

GENERAL CONSTRUCTION NOTES:  
BUILDING USE: LIVESTOCK BARN  
BUILDING AND FOUNDATION DESIGNED IN ACCORDANCE WITH THE NBC LATEST EDITION.  
THE CONTRACTOR IS REQUIRED TO REVIEW THE COMPLETE SET OF CONTRACT DOCUMENTS AND CO-ORDINATE ALL TRADES. THE WORK MUST BE A COMPLETE, FUNCTIONING FACILITY, AS EXPLICITLY & IMPLICITLY DESCRIBED BY THE CONTRACT DOCUMENTS.  
THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS PRIOR TO COMMENCING WITH THE WORK. CONTRACTOR IS TO NOTIFY ENGINEER OF ANY DISCREPANCY OR DIVARIATION IN THE EXISTING CONDITION PRIOR TO COMMENCING WITH THE WORK FOR FURTHER INSTRUCTIONS. DRAWINGS ARE NOT TO BE SCALE, BUT MUST BE USED TO DETERMINE THE GENERAL LAYOUT. ALL DIMENSION DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER.  
ALL NEW GRADE WORK IS TO BE SLOPED AWAY FROM BUILDING.  
STRIP TORSION, ENSURE THAT ALL ORGANIC MATERIAL IS REMOVED.  
ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6" AND SHALL BE COMPACTED.  
ALL DIMENSIONS HAVE PRIORITY ON DRAWINGS, NO DIMENSIONS SHALL BE MEASURED DIRECTLY ON DRAWING.  
NO DIMENSIONS ON PLAN SHOULD BE USED FOR REBAR/CONCRETE. IN SITE MEASUREMENTS AND PROPER SETTING/DRAWINGS TO BE SUPPLIED TO ENGINEER IN THE FORM OF SHOP DRAWING FOR APPROVAL PRIOR TO FABRICATION.  
BUILDING CONCRETE UNDER FARM BUILDING CODE 1995 FOR ALL ITEMS DESCRIBED BY SUCH SAID CODE. ANY AREAS NOT COVERED BY THE FARM BUILDING CODE 1995 SHALL USE THE ONTARIO BUILDING CODE LATEST EDITION AS BASIS FOR DESIGN AND CONSTRUCTION OF THIS PROJECT.  
ALL LOADS DERIVED BY PLAN SCENE SHALL IN NO INSTANCES BE EXCEED IN ALL PHASES OF CONSTRUCTION.  
REFER TO ARCHITECTURAL PLAN SERIES FOR ATTIC VENTILATION, ATTIC VENTILATION TO CORROM TO OBC REQUIREMENT AS BASIS FOR DESIGN.  
ALL EQUATION DESIGN ASSUME NO NEGATIVE MOMENT BELOW ANY OF THE BUILDING FOOTING. PROPER PREPARATION, BUILDING DAMAGE AND INSULATION, AS WELL AS FINAL GRADING AS BEEN PUT IN PLACE FOR THESE REASONS AND IN NO INSTANCES SHALL BE MODIFIED WITHOUT PROPER CONSENT OF DESIGN ENGINEER.  
REINFORCEMENT (STEEL BAR) - REBAR  
THERE SHALL BE A MINIMUM OF 33% OF TOTAL OVERLAPPING ON A SAME AXIS.  
RESPECT MINIMAL OVERLAP  
450mm FOR 10M  
600mm FOR 15M  
900mm FOR 20M

REBAR STEEL YIELD STRENGTH SHALL BE 400 MPa AND COMPLY WITH CSA G30.8 AND BE OF HIGH RIBBON DEFORMED TYPE. ATTACH REBAR PRIOR TO CONCRETE CASTING WITH WIRE TIES #3 IN ORDER TO STABILIZE THE FRAME.  
WELDKESH  
-EACH SHEET REQUIRES A MINIMAL OVERLAP OF 150 MM  
-MAINTAINED WITH CONCRETE BRICKS WITH 900 mm SPACING IN STAGGERED ROWS.  
CONTROL JOINT FILLING  
WALLS  
FILLING WITH SONNEMORN NP1 OR SIKATEX JA OR EQUIVALENT. THESE PRODUCTS SHALL BE APPLIED 2 DAYS AFTER CONCRETE CASTING, ACCORDING TO MANUFACTURER'S SPECIFICATIONS.  
FLOORS AND CEILING  
FILLING WITH SONNEMORN S1.1 OR SIKATEX 2C S1 OR EQUIVALENT SELF-LEVELLING CONCRETE. THESE PRODUCTS SHALL BE APPLIED IMMEDIATELY AFTER CONCRETE CASTING, AT 3mm (1/8") UNDER CONCRETE SURFACE ACCORDING TO MANUFACTURER'S SPECIFICATIONS.  
FORMWORK REMOVAL  
FORMWORK REMOVAL SHALL BE DONE WHEN CONCRETE HAS REACHED A MINIMUM OF 5 MPa.  
CONCRETE SHALL OBTAIN A 20 MPa COMPRESSION TEST BEFORE COMMISSIONING AND EMBAIKING.  
TIE OF INTERNAL AND EXTERNAL FORMS SHALL BE SEALED WITH SAKGROUT 212 OR EQUIVALENT APPROVED BY CONSTRUCTION SITE SUPERVISOR.  
EMBAIKMENT  
ANY FILLING OF THE STRUCTURE PERIMETER SHALL BE MADE WITH NON FROST-RISKEN CLASSIFIED MATERIALS.  
CONCRETE GENERAL NOTES:  
1. THE ONTARIO BUILDING CODE LATEST EDITION AND ALL PERTINENT RECOMMENDATIONS OF CSA STANDARD A23.1 AND A23.3 SHALL BE THE BASIS FOR THE DESIGN AND CONSTRUCTION OF ALL WORK ON THIS PROJECT.  
2. ALL CONCRETE, UNLESS OTHERWISE STATED, SHALL BE DESIGNED AS FOLLOW: (AS PER CANADIAN FARM BUILDERS ASSOCIATION AND THE READY MIX CONCRETE ASSOCIATION OF ONTARIO)

UNIT	FLOOR AND CEILING	REINFORCED EXTERIOR FINISH AND TANKS	WATERPROOFING GUTTER FLASHING AND PIT FLOORS	MILKHOUSE AND PANICUP FLOORS	ALL OTHER FLOORS	ALL OTHER CONCRETE
A) MINIMUM COMP. STRENGTH (AS SHOWN)	35 MPa (5076 psi)	32 MPa (4640 psi)	30 MPa (4350 psi)	30 MPa (4350 psi)	25 MPa (3600 psi)	25 MPa (3600 psi)
B) MAXIMUM AGGREGATE SIZE	19 mm (3/4")	19 mm (3/4")	19 mm (3/4")	19 mm (3/4")	19 mm (3/4")	19 mm (3/4")
C) AIR CONTENT	5-8%	5-8%	5-8%	5-8%	3-5%	5-8%
D) SLUMP (1/2 m (1/2") USE OF SUPER PLASTICIZER IS PERMITTED - USE OF SUPER PLASTICIZER IS SLUMP REDUCER (-1))	102 mm (4")	102 mm (4")	102 mm (4")	102 mm (4")	102 mm (4")	102 mm (4")
E) CEMENT TYPE	10/GU	50/HB	10/GU	10/GU	10/GU	10/GU
F) WATER/CEMENT RATIO	40	45	50	50	50	55
G) CURING TYPE (REFER TO CSN)	1	1 AND 2 CHEMICAL CURING	1	1	1	1
H) THICKNESS AND REINFORCEMENT	REFER TO STRUCTURAL PLAN	REFER TO STRUCTURAL PLAN	REFER TO STRUCTURAL PLAN	4" THICK WITH WMM (MWM NOT REQUIRED FOR FREE STALL PLATFORM)	4" THICK WITH WMM (MWM NOT REQUIRED FOR FREE STALL PLATFORM)	REFER TO STRUCTURAL PLAN

