

| Révisions / Revisions | Objet / Object                | Date / Date |
|-----------------------|-------------------------------|-------------|
| 1                     | DESIGN POUR CONSTRUCTION      | 2023-06-15  |
| 2                     | Détails pour construction     | 2023-06-15  |
| 3                     | Détails typ                   | 2023-06-15  |
| 4                     | DESIGN AVEC POUR CONSTRUCTION | 2023-06-15  |

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Titre du projet / Project title

**SCC\_Bat18Cowansville**  
 400, chemin Fordyce, Cowansville (Québec) J2K 3G6

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**STRUCTURE**  
**22-0625 | SCC\_Bat18Cowansville**  
 400, chemin Fordyce, Cowansville (Québec) J2K 3G6  
 2023-06-15 | ÉMISSION POUR CONSTRUCTION



GENERAL NOTES

- 1. DEFINITION OF TERMS
1.1. UNLESS OTHERWISE INDICATED IN THE TEXT, THE WORDS AND EXPRESSIONS THAT BEGIN WITH A CAPITAL LETTER IN THE GENERAL NOTES SHALL BE INTERPRETED AS FOLLOWS.
1.1.1. ENGINEERING DOCUMENTS INCLUDES, WITHOUT BEING LIMITED TO ALL OFFICIALLY ISSUED CONSTRUCTION DOCUMENTS SUCH AS PLANS, DRAWINGS AND SPECIFICATIONS, SIGNED AND SEALED BY ELEMA'S ENGINEER.

- 1.1.2. CONTRACTOR THE GENERAL CONTRACTOR, PROJECT MANAGER OR ANY OTHER ENTITY IN CHARGE OF PERFORMING THE WORK.
1.1.3. GEOTECHNICAL ENGINEER: RESPONSIBLE FOR PERFORMING ANALYZING AND ISSUING THE GEOTECHNICAL STUDY SPECULATED IN SECTION 4.
1.1.4. LABORATORY: THE TESTING LABORATORY RESPONSIBLE FOR ANALYZING AND MONITORING COMPLIANCE OF STRUCTURAL MATERIALS.
1.1.5. STRUCTURAL ENGINEER: ELEMA'S ENGINEER (OR THE ENGINEERS REPRESENTATIVE) WHO SIGNS AND SEALS THE ENGINEERING DOCUMENTS.
1.1.6. O.I.O. (ORDRE DES INGÉNIERS DU QUÉBEC) (ORDER OF ENGINEERS)
1.1.7. U.N.O.: UNLESS NOTED OTHERWISE.
1.1.8. SUBCONTRACTOR: PERSON OR COMPANY IN CHARGE OF FORMER THE WORK ON BEHALF OF THE CONTRACTOR. THE SUBCONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE QUALITY OF THE CONTRACTOR AND IS SUBJECT TO THE SAME REQUIREMENTS AS THE CONTRACTOR.

- 2. GENERAL PROVISIONS
2.1. U.N.O. ENGINEERING DOCUMENTS ARE PREPARED IN ACCORDANCE WITH THE CODES AND STANDARDS STIPULATED IN TABLE 2.1.
2.2. USE THE MOST RECENT VERSION OF ALL APPLICABLE STANDARDS NOT LISTED ABOVE.
2.3. THE CONTRACTOR SHALL ONLY USE AND DISTRIBUTE ENGINEERING DOCUMENTS THAT HAVE BEEN SIGNED, SEALED AND ISSUED FOR CONSTRUCTION, AS WELL AS ANY SUBSEQUENT RELATED DIRECTIVES, OR INSTRUCTIONS. THE CONTRACTOR SHALL PERFORM WORK AS INDICATED IN THESE ENGINEERING DOCUMENTS AND IN ACCORDANCE WITH ALL CODES AND STANDARDS STIPULATED IN TABLE 2.1.
2.4. IN NO CASE SHALL THE CONTRACTOR PERFORM TO SCALE MEASUREMENTS ON THE ENGINEERING DOCUMENTS OR COMPUTER-ASSISTED DRAWINGS AND DATABASES (BIM/CAD) AS TO SCALE.
2.5. THE CONTRACTOR SHALL NOT, AT ANY TIME, EXCEED THE LOADS INDICATED IN THE ENGINEERING DOCUMENTS. WHEN IN DOUBT, THE CONTRACTOR SHALL REQUEST PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL EVENLY DISTRIBUTE ITS MATERIALS OVER THE SURFACE OF STRUCTURES AS SPECIFIED ON THE DRAWINGS (UNLESS NOT EXCEEDED).

- 2.6. U.N.O. VIBRATION VELOCITY GENERATED BY CONSTRUCTION OPERATIONS AND TO WHICH SUBSTRUCTURES ARE EXPOSED TO SHALL NOT EXCEED 50 CM/S ON ANY OTHER REGULATION STIPULATED BY MUNICIPAL OR OTHER OFFICIAL BODIES. THE CONTRACTOR SHALL COMPLY WITH THE MOST RESTRICTIVE OF THE REQUIREMENTS.
2.7. THE CONTRACTOR SHALL ENSURE THAT THE VIBRATIONS INDICATED DURING THE WORK DO NOT CAUSE HARM TO THE SURROUNDING STRUCTURES. IF THE LIMITS STIPULATED UNDER ITEM 2.6 DO NOT PREVENT DAMAGE TO THE SURROUNDING STRUCTURES, THE VIBRATION VELOCITY LIMIT SHALL BE DECREASED.
2.8. THE STRUCTURAL ENGINEER RECOMMENDS THAT A VISIT BE MADE BY THE CONTRACTOR BEFORE THE START OF WORK OF THE EXISTING CONSTRUCTION.
2.9. BIM/CAD FILES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. IF THE CONTRACTOR OBTAINS A COPY THEREOF, THE CONTRACTOR SHALL RESPECT THE COPYRIGHTS AND AGREEES NOT TO REPRODUCE, DISTRIBUTE OR USE THEM FOR OTHER PURPOSES. THE CONTRACTOR ALSO ACKNOWLEDGES THAT DRAWINGS RECEIVED IN ELECTRONIC FORM MAY HAVE BEEN ALTERED AND CONSEQUENTLY SHALL NOT BE CONSIDERED AS FREE OF ERRORS OR OMISSIONS, NOR AS CORRESPONDING TO THE ENGINEERING DOCUMENTS.

- 3. SPECIAL PROVISIONS
3.1. TENDER DOCUMENTS
3.1.1. FOR TENDERING PURPOSES, THE CONTRACTOR AND ITS SUBCONTRACTORS ARE REQUIRED TO READ AND UNDERSTAND ALL ENGINEERING DOCUMENTS, AS WELL AS DOCUMENTS ISSUED BY THE ARCHITECT, MECHANICAL ENGINEER, ELECTRICAL ENGINEER AND ANY OTHER PROFESSIONAL INVOLVED IN THE PROJECT.
3.1.2. DURING THE TENDERING PERIOD, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE STRUCTURAL ENGINEER WITHIN A REASONABLE TIME FRAME, OF ANY INCONSISTENCIES OR OMISSIONS FOUND IN THE ENGINEERING DOCUMENTS AND SHALL ASK WHATEVER QUESTIONS NECESSARY TO PREPARE HIS TENDER BY SUBMITTING HIS TENDER. THE CONTRACTOR CONFIRMS THAT THE ENGINEERING DOCUMENTS ARE FULLY UNDERSTOOD, CLEAR, COMPREHENSIVE AND FREE OF ANY AMBIGUITY.
3.1.3. ANY MODIFICATIONS TO THE ENGINEERING DOCUMENTS DURING THE TENDERING PERIOD MAY BE THE SUBJECT OF AN ADDENDUM AND SHALL BE INCLUDED IN THE CONTRACTOR'S TENDER.
3.1.4. IN ADDITION TO THE OPENINGS SHOWN IN THE ENGINEERING DOCUMENTS, THE CONTRACTOR SHALL LIST AND TAKE INTO ACCOUNT ALL OPENINGS SHOWN IN OTHER PROFESSIONAL'S DOCUMENTS, INCLUDING SLEEVES FOR PLUMBING, ELECTRICITY AND OTHER UTILITIES.

- 3.2. CONSTRUCTION DOCUMENTS
3.2.1. FOR CONSTRUCTION PURPOSES, THE CONTRACTOR AND ITS SUBCONTRACTORS ARE REQUIRED TO READ AND UNDERSTAND ALL ENGINEERING DOCUMENTS, AS WELL AS DOCUMENTS ISSUED BY THE ARCHITECT, MECHANICAL ENGINEER, ELECTRICAL ENGINEER AND ANY OTHER PROFESSIONAL INVOLVED IN THE PROJECT.
3.2.2. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER WITHIN A REASONABLE TIME FRAME, OF ANY INCONSISTENCIES FOUND IN THE ENGINEERING DOCUMENTS, AS COMPARED TO THE ARCHITECT'S DOCUMENTS OR THOSE OF ANY OTHER PROFESSIONALS INVOLVED IN THE PROJECT.
3.2.3. ANY MODIFICATIONS TO THE ENGINEERING DOCUMENTS DURING THE CONSTRUCTION PERIOD SHALL BE ISSUED IN A DIRECTIVE.
3.2.4. CLARIFICATIONS TO ENGINEERING DOCUMENTS MAY BE ISSUED IN A SITE INSTRUCTION.
3.2.5. IN ADDITION TO THE OPENINGS SHOWN IN THE ENGINEERING DOCUMENTS, THE CONTRACTOR SHALL LIST AND TAKE INTO ACCOUNT ALL OPENINGS SHOWN IN OTHER PROFESSIONALS' DOCUMENTS, INCLUDING SLEEVES FOR PLUMBING, ELECTRICITY AND OTHER UTILITIES.

- 3.3. TEMPORARY STRUCTURES
3.3.1. TEMPORARY STRUCTURES INCLUDE, WITHOUT BEING LIMITED TO, FORMWORK, SCAFFOLDING, SHORING, TEMPORARY WALLS, WORK PLATFORMS (ONMAST'S FRAG), TOWER CRANES, SOLDER PILES AND LAGGING WALLS, CONSTRUCTION SITE FENCING OR OTHER TEMPORARY STRUCTURES.
3.3.2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, CONSTRUCTION AND MANAGEMENT OF TEMPORARY STRUCTURES, ACCORDING TO INDUSTRY STANDARDS.
3.3.3. ALL TEMPORARY STRUCTURES SHALL BE DESIGNED, CONSTRUCTED AND DISMANTLED ACCORDING TO THE CURRENT APPLICABLE CODES AND STANDARDS, AS WELL AS ONEST REGULATIONS.
3.3.4. THE CONTRACTOR SHALL MANDATE AN ENGINEER WHO IS A MEMBER IN GOOD STANDING OF THE O.I.O. AND WHO HAS RELEVANT EXPERIENCE TO DESIGN AND PRODUCE SHOP DRAWINGS FOR, AND TO TAKE ENTIRE RESPONSIBILITY FOR THE EXECUTION OF TEMPORARY STRUCTURES.
3.3.5. THE DIMENSIONAL REQUIREMENTS OF TEMPORARY STRUCTURES SHALL BE INCORPORATED WITHIN THE PERMANENT PROJECT STRUCTURE. THE CONTRACTOR SHALL ENSURE ADEQUATE COORDINATION BETWEEN ITS SUBCONTRACTOR AND THE STRUCTURAL ENGINEER WHEN TEMPORARY STRUCTURES INTERFERE WITH PERMANENT STRUCTURES.
3.3.6. WHENEVER POSSIBLE, THE TOWER CRANE FOUNDATIONS SHALL BE INDEPENDENT OF THE BUILDING'S FOUNDATIONS. THE CRANE FOUNDATIONS SHALL BE DESIGNED TO BE SEPARATE FROM AND FOR THE BUILDING'S LOADS IN THE CRANE FOUNDATIONS DESIGN AND ENSURE THE BUILDING'S STRUCTURAL INTEGRITY REMAINS INTACT AT ALL TIMES.
3.3.7. TEMPORARY STRUCTURES, MECHANICAL EQUIPMENT AND MOBIL LIFTING EQUIPMENT ERECTED ON PERMANENT STRUCTURES SHALL BE DIRECTLY SUPPORTED BY THE FOUNDATION OR BY A TEMPORARY STRUCTURE DESIGNED FOR THIS PURPOSE.

- 3.4. TEMPORARY OPENINGS IN STRUCTURAL ELEMENTS
3.4.1. THE CONTRACTOR SHALL DESIGN ALL TEMPORARY OPENINGS AND ENSURE THEY ARE FILLED IN WHEN WORK IS COMPLETE. ALL TEMPORARY OPENINGS AND CONSTRUCTION METHODS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
3.4.2. THE CONTRACTOR SHALL ASSUME ALL COSTS ASSOCIATED WITH TEMPORARY OPENINGS.

- 5. WORK IN OR NEAR EXISTING STRUCTURES
5.1. THE CONTRACTOR SHALL IDENTIFY AND LOCATE ALL PUBLIC UTILITIES NEAR THE PROJECT AND TAKE NECESSARY PRECAUTIONS TO PROTECT THEM.
5.2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DEMOLITION, TEMPORARY SUPPORT, UNDERPINNING, SHORING, BRACING, TIED BEAMS, UNDERPIPING, SOIL BOLTS, SHORING. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND EQUIPMENT. THE CONTRACTOR SHALL USE UNDERPIPING WITH THE REQUIRED LEVEL OF KNOWLEDGE, ALL WORK SHALL COMPLY WITH THE MOST RECENT EDITION OF THE GOVERNMENT OF QUEBEC'S SAFETY CODE FOR THE CONSTRUCTION INDUSTRY (SC03).
5.3. THE CONTRACTOR SHALL VERIFY DIMENSIONS INDICATED IN THE ENGINEERING DOCUMENTS. IF ANY INCONSISTENCIES ARE NOTED BETWEEN THE CONDITIONS ON THE SITE AND THE ENGINEERING DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER.
5.4. FOR DEMOLITION WORK, THE CONTRACTOR SHALL PREPARE A WORK METHOD, DEMOLITION DRAWINGS AND TEMPORARY STRUCTURE DRAWINGS, SIGNED AND SEALED BY ITS ENGINEER. ALL DEMOLITION WORK SHALL COMPLY WITH CSA S308.1M(09) (R2009). THE STRUCTURAL ENGINEER RESERVES THE RIGHT TO REVIEW AND COMMENT ON THE DEMOLITION DRAWINGS.
5.5. IF INFRASTRUCTURE WORK INVOLVES PARTIAL (OR COMPLETE) DEMOLITION OF A SLAB OR GRADE, THE CONTRACTOR SHALL REQUEST WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER BEFORE RESPONDING ANY WORK.
5.6. WHEN DEMOLITION OF BRACING AND/OR SOILD MASSORY STRUCTURES IS PLANNED, THE CONTRACTOR SHALL REQUEST WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER PRIOR TO PERFORMING ANY WORK.

