March 28, 2013

Chappell House at the Riverwood Property
Foundation Review and Strategic Repair
4300 Riverwood Park Ln., Mississauga, Ontario

Item 4, Appendix 1
Heritage Advisory Committee
Agenda – April 23, 2013

Table of content

Appendices

1. Introduction

George Robb Architect was hired by the City of Mississauga to review the Chappell House foundation walls at two distinct locations: in the North Basement Wall and walls and ceiling in the Vault which is also located in the basement above the main entrance.

Fernando Moraes from the City of Mississauga provided us with the following documents for your review:

- A structural engineering review and remediation procedure report by Moon-Matz Ltd., dated April, 2010.
- Mircostation type drawings prepared by the City,
- A sketch with outlined services to the site,
- Heritage report.

We have also reviewed the estate's heritage significance through Canada's Historic Places, a Federal, Provincial and Territorial Collaboration website administered by Park Canada. The pages are attached in our Appendices.

We have undertaken a few methods to find all the causes of the foundation excessive dampness and deterioration:

1.1. We reviewed the structural report by Moon-Matz Ltd. This report outlines the conditions of the foundation walls and suggests recommendations but there was very little mention of the causes.

1.2. We visited the site on July 12th with Fernando Moraes as well as another visit on August 14th with Nebojsa Ojdrovic, Ph.D., P.Eng. to review and investigate all areas proposed to be repaired. Findings of these visits will be reflected in this report and a structural report can be found in the Appendices.

1.3. In order to further understand the foundation issues, the city will engage a contractor to dig in four different locations. This will not only help us properly identify the issues but may help to reduce unexpected site conditions found during construction. This investigation will be done at the end of fall to minimise the impact to the landscaping.

The house is also home to a group of horticulturalists which take care of the beautifully landscaped groups around the house. The amount of irrigation being used and the close proximity of the spouts to the house's walls also reinforces the need for extra protection to its foundation walls.

Our goal in this process is to find all problems which causes dampness and deterioration to the foundation walls and find the ideal solution which will stop water from seeping into the walls. Upon successful completion of the first stage, we would also recommend that this foundation repair be applied around the entire perimeter of the building.

2. Site

Chappell House address is 4300 Riverwood Park Lane, nestled in the Riverwood property which is co-owned by the City of Mississauga and Credit Valley Conservation. Riverwood is located east of the Credit River and between hwy 403 and Burnhamthorpe road west.

"The Riverwood Conservancy is a volunteer and member-based charity that provides programs and services to the community in nature and environmental education, stewardship of Riverwood, and gardening and horticulture."

3. History

On its original site, the house was constructed in 1919. The architect was A.S. Mathers. The house was constructed of Credit Valley stone. The foundation walls were made of poured concrete. The U-shaped house with a "steeply pitched cross-hip roof" is also a good example of an Arts and Craft style residential building.

The entire Riverwood property was designated by the city of Mississauga, November 15, 2004, Bylaw: 505-2004, for its heritage significance. The following elements are the defining characters of heritage values for the house:

- Arts and Crafts style,
- Credit Valley stone,
- Design by A.S. Mathers, architect,
- U-shaped floor plan,
- Cross-hip roof,
- Wood shingles,
- External chimney.

4. Condition

4.1. Architectural

4.1.1. The Main Porch Entrance

4.1.1.1. The low walls around the front porch are made with the same stone as the house with a larger stone cap on top. This 33.5" tall walls has a 4" projection base detail. We assume that, based on the type of stone and detail of the wall, they were constructed at the same time as the house. These walls are currently used to hold decorative pots which are frequently manually watered with a watering can. The walls have significant cracks all around in the mortar joists. The walls are at the end of their useful lives.

4.1.1.2. The floor of the porch is paved with random flagstone which slopes within the vestibule created by the new sliding door, but is relatively flat or concave beyond allowing water to accumulate.

4.1.2. The Vault

The walls and the ceiling show a significant amount of dampness and deterioration. There are many signs of the walls having been saturated for extended periods. The south and east walls have the most; rust in the ceiling, numerous locations of

delaminating concrete, the walls and ceiling are wet, and the floor was flooded. There are a number of reasons for this which are noted below.

4.1.2.1. The concrete walls and floors are close to 100 years of age and with the freeze/thaw cycles, the concrete is showing signs of aging and is nearing the end of its useful life.

4.1.2.2. There are a few layers of brick and stone at the top of the walls this would suggest that the outdoor grade level has risen through the years, which may suggest the current slab is an earlier replacement. This phenomenon, although very common, allows water to seep into the walls through the porous mortar joints above the concrete foundations.

4.1.2.3. The slab above has been exposed to water and winter salting for many years.

4.1.2.4. There was a pool of water flooding the room. There is a malfunctioning drain in the middle of the floor. The drain may have been installed improperly but most likely, the hole may have been placed after the floor was poured for prevention of minor flooding (no ties to a drain pipe).

4.1.2.5. There are three irrigation sprinkler heads 10 centimeter from the foundation wall. This is much too close. It keeps the concrete consistently wet on three sides of the room.

4.1.3. The North Basement Wall

4.1.3.1. Walls

The foundation wall is damp, it does appear to be moldy and has some delamination. We have observed that throughout the basement the foundation seems to have the same characteristics of delamination and areas of dampness. As we mentioned above, the concrete walls is showing signs of aging and the delamination is part of this. It is our option that the delamination is occurring on both the interior and the exterior of the building. This is still to be proven through future scheduled investigation. Even though these walls have the same characteristics as the walls in the vault, they are in much better condition.

There was also observed a jog in the stone wall at the north/east corner. This requires additional investigation on the exterior side of the corner to understand and properly treat this location.

There was an addition to the building on the north elevation creating a new solarium above. The two distinct elements confirming the addition are the exterior mortar joint between the existing building and the addition, which is not bonded; and the segregation of the new foundation walls to the existing basement. The addition has no basement and due to this isolation, it is very difficult to inspect the interior conditions of its foundations.

4.1.3.2. Ceilings

The gypsum board ceiling seems to be new and is in very good condition.

4.1.3.3. Windows

There are two windows and window wells on this side of the basement. These windows were originally above ground so we are lead to believe the wells may have been additions. The windows seem to be in reasonable condition. The exterior side of the window was recently painted. Some lites have holes in them and the caulking around the perimeter of the window is cracking.

The window sills are covered by aluminum flashing which is mechanically fastened and caulked in place with a proper drip edge. The flashing seems to be in good condition but the original wood sill condition underneath is unknown. There is an electrical outlet on the east side of the exterior window frame. This outlet maybe not meet today's standards and will require a review by an electrical engineer.

The wells are made of concrete and a metal grate is installed on top. The concrete is old and the metal grate is rusted through. We are unsure if the well has a concrete floor.

We also noticed an opening on the south wall of that basement room which is semi-opened and allowing water and mud to seep into the basement creating a large area of dirt on the basement floor. The opening may have been an earlier coal chute.

4.1.3.4. Landscaping and irrigation

There is a hose bib beside the north foundation wall close to the north/east corner. This may leak from time to time. This hose bib is also frequently used to fill watering cans, etc., by the horticulturalists.

There are a number of conduits and a junction box on the north/east corner of the north basement wall. This leads to our assumption that the main controls for the irrigation system throughout the perimeter of the house are located here.

The grade is also a concern on the side of the building. The grade is sloping toward the building and the grade is generally too high. The window well is also flush to grade.

4.2. Structural

Nebojsa Ojdrovic, Ph.D., P.Eng. from Ojdrovic Engineering Inc. provided us with a Structural Review of the basement Vault under the main entrance and of the north wall in the basement. The report was dated August 16, 2012.

5. Designated Substances & Hazardous Materials

Sampling, analysis and treatments should be undertaken in both the vault and the north side of basement prior to renovation of the foundation.

6. Conservation Guidelines

The areas affected are the low walls at the main entrance, the floor of the entrance, foundation walls of the vault and the north basement foundation wall which includes two basement windows.

All work that affects the heritage attributes of the property should be undertaken with regard to international standards for dealing with properties of cultural heritage significance

The guidelines below are the current standards of the Ontario Ministry of Culture.

1. RESPECT FOR DOCUMENTARY EVIDENCE:
Do not base restoration on conjecture.
Conservation work should be based on historic documentation such as historic photographs, drawings and physical evidence.

2. RESPECT FOR THE ORIGINAL LOCATION:
Do not move buildings unless there is no other means to save them.
Site is an integral component of a building. Change in site diminishes heritage value considerably.

3. RESPECT FOR HISTORIC MATERIAL:
Repair/conserve - rather than replace building materials and finishes, except where absolutely necessary.
Minimal intervention maintains the historical content of the resource.

4. RESPECT FOR ORIGINAL FABRIC:
Repair with like materials.
Repair to return the resource to its prior condition, without altering its integrity.

5. RESPECT FOR THE BUILDING'S HISTORY:
Do not restore to one period at the expense of another period.
Do not destroy later additions to a house solely to restore to a single time period.

6. REVERSIBILITY:
Alterations should be able to be returned to original conditions. This conserves earlier building design and technique.
e.g. When a new door opening is put into a stone wall, the original stones are numbered, removed and stored, allowing for future restoration.

7. LEGIBILITY:
New work should be distinguishable from old.
Buildings should be recognized as products of their own time, and new additions should not blur the distinction between old and new.

8. MAINTENANCE:
With continuous care, future restoration will not be necessary.
With regular upkeep, major conservation projects and their high costs can be avoided.

7. Recommendations

7.1. The Main Porch Entrance

7.1.1. Test excavation should be undertaken to establish:

a) Condition of exterior face of concrete walls,
b) Depth of footings, especially at junction with solarium and solarium steps,
c) Condition of subsurface stone and mortar joints,
d) Termination of rain water leaders.

7.2. The Vault

7.2.1. Vault slab and walls require replacement. This will also require removal and rebuilding of the low porch walls. New slab will require integral waterproofing (see attached membrane material).

7.3. The North Basement Wall

7.3.1. All basement walls should be repaired as required based on observations during 7.1 above. This may require a waterproofing treatment or, at a minimum, installation of a drainage plane and insulation.

7.4. Depending on the observations during test excavation, rainwater leaders should be collected in a subsurface drainage system, or, at a minimum, discharge at grade.

7.5. Please find in the Appendices the Investigation Review produced October 10, 2012. The excavation was done by Universal Restoration October 8, 2012.

8. Estimates

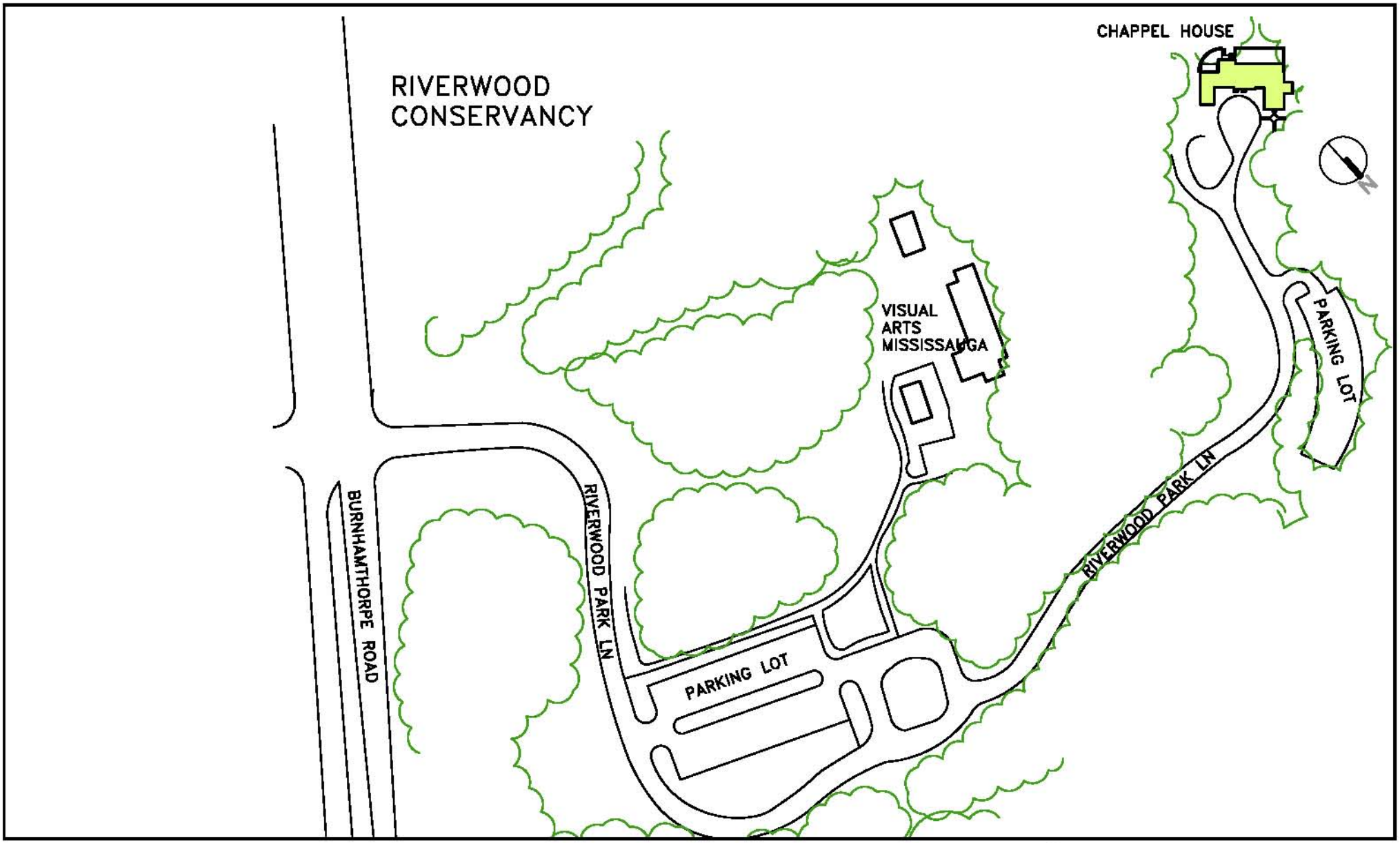
8.1. The Main Porch Entrance

8.2. The Vault

8.3. The North Basement Wall

Plan Drawings

GEORGE ROBB ARCHITECT



TITLE: SITE PLAN

PROJECT: Chappel House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

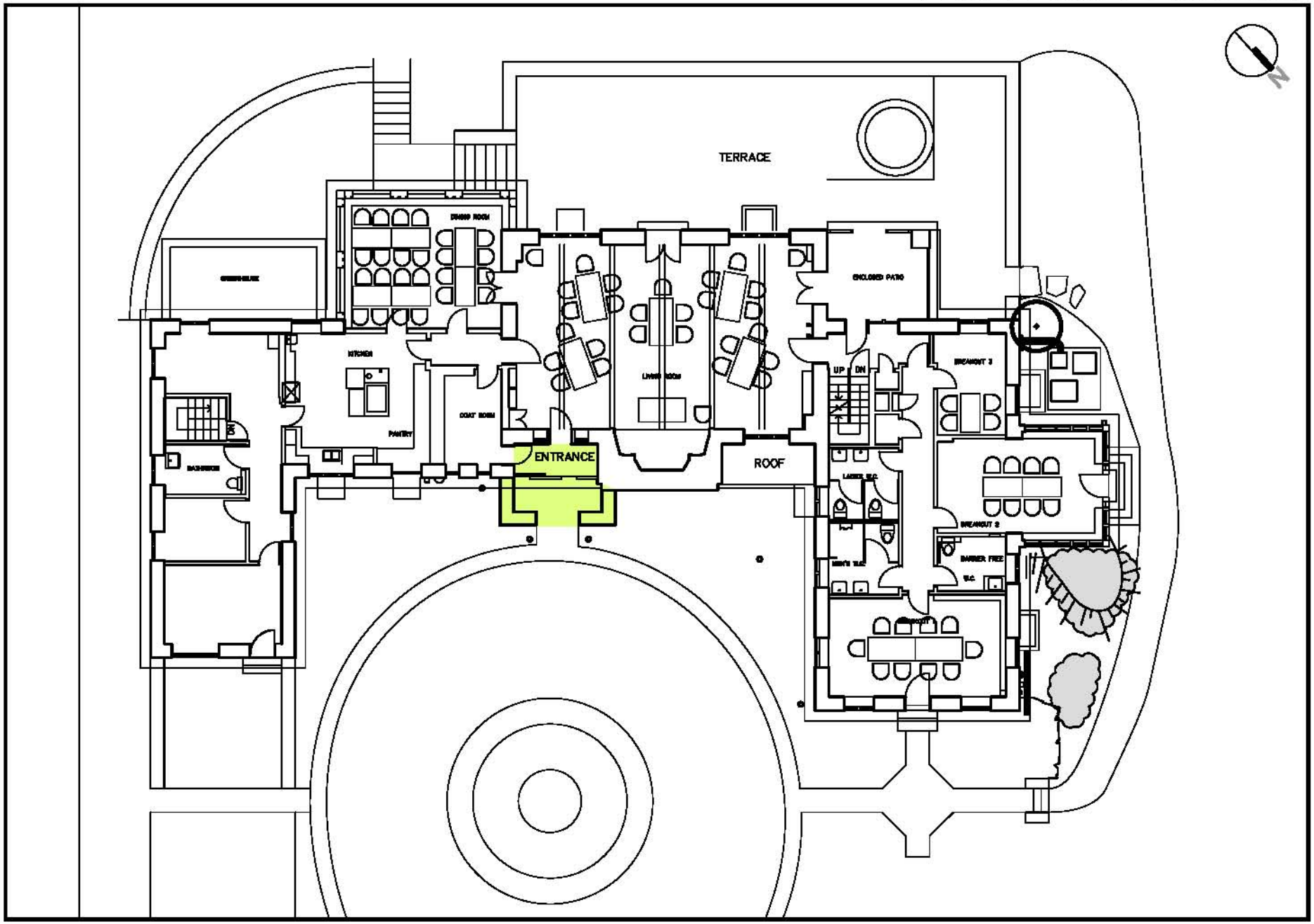
PROJECT #: 1212

DATE: 20 August 2012

SCALE: 1:100

CLIENT: MISSISSAUGA
Leading today for tomorrow

SITE PLAN



TITLE: GROUND FLOOR & PERIMETER

PROJECT: Chappel House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

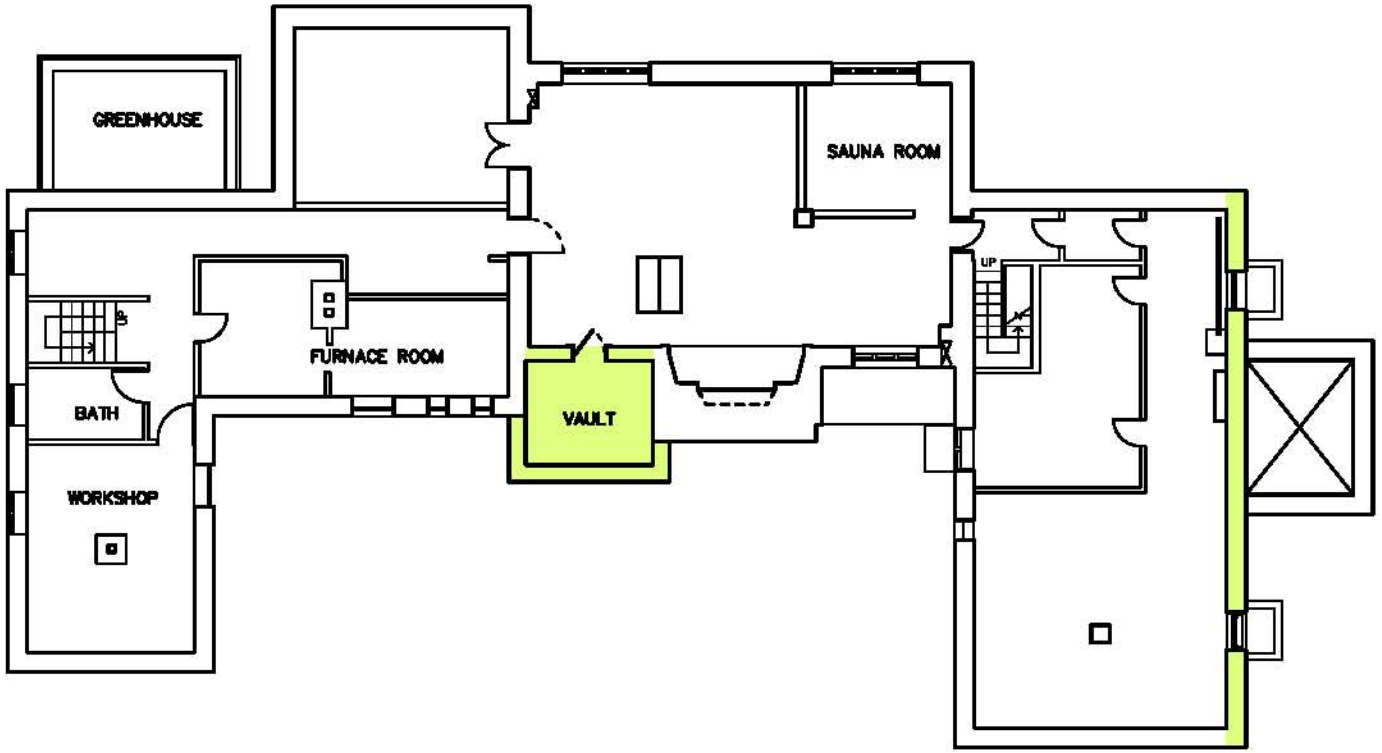
PROJECT #: 1212

DATE: 20 August 2012

SCALE: 1:100

CLIENT: MISSISSAUGA
Leading today for tomorrow

GROUND FLOOR PLAN



TITLE: BASEMENT FLOOR PLAN

PROJECT: Chappel House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

PROJECT #: 1212

DATE: 20 August 2012

CLIENT: MISSISSAUGA
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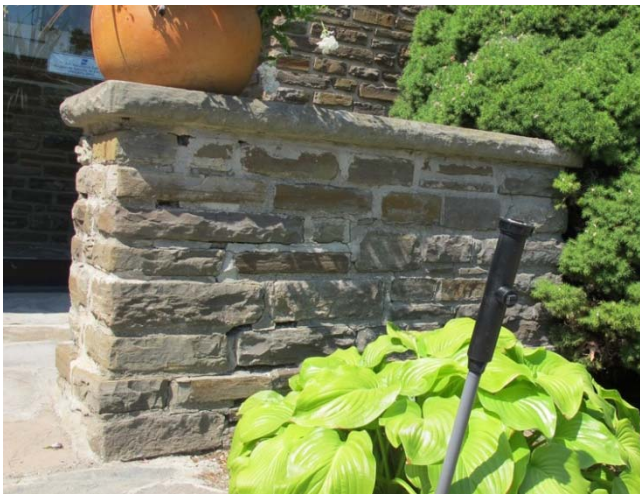
BASEMENT PLAN

Photographic Record

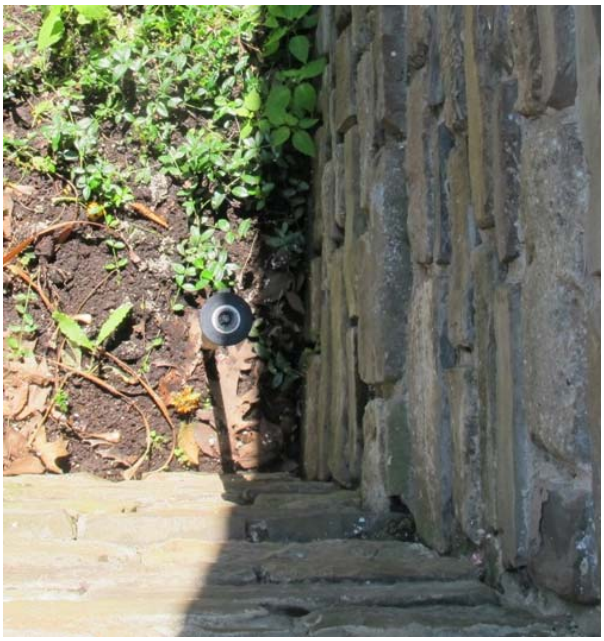
main porch entrance

south wall at porch entrance

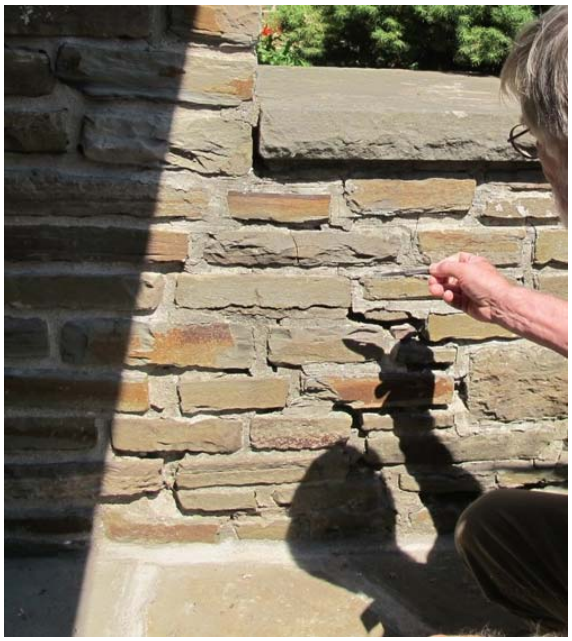


north wall at porch entrance

Interior of South wall



Exterior side of South wall, inside corner to the house wall. Showing proximity of irrigation sprinkler head.



Interior wall on the north side of porch.

End of north wall at porch entrance.

Exterior side of horth wall, inside corner to the house wall.

Interior vestibule in front of the porch entrance.

South/east corner of the vault at ceiling level

North/east corner of the vault at ceiling level

West end looking east of the north basement wall.

East end looking west of the north basement wall.

Interior face of western window in the north basement wall.

Interior face of eastern window in the north basement wall.

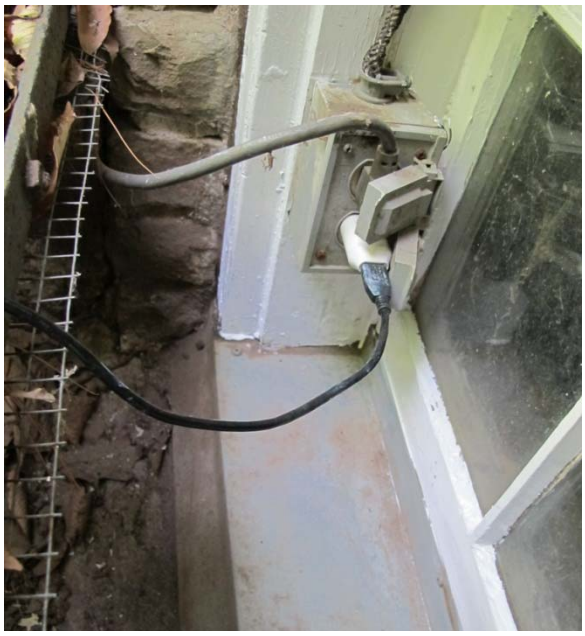
Exterior face of western window in the north basement wall.

Exterior face of eastern window in the north basement wall.

North/east corner area at the north basement wall.

North/east corner area at the north basement wall.

Interior detail photo of the eastern window.



Exterior detail photo of the eastern window.

Related Technical Literature

Structural Review

OJDROVIC
ENGINEERING INC.
2946 Dundas Street West, Toronto, ON M6P 1Y8, T: 416-925-0333, F: 416-925-3980, engineering@ojdrovic.com

August 16, 2012

George Robb Architect
4800 Dundas Street West, Suite 201
Toronto, Ontario M9A 1B1

OEI File: E007-005

Att. **Mr. Peter Stewart, B.Arch., OAA, MRAIC, CAHP**

Dear Mr. Stewart:

RE: Structural Review of the Basement Vault Structure Under the Main Entrance at Chappell Riverwood Estate, Mississauga, Ontario

We performed a visual inspection of the concrete foundation walls and roof slab under the main entrance, the space typically referred to as “the vault”, on August 14, 2012.

GENERAL

The structural review included only visual, non-destructive, inspection of the foundation walls and the underside of the slab. Accessible surfaces were sounded using a metal tool. The main entrance slab area was also reviewed from above.

In addition, we looked also at a few other foundation walls.

We did not perform any material sampling or test openings.

Our findings are presented below in the form of a table with annotated photographs.

DESCRIPTION OF THE MAIN ENTRANCE AND THE VAULT BELOW

We did not review any original construction documents, and the history of construction and repairs was not available. This report is based solely on visual inspection.

The main entrance consists of a small patio paved with flagstones and encircled with stone knee walls, and includes an enclosed vestibule. The glazed vestibule enclosure with an automatic door is clearly a contemporary addition. The vault extends from the stone knee walls to the masonry wall with the white wood door inside the vestibule. It should be noted here that the part of the surface covered with flagstones within the vestibule has a pronounced slope outwards, while the part between the glazed wall and stone knee walls is almost completely flat, if not with a slight slope back towards the house, in the central area. Please see standing water in the photograph above.

The vault below the main entrance area is formed by three exterior foundation walls made of concrete, a concrete slab on grade, and a concrete roof slab under the flagstones above. The roof slab appears to have a flat and horizontal underside surface. The concrete foundation walls stop 8 to 10 inches below the slab, and continue to the underside of the slab as stone masonry walls. The north wall appears to have been repaired in the past using brick.

Our inspection was performed after a few days of rain. Water infiltration was thus obvious.

DISCUSSION OF OBSERVATIONS

	The mortar joints in both knee walls are deteriorated on both sides of the walls. Several maintenance campaigns can be observed, based on different colour and texture of mortar used for repointing.

The view of the north-east corner of the vault. The photograph was taken in the same direction as the one shown above.

The water infiltration is obvious. Traces of efflorescence are visible on the wall surfaces. The concrete appears to be soft in some areas, and sounds hollow in other. This applies to both walls and the roof slab.

The view of the south-east corner of the vault shows the top eight to ten inches constructed using stone. The wall was completely wet at the time of our visit.

	The north-west corner is under the glazed vestibule and is the driest corner in the room.

	The whole south wall is wet, including parts of the west wall. It should be noted that sprinklers for irrigation of lush landscaping are located very close to the building foundations, including one within inches of the south-west corner of the vault. The water infiltrating through the walls is definitely due to the rain that was falling for a few days before our visit, but sprinklers can contribute to the permanent wetting of the foundation walls.
	Interestingly, we did not observe a single reinforcing bar exposed as a result of spalling of the concrete slab soffit. There are several locations with traces of corrosion, but we did not see any bars. They must be located deeper in the concrete, with a thicker cover.

	This part of the soffit does not show any corrosion, but the concrete appears to be soft in a few locations. Even in spalled areas, there are locations where it sounds hollow. The concrete is most likely saturated with salts as a consequence of years of de-icing the main entrance path.
	Another view of the repair of the top of concrete foundation walls performed using brick.

OTHER FOUNDATION WALLS

	This crack is located in the west foundation wall beside the north foundation wall, immediately under the office door above. The crack extends from the base of the wall to the underside of the main floor framing, and likely, above. It is very narrow at the base, and widens as it propagates up. This indicates that most likely the foundations on the east and west sides of the building are settling, or have been settling in the past, thus creating the crack in the wall where it is notched by the door above.
	The bottom part of the north wall is made of concrete. Water appears to leak through the wall at the joint with the stone wall above. The whole wall shows traces of moisture. The condition of the waterproofing membrane and the existence and condition of weepers outside of the wall are unknown.

	The moisture is evident behind the paint of the foundation walls on the south side of the building.
	Typical downspout connected to underground sewer system.

CONCLUSIONS AND RECOMMENDATIONS

The visual inspection of the foundation walls of Riverwood Estate indicates that most of the walls suffer from water infiltration. The most likely reason for this is either lack of weeping tiles or plugged weeping tiles, and poor condition of the waterproofing membrane below grade. In many locations around the perimeter of the building, the soil and landscaping have crept up against the walls above the level of the concrete footings. The rain water leaders appear to be connected to the underground sewer system.

The following are general recommendations:

- A few test pits should be excavated along the foundation walls to inspect the condition of walls from the outside, and to verify existence and condition of waterproofing membrane and weeping tiles. It would be useful if some of the test pits would be dug around eaves trough downspouts to examine the underground sewer system.
- Based on the results of the test pit investigations, a program of foundation wall repairs should be prepared. It is likely that the required work would include:
  - complete excavation of all foundation walls;
  - selective repairs and rebuilding as necessary of the walls;
  - installation of a waterproofing membrane;
  - installation of a new weeping tile system;
  - diversion of rain water from downspouts away from the building;
  - relocation of the sprinkler system away from the walls;
  - re-landscaping such that the top of grade is approximately 6” below the top of concrete foundation walls and sloping away from the building.

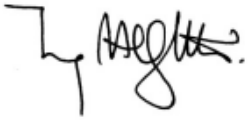
The general observations and recommendations for future work discussed above apply also to the foundation walls of the vault under the main entrance. In addition, due to the level of deterioration of the vault roof slab and walls, the following actions are recommended:

- Replacement of the concrete roof slab with new reinforced concrete slab;
- Deconstruction of upper parts of the foundation walls made of stone just under the roof slab and replacement with reinforced concrete;
- Removal and replacement of the upper parts of the concrete walls, as needed;
- Localized concrete repairs of the foundation walls below the level of partial wall replacement.

We hope that this report meets your expectations. Please do not hesitate to call, should you require any clarifications.

Yours very truly,

OJDROVIC ENGINEERING INC.



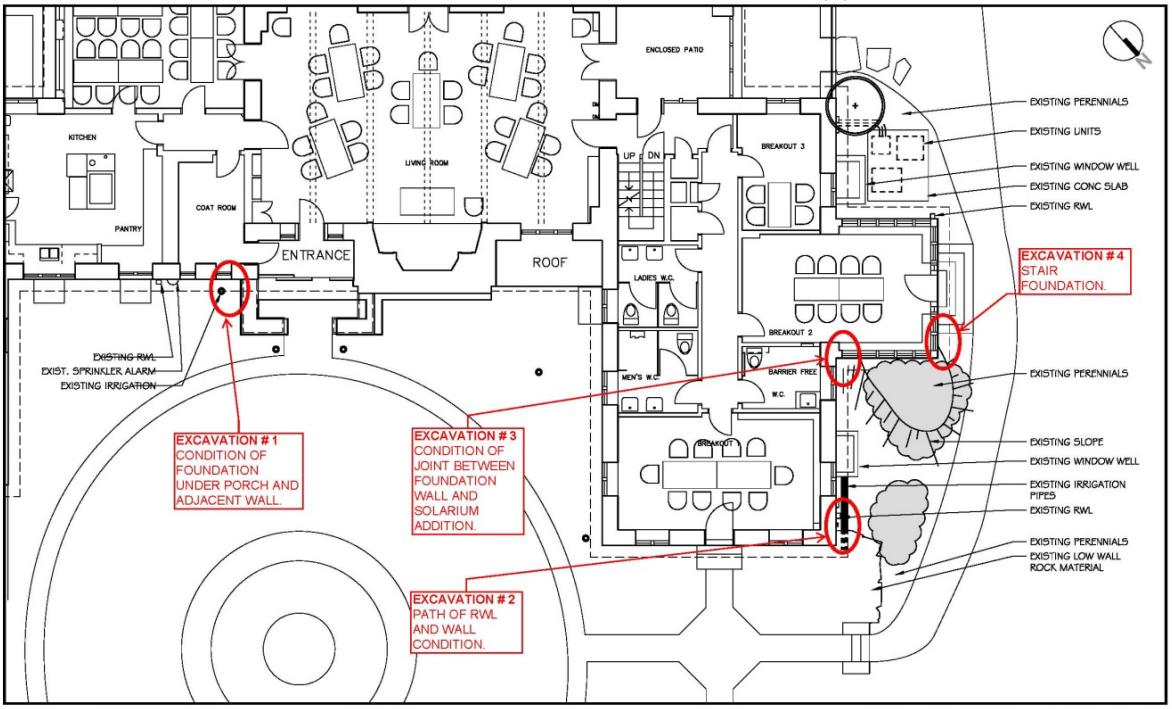
Nebojsa Ojdrovic, Ph.D., P.Eng.

Related Technical Literature

Investigation Report

On October 9, 2012 Peter Stewart and Francine Antoniou from GRA visited Chappell House to review 4 pre-determined excavated locations along the foundation walls GRA are presently reviewing. The holes were excavated on Monday October 8, 2012 by Universal Restoration.

Key plan of excavated locations



Panorama showing 3 of the 4 excavated locations.

1. Excavation # **1** - Condition of foundation under porch and adjacent wall.

a) Concrete is in good condition with minor spalling 12”-24” at top of concrete wall. The foundation wall is reasonably dry and sound below.
b) Top soil to ½ depth of excavation over sandy fill.
c) Concrete wall bears on concrete footing with approx. 4” projection, 8” thick.
d) Mortar dense with sand behind.
e) Grade is too high.
f) Hole through wall for sanitary drain is oversized and significant water damage is evident on the interior.

2. Excavation # **2** – Condition of wall and path of RWL.

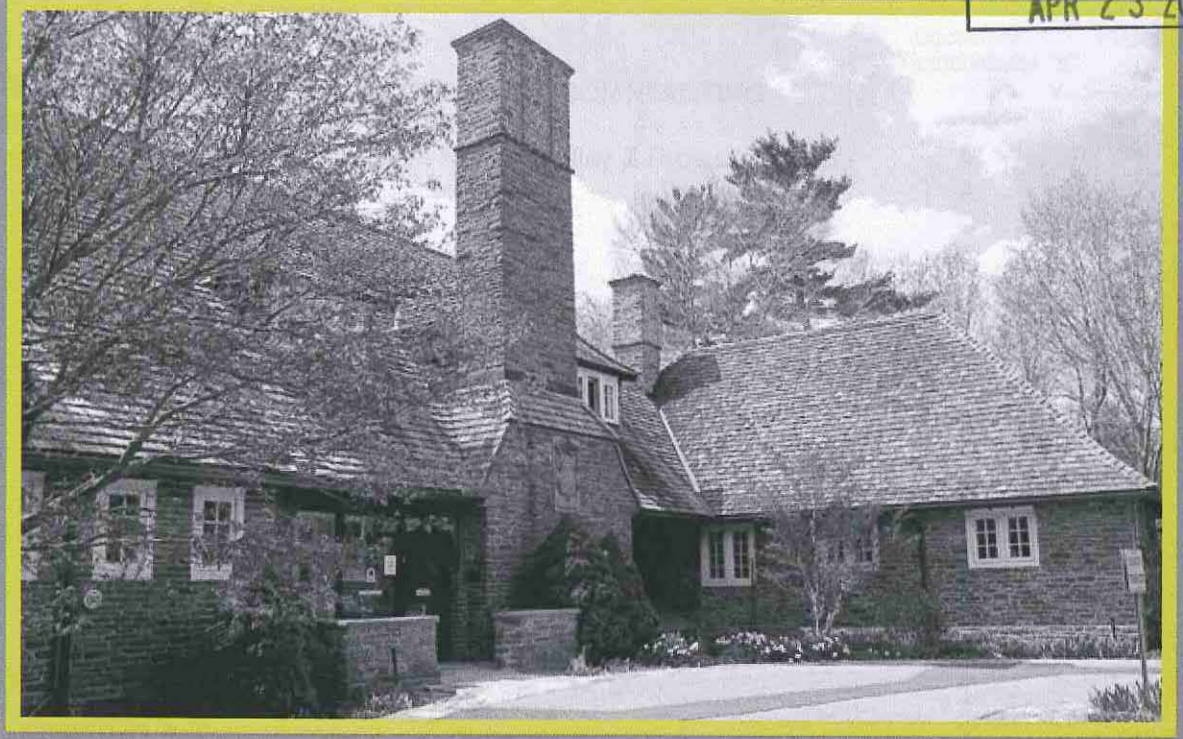
a) Concrete is in good condition with minor spalling 12”-24” at top of concrete wall. The foundation wall is reasonably dry and sound below.
b) Footing is 10” deep with 4” projection.
c) Mortar is dense with sand behind.
d) Grade is too high.

3. Excavation # **3** – Condition of joint between foundation wall and solarium addition.

a) Concrete foundation wall on the left is in good condition with no evidence of spalling. The foundation wall of the solarium is of rough concrete and constructed like trench fill which was damp. This foundation was covered by a 12" formed concrete on top like a grade beam.
b) Open joint in corner
c) Grade beam deterioration.
d) Trench fill is 38" below beam.
e) Solarium foundation likely requires underpinning.

4. Excavation # **4** – Stair foundation.

a) Steps have no foundation (built on grade).



CHAPPELL HOUSE FOUNDATION REPAIRS

PROCURMENT NO. FA49.1020-11

SPECIFICATION

Issued for Heritage Permit

March, 2013

GEORGE ROBB ARCHITECT
4800 DUNDAS STREET WEST
SUITE TWO HUNDRED & ONE
TORONTO, ONTARIO M9A 1B1
Tel: 416 596 8301, Fax: 416 596 1508

PART 1 - GENERAL

1.1 Document Responsibility

Refer to Project Manual, Document 00 01 10 - Table of Contents, for indication of responsibility for listed documents preparation (DR), as follows:

.1 A - Denotes documents prepared by Architect.

.2 ME - Denotes documents prepared by Mechanical/Electrical Engineer.

.3 H - Denotes documents prepared by Architectural Hardware Consultant.

.4 O - Denotes documents prepared by Owner.

.5 S - Denotes documents prepared by Structural Engineer.

.6 L - Denotes documents prepared by Landscape Architect.

.7 SS – Site Servicing Engineer

.8 HM – Denotes documents prepared by Hazardous Material Specialist.

1.2 Owner

The Corporation of the City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1

Fernando Moraes, Project Manager
Facilities Planning & Development, Corporate Services

1.3 Architect and Consultant

George Robb Architect
4800 Dundas St. W., Suite 201
Toronto, Ontario, M9B 1A1

1.4 Structural Engineer

Ojdrovic Engineering Inc.
2946 Dundas Street West,
Toronto, Ontario, M6P 1Y8

END OF SECTION

PART 1 - GENERAL

1.1 REGULATORY DOCUMENTS

.1 Nothing contained in the Drawings or Specifications shall be so construed as to be in conflict with any law, by-law or regulation of the municipal, provincial or other authorities having jurisdiction. Work shall be performed in conformity with all such laws, by-laws and regulations.

.2 Contract forms, codes, specifications, standards, manuals, and installation, application and maintenance instructions, referred to in these Specifications are of the latest published editions at the date of signing the Contract.

.3 All work shall be in accord with the Building Code (Ont. Reg. 350/06), Canadian Electric Code (CEC), Can3.B44-M and supplements thereto, W59 as applicable. Conform to Occupational Health and Safety Act, Ontario and Regulations for Construction Projects and the Ontario Fire Code, and all other applicable codes and building By-laws.

1.2 PERMITS

.1 The Contractor shall apply for, secure and pay for all approvals relative to his work, from all authorities having jurisdiction, including where required, inspection fees and permits. The Contractor shall furnish all necessary bonds or cash deposits that may be required as pledge and/or security for the protection or maintenance of any property in connection with or arising out of the work.

.2 The Contractor shall be responsible for ensuring that no work is undertaken which is conditional on permits, approvals or guarantees until it is certain that all conditions necessary to obtain them are met. No time extension will be allowed for delay in obtaining necessary permits.

PART 2 - PRODUCTS

Reserved.

PART 3 - EXECUTION

3.1 EXAMINATIONS

.1 Site and Documents

.1 The Contractor shall examine the site, drawings, specifications, and other contract Documents and become fully conversant with:

- Access to and from site.
- Any obstacles on site affecting access or work of contract.
- Rights and interests which might be interfered with.
- Total extent of the work and the conditions under which it will be performed.
- Existing structures on the site.

.2 No claims for extra payment will be paid for extra work made necessary, or for difficulties encountered, due to conditions of the site which were visible or reasonably inferable from an examination of the site at the time prior to tender closing date. Failure of the Contractor to visit and examine the site shall be deemed a waiver of all claims for extra payment due to any condition of the site existing prior to tender closing date.

.2 Previously Completed Work and Existing Conditions:

.1 Where dimensions are required for proper execution, verify dimensions of completed Work in place before installation of subsequent Work to be incorporated with it.

.2 Verify that previously executed Work and surfaces are satisfactory for installation or application, or both, and that performance of subsequent Work will not be adversely affected.

.3 Ensure that Work installed in an unsatisfactory manner is rectified by those responsible for its installation before further work proceeds.

.4 Defective Work resulting from application to, or installation on, or incorporated with, unsatisfactory previous Work will be considered the responsibility of those performing the later Work.

.3 Field Measurements:

.1 Verify relevant field dimensions prior to commencement of installation of any Work affected by these dimensions. Report discrepancies to the Owner.

.2 Examine surfaces and structures underlying, or adjacent to, Work to be installed or affecting Work to be executed.

.3 Make good any conditions that adversely affect the Work to be executed or installed.

.4 The commencement of Work concerned implies acceptance of relevant conditions and no subsequent claims based on these conditions will be entertained.

3.2 CUTTING AND PATCHING

.2 Except where shown on drawings, do not cut or drill structural or load-bearing elements.

.3 Do not endanger Work or property by cutting, drilling or similar activities. No Contractor shall cut or alter the Work of another Contractor unless such cutting or alteration is approved by the latter.

.4 Cut and drill with true smooth edges and to minimum suitable tolerances.

.5 Fit installations tightly to stop air movement completely. The Contractor performing Work that penetrates an air, vapour, moisture, thermal or acoustical separation of the building shall pack voids tightly with approved materials; seal air, vapour, and moisture barriers; caulk joints as required to ensure that no air movement through the penetration is possible.

3.3 FIRE PROTECTION

.4 Provide temporary fire protection throughout the period of construction. Particular attention shall be paid to the elimination of the fire hazards.

.5 Comply with the owner's directives regarding fire safety.

.6 No flammable materials or solvents shall remain unattended at night. Remove these products at the end of each work day.

.7 The activities of any trade that produces flames, sparks or heat that could act as an ignition source for flammable or combustible materials shall be considered "hot work" and the Contractor shall have in place a permit system to monitor and control "hot works". Review procedures for "hot works" permit with Owners prior to commencement of the work.

.8 Comply with the Ontario Fire Code in regard to safety measures surrounding "hot works".

3.4 Hot Work Procedures

.1 Definitions

.1 "Hot Work" means any type of temporary work that could create an ignition source and possibly lead to fire. Examples of hot work are, welding, grinding, brazing, cutting, or use of a torch for heating purposes.

.2 "Fire Watch" means the responsibility of watching the person performing the hot work and the area in order to address any sparks or other sources that could cause a fire.

.3 "Fire Monitoring" means the responsibility of monitoring the area where the hot work took place after the hot work is completed.

.4 Scope Hot work is to be avoided on site. The project must be reviewed to ensure that other less hazardous options have been considered prior to using these procedures. Hot Work shall comply with the requirements of NFPA 51B, Standards for Fire Prevention During Welding, Cutting and Other Hot Work as amended from time to time. The activities of any trade that produces flames, sparks or heat that could act as an ignition source for flammable or combustible materials shall be considered hot work and the Contractor shall have in place a permit system to monitor and control hot works. Review procedures for "Hot Work Permit" with the Owner prior to commencement of the work.

.5 Responsibilities The Hot Work Procedure is in addition to any legal or regulatory requirements pertaining to Hot Work, including, without limitation, the requirements of the Fire Code (Ontario Regulation 213/07) enacted pursuant to the Fire Protection and Prevention Act, 1997. The contractor is responsible for administering the Hot Work Procedure and ensuring that a Hot Work Permit is obtained and posted clearly on site before hot work commences. Maintain hot work equipment in a safe and operational condition. Ensure the precautions listed on the Hot Work Permit (Appendix A) are understood by the person performing the hot work. Inform subcontractors of this procedure and all other applicable procedures. Ensure there is a properly trained person designated to perform fire watch and monitoring. Speak with on site staff and the Owner representative prior to proceeding with hot work to ensure that any fire alarm system is appropriately modified to prevent a false alarm that may be caused by the hot work. It is the contractor's responsibility to reinstate any changes to the fire alarm system following completion of the work and notify the owner and any other concerned party that the work is complete.

.6 Hot Work Permit Hot work Permits should be kept by the contractor with other contract documents on site. The Hot Work Permit is attached. Fully complete the Hot Work Permit, follow the precautions on the permit and post the permit in the area of the work.

3.5 PROTECTION OF WORK, PROPERTY AND PERSONS

.1 Include all necessary methods, materials, and construction to ensure that no damage or harm to Work materials, property and persons results from the Work of this Contract. The Contractor shall bear the cost of repairing and making good any damage, loss or injury to the property of the Owner or others which is attributable to the performance of this Contractor or to the negligence or failure of this Contractor to conform to the provisions of the Contract or to take reasonable precautions.

.2 Protect adjacent private and public property from damage and, if damaged, make good to match in all details. Save the Owner and the Architect harmless from claims for loss or damage to adjacent property.

.3 Protect surfaces of completed Work from staining, disfigurement and all other damage by restriction of access or by use of physical means suitable to the material and surface location.

.4 Enforce fire prevention methods at site. Use flammable materials only if proper safety precautions are taken, both in use and storage.

.5 Do not store flammable materials in the building. Take necessary measures to prevent spontaneous combustion. Place cloths and other disposable materials that are a fire hazard in closed metal containers and remove them from the building every night.

.6 Where flammable materials are being applied, ensure that adequate ventilation is provided, spark-proof equipment is used, and smoking and open flames are prohibited.

.7 Ensure that volatile fluid wastes are not disposed of in building drains.

3.6 FASTENINGS

.1 Include in the Work necessary fastenings, anchors, inserts, attachment accessories, and adhesives. Where installation of devices is in Work of others, deliver devices in ample time for installation, locate devices and cooperate with other Contractors as they require.

.2 Do not use fastenings which cause spalling or cracking of materials in which installed.

.3 Use only approved fastenings.

.4 Install Work with fastenings or adhesives in sufficient quantity to ensure permanent secure anchorage of materials, constructions, components, and equipment. Space anchors within limits of load-bearing or shear capacity.

3.7 CLEANING

.1 Ensure that spatters, droppings, soil, labels and other debris are removed from surfaces to receive finishes, before they set up. Leave Work and adjacent finished Work in new condition.

.2 Use only specified cleaning materials which are recommended for the purpose by the manufacturer of the surface to be cleaned and of the cleaning material.

.3 Maintain area "broom clean" at all times during the Work.

.4 Remove construction debris and dirt as often as required to avoid accumulation.

.5 Ensure that cleaning operations are scheduled to avoid deposit of dust or other foreign matter on surfaces during finishing Work and until wet or tacky surfaces are cured.

3.8 ADJUSTING

.1 Ensure that all parts of Work fit snugly, accurately and in true planes, and that moving parts operate positively and freely, without binding and scraping.

.2 Verify that Work functions properly, and adjust it accordingly to ensure satisfactory operation.

3.9 OWNER OCCUPANCY

.1 The Owner reserves the right to occupy portions of the premises, whether partially or entirely completed, or whether completed on schedule or not, provided such occupancy does not interfere with continuation of the Work of this Contract.

.2 Partial occupancy or installation by the Owner of his equipment shall not imply acceptance of the Work in whole, or in part, nor shall it imply acknowledgment that terms of the Agreement are fulfilled.

END OF SECTION

1. CONTRACT DOCUMENTS

1.1 The Contract will be in the form of the Agreement between Owner and Contractor, Canadian Standard Construction Document, CCDC 2 - 2008 Stipulated Price Contract as amended by the Supplementary Conditions.

1.2 The General Conditions of the Stipulated Price Contract, Standard Construction Document, CCDC 2 - 2008; as amended and supplemented by the Supplementary General Conditions, Section 00800, will govern the Work specified in each Section of the Specifications.

1.3 Section 01005, General Requirements, of the Specifications generally specifies Work and coordination of the Work that is the responsibility of the Contractor, and shall not be interpreted to defined absolutely the limits of responsibility that must be established between the Contractor and his subcontractors by their separate agreements.

1.4 Ensure that Sub-Contractors understand that the General Conditions of the Contract, Supplementary Conditions, and Division 1, General Requirements, apply to Sections of the Specifications governing their Work.

1.5 Work in the Specifications is divided into descriptive Sections which are not intended to identify absolute contractual limits between Subcontractors, nor between the Contractor and his Subcontractors.

1.6 Wherever in the Contract Documents the words "approval", "approved", "direction", "directed", "selection", "selected", "request", "requested", "report", and similar words are used, such approvals, directions, selections, requests and reports shall be given by the Architect unless specifically stated otherwise.

1.7 Wherever in the Contract Documents the word "provide" is used in any form, it shall mean that the Work concerned shall include both supply and installation of the products required for completion of that part of the Work.

1.8 Wherever in the Specifications it is specified that Work is to proceed or to meet approval, direction, selection or request of jurisdictional authorities or others, such approval, direction, selection or request shall be in writing.

1.9 Wherever in the Specifications it is specified that Work shall be repaired, made good or replaced, it shall be performed without any additional cost to the Owner.

2. PROJECT DESCRIPTION

2.1. The Chappell House is designated under Part IV of the Ontario Heritage Act and all work must be undertaken in accord with current conservation best practices for historic properties.

2.2. The Chappell House will remain in operation throughout the duration of the construction of the renovation to the existing building.

2.3. The facilities hours of operation are from 9:00 to 5:00pm including the weekends. The main entrance will be temporary closed during construction. During this time, Proper fencing, boring and access path to the General Office will be required.

2.4. The work of the base bid contract includes, but is not limited to, the following:

1. Overall scope of work consists of 2 areas in the building:
    1. The vault/main entrance: remove and rebuild all possible deteriorating foundation wall around the vault located in the basement below the main entrance. Provide proper drainage system. Porch floor and balustrade walls will need to be rebuilt to match existing. Re-garding is required around the porch.

    2. The north basement wall: provide proper foundation drainage system. Underpinning under solarium. New window well. Rebuilding low stone landscaping wall. Re-garding is required.

2. Review drawings and specifications for full scope of work.

3. WORK PERFORMED UNDER SEPARATE CONTRACTS

3.1 Where the Owner has work performed under separate Contract by others, this Contractor shall co-operate as fully as possible to allow the work to be carried out at the proper time and location. This separate contract work includes, but is not limited to, the following:

1. Pest Control.
2. Mold Removal & Treatment.
3. IT.
4. Security.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

.1 Coordination of the Work of those Sections of the Specifications, which form this Contract, is the responsibility of the Contractor.

.2 The Contractor will be deemed to possess the necessary technical skills to carefully evaluate all requirements of the Contract, and to have included for all project coordination and supervision to properly implement these requirements.

1.2 QUALITY ASSURANCE

.1 Coordinate requirements of authorities having jurisdiction.

.2 Maintain job records and ensure that such records are maintained by subcontractors.

1.3 SUBMITTALS

.1 Schedule and expedite submission of specified submittals.

.2 Review submittals and make comments as specified in Section 01300.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Schedule delivery of products with the Owner, to determine access and unloading areas.

.2 The Owner will make available areas for storage of products and construction equipment to meet specified requirements, and to ensure a minimum of interference with progress of the Work and relocations.

.3 Make arrangements for transference of stored products and construction equipment to work areas.

1.5 JOB CONDITIONS

.1 Ensure that protection of adjacent property and the Work is adequately provided and maintained to meet specified requirements.

1.6 WARRANTIES

.1 Ensure that warranties are provided as specified.

PART 2 - PRODUCTS

RESERVE

PART 3 - EXECUTION

3.1 COORDINATION

.1 Review Contract Documents and advise the Owner in writing of possible conflicts between parts of the Work before ordering of products or commencement of affected Work.

.2 Coordinate all Work of this Contract on which subsequent Work depends to facilitate progress, and to prevent conflict between parts of the Work.

.3 When installation information is given in error, or too late to incorporate in the Work the Contractor will be responsible for having all additional Work done which is thereby made necessary.

.4 Remove and replace Work installed in error which is unsatisfactory for subsequent Work.

3.2 USE OF PREMISES

.1 During the progress of the Work the Contractor will not have exclusive access to the Work areas nor the construction facilities. The site will continue to function as currently intended and the Contractor must not hinder access thereto.

.2 The Contractor shall confine his plant, equipment, the storage of materials and the operations of his workmen to limits indicated by the Owner and shall not unreasonably encumber the premises with his materials.

.3 The Contractor shall not load or permit to be loaded any part of the Work with a weight that will endanger its safety.

3.3 CONSTRUCTION METHODS

.1 The Contractor shall be responsible for the safety, adequacy and efficiency of his plant and equipment at the site of the Work and for the construction methods, employed for its execution. The Contractor shall cause its employees, and the employees of any of its Subcontractors, to comply in all respects with rules and regulations issued from time to time in writing by the Owner governing safety and the execution of the Works.

END OF SECTION

PART 1- GENERAL

1.1 SCOPE

.1 Refer to all other sections of the documents to determine their effect on the work of each Section of these specifications.

1.2 DESCRIPTION

.1 It is intended that the Work proposed be executed in a manner which, to the fullest possible extent, minimizes any adverse effects on the cultural and natural environment of the project area. The environmental conditions of contract stated herein must be complied with in all respects. It is the responsibility of the Contractor that all his personnel be sufficiently instructed so that the work is carried out in a manner consistent with minimizing environmental damage.

.2 This Section outlined the general requirements of the environmental considerations and will be specified in more detail as required in the special clauses of these documents.

PART 2 - PRODUCTS

.1 There are no products under this section.

PART 3 – EXECUTION

.1 Refuelling, Cleaning and Maintenance Areas

.1 The Contractor shall undertake a detailed review of his proposed route of construction to plan access routes and fuelling areas. Construction equipment shall be cleaned prior to entering public roadways. All equipment cleaning and construction debris shall be contained and disposed of in an approved location. Refuelling, cleaning and maintenance of equipment shall not be undertaken in or adjacent to watercourses. Suitable areas shall be established and all of these activities shall be conducted in these areas. The locations of such areas are subject to approval by the Engineer. Exhaust emissions from equipment should be minimized through efficient maintenance.

.2 Procedures for the interception and rapid clean up and disposal of spillages that do occur shall be submitted to the Engineer for review prior to starting work. All materials required for clean up of fuel spillages shall be maintained readily accessible on site. Any spills causing environmental impairment shall be reported immediately to the local District office of the Ministry of Environment.

.3 The exception to the fuelling location requirement shall be generators, cranes, backhoes or shovels which may be fuelled at other than the designated fuelling areas. However, no fuelling of backhoes shall be carried out within 30 metres of any watercourse. This requirement may be relaxed at the discretion of the Engineer if no-spill fuelling facilities are used.

.2 Noise Control

.1 All vehicles and equipment shall be equipped with efficient muffling devices to minimize noise levels in the project area. In particular, construction equipment such as compressors, gas and diesel driven engines, and pavement breakers shall be equipped with efficient mufflers.

.2 The Contractor shall establish and maintain site procedures consistent with the objective that noise levels from the construction area shall be minimized, and in accordance with local by-laws.

.3 In areas where semi-permanent installations, such as tunnel shafts, are required, other devices such as artificial barriers, berms, etc. shall be used to minimize noise levels.

.3 Dust Control

.1 The Contractor shall undertake all dust control measures to prevent dust nuisances resulting from any phase of his operation. Dust control practices shall be carried out at all locations on site or on adjacent roads. Permitted dust control measures include the applications of calcium chloride, oiling or water.

.2 Frequent water applications shall be required throughout the duration of the work. The contractor shall ensure that sufficient water and applicators are available at all times. The use of calcium chloride shall be restricted to weekend applications except where the Engineer has given prior approval in writing due to circumstances beyond the control of the Contractor. The use of calcium chloride and oil shall be minimized in close proximity to watercourses.

.3 The transporting of excessively dusty materials such as cement must be carried out in covered haulage vehicles.

.4 Working Area Delineation

.1 The boundaries of the working area shall be delineated through the use of snow fencing.

.2 Snow fencing shall be placed between the construction easement and watercourse, marshes, trees and shrubs that are to be protected.

.5 Clearing of Vegetation

.1 Prior to clearing of vegetation the route of the proposed works shall be examined to identify significant environmental features which must be maintained. Particular attention shall be given to any natural wildlife habitats located within the working areas. Trees which can be preserved shall be protected by snow fencing or equivalent placed around the drip line. The Engineer shall designate on the Drawings and shall identify in the field those natural environmental features within the working limits which must be preserved. If deemed necessary by the Engineer, the Contractor shall erect, maintain and remove snow fence in order to protect these areas.

.2 In general, clearing and grubbing shall be kept to a minimum. Vegetative cover shall be removed only slightly in advance of actual construction. Clearing and grubbing shall be performed in a manner stated herein or as shown on the Contract Drawings.

.6 Stockpiles

.1 Stockpiles of a semi-permanent nature, e.g. topsoil, excess excavated material, shall be located and protected to ensure minimum environmental interference.

.2 Stockpiles of this type shall be covered with plastic sheeting and perimeter drainage ditches shall be constructed to intercept and divert runoff to adjacent settling ponds.

.3 Specific attention must be given to the locating of stockpiles or other fills away from tree stands, flood plains and areas containing valuable natural wildlife habitats. The destruction of tree roots or other vegetation by unnecessary cutting during construction or by the placing of excessive fill in trees stand areas, or by compaction due to heavy equipment will not be permitted.

.4 Excess excavated material shall be disposed of in an approved manner.

.7 Protection of Trees

.1 The Contractor shall be responsible for the protection of tops, trunks and roots of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be fenced around the drip line before any work is started. Wherever possible, do not permit heavy equipment or stockpiles within branch spread. Remove interfering branches without injury to trunks and cover scars immediately with an approved tree wound dressing.

.2 Where excavating, filling or grading is required within the branch spread of

trees that are to remain the work shall be performed as follows

1. Trenching -When trenching occurs around trees to remain, the tree roots shall not be cut but the trench shall be tunneled under or around the roots by careful hand digging and without injury to the roots. Any roots over 25 mm which are damaged, shall be treated immediately with tree paint.

2. Raising Grades -When the existing grade at the tree is below the new finished grade, and fill not exceeding 400mm is required, clean washed gravel graded from 25mm to 50mm size shall be placed directly around the tree trunk. The gravel shall extend out from the trunk on all sides a minimum of 450mm and finish approximately 50mm above the finished grade at the tree. Install gravel before any earth fill is placed. New earth fill shall not be left in contact with the trunks of any trees requiring fill.

3. Lowering Grades -Trees marked for preservation that are located above proposed grades shall stand on broad rounded mounds and be graded smoothly into the lower level . Exposed or broken roots shall be cut clean and covered with topsoil.

.3 Trees potentially undermined by trench construction shall be braced to unaffected trees by means of cables and turnbuckles, for the period of open trench construction.

.4 All trees outside the working easement, or those within the working easement, or those within the working easement and designed to be protected shall be protected from construction activity.

.5 Any shrubs or trees killed by the construction operation shall be removed from the construction site and disposed of in a location approved by the Engineer.

.6 Any such trees which, in the opinion of the Engineer have been damaged beyond repair by the Contractor's activity shall be replaced by the Contractor at his expense with trees of a similar size and species, or such size and species as may be approved by the Engineer. These trees shall be subject to guaranteed maintenance.

.8 Fires

.1 Fires and burning of rubbish on site not permitted.

.9 Disposal of Wastes

.1 Do not bury rubbish and waste materials on site, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

.10 Drainage

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump or permit water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materails or other harmful substances in accordance with local authority requirements.

.11 ISO 14001 Environmental Management System Requirements

The Town, as part of its ISO 14001 Environmental Management System Requirements, requires that contractors and suppliers working on behalf of the Engineering & Public Works Department be qualified, trained and competent to carry out their functions and duties. All contractors and suppliers shall be aware of environmental issues and the Engineering & Public Works Department's environmental policy and procedures in all matters associated with their work. The Town may request a contractor or supplier to provide documented education, training records, licensing, certification, skills and years of experience for persons working on behalf of the Engineering & Public Works Department. Contractors and suppliers may from time to time be required, as determined by the Town in its sole discretion, to attend environmental awareness, procedural or work instruction training sessions at the Town prior to the commencement of Work.

.12 Erosion & Sedimentation Control

Contractor shall prepare and implement an Erosion and Sediment Control plan detailing sediment control measures to be implemented before construction activities on the subject lands to protect downstream watercourses and environmental features.

Where silt fencing is required, the Contractor shall install Enviro Fence, or approved equal, for sediment control as per OPSD 219.110. The silt fencing shall be 1.2 m high, complete with T-bars and a filter fabric attached to the fence. The sediment control fence must be anchored and toed-in at least 15-20 cm (6 to 8 inches) in a trench and then backfilled and compacted.

.13 Recycled Material and Energy Conservation Specification

In order to contribute to waste reduction and energy conservation and to increase the development and awareness of environmentally sound purchasing, acquisitions of goods and services will ensure that wherever possible, specifications are amended to provide for expanded use of durable products, reusable products and products (including those used in services) that contain the maximum level of post-consumer waste and/or recyclable content, and which consume less energy, without significantly affecting the intended use of the products or service. It is recognized that cost analysis is required in order to ensure that the products are made available at competitive prices.

.14 Spill Response

Any and all fuel, oil or chemical spills must be reported by the Contractor to the Town immediately. As soon as a spill starts, the Contractor will cease operations immediately until the Contractor's supervisor arrives on site.

Dryall or other absorbent, depending on the nature of the spill, will be laid down by the Contractor immediately, and other steps will be taken as necessary to prevent the spill from entering the sewer or watercourse. As soon as the absorbent has had the desired effect, it is to be scraped from the road or affected property. If residue still remains the Contractor will repeat the above process until all of the spill has been absorbed and will leave the site in a clean and tidy condition. Failure to respond immediately to spills may result in asphalt or other damage for which the Contractor will be responsible.

The Contractor will notify the Town as soon as they have completed the steps outlined above in order that the Town can inspect the site to ascertain whether any further action is required. If necessary, at the Commissioner's discretion, power washing and/or other spill clean-up measures will be utilized at the Contractor's expense.

.15 Working Near Water Courses

The Contractor shall follow the guidelines contained in the Metropolitan and Region Conservation Authority publication entitled "Erosion and Sediment Control Guidelines for Construction", April 1994.

1. Watercourses shall not be diverted, or blocked and temporary watercourse crossings shall not be constructed or utilized, unless otherwise specified in the contract.
2. Where the contract does not require work in watercourses or on watercourse banks, equipment shall not be operated within such areas.
3. Construction material, excess material, construction debris and empty containers shall be stored away from the watercourse and environmentally sensitive areas.
4. All equipment maintenance and refueling shall be controlled so as to prevent any discharge of petroleum products. Vehicular maintenance and refueling shall be conducted away from watercourse and environmentally sensitive areas.
5. Run-off from construction materials and any stockpiles shall be contained and discharged so as to prevent entry of sediment to watercourses.

6. If dewatering is required, any sediment laden water is to not discharge directly into the watercourse and is to be filtered.
7. To reduce erosion, erosion mats will be placed to aid in slope stabilization until the cover vegetation has taken as specified in the contract.
8. Construction is to not occur within watercourse due to MNR timing restrictions. Once the construction for the culvert extensions commence, it shall continue until complete. Temporary erosion mats may be required for temporary stoppage, i.e. overnight, Sundays, etc. Work shall not commence on the extension if rain is forecast within the time allotted for the construction of the extension. Work for the extension shall not be scheduled to commence near the end of the week.
9. Erosion control measures are to be in place before extension construction commences. Materials that result from the work or that are disturbed by the work shall be prevented from entering the open portion of the watercourses.
10. The contractor is to inform the Contract Administration and the Conservation Authority 2 working days in advance of commencing construction.

    The contractor shall install other erosion and sediment controls as required as per OPSS 577 (Feb. 1996).

END OF SECTION

1. GENERAL

1.1 Make submittals specified in this Section to the Consultant unless otherwise specified.

1.2 Ensure that submissions requiring review and comment, or approval, are made to allow sufficient time for review without delaying progress of scheduled construction.

1.3 Work affected by a submittal requiring review by the Consultant shall not proceed until review is complete.

2. CONSTRUCTION SCHEDULES

2.1 Submit proposed construction schedule prior to commencement of Work, as specified in Section 01311.

2.2 As construction progresses, submit up-dated construction schedules to the Consultant.

3. EXTRA STOCK

3.1 Supply extra stock at completion of Project where specified in other Sections of the Specifications.

4. SAMPLES

4.1 Submit samples for which a submission requirement is specified in other Sections of the Specifications.

4.2 Submit samples in duplicate of adequate size to represent the material in its intended use on the Project.

4.3 Label samples with the Project name, Contractor name and date.

4.4 If sample is not approved, both samples will be returned. If sample is approved, one sample will be returned, marked "approved".

5. SHOP DRAWINGS

5.1 Submit shop drawings where required in other Sections of the Specifications. Include in shop drawing submissions detailed information, templates and installation instructions required for incorporation and connection of the Work concerned.

5.2 The term "Shop Drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

5.3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the Work. Indicate cross references to design drawings and specifications.

5.4 The Contractor will check, sign, and make notations he considers necessary on shop drawings before submission to the Consultant.

5.5 Indicate on each submission, changes from the Contract Drawings and Specifications that have been incorporated in the shop drawings. The Contractor shall be responsible for changes made from the Contract Drawings and Specifications which are not indicated or otherwise communicated in writing with the submission.

5.6 Shop drawing review by the Consultant is for the sole purpose of ascertaining general conformance with the design concept. This review shall not mean that the Architect warrants or represents that the information contained on the shop drawings is either accurate or complete, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for meeting design, details and all other requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation.

5.7 Adjustments made on shop drawings by the Consultant are not intended to change the Contract Price. If adjustments affect the Value of Work, state such in writing to the Consultant prior to proceeding with the Work.

5.8 Submit shop drawings folded into 8 - ½" x 11" size with title block appearing on outside. Copies of engineering data sheets, catalogue cuts and standard diagrams may be substituted for shop drawings where applicable. Submit three prints and one sepia of each drawing or four copies of catalogue cuts.

5.9 Shop drawings which require extensive correction will be sent back for revisions and resubmission. Two prints will be retained and all other copies returned.

5.10 Other than 5.9, shop drawings will be sent back with review comments only. One print will be retained and all other copies returned.

5.11 Only drawings noted for revision and resubmission need be resubmitted.

5.12 Do not add new details or information to shop drawings after they have been finally reviewed, except when approval is given.

5.13 Review of shop drawings shall not relieve the Contractor of his responsibility for execution of Work in accordance with Contract Documents.

5.14 Fabricate Work exactly as shown on shop drawings. If shop practice dictates revisions, revise drawings and resubmit.

5.15 File one copy of each finally revised and corrected shop drawing at site.

6. EXTENDED WARRANTIES

6.1 Submit the extended warranties as specified in each application Section of the Specifications.

6.2 Extended warranties shall commence on termination of the standard one year warranty granted in this Contract as specified in Article GC 12.3, Warranty, of the General Conditions, and shall be an extension of these same provisions.

6.3 Submit each extended warranty in an approved uniform format.

7. AS-BUILT DRAWINGS

7.1 Submit as built drawings to the Architect.

END OF SECTION

1. SCHEDULE

.1 Before commencement of Work, provide Construction Schedule to Consultant and Owner for approval.

.2 Schedule shall show:
- .1 Commencement and completion dates of Contract,
- .2 Commencement and completion dates of stipulated stages,
- .3 Commencement and completion dates of Trades,
- .4 Commencement and completion dates of any anticipated interruptions to the on-going use of the building,
- .5 Order and delivery times for materials and equipment, where possible,
- .6 Dates for submission of shop drawings, material lists and samples,
- .7 Any other information relating to the orderly progress of the Contract.

2. UPDATING AND MONITORING

.1 Set up format of Construction Schedule to allow plotting of actual progress against scheduled progress.
- .1 Allow sufficient space for modifications and revisions to the Schedule as Work progresses.
- .2 Format shall be approved by the Consultant.

.2 Copy of the Schedule shall be available during construction period and actual progress shall be plotted weekly.

.3 Arrange participation, on site and off site, with sub-contractors and suppliers, as and when necessary for the purpose of updating the schedule and monitoring progress.

END OF SECTION

FA49.1020-11 SECTION 01343 Environmental Procedures for Hazardous Materials

1 References

1.1 Export and Import of Hazardous Waste Regulations.

1.2 National Fire Code of Canada.

1.3 Transportation of Dangerous Goods Act.

1.4 Transportation of Dangerous Goods Regulations.

2 Definitions

2.1 Dangerous Goods: Product, substance, or organism that is specifically listed or meets the hazard criteria established in Transportation of Dangerous Goods Regulations.

2.2 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

2.3 Hazardous Waste: Any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment or disposal.

2.4 Workplace Hazardous Materials Information System (WHMIS): A Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, information on hazardous materials is to be provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by a combination of federal and provincial laws.

3 Submittals

3.1 Submit product data in accordance with Section 01300 - Submittals.

3.2 Submit to the Owner current Material Safety Data Sheet (MSDS) for each hazardous material required prior to bringing hazardous material on site.

3.3 Submit hazardous materials management plan to the Town, that identifies all hazardous materials, their use, their location, personal protective equipment requirements, and disposal arrangements.

4 Storage and Handling

4.1 Coordinate storage of hazardous materials with the Town and abide by internal requirements for labeling and storage of materials and wastes.

4.2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.

4.3 Store and handle flammable and combustible materials in accordance with current National Fire Code of Canada requirements.

4.4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use. Store all flammable and combustible liquids in approved safety cans bearing the Underwriter’s Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Owner.

4.5 Transfer of flammable and combustible liquids is prohibited within buildings.

4.6 Transfer of flammable and combustible liquids will not be carried out in the vicinity of open flames or any type of heat-producing devices.

4.7 Flammable liquids having a flash point below 38C, such as naphtha or gasoline, will not be used as solvents or cleaning agents.

4.8 Store flammable and combustible waste liquids for disposal in approved containers located in a safe, ventilated area. Keep quantities to a minimum.

4.9 Observe smoking regulations at all times. Smoking is prohibited in any area where hazardous materials are stored, used, or handled.

4.10 Abide by the following storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:

4.10.1 Store hazardous materials and wastes in closed and sealed containers which are in good condition.

4.10.2 Label containers of hazardous materials and wastes in accordance with WHMIS.

4.10.3 Store hazardous materials and wastes in containers compatible with that material or waste.

4.10.4 Segregate incompatible materials and wastes.

4.10.5 Ensure that different hazardous materials or hazardous wastes are not mixed.

4.10.6 Store hazardous materials and wastes in a secure storage area with controlled access.

4.10.7 Maintain a clear egress from storage area.

4.10.8 Store hazardous materials and wastes in a manner and location which will prevent them from spilling into the environment.

4.10.9 Have appropriate emergency spill response equipment available near the storage area, including personal protective equipment.

4.10.10 Maintain an inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.

4.11 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.

4.12 Report spills or accidents immediately to the Town. Submit a written spill report to the Town within 24 hours of incident.

5 Transportation

5.1 Transport hazardous materials and wastes in accordance with the federal Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.

6 Materials

6.1 Only bring on site the quantity of hazardous materials required to perform the Work.

6.2 Maintain MSDSs in proximity to where the materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

7 Disposal

7.1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.

7.2 Recycle hazardous wastes for which there is an approved, cost effective recycling process available.

7.3 Send hazardous wastes only to authorized hazardous waste disposal or treatment facilities.

7.4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.

7.5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.

7.6 Dispose of hazardous wastes in a timely fashion in accordance with applicable provincial regulations.

END OF SECTION

PART 1 - GENERAL

.1 Provide construction photographs in accordance with procedures and submission requirements specified in this Section.

.2 Photographs to be taken using digital imaging.

1.2 Progress Photographs

.1 Digital size: 1280 x 1024 pixels minimum.

.2 Type: jpg format and in full colour .

.3 Number of CDs required: 2 sets.

.4 Identification: picture most be properly name and have date and time imbedded within the file property.

.5 Number of viewpoints: 2 for each area of work. Locations of viewpoints determined by Consultant.

.6 Frequency: bi-weekly with progress statement, showing areas for which claim is being made, showing areas of work commences, at 50% complete work, at completion of work on any area of the building.

.7 In addition to photographs required by this Section, refer to other Sections for additional photographs of specific components of the Work.

1.3 Detail Photographs

.1 Digital sizes: 800 x 600 pixels minimum.

.2 Type: jpg format and in full colour .

.3 Method of transfer: pictures are to be emailed or uploaded to FTP site. Method used will be confirmed and discussed at startup meeting.

.4 Identification: picture most be properly name and have date and time imbedded within the file property

.5 Number of viewpoints: As indicated in respective specification Sections.

1.4 Final Photographs

.1 Digital sizes: 1280 x 1024 pixels minimum.

.2 Type: jpg format and in full colour .

.3 Number of CDs required: 2 sets. Each CD shall have attached a contact sheet with a max. of 35 photographs per letter size sheet. Single sided.

.4 Identification: picture most be properly name and have date and time imbedded within the file property.

.5 Number of viewpoints:

.1 Each side of rooms, and selected details, for maximum total of 36 viewpoints.

.2 Locations of viewpoints determined by Consultant.

.6 Submit all photographs before final acceptance of building.

END OF SECTION

PART ONE – GENERAL

1.1 INSTALLATION AND REMOVAL

.1 Provide construction facilities in order to execute work expeditiously.

.2 Maintain temporary facilities and plant in good operating order.

.3 Remove from site such work after use.

1.2 SCAFFOLDING

.1 Provide and maintain scaffolding, ramps, ladders, platforms, temporary stairs and other temporary access devices as required to complete the Work.

.2 Design and construct scaffolding in accordance with CSA S269.2-M87, and provisions of applicable occupational health and safety legislation. Construct and maintain scaffolding in rigid, secure and safe manner, complete with stairs to all levels.

.3 Erect scaffolding independent of walls. Remove promptly when no longer required.

.4 Where scaffold is secured to walls, anchors shall be non-corroding type, and anchors may only be set into masonry joints, and only where existing brick and stone masonry units are not damaged by scaffold anchors. Remove anchors and repoint prior to completing work in accordance with other Sections.

.5 Any part of the scaffolding, hoists or any construction plant shall not directly bear against the masonry. Provide insulating material of lumber or plywood with additional padding as necessary to prevent damage to the existing masonry and other surfaces.

.6 Install bearing pads below scaffold legs to protect surfaces such as asphalt pavement from damage.

.7 Not less than 50% of the building, as measured by wall area, shall be scaffolded at any time during the course of the work, unless otherwise agreed in advance by the Consultant. Terminate scaffolding at natural breaks in the work involved, such as changes in wall plane.

1.3 HOISTING

.1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.

.2 Hoists and cranes shall be operated by qualified operator.

1.4 ELEVATORS

.1 Not applicable.

1.5 SITE STORAGE/LOADING

.1 Confine work and operations of employees to limits indicated by Contract documents or where no limits shown on drawings, to immediate area of work. Do not unreasonably encumber premises with products.

.2 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the Work or cause permanent deformation.

. 3 Assume full responsibility for protection and safekeeping of products under this Contract.

.4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

.5 Establish fenced and secure outdoor storage areas for materials not requiring weather protection.

1.6 SECURITY

.1 Comply with Owner's security requirements.

1.7 OFFICES

. 1 Provide and maintain in clean condition during progress of work, adequately lighted, heated and ventilated temporary Contractor's office with drawing lay down table, space for filing and layout of Contract Documents and Contractor's normal site office staff.

.2 Provide adequate required first aid facilities.

1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

END OF SECTION

PART ONE – GENERAL

1.1 Related Sections

.1 Section 01535 Temporary Facilities.

1.2 Installation and Removal

.1 Provide temporary controls in order to execute work expeditiously.

.2 Maintain temporary controls and plant in good operating order.

.3 Remove from site all such work after use.

1.3 Hoarding

.1 Erect hoarding to protect the public, workers, public and private property from injury or damage.

.2 Provide lockable gates within hoarding for access.

.3 Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to building.

.4 Provide barriers around trees and plants designated to remain. Protect from damage.

.5 Erect signs to prohibit entry of unauthorized personnel into work areas. Use all necessary security means to prevent unauthorized access into work areas.

.6 Erect walkways, hoarding, guards, or other protective measures and directional devices required to provide persons with safe access to the building. Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law to permit access to and from building.

.7 Maintain public side of enclosure in clean condition.

.8 Maintain the area within the temporary enclosure in a neat, clean, and orderly manner.

.9 Keep all operations, other than access to and from the work of this contract, within the temporary enclosure and existing site fencing.

1.4 Guard Rails and Barricades

.1 Provide secure, rigid guardrails and barricades around deep excavations, open shafts, open stairwells, open edges of floors and roofs.

.2 Provide secure, rigid guard rails and barricades as required by governing authorities.

1.5 Security and Weather Enclosures

.1 In addition to the requirements of other Sections, provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors, walls, and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.

1.6 Dust Tight Screens

.1 In addition to the requirements of other Sections, provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work, Owner and occupation, and public.

.2 Provide and place dust screens, covers, or other appropriate dust protection to keep surfaces, furnishings, equipment, and fittings completely free from dust and debris arising from the Work.

.3 Install temporary filters to existing mechanical grilles, louvers, exhausts, etc., unless the Owner has consented to disconnect the equipment involved.

.4 Maintain and replace protection until such Work is complete. Remove upon completion of dust- generating work, and clean areas affected.

1.7 Access to Site

.1 Use new and existing driveways, roads, parking areas, and sidewalk crossings as may be required for access to the work

.2 Protect driveways, roads, parking areas and sidewalk crossings from damage, and make good damage arising.

.3 Keep public roads clean of soiling.

1.8 Public Traffic Flow

.1 Provide and maintain flag persons, traffic signals, barricades and flares, lights, or lanterns as required to perform the work and protect the public.

.2 Provide protected covers to all building entrances and exits at all times.

1.9 Protection for Off-Site and Public Property

.1 Protect surrounding private and public property from damage during performance of work.

.2 Be responsible for damage incurred.

1.10 Garbage Chutes and Bins

.1 Provide garbage chutes to control fall of debris from above grade works to waste container. Do not allow debris to free-fall.

.2 Provide all necessary garbage bins and dispose of debris off-site.

1.11 Enclosure of Structure

.1 Where the existing building envelope is opened, breached, or otherwise compromised by work of this Contract, possibly permitting entry of wind or precipitation into the building, or possibly adversely affecting usual interior temperatures and humidity, provide temporary weather tight and dust tight enclosures and protection for exterior openings made until permanently enclosed.

.2 Refer to other specification Sections for additional requirements pertaining to particular temporary closures.

.3 Erect enclosures to allow access for installation of materials and working inside enclosure where necessary.

.4 Design enclosures to withstand wind pressure and snow loading.

.5 Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas used by public or government staff.

.6 Provide temporary dust barriers at all exterior openings, which could permit entry of dust from Work of this Contract to interior areas, contaminating occupied or habitable spaces. Be advised that windows in this building are generally operable, and must be at least partially maintained as ventilating units for occupant health and comfort. Where temporary screens prevent adequate space ventilation, and ventilation is required by occupant use, provide alternate ventilation means to maintain level of occupant comfort normally occurring in this building.

.7 Existing mechanical grilles, louvers, exhausts, etc., shall not be covered or blocked without the Consultant's consent. Where required, provide temporary extension of these elements past the exterior face of the scaffold, and/or filtering of incoming air for these elements past the exterior face of the scaffold, and/or filtering of incoming air for these elements in a manner that will not impede normal operation of the equipment, unless the Consultant has consented to disconnect the equipment involved.

.8 Protect adjacent and abutting properties and buildings from damage, dust, and disturbance by providing temporary screens and barriers, and providing warnings of work in progress.

1.13 Protection of Building Finishes and Equipment

.1 Provide protection for finished and partially finished building finishes and equipment during performance of work.

.2 Provide necessary screens, covers, and hoardings as required.

.3 Be responsible for damage incurred due to lack of or improper protection.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 Related Section

.1 Section 01343 – Environmental Procedures for Hazardous Materials

.2 Section 01300 - Submittals

1.2 Project Cleanliness

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by the Town or other Contractors.
.2 Remove waste materials from site at regularly scheduled times. Do not burn waste materials on site.
.3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
.4 Provide and use clearly marked separate bins for recycling if applicable.
.5 Remove waste material and debris from site regularly.
.6 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
.7 Provide adequate ventilation during use of volatile or noxious substances.
.8 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
.9 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 Final Cleaning

.1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
.2 Remove waste products and debris and leave Work clean and suitable for occupancy.
.3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
.4 Remove stains, spots, marks and dirt from all surfaces.
.5 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
.6 Remove dirt and other disfiguration from exterior surfaces.
.7 Sweep and wash clean paved areas.
.8 Clean and check drainage systems.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTION

.1 Division 2.

1.2 GENERAL REQUIREMENTS

.1 Provide protection to adjacent property and to areas on site to remain unchanged. Make good any damage caused by clearing operations.

1.3 SITE EXAMINATIONS

.1 Prior to commencement of work on site, verify existing subgrade and site conditions and report in writing immediately to the Architect, all discrepancies and conditions which are at variance with drawings and specifications.

.2 Failure to do so will imply acceptance by the Contractor of surfaces and site conditions and no claim made thereafter for damages or extras resulting from such discrepancies will be accepted.

.3 Verify on the site all underground services, such as water lines, sewers, electrical cables, telephone, gas and other utility lines and have such services located on the site by the appropriate authorities.

.4 Be prepared to meet and blend smoothly with existing grades at the project boundaries where required.

1.4 INSPECTION

.1 Upon completion of rough grading, adjustment and preparation of sub-grades, obtain approval from the Architect before proceeding with further work, giving timely notice.

1.5 COMPACTION

.1 Compact sub-grade under all paving, and where specified uniformly and adequately to ninety-eight percent (98%) minimum Standard Proctor Density.

.2 Sub-grade under landscaped areas (planting and grass) shall meet approximately eighty-five percent (85%) Standard Proctor Density.

1.6 PROTECTION

.1 Protect existing trees as directed on site by consultant prior to commencing grading.

.2 Protect all excavations from caving-in by shoring and bracing in strict accordance with all applicable regulations and building codes and support existing structures, paving, services, etc., where necessary.

.3 Protect excavations from freezing and keep free of water at all times by providing and operating all necessary equipment.

.4 Be responsible for all damage and subsequent repair to underground utilities and structures resulting from Contractor's operations.

.5 Erect barriers, fencing and/or signs where required and requested and be responsible for maintenance and removal of such works upon completion of work.

1.7 CLEARING

.1 Clear site of all rubbish, rocks, boulders, tree stumps, brush and other useless materials and debris, remove from site and dispose of unless instructed otherwise.

1.8 TOPSOIL AND STRIPPING

.1 All areas designed for paving or the construction of structures, shall be stripped of all topsoil and organic matter to its full depth taking care not to contaminate it with any sub-soil.

.2 Topsoil will be re-used for landscape work, unless specified otherwise.

1.9 GRADING

.1 After stripping of topsoil, do all necessary rough grading, excavating, and filling, where required, to establish the sub-grade under all areas as shown on drawings.

.2 Level of sub-grade shall be to the depths specified, after compaction of subgrade and of materials placed thereon.

.3 Remove all soft and unstable areas in sub-grade to approved depth and backfill with clean, approved fill material.

.4 Establish and maintain sub-grade parallel to finished grade and shape to allow adequate surface runoff and prevent ponding, scouring and erosion.

.5 Provide for uniform slopes between points for which finished grades are shown on drawings. Meet and blend with existing grades in a smooth manner.

.6 Establish smoothly rounded grades at top and toe of slopes and banks.

.7 Do not grade when soil is wet or frozen.

.8 Preparations of sub-grade:

.1 Scarify sub-grade on which topsoil is to be placed, to the minimum depths specified.

.2 Scarify sub-grades under areas which are to be raised by placing fill to minimum depth of 75mm to provide a good bond and prevent slipping of fill.

1.10 FILLING

.1 Fill material shall be clean, free of topsoil and organic matter and debris, and shall be approved by the Landscape Architect before placing. On site excavated material may be used for filling when approved by the Architect.

.2 Where required, supply and spread approved fill materials to raise existing grades to the specified sub-grade level, as shown on the drawings.

.3 Place fill in loose layers, not exceeding 150mm in depth and compact each layer to a minimum dry density of ninety-eight percent (98%) of the maximum Standard Proctor Density, before placing subsequent layers.

.4 The surface shall be shaped at all times to ensure adequate surface runoff and prevent ponding and scouring.

1.11 EXCAVATION

.1 Before proceeding with excavating work for paving and footings, the areas shall be staked out and approval obtained from the Architect.

.2 Excavate where required to the minimum specified depths to establish the subgrade under all paving where shown on drawings.

.3 Prepare and compact final sub-grades as shown on drawings.

.4 The excavations for footings shall be carried to undisturbed soil, to depths as shown on drawings.

.5 All excavations shall be sufficiently shored and braced to prevent caving-in and support existing structures, roads, services, etc.

.6 Warning signs and protection barriers shall be erected in accordance with local regulations.

.7 Be responsible for all damage and subsequent repair to underground utilities and structures resulting from Contractor's operations.

.8 All excavations shall be protected from freezing and water. Provide and operate as many pumps as are necessary to keep excavations free of water at all times.

.9 All excavated material shall be removed and disposed of as directed, unless approved by the Architect for filling or backfilling.

1.12 BACKFILLING

.1 This shall include the backfilling around new structures with granular materials and/or other approved fill.

.2 Remove all debris, rubbish, shoring, etc., from excavation before back filling.

.3 Backfill material shall be clean, free from debris, organic matter, and other deleterious material, and shall not be placed over frozen or wet soil.

.4 Backfill material shall be placed in 150mm lifts and each layer consolidated to ninety-eight percent (98%) Standard Proctor Density.

.5 Be responsible for making good any subsequent settlement of fill and work placed on top of it.

PART 2 - PRODUCT

2.1 Fill material shall be in accordance with the recommendations of the soil report and the independent testing agency provided for in the allowance in Section 01020.

PART 3 - EXECUTION

3.1 CLEARING OPERATIONS

.1 Remove existing organic and inorganic materials required to permit the construction of building, paved areas and playing fields.

3.2 GENERAL EXCUTION

.1 Prior to commencing with work, obtain Consultant’s review and direction prior to commencing with clearing.

.2 Grub out root system and stumps to minimum 750 mm below new finished grade or deeper where required by the new work.

.3 Strip soil in areas of building and parking and, if suitable for re-use stockpile on site in a location approved by the Consultant.

.4 Remove from site and legally dispose of all materials and debris resulting from the site clearing operations.

3.3 TOPSOIL AND CUT AND FILL

.1 Excavation sub-contractor is responsible for all cut and fill and stock piling of topsoil for landscaping.

.2 Dispose of surplus material in an approved site. Make up any short fall of material.

.3 Excavations for footings carried deeper than required shall be filled with concrete at the Contractor's expense.

.4 Structural fill under the building and parking areas shall be compacted to the specifications of the Geotechnical Consultant.

.5 Landscaped fill areas shall be compacted to 95% Standard Proctor Maximum Dry Density.

3.4 EXCAVATION AND GRADING

.1 Compact all areas to be back filled by mechanical tamping or rolling in accordance with the relevant soil report.

.2 Remove from site tree root systems, boulders, cobbles and debris, where encountered in the work.

.3 Protect parking areas, driveway and building sub-grade. Rectify any deterioration of sub-grade conditions due to weather conditions with replacement of the damaged sub-grade material with engineered fill or granular material.

.4 Maintain the following slopes for finished grades:

Driveway Grades	- min. 2.0% max 4.0%
Parking Lot Grades	- min. 2.0%
	- max 3.0% perpendicular to parking bay
	- min 4.0% parallel to parking bay
Sidewalks	- min 2.0% crossfall, max 3.5% crossfall
Hard Play Area	- min. 2.0%, max 2.5%
Soft Landscaped Areas	- min. slope 2.5%, max. slope 25%
Playing Fields	- min. slope 1.5%
Drainage Swales	- min. fall 0.5 % (preferably 1.0%)

.5 Depth of compacted topsoil - sod 125mm, seed 100mm
- shrub beds and planters 450mm

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

.1 Comply with Division One as appicable.

.2 Restrictions on noise, dust, interference, obstructions, access, hours of work: Section 01002 Special Project Requirements.

.3 Temporary facilities, garbage chutes, weather and dust barriers or partitions.

.4 Public safety: Section 01001 General Requirements, Section 01002 Special Project Requirements and Section 01535 Temporary Facilities.

.5 Restrictions on use of adjacent public and private roads, walks and property, including aerial space: Section 01001 General Instructions and Section 01535 Temporary Facilities.

.6 Recording of existing conditions: Section 01380 Construction Photographs

.7 Safety barricades and lights.

.8 Cutting out of window opening into concrete block: toothed-in block on both sides of opening with solid faced pier block. Refer to drawings.

.9 Prior to removal of any material: Section 1343 Enviromental Procedures for Hazardous Materials.

1.2 References

.1 CSA S350-M1980, Code of Practice of Safety in Demolition of Structures.

1.3 Existing Conditions

.1 Examine areas to be selectively demolished or dismantled, and confirm that their condition substantially the same as the date on which tenders closed, and as indicated in the Contract Documents. Advise the Consultant of any conditions that vary from this.

.2 Refer to Section 01001 – General Requirements, and the Hazardous Materials Assessment, prepared by Pinchin Environmental, dated Aug 21, 2012, regarding hazardous materials.

.3 Be familiar with structural system of the building and the elements being demolished or dismantled.

1.4 Demolition Drawings

.1 Where required by authorities having jurisdictions, submit for approval drawings, diagrams or details showing sequence of disassembly work and supporting structures.

.2 Submission to bear stamp of qualified professional engineer registered in Province of Ontario.

1.5 Protection

.1 Prevent movement, settlement or damage of structures, services, walks, paving, trees, landscaping, adjacent grades, and parts of existing building to remain, affected by demolition or dismantling, cutting out, or partial removal of any elements, as specified in other Sections.

.2 Provide bracing, shoring, or needling as required to support portions of existing structure to remain, where demolition or dismantling, cutting out, or partial removal of any elements, as specified in other Sections degrades the structural integrity of the structure to a point where it will not support all imposed loads. All bracing, shoring, and needling shall be designed to cause no damage to existing surfaces upon which the bracing, shoring or needling bears.

.3 Make good damage to existing elements to remain caused by demolition.

.4 Take precautions to support affected structures and, if safety of building being demolished or services appears to be endangered, cease operations and notify Consultant.

.5 Prevent debris from blocking surface drainage system, and obstructing mechanical and electrical systems, which must remain in operation.

.6 Maintain temporary supports in place until permanent structures is able to fully support all imposed loads.

.7 Shoring, bracing, or needling shall be designed by a Professional Engineer registered in the Province of Ontario, and drawings shall bear the seal of this Engineer. Submit drawings of shoring, bracing, or needling to the Engineer prior to installing.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.1 Work

.1 Dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.

.2 Carefully remove materials and equipment specified for re-use in other Sections, clean, store, and protect for re-installation.

.3 Materials to be re-used include:
1. All wood boards and wood timber from the Inn, which is still in good condition,
2. Artifacts discovered during demolition.

Store these materials in an approved manner on site; location as shall be directed.

3.3 Preparation

.1 Regarding temporary lifting of services, and/or temporarily re-route service lines entering building or on the building in accordance with authorities having jurisdiction, and to suit the Work of this contract. Post warning signs on electrical lines and equipment that must remain energized during period of work.

.2 Do not disrupt active or energized utilities designated to remain undisturbed, without Consultant's consent.

3.4 Demolition

.1 Review entire document for extent of demolition work.

.2 Remove existing equipment, services and obstacles where required for refinishing or making good of existing suraces, and replace as work progresses.

.3 At end of each day leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors of parts not to be demolished from exterior elements at all times.

.4 Demolish to minimize dusting. Keep materials wetted as directed by Consultant.

.5 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose in safe manner to minimize danger at site or during disposal.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies, filling, rough grading, excavation and backfilling. This section covers work required throughout the site.

1.2 REFERENCES

.1 Construction Specifications for Compacting - OPSS 501

.2 Material Specifications for Aggregates - Miscellaneous OPSS 1004

.3 Material Specifications for Aggregates - OPSS 1010

1.3 SCOPE OF WORK

.1 Complete all site clearing as per specifications and drawings.

.2 Complete all topsoil stripping as per Specifications and Drawings.

.3 Complete all excavation, filling and rough grading to bring site to required sub-grade as per Specifications and Drawings.

.4 Complete all compaction as per Specifications.

.5 Complete all excavation and haulage of excess fill material as required. Excess clean fill if approved by the Consultant Consultant may be placed on site in locations determined by the Consultant Consultant, and within the limits of the contract. All other excess material and material deemed not suitable for re-use on site will be removed from the site.

1.4 SITE CLEARING

.1 The Contractor shall clear the site of all rubbish, rocks, boulders, concrete blocks, construction debris, trees, tree stumps, and all useless materials and remove same off the site and dispose of.

.2 The burning and burying of any debris on the site shall not be permitted.

.3 Erect temporary silt control devices as required and as per City standard details. Maintain safety fence as required in good repair at all times. Remove safety fence from the site when the project is complete.

1.5 DEFINITION

.1 For the purposes of this specification the following definitions apply:

.1 **Stripping** means the excavation of organic topsoil and other material specified. Earth means all soils, and any other material to be excavated and not classified such as rocks or boulders, excluding concrete and stone masonry.

.2 **Imported suitable fill** means suitable fill material as specified hereafter, which is obtained by the contractor from a location or locations outside the contract area, and approved in advance by the Consultant for use on the project.

.3 **Excavation - Rock and Common** means excavation required to remove or move or relocate existing subgrade materials.

.4 **Rock Excavation** is defined as solid rock which is naturally occurring.

.5 **Common Excavation** is defined as excavation of existing non naturally occurring buried or exposed rocks and boulders and landfill as defined in Section 02070 – Part 1.6, and native non rock subgrade material, clays silts and soft shales.

It is understood that 'Common' excavation as defined above is included for all Contract items in both the Schedule of Contract Prices and Appendix A – Schedule of Contract Unit Prices, and that no extra will be paid for 'Common' excavation as defined. Rock excavation will be paid as an extra. Rock excavation is not anticipated to be required on this project.

1.6 QUALITY ASSURANCE

.1 Imported or Site Cut Fill

At least 72 hours prior to placing any imported or excavated earth fill requiring a disposal location on site, the Contractor shall file with the Consultant, written notice of the location or locations from which he intends to obtain or place the material, together with written permission from the owner of the land from which the material is to be taken.
All fill placed in the contract to meet OPSS Select Subgrade Material (SSM) Specifications compacted to a dry density of not less than 98% SPMDD. Fill excavated from the site and if approved by the Consultant or Geotechnical Consultant to be placed in a designated fill location within the site boundaries will be graded to the shapes provided to the Contractor by the Consultant or Geotechnical Consultant.

.2 Arrange and pay for compaction tests to latest ASTM D698-00ae1 for Standard Proctor Dry Density on compacted fill by independent testing agency approved by the Consultant.

.3 Provide adequate notice to permit scheduling of testing operations. Ensure work is ready for testing procedures. Conduct tests on the basis of 1 test for every 500m2 (5382 sq.ft.) in general fill areas and 1 test for every 10m (32') in trenches per every 0.6m (2') of depth. Costs for testing shall be borne by the Contractor.

.4 The Contractor shall provide site supervision during construction and co-ordinate inspections with the Consultant or Geotechnical Consultant during grading operations.

.5 The Contractor shall provide grade stakes as necessary and any other necessary installation control services required during construction.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Stockpile existing fill materials in locations designated by the Consultant and as defined on the drawings..

.2 Use imported stone as specified.

.3 Excavate and haul and place on site in designated locations all excess fill material as required.

.4 The Contractor will be responsible for any damage to Corporate or private property which may be incurred.

.5 No storage of equipment or material will be permitted upon existing hard surface areas, within or adjacent to the construction site.

1.8 SHORING AND BRACING

.1 Comply with all Safety requirements, applicable local regulations and Occupational Health and Safety Act latest edition.

.2 Shore and brace all excavations sufficiently to prevent caving in and to support existing structures, roads or services.

.3 Ensure shoring is in accordance with local municipal and provincial regulations and obtain all necessary permits.

.4 Erect warning signs and protective barriers in accordance with local municipal and provincial regulations.

.5 Make good any damage and be liable for any injury resulting from inadequate shoring or bracing.

1.9 WARRANTY

.1 Guarantee all work in this section from slipping, sinking, eroding, or any other change in grade during the warranty period.

PART 2 - PRODUCTS

2.1 MATERIAL

.1 General fill material: clean, free from debris, organic matter and other deleterious material.

.2 Granular fill material: as called for on the drawings and conforming in all respects with OPSS 1001 and 1010, latest edition.

.3 Imported Suitable Fill: The material shall meet the requirements for select subgrade material of OPSS 1010 except for the following revised gradation requirements.

MTO Sieve Designation	Percentage Passing by Mass
1.18 mm	10 - 90
300 micron	5 - 70
150 micron	2 - 40
75 micron	0 - 20

.4 Geotextile: Geotextile Tensile Strength of 700N, 1200N, or approved equal or as per drawings.

PART 3 - EXECUTION

3.1 GENERAL

.1 Conform to the requirements of Section 01560 - Environmental Protection.

3.2 SITE CLEARING

.1 Clear and remove from the site all rubbish, rocks, boulders, tree stumps and all useless materials.

.2 Do not burn any materials on site.

3.3 FILLING WITH SUITABLE FILL

.1 Strip the original ground the areas to be filled of all topsoil and vegetable manner and as indicated on the drawings. Store topsoil on site as indicated on the drawings.

.2 Fill with suitable fill material in uniform layers not exceeding 300 mm in depth (prior to compaction to 98% Standard Proctor Density or as per drawings).

.3 Shape and compact each layer to the line and cross section and density specified before placing succeeding layer. Remove stones greater than the fully compacted depth.

.4 Compact each layer at a moisture content suitable for obtaining the requirement density.

.5 Grade to a maximum tolerance of 100 mm +.

3.4 ROUGH GRADING

.1 Where necessary strip topsoil and stockpile as directed and as indicated on the drawings.

.2 Cut back areas that are to be lowered to the grades shown on the drawings, allowing for the placement of topsoil and/or specified materials. Obtain the written approval of the Consultant before using excavated material as fill. Prior to placing fill material, scarify the existing grade to a minimum depth of 75mm (3").

.3 Where existing grade is to be raised, supply and place fill material approved by the Consultant in progressive 150mm (6") lifts (loose material depth). Compact each lift to 98% Standard Proctor Dry Density or as per drawings before placing subsequent layers.

.4 Provide finished rough grade parallel to finished grade, allowing for the placing of the specified surface material and base and to a tolerance of plus or minus 50mm (2"), and compacted to 98% Standard Proctor Dry Density or as per drawings under areas to be sodded, seeded or planted.

3.5 GENERAL EXCAVATION

.1 Stake out the locations of all items requiring excavation and obtain the approval of the Consultant before commencing work.

.2 Dispose of excavated material off site unless approved for use as fill material or backfilling material by the Consultant or Geotechnical Consultant.

.3 Excavate to the elevations and dimensions indicated or required for construction work. All depths detailed are shown depth after compaction.

.4 Obtain the approval of the Consultant for all excavations before proceeding with construction activities. Consultant and Geotechnical Consultant will be required to view all wall excavations prior to construction to determine suitability of existing subgrade.

.5 Where bearing capacity of the subsoil appears to be insufficient, obtain the written approval of the Consultant or Geotechnical Consultant to have soil investigations carried out.

.6 Fill extra or over excavations with concrete or as directed at no cost to the Contract. Extra or over excavations are defined as excavations that exceed the requirements of the details, specifications or drawings.

.7 Correct unauthorized excavation at no extra cost.

.8 Do not disturb soil within the branch spread of trees or shrubs that are to remain. If excavating through roots, excavate by hand and cut all roots with a sharp hand saw or chain saw. Where excavation results in the loss of more than 20% of the root system of any tree, have the plant material pruned by a qualified arboriculturalist to compensate for root loss. Pay all costs incurred.

.9 Incorporate recommendations from Geotechnical report for excavation and backfilling.

3.6 BACKFILLING

.1 Do not commence backfilling until work has been approved by the Consultant.

.2 Ensure areas to be backfilled are free of debris, snow, ice, water or frozen ground.

.3 Place specified fill materials in continuous horizontal layers not exceeding 150mm (6") loose depth and compact to 100% Standard Proctor Dry Density or as per drawings.

.4 Backfill simultaneously on both sides of walls to equalize soil pressure.

.5 Make good any settlement or subsequent damage to adjacent structures or to other work under this contract caused by improper or inadequate compaction.

3.7 TESTING

.1 The Contractor to test compaction as per Section 1.6. The Consultant reserves the right to have additional soil compaction tests undertaken.

.2 Such tests shall be certified by an approved testing agency arranged and paid for by the Contractor.

3.8 ADJUST AND CLEAN

.1 Prior to any fertilizing and sodding or seeding, clean the site of all garbage, paper, sticks, and stones over 25mm in diameter.

3.9 MAINTENANCE

.1 Maintain all grades until total performance of completed parks works. Maintenance will include all filling and re-grading to retain grades at required elevations.

.2 Mud tracking and cleaning of roads and walkways both off and on the site is the responsibility of the Contractor.

.3 Dust Control is the responsibility of the Contractor. Due to the nature of this site and the proximity of residences and schools, the Contractor must make all efforts to control dust by means approved by the Consultant.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

.1 Comply with requirements of Division 1.

1.2 RELATED WORK

.1 Earthwork: Section 02200

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Rigid plastic pipe and fittings: CSA B182.1-M92 perforated and unperforated. Nominal pipe diameter 100 mm unless otherwise indicated.

.2 Flexible drainage pipe: Big "O" 404 perforated flexible pipe with filter wrap, 100 mm diameter unless otherwise shown.

.3 Protection and Drainage Board shall be *Mira*DRAIN 6000XL, a three dimensional dimpled core and geotextile fabric. *Mira*STICK adhesive or a washer headed concrete nail for securement of protection board. *Mira*DRAIN by mIRAdri moisture Protection Products.

.4 Drainage course aggregate: screened pea gravel 6 to 13 mm or 19 mm clear stone.

.5 Filter mat: non-clogging type: Terrafix 270 R by Terrafix, or equivalent product by other manufacturer approved by Consultant.

PART 3 - EXECUTION

3.1 LAYOUT

.1 Establish grades and inverts from appropriate bench marks. Lay out lines as shown.

.2 Slope drainage pipes at least 0.5%.

.3 Lay pipe in straight lines; turn corners using 45o bends.

3.2 INSTALLATION: GENERAL

.1 Coordinate work of this Section with Section 02200 Earthwork.

.2 Protect all areas of membrane with protection and drainage board. Place protection and drainage board continuously around foundation wall with flat side against the wall and filter fabric toward the soil. Adhere with MiraSTICK adhesive or a washer headed concrete nail and lap joints and apply locking clips.

.3 Do not place pipe in direct contact with rigid materials such as rock, brick, wood. Do not use grade stakes, stones, masonry or concrete fragments or any type of shim under pipe.

.4 Join pipe sections by means of couplings. Provide end plugs on open ends of pipe runs at high points. Provide fittings such as elbows, bends, tees, adapters, reducers, as required to form a complete drainage system. Carefully tap tapered fittings into pipe; do not overdrive.

.5 Install perforated pipe with holes and coupling slots facing down.

.6 Aggregate materials shall be damp when placed. If necessary, spray with water using fog nozzle to assist hydraulic consolidation.

.7 Place aggregate materials by hand around and above pipe in successive 150 mm lifts. Consolidate each lift by tamping moderately; prevent damage to pipes.

.8 Do not cover pipes until reviewed by Consultant.

.9 Construct protect outfall at drain discharge points.

3.3 BUILDING PERIMETER DRAINAGE

.1 Provide perimeter drainage at outside of external foundation walls where floor slab is located belowfinish grade, and where indicated.

.2 Place filter fabric into prepared excavation. Size filter fabric to completely wrap drainage course, lapping at joints minimum 300 mm.

.3 Place minimum 150 mm drainage course aggregate on filter fabric and consolidate.

.4 Lay rigid drainage pipe to layout shown. Unless other size is indicated, provide 100 mm diameter perforated pipe. Connect to storm drainage system as indicated.

.5 .5 Provide minimum 150 mm thick drainage course aggregate at sides and top of drainage pipe.

.6 Close filter fabric over top of drainage course and secure lap in place. Lap filter fabric minimum 300 mm.

3.4 PAVING DRAINAGE

.1 Provide subdrainage below paved areas, at locations and to extent indicated.

.2 Provide flexible drainage pipe with minimum 150 mm drainage course aggregate all sides.

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

.1 Section 02200 - Excavating, Trenching and Backfilling.

.2 Section 03300 - Concrete.

1.2 SUMMARY

.1 Comply with requirements of Division 1.

.2 Conform to Ontario Provincial Standard Specification OPSS 310.

.3 Obtain all necessary approvals and conform to requirements of local municipality for work on public property.

.4 Comply to the requirements of Section 01400.

.5 Testing agency shall:

.1 Perform grain size analysis.
.2 Monitor moisture content of granular fill.
.3 Determine in-site density, thickness and moisture content of compacted fill.
.4 Monitor asphalt mixes properties and asphalt aggregate gradation.
.5 Check suitability of equipment used.
.6 Warranty - Be responsible for the repair at no cost to the Owner, of any /defects In the work of this and other Sections due to faults in the workmanship or materials provided in this Section for a period of 2 years from the date of Substantial Performance.

1.3 Measurement Procedures

.1 Asphalt paving will be measured as noted in the contract unit price schedule, including all excavation, base preparation, compaction and all incidental items required to complete the installation as shown on the drawings and details, including line painting of the parking area.

.2 Two types of paving profiles are used: light duty asphalt installed at car parking zones and heavy duty paving along main driveway access and fire route.

1.4 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Submit to the Soils Engineers, samples of material for sieve analysis at least three (3) weeks before commencing asphalt work.

1.5 OPSS Forms

.1 The Contractor shall have the current copies of all OPSS forms and details mentioned in this specification on the site for the duration of this work.

1.6 Delivery and Storage of Materials

.1 Coarse and fine aggregates shall be stored separately, in free draining stockpiles and in such a manner as to prevent contamination and segregation.

1.7 Quality Assurance and Testing

.1 The asphalt contractor shall have a minimum of five (5) years of experience in asphalt paving work.

.2 Asphalt plants, spreading equipment and rollers and asphalt paving to meet the requirements of the current applicable OPSS sections.

.3 Haul trucks to be of adequate size, spread and condition to ensure orderly and continuous operation. Employ suitable hand tools.

.4 It is the responsibility of the Contractor to contact the testing laboratory for tests and to give them timely notice.

.5 If any test does not meet the specifications, it will be the Contractor's responsibility to remedy the work and pay for all subsequent testing necessary to achieve the specified results.

.6 Testing to be conducted for this section of work is as follows:

.1 subgrade to be minimum 98% Standard Proctor Maximum Dry Density
.2 granular A compacted to 100% Standard Proctor Maximum Dry Density
.3 asphalt to be tested for content and grain size and mix

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Materials and thicknesses to conform to applicable details as shown on Drawing No. A101, Detail No. 6/A101 (Heavy Duty) and Detail No. 7/A101 (Light Duty)

.2 Aggregates to: OPS1010.

.1 Granular A – or 19mm Crusher Run Limestone

.3 Prime coat: MTO Primer or SS-1 to OPSS1103.

.4 Tack coat: SS-1 to OPSS1103.

.5 Asphalt concrete: to OPSS1150.

.1 Hot mix, hot laid HL3

.2 Hot mix, hot laid HL8

.6 Paint thinner: to CGSB1-GP-5M.

.7 Pavers: mechanical grade controlled, self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated conforming to OPSS 310.06.01. Blade graders are not permitted for spreading asphalt.

.8 Rollers: sufficient number of rollers of type and mass to obtain specified density of compact mix in accordance with OPSS 310.06.02.

2.2 Asphalt paving design shall conform to the recommendations of the soils study and Geotechnical Consultant. All driveways and loading areas shall be heavy duty asphalt paving. Paved play areas shall be medium duty asphalt paving.

2.3 Pavement markings shall be 125 mm wide, yellow: CGSB 1-GP-74M

PART 3 - EXECUTION

3.1 Site Preparation

.1 Set out work to lines and levels shown on Drawings. Gain approval from the Town of all works prior to installation. Maintain such lines and levels for duration of work.

.2 Excavate and prepare all bases as noted on details. Remove and dispose of existing unsuitable subgrade materials off site.

.3 Verify grades of subgrade for conformity with elevations and sections before placing base material.

.4 Disturbed subgrade or clean fill shall be compacted to 98% of Standard Proctor Density in accordance with ASTM D698-70.

.5 If required, place sub-base material in 75 mm lifts, compacting each lift to 98% SPMDD.

.6 Gain final sub-grade approval from the Soils Consultant prior to placing base material.

3.2 Base Material

.1 Exercise due care at all times to prevent base material from becoming contaminated by clay or other types of deleterious materials.

.2 Place base material to compacted thickness as indicated.

.3 Place in layers not exceeding 150 mm compacted thickness. Compact to density not less than 98% maximum dry density in accordance with ASTM D698.

.4 The granular surface shall be rolled continuously, compacted and bladed as necessary, and shall be within 10 mm of specified grade, but not uniformly high or low.

.5 Finished surface of granular material shall not deviate more than 10 mm from designed grade.

.6 Gain approval from the Soils Consultant of the installed base course. Approval to place asphalt shall be contingent upon the condition of base test results indicating that the required compaction has been achieved.

3.3 Transportation of Mix

.1 Transport mix to job site in vehicles cleaned of foreign material.

.2 Paint or spray truck beds with light oil, limewater, soap or detergent solution, at least once a day or as required. Elevate truck bed and thoroughly drain. No excess solution will be permitted.

.3 Schedule delivery of material for placing during daylight hours.

.4 Deliver material to pave at a uniform rate and in an amount within the capacity of the paving and compacting equipment.

.5 Deliver loads continuously in covered vehicles and immediately spread and compact. Deliver and place mixes at a temperatures recommended by OPSS documents.

.6 Air temperature during placing of mixture shall be minimum 7ºC (45ºF) and rising. Temperature of mixture when spread shall be not less than 120ºC (245ºF) nor more than 150ºC (300ºF). Do not increase temperature of mixture to offset long distance hauling.

3.4 Asphalt Placing

.1 Place asphalt to thickness, grades and lines indicated on drawings and details.

.2 Asphalt shall not be placed during rainfall, or on a surface which is wet or covered by ice or snow, or if the temperature is below recommendations in OPSS documents.

.3 Compact asphaltic mixture as soon as it can bear roller without undue displacement or hair cracking and continue until all roller marks are eliminated. Keep speed of roller slow enough to avoid displacement of mixture. Keep roller wheels slightly moistened by water to prevent adhesion of mixture. Excess water is not permitted. Compact mixture with hot tampers in locations that are not easily accessible to machine roller.

.4 Use self propelled Class 'B' roller for initial and final rolling.

.5 For vehicular areas carry out compaction in three operations in close sequence:

- .1 “Breakdown” rolling with two wheeled rollers as soon as possible after spreading.
- .2 Rolling with pneumatic tired or tandem rollers immediately after the first rolling to achieve the minimum specified density.
- .3 Final rolling with two or three axle tandem rollers to remove roller marks.
- .4 Compact mix with hot tampers or other equipment approved by the Town in areas inaccessible to rollers.

3.5 Pavement Construction

.1 Application of prime coat: OPSS302.

.2 Construction of asphalt concrete: OPSS310 and in conformance with OPSS Forms 310, 501,1010 and 1150.

3.6 Finish Tolerances

.1 Upon completion of compaction each pavement course shall be:

- .1 Smooth and true to crown and grade with variation not more than 3 mm from thickness shown on Drawing. Do not place any asphaltic course less than 25 mm thick or more than 75 mm thick.
- .2 Finished asphalt surface to be within 10 mm of design elevation, but not uniformly high or low, and with no irregularities greater than 10 mm in 4.5m.
- .3 Compacted to a density not less than 98% of density of laboratory compacted mixture.

3.7 Defective Work

.1 Correct irregularities which develop before rolling is completed, by loosening surface mix and removing or adding material, as required. If irregularities or defects remain after final compaction, remove surface course promptly and lay new material to form a true and even surface and compact immediately to specified density.

.2 Repair areas showing checking or hairline cracking.

3.8 Joints

.1 Cut back bituminous course to its full depth in straight or curved lines as required to expose a fresh, straight, vertical surface. Remove broken and loose material.

.2 Asphalt shall be placed in such a manner that the joint shall not be allowed to cool before adjacent asphalt course is applied.

.3 Overlap previously laid strip with spreader by 150 mm, plus or minus 50 mm.

.4 Carefully place and compact hot asphaltic material against joints. Correct any unsatisfactory joint before proceeding with work.

.5 Feathering of joints is not permitted.

3.9 Cleaning

.1 After completion of asphalt work and prior to final inspection, clean all areas contaminated by asphaltic or other materials resulting from the work.

3.10 Warranty

.1 Warranty all workmanship and materials for a period of two (2) years from the date of Substantial Completion.

.2 Repair all cracks or settlement which occurs during the Warranty period at no additional cost to the Town.

.3 Upon notification by the Town, repair or make good failure, deterioration or damage in accordance with Part B - Section 15.

3.11 Line Painting at Parking Area

.1 The parking stall lines shall be accurately laid out with the use of a mason’s line, 50mm width and be painted with two coats of 100% acrylic latex paint such as “California Products” or approved equal.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

.1 Division One, General Requirements, is a part of this section and shall apply as if repeated here.

PART 2 - PRODUCTS

2.1 MATERIALS

All topsoil, supplied by the Contractor shall meet the following requirements:

pH	5.5-7.5
Total Salts (mmhos/cm)	<1.5
Organic Matter %	4-15
Phosphorus (ppm)	10-60
Potassium (ppm)	80-250
Magnesium (ppm)	100-300
Calcium (ppm)	1000-4000
Sodium (ppm)	<200
Chloride (ppm)	<100
Sodium Absorption Ratio	<15
Sand Fraction %	20-75
Silt Fraction %	5-50
Clay Fraction %	5-30
Texture	Loam/Sandy Loam
Atrazine (ppm)	<0.05

PART 3 - EXECUTION

3.1 TOPSOIL SPREADING AND FINE GRADING

.1 Obtain approval by the Architect of prepared subgrade prior to spreading topsoil.

.2 Spread topsoil to the following depths:

.1 150 mm for all areas to be seeded and sodded.

.2 Depth indicated is compacted depth.

.3 Spread topsoil on prepared sub-grade of the work site.

.4 Fine grade topsoil to produce a smooth even surface free from debris, sod, stones and roots.

.5 Compact (85% Standard Proctor Density).

.6 Meet and match all existing turf areas, curbs, manholes and catchbasin frames in a smooth uniform line to the satisfaction of the Consultant.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

.1 Comply with requirements of Division 1.

1.2 QUALITY CONTROL

.1 The work shall be carried out by skilled tradesmen in full accordance with specifications and best trade practice.

1.3 INSPECTION

.1 Obtain approval of base before proceeding with paving work.

.2 Complete all layout work and set final grades for paving.

.3 Give timely notice, in writing, when layout work is ready for inspection by Architect. Paving placed prior to inspection will be at the contractor's responsibility.

1.4 SAMPLES

.1 Submit sample prior to installation.

.2 All work shall conform to approved samples.

.3 Revise existing flagstone. Replacement stone for any units damaged during removal shall match original in colour & thickness.

1.5 PROTECTION

.1 Protect all other work from damage and contamination resulting from paving installation.

.2 Make good all damages, and clean up contaminated work at no extra cost to the City and to the approval of the Architect.

1.6 MAINTENANCE AND GUARANTEE

.1 Maintain all paving from time of installation until acceptance of work.

.2 Upon completion of all work, furnish a written guarantee in a form approved by the City.

.3 The guarantee shall include all paving work, including finishes and shall extend over a period of one (1) year from the date of acceptance.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Paving to be installed as per details.

.2 Paving to be laid as per original layout.

.3 Granular `A' to conform to MTC Specification.

.4 Bedding sand should be well graded clean washed sharp sand with 100% passing a 8 mm sieve size. No particles should pass smaller than the #200 sieve. Bedding sand specification should conform to either Can/CSA - A23.1 - M90 or ASTM C 33 standard. Limestone screenings are not acceptable as levelling bed material.

.5 Mortar material as specified in Section 04100 - Mortar and Grout for Masonry.

.6 Replacement Stone if required:

.1 Stone shall be limestone to match existing in colour and texture; Gray Credit Valley Sandstone or equal. Provide to suit 5” bed width, split face and bed, random heights in 4”, 6” and 8” evenly distributed. Provide sample panel of one square metre for approval.

2.2 DELIVERY AND STORAGE

.1 Layout all paving stone areas and set out finished grades by means of grade stakes, clearly marked.

.2 Report any discrepancies immediately to the Landscape Architect for decision prior to installation of paving stones.

.3 Obtain approval of layout and finished grades before proceeding with work.

.4 Excavate to the minimum specified depths, as shown on drawings. Maintain subgrade parallel to finished grade in all cases.

.5 Compact sub-grade uniformly to minimum ninety-eight percent (98%) Standard Proctor Density.

.6 Place granular materials in layers not exceeding 150 mm in depth.

.7 Maintain edges of all paving stone areas straight and continuous.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Placing of setting bed:
- .1 Spread bedding sand evenly over prepared base, so as to avoid segregation of materials. Depth of bedding sand as per manufacturers specifications.
- .2 Trowel mixture immediately to obtain a smooth surface free of irregularities.

.2 Co-ordinate paver laying from one edged area to minimize cutting of stones.

.3 Cutting of stones shall be performed with a "guillotine" type cutter as recommended by the manufacturer.

.4 All cuts shall be clean and match true to edging stones.

.5 The contractor shall replace, at no extra cost to the City, all cut stones marked as unacceptable.

.6 All paving stones shall be laid butt tight to each other.

.7 Joints shall be grated with 1-1-6 mortar mix (see masonry specification).

.8 Sprinkle paved area with a fine spray of water to ensure compaction in the joints.

.9 The finished paving surface shall be smooth and even throughout, free of any irregularities in the paving surface.

.10 Obtain approval of installation of paving work.

3.2 CLEAN-UP

.1 After completion of work, clean-up area.

.2 Remove all excess materials and equipment.

.3 Clean other areas which have been contaminated as a result of paving work.

3.3 PROTECTION AFTER COMPLETION

.1 Be responsible for protection and maintenance of paving from time of installation until acceptance of work. Repair all damages during this period at no extra cost.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

.1 Provide all material and labour required for the completion of the Contract. Breakdown of Work by Section is for guidance only and is not necessarily complete.

.2 Work Furnished and Installed:

.1 Concrete reinforcement.
.2 Reinforcing bars for masonry.

.3 Work Furnished but not Installed:

.1 Reinforcing bars for masonry, including lintels, band courses, and piers.

.4 Work Installed but Furnished By Other Sections:

.1 Anchor bolts.

.5 Related Work Specified Elsewhere:

.1 Concrete Formwork, Section 03100.
.2 Cast-in-Place Concrete, Section 03300.

1.2 STANDARDS, CODES AND ACTS

.1 Conform with the *Ontario Building Code 2006 (O. Reg. 403/97) and any applicable acts of any authority having jurisdiction and the following:

.1 Manual of Standard Practice (2004), Reinforcing Steel Institute of Ontario (RSIO).
.2 CAN/CSA-A.23-94 - Concrete Materials and Methods of Concrete Construction, Canadian Standards Association.
.3 CSA-A.23.3-04 - Design of Concrete Structures, Canadian Standards Association.
.4 CSA-G30.3-M1983 (R2002), G30.5-M1983 (R1998), G304-M1983 (R1998), G305-M1983 (R1998), and CAN/CSA-G308-M92 (R1998) - series of standards for Concrete Reinforcement, Canadian Standards Association.

.5 CSA W186-M1990 (R2002), Welding of Reinforcing Bars in Reinforced Concrete Construction, Canadian Standards Association.

.2 Where there are differences between the specifications, drawings, codes, standards or acts, the most stringent shall govern.

1.3 TOLERANCES

.1 Perform fabrication and setting so that completed work will be within the tolerances set out in CSA-A.23, and RSIO Manual.

.2 These tolerances are acceptable with regard to structural requirements. Interfacing tolerances may not be compatible with the above. Review and coordinate interfacing tolerances so that the various elements come together properly.

1.4 QUALIFICATIONS

.1 Welding Reinforcement

.1 The organization and personnel undertaking the welding of reinforcement shall be qualified by the Canadian Welding Bureau under the requirements of CSAW186.

1.5 SUBMITTALS

.1 Submit, shop drawings for reinforcement, and certificates for review by the Consultant:

.1 Refer to Section 01300.

.2 Shop Drawings for Reinforcement

.1 After Consultant has reviewed and returned opening drawings, prepare reinforcement placing drawings and bar lists taking into account all openings and recesses.

.2 Prepare placing drawings to a minimum scale of 1:50 in a clear complete manner that will permit placing of reinforcement to be performed without reference to contract drawings. Do not reproduce the structural drawings.

.3 Detail reinforcement in accordance with the contract documents, CAN/CSA-A.23 and detailing standards in RSIO Manual.

.4 Except as noted otherwise on the drawings, provide standard hooks on reinforcement in accordance with CSA-A.23.3.

.5 Amongst other items, indicate the following:

- Bar sizes
- spacing

- location and quantities of reinforcing
- Identify each bar with a code mark corresponding to the bar lists.

.6 Detail sections to fully illustrate placement of reinforcement at areas such as change of levels, wherever else required.

.7 Location and embedment of dowels.

.3 Certificates

.1 Steel of Canadian Manufacture: Mill test certificates properly correlated to the reinforcement used for fabrication.

.2 Steel of other than Canadian Manufacture: Test data that each size and grade of reinforcement proposed meets specification requirements. Reinforcement approved for use by the Consultant shall be identified in a manner suitable to the Consultant. Only steel that has been approved will be accepted on jobsite.

.3 Weldable Reinforcement: Chemical composition and verification of weldability.

.4 Submit code marks or symbols used on reinforcement of each manufacturer so that Consultant may readily identify grades and sizes of reinforcement.

.4 Substitutions

.1 Substitution of different size bars permitted only upon written approval of Consultant.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Reinforcement

.1 Deformed steel to CSA G30 Series and to the material specification shown on the drawings.

.2 *Reinforcement to be welded shall conform to the material recommendations contained in CSA-W186.

.2 Welded Wire Fabric

.1 Conform to CSA-G30.5M.

.3 Support Accessories

.1 Chairs, bolsters or spacers of sufficient strength to rigidly support the weight of reinforcement and construction loads. In the case of concrete exposed to view or weather the accessories shall be such that no metal is permitted to come closer than 38 mm from a formed face and 50 mm from a trowelled surface. Use precast

concrete supports for exposed concrete beams and soffits and concrete cast against soil.

PART 3 - EXECUTION

3.1 FABRICATION

.1 Fabricate reinforcing in accordance with CAN/CSA-A.23.

.2 Identify with a metal tag each bar with code mark corresponding to that appearing on bar list.

.3 Bend reinforcement once only and at room temperature. Do not straighten or rebend reinforcement. Do not use bars with kinks or bends not shown on the drawings.

.4 Replace bars which develop cracks or splits.

3.2 PLACING

.1 Prior to concreting, place reinforcement, support and secure against displacement in accordance with the requirements contained in RSIO Manual and to the tolerances specified in CSA-A.2. Tolerances shall be non-cumulative.

.2 Conform to requirements shown for concrete cover to reinforcement.

.3 Place reinforcement accurately and secure against displacement by using annealed iron wire ties or clips, or as otherwise specified, at intersections. Tack welding of reinforcement to secure in place will not be permitted.

.4 Secure reinforcement in walls using sufficient spacