ROY CONSULTANTS
ENGINEERING SERVICES D'INGÉNIERIE

T. : 506.546.4484 • F. : 506.548.2207
548, av. King Ave. • Bathurst (NB) E2A 1P7
www.royconsultants.ca

May 4, 2015

Mrs. Melynda Jarratt
Association Maison Doucet Hennessy House Association Inc.
375 St. Peter Avenue
Bathurst, NB E2A 2Y4

Our File No.: 423-14-C

Mrs. Jarratt:

Subject: Structural Condition Review
Doucet Hennessy House, Bathurst (NB) _Rev 2

Roy Consultants was retained to perform a structural condition review of the above mentioned property. The following is our opinion on the findings and technical comments regarding the historic house.

Background Information

The property's original construction dates back to the 1800's. The structure consists of a wooden structure resting on a field stone and brick foundation. Over the years, several major renovations have been done to the building to obtain the current configuration. The property was originally owned by the Doucet family and was bought in the early 1900's by the Hennessy family. The property consists of a two (2)-storey building with an open attic and an unfinished basement.

Investigation and Findings

Our approach when performing a structural condition review is to conduct a visual inspection and identify any signs of structural deficiencies visually noticed. The evaluation of the building is based on past performance. The 2010 National Building Code of Canada has guidelines[1] allowing a structure to be evaluated based on its past performance. More precisely, the Code cites that buildings may be considered to have demonstrated satisfactory capacity to resist loads other than earthquakes, provided:

→ *"Careful examination by a professional engineer does not expose any evidence of significant damage, distress or deterioration";*

[1] Commentary L - Application of NBC Part 4 of Division B for the Structural Evaluation and Upgrading of Existing Buildings, in the User's Guide – NBC 2010 Structural Commentaries (Part 4 of Division B)

…/2

- → *"The structural system is reviewed, including examination of critical details and checking them for load transfer";*
- → *"The building has demonstrated satisfactory performance for 30 years or more";*
- → *"There have been no changes within the past 30 years that could significantly increase the loads on the building or affect its durability, and no such changes are contemplated".*

During our investigation, only minor structural deficiencies were found and were man made during renovations. Hereafter is the list of minor deficiencies found during our investigation:

1. Structural member in the attic area were cut at the junction of the back addition of the property. This is believed to have been done to allow the chimney pipe to pass through at this area. Although it is not a critical matter, minor reinforcement/repairs of this area are recommended in future renovation;
2. Some floor joists and/or beams located in the basement do not have proper support. We strongly believe that adding some additional posts in some area of the basement would rectify this situation;
3. Field stone foundation shows signs of distress in some areas. A lateral crack has occurred which is a sign that lateral pressure of the earth is causing the mortar between field stones to crack, reducing the structural capacity of the foundation. Although it is not critical at this point, we strongly believe that a new concrete foundation will be required in the future to sustain the structural loads of the property.
4. In addition to the lateral crack, the field stone foundation has some areas of local distress. These area are believe to be past openings that were block and are not performing adequately. These areas should be repaired locally if a new foundation is not poured. We would recommend to install a new concrete foundation and we strongly believe that a new foundation would be the most economical and practical option to repair the deficiencies in regards to the field stone foundation.

With the above said, we strongly believe that if the property's vocation is to remain the same (i.e.: remain *Group C – Residential Occupancy)*, only small structural reinforcements would need to be implemented to bring back the property to a sound structural state since the property's past performance has proven to be satisfactory.

Since major renovations to the property are anticipated and its vocation will change from a *Group C – Residential Occupancy* to a *Group A – Assembly Occupancy*, the property will need to be brought back to current national building code standards as per part 4 of the NBC since the occupancy classification of the building will change. This would mean the following:

1. The entire property will need to be repaired/reinforced to meet current standards prescribed by the National Building Code at the time of the renovation. Major items that will need to be reinforced are:
    a. The floors would need to be reinforced to meet the live load prescribed by the

National Building Code at the time of the renovation. We have reviewed the existing floor structure of the main floor exposed in the basement and the structure is not adequate as per current standard. The floor structure of the basement will need to undergo major reinforcement to meet with current standard. The floor of the second storey was not exposed but since it dates back to the same period, we can conclude that the floor will also need to be reinforced. In order to achieve a full structural evaluation of the second storey floor, the floor structure would need to be exposed (i.e.: all ceiling finish would need to be removed for field measurements).

b. The roof structure will also need to be reinforced to meet current NBC requirements. A verification of the rafters shows that they also do not meet current requirements.
c. The exterior walls were damaged to a certain extent. Since repair is anticipated for the foundation, we do not foresee any repair required to the exterior of the foundation at the moment.

Opinion of Structural Construction Cost

Our preliminary opinion of construction cost for the repairs listed above is $220,000.00, plus HST. This cost will need to be revised once all the details of the repairs will be known (i.e.: plans are completed).

Intervention	Opinion of construction Cost
Repair/reinforcement of attic members	$3,000.00[2]
Reinforcement of floor joists/beams in basement	$8,000.00[2]
New concrete foundation (including raising of the property and re-installation on new foundation)	$85,000.00
Sub-total (Phase 1)	$96,000.00
Reinforcement of floor joists and beams to meet NBC requirements	$60,000.00
Reinforcement of roof rafters	$12,000.00
Addition of new lintel above windows and doors	$10,000.00
Sub-total (Phase 2)	$82,000.00
Sub-total	$167,000.00[3]
Contingencies (15%)	$25,050.00
Engineering Fees (15%)	$25,050.00
Total	$217,100.00
Say	$220,000.00

[2] We do not recommend doing these repairs if phase 2 of the work is anticipated since these repair costs are for requirements of Group C – Residential Occupancy only and not Group A – Assembly Occupancy as per the proposed future use of the building.
[3] Cost to reinforce the attic member and the floor joists was not included in the sub-total since the repairs listed in Phase 2 would include repairs listed in Phase 1.

Mechanical and Electrical Assessment

Enclosed to this report in appendix A is the Mechanical and Electrical assessment of the property.

We appreciate the opportunity to assist the Doucet Hennessy House Association Inc. with this business matter and we trust that this opinion meets your present expectations. However, do not hesitate to contact us should you have any questions and/or concerns.

Yours truly,

Robert Roy, P.Eng.
CIVIL Engineer
STRUCTURAL Dept.

RR/sl

Enc.: Picture of Site Visit

Appendix A – Mechanical and Electrical Assessment

Photo No. 1: Roof Rafter Cut at chimney

Photo No. 2: Roof Rafter Cut at Chimney

Photo No. 3: Cut Wood Framing at the Junction of the Building Addition

Photo No. 4: Questionable Framing around Basement Chimney

Photo No. 5: Old Opening in Basement Foundation

Photo No. 6: Unsupported Joist beside Basement Stair

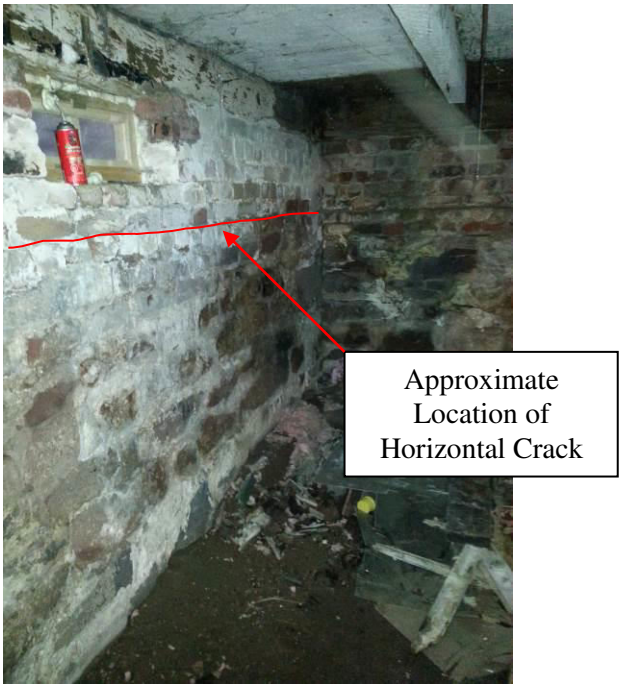


Photo No. 6: Foundation Horizontal Crack Suggesting an Excessive Lateral Load on the Foundation

ELECTRICAL AND MECHANICAL ASSESSMENT

DOUCETT-HENNESSY HOUSE
BATHURST, NEW BRUNSWICK

Our File No.: 423-14
April, 2015

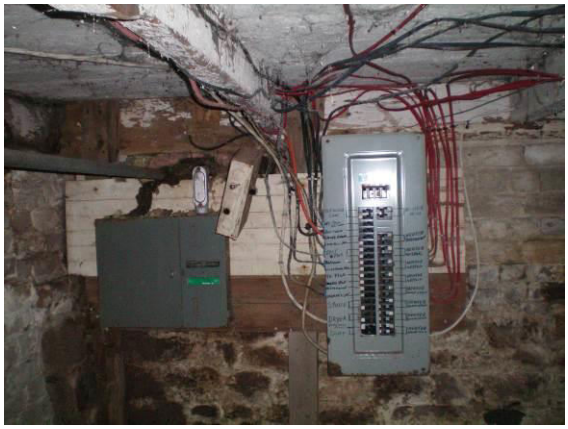
1. ELECTRICAL AND MECHANICAL ASSESSMENT

1.1 ELECTRICAL

1.1.1 Electrical Main Service Entrance

The main electrical service enters the building from an overhead utility line. The service entrance consists of two (2) 200A 120/240V 1ph service masts. One supplies a 200A 4-jaw meter to a 200A distribution panel located in the basement. The second service mast supplies a 100A 120/240V 4-jaw 3-meter base. From that meter base, two meters are blanked with unused panel and disconnect in the basement. The third meter supplies power to a rented apartment in the building. The service entrance is in very poor shape and is not salvageable.