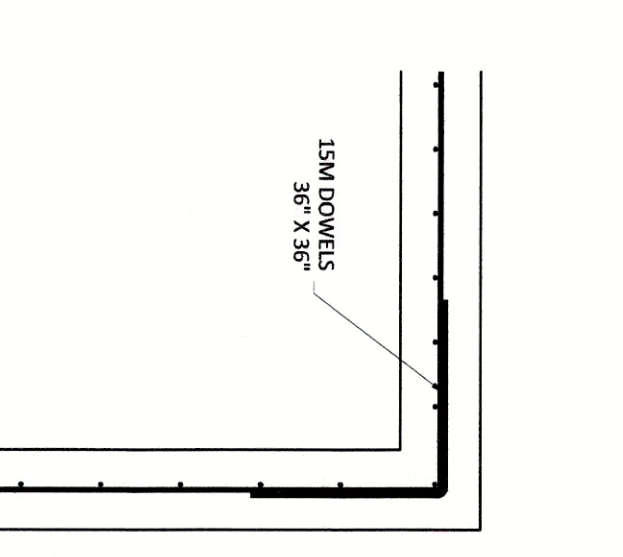
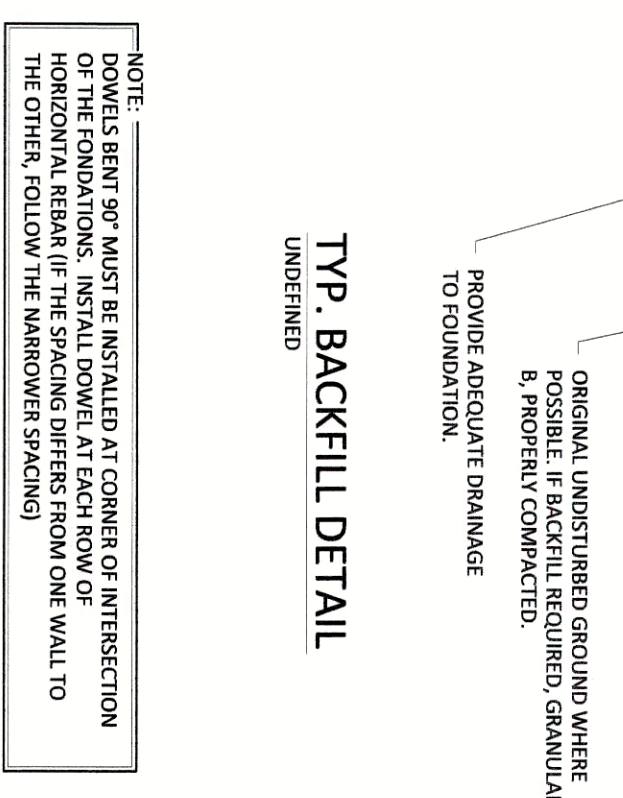
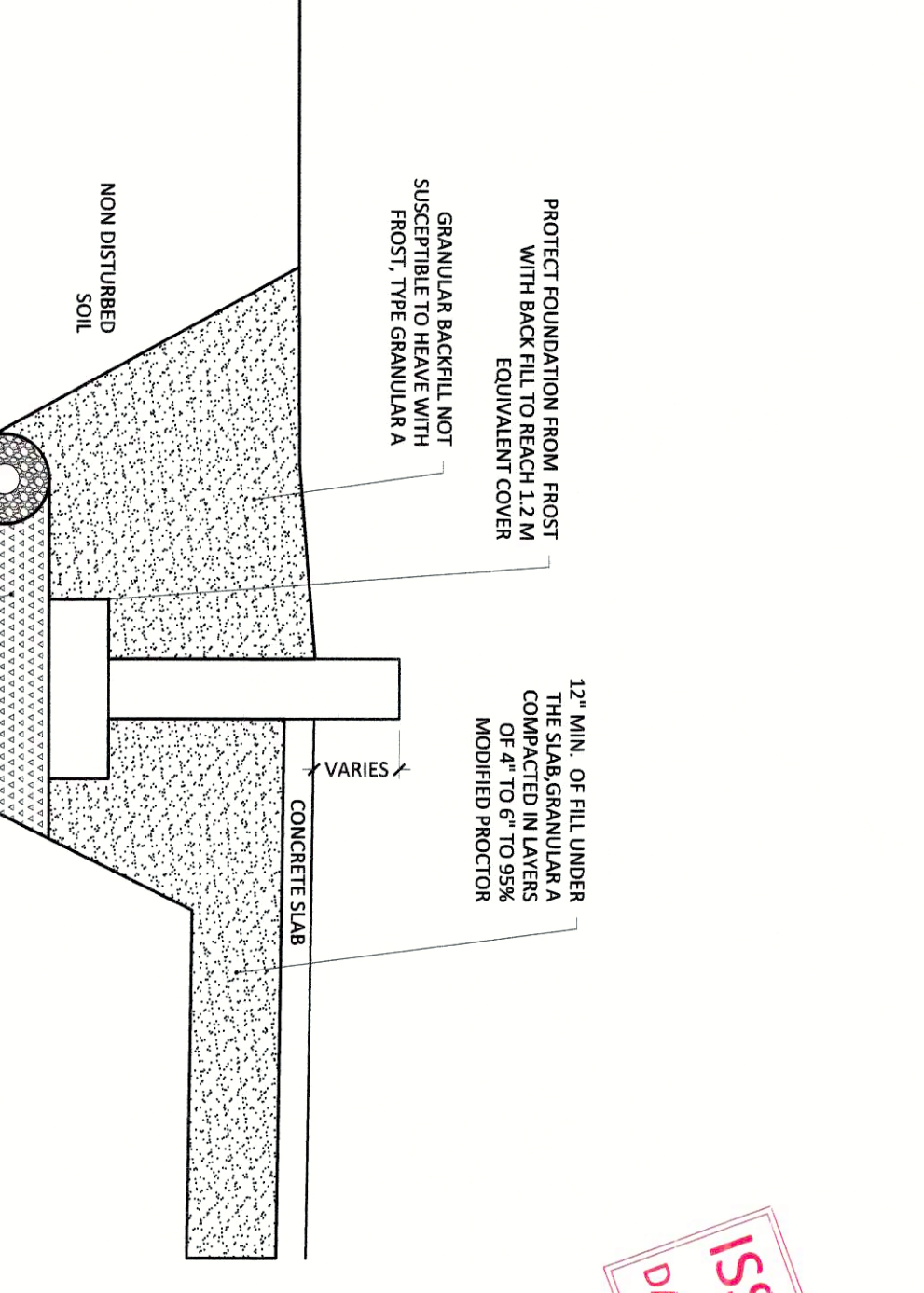
NOTES:  
1- TO FINISH GRADE PLAN FOR REQUIRED GENERAL NOTES. USE CORING SHALL BE 32 MPa @ 50 DMS.  
2- FOR THE FIELD SLABS, A CHEMICAL CONCRETE CURING AND HARDENER IS RECOMMENDED.  
PRODUCTS: M&M, M&P-CURE OR APPROVED EQUIVALENT.

DESIGN BASED ON THE FOLLOWING CONDITIONS:  
1. 3 - SULPHATE RESISTANT CEMENT SHALL BE USED FOR ALL CONCRETE IN CONTACT WITH IN-SITU SOILS, KNOWN TO BE HIGH IN SULPHATE. NORMAL PORTLAND CEMENT SHALL BE USED FOR ALL OTHER CONCRETE.  
2. CONCRETE COVER FOR REINFORCING STEEL BE AS FOLLOWS:  
A) CONCRETE EXPOSED AGAINST SOIL  
75 mm (3")  
B) CONCRETE DEPOSIT TO WEATHER, WATER, MANURE, GASES OR SOIL AFTER REMOVAL OF FORMS  
60 mm (2 1/2")  
C) SLAB AND WALLS EXCEPT AS NOTED IN A) AND B) 20 mm (1")  
MEASUREMENT

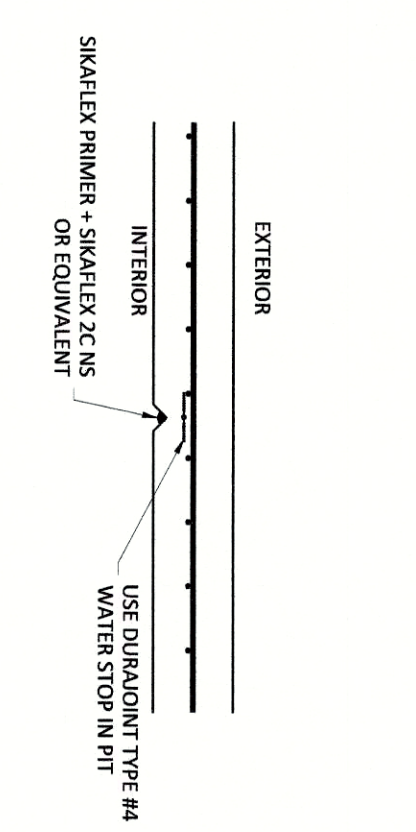
- BASE SOIL COMPACTION SPECIFICATIONS:  
1.1 SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY  
1.2 SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY FOR 10M.  
1.3 SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY FOR 15M.
- ALL REINFORCING STEEL SHALL BE HIGH RIBBON DEFORMED BARS CONFORMING TO CSA G40.21 38 GRADE 400R 15M OR 10M.
- ALL BRACING DETAILS, DIMENSIONS, ANCHORAGE, CUT-OFF LENGTHS, BAR SUPPORTS, SPACERS AND LOCATION OF REINFORCING SPACES SHALL BE IN ACCORDANCE WITH CSA A303 LATEST EDITION, UNLESS OTHERWISE SHOWN.
- ALL REINFORCING SPACES SHALL BE LOCATED AT POINTS OF MINIMAL STRESS, UNLESS OTHERWISE SHOWN.
- PROVIDE CORNER BARS TO MATCH HORIZONTAL WALL REINFORCING ON THE OUTSIDE FACE OF ALL EXTERIOR CORNERS.
- WHERE OPENING OCCUR IN WALLS, PROVIDE 2. 15M BARS ON EACH SIDE EXTENDING 610 mm (24") BOUND EDGE OF OPENING, UNLESS NOTED OTHERWISE.
- REINFORCING STEEL FOR ALL SUSPENDED BEAMS, COLUMNS AND SUSPENDED SLABS IN MANURE STORAGE AREAS IS TO BE PROXY COATED.
- ALL DOWNIES ACROSS POTENTIALLY LEAKING JOINTS IN A MANURE STORAGE ARE TO BE PROXY COATED.
- CHAWNER ALL EXPOSED EDGES 25 mm (1") UNLESS NOTED OTHERWISE.
- DOORWAYS THRU UPSTAIRS AND FOUNDATION WALLS SHALL BE CARRIED OUT AS FOLLOWS:  
15.1 - FORM OUT ALL R.O.S SO THAT NO DOOR IS LESS THAN 76 mm (3") AWAY FROM ANY INTERSECTING WALLS.  
15.2 - FORM OUT ALL R.O.S 102 mm (4") WIDER THAN DOOR TO ALLOW FOR FRAME INSTALLATION.  
15.3 - THRU DOORWAY 152 mm (6") BELOW FINISHED FLOOR ELEVATION TO ALLOW FLOOR SLAB TO BE FOUNDED ON CONCRETE FOOTING AND BOND FRAME.
- ALL REBAR MUST BE PLACED, LEVELLED AND TIED ON A CONCRETE BASE OF 80x80x75 (LENGTH X WIDTH X THICKNESS) MINIMUM BEGORE CASTING CONCRETE AND BOND FRAME.  
ALL CONCRETE ELEMENTS AND CONCRETE STRUCTURAL SHALL COMPLY WITH NBC LATEST EDITION AND CSA A23.1 LATEST EDITION.  
CONTRACTOR IS RESPONSIBLE FOR ALL UNDER SLAB CONDUITS TO BE PROPERLY INSTALLED AS APPROVED PRIOR TO ANY SLAB POUR.  
EFFECTIVE CONCRETE AND WATER TIGHTNESS TEST  
AFTER FORMS REMOVAL, CONCRETE SHALL BE INSPECTED BY THE CONTRACTOR AND CLIENT'S REPRESENTATIVE. DEFECTIVE SPOTS (BEE HIVES, VOIDS, HOLES, ETC.) SHALL BE REPAIRED BY THE CONTRACTOR. AT HIS EXPENSE. WATER TIGHT STRUCTURES (GUTTER, LIQUID MANURE RESERVOIR, PPE-PIT, ETC.) SHALL BE REPAIRED IN ORDER TO INSURE WATER TIGHTNESS. ALL CRACKS BECOMING VISIBLE AFTER CONCRETE POURING SHALL BE REPAIRED ACCORDING TO PROJECT ENGINEER RECOMMENDATIONS.  
THE CLIENT'S REPRESENTATIVE SHALL REQUEST A WATER TIGHTNESS TEST AT ANYTIME IN MAINTAINING A WATER LEVEL, AS HIGH AS THE STRUCTURE IN SERVICE. WATER TIGHTNESS CORRECTIVE MEASURES REQUIRED SHALL COMPLY WITH REGULATIONS.  
CONCRETE CASTING AND FINISHES  
THE CONTRACTOR IS RESPONSIBLE FOR USING APPROPRIATE METHODS IN ORDER TO OBTAIN QUALITY WORK COMPLIANT WITH REGULATIONS AND STANDARDS. THE CONTRACTOR SHALL COMPLY WITH DIVERSE CODES, REGULATIONS, NORMS AND GUIDELINES IN FORCE.  
THE CONTRACTOR SHALL RESPECT ALL SHEET REGULATIONS.  
IT IS PROHIBITED TO USE CALCIUM CHLORIDE TO REMOVE SNOW AND ICE ON CONCRETE SURFACES AND FORMWORK. STEEL REINFORCEMENT SHALL NOT BE REMOVED USING A STEAM HEAT GUN OR BLOWING AIR THROUGH IT.  
CONGLOMERATE CONCRETE BY VIBRATION WHILE CASTING.  
FORMWORKS SHALL NOT BE MOVED AFTER CONCRETE POURING.  
SURFACES BEING IN CONTACT WITH CONCRETE SHALL BE HANDREDF AND AT THE SAME TEMPERATURE THAN THE CONCRETE.

NOTE:  
1- THE FOLLOWING REVIEWS ARE REQUIRED (BY F. ENG) AT VARIOUS STAGES OF PROGRESS REQUIRING REVIEWS BY SUCH PARTIES AS:  
A- VALIDATED SOIL BERING CONDITIONS.  
B- REVIEW OF FORMWORK AND REINFORCING STEEL OF  
C- REVIEW OF FORMWORK AND REINFORCING STEEL OF  
D- REVIEW OF CONCRETE CURING AND HARDENER IS RECOMMENDED FOR FREE STALL PLATFORM.  
E- FINAL REVIEW AT END

CONCRETE FINISH SHALL BE DONE WITH A METALLIC TROWEL EXCEPT IF INDICATED OTHERWISE ON THE PLAN.  
CONCRETE CURING  
COLD TEMPERATURE  
IF WORK IS PERFORMED AT A TEMPERATURE LOWER THAN 5°C OR TEMPERATURE IS LOWER THAN 5°C WITHIN 24 HOURS FOLLOWING CONCRETE CASTING, CONTRACTOR SHALL MAINTAIN CONCRETE TEMPERATURE AT 10°C FOR AT LEAST 5 DAYS.  
HOT TEMPERATURE  
FOR TEMPERATURES OVER 27°C OR FOR EVAPORATION RATE EXCEEDING 100 g/m²/h, CONTRACTOR MUST PROTECT CONCRETE SURFACE FROM PREMATURE DRYING FOR AT LEAST 36 CONSECUTIVE HOURS AFTER CASTING.  
CONTRACTOR SHALL KEEP CONCRETE WET USING WILD WATER OR COVER CONCRETE WITH POLYBUTYLENE OR USE REBARING ADMIXTURE ACCORDING TO SUPPLIER'S INSTRUCTIONS.  
SITE GENERAL REVIEW  
• THE GENERAL SITE REVIEW WILL BE DONE BY THE CONSULTANT'S LEAD & CHAIRMAN INC., THE CONTRACTOR SHALL INFORM THE FIRM AT LEAST 5 DAYS BEFORE THE BEGINNING OF WORK AND 48H BEFORE EVERY CONCRETE POUR.  
BAGGELL AROUND THE PERIMETER WALL  
MATERIAL UNDER THE FOOTINGS AND/OR SLAB SHALL BE FREE-FLOWING CLEAN MATERIAL. TYPE GRANULAR A 8" OR BETTER SAND HEAVE WITH FROST. WELL GRADED GRANULAR OR WELL GRADED SAND ACCORDING TO ONTARIO PROVINCIAL SPECIFICATION STANDARDS. TYPE GRANULAR "A".  
GRANULAR CUSHION  
• MATERIAL UNDER THE FOOTINGS AND/OR SLAB SHALL BE FREE-FLOWING CLEAN MATERIAL. TYPE GRANULAR A 8" OR BETTER SAND FREE OF PARTICLES LARGER THAN 3" (75.0 mm) OR GRAVEL 0.75 mm WITH AN UNIFORM DISTRIBUTION. (GPS STANDARDS)  
• COMPACTION SPECIFICATIONS:  
• ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6" (150 mm) AND SHALL BE COMPACTED TO A MINIMUM OF 98% ACCORDING TO SUPPLIER'S INSTRUCTIONS.  
• CONTRACTOR IS RESPONSIBLE FOR ALL UNDER SLAB CONDUITS TO BE PROPERLY INSTALLED AS APPROVED PRIOR TO ANY SLAB POUR.



CORNER DOWELS TYP. DETAIL



CONTROL JOINT TYP. DETAIL

ISSUED FOR CONSTRUCTION  
DATE: MAY 5th 2020

NO	REVISION / MODIFICATION	DATE	BY	VER.
1	ISSUED FOR CONSTRUCTION	05/05/2020	P.G.	P.G.
2	ISSUED FOR CONSTRUCTION MODIFICATION	23/04/2020	M.A.	P.G.

<p>NOTES: A. DETAIL NO. B. SOURCE OF DETAIL C. ILLUSTRATED ON</p>
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**PROJECT:** 2234, OTTAWA REGIONAL RD 19  
MACHINE SHED  
MANOTICK (ONTARIO) K0M 1B4

**CONCRETE SPECIFICATIONS**

**DRAWING TITLE:** CONCRETE SPECIFICATIONS

**SCALE:** UNDEFINED

**PAPER SIZE:** ARCH D (24 X 36 POUCE)  
DRAWN BY: MIGUEL AUDET  
CHECKED BY: PHILIPPE GAUDE, P.Eng.  
VERIFIED BY: PHILIPPE GAUDE, P.Eng.  
DESIGNED BY: PHILIPPE GAUDE, P.Eng.

**LICENSED PROFESSIONAL ENGINEER**  
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PROVINCE OF QUEBEC  
FILE: MCH/2020  
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SPECI