 UNDER MATERIALS FOR COMMON NAIL SIZES.

2. UNLESS NOTED OTHERWISE NAIL ALL WALL, FLOOR AND ROOF SHEATHING WITH 65 mm NAILS AT 150 mm O/C AT SUPPORTED EDGES OF SHEATHING SHEETS, AND AT 250 mm O/C FOR FLOORS AND AT 300 mm O/C FOR ROOFS AT INTERMEDIATE SUPPORTS TO ALL SUPPORTING MEMBERS. FLOOR SHEATHING SHALL BE NAILED WITH SPIRAL NAILS AND SHALL BE GLUED TO THE JOISTS IN ADDITION TO NAILING. IF SMALLER DIAMETER NAILS (I.E. PNEUMATICALLY DRIVEN NAILS OR PANELS) ARE USED, INCREASE THE NUMBER OF NAILS BY 33%. SEE SHEAR WALL SCHEDULE OR DIAPHRAGM NAILING SCHEDULE FOR ADDITIONAL REQUIREMENTS.

3. DO NOT USE PNEUMATICALLY DRIVEN NAILS WITH JOIST HANGERS OR CONNECTING HARDWARE. NAILS FOR HARDWARE SHOULD BE AS SPECIFIED OR SUPPLIED BY MANUFACTURER.

4. DO NOT USE PNEUMATICALLY DRIVEN NAILS IN SHEAR WALL SHEATHING UNLESS THE NAILS MEET THE LENGTH AND DIAMETER OF NOTE 9 UNDER MATERIALS.

SHRINKAGE

1. FRAMING DETAILS SHALL ENSURE UNIFORM VERTICAL SHRINKAGE. ADJACENT PORTIONS OF STRUCTURE SHALL BE SUPPORTED ON ROUGHLY EQUIVALENT AMOUNTS OF HORIZONTAL TIMBER (JOISTS AND SILL PLATES). DO NOT MIX KILN-DRIED AND NON-KILN DRIED JOISTS IN ANY GIVEN FLOOR.

2. FRAMING DETAILS AROUND NON-SHRINKING STRUCTURAL ELEMENTS (CONCRETE, STEEL, PARALLAMS, GLULAMS, MICROLAMS, PLYWOOD ETC.) SHALL TAKE INTO ACCOUNT THE SHRINKAGE OF THE TIMBER. EXAMPLES:

JOISTS

1. REFER TO PLAN AND JOIST SCHEDULE FOR JOIST TYPE, SIZE, AND SPACING.

2. DIMENSIONAL LUMBER JOISTS SHALL HAVE CROSS-BRIDGING OR FULL-DEPTH BLOCKING AT 1800 O/C ALONG THE SPAN FOR ALL SPANS GREATER THAN 3600. CROSS BRIDGING SHALL CONSIST OF 38 X 98 TIMBER OR APPROVED STEEL BRIDGING. T.J. JOISTS SHALL BE BLOCKED AS PER MANUFACTURERS REQUIREMENTS. JOISTS SHALL HAVE FULL-DEPTH BLOCKING OVER LOAD BEARING WALLS, DROPPED BEAMS OR HEADERS. SEE TYPICAL LOAD BEARING WALL AND SHEAR WALL CONNECTIONS BETWEEN FLOORS FOR ADDITIONAL BLOCKING REQUIREMENTS.

3. TRIM OPENINGS IN FLOORS AND ROOFS (I.E. STAIRS, FIREPLACES, SKYLIGHTS ETC) WITH DOUBLE JOISTS UNLESS NOTED OTHERWISE.

4. PROVIDE DOUBLE JOISTS UNDER PARALLEL FRAME WALLS UNLESS NOTED OTHERWISE.

5. STAIRS AND STRINGERS SHALL BE FRAMED IN ACCORDANCE WITH THE BUILDING CODE PART 9, UNLESS NOTED OTHERWISE.

6. JOISTS ARE TO BE FLUSH UNLESS NOTED OTHERWISE. USE JOIST HANGERS OR FRAMING ANCHORS TO CONNECT JOISTS.

7. UNLESS NOTED OTHERWISE, JOIST HANGERS OR FRAMING ANCHORS SHALL BE CAPABLE OF DEVELOPING THE SHEAR STRENGTH OF THE SUPPORTED MEMBER. FOR DIMENSIONAL LUMBER JOISTS, THE FOLLOWING CAPACITIES ARE REQUIRED: (BASED ON CASE 2 S-P-F NO. 11NO.2)

JOIST SIZE	REQUIRED SHEAR RESISTANCE (kN)	WORKING LOAD	FACTORED LOAD
38 X 89	5.5	7.2	
38 X 140	7.2	9.4	
38 X 184	8.2	10.6	
38 X 235	9.53	12.4	
38 X 286	10.5	13.7	

FOR JOISTS, HANGERS SHALL BE SPECIFIED ON ENGINEERED SHOP DRAWINGS PROVIDED BY THE JOIST SUPPLIER.

BEAMS

1. BUILT-UP BEAMS (I.E. 3-38 X 235) SHALL BE NAILED TOGETHER WITH 2 ROWS OF 15 mm NAILS EACH ROW WITH NAILS AT 300 O/C. INDIVIDUAL MEMBERS MAY NOT BE SPLICED BETWEEN SUPPORTS. FOR ENGINEERED PRODUCTS, NAILING REQUIREMENTS OF LAMINATES SHALL BE SPECIFIED ON ENGINEERED SHOP DRAWINGS PROVIDED BY BEAM SUPPLIER.

2. FLUSH BEAMS

3. DROPPED BEAMS

U.N.O. ALL EXTERIOR WALL BEAMS, INTERIOR WALL BEAMS, AND DOOR HEADER BEAMS ARE DROPPED. UNLESS NOTED OTHERWISE ALL OTHER INTERIOR BEAMS ARE FLUSH.

4. USE 2-38 x 184 BEAMS OVER ALL OPENINGS IN LOAD BEARING AND NON LOAD BEARING WALLS UNLESS NOTED OTHERWISE. BEAMS SHALL BE SUPPORTED AT EACH END AS SHOWN BELOW UNLESS NOTED OTHERWISE.

A. CASE 1 - FLUSH BEAM:

B. CASE 2 - DROPPED BEAM

SEE PLAN FOR NUMBER OF STUDS. MINIMUM 2 STUDS TOTAL.

MOISTURE BARRIERS AT WOOD BEAMS

1. PROVIDE A MOISTURE BARRIER BETWEEN WOOD ELEMENTS AND ALL CONCRETE OR MASONRY. THIS CAN BE A SHEET OF LIGHT-GAUGE (0.61 mm MINIMUM) GALVANIZED METAL, ASPHALT IMPREGNATED BUILDING PAPER (7.5 kg PER 10 m²), CLOSED-CELL FOAM GASKET MATERIAL, TYPE S ROLL ROOFING, SHEET POLYETHYLENE NOT PERMITTED. ALL JOINTS AND TERMINATIONS TO BE LAPPED (50 mm MINIMUM) AND SEALED. BUTT JOINTS IN MOISTURE BARRIERS NOT PERMITTED.

2. DRYWALL OR SHEATHING ON LOAD BEARING WALLS OR SHEAR WALLS SHALL BE FASTENED DIRECTLY TO THE STUDS, WITHOUT THE USE OF RESILIENT METAL CHANNELS.

WALLS

1. LOAD BEARING WALLS: DENOTED ON PLAN THUS:

2. SEE TYPICAL DETAILS FOR LOAD BEARING WALL CONNECTIONS BETWEEN FLOORS U.N.O.

UNLESS NOTED OTHERWISE, PROVIDE A BUILT-UP STUD POST AT THE ENDS OF ALL BEAMS AND GIRDER TRUSSES FRAMING INTO A WALL. THE BUILT-UP STUD POST SHALL MATCH THE WIDTH OF THE BEAM, AND THE STUD SIZE SHALL MATCH THOSE IN THE WALL U.N.O. ON PLAN.

3. ALL POSTS AND BUILT-UP STUD POSTS SHOWN ON ANY LEVEL SHALL BE CARRIED DOWN TO THE CONCRETE UNLESS NOTED OTHERWISE. PROVIDE SOLID BLOCKING BETWEEN JOISTS UNDER ALL POSTS AND BUILT-UP POSTS.

4. ALL LOAD BEARING WALLS SHALL HAVE 2 CONTINUOUS TOP PLATES AND 1 CONTINUOUS BOTTOM PLATE. BEAMS OR HEADERS OVER OPENINGS IN WALLS SHALL BE DROPPED TO ALLOW THE TOP PLATES TO BE CONTINUOUS. WHERE 20 mm CONCRETE TOPPING IS USED ON THE FLOORS, PROVIDE 2 CONTINUOUS BOTTOM PLATES. DOUBLE PLATES SHALL BE SPLICED WITH A MINIMUM 600 mm STAGGERED LAP AT CORNERS. TOP AND BOTTOM PLATES WHICH HAVE BEEN CORED OR WHICH ARE DISCONTINUOUS SHALL BE REINFORCED AS FOLLOWS:

5. WHERE PERMANENT SHEATHING IS NOT APPLIED TO STUDS PROVIDE BLOCKING AT 1000 mm O/C FOR 38 X 89 WALLS AND 600 mm O/C FOR 38 X 140 WALLS.

6. FASTEN WOOD-FRAME STRUCTURE AT BASE BY BOLTING THE BOTTOM PLATE (SILL PLATE) TO THE CONCRETE WITH 13 mm Ø ANCHOR BOLTS AT 1200 mm O/C UNLESS NOTED OTHERWISE. ANCHOR BOLTS SHALL HAVE A MINIMUM 125 mm EMBEDMENT AND A MINIMUM 75 mm PROJECTION ABOVE THE CONCRETE. THE ANCHOR BOLTS MAY BE CAST IN PLACE OR GROUDED INTO PREDRILLED HOLES WITH THE H.L.T.H. SYSTEM. H.L.T.H. KWIR BOLTS WITH A 75 mm EMBEDMENT MAY BE USED WITH A 100 mm OR GREATER EDGE DISTANCE. NON-LOAD BEARING WALLS MAY BE FASTENED WITH 3 mm Ø POWER DRIVEN FASTENERS AT 400 mm O/C (MINIMUM 20 mm PENETRATION INTO CONCRETE). FULL WIDTH OF WALLS SHALL BEAR ON CONCRETE UNLESS NOTED OTHERWISE. SEE SHEAR WALL SCHEDULE FOR ADDITIONAL ANCHORING REQUIREMENTS OF SHEAR WALLS.

7. SILL PLATES SHALL BEAR ON A LEVEL SURFACE; PROVIDE A LEVELLING BED OF MORTAR IF REQUIRED. PROVIDE A SILL GASKET UNDER SILL PLATES BEARING ON CONCRETE.

8. WHERE THE SPACING OF JOISTS OR ROOF TRUSSES MATCHES THE SPACING OF THE STUDS IN THE SUPPORTING WALL (OR A MULTIPLE THEREOF), EACH JOIST OR TRUSS SHALL BEAR DIRECTLY OVER A STUD.

9. WHEN LIFT-WALL CONSTRUCTION IS USED FOR EXTERIOR WALLS, THE ADJACENT WALL PANELS SHALL BE WELL CONNECTED. THE FOLLOWING DETAIL MAY BE USED:

10. SHEATHING

A. ROOF SHEATHING (U.N.O.)

SLOPED ROOF (SLOPE ≥ 15%)

15.5 mm PLYWOOD WITH H-CLIPS AT UNSUPPORTED JOISTS

FLAT ROOF (SLOPE ≤ 15%)

15.5 mm TONGUE AND GROOVE PLYWOOD.

B. FLOOR SHEATHING (U.N.O.)

19 mm TONGUE AND GROOVE PLYWOOD IF NO CONCRETE TOPPING IS USED (ANY JOINT WITHOUT A TONGUE AND GROOVE CONNECTION SHALL BE BLOCKED WITH A 38 X 89). 15.5 mm BUTT JOINT PLYWOOD IF 38 mm CONCRETE TOPPING IS USED.

C. EXTERIOR WALL SHEATHING (U.N.O.)

15.5 mm PLYWOOD ON EXTERIOR SIDE TYP. 15.5 mm PLYWOOD SHEATHING IF WALLS CLAD WITH VERTICAL STRAPPING OR BRICK VENER. SEE ALSO ARCHITECTURAL FOR ADDITIONAL SHEATHING REQUIREMENTS.

D. SHEAR WALL SHEATHING (U.N.O.)

SEE SHEAR WALL SCHEDULE FOR SHEATHING REQUIREMENTS AT SHEAR WALL LOCATIONS.

2. LAY FLOOR AND ROOF SHEATHING WITH THE SURFACE GRAIN AT RIGHT ANGLES TO THE JOISTS. STAGGER THE JOINTS PARALLEL TO THE JOISTS.