Exterior View of Meters

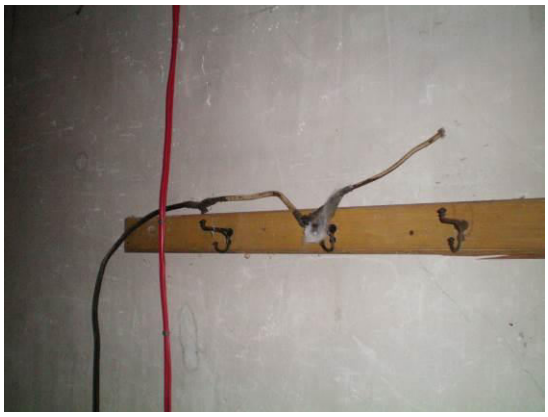


Basement View of Distribution

1.1.2 Wiring Devices

The building wiring consists of lumex copper wires (paper and tar covered) and NMD plastic insulated. Both materials are approved building materials. However, the building wiring has seen many modifications over the years and proper care or disposal of unwanted cables has been neglected and will require inspection and removal. Some may have power and may be harmful.

Disconnect



Abandoned Wire

1.1.3 Lighting System

The existing lighting system consists of surface fluorescent and incandescent luminaires. The exterior lighting consists of incandescent wall luminaires. Some lights are wired without boxes on porcelain holders.

Typical Light Wired without Box

1.1.4 Electric Heating System

The existing heating system consists of baseboard heaters. Some sections of the building on the upper floor are not heated and are covered with insulation.

Upper Floor with Insulation to Reduce Lower Apartment Heat Loss

1.1.5 Electrical to Mechanical Equipment

There is no existing mechanical equipment installation. Any building modernisation, which involves ventilation, air conditioning and heat recovery shall require new wiring and extra service capacity.

1.1.6 Communication Tel/Data System

The existing communication system consists of an exterior surface telephone cable entry.

Telephone Line Running on the Exterior Wall to Individual Phones

1.1.7 Electrical Conclusion

The existing service entrance with all distribution panels and building wiring should be removed. An entirely new service entrance with new distribution, wiring and communication should be installed as per the new building design requirements. The work could be done directly by a licenced electrician to render the installation acceptable to current codes and standards.

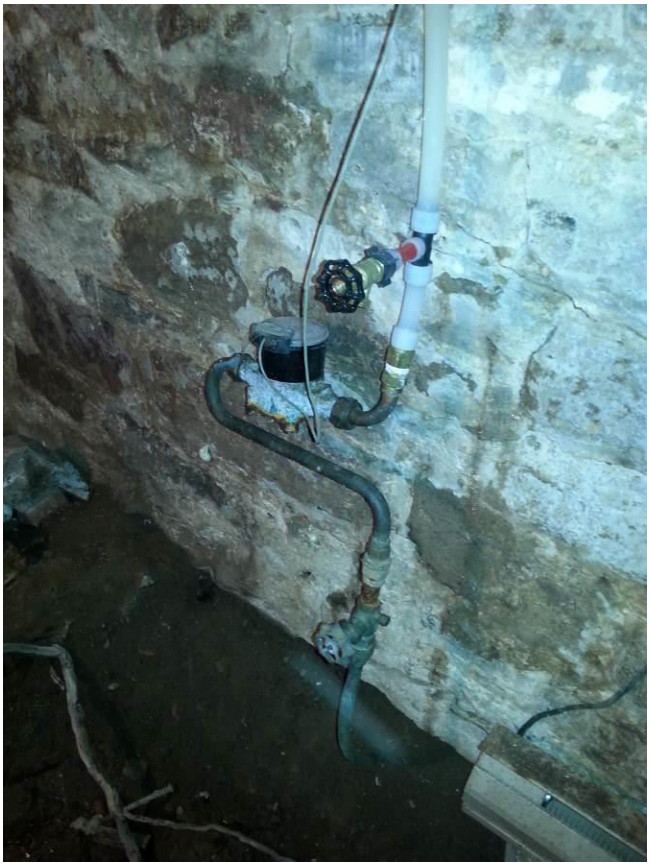
Electrical Opinion of Probable Construction Costs	
Electrical Main Service Entrance	**$20,000.00**
Building Wiring (Including Fixtures)	**$50,000.00**
Security System	**$5,000.00**
Communication System	**$5,000.00**
Total	**$80,000.00**

1.2 MECHANICAL

1.2.1 Water Entrance

The existing water entrance is not as per current applicable codes. The water entrance shall meet CSA B64-10.1-07, meaning the water entrance should be complete with a dual type backwater preventer. The main shutoff gate valve and meter have reached the end of their service life and should be replaced. A wye strainer should also be installed. The sequence of the water entrance should be as follows:

1. Main Shut-off Valve;
2. Wye Strainer;
3. Water Meter;
4. Backflow Preventer.



Existing Water Entrance

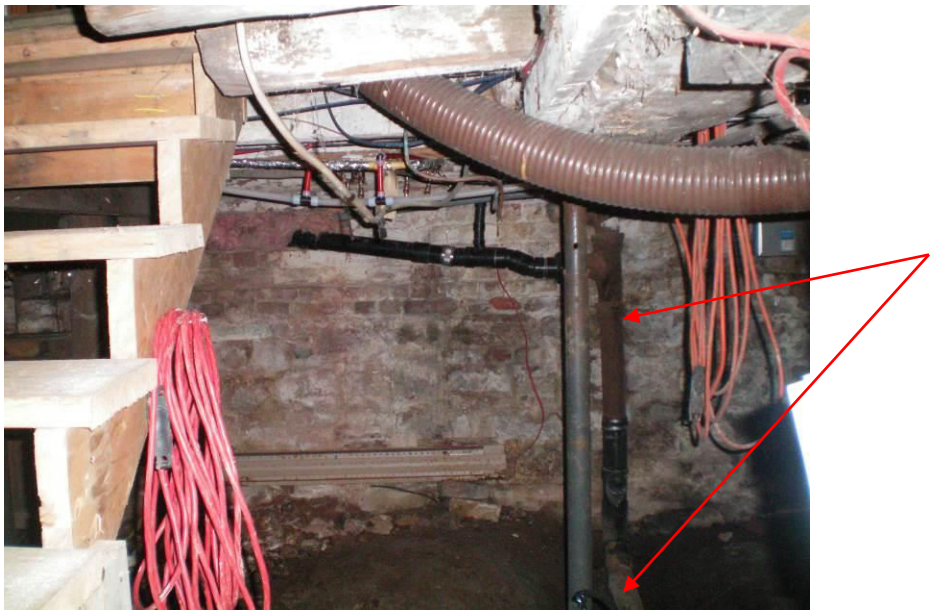
1.2.2 Hot Water Tank

Domestic hot water tank is not installed as per standards and should be rectified.

1.2.3 Piping

Cast iron sanitary piping located in the basement is in poor condition and has reached the end of its service life. We strongly suggest replacing said piping with new ABS type piping.

All existing copper piping located in the basement should be insulated adequately. Currently, some of it is insulated with fiber insulation and aluminum tape.



Cast Iron Piping in Poor Condition

1.2.4 Fixtures

Most fixtures in the building are old but still function. We strongly suggest incorporating new fixtures in a future renovation project. Some fixtures were found to have no closet stops, which makes it hard to perform regular maintenance on such fixtures.

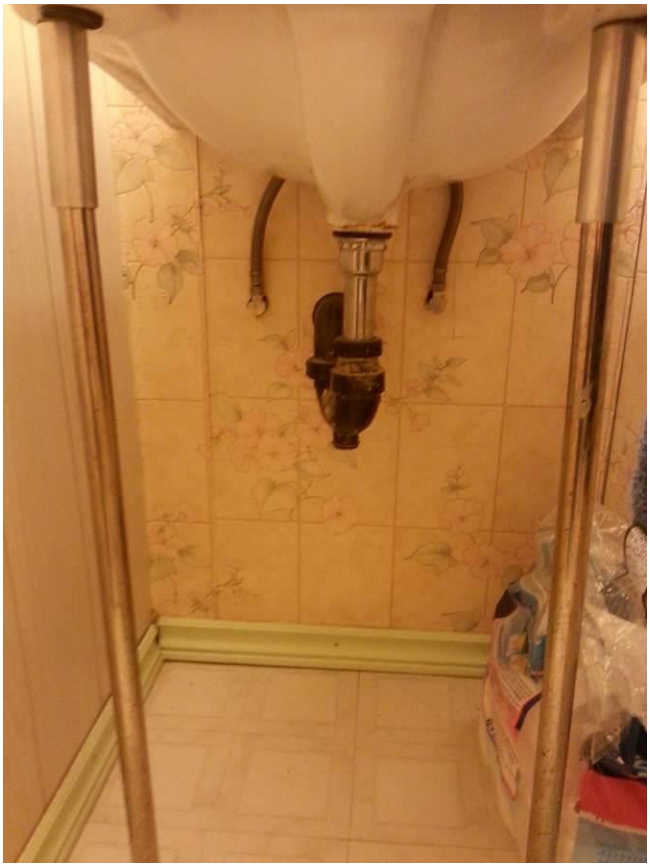
1.2.5 Pipe Ventilation

Although most sanitary pipe ventilation were not visible, an in-line ventilation was observed on the washer. This is not acceptable as per plumbing code and proper sanitary pipe ventilation should be provided.

