GENERAL NOTES

01-01-01 THE PROFESSIONAL ENGINEER'S SEAL ON THESE DRAWINGS APPLIES ONLY TO THE STRUCTURAL ELEMENTS SHOWN HEREON.

01-01-09 ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE BUILDING CODE AND ALL GOVERNING STANDARDS & REGULATIONS.

01-01-12 READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS.

01-01-14 CLARIFY WITH THE ENGINEER ANY QUERIES REGARDING INTERPRETATION OF THE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.

01-01-15 THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND SHALL REPORT ANY DISCREPANCY TO THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.

DESIGN NOTES

01-02-01 THE STRUCTURAL FRAMING DEPICTED ON THESE DRAWINGS HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2012 ONTARIO BUILDING CODE.

01-02-03 WHERE STANDARDS ARE REFERENCED, THE EDITION OF THE GIVEN STANDARD SHALL BE THE MOST RECENT EDITION AT THE TIME OF THE ISSUANCE OF THE BUILDING PERMIT, EXCEPT WHERE THE BUILDING CODE IN EFFECT AT THAT TIME, OR THE STANDARDS IT REFERENCES, EXPLICITLY SPECIFY AN EARLIER EDITION OF THE STANDARD.

01-02-04 IMPORTANCE CATEGORY: NORMAL

01-02-06 REFERENCE VELOCITY WIND PRESSURE, q50: 0.48 kPa

01-02-07 THIS STRUCTURE HAS BEEN DESIGNED USING THE INTERNAL PRESSURE COEFFICIENTS "Cpi" FOR A CATEGORY 3 STRUCTURE.

FOUNDATION NOTES

EXCAVATION & BACKFILLING

31-04-06 THE CONTRACTOR SHALL ENSURE THAT ALL EXCAVATIONS SHALL BE UNDERTAKEN IN SUCH A MANNER AS TO PREVENT MOVEMENT THAT WOULD CAUSE DAMAGE TO ADJACENT BUILDINGS AT ALL PHASES OF CONSTRUCTION.

31-04-13 THE MATERIAL USED AS BACKFILL OR FILL SUPPORTING A FOOTING, FOUNDATION OR A FLOOR ON GRADE SHALL BE OF A TYPE THAT IS NOT SUBJECT TO DETRIMENTAL VOLUME CHANGE WITH CHANGES IN MOISTURE CONTENT AND TEMPERATURE, AND IS NOT FROST SUSCEPTIBLE.

FOUNDATION INSULATION

31-05-01 RIGID INSULATION TO BE EXTRUDED POLYSTYRENE MEETING ASTM C578, R5 PER INCH.

31-05-02 RIGID INSULATION SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS, AS DETERMINED IN ACCORDANCE WITH ASTM D1621. TYPE SM: 210kPa (30psi), TYPE HL-40: 275 kPa (40 psi), TYPE HL-60: 415 kPa (60 psi), TYPE HL-100: 690 kPa (100 psi).

31-05-03 UNLESS NOTED OTHERWISE, RIGID INSULATION SHALL BE TYPE SM.

31-05-04 STAGGER JOINTS IN INSULATION. BUTT JOINTS MUST BE TIGHT.

31-05-05 PROTECT INSULATION BOARDS FROM PHYSICAL DAMAGE AND DIRECT EXPOSURE TO SUNLIGHT UNTIL COVERED WITH A MINIMUM 150mm (6") TOP SOIL, PAVERS, OR A CONCRETE SLAB. CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION TO INSULATION WHERE SOIL, PAVERS OR CONCRETE SLAB IS NOT PROVIDED.

31-05-06 INSULATION IS SHOWN ON THE STRUCTURAL DRAWINGS WHERE REQUIRED FOR PROTECTION OF THE FOUNDATIONS FROM DAMAGE DUE TO FROST ACTION ONLY. TYPICALLY, ONLY STRUCTURALLY REQUIRED INSULATION IS SHOWN ON THE STRUCTURAL DRAWINGS. PLEASE REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSULATION REQUIREMENTS.