3. DRYWALL OR SHEATHING ON LOAD BEARING WALLS OR SHEAR WALLS SHALL BE FASTENED DIRECTLY TO THE STUDS, WITHOUT THE USE OF RESILIENT METAL CHANNELS.

ENGINEERED WOOD TRUSSES

1. THE STRUCTURAL DRAWINGS SHOW CONCEPTUAL WOOD TRUSS FRAMING ONLY. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, ROOF SLOPES, ROOF OVERHANGS, ELEVATIONS, OPENINGS ETC.

2. WOOD TRUSSES ARE BOTTOM CHORD BRACING UNLESS NOTED OTHERWISE.

3. THE DESIGN, PREPARATION OF SHOP DRAWINGS, REVIEW OF FABRICATION AND FIELD REVIEW OF INSTALLATION SHALL BE CARRIED OUT AND STAMPED BY A SPECIALTY STRUCTURAL ENGINEER.

4. THE WOOD TRUSSES SHALL BE DESIGNED FOR THE LOADS SPECIFIED IN THE GENERAL NOTES, OR AS SHOWN ON PLANS. THEY SHALL BE BASED ON PART 4 OF THE BUILDING CODE, INCLUDING THE EFFECT OF SLIDING OR DRIFTING SNOW. PLUS ANY ADDITIONAL REQUIREMENTS SET OUT IN THE LOCAL BUILDING BY-LAW. THEY SHOULD ALSO BE DESIGNED FOR A VERTICAL POINT LOAD OF 0.90 kN (UNFACTORED) APPLIED ANYWHERE ON BOTTOM CHORD (ONE POINT LOAD PER TRUSS).

5. TRUSS SUPPLIER MUST DESIGN AND SUPPLY THE ENTIRE TRUSS SYSTEM WHICH INCLUDES THE FOLLOWING ELEMENTS:

- LATERAL BRACING AND BRIDGING.
- CONNECTING HARDWARE.
- BEARING PLATES, HOLD DOWNS, AND TENSION TIES SHOWN ON TRUSS SHOP DRAWINGS.

6. THE SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING ELEMENTS:

A. FRAMING LAYOUT, SECTIONS, CONNECTION DETAILS, DESIGN LOADS, WOOD SPECIES AND WOOD GRADE.

B. COMPLETE DIMENSIONS.

C. ALL BRACING AND BRIDGING NECESSARY FOR THE STABILITY OF THE TRUSSES DURING ERECTION AND IN THE COMPLETED STRUCTURE.

D. HOLD DOWN ANCHORS TO RESIST WIND UPLIFT, CONNECTING ROOF TRUSSES TO THE SUPPORTING STRUCTURE.

E. END REACTIONS OF GIRDER TRUSSES ON THE SUPPORTING STRUCTURE IN K.N (UNFACTORED). NOTE THAT IT IS THE TRUSS ENGINEER'S RESPONSIBILITY TO CHECK BEARING CONDITIONS AT THE SUPPORT POINTS OF ALL TRUSSES BUT ESPECIALLY GIRDERS AND PROVIDE STEEL HARDWARE AS REQUIRED TO PREVENT OVER STRESS IN BOTH THE TOP PLATES AND THE GIRDERS.

7. THE WOOD TRUSS LAYOUT SHOWN ON THESE DRAWINGS HAS BEEN COORDINATED WITH THE SUPPORTING STRUCTURE BELOW. THE WOOD TRUSS LAYOUT SHALL NOT BE CHANGED WITHOUT PRIOR WRITTEN APPROVAL OF AMR. THE COST OF REDESIGNING THE SUPPORTING STRUCTURE TO SUIT CHANGES TO THE TRUSS LAYOUT WILL BE CHARGED TO THE CONTRACTOR.

8. TRUSS SUPPLIER SHALL SUBMIT A LETTER ATTESTING TO THE SUCCESSFUL COMPLETION AND INSTALLATION OF ALL ELEMENTS IN COMPLIANCE WITH THE ENGINEERED TRUSS SHOP DRAWINGS TO THE ENGINEER OF RECORD. THIS LETTER SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.

9. THE WOOD TRUSSES SHALL BE DESIGNED FOR A MAXIMUM LIVE LOAD DEFLECTION OF 1/360 OF THE SPAN.

10. INDICATES PRE-ENGINEERED WOOD TRUSSES @ 600 mm O/C UNLESS NOTED OTHERWISE ON PLAN. SEE ARCHITECTURAL DRAWINGS FOR ROOF GEOMETRY.