Acceptable Sanitary Pipe Ventilation

1.2.6 Ventilation

No ventilation was found in the building. If major renovations are implemented, a new HRV system would be required to be added to the project.



Fixtures without Closet Stops

1.2.7 Mechanical Conclusion

Overall, the building's plumbing is in code condition. Only small repairs need to be implemented to bring the building to its original state (without any major renovations). The work could be done directly by a licenced plumber to render the installation acceptable to current codes and standards. A new ventilation system would also be required should a major renovation be implemented.

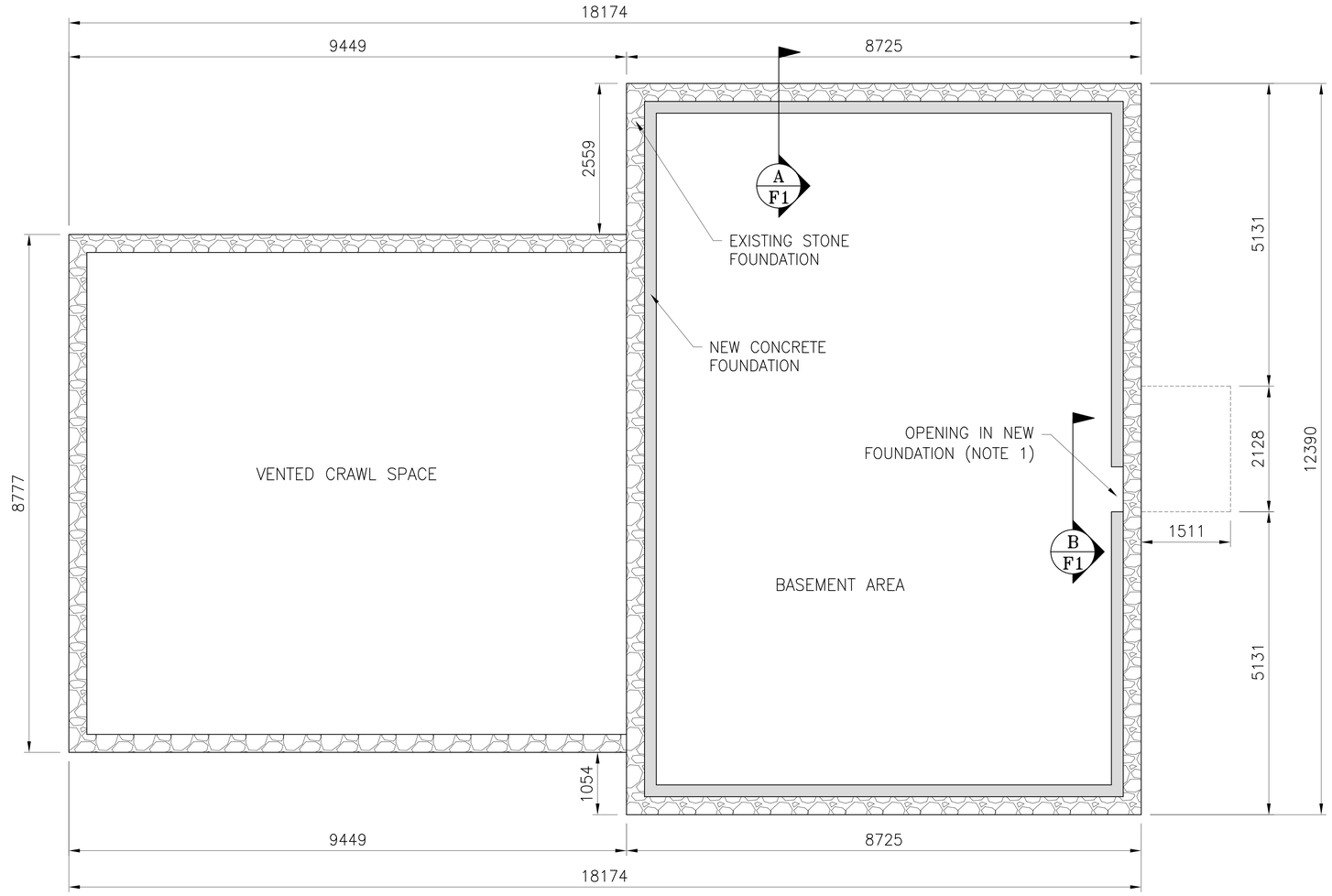
Mechanical Opinion of Probable Construction Costs	
Water Entrance	**$6,000.00**
Piping	**$10,000.00**
Fixtures	**N/I**
Ventilation	**N/I**
Total	**$16,000.00**

2. RENOVATIONS

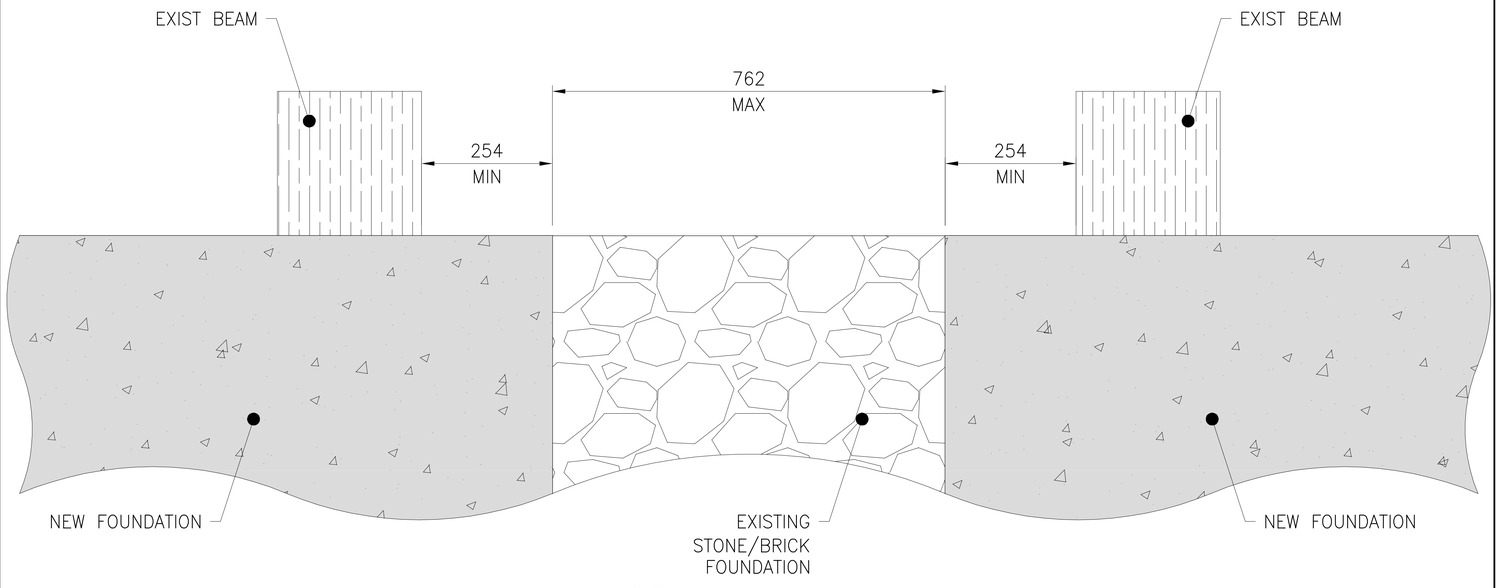
We have reviewed the proposed mechanical and electrical costs identified in the architectural report and feel that the costs identified in Jacques Boucher Architect's report should be revised in terms of costs as follows:

1. Plumbing Work: $35,000.00
2. Ventilation and Heating Work: $60,000.00
3. Electrical Work: $80,000.00

Drawing Number 493-13-S1 Numero du Plan
Plot date 2014/08/20 Date du tracage



FOUNDATION PLAN
SCALE: 1:40



SECTION A/F1
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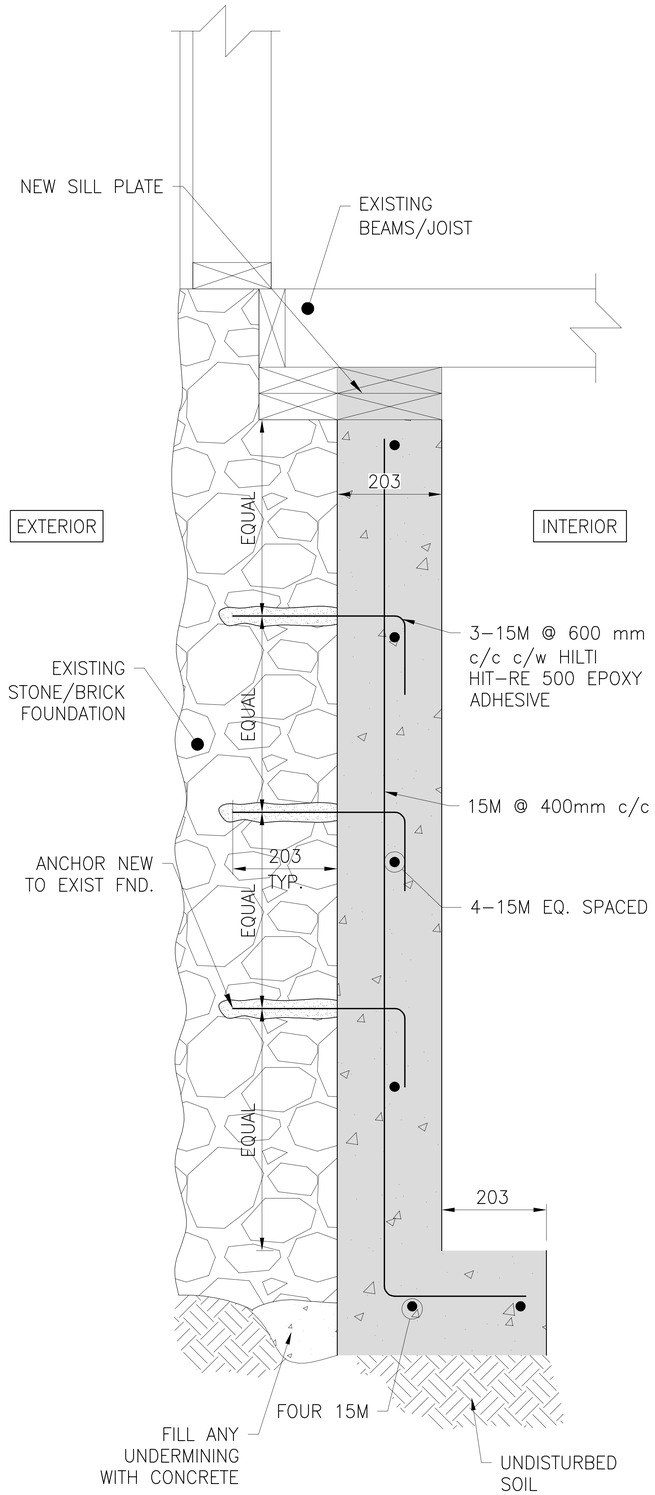

SECTION A/F1
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NOTES

GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LOCATIONS, ELEVATIONS, SLOPES AND/OR CONSTRUCTION DETAILS. REPORT ANY DISCREPANCIES TO OWNER AND/OR CONSULTANT.
- THESE STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH STRUCTURAL SPECIFICATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY SHORING DURING FOUNDATION REPAIR WORK.

SPECIFIC NOTES

1. ONE OPENING IN FOUNDATION IS REQUIRED FOR HISTORICAL REFERENCES AND SHOW THE ORIGINAL FOUNDATION. EXACT LOCATION OF OPENING TO BE CONFIRMED ON SITE WITH OWNER.

NO.	DATE	REVISIONS	Par: By:
A	2015/08/18	ISSUED FOR APPROVAL	P.L.

A/B A DETAIL No
No DU DETAIL
B LOCATION DRAWING No
SUR DESSIN No
C DRAWING No
DESSIN No
A/B/C

Client / Client

BATHURST, NB

Project / Projet

FOUNDATION REPAIRS

ROY CONSULTANTS
ENGINEERING SERVICES D'INGÉNIERIE
548, av. King Ave.
Bathurst (NB) E1A 1P7
T. 506-546-6484
www.royconsultants.ca

Drawing Title / Titre du Plan

–STRUCTURAL–
FOUNDATION REPAIRS

Design by: R. ROY	Design par:
Drawn by: P. LEBOUTHILLIER	Dessine par:
Checked by: Verifie par:	Date: SEPTEMBER 2015
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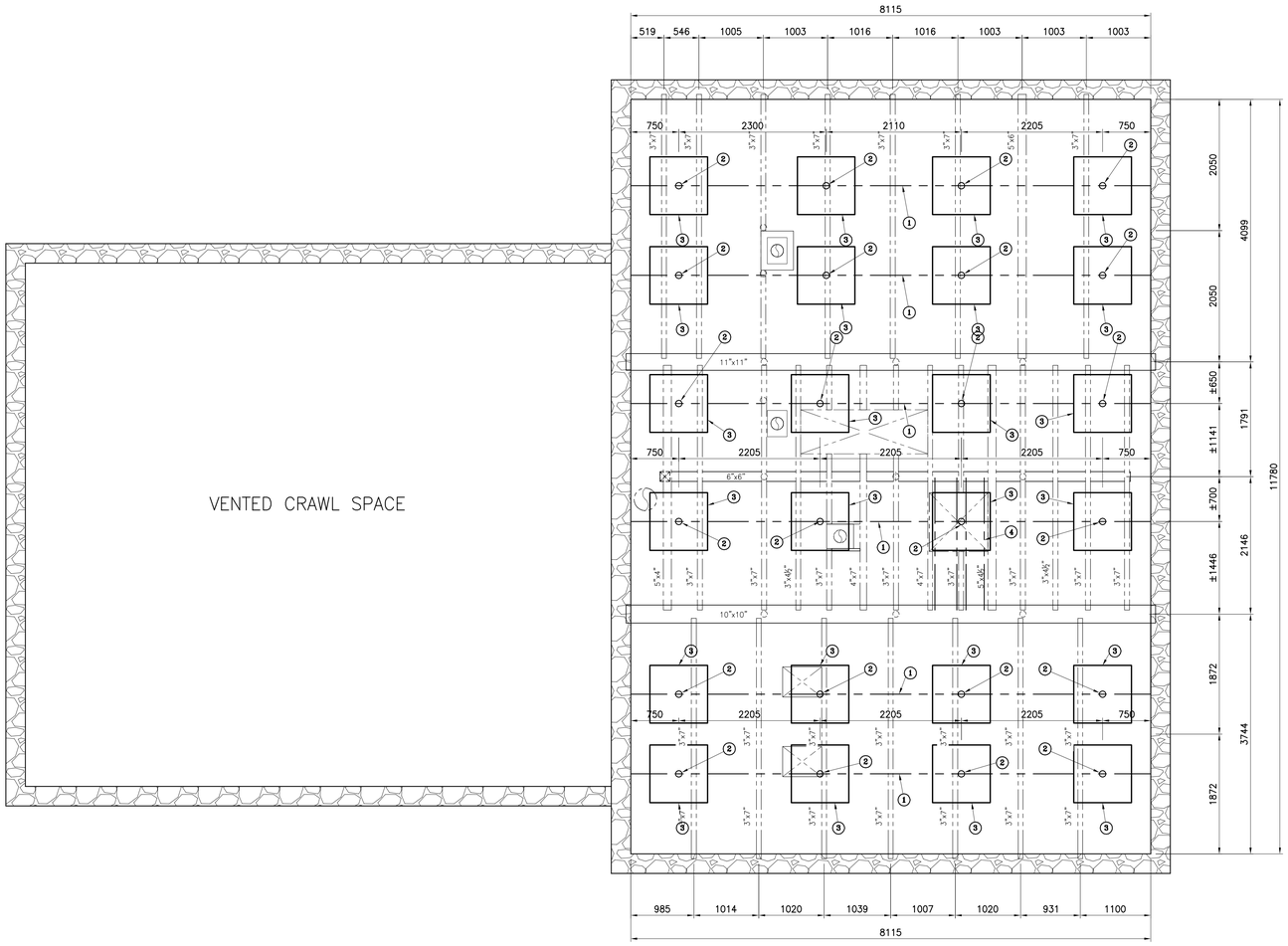
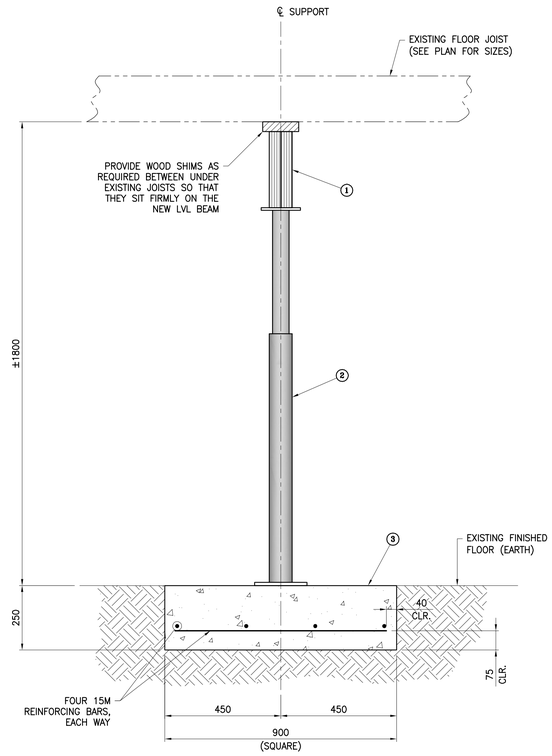
Sheet: 1 of/de 1	Feuille:
Drawing Number: 423-14-F1	Numero du Plan:
Rev. A	

Drawing Number 423-14-S1 Numero du Plan
Plot date 2015/09/18 Date du tracage

ITEM	DESCRIPTION
①	NEW 2-PLY 44x302 (1¾"x11⅞") LVL 1.9E (SEE DETAIL), 4 REQ'D
②	NEW METAL JACK POST (SEE DETAIL), 16 REQ'D
③	NEW 900x900x250 CONCRETE BASE (SEE DETAIL), 16 REQ'D
④	NEW 2 x 8 WOOD JOIST, 4 REQ'D



FLOOR FRAMING PLAN VIEW
SCALE: 1:40



TYPICAL SUPPORT DETAIL
SCALE: N.T.S. (REQ'D @ 16 LOCATIONS)

NOTES

NO.	DATE	REVISIONS	Par: By:
A	2015/09/18	ISSUED FOR APPROVAL	R.V.

A DETAIL No / No DU DETAIL
B LOCATION DRAWING No / SUR DESSIN No
C DRAWING No / DESSIN No

Client Client

BATHURST, NB

Project Projet

FOUNDATION REPAIRS AND NEW FIRE EXIT

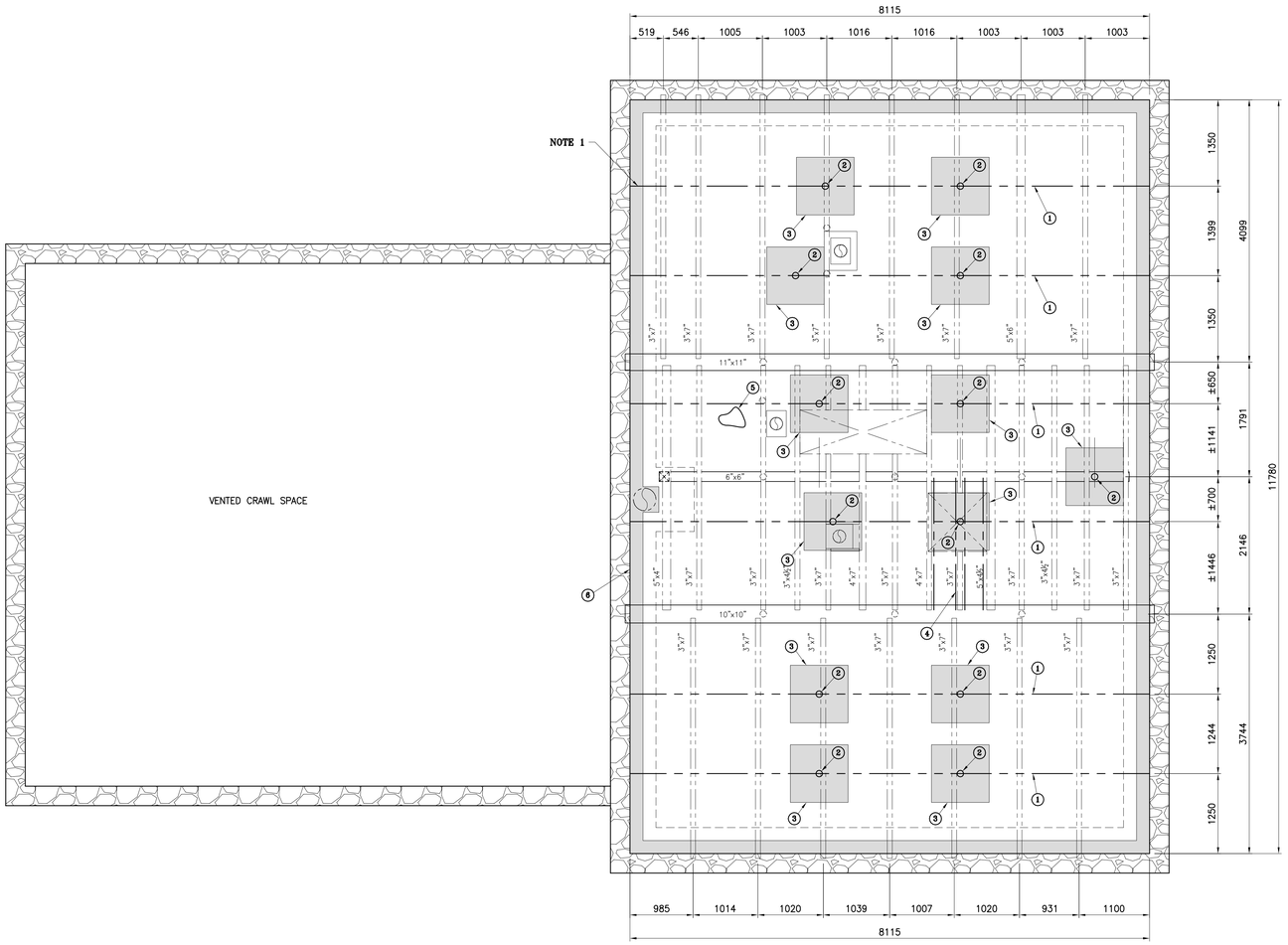
ROY CONSULTANTS
ENGINEERING SERVICES D'INGÉNIERIE
548, av. King Ave.
Bathurst (NB) E2A 1P7
T. 506.546.4484
www.royconsultants.ca

Drawing Title Titre du Plan

-STRUCTURAL-
FLOOR STRUCTURAL REPAIR

Design by: Design par:	Drawn by: Dessine par:
R. ROY	P.L. / C.J.A. / R.V.
Checked by: Verifie par:	Date: SEPTEMBER 2015
Scale: Echelle: AS SHOWN	Sheet: Feuille: 1 of/de 1

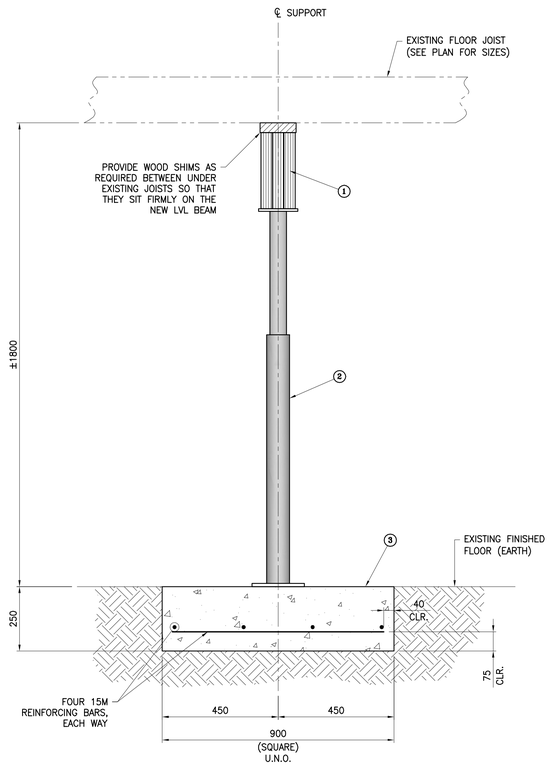
Drawing Number: Numero du Plan: 423-14-S1 | Rev. A



FLOOR FRAMING PLAN VIEW

SCALE: 1:40

ITEM	DESCRIPTION
①	NEW 3-PLY 44x302 (1¾"x11⅞") LVL 1.9E (SEE DETAIL), 6 REQ'D
②	NEW METAL JACK POST (SEE DETAIL), 13 REQ'D
③	NEW 900x900x250 CONCRETE BASE (SEE DETAIL), 13 REQ'D (SEE DRAWING 423-14-S2 FOR LOCATION)
④	NEW 2 x 8 WOOD JOIST, 4 REQ'D
⑤	PLUMBING WATER PIPE TO BE RELOCATED AS REQUIRED.
⑥	NEW FOUNDATION (SEE DRAWING 423-14-S2)



TYPICAL SUPPORT DETAIL

SCALE: N.T.S. (REQ'D @ 16 LOCATIONS)

TECHNICAL SPECIFICATIONS

CONCRETE SPECIFICATIONS:

GENERAL:

1. ALL CONCRETE, REINFORCEMENT, ACCESSORIES AND PROCEDURES SHALL MEET OR EXCEED THE APPLICABLE CSA STANDARDS FOR THAT PRODUCT. USE ONLY PRODUCTS SUITABLE FOR THE INTENDED FINAL USE AND CONDITIONS PREVALENT DURING CONSTRUCTION. PROTECT ALL MATERIALS FROM THE WEATHER DURING STORAGE AND INSTALLATION.
2. PORTLAND CEMENT: TO CAN/CSA A3001-08, TYPE GU – GENERAL USE HYDRAULIC CEMENT.
3. AGGREGATES: CLEAN, WELL-GRADED, UNCOATED SAND AND COARSE AGGREGATES FROM AN APPROVED SOURCE CONFORMING TO CAN/CSA-A23.1-09.
4. WATER: POTABLE FROM AN APPROVED MUNICIPAL SOURCE AND TO CAN/CSA-A23.1/A23.2.
5. CHEMICAL ADMIXTURES: SHALL CONFORM WITH ASTM C494-13.
6. THE COEFFICIENT FOR VARIATION OF 28 DAY COMPRESSIVE TEST RESULTS SHALL BE IN THE "GOOD OR BETTER" RANGE (15% MAXIMUM VARIATION) AS PER ACI STANDARD 214.
7. PROVIDE AN APPROVED WATER REDUCING AGENT IN ALL CONCRETE MIX DESIGNS. THE CONTRACTOR USES FLY-ASH AT HIS OWN RISK ON SLAB-ON-GRADE APPLICATIONS.
8. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH CSA-A23.1-09 TO PREVENT SEGREGATION OF THE MIX.
9. ALL CONCRETE SHALL BE PLACED IN ITS FINAL POSITION WITHIN 2 HOURS OF ORIGINAL BATCHING.
10. THE CONTRACTOR SHALL TEST THE CONCRETE FOR EACH POUR AND TYPE OF CONCRETE PLACED IN A GIVEN WAY. LARGE POURS SHALL HAVE A TEST CONDUCTED ON EACH 40M³ OF CONCRETE PLACED. INSPECTION AND TESTING OF CONCRETE AND CONCRETE MATERIALS TO BE CARRIED OUT BY A TESTING LABORATORY APPROVED BY ENGINEER IN ACCORDANCE WITH CAN/CSA-A23.1. TEST RESULTS TO BE FORWARDED TO THE ENGINEER IN A TIMELY MANNER. COST OF TESTING TO BE PAID BY OWNER.
11. CURING PROCEDURES AND PROTECTION OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARDS CAN/CSA-A23.1-09 NEW CONCRETE SHALL NOT BE ALLOWED TO FREEZE UNDER ANY CIRCUMSTANCES. THE CONTRACTOR SHALL PAY THE COSTS RELATED TO DAMAGE UNDER STRENGTH OR IMPROPERLY REINFORCEMENT.
12. CONCRETE COVER SHALL BE 40 MM UNLESS NOTED OTHERWISE ON DRAWINGS.
13. CHEMICAL HARDENER: KURE N HARDEN BY BASF BUILDING SYSTEMS OR APPROVED EQUAL

CONCRETE MIX:

1. FOR ALL CONCRETE EXPOSED TO FREEZING AND THAWING (I.E. WALL AND FOOTING):
   - .1 CLASS OF EXPOSURE: F-2
   - .2 MAXIMUM WATER / CEMENTING MATERIAL RATIO: 0.5
   - .3 20MM NOMINAL SIZE OF COARSE AGGREGATES
   - .4 MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 30 MPA
   - .5 SLUMP AT TIME AND POINT OF DISCHARGE: 80 MM ± 30 MM
   - .6 AIR CONTENT: 4% TO 7%

CONCRETE FINISH:

1. INTERIOR CONCRETE FLOORS TO BE LEFT EXPOSED OR TO RECEIVE COVERING REQUIRING A SMOOTH SURFACE: INITIAL FINISHING OPERATIONS FOLLOWED BY FINAL FINISHING COMPRISING MECHANICAL FLOATING AND STEEL TROWELLING AS SPECIFIED IN CAN/CSA-A23.1-04 TO PRODUCE HARD, SMOOTH, DENSE TROWELLED SURFACE FREE FROM BLEMISHES. SURFACE SHALL BE READY TO RECEIVE FLOOR FINISH, IF APPLICABLE.
2. APPLY 2 COATS OF CHEMICAL HARDENER ON EXPOSED FLOORS IN ACCORDANCE WITH SEALER/DENSIFIER MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. USE CURING COMPOUNDS COMPATIBLE WITH APPLIED FINISH ON CONCRETE SURFACES. APPLIED FINISH ON CONCRETE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

FORMWORK:

1. FABRICATE AND ERECT FORMWORK IN ACCORDANCE WITH CAN/CSA-S269.3-M92 (R2008) TO PRODUCE FINISHED CONCRETE CONFORMING TO SHAPE, DIMENSIONS, LOCATIONS AND LEVELS INDICATED.
2. LEAVE FORMWORK IN PLACE FOR 2 DAYS AFTER PLACING CONCRETE.

UNDER NO CIRCUMSTANCES WILL REMOVAL OF FORMWORK BE ACCEPTED UNTIL CONCRETE HAS REACHED 70% OF ITS DESIGN STRENGTH.

REINFORCEMENT:

1. ALL REINFORCING BARS SHALL BE MANUFACTURED AND MEET THE REQUIREMENTS OF CSA STANDARD G30.18-M92 (R2002), BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT.
2. ALL REINFORCING BARS SHALL BE GRADE 400 MPA.
3. SPLICES, BENDS, AND PLACEMENT SHALL CONFORM TO CAN/CSA-A23.1-09 AND CAN/CSA-A23.3-09.
4. REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST VERSION OF THE ACI DETAILING MANUAL AND TO CORRESPOND WITH REVIEWED SHOP DRAWINGS. ALL FABRICATOR DRAWINGS TO BE STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN PROVINCE OF NEW BRUNSWICK, CANADA.
5. REINFORCING STEEL SHALL NOT BE WELDED OR HEATED WITHOUT THE PRIOR APPROVAL OF THE CONSULTANT.
6. ALL REINFORCING STEEL SHALL BE CHAIRED AS PER CAN/CSA-A23.1/A23.2 AND SECURELY TIED IN PLACE USING STANDARD TIES AND CHAIRS.
7. ALL REINFORCEMENT SHALL BE REVIEWED IN PLACE, PRIOR TO PLACING THE CONCRETE, BY THE ENGINEER. ALL REINFORCEMENTS SHALL BE IN PLACE AND SECURED AT THE TIME OF THE REVIEW. PROVIDE 24 HOURS NOTICE PRIOR TO POURS.

DESIGN:

1. ALL FOUNDATION SHALL BEAR ON SOIL HAVING AN ALLOWABLE BEARING CAPACITY OF 150 KPA AT SERVICEABILITY LIMIT STATE. PRIOR TO PLACEMENT OF CONCRETE FOR FOOTINGS, THE OWNER SHALL RETAIN THE SERVICES OF SOIL INVESTIGATION FIRM TO CONFIRM THAT THE SOIL IS ACCEPTABLE TO ACHIEVE THE SPECIFIED BEARING CAPACITY. COST OF TESTING TO BE PAID BY OWNER.
2. ALL DISCREPANCIES IN DETAILS AND DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO COMMENCING RELATED WORK. DRAWINGS ARE NOT TO BE SCALED.

CARPENTRY

QUALITY ASSURANCE:

.1 LUMBER BY GRADE STAMP OF AN AGENCY CERTIFIED BY CANADIAN LUMBER STANDARDS ACCREDITATION BOARD.
.2 PLYWOOD, PARTICLE BOARD, OSB AND WOOD BASED COMPOSITE PANELS IN ACCORDANCE WITH CSA AND ANSI STANDARDS.

PRODUCTS:

.1 SAWN LUMBER: UNLESS SPECIFIED OTHERWISE, SPF SPECIES, NO. 2 OR BETTER GRADE, SOFTWOOD, S4S MATERIAL, MOISTURE CONTENT 19% OR LESS IN ACCORDANCE WITH NBC, CAN/CSA-O141-91(R1999) AND NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER.
.2 STRUCTURAL COMPOSITE LUMBER: IN ACCORDANCE WITH ASTM D5456-01.
.3 FURRING, BLOCKING, NAILING STRIPS, GROUNDS, ROUGH BUCKS, CANTS, CURBS, FASCIA BACKING AND SLEEPERS: S2S OR S4S MATERIAL, "STANDARD" OR BETTER GRADE.
.4 PLYWOOD: CANADIAN SOFTWOOD PLYWOOD (CSP) TO CSA O151-M78(R1998), STANDARD CONSTRUCTION.
.5 ORIENTED STRAND BOARD (OSB) TO CAN/CSA-O325.0-92(R1988).
.6 FASTENERS: ALL GALVANIZED TO CAN/CSA-G164-M92(R1998).

INSTALLATION:

.1 COMPLY WITH REQUIREMENTS OF NBC, SUPPLEMENTED BY THE FOLLOWING PARAGRAPHS.
.2 INSTALL MEMBERS TRUE TO LINE, LEVELS AND ELEVATIONS, SQUARE AND PLUMB.
.3 FRAME, ANCHOR, FASTEN, TIE AND BRACE MEMBERS TO PROVIDE NECESSARY STRENGTH AND RIGIDITY.

END OF SPECIFICATIONS

NOTES

GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LOCATIONS, ELEVATIONS, SLOPES AND/OR CONSTRUCTION DETAILS. REPORT ANY DISCREPANCIES TO OWNER AND/OR CONSULTANT.
- THESE STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH STRUCTURAL SPECIFICATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY SHORING DURING FOUNDATION REPAIR WORK.

SPECIFIC NOTES

1. NEW BEAMS TO BE SUPPORTED BY NEW FOUNDATION.

NO.	DATE	REVISIONS	Par: By:
B	2015/10/21	ISSUED FOR APPROVAL	D.C.
A	2015/09/18	ISSUED FOR APPROVAL	R.V.

A DETAIL No / No DU DETAIL
B LOCATION DRAWING No / SUR DESSIN No
C DRAWING No / DESSIN No

Client / Client
ASSOCIATION MAISON DOUCET-HENNESSY HOUSE ASSOCIATION
BATHURST, NB

Project / Projet
FOUNDATION REPAIRS AND NEW FIRE EXIT

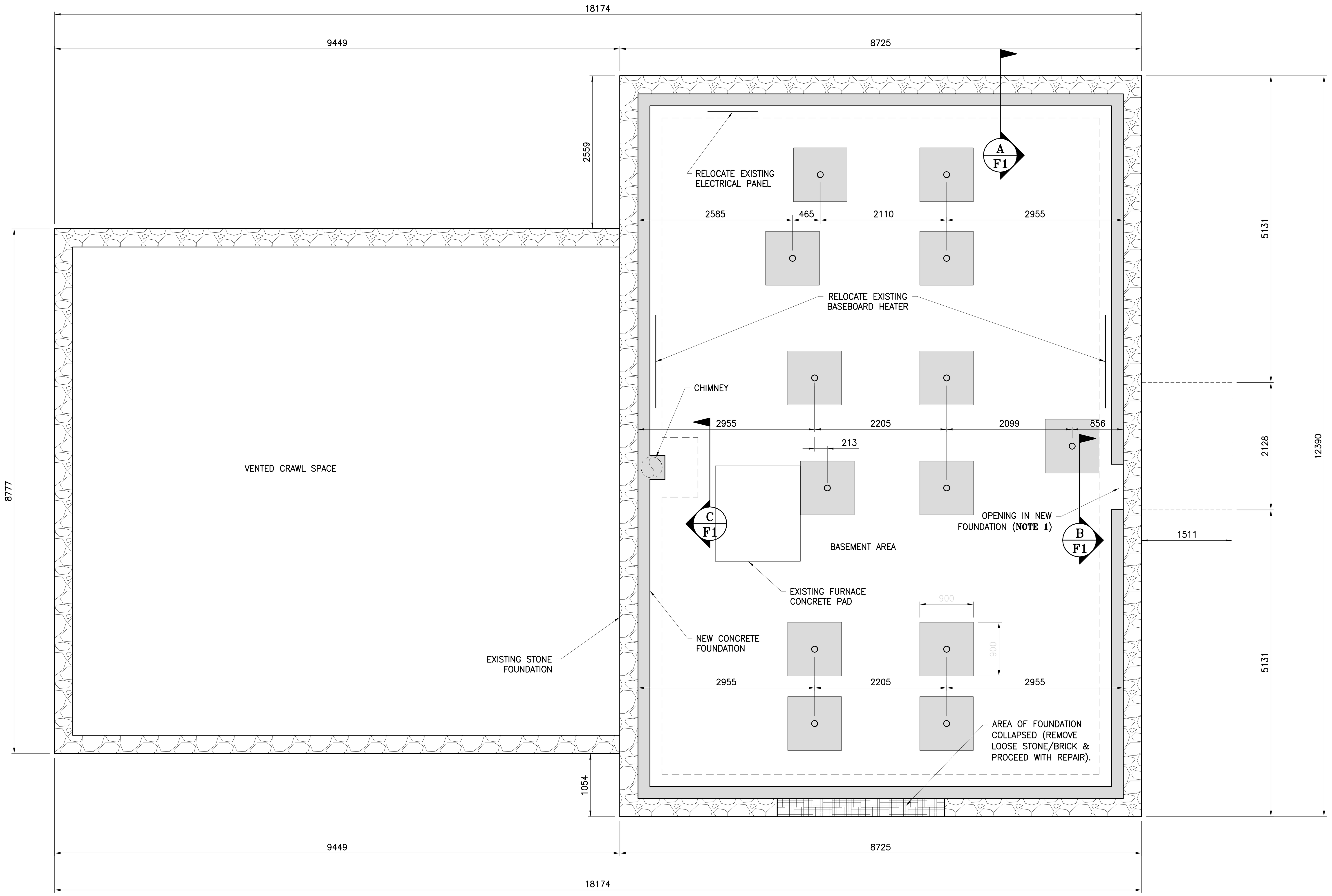
ROY CONSULTANTS
ENGINEERING SERVICES INGÉNIERIE
548, av. King Ave.
Bathurst (NB) E1A 1P7
T. 506.546.4464
www.royconsultants.ca

Drawing Title / Titre du Plan
-STRUCTURAL-
FLOOR STRUCTURAL REPAIR

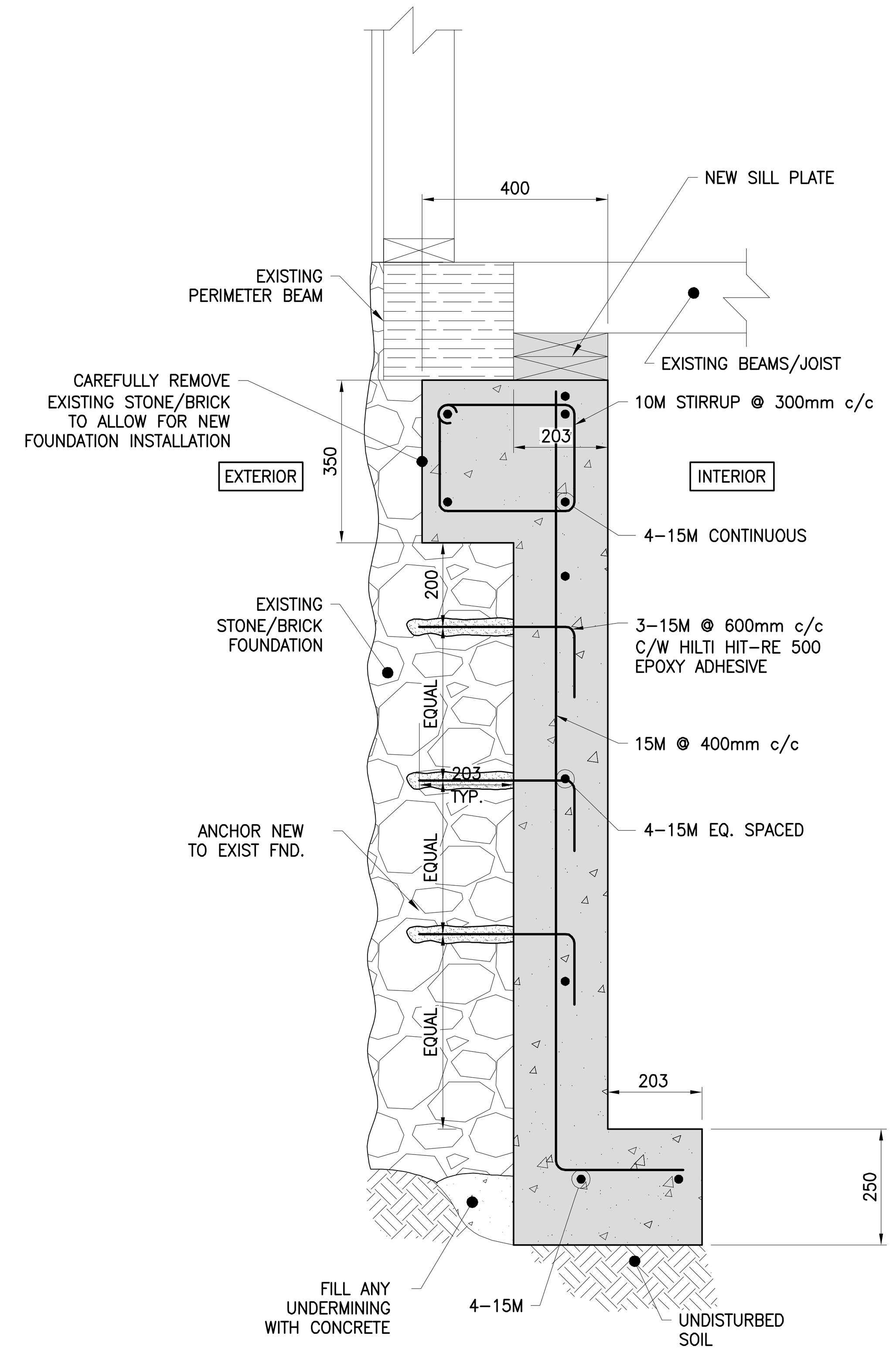
Design by: Design par:	Drawn by: Dessine par:
R. ROY	P.L. / C.J.A. / R.V. / D.C.
Checked by: Verifie par:	Date:
R. ROY	JUNE 2015
Scale: Echelle:	Sheet: Feuille:
AS SHOWN	S1 of/de S2

Drawing Number: Numero du Plan: 423-14-S1
Rev. B

Drawing Number 423-14-S2 Numero du Plan
Plot date 2015/10/14 Date du tracage



FOUNDATION PLAN
SCALE: 1:40



SECTION A/F1
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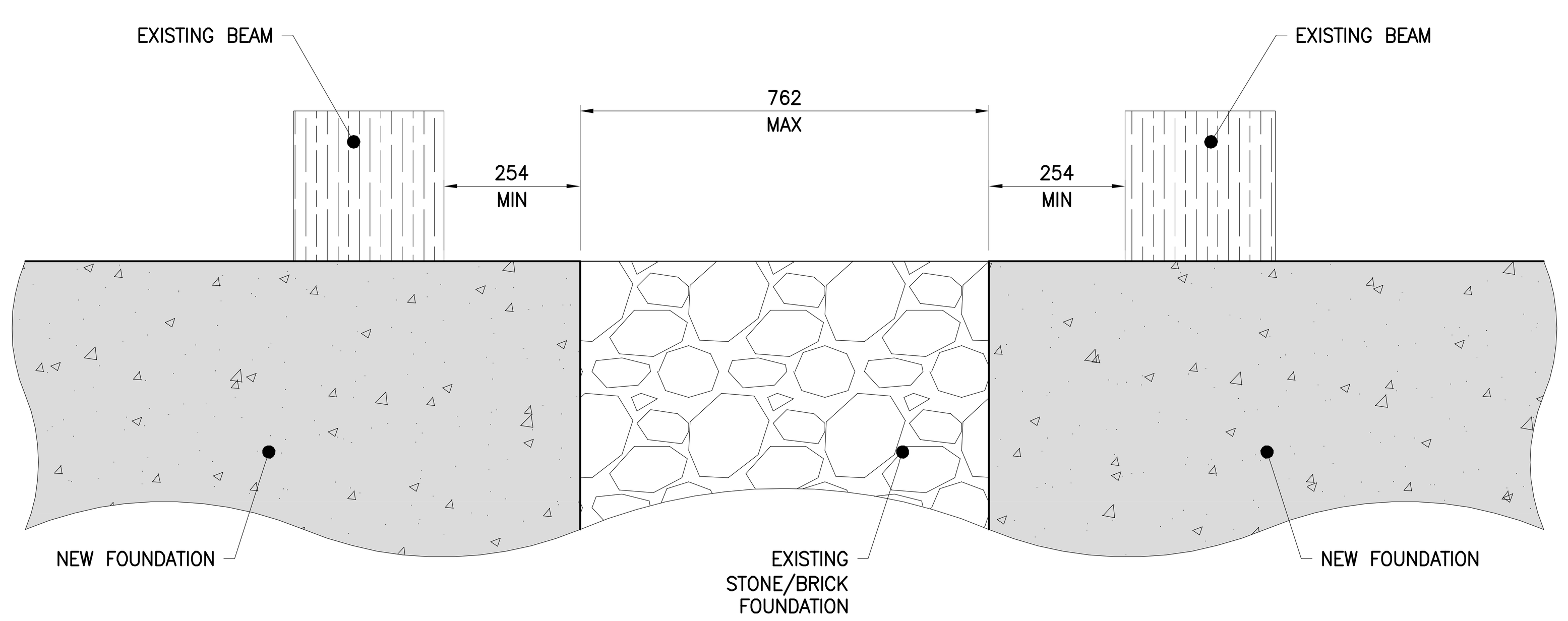

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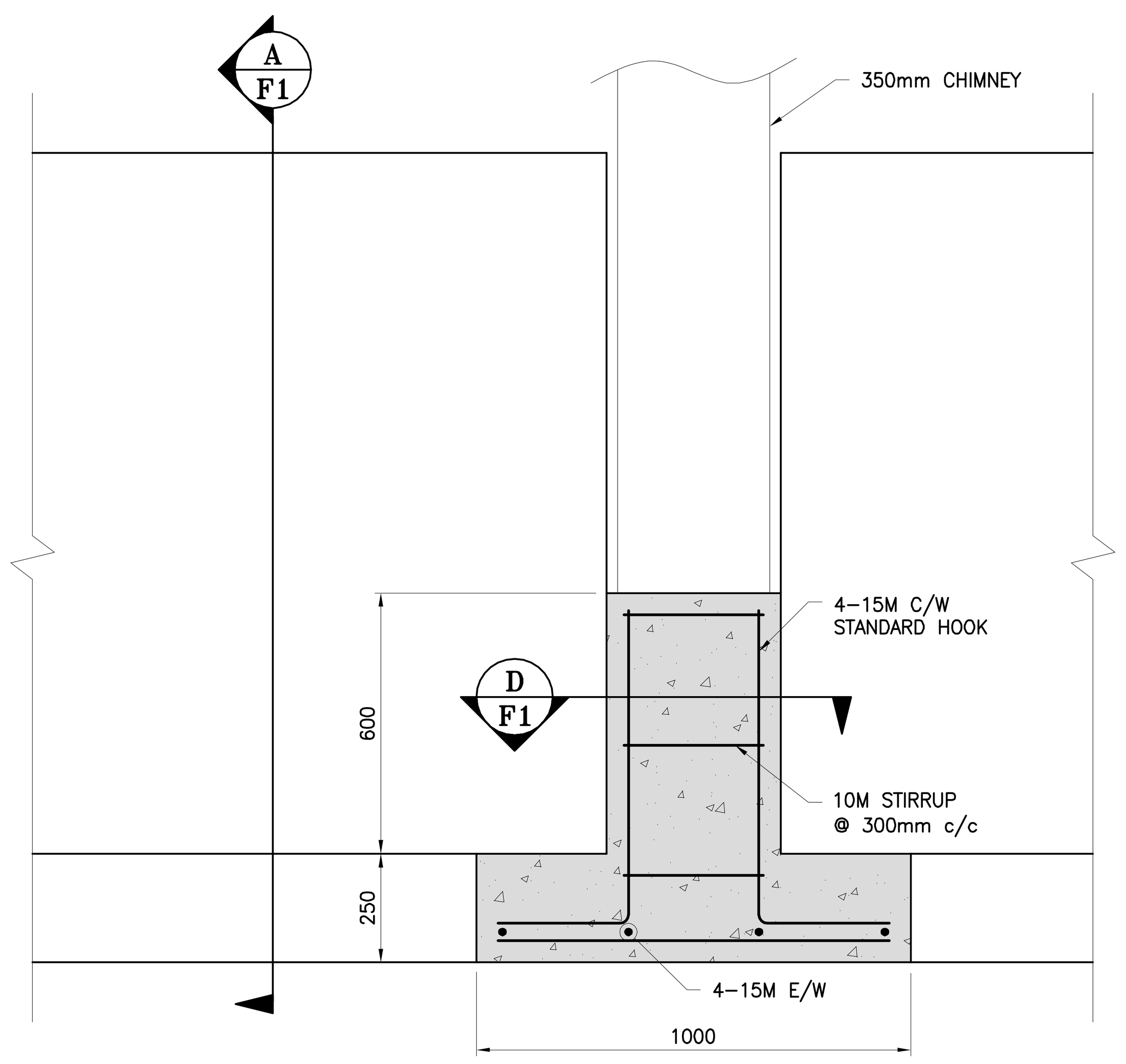

SECTION C/F1
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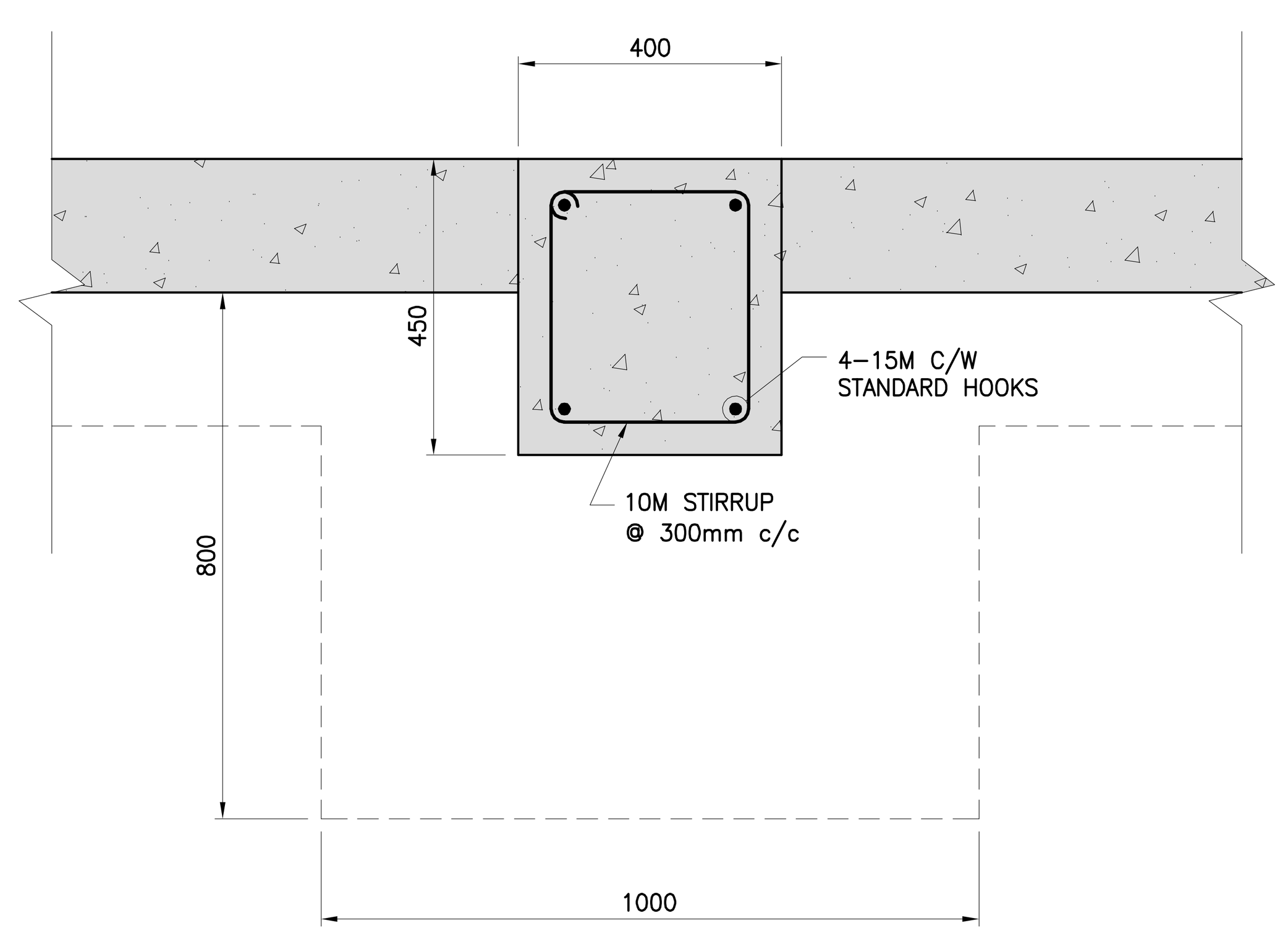

SECTION D/F1
SCALE: 1:10

NOTES

GENERAL NOTES

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- THESE STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH STRUCTURAL SPECIFICATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY SHORING DURING FOUNDATION REPAIR WORK.

SPECIFIC NOTES

1. ONE OPENING IN FOUNDATION IS REQUIRED FOR HISTORICAL REFERENCES AND SHOW THE ORIGINAL FOUNDATION. EXACT LOCATION OF OPENING TO BE CONFIRMED ON SITE WITH OWNER.

NO.	DATE	REVISIONS	Par: By:
B	2015/10/21	ISSUED FOR APPROVAL	D.C.
A	2015/08/18	ISSUED FOR APPROVAL	P.L.

A DETAIL No / No DU DETAIL
B LOCATION DRAWING No / SUR DESSIN No
C DRAWING No / DESSIN No

Client / Client
ASSOCIATION MAISON DOUCET-HENNESSY HOUSE ASSOCIATION
BATHURST, NB

Project / Projet
FOUNDATION REPAIRS

ROY CONSULTANTS
548, av. King Ave. Bathurst (NB) E2A 1P7
T. 506.546.4484
www.royconsultants.ca

Drawing Title / Titre du Plan
-STRUCTURAL-
FOUNDATION REPAIRS

Design by: Design par: R. ROY	Drawn by: Dessine par: P.L. / D.C.
Checked by: Verifie par: R. ROY	Date: SEPTEMBER 2015
Scale: Echelle: AS SHOWN	Sheet: Feuille: S2 of/de S2
Drawing Number: Numero du Plan: 423-14-S2	Rev. B