STRUCTURAL STEEL NOTES

GENERAL REQUIREMENTS & APPLICABLE STANDARDS

05-01-01 ALL STRUCTURAL STEEL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD CAN/CSA-S16 "LIMIT STATES DESIGN OF STEEL STRUCTURES".

MATERIAL PROPERTIES

05-02-01 STRUCTURAL STEEL: CSA G40.21 300W (44W), EXCEPT
- W SECTIONS: CSA G40.21 350W (50W)
- SQUARE AND RECTANGULAR HOLLOW SECTIONS:
  1. NON-HOT DIP GALVANIZED: CSA G40.21 350W (50W) CLASS C or ASTM A500 GRADE C
  2. HOT DIP GALVANIZED: CSA G40.21 350W (50W) CLASS H
- ROUND HOLLOW SECTIONS:
  1. NON-HOT DIP GALVANIZED: CSA G40.21 350W (50W) CLASS C
  2. HOT DIP GALVANIZED: CSA G40.21 350W (50W) CLASS H
- ANCHOR RODS: ASTM F1554, GRADE 36
- CF SECTIONS: ASTM A570M GRADE 350W (50W)

05-02-04 GROUT FOR BASE AND BEARING PLATES: SIKA M-BED OR APPROVED EQUIVALENT.

FABRICATION AND EXECUTION

05-03-07 WELDING SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD W59 AND CSA STANDARD S16.

05-03-08 THE FABRICATOR OR CONTRACTOR UNDERTAKING WELDING WORK SHALL BE CERTIFIED BY THE CANADIAN WELDING BUREAU AS BEING QUALIFIED UNDER REQUIREMENTS OF CSA STANDARD W-47.1, CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES DIVISION 2.1.

05-03-09 UNLESS OTHERWISE SPECIFIED, SHOP PAINT AND SURFACE PREPARATION FOR PAINTING SHALL CONFORM TO CAN/CGSB - 85.10.

CONCRETE NOTES

GENERAL REQUIREMENTS & APPLICABLE STANDARDS

03-01-01 ALL STRUCTURAL CONCRETE ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD CAN/CSA A23.3 "DESIGN OF CONCRETE STRUCTURES".

03-01-02 THE CONTRACTOR SHALL ENSURE THAT CONCRETE SHALL BE MIXED, PLACED & CURED IN ACCORDANCE WITH CSA STANDARD A23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION".

03-01-03 FORMWORK SHALL BE IN ACCORDANCE WITH CAN/CSA - A23.1, FALSEWORK WITH CSA S269.1.

MATERIAL PROPERTIES

03-02-02 CONCRETE FOR GRADE BEAMS SHALL CONFORM TO CSA STANDARD A23.1 EXPOSURE CLASS C-1 & HAVE A MIN. COMPRESSIVE STRENGTH AT 28 DAYS OF 35 MPa.

03-02-04 CONCRETE SHALL HAVE A SLUMP OF 80mm +/- 20mm

03-02-06 CONCRETE FOR SLABS ON GRADE SHALL HAVE THE FOLLOWING PROPERTIES:

STRENGTH: 12.4 MPa (1,800 PSI) AT 3 DAYS, AND 28 MPa (4,000 PSI) AT 28 DAYS
AGGREGATE: 20mm MAXIMUM
CEMENT: 320 kg/CUBIC METRE MINIMUM
SLUMP: 80mm ± 20mm (3¼" ± ¾")
EXPOSURE CLASS: C-4

03-02-07 THE MAXIMUM NOMINAL AGGREGATE SIZE FOR CONCRETE SHALL BE 20mm (¾").

03-02-12 REINFORCING STEEL SHALL CONFORM TO CSA STANDARD G30.18 GRADE 400 (GRADE 60).

03-02-14 CHAIRS, BOLSTERS, BAR SUPPORTS AND SPACERS FOR REINFORCING SHALL CONFORM TO CAN/CSA - A23.1.

FABRICATION AND EXECUTION

03-03-01 HARD TROWELLING OF CONCRETE CONTAINING AIR ENTRAINMENT IS NOT PERMITTED.

03-03-02 WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA - A23.1, CSA W186 AND REINFORCING STEEL - MANUAL OF STANDARD PRACTICE.

03-03-03 UNLESS NOTED OTHERWISE, ALL LAP SPLICES IN CONCRETE REINFORCEMENT TO BE CLASS "B".

03-03-07 HOOKS AND BENDS IN REINFORCEMENT SHALL BE AS DEFINED IN CSA STANDARD CAN/CSA-A23.1.

03-03-18 REINFORCING, INCLUDING DOWELS, SHALL BE SECURE AND IN PLACE PRIOR TO POURING OF CONCRETE. "WET SETTING" IS NOT PERMITTED.

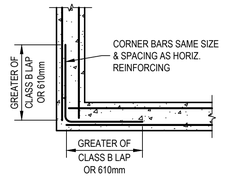
SLABS ON GRADE

03-04-04 PLACE 150mm (6") MINIMUM GRANULAR 'A' UNDER SLABS ON GRADE. COMPACT TO 95% MODIFIED PROCTOR DENSITY.

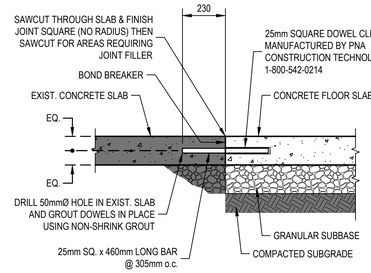
03-04-07 USE 12mm (½") THICK JOINT FILLER TO SEPARATE SLABS-ON-GRADE FROM VERTICAL SURFACES AND EXTEND JOINT FILLER FROM BOTTOM OF SLAB TO WITHIN 12mm (½") OF FINISHED SLAB SURFACE UNLESS INDICATED OTHERWISE.

03-04-08 THE SURFACE TOLERANCE OF THE COMPACTED GRANULAR BASE BENEATH SLABS ON GRADE SHALL HAVE A MAXIMUM VARIATION OF +/- 10mm (3/8").

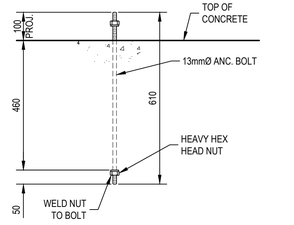
03-04-10 SLABS ON GRADE CONTAINING AIR ENTRAINMENT SHALL NOT BE HARD TROWELLED. WHERE THE CONCRETE FINISHING SPECIFICATIONS CALL FOR HARD (i.e. STEEL) TROWELLED FINISH FOR AIR ENTRAINED CONCRETE FLATWORK, NOTIFY THE ENGINEER AND AWAIT WRITTEN INSTRUCTIONS.



3.09 WALL CORNER DETAIL



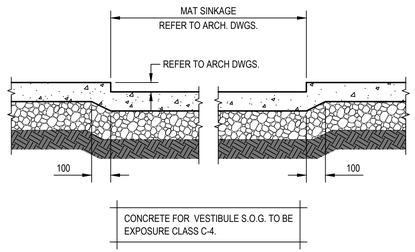
3.82 NEW TO EXISTING FLOOR SLAB JOINT DETAIL



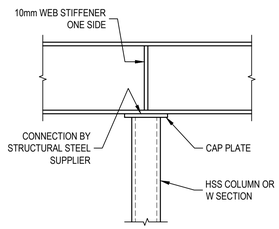
5.58 ANCHOR BOLTS

13mmØ ANCHOR BOLT

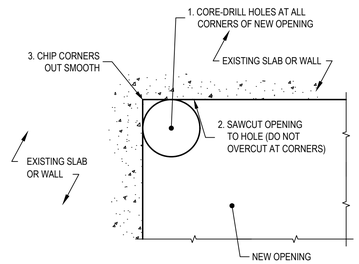
WELDING OF BOTTOM NUT TO BOLT MAY BE OMITTED IF THREADS ARE BURRED ABOVE & BELOW NUT TO PREVENT ROTATION.



3.84 TYPICAL MAT SINKAGE DETAIL



5.36 TYPICAL CONTINUOUS BEAM SUPPORTED ON COLUMN



3.44 CUTTING OF NEW OPENINGS IN EXISTING SLABS & WALLS

CONCRETE COVER FOR REINFORCEMENT

EXPOSURE CONDITION	BAR SIZE	EXPOSURE CLASS		
		N	F-1, F-2 S-1, S-2	C-XL, C-1, C-2 A-1, A-2, A-3
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	35M & SMALLER	75 mm	75 mm	75 mm
	45M	75 mm	75 mm	90 mm
	55M	75 mm	85 mm	110 mm
TOP AND FORMED SIDES OF FOOTINGS	25M & SMALLER	40 mm	40 mm	60 mm
	30M	40 mm	45 mm	60 mm
BEAMS, GIRDERS, COLUMNS, AND PILES	25M & SMALLER	30 mm	40 mm	60 mm
	30M	30 mm	45 mm	60 mm
SLABS, WALLS, AND JOISTS	20M & SMALLER	20 mm	40 mm	60 mm
	25M	25 mm	40 mm	60 mm
	30M	30 mm	45 mm	60 mm

NOTES:

1. BASED ON CSA STANDARD A23.1-09

2. FOR CONCRETE ELEMENTS REQUIRING A FIRE RESISTANCE RATING, REFER TO APPLICABLE TABLE AND PROVIDE WHICHEVER COVER IS GREATER.

NO.	DATE	REVISIONS	BY
2	05/10/19	Issued for Building Permit	CR
1	04/16/19	Issued for Coordination	CR

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PROJECT:
Clarington Public Library
Bowmanville Branch Renovation
40 Temperance Street,
Bowmanville, Ontario

OWNER:
Municipality of Clarington

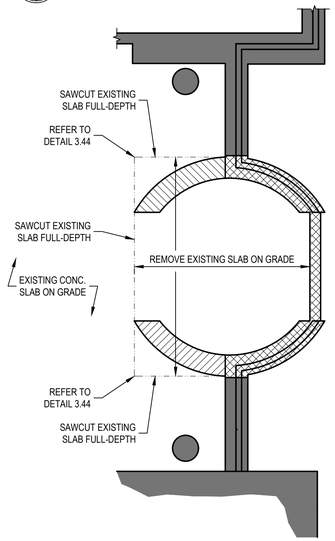
CLIENT:
Shoalts and Zaback Architects

DRAWING TITLE:
Notes & Typical Details

LICENSED PROFESSIONAL ENGINEER
C. D. RONEY
2019-05-09
PROVINCE OF ONTARIO

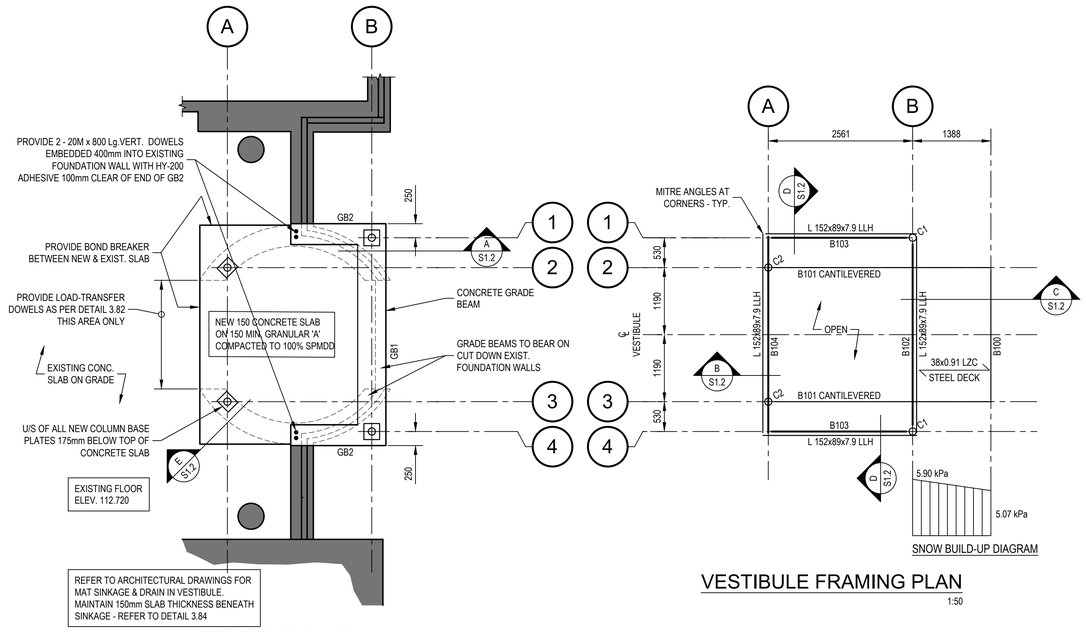
CLIENT PROJ. No.: 18085	PROJECT No.: 1800121
DESIGNED BY: C.D.R.	SCALE: AS SHOWN
DRAWN BY: K.S.A.	DATE: May 2019
DWG. NO.:	

S1.1



FOUNDATION DEMOLITION PLAN

1:50



FOUNDATION PLAN

1:50

VESTIBULE FRAMING PLAN

1:50

BEAM SCHEDULE

MARK		B100		B101		B102		B103		B104	
SIZE		C130x10		HSS 127x127x8.0		C310x31 + W250x18		C310x31 + W250x18		C310x31 + W250x18	
REACTIONS		LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
ALL REACTIONS AT U.L.S. UNFACTORED. COMBINE IN ACCORDANCE WITH OBC/NBC 4.1.3.2 DEAD LOAD	X	0.49	0.49	0.29	1.73	6.09	6.09	2.94	2.94	6.87	6.87
	Y	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	Z	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
LIVE LOAD	X	-------	-------	-------	-------	-------	-------	0.81	0.27	2.48	2.48
	Y	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	Z	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
SNOW LOAD	X	4.56	4.56	-2.47	7.03	15.3	15.3	0.67	1.98	0.74	0.74
	Y	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	Z	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
WIND LOAD	X	+0.51 -1.36	+0.51 -1.36	-0.28 +0.74	+0.79 -2.10	1.32	1.32	0.40	0.40	0.93	0.93
	Y	-------	-------	-------	-------	±5.07	±5.07	±3.78	±3.78	±5.07	±5.07
	Z	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
REMARKS:											

AXIAL TENSION: +ve
UNITS: kN, mm, kNm

COLUMN SCHEDULE

C1: HSS127Ø x6.4

C2: HSS127Ø x6.4

GRADE BEAM SCHEDULE

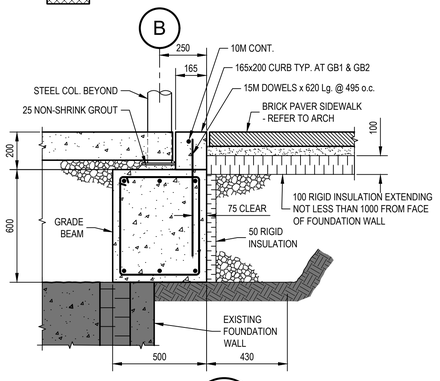
GB1: 500x600 CONC. BEAM
3-20M T&B WITH 180° HOOKS EACH END
10M STIRRUPS @ 340 o.c.

GB2: 370x600 CONC. BEAM
2-20M TOP
2-25M BOTTOM
10M STIRRUPS @ 375 o.c.

LEGEND

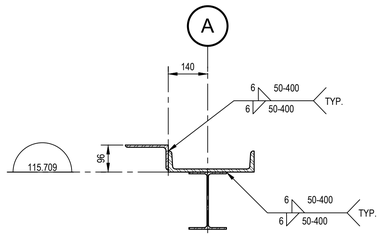
REMOVE EXISTING FOUNDATION WALL TO 200mm BELOW TOP OF EXISTING FLOOR SLAB.

REMOVE EXISTING FOUNDATION WALL TO 800mm BELOW TOP OF EXISTING FLOOR SLAB.



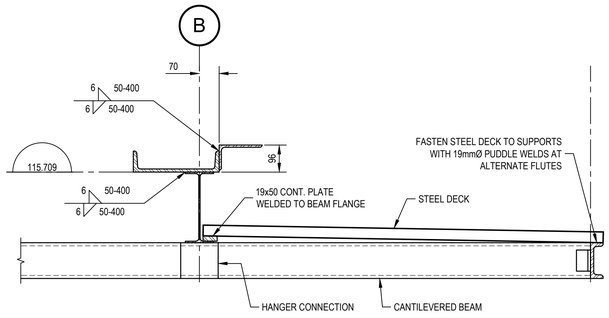
SECTION A S1.2

1:15



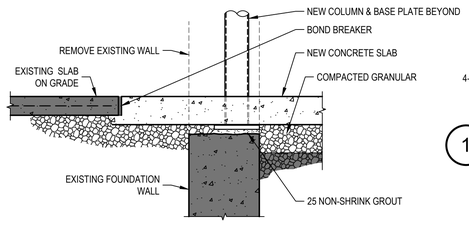
SECTION B S1.2

1:10



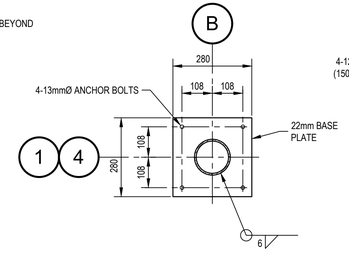
SECTION C S1.2

1:10



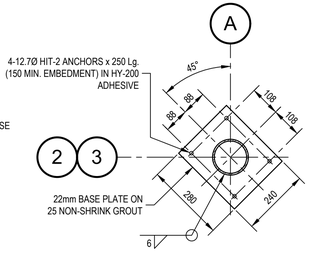
SECTION E S1.2

1:15



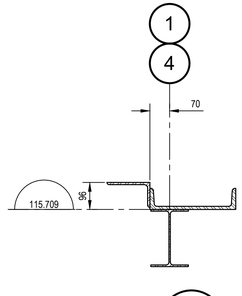
COLUMN C1 BASE PLATE DETAIL

1:10



COLUMN C2 BASE PLATE DETAIL

1:10



SECTION D S1.2

1:10

ELEVATION OF WOOD BLOCKING FOR ADULT CHANGE TABLE

AS PERMITTED BY OBC 3.1.5.2

1:15

PLAN DETAIL AT ADULT CHANGE TABLE SUPPORT F S1.2

BLOCKING ASSEMBLY SHOWN IS INTENDED TO BE CONSTRUCTED WITHIN A WALL ASSEMBLY. WALL STUDS & SHEATHING NOT SHOWN.

1:15

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2	05/10/19	Issued for Building Permit	CR
1	04/16/19	Issued for Coordination	CR

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PROJECT:
Clarington Public Library
Bowmanville Branch Renovation
40 Temperance Street,
Bowmanville, Ontario

OWNER:
Municipality of Clarington

CLIENT:
Shoalts and Zaback Architects

DRAWING TITLE:
Demolition Plan, Foundation Plan
Framing Plan & Sections

LICENSED PROFESSIONAL ENGINEER
C. D. RONEY
2019-05-09
PROVINCE OF ONTARIO

CLIENT PROJ. No.: 18085	PROJECT No.: 1800121
DESIGNED BY: C.D.R.	SCALE: AS SHOWN
DRAWN BY: K.S.A.	DATE: May 2019
DWG. NO.: S1.2	