11. TRUSS DESIGNATIONS:

- G.T. INDICATES GIRDER TRUSS.
- H.T. INDICATES HP TRUSS.
- D.T. INDICATES DRAG TRUSS (SEE DRAG TRUSS SCHEDULE FOR ADDITIONAL REQUIREMENTS).

12. THE WOOD TRUSSES SHALL BE KEPT DRY AND PROTECTED FROM THE ENVIRONMENT DURING STORAGE ON OR OFF THE PROJECT SITE AS PER THE MANUFACTURERS REQUIREMENTS.

RENOVATIONS

1. THE CONTRACT DOCUMENTS ARE BASED ON ASSUMED AS-BUILT DIMENSIONS FOR THE EXISTING BUILDING STRUCTURE AND ASSUMPTIONS IN ACCORDANCE WITH DETAILING AND PLACING PRACTICE. THESE ASSUMPTIONS MAY VARY FROM THE ACTUAL, ON-SITE CONDITIONS. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE CONSULTANT OF ANY ACTUAL VARIATIONS FROM THE ASSUMED CONDITIONS.

2. MINOR MODIFICATIONS TO SUIT TOLERANCES OF ± 50mm WILL BE REQUIRED TO THE WORK INDICATED ON THESE DRAWINGS TO REFLECT ACTUAL SITE CONDITIONS. THE CONTRACTOR WILL COOPERATE WITH THE CONSULTANT AND AMR IN THEIR REGARD. MINOR MODIFICATIONS WILL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND WILL NOT RESULT IN A CHANGE IN THE CONTRACT PRICE.

3. ENSURE THAT ALL NECESSARY JOB DIMENSIONS ARE TAKEN AND ALL TRADES ARE COORDINATED FOR THE PROPER EXECUTION OF THE WORK. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF SUCH DIMENSIONS, AND FOR COORDINATION.

4. PRIOR TO FABRICATION OF ANY STRUCTURAL MEMBERS, THE CONTRACTOR SHALL COMPLETE THIS SITE REVIEW OF CRITICAL "TIE-IN" DIMENSIONS AND CONFIRM ALL DIMENSIONS TO ENSURE PROPER FIT OF NEW WORK TO EXISTING. REPORT ANY DISCREPANCIES TO AMR PRIOR TO STARTING WORK.

5. COMMENCEMENT OF CONSTRUCTION OR ANY PART THEREOF CONSTITUTES ACCEPTANCE OF EXISTING CONDITIONS AND MEANS DIMENSIONS AND ELEVATIONS HAVE BEEN CONSIDERED, VERIFIED AND ARE ACCEPTABLE.

6. ANY OPENINGS THAT ARE NOT SHOWN OR INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE REPORTED TO AMR FOR REVIEW. THESE OPENINGS MAY NOT BE ALLOWED, MAY HAVE TO BE MOVED, OR MAY REQUIRE ADDITIONAL STRUCTURAL WORK AND DETAILING. DO NOT PROCEED WITH THESE OPENINGS WITHOUT WRITTEN PERMISSION FROM AMR.

7. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, THE CORING OR CUTTING OF OPENINGS AND HOLES SHOWN ON THE STRUCTURAL DRAWINGS THROUGH THE EXISTING STRUCTURE SHALL NOT CUT ANY REINFORCING BARS. THE CONTRACTOR SHALL LOCATE THE LOCATION, SIZE, LENGTH, ORIENTATION AND POSITION OF EXISTING REINFORCING AND PROVIDE AMR WITH HARD COPIES OF SUCH FOR OUR REVIEW IN THE VICINITY OF THE HOLES AND SLEEVES TO BE CUT OR CORED, AND THE HOLES AND SLEEVES SHALL BE LOCATED TO AVOID CUTTING OF REINFORCING BARS, WHERE THIS IS NOT POSSIBLE, IT SHALL BE REPORTED TO AMR FOR REVIEW.

8. UNLESS NOTED OTHERWISE AT ALL LOCATIONS WHERE NEW CONCRETE WILL BE IN CONTACT WITH EXISTING CONCRETE SURFACES, THE EXISTING CONCRETE SURFACE IS TO BE COMPLETELY CLEANED AND ROUGHENED BY HYDRODEMOLITION, BUSH HAMMERING, (OR APPROVED EQUAL) TO AN AMPLITUDE OF 6 mm (1/4").

9. CONNECTIONS FOR NEW STRUCTURAL STEEL FRAMING TO EXISTING STRUCTURAL STEEL SHALL BE ACHIEVED THROUGH WELDED CONNECTIONS UNLESS OTHERWISE NOTED. WELDING OF NEW STEEL TO "OLD" STEEL (STEEL PRODUCED IN EARLY 20TH CENTURY) MAY REQUIRE MODIFICATIONS TO THE STANDARD WELDING PROCEDURES. PROCEDURES OF WELDING NEW STEEL TO "OLD" STEEL SHALL BE PREPARED BY THE CONTRACTOR'S SPECIALTY STRUCTURAL ENGINEER AND REVIEWED AND APPROVED BY AMR. CONTRACTOR TO ALSO PROVIDE A REPORT FROM MATERIALS TESTING COMPANY COMMENTING ON CHEMICAL COMPOSITION AND WELDABILITY OF OLD STEEL.

10. CONTRACTOR TO ENSURE THAT UNDERGROUND OR IN-SLAB SERVICES ARE NOT DAMAGED THROUGH DEMOLITION, SAWCUTTING, HOLE AUGURING, OR OTHER CONSTRUCTION ACTIVITIES. SEE SPECIFICATION FOR TESTING/LOCATING REQUIREMENTS.

11. DRILL AND SITE MEASURE BOLT HOLES IN EXISTING STRUCTURE PRIOR TO FABRICATING STEEL CONNECTION PLATES. BOLT HOLES MAY HAVE TO BE MOVED FROM WHAT IS SHOWN ON THE DRAWINGS TO AVOID CUTTING EXISTING REINFORCING OR TO AVOID OTHER SITE CONDITIONS. SITE MODIFICATION OF STEEL CONNECTION PLATES WILL NOT BE ACCEPTED WITHOUT THE PRIOR APPROVAL OF AMR.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SECTIONS SHALL BE NEW AND CONFORM TO THE FOLLOWING:

A. WIDE FLANGE BEAMS AND WWF SECTIONS	CSA G40.21 350W
B. MISCELLANEOUS ROLLED SECTIONS (EXCEPT WIDE FLANGES)	CSA G40.21 300W
C. HOLLOW STRUCTURAL SECTIONS	CSA G40.21 350W
D. ROLLED PLATES	CSA G40.21 300W
E. BOLTS (SEE PLANS AND DETAILS)	ASTM A325 OR ASTM A490
F. STRUCTURAL STEEL ANCHOR RODS (U.N.O.)	ASTM F1554 GRADE 36 38 MINIMUM CANCSA-530 18R, GRADE 400
G. REINFORCING BAR ANCHOR BOLTS	ASTM A307

2. ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. ALL BEAM CONNECTIONS TO BE STANDARD FRAME BEAM CONNECTIONS OR EQUIVALENT UNLESS NOTED OTHERWISE. SUBMIT A LETTER OF CERTIFICATION BY P.E. ENGINEER RESPONSIBLE FOR DESIGN OF CONNECTIONS.

3. SHOP DRAWINGS SHALL BE PREPARED UNDER THE DIRECTION OF A SPECIALTY STRUCTURAL ENGINEER. FOR THOSE CONNECTIONS AND COMPONENTS DESIGNED BY THE FABRICATOR, THIS ENGINEER OR THEIR REPRESENTATIVE SHALL VISIT THE SITE TO REVIEW IN PLACE THE CONNECTIONS AND COMPONENTS DESIGNED BY THIS ENGINEER TO SATISFY THEMSELVES THAT THESE CONNECTIONS AND COMPONENTS COMPLY WITH THEIR DESIGN ON THE SHOP DRAWINGS. THIS ENGINEER SHALL PROVIDE A LETTER TO AMR TO THIS EFFECT. THIS ENGINEER SHALL ALSO PROVIDE SEALED SKETCHES FOR ALL FIELD MODIFICATIONS MADE TO THEIR DESIGN.

4. SHOP DRAWINGS SHALL BE PREPARED UNDER THE DIRECTION OF A SPECIALTY STRUCTURAL ENGINEER. FOR THOSE CONNECTIONS AND COMPONENTS DESIGNED BY THE FABRICATOR, THIS ENGINEER OR THEIR REPRESENTATIVE SHALL VISIT THE SITE TO REVIEW IN PLACE THE CONNECTIONS AND COMPONENTS DESIGNED BY THIS ENGINEER TO SATISFY THEMSELVES THAT THESE CONNECTIONS AND COMPONENTS COMPLY WITH THEIR DESIGN ON THE SHOP DRAWINGS. THIS ENGINEER SHALL PROVIDE A LETTER TO AMR TO THIS EFFECT. THIS ENGINEER SHALL ALSO PROVIDE SEALED SKETCHES FOR ALL FIELD MODIFICATIONS MADE TO THEIR DESIGN.

5. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO START OF STEEL FABRICATION.

6. FABRICATION, ERECTION, STRUCTURAL DESIGN, AND DETAILING OF ALL STEEL SHALL BE IN ACCORDANCE WITH CANCSA-S16.

7. FILLET WELDS SHALL BE 5 mm MINIMUM U.N.O.

8. BOLTS SHALL BE A325 19 mm Ø MINIMUM U.N.O.

9. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH MEMBER U.N.O.

10. UNLESS NOTED OTHERWISE, COLUMN CAP PLATES SHALL BE 16 mm THICK AND COLUMN BASE PLATES SHALL BE 20 mm MINIMUM THICK.

11. PROVIDE 6 mm CAP PLATES FOR ALL HSS MEMBERS U.N.O.

12. CONNECTION DETAILS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE ALTERED BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL FROM AMR ENGINEERING LIMITED.

TYP. BEAM BEARING DETAIL AT MASONRY WALLS

1. WALL

2. BEAM

3. 2" MAX

4. WELD BEAM TO BPL

5. BPL - SEE PLANS/SCHEDULE

6. PROVIDE SOLID BEARING FOR MINIMUM 8" UNDER BPL TYP.

7. LAST DIMENSION OF BPL

TYPICAL MASONRY WALL CONTROL JOINT

BOND BEAM HORIZONTAL REINFORCING. SPLICE 200 mm AT JOINT.

CAULK JOINT AS PER ARCHITECT'S REQUIREMENTS

1-18M VERT. EACH SIDE OF JOINT. FILL VERT. CELL WITH CONCRETE.

CONTROL JOINT - PROVIDE 200 mm LONG PLASTIC OR METAL SLEEVE AROUND REBAR.

PLAN SECTION TAKEN THROUGH BOND BEAM.

SPACE CONTROL JOINTS AT 7200 mm O/C MAXIMUM UNLESS NOTED OTHERWISE ON PLAN.

COORDINATE LOCATIONS WITH ARCHITECT AND AMR.

CONTROL JOINTS SHALL NOT BE LOCATED UNDER OWSJ OR STEEL BEAMS.

TYPICAL DETAIL FOR WOOD BEAM TO STEEL COLUMN CONNECTION

1. WOOD BEAM - SEE PLAN

2. 5mm THK. STEEL L-BRACKET W/ 2-12 DIA THRU BOLTS

3. 13mm Ø HOLES FOR THRU BOLTS @ 600 C/C TYP.

4. WELD ALL AROUND -TYP.

5. WELD ALL AROUND -TYP.

6. STEEL COLUMN - SEE PLAN

7. SPLICE BEAM AT C.L. OF COLUMN

LOAD BEARING MASONRY

1. MASONRY WORK SHALL CONFORM TO CSA S304.1 AND ITS REFERENCED DOCUMENTS, INCLUDING:

A. CONCRETE BLOCK TO CANCSA-A165.1, TYPE H15/A, UNLESS NOTED OTHERWISE ON SCHEDULE (BASED ON NET AREA).

B. MORTAR TO CANCSA-A175, TYPE S FOR ALL WALLS.

C. GROUT TO CANCSA-A179.

D. MASONRY WIRE REINFORCING TO CSA G30.5.

E. REINFORCING BARS TO CANCSA-G30.18 - 400 MPa.

F. WELDED REINFORCING BARS TO CANCSA-G30.18 - 400 MPa.

G. CONNECTIONS TO CANCSA-A370.

H. PRACTICE TO CANCSA-A371.

2. STRUCTURAL DRAWINGS INDICATE ONLY LOAD-BEARING WALLS. DESIGN IS BASED ON ENGINEERING ANALYSIS ACCORDING TO CSA S304.1.

3. FILL BLOCK CORES UNDER ALL CONCENTRATED LOADS WITH 12.5 MPa MIN. GROUT TO A DEPTH OF AT LEAST 400 mm MEASURED DOWN FROM THE BEARING UNLESS NOTED OTHERWISE. PROVIDE 20MPa GROUT AT MASONRY WALL AROUND FLOOR LEVELS AS PER DETAIL 13/S10.

4. PROVIDE EXTRA HEAVY DUTY LADDER TYPE OR TRUSS TYPE MASONRY REINFORCING (4 mm DIAMETER) IN HORIZONTAL JOINTS EVERY SECOND COURSE (400 mm) UNLESS NOTED OTHERWISE IN SCHEDULE.

5. PROVIDE LINTELS OVER ALL OPENINGS IN WALLS. SEE LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON PLAN. CONNECT BACK TO BACK ANGLES TOGETHER AT 500 mm O/C MAXIMUM. PROVIDE 150 mm MINIMUM END BEARING FOR LINTELS.

6. PROVIDE 1-15M CONTINUOUS IN TOP COURSE OF WALL UNDER FLOOR SLAB TYP. U.N.O. AND FILL CELLS SOLID WITH 12.5 MPa GROUT MIN.

7. LAPS:

WIRE REINFORCEMENT	200 mm
10M BARS	400 mm
15M BARS	600 mm
20M BARS	1000 mm

8. UNLESS NOTED OTHERWISE, PROVIDE VERTICAL BARS FULL HEIGHT AT UNSUPPORTED ENDS OF WALLS, CORNERS, INTERSECTIONS, SIDE OF DOORS, AND OTHER OPENINGS, AS SHOWN BELOW.

9. PROVIDE 1-15M IN EACH CELL OF ALL PIERS AND PILASTERS UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING SHALL BE CONTINUED TO WITHIN 50 mm OF TOP OF THE WALL.

10. PROVIDE CLEANOUTS FOR ALL CELLS TO BE REINFORCED. REPEAT CLEANOUTS ABOVE BOND BEAMS.

11. FILL CELLS CONTAINING VERTICAL REINFORCING AND BOLTS WITH 12.5 MPa GROUT MIN. VIBRATE OR PUDDLE TO FILL CELLS COMPLETELY.

12. FILL CELLS IN 1200 mm LIFTS OR BETWEEN BOND BEAMS, WHICHEVER IS LESS.

13. CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 7200 mm, IF NOT OTHERWISE SHOWN ON DRAWINGS.

14. CONTROL JOINTS AND EXPANSION JOINTS SHALL CONTINUE THROUGH BOND BEAMS IF NOT OTHERWISE SHOWN.

15. OUTSIDE FACE OF EXTERIOR WALLS SHALL BE WATERPROOFED AS PER SPECIFICATIONS AND ARCHITECTURAL DRAWINGS.

16. NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURE BELOW 5° CELSIUS, UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK.

17. PROVIDE 15M @ 800 mm O/C FULL HEIGHT FOR ALL LOAD BEARING MASONRY WALLS, UNLESS NOTED OTHERWISE ON SCHEDULE.

18. BUILD MASONRY TIGHT INTO BEAM WEB.

19. PROVIDE EXTRA HEAVY DUTY BLOCK LOK LADDER TYPE REINFORCING OR AN APPROVED EQUAL AT 400 C/C MAXIMUM UNLESS NOTED IN ALL MASONRY WITH TWO OR MORE WYTHES.

20. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING TO HOLD FREE STANDING MASONRY WALLS PLUMB & TRUE TO LINE DURING CONSTRUCTION.

21. LOAD BEARING MASONRY IS SHOWN THUS: ON PLANS/SCHEDULE/ SECTION.

ISSUED FOR PERMIT & TENDER

ISSUED FOR CLIENT REVIEW

REVISION

DATE

BY

PROJECT NORTH

CLIENT: WILCOX ARCHITECTS INC. 74 LINDSAY ST. S. LINDSAY, ONT.

PROJECT: CKL KINMOUNT FIRE HALL EXPANSION & RENOVATIONS

DRAWING: 24 MAJESTIC STREET, KINMOUNT, ONTARIO

GENERAL NOTES AND TYPICAL DETAILS

AMR ENGINEERING LTD. STRUCTURAL ENGINEERS 920 ALNESS STREET, SUITE 205 TORONTO, ON M3J 2H7 (416) 551-1611

REGISTERED PROFESSIONAL ENGINEER 25-2309 D. KOTOBELLI PROVINCE OF ONTARIO

DRAWN BY: M.K. CHECKED BY: D.K. DATE: JUNE 20/25 SCALE: AS NOTED

AMR PROJECT No. 25-2309 DWG. No. S6 OF 6