- 10. REINFORCED CONCRETE
10.1. REINFORCED CONCRETE STRUCTURES SHALL COMPLY WITH CSA-A23.1, CSA-A23.2 AND CSA-A23.3.
10.2. THE CLIENT SHALL MANDATE A LABORATORY TO PROVIDE CONCRETE QUALITY FOLLOWING.
10.3. THE SPECIALIZED LABORATORY'S QUALITY CONTROL PROGRAM SHALL INCLUDE THE FOLLOWING, AT A MINIMUM:
10.3.1. VERIFICATION OF THE CONTRACTOR'S PROPOSED CONCRETE MIX DESIGNS.
10.3.2. PRESENCE WHENEVER CONCRETE IS POURED.
10.3.3. SAMPLING OF THREE (3) CYLINDERS OF CONCRETE FROM THE FIRST 50 CM DEPTH METRES OF CONCRETE.
10.3.4. SAMPLING OF THREE (3) CYLINDERS OF CONCRETE PER ADDITIONAL 100 CUBIC METRES OF CONCRETE.
10.3.5. PERFORMANCE OF ONE (1) SLUMP TEST PER HOUR.
10.3.6. PERFORMANCE OF ONE (1) COMPRESSION TEST (CYLINDERS) AT SEVEN (7) DAYS.
10.3.7. PERFORMANCE OF TWO (2) COMPRESSION TESTS (CYLINDERS) AT 28 DAYS.
10.3.8. PERFORMANCE OF ADDITIONAL COMPRESSION TESTS (CYLINDERS) FOR RAPID FLOW FORM.
10.3.9. SUBMIT A REPORT TO THE STRUCTURAL ENGINEER DESCRIBING THE COMPRESSION TEST RESULTS, AS SOON AS THE TESTS HAVE BEEN COMPLETED.
10.3.10. THE CONTRACTOR SHALL SUBMIT THE LOCATION OF CONSTRUCTION JOINTS IN WALLS, SLABS AND BEAMS TO THE STRUCTURAL ENGINEER FOR VERIFICATION AT LEAST SEVEN (7) DAYS PRIOR TO POURING.
10.3.11. FOUNDATION WALLS ARE NOT DESIGNED TO WITHSTAND LATERAL THRUST DUE TO HYDROSTATIC PRESSURE. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR INSTALLATION OF DRAINAGE SYSTEMS AFFIXED TO THE WALLS. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER WHEN NO DRAINAGE SYSTEM IS INDICATED ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS.
10.3.12. THE CONTRACTOR SHALL ALLOW THE CONCRETE IN COLUMNS AND WALLS TO SET FOR AT LEAST 72 HOURS AND TO BE STORED AT LEAST NINE (9) DEGREES CELSIUS. THEREFORE, THE CONTRACTOR SHALL ENSURE THAT THE SLABS HAVE REACHED 100% OF THEIR SPECIFIED STRENGTH BEFORE REMOVAL OF THE SHORING SYSTEM.

- 10.4. THE THICKNESS OF SOIL AND GRAVEL LAYERS ON OUTDOOR TERRACES SHALL BE CAREFULLY MEASURED IN ACCORDANCE WITH THE LANDSCAPE ARCHITECT'S DRAWINGS AND SHALL NOT EXCEED THE THICKNESSES INDICATED IN THE ENGINEERING DOCUMENTS OR ARCHITECTURAL DOCUMENTS. IT IS STRICTLY PROHIBITED FOR TRUCKS TO DRIVE OR DUMP THEIR CONTENTS ON SLABS.
10.4.1. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR FINISHES TO DRAIN THE CONCRETE SURFACE FINISH OR TREATMENT (E.G. SMOOTH FINISH, SANDBLAST FINISH, STrips, CHAMFER, DRAINAGE GROOVES, JOINTS, ETC.) TO BE INCORPORATED INTO THE FORMWORK.
10.4.2. THE CONTRACTOR SHALL SUBMIT THE LOCATION OF CONSTRUCTION JOINTS IN WALLS, SLABS AND BEAMS TO THE STRUCTURAL ENGINEER FOR VERIFICATION AT LEAST SEVEN (7) DAYS PRIOR TO POURING.
10.4.3. COMPATIBILITY OF CONCRETE HARDENERS WITH ARCHITECTURAL FINISHES SHALL BE SUBMITTED AND VERIFIED BY THE ARCHITECT.
10.4.4. IT IS PROHIBITED TO POUR CONCRETE FOR SLABS WHEN FORMWORK IS PLACED ON FROZEN GROUND, DURING PERIODS OF FROST. THE CONTRACTOR SHALL IMPLEMENT WHATEVER MEASURES NECESSARY TO PREVENT THE GROUND FROM FREEZING.
10.4.5. NO SAYS CUTS SHALL BE PERMITTED IN STRUCTURAL SLABS.
10.4.6. CONCRETE FOR STRUCTURAL SLABS SHALL BE POURED, VIBRATED AND THEN LEVELLED OFF USING STRAIGHT BARS. CONCRETE THICKNESS SHALL BE MEASURED BY PUNING A ROD INTO THE CONCRETE, AND SHALL ACCORD FOR CAMBERS. USING A LASER TO DETERMINE SLAB THICKNESS IS NOT PERMITTED.
10.4.7. SLABS SHALL BE FINISHED USING STEEL MECHANICAL FINISHES, SUCH AS STAIRS, CHAMFER, DRAINAGE GROOVES, JOINTS, ETC. TO BE INCORPORATED INTO THE FORMWORK.
10.4.8. THE TOP OF STAIRS AND EXTERIOR SLABS SHALL BE FINISHED WITH A WOODEN TROWEL.
10.4.9. UNLESS OTHERWISE INDICATED IN THE ARCHITECTURAL SPECIFICATIONS, THE FLOWSHALL STRAIGHT EDGE. FLATNESS TOLERANCES SHALL BE MEASURED BEFORE FORMS ARE REMOVED FROM EACH SLAB, AND THEN SENT TO THE STRUCTURAL ENGINEER AND THE ARCHITECT. ANY SLAB SURFACE DEMAY TO BE OUT OF TOLERANCE SHALL BE REPAIRED BY THE STRUCTURAL ENGINEERS AND ARCHITECT'S FULL SATISFACTION.

- 10.5. CONCRETE FOR SLABS SHALL NOT BE POURED UNDER ADVERSE WEATHER CONDITIONS (NO WIND, SLEET, ETC.) OR WHEN FORECASTED OUTDOOR TEMPERATURES FOR THE SUBSEQUENT TWENTY-FOUR (24) HOURS IS BELOW -17 DEGREES CELSIUS. THE CONTRACTOR SHALL ALSO TAKE THE WIND AND EXPOSURE CONDITIONS INTO ACCOUNT IN THE APPROVED CONSTRUCTION METHODS.
10.5.1. IN NO CASE SHALL THE CONTRACTOR PERFORM TO SCALE MEASUREMENTS ON THE ENGINEERING DOCUMENTS OR COMPUTER-ASSISTED DRAWINGS AND DATABASES (BIM/CAD) AS TO SCALE.
10.5.2. THE CONTRACTOR SHALL NOT, AT ANY TIME, EXCEED THE LOADS INDICATED IN THE ENGINEERING DOCUMENTS. WHEN IN DOUBT, THE CONTRACTOR SHALL REQUEST PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL EVENLY DISTRIBUTE ITS MATERIALS OVER THE SURFACE OF STRUCTURES AS SPECIFIED ON THE DRAWINGS (UNLESS NOT EXCEEDED).

- 10.6. U.N.O. VIBRATION VELOCITY GENERATED BY CONSTRUCTION OPERATIONS AND TO WHICH SUBSTRUCTURES ARE EXPOSED TO SHALL NOT EXCEED 50 CM/S ON ANY OTHER REGULATION STIPULATED BY MUNICIPAL OR OTHER OFFICIAL BODIES. THE CONTRACTOR SHALL COMPLY WITH THE MOST RESTRICTIVE OF THE REQUIREMENTS.
10.7. THE CONTRACTOR SHALL ENSURE THAT THE VIBRATIONS INDICATED DURING THE WORK DO NOT CAUSE HARM TO THE SURROUNDING STRUCTURES. IF THE LIMITS STIPULATED UNDER ITEM 2.6 DO NOT PREVENT DAMAGE TO THE SURROUNDING STRUCTURES, THE VIBRATION VELOCITY LIMIT SHALL BE DECREASED.
10.8. THE STRUCTURAL ENGINEER RECOMMENDS THAT A VISIT BE MADE BY THE CONTRACTOR BEFORE THE START OF WORK OF THE EXISTING CONSTRUCTION.
10.9. BIM/CAD FILES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. IF THE CONTRACTOR OBTAINS A COPY THEREOF, THE CONTRACTOR SHALL RESPECT THE COPYRIGHTS AND AGREEES NOT TO REPRODUCE, DISTRIBUTE OR USE THEM FOR OTHER PURPOSES. THE CONTRACTOR ALSO ACKNOWLEDGES THAT DRAWINGS RECEIVED IN ELECTRONIC FORM MAY HAVE BEEN ALTERED AND CONSEQUENTLY SHALL NOT BE CONSIDERED AS FREE OF ERRORS OR OMISSIONS, NOR AS CORRESPONDING TO THE ENGINEERING DOCUMENTS.

- 10.22. CONSTRUCTION JOINTS
10.22.1. THE CONTRACTOR SHALL POUR CONCRETE FOR THE STRUCTURAL SLABS AND WALLS WITH CONSTRUCTION JOINTS SPACED NO MORE THAN 30 METERS FROM THE CONSTRUCTION JOINTS IN CONCRETE BEAMS. REFER TO THE TYPICAL DETAIL DRAWINGS FOR ANY CONCRETE SURFACE LONGER THAN 30 M. THE CONTRACTOR SHALL INSERT A 30 M EXPANSION STOP WITH MAXIMUM SPACING OF 30 M C/C. THE EXPANSION STOP SHALL BE CONCRETED IN A 2nd PHASE, TWENTY-FOUR (24) HOURS LATER. CONSTRUCTION JOINTS AND EXPANSION STOPS IN STRUCTURAL SLABS AND BEAMS SHALL BE INSERTED IN THE MIDDLE THIRD OF THE SPANS.
10.22.2. BEFORE CONCRETE OPERATIONS BEGIN, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE STRUCTURAL ENGINEER FOR APPROVAL, INDICATING THE CONCRETE POURING SEQUENCE AND POSITIONS OF THE CONSTRUCTION JOINTS.

- 10.23. CONCRETE QUALITY
10.23.1. THE CONCRETE SUPPLIER SHALL SUBMIT THE MIX DESIGNS FOR ALL TYPES OF CONCRETE SPECIFIED FOR THE PROJECT TO THE LABORATORY, FOR APPROVAL.
10.23.2. 28-DAY STRENGTH OF CONCRETE: REFER TO THE CONCRETE QUALITY TABLE FOR THE REQUIRED CONCRETE PROPERTIES. THE MOST RESTRICTIVE REQUIREMENTS FOR PARKING STRUCTURES ARE INDICATED IN SECTION 6.4. PARKING LOTS.
10.23.3. WATER MAY NOT BE ADDED TO CONCRETE MIXTURE ON THE CONSTRUCTION SITE TO COMPENSATE FOR EVAPORATION. CALCIUM CHLORIDE MAY NOT BE ADDED TO THE CONCRETE. CONCRETE THAT HAS EXCEEDED THE PLACED TIME LIMIT BEFORE BEING DISCHARGED FROM THE TRUCK SHALL BE REJECTED. ANY DEVIATION FROM THE APPROVED MIX DESIGN OR FROM CONCRETE HANDLING, DISCHARGE AND PLACEMENT PROCEDURES SHALL BE APPROVED BY THE LABORATORY, IN ACCORDANCE WITH THE REQUIREMENTS INDICATED IN A23.1.

- 10.23.4. CONCRETE CURING: CONCRETE SHALL BE PROPERLY CURED IN ACCORDANCE WITH CSA-A23.1 TAKING CARE TO USE PRODUCTS THAT ARE COMPATIBLE WITH THE FINISHES SPECIFIED IN THE ARCHITECTURAL DRAWINGS. ANY OMISSION IN CURING CONCRETE MAY RESULT IN EXCESSIVE CRACKING AND ADDITIONAL UNDESIRABLE PERMANENT DEFLECTION. CURING METHODS SHALL BE SELECTED ACCORDING TO TABLE 2.1(A.2.1), DEPENDING ON THE TYPE OF CONCRETE USED.
10.24.1. BASIC CURING: TYPE 1 BASIC CURING REQUIRED FOR ALL SLABS. WET CURING FOR THREE (3) DAYS AT A MINIMUM TEMPERATURE OF TEN (10) DEGREES CELSIUS, OR UNTIL 40% OF SPECIFIED STRENGTH IS REACHED.
10.24.2. ADDITIONAL CURING: TYPE 2 CONCRETE FOR WALLS SUBJECT TO F-1, C-1, C-2, S-1 AND S-2 CLASSES OF EXPOSURE. CURING IS REQUIRED FOR SEVEN (7) CONSECUTIVE DAYS AT A MINIMUM OF TEN (10) DEGREES CELSIUS OR UNTIL 70% OF THE SPECIFIED STRENGTH IS REACHED.
10.24.3. AS AN ALTERNATIVE TO WET CURING, CURING COMPOUNDS THAT MEET ONE OF THE FOLLOWING STANDARDS MAY BE USED: AASHOT/ASTM C117 OR ASTM C309. ALL CURING COMPOUNDS SHALL BE APPROVED BY THE LABORATORY AND ARCHITECT.
10.24.4. ONLY TYPE TEN (10) (TYPE GU) CEMENT MAY BE USED IN CONCRETE FOR UTILITIES.
10.24.5. ANY EXPANSION/CONTRACTION CRACKS LARGER THAN 0.5 MM SHALL BE CALKED USING REPAIR MORTAR, IN A COLOUR THAT MATCHES THE COLOUR OF THE CONCRETE. THESE REPAIRS SHALL BE PERFORMED ONE (1) YEAR AFTER CONCRETE IS POURED. JUST PRIOR TO HANDING OVER THE BUILDING, CRACKS IN STRUCTURAL SLABS WIDER THAN 0.5 MM SHALL BE INFECTED WITH EPOXY.
10.24.6. CONDUIT BENEATH THE SLABS SHALL NOT RUN BENEATH COLUMNS, BENEATH THE CORNERS OF FOUNDATION WALLS, OR BENEATH THE CORNERS OR CLUSTERS OF REBAR IN SHEAR WALLS. CONDUIT SHALL BE PLACED IN AN AREA AT LEAST 50 MM FROM COLUMNS AND ENDS OF WALLS. AVOID CROSS-CROSSING CONDUIT IN THE SLABS. CONDUIT SHALL NOT BE AFFIXED TO REBAR THAT RUNS PARALLEL TO IT. CLUSTERS OF CONDUIT IN THE SLABS, JUST AS IN THE CASE AT ELECTRICAL PANEL OUTLETS, SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

- 10.24.7. SHOP DRAWINGS AT LEAST TWO (2) WEEKS PRIOR TO STARTING CONCRETE WORK. THE CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS FOR THE STRUCTURAL ENGINEERS' REVIEW, SHOWING ALL PLUMBING SLEEVES AS WELL AS THE ELECTRICAL AND VENTILATION OPENINGS THAT RUN THROUGH THE SLABS, BEAMS AND CONCRETE WALLS. NO SLEEVE SHALL RUN THROUGH COLUMNS. SLEEVES SHALL RUN VERTICALLY THROUGH A BEAM. SHOP DRAWINGS PREPARED BY SUBCONTRACTORS SHALL SHOW THE DIAMETERS AND POSITION OF SLEEVES RELATIVE TO THE COLUMNS.
10.24.8. THE INSTRUCTIONS IN THIS SECTION SHALL BE TRANSMITTED TO THE PLUMBING, ELECTRICITY AND VENTILATION SUBCONTRACTORS.
10.24.9. THE CONTRACTOR SHALL ALSO REFER TO THE TYPICAL DETAIL DRAWINGS.
10.24.10. NO HOLES ARE TO BE MADE AFTER CONCRETE IS POURED. CUTTING THE REBAR IS STRICTLY PROHIBITED. BEFORE CONCRETE IS POURED FOR THE SLAB, THE CONTRACTOR SHALL LOCATE THE OPENINGS FOR PLUMBING AND ELECTRICITY, AND SHALL PROVIDE:
10.24.11. LARGEST OR STEEL SLEEVES IN THE SLABS AND WALLS FOR THIS PURPOSE. IN A CLUSTER OF SLEEVES, SPACING BETWEEN THE SLEEVES SHALL BE AT LEAST EQUIVALENT TO THE DIAMETER OF THE LARGEST SLEEVE, WITH A MINIMUM SPACING OF 100 MM.
10.24.12. IF CREATING A HOLE AFTER POURING THE CONCRETE IS NEARABLE, DETAILS SHALL BE SUBMITTED IN WRITING TO THE STRUCTURAL ENGINEER FOR REVIEW. REBAR SHALL BE INSTALLED TO PREVENT HAVING TO UNNECESSARILY CUT IT. THE CONTRACTOR SHALL DRILL HOLES IN THE CORNERS OF OPENINGS TO INTERSECT THE PERIMETER SAW CUTS.
10.24.13. CONDUIT IN THE SLABS SHALL BE PLACED BETWEEN THE ROWS OF REBAR AND SHALL COMPLY WITH SPECIFIC CONDITIONS OF CONCRETE COVER: CONDUIT WITH A DIAMETER LARGER THAN 30% OF THE SLAB THICKNESS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL. THIS CONDUIT SHALL BE PLACED IN THE MIDDLE THIRD OF THE SPANS AND AFFIXED TO THE FORMWORK TO PROTECT THEM FROM RISKING WHEN CONCRETE IS POURED. CONDUIT SPACING SHALL BE AT LEAST EQUIVALENT TO THE DIAMETER OF THE LARGEST CONDUIT, WITH A MINIMUM SPACING OF 100 MM.
10.24.14. CONDUIT BENEATH THE SLABS SHALL NOT RUN BENEATH COLUMNS, BENEATH THE CORNERS OF FOUNDATION WALLS, OR BENEATH THE CORNERS OR CLUSTERS OF REBAR IN SHEAR WALLS. CONDUIT SHALL BE PLACED IN AN AREA AT LEAST 50 MM FROM COLUMNS AND ENDS OF WALLS. AVOID CROSS-CROSSING CONDUIT IN THE SLABS. CONDUIT SHALL NOT BE AFFIXED TO REBAR THAT RUNS PARALLEL TO IT. CLUSTERS OF CONDUIT IN THE SLABS, JUST AS IN THE CASE AT ELECTRICAL PANEL OUTLETS, SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

- 10.24.7. SHOP DRAWINGS AT LEAST TWO (2) WEEKS PRIOR TO STARTING CONCRETE WORK. THE CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS FOR THE STRUCTURAL ENGINEERS' REVIEW, SHOWING ALL PLUMBING SLEEVES AS WELL AS THE ELECTRICAL AND VENTILATION OPENINGS THAT RUN THROUGH THE SLABS, BEAMS AND CONCRETE WALLS. NO SLEEVE SHALL RUN THROUGH COLUMNS. SLEEVES SHALL RUN VERTICALLY THROUGH A BEAM. SHOP DRAWINGS PREPARED BY SUBCONTRACTORS SHALL SHOW THE DIAMETERS AND POSITION OF SLEEVES RELATIVE TO THE COLUMNS.

- 10.25. SHORING, FORMWORK AND FORMWORK REMOVAL
10.25.1. ALL FORMWORK SHALL COMPLY WITH CSA-A23.1 AND CSA-A23.3. TEMPORARY STRUCTURE DESIGN, MATERIALS, MANUFACTURING, ASSEMBLY AND CONSTRUCTION OF CONCRETE FORMWORK SHALL COMPLY WITH CSA S289.1, CANCSA-S289.2 AND CANCSA-S289.3. FORMWORK AND LEASING SPECIAL DESIGN AND ERECTION ARE THE RESPONSIBILITY OF THE FORMWORK CONTRACTOR, WHO SHALL RETAIN THE SERVICES OF A SPECIALIZED ENGINEER WHO IS A MEMBER OF THE ORDRE DES INGÉNIERS DU QUÉBEC.
10.25.2. WHEN A PREFABRICATED FORMWORK SYSTEM IS USED, PLVING FORMS FOR SPANS WIDER THAN 5 M MEASURED FROM COLUMN CENTRE-TO-CENTRE. THE CONTRACTOR SHALL PROVIDE AT LEAST TWO PREFABRICATED MODULES FOR EACH SPAN.
10.25.3. FORMWORK TIES FOR VISIBLE WALLS SHALL BE USED WITH PLASTIC CONES ON EACH END. THE CONES SHALL BE FILLED WITH FINISH CONCRETE AFTER FORMS ARE REMOVED.
10.25.4. FORMWORK TIES FOR VISIBLE WALLS SHALL BE USED WITH PLASTIC CONES ON EACH END. THE CONES SHALL BE FILLED WITH FINISH CONCRETE AFTER FORMS ARE REMOVED.
10.25.5. FORMWORK ON FOOTINGS AND RAFT SLABS CAN BE REMOVED TWENTY-FOUR (24) HOURS AFTER CONCRETE IS POURED.
10.25.6. FOR VERTICAL ELEMENTS, RECOMMENDED CURING TIME BEFORE REMOVING FORMS, TO MINIMIZE CRACKING DUE TO SHRINKAGE, IS THREE (3) DAYS.
10.25.7. CURING TIME BEFORE REMOVING FORMWORK MAY BE LONGER THAN SPECIFIED ABOVE FOR VERTICAL ELEMENTS WHEN THE CONCRETE CONTAINS SILICA FUME OR FLY ASH, ESPECIALLY IN COLDER TEMPERATURES. SINCE HYDRATION HEAT IS MUCH LOWER, FLOWED THE CONCRETE SUPPLIERS AND LABORATORY'S RECOMMENDATIONS.
10.25.8. ALL STRUCTURAL SLABS SHALL REMAIN SHORED FOR A MINIMUM OF TWENTY-EIGHT (28) DAYS. FORMWORK CAN BE REMOVED AND SLABS SHORED UP SEVEN (7) DAYS AFTER CONCRETE PLACEMENT WHEN IT IS DEMONSTRATED THAT THE CONCRETE HAS REACHED 70% OF ITS SPECIFIED STRENGTH.
10.25.9. DURING THE WINTER, GAINS IN CONCRETE STRENGTH MAY BE NIL IF THE EXTERIOR AMBIENT TEMPERATURE IS LESS THAN TEN (10) DEGREES CELSIUS. THEREFORE, THE CONTRACTOR SHALL ENSURE THAT THE SLABS HAVE REACHED 100% OF THEIR SPECIFIED STRENGTH BEFORE REMOVING THE SHORING SYSTEM.
10.25.10. U.N.O. IN THE ENGINEERING DOCUMENTS, STEEL ASSEMBLIES SHALL BE DESIGNED TO WITHSTAND THE LARGEST OF THE FOLLOWING LOADS:
- 50% OF THE FACTORED SHEAR RESISTANCE OF THE SECTION
- THE LOAD RESULTING FROM AN EVENLY DISTRIBUTED LOAD TO ACHIEVE THE DESIGN STRENGTH FOR THE SECTION (PLASTIC CAPABILITY)
- THE LOAD RESULTING FROM THE STRUCTURAL CONFIGURATION

- 10.26. FORMWORK REMOVAL AND RE-SHOULDERING OF SLABS
10.26.1. UNDER NO CIRCUMSTANCES MAY THE CONTRACTOR BEGIN REMOVING FORMWORK AND RE-SHOORING THE SLABS UNLESS RESULTS FROM NON-DESTRUCTIVE TESTING OR SAMPLING ONE (1) METRE PER METRE AT LEAST THREE (3) OR OTHER RECOGNIZED TESTS SHOW THAT THE CONCRETE HAS REACH 70% OF THE STRENGTH SPECIFIED ON THE DRAWINGS.
10.26.2. ALL INSTRUMENTS USED IN TESTING SHALL BE CALIBRATED AND TESTS RE-ORGANIZED IN A CERTIFIED LABORATORY.
10.26.3. THE CONTRACTOR SHALL REMOVE FORMWORK AND INSTALL THE SLAB RE-SHOORING SYSTEM SHALL TANGUALLY; IT IS PROHIBITED TO LEAVE A SLAB OPEN FORMWORK HAS BEEN REMOVED WITHOUT A SHORING SYSTEM IN PLACE. THE SHORING METHOD USED SHALL BE DESIGNED TO MINIMIZE SLAB AND BEAM DEFLECTION. DESIGN LOADS INDICATED ON THE DRAWINGS SHALL NOT BE EXCEEDED.
10.26.4. ALL VISIBLE METAL PIECES PROTRUDING FROM THE CONCRETE (SUCH AS TIES AND PLATES, BOLTS, SLEEVES, ANGLE IRONS, ETC.) SHALL BE INSTALLED BY THE FORMWORK CONTRACTOR, BUT SUPPLIED BY OTHERS, REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR FABRICATED METAL PIECES TO BE EMBEDDED IN THE CONCRETE STRUCTURES.
10.26.5. FOR EXPLOD CONCRETE POSITION-FORM TIES, JOINTS AND CONSTRUCTION JOINTS ACCORDING TO THE ARCHITECT'S SPECIFICATIONS, AND PROVISIONS STIPULATED IN THE CONSTRUCTION JOINTS SPECIFICATIONS AGREED TO.

- 10.26.6. FOR SLABS WITH PREFABRICATED FORMWORK (CURFORM) IS PROHIBITED UNLESS THE ARCHITECT HAS AGREED TO SUCH.
10.26.7. U.N.O. L550 CAMBERS SHALL BE INCLUDED IN THE FORMWORK FOR SLABS AND BEAMS WITH SPANS GREATER THAN 10 METERS.
10.26.8. FORMWORK RELEASE AGENTS SHALL BE COMPATIBLE WITH THE ARCHITECTURAL FINISHES AND ENVIRONMENTAL REQUIREMENTS.
10.26.9. AT LEAST FOUR (4) ADJACENT SLABS SHALL BE SHORED TO SUPPORT THE SLAB TO BE CAST. SHORING AND SHORING MILLI-STORY BUILDINGS SHALL COMPLY WITH THE REGULATIONS RESPECTING THE SHORING OF CONCRETE FORMWORK, AND ARRANGED AS FOLLOWS:
- 100% OF FORMWORK SHORING FOR THE SLAB TO BE CAST;
- 50% OF SHORING FOR THE ADJACENT SLABS;
- 50% OF SHORING FOR THE OTHER TWO ADJACENT SLABS. ANY DEVIATION FROM THESE REQUIREMENTS SHALL BE STUDIED AND DEMONSTRATED BY THE FORMWORKER AND SUBMITTED TO THE ARCHITECTURAL ENGINEER AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

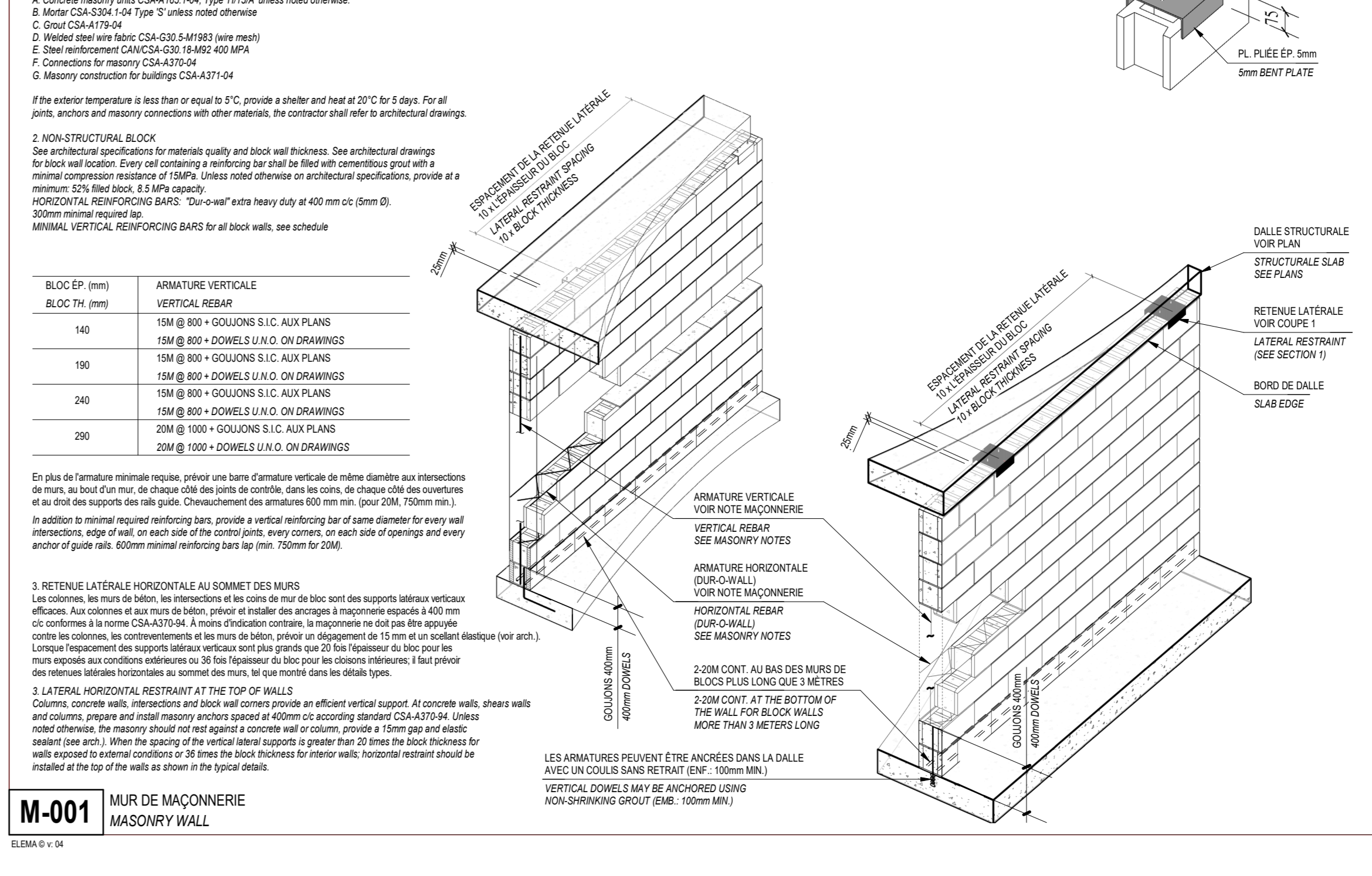
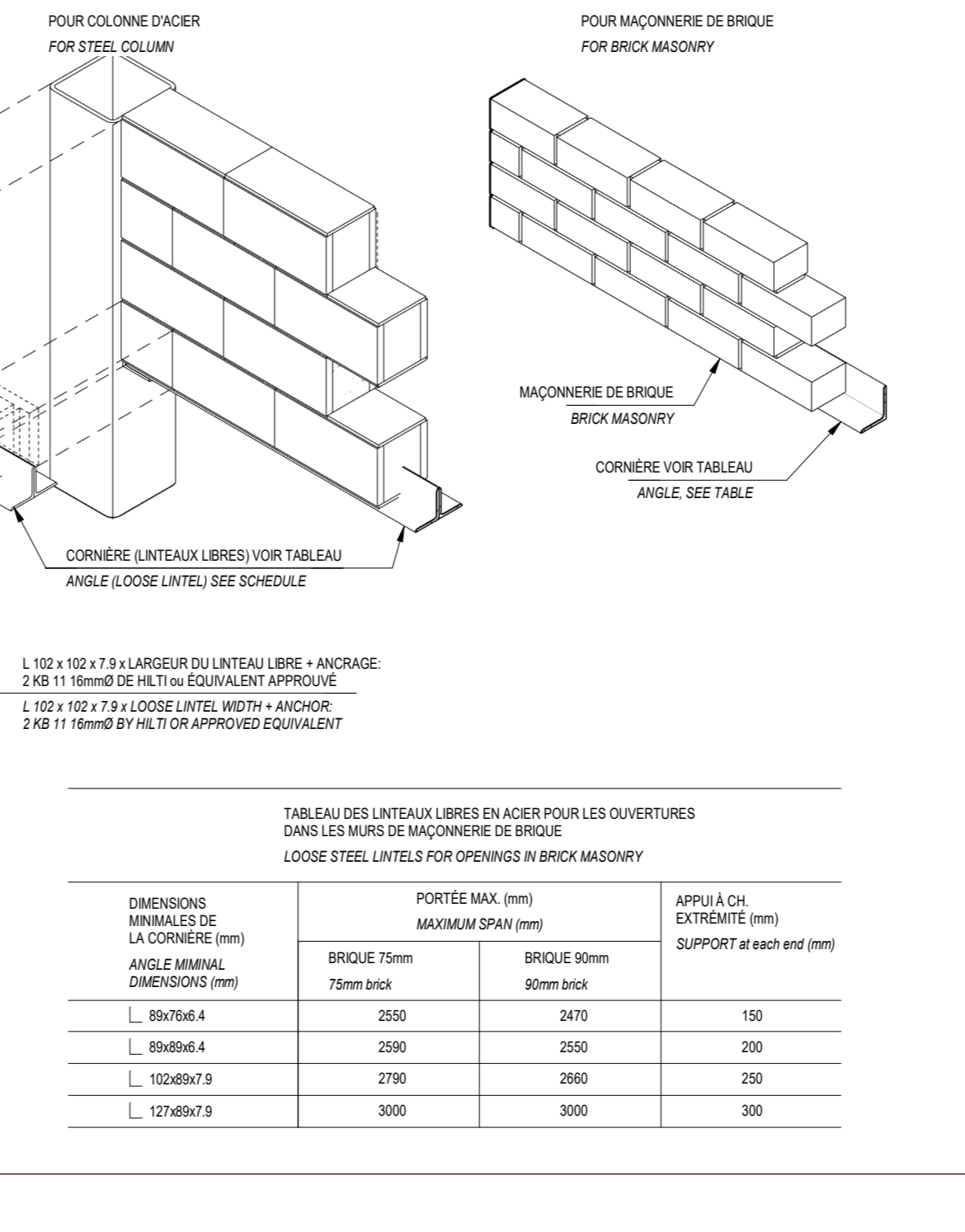
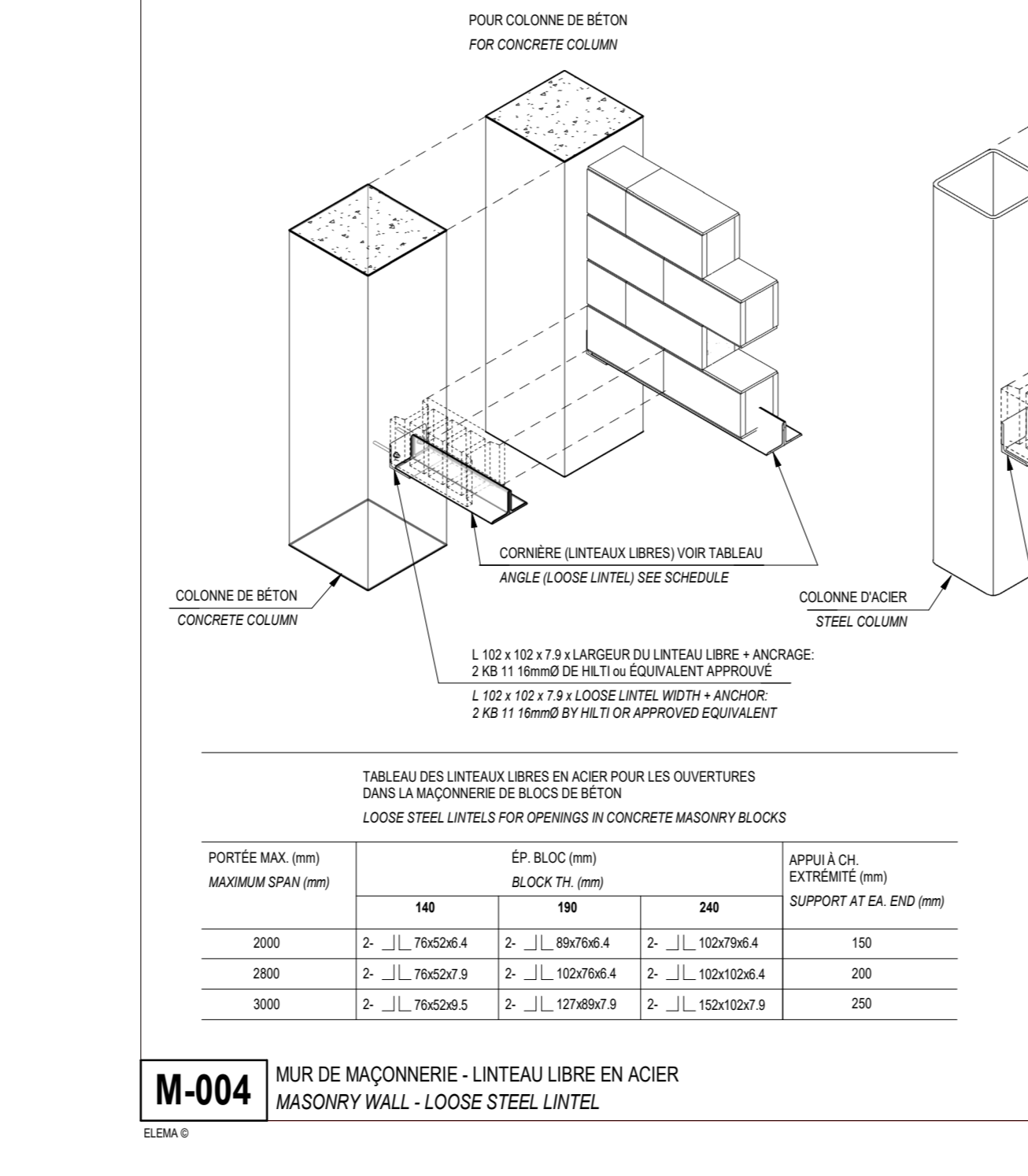
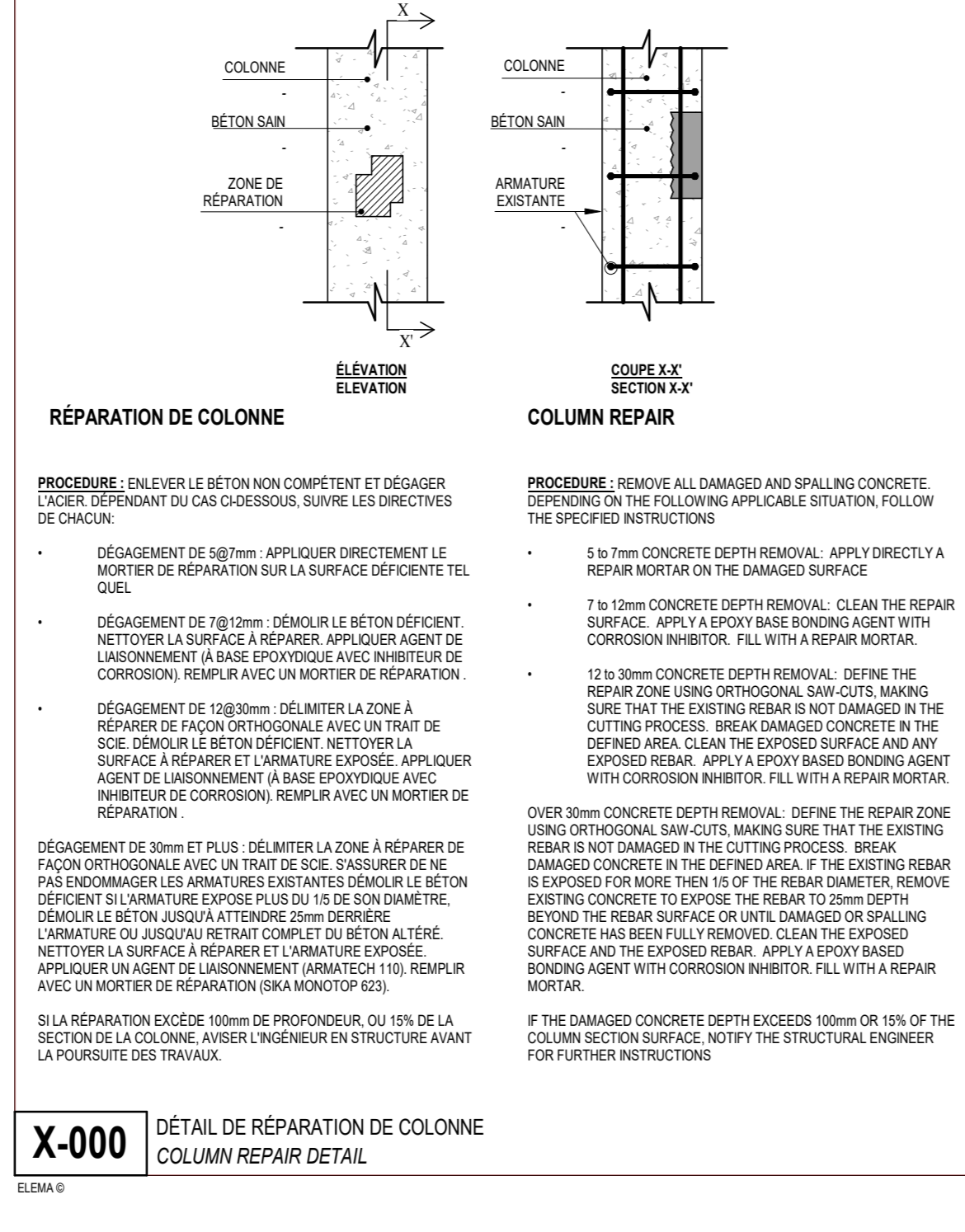
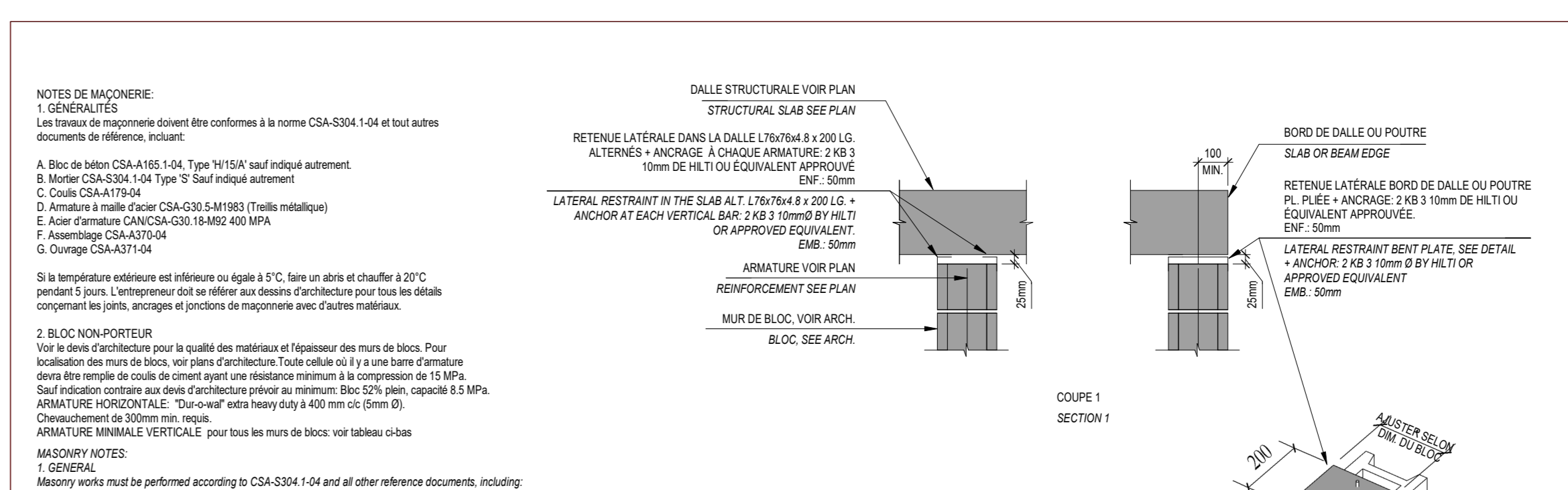
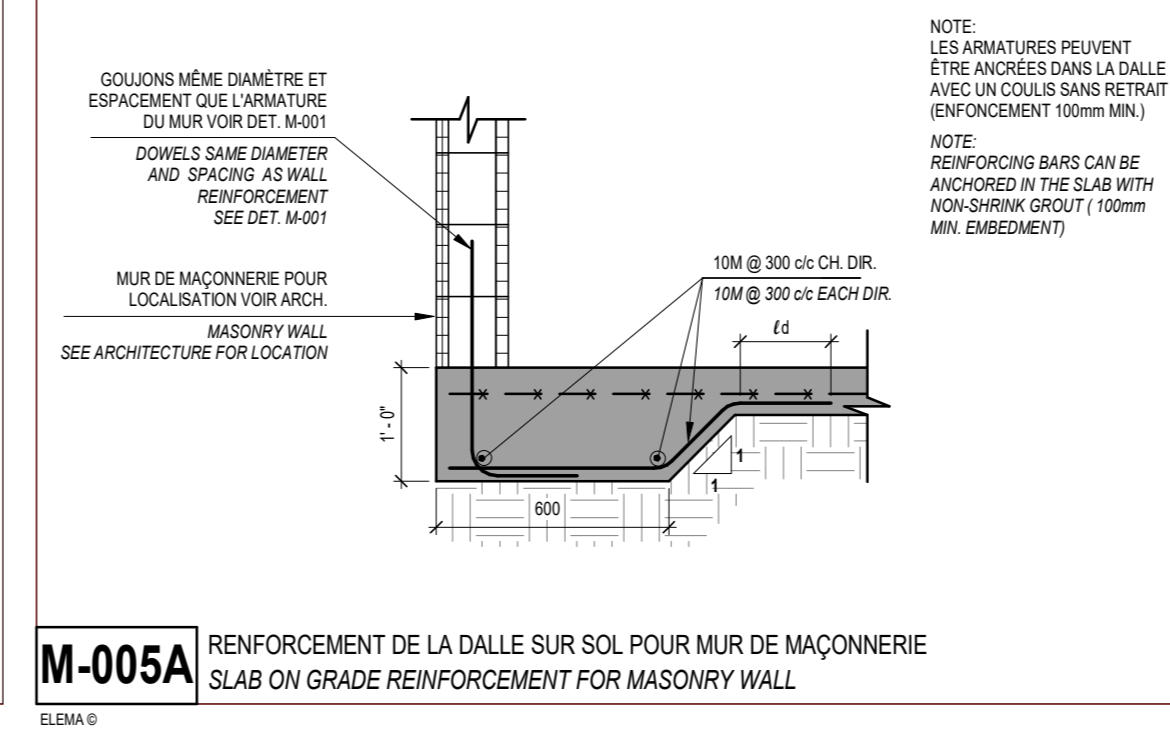
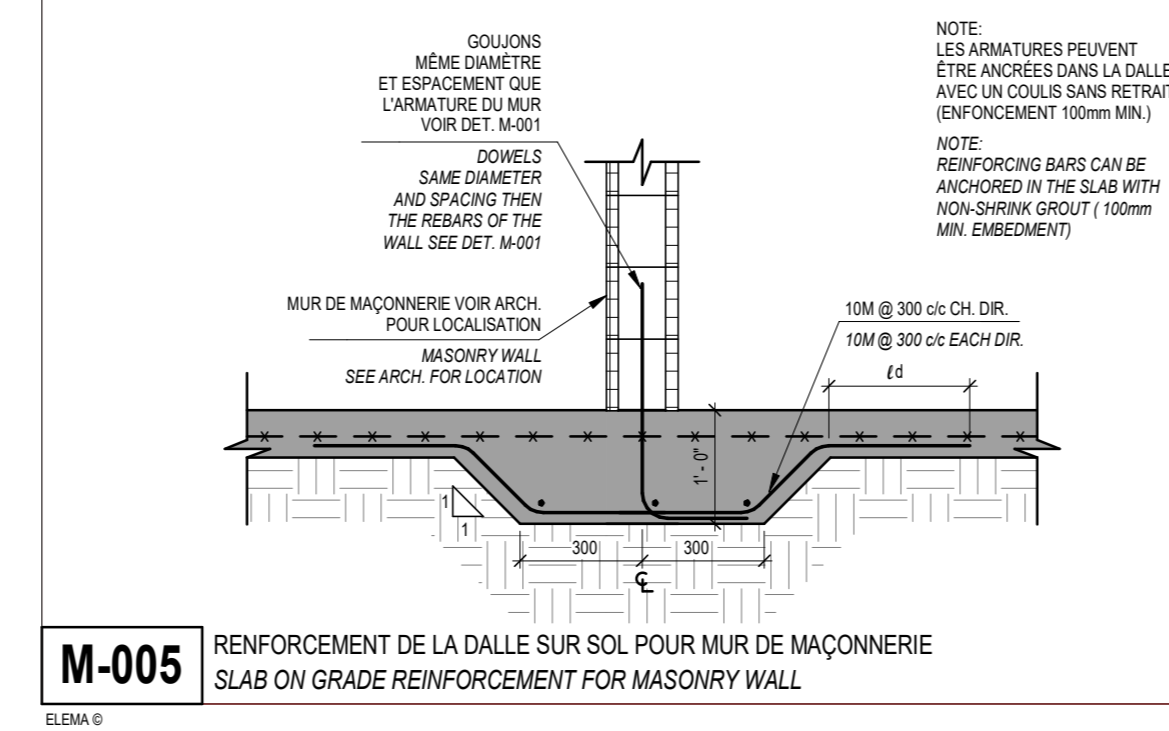
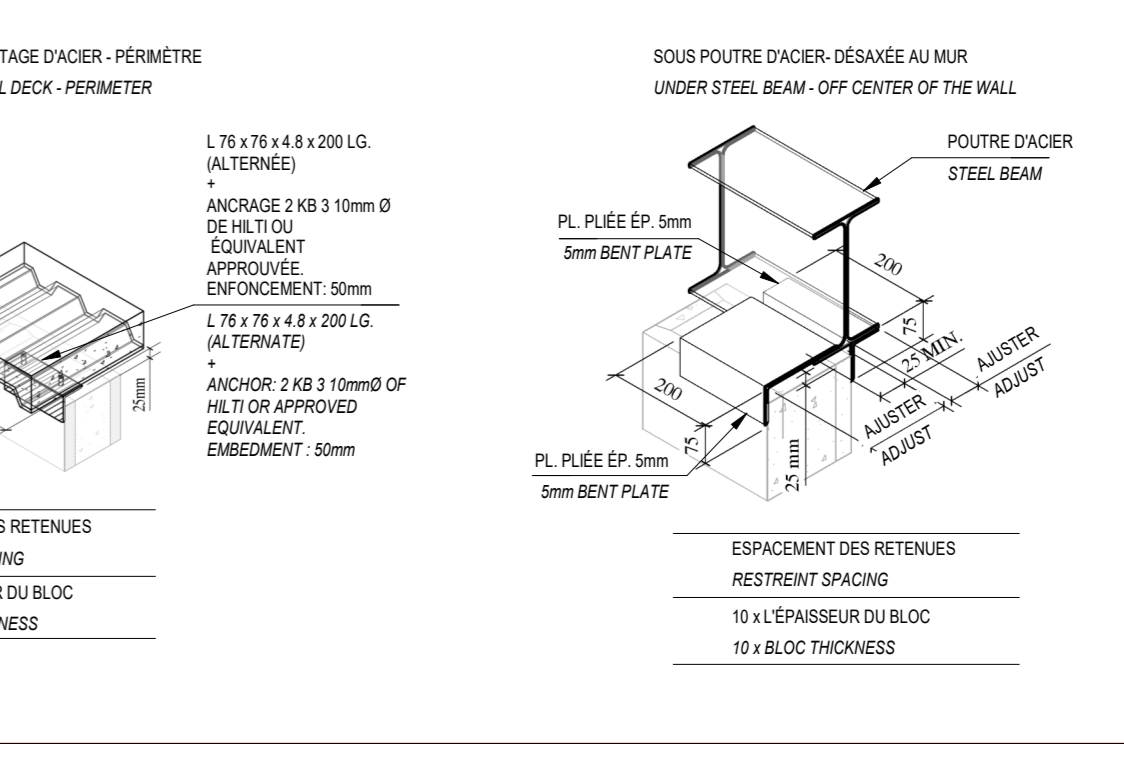
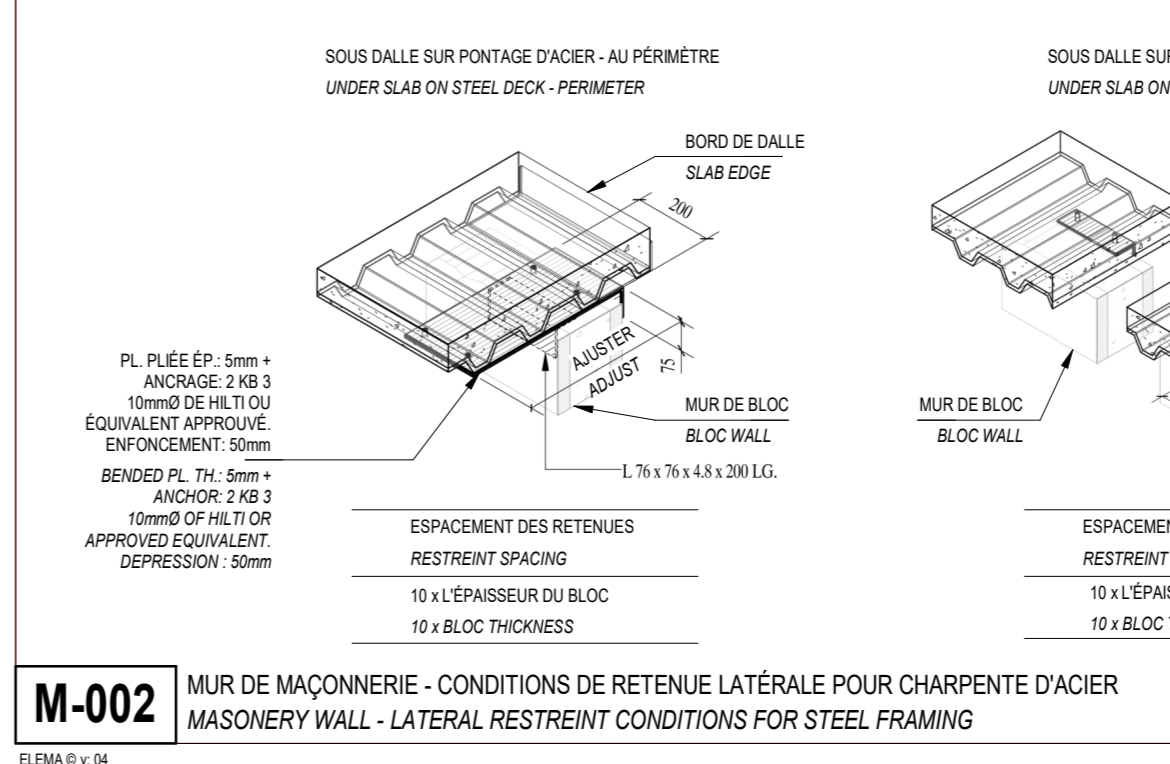
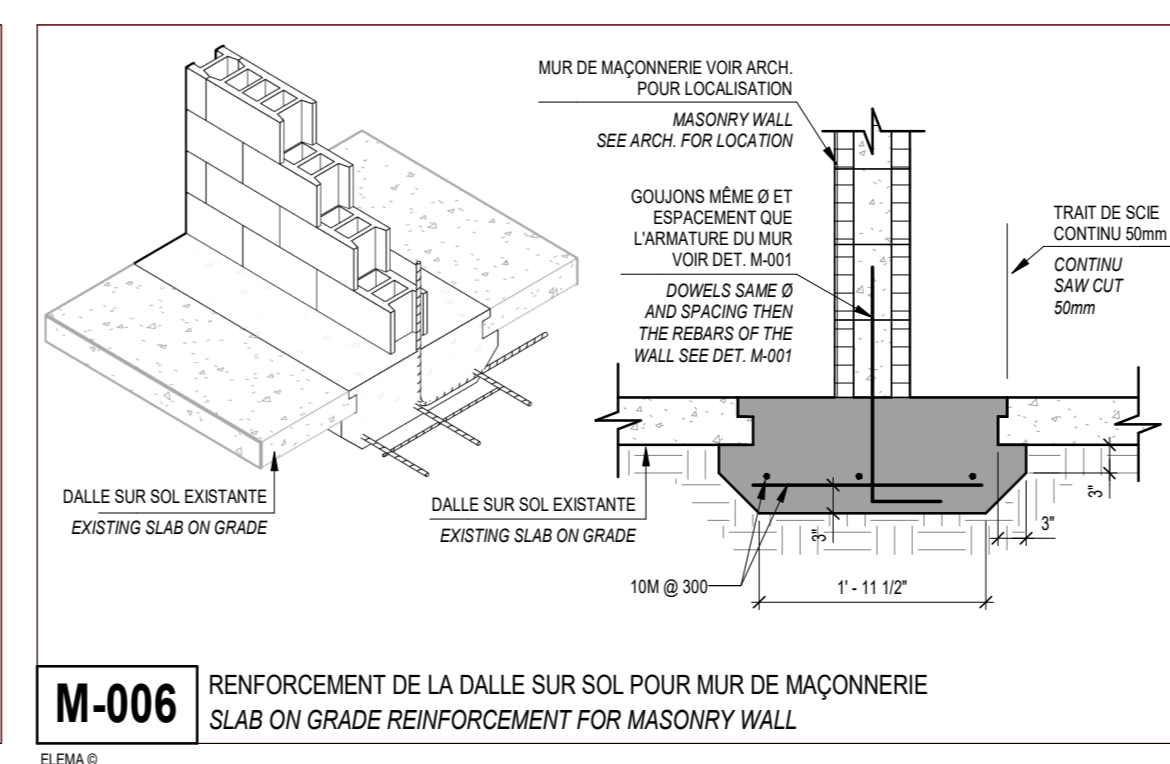
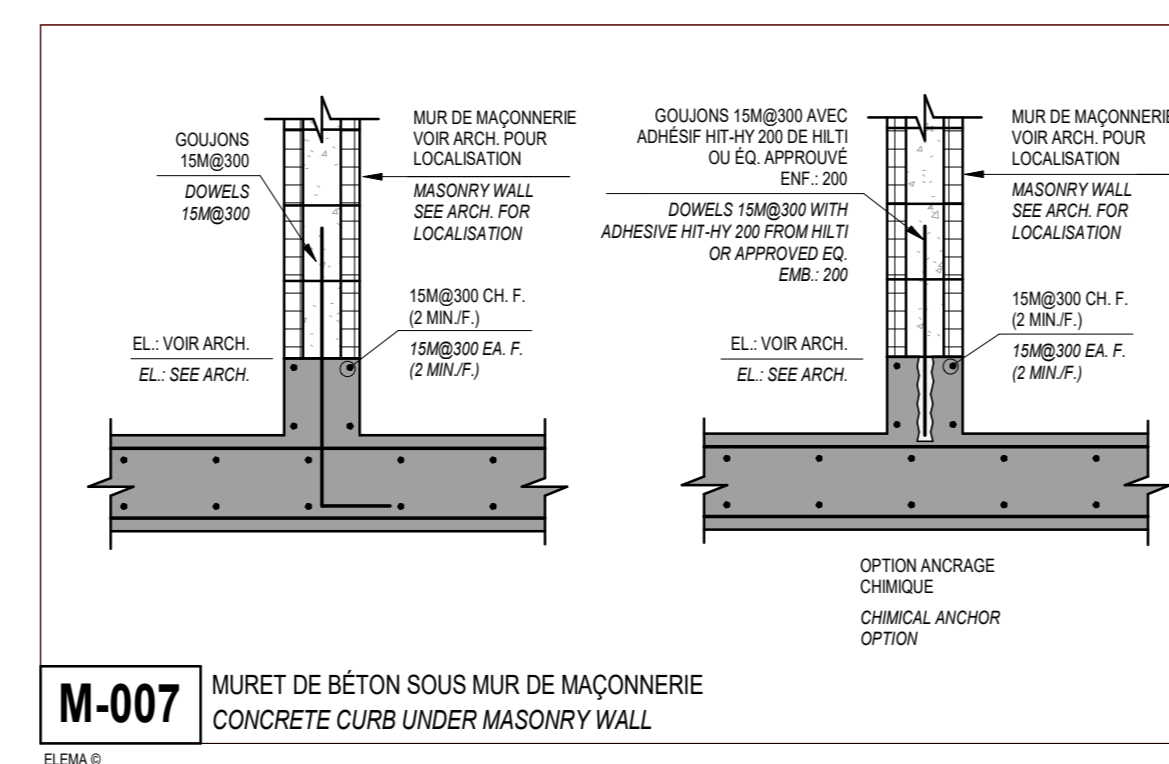
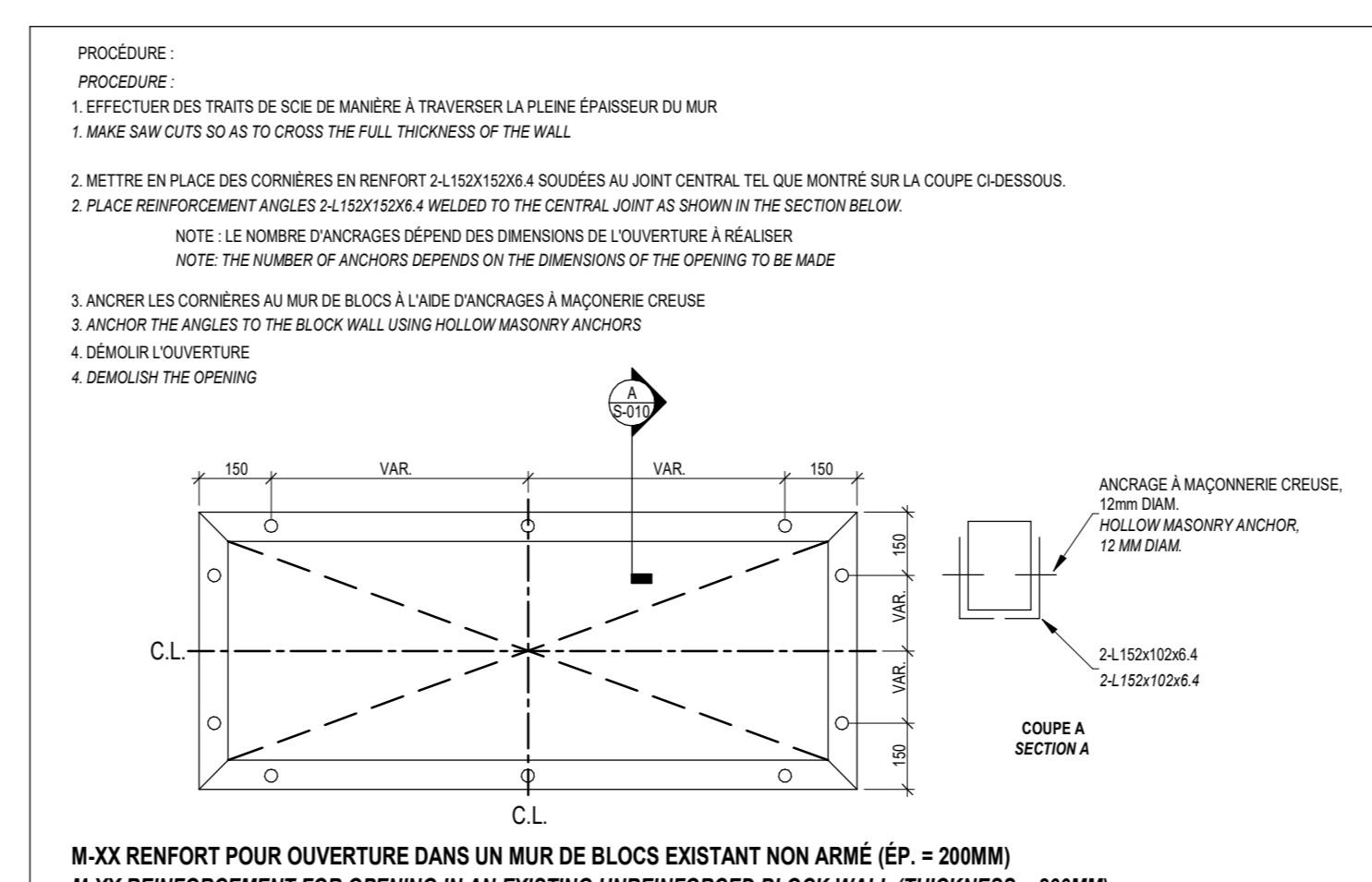
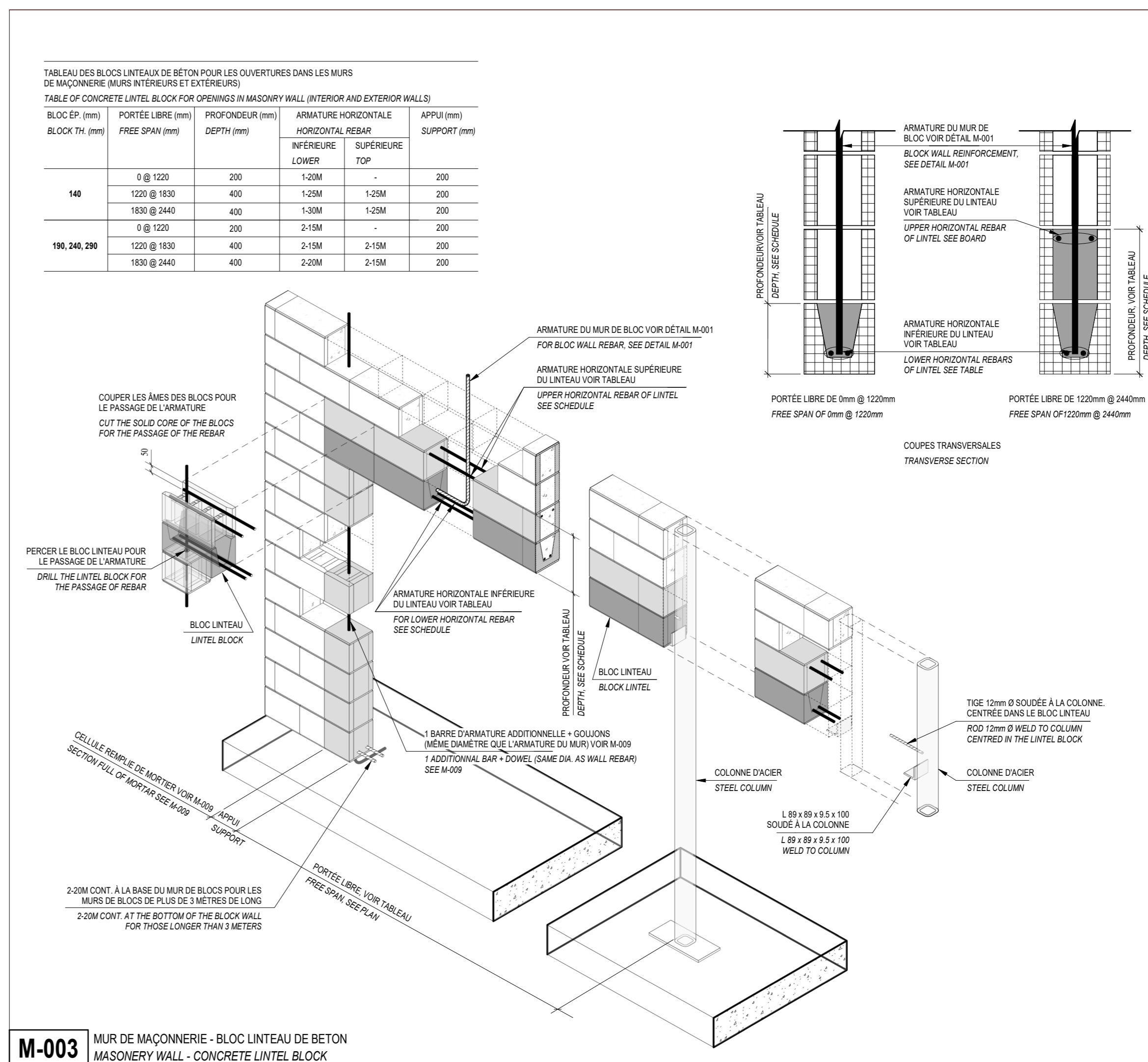
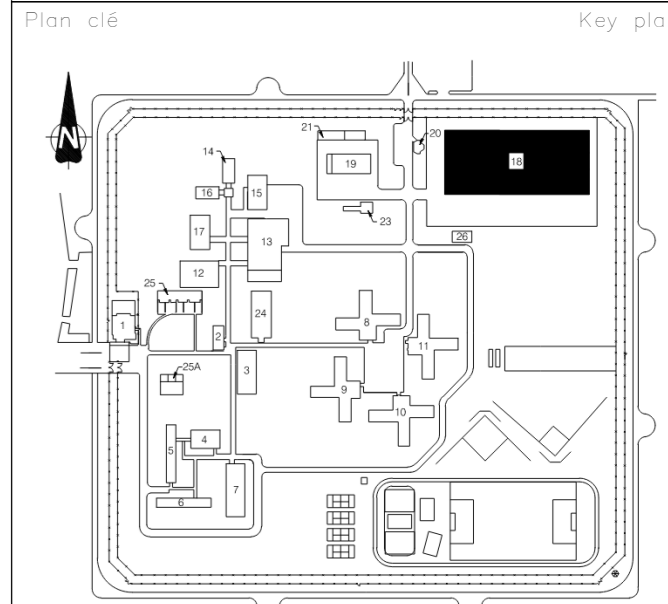
- 10.26.10. FOR CONCRETE ROOF SLABS WITH MOUNTING SLOPS, THE CONTRACTOR SHALL SHORING AT LEAST SIX (6) METRES, THE FOLLOWING:
- 100% OF FORMWORK SUPPORTS FOR THE SLAB TO BE CAST;
- 100% OF SHORING FOR THE ADJACENT SLAB;
- 100% OF SHORING FOR THE ADJACENT SLAB;
- 25% OF SHORING FOR THE 4th AND 5th ADJACENT SLABS.
10.27. SURVEY'S SHALL ALWAYS BE TAKEN AT THE PERMITTED AND DEMONSTRATED BY THE FORMWORK CONTRACTOR SPECIALIZED ENGINEER AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
10.27.1. THE CONTRACTOR SHALL SUBMIT A SURVEY OF ELEVATIONS BEFORE AND AFTER CONCRETE IS POURED TO THE STRUCTURAL ENGINEER AND ARCHITECT.
- SURVEY OF FORMWORK BEFORE CONCRETE IS POURED TO CONFIRM CAMBERS
- 50% OF SHORING FOR THE ADJACENT SLABS.
- SURVEY OF FINISHES AFTER CONCRETE IS POURED TO VALIDATE SLAB THICKNESSES AND FINISH TOLERANCES.
10.27.2. SURVEY OF THE TOP OF SLABS AFTER FORMWORK REMOVAL (RE-SHOORING IF REQUIRED)
10.27.3. SURVEY'S SHALL ALWAYS BE TAKEN AT THE SAME LOCATIONS, I.E. NEAR COLUMNS, IN THE CENTER OF SPANS AND IN THE MIDDLE OF EACH PANEL. (A PANEL IS THE AREA OUTLINED BY FOUR (4) COLUMNS).
10.27.4. THE CONTRACTOR SHALL SUBMIT A SURVEY OF ELEVATIONS BEFORE AND AFTER CONCRETE IS POURED TO THE STRUCTURAL ENGINEER AND ARCHITECT.

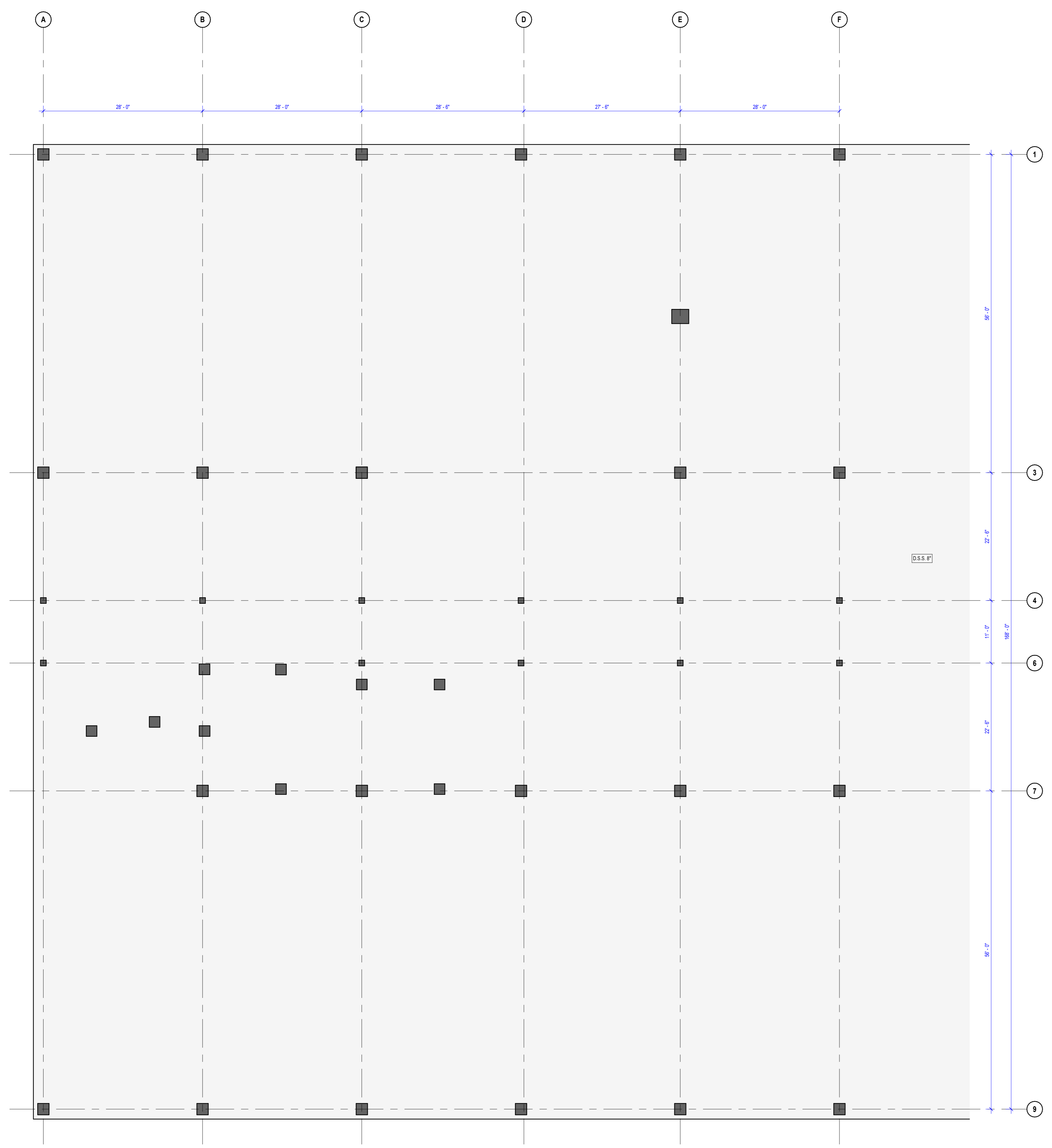
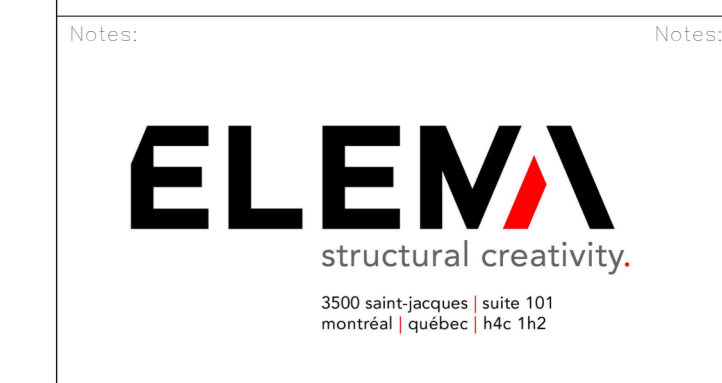
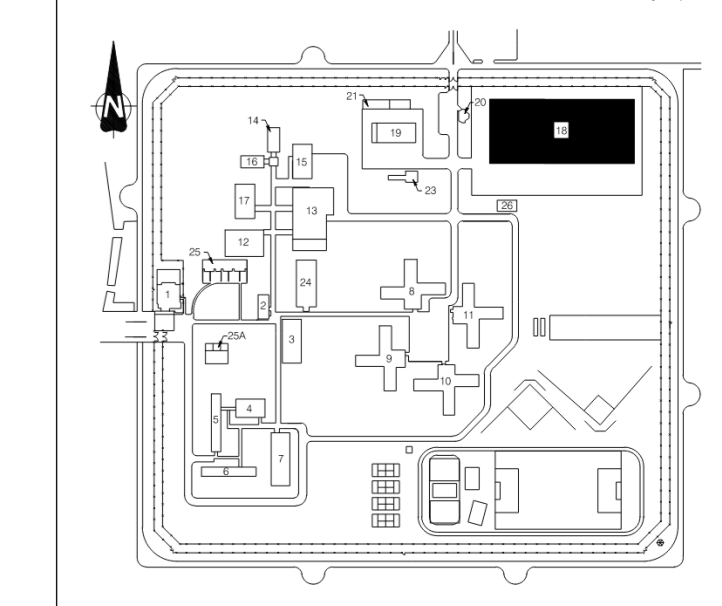
- 11. REINFORCING STEEL
11.1. ALL REINFORCING WORK SHALL COMPLY WITH CSA-A23.1, CSA-A23.2 AND CSA-A23.3.
11.2. U.N.O. ALL REINFORCING STEEL SHALL BE RIBBED STEEL, TO CSA-G30.18, GRADE 400R IF WELDABLE STEEL IS REQUIRED ACCORDING TO THE DRAWINGS, SUPPLY GRADE 400R STEEL. REINFORCING STEEL FOR SHEAR WALLS SHALL BE RIBBED STEEL, TO CSA-G30.18, GRADE 400R. U.N.O. ON THE DRAWINGS, WELDED STEEL WIRE FABRIC SHALL COMPLY WITH G50.5.
11.3. REINFORCING STEEL DETAILING SHALL COMPLY WITH THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION'S REINFORCING STEEL MANUAL OF STANDARD PRACTICE.
11.4. REINFORCING STEEL DETAILING SHALL ENSURE THAT THE CONCRETE CAN FLOW THROUGH PLACEMENT IN AREAS WHERE REBAR IS VERY DENSE; PROVIDE ALTERNATE OVERLAPPING.
11.5. ALL REINFORCING STEEL SHALL BE CLEAN AND FREE OF RUST (SCALING), GREASE, CONCRETE AND PAINT.
11.6. REBAR SUPPORTS AND CHAIRS IN THE SLABS MAY BE MADE OF PLASTIC, CONCRETE OR GALVANIZED STEEL. DIMENSIONS SHALL COMPLY WITH REQUIREMENTS AND COVER SHOWN ON THE DRAWINGS.
11.7. THE REINFORCING STEEL SUPPLIER IS RESPONSIBLE FOR DESIGNING, LOCATING, COUNTING, INSTALLING AND SUPPLYING A SUFFICIENT NUMBER OF HIGH CHAIRS AND SUPPORT BARS REQUIRED FOR THE REBAR.
11.8. QUALITY CONTROL: ONE SAMPLE OF EACH DIAMETER OF REBAR SHALL BE COLLECTED PRIOR TO STARTING CONCRETE WORK. IDENTIFICATION AND TESTING SHALL BE THE RESPONSIBILITY OF THE PROJECT OWNER OR BUILDER. MECHANICAL AND CHEMICAL PROPERTIES SHALL COMPLY WITH CSA G30.18.
11.9. THE REINFORCING STEEL SUPPLIER SHALL SUBMIT A FACTORY TESTING REPORT TO THE STRUCTURAL ENGINEER CONTAINING THE PHYSICAL AND CHEMICAL ANALYSIS RESULTS FOR ALL REINFORCING STEEL TO BE INSTALLED ON THE CONSTRUCTION SITE.

- 11.10. SIZES AND WEIGHTS
11.10.1. FOURTEEN (14) DAYS PRIOR TO START OF WORK, THE CONTRACTOR SHALL SUBMIT THE FOOTING, RAFT, SLAB, COLUMN, FOUNDATION WALL, SHEAR WALL AND BEAM SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW.
11.10.2. THE CONTRACTOR IS RESPONSIBLE FOR MINIMIZING DELAYS AND DEFICIENCIES DURING REBAR INSTALLATION AND INSPECTION, ENSURING THAT THE SUBCONTRACTORS' DRAWINGS COMPLY WITH THE DRAWINGS ISSUED FOR CONSTRUCTION PRIOR TO SUBMITTING THEM TO THE STRUCTURAL ENGINEER FOR COMMENTS.
11.11. REBAR INSPECTION
11.11.1. PRIOR TO THE STRUCTURAL ENGINEERS' INSPECTION VISIT, THE CONTRACTOR SHALL ENSURE THAT REBAR INSTALLATION IS REQUIREMENTS.
11.11.2. THE CONTRACTOR SHALL SEND A NOTICE TO THE STRUCTURAL ENGINEER AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO EACH CONCRETE POUR. ALL REBAR SHALL BE INSTALLED TO THE STRUCTURAL ENGINEERS' FULL SATISFACTION, PRIOR TO STARTING CONCRETE WORK.
11.11.3. PRIOR CERTIFICATION: ACCORDING TO ARTICLE 3.24.12 OF THE SAFETY CODE FOR THE CONSTRUCTION INDUSTRY, THE STRUCTURAL STEEL MANUFACTURER SHALL, PRIOR TO STARTING WORK, PROVIDE CERTIFICATION SIGNED BY HIS ENGINEER WHO IS A MEMBER OF THE O.I.O., STATING THAT THE ANCHOR RODS HAVE BEEN INSTALLED ACCORDING TO THE ANCHORING PLAN, AND THAT THE CONCRETE QUANTITIES HAVE REACHED THE REQUIRED STRENGTH TO SUPPORT ERECTION ON THE STEEL STRUCTURE. PROVIDE A NEW CERTIFICATION WHENEVER ANCHOR RODS ARE MODIFIED OR REPAIRED.
11.12. ANCHOR RODS
11.23.1.1. ALL FIELD WELDS SHALL BE VISUALLY INSPECTED BY A QUALIFIED INSPECTOR WHO SHALL BE VALIDATED BY THE OWNER. PROVIDE THE INSPECTION REPORTS TO THE STRUCTURAL ENGINEER FOR INFORMATIONAL PURPOSES.
11.23.1.2. TEN PERCENT (10%) OF SPICES MADE ON BENT COMPONENTS AND COLUMNS SHALL BE VALIDATED BY NON-DESTRUCTIVE TESTING. PROVIDE INSPECTION REPORTS TO THE STRUCTURAL ENGINEER FOR INFORMATIONAL PURPOSES.
11.23.1.3. PERFORM NON-DESTRUCTIVE TESTING ON ALL SPECIAL COMPONENTS AS REQUESTED BY THE STRUCTURAL ENGINEER ON THE DRAWINGS.

- 12. STRUCTURAL STEEL
12.1. ALL STEEL STRUCTURE, FABRICATION, ASSEMBLY AND OTHER WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA-S16. THE STEEL MANUFACTURER SHALL PROVIDE A REPORT STATING THAT ALL MATERIALS SUPPLIED COMPLY WITH CSA-G40.36 AND ASTM, AND THAT ALL OTHER APPLICABLE STANDARDS.
12.2. THE STEEL MANUFACTURER SHALL BE CERTIFIED IN ACCORDANCE WITH U7.1, WELDING MATERIALS SHALL COMPLY WITH WELLS WELD IN ACCORDANCE WITH W5E SPECIFICATIONS AND PROCEDURES. WELDERS SHALL BE ACCREDITED BY THE CANADIAN WELDING BUREAU.
12.3. WIND AND WIP STRUCTURAL SHAPES SHALL COMPLY WITH CSA-G40.21 GRADE 350W OR ASTM A572 GRADE 50 AND ASTM A588.
12.4. HOLLOW STEEL SECTIONS (HSS) SHALL COMPLY WITH CSA-G40.21 GRADE 50W - CLASS C OR H OR ASTM A588 CLASS C WHEREVER DIMENSIONS ARE THE SAME AS THOSE FOR TUBULAR HSS.
12.5. STEEL FOR C, L, M, MC SECTIONS, PLATES AND ACCESSORIES SHALL COMPLY WITH CSA-G40.21 GRADE 50W.
12.6. NUTS, BOLTS AND WASHERS SHALL COMPLY WITH ASTM F1554.
12.7. ANCHOR BOLTS SHALL BE THREADED AND BENT FROM ROUND, SMOOTH BARS THAT MEET CSA-G40.21 50W (U.N.O.).
12.8. ALL STRUCTURAL STEEL SHALL BE CLEANED WELL TO OBTAIN AN SSPC-SP 6 QUALITY SURFACE. STEEL SHALL BE FACTORY-PRIED, IN THE ARCHITECT'S CHOICE OF COLOUR. THE CONTRACTOR SHALL TOUCH UP PARTS OF STRUCTURE AFTER REPAIRS. ALL ACCESSORIES SHALL BE THE MOST RECENT EDITION OF GOSP/CSA STANDARD 17-A, (REFER TO THE ARCHITECT FOR FINISH PAINT).
12.9. U.N.O. ANYTHING ASSEMBLED ON SITE SHALL BE BOLTED (MINIMUM OF TWO (2) BOLTS PER ASSEMBLY), U.N.O. ON THE DRAWINGS, SPECIFICATIONS THAT REQUIRE WELDING SHALL BE FACTORY- WELDED.
12.10. U.N.O. IN THE ENGINEERING DOCUMENTS, STEEL ASSEMBLIES SHALL BE DESIGNED TO WITHSTAND THE LARGEST OF THE FOLLOWING LOADS:
- 50% OF THE FACTORED SHEAR RESISTANCE OF THE SECTION
- THE LOAD RESULTING FROM AN EVENLY DISTRIBUTED LOAD TO ACHIEVE THE DESIGN STRENGTH FOR THE SECTION (PLASTIC CAPABILITY)
- THE LOAD RESULTING FROM THE STRUCTURAL CONFIGURATION

- 12.11. HOLLOW IN STRUCTURAL COMPONENTS, RIGID STEEL JOINTS SHALL BE DESIGNED ACCORDING TO THE FACTORED DEFLECTION RESISTANCE (WITH CONTINUOUS BUCKLING-RESTRAINING SYSTEM) FOR THE LOWEST-CAPACITY MEMBERS TO BE JOINED.
12.12. IN WORK IN STRUCTURAL COMPONENTS OF ANY COMPONENTS THAT ARE NOT DRILLED OR ARE POORLY FITTED (TO FITS AND DO NOT MEET THE PERMISSIBLE TOLERANCES), THE CONTRACTOR SHALL SUBMIT PROPOSED CORRECTIVE MEASURES TO THE STRUCTURAL ENGINEER FOR APPROVAL. THE DESIGNING ARCHITECT'S COMMENTS SHALL BE SIGNED AND SEALED BY AN ENGINEER WHO IS A MEMBER OF THE O.I.O.
12.23. NO PART MAY BE ADJUSTED BY HEATING ON THE CONSTRUCTION SITE.
12.23.1. HOLES IN STEEL PARTS MAY BE MADE BY AN UNLICENSED PERSON USING A TORCH.
12.23.2. SUPPLY 25 MM X 3 MM X 300 MM MASONRY ANCHORS AT 400 MM C/C (1' X 6 3/4" X 12" @ 16" O.C.) TO ANCHOR BLOCK WALLS TO THE COLUMNS. COORDINATE THE POSITIONS OF ANCHORS IN THE MASONRY JOINTS. REFER TO THE ARCHITECTURAL DOCUMENTS.
12.23.3. CERTAIN ISSUES RELATING TO ERECTING THE STRUCTURE IN WARM WEATHER MAY REQUIRE REVISIONS TO THE ANCHORING PLAN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW.
12.23.4. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DOCUMENTS FOR STEEL STRUCTURE FIRE PROTECTION.
12.23.5. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURE DETAILS FOR CONSTRUCTION OF COMPONENTS AFFIXED TO THE STEEL MEMBERS, PARTICULARLY THOSE SUBJECT TO BENDING STRESS.
12.23.6. FOR PREFABRICATED EXTERIOR COVERSINGS, THE CONTRACTOR SHALL REFER TO THE MANUFACTURER'S SHOP DRAWINGS FOR THE POSITIONING AND INSTALLATION OF ALL OTHER NON STRUCTURAL COMPONENTS (GLASS, BEAM, CEAN, C-SCTIONS, PLATES OR OTHER) SHALL BE CUT, TWISTED OR ALTERED IN ANYWAY TO ACCOMMODATE FASTENINGS OF THE COVERINGS.
12.23.7. HOLES IN STEEL MEMBERS AND BASE PLATES MUST BE MADE IN THE FACTORY, USING A DRILL. NO HOLES MAY BE MADE BY TORCH, EITHER IN THE FACTORY OR ON THE CONSTRUCTION SITE. NO HOLE MAY BE ENLARGED IN ANY MANNER. DRILL HOLES SHALL BE MADE TO PERMITTED TOLERANCES. REPLACED. THE CONTRACTOR IS RESPONSIBLE FOR RECOMMENDING CORRECTIVE METHODS PRIOR TO INSTALLING SUCH PARTS. THE STRUCTURAL ENGINEER RESERVES THE RIGHT TO REJECT THE PROPOSED CORRECTIVE METHODS.
12.23.8. U.N.O. ON THE ARCHITECTURAL DRAWINGS, ALL STEEL COMPONENTS EXPOSED TO WEATHER SHALL BE HOT-DIP GALVANIZED, TO CSA-G16. THE SURFACES OF GALVANIZED STEEL COMPONENTS THAT WILL BE FIELD-WELDED SHALL BE GROUND BEFOREHAND, TO ENSURE WELDS ARE NOT CONTAMINATED. TOUCH UP PAINT ON THE CONSTRUCTION SITE WITH ZINC-RICH PAINT. TOUCH UPS SHALL PROVIDE THE SAME LEVEL OF PROTECTION AS THE INITIAL FINISH AND SHALL BE COMPATIBLE WITH THE INTENDED ARCHITECTURAL FINISHES.
12.23.9. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURE DETAILS FOR CONSTRUCTION OF COMPONENTS AFFIXED TO THE STEEL MEMBERS, PARTICULARLY THOSE SUBJECT TO BENDING STRESS.
12.23.10. FOR PREFABRICATED EXTERIOR COVERSINGS, THE CONTRACTOR SHALL REFER TO THE MANUFACTURER'S SHOP DRAWINGS FOR THE POSITIONING AND INSTALLATION OF ALL OTHER NON STRUCTURAL COMPONENTS (GLASS, BEAM, CEAN, C-SCTIONS, PLATES OR OTHER) SHALL BE CUT, TWISTED OR ALTERED IN ANYWAY TO ACCOMMODATE FASTENINGS OF THE COVERINGS.
12.23.11. HOLES IN STEEL MEMBERS AND BASE PLATES MUST BE MADE IN THE FACTORY, USING A DRILL. NO HOLES MAY BE MADE BY TORCH, EITHER IN THE FACTORY OR ON THE CONSTRUCTION SITE. NO HOLE MAY BE ENLARGED IN ANY MANNER. DRILL HOLES SHALL BE MADE TO PERMITTED TOLERANCES. REPLACED. THE CONTRACTOR IS RESPONSIBLE FOR RECOMMENDING CORRECTIVE METHODS PRIOR TO





**RDC/GROUND FLOOR EXISTANT**

Ech.: 1" = 10'-0"

| ACRONYMES |                        | ACRONYMES |                             |
|-----------|------------------------|-----------|-----------------------------|
| H.P.      | HIGHEST POINT          | P.H.      | POINT HAUT                  |
| L.P.      | LOWEST POINT           | P.B.      | POINT BAS                   |
| TYP.      | TYPICAL                | TYP.      | TYPIQUE                     |
| U.N.O.    | UNLESS NOTED OTHERWISE | S.C.      | SAUF INDICATIONS CONTRAIRES |
| S.O.G.    | SLAB ON GRADE          | D.S.S.    | DALLE SUR SOL               |
| S.S.      | STRUCTURAL SLAB        | D.S.      | DALLE STRUCTURALE           |
| S.O.I.    | SLAB ON INSULATION     | D.S.I.    | DALLE SUR ISOLANT           |
| E.F.      | EACH FACE              | CH.F.     | CHAQUES FACES               |
| B.E.W.    | BOTTOM EACH WAY        | J.C.      | JOINT DE CONTRÔLE           |
| T.E.W.    | TOP EACH WAY           | S.E.B.    | SEMELLE EN BAS              |
| C.J.      | CONTROL JOINT          |           |                             |
| S.D.F.    | STEPPED DOWN FOOTING   |           |                             |

- SE RÉFÉRER À LA SÉRIE S-001 POUR LES NOTES GÉNÉRALES.
- SE RÉFÉRER À LA SÉRIE S-010 POUR LES DÉTAILS TYPÉS.
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- REFER TO S-001 SERIE FOR GENERAL NOTES
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| Revisions | Objet                   | Date       |
|-----------|-------------------------|------------|
| 1         | DESIGN FOR CONSTRUCTION | 2023-06-15 |
| 2         | ISSUES FOR APPROVAL     | 2023-06-15 |
| 3         | ISSUES FOR CONSTRUCTION | 2023-06-15 |

| Revisions | Objet                   | Date       |
|-----------|-------------------------|------------|
| 1         | DESIGN FOR CONSTRUCTION | 2023-06-15 |
| 2         | ISSUES FOR APPROVAL     | 2023-06-15 |
| 3         | ISSUES FOR CONSTRUCTION | 2023-06-15 |

Titre du projet / Project title

**SCC\_Bat18Cowansville**  
 400, chemin Fordyce, Cowansville (Québec) J2K 3G6

Titre du dessin / Drawing title

**REZ-DE-CHAUSSÉE/ GROUND FLOOR**

Conçu par / Designed by  
**Louis-Philippe Myre, ing.**

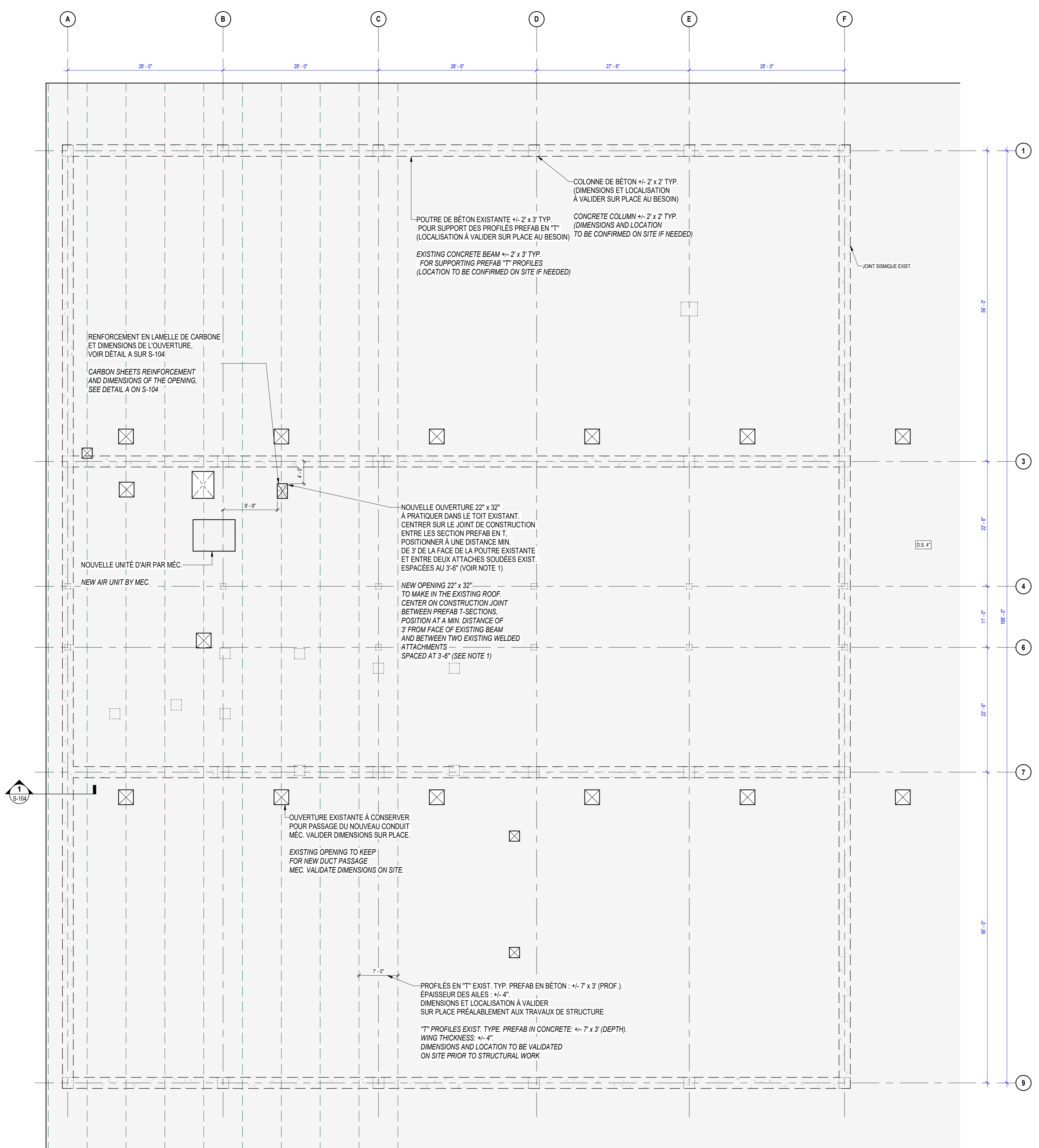
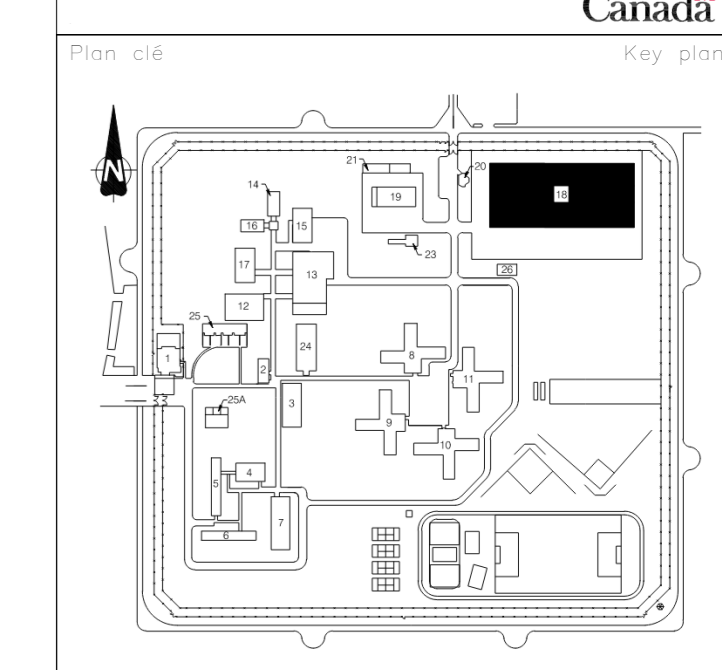
Tracé par / Drawn by  
**Adlievov V.**

Approuvé par / Approved by  
**Patrick Bourgeois, ing.**

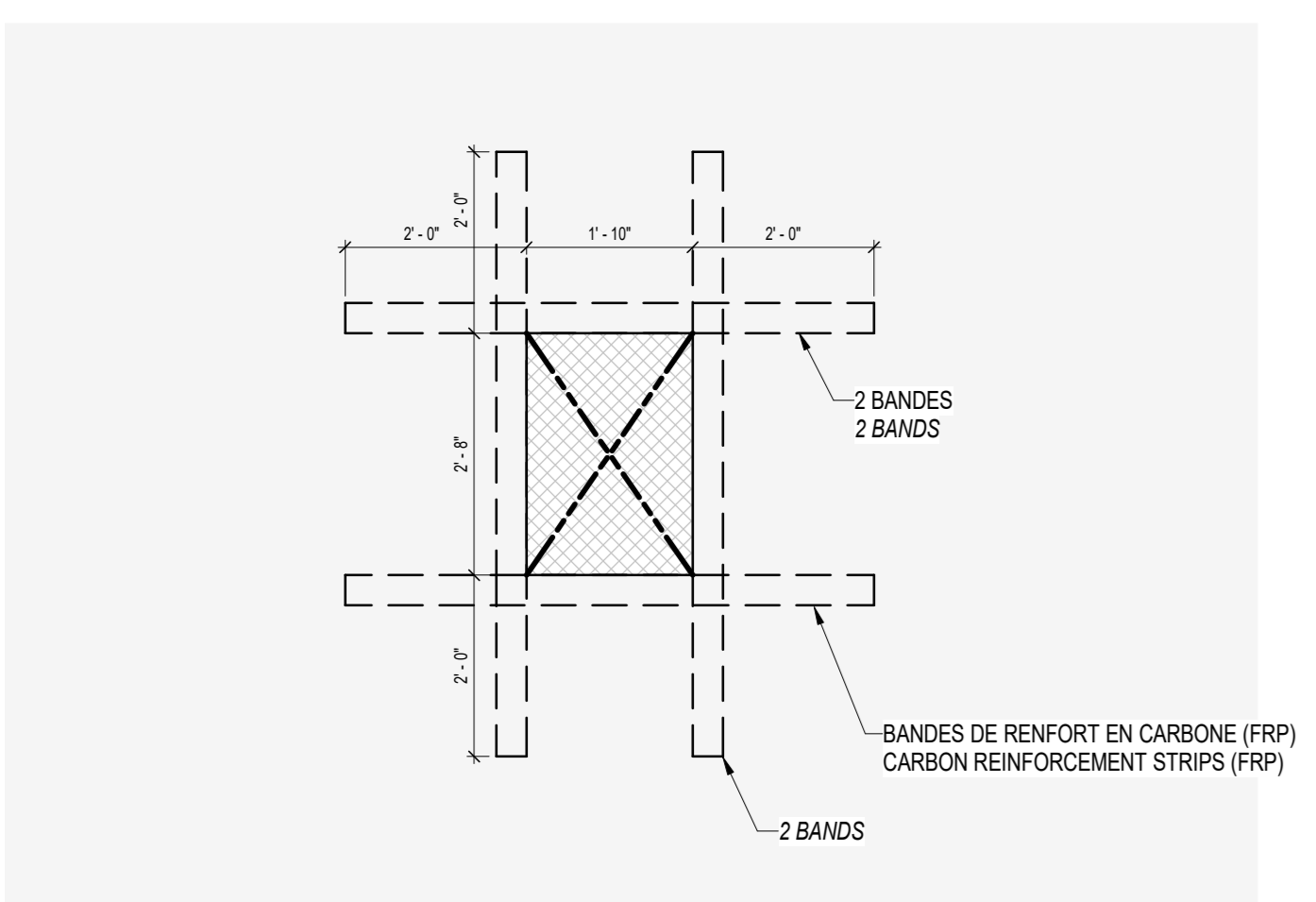
No. de projet / Project number

No. de dessin / Drawing no. | Titre / Title | Date

Echelle / Scale | No. de feuille / Sheet no.  
 22-0625 | **S-100**

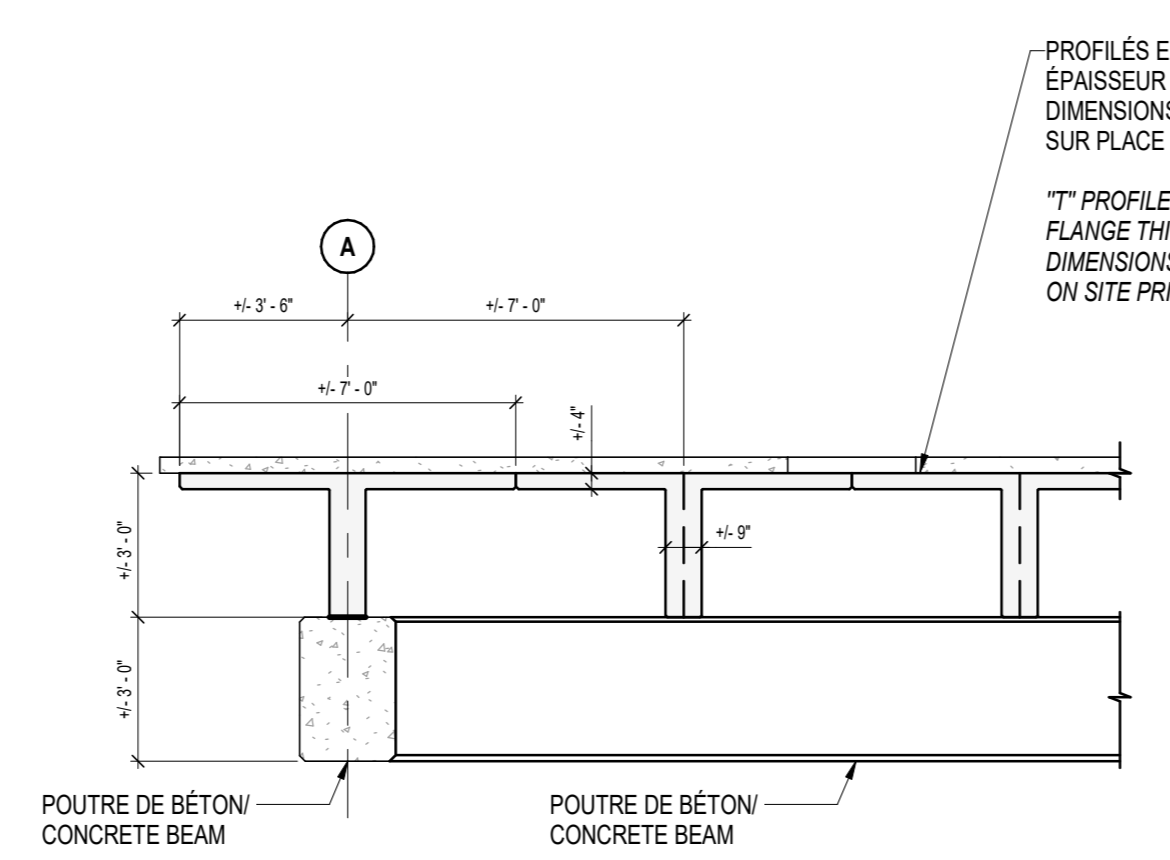


NOTE 1 : LES SECTIONS PRÉFAB EN T SONT LIÉES ENTRE ELLES À L'AIDE DE BARRÉS SOUDÉS ESPACÉS AUX 3'-0"  
NOTE 1: PREFAB T SECTIONS ARE LINKED TOGETHER USING WELDED BARS SPACED 11-3'-0"



**DÉTAIL A - RENFORT DE DALLE AVEC LAMELLES DE CARBONE**  
**DETAIL A - SLAB REINFORCEMENT WITH CARBON STRIPS**

**NOTES IMPORTANTES / IMPORTANT NOTES:**  
- INSTALLATION EN SOUS FACE DE LA DALLE (INTRADOS) / INSTALLATION EN SOUS FACE DE LA DALLE (INTRADOS)  
- SUIVRE LES RECOMMANDATIONS DU FABRICANT DE BANDES DE CARBONE POUR L'INSTALLATION DES BANDES ANSI QU'É LA PRÉPARATION DE SURFACE / FOLLOW THE CARBON STRIP MANUFACTURER'S RECOMMENDATIONS FOR STRIP INSTALLATION AND SURFACE PREPARATION  
- LORS DU PERÇAGE, LA DALLE DEVIENDRAIT ÊTRE LIBRE DE TOUTES SURCHARGES ADDITIONNELLES. SI CE N'EST PAS LE CAS, CETTE DERNIÈRE DEVRA ÊTRE ÉTAYÉE. / DURING DRILLING, THE SLAB SHOULD BE FREE OF ANY ADDITIONAL OVERLOADS. IF THIS IS NOT THE CASE, THE LATTER MUST BE SUBSTITUTED.



**1 COUPE/SECTION**  
S-104 Ech.: 1/4" = 1'-0"

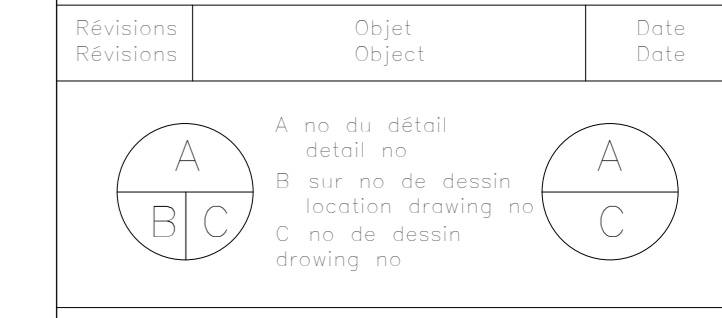
**TOIT/ROOF EXISTANT**

Ech.: 1" = 10'-0"

| ACRONYMS |                        | ACRONYMS |                             |
|----------|------------------------|----------|-----------------------------|
| H.P.     | HIGHEST POINT          | P.H.     | POINT HAUT                  |
| L.P.     | LOWEST POINT           | P.B.     | POINT BAS                   |
| TYP.     | TYPICAL                | TYP.     | TYPIQUE                     |
| U.N.Q.   | UNLESS NOTED OTHERWISE | S.I.C.   | SAUF INDICATIONS CONTRAIRES |
| S.O.G.   | SLAB ON GRADE          | D.S.S.   | DALLE SUR SOL               |
| S.S.     | STRUCTURAL SLAB        | D.S.     | DALLE STRUCTURALE           |
| S.O.I.   | SLAB ON INSULATION     | D.S.I.   | DALLE SUR ISOLANT           |
| E.F.     | EACH FACE              | CH.F.    | CHACQUES FACES              |
| B.E.W.   | BOTTOM EACH WAY        | J.C.     | JOINT DE CONTRÔLE           |
| T.E.W.   | TOP EACH WAY           | S.E.B.   | SEMELLE EN BAS              |
| C.J.     | CONTROL JOINT          |          |                             |
| S.D.F.   | STEPPED DOWN FOOTING   |          |                             |

- SE RÉFÉRER À LA SÉRIE S-001 POUR LES NOTES GÉNÉRALES.  
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| Révisions / Revisions | Objet / Object          | Date / Date |
|-----------------------|-------------------------|-------------|
| 1                     | DESIGN FOR CONSTRUCTION | 2023-06-15  |
| 2                     | ISSUES FOR APPROVAL     | 2023-06-19  |
| 3                     | ISSUES FOR CONSTRUCTION | 2023-06-19  |



Titre du projet / Project title

**SCC\_Bat18Cowansville**  
400, chemin Fordyck, Cowansville (Québec) J2K 3G6

Titre du dessin / Drawing title

**TOITURE / ROOF**

Conçu par / Designed by  
Louis-Philippe Myre, ing.

Dessiné par / Drawn by  
Abilezov V.

Approuvé par / Approved by  
Patrick Bourgeois, ing.

No. de projet / Project number

Nr. du dessin / Drawing no. Titre / Title Date

Echelle / Scale No. de feuille / Sheet no.  
22-0625 **S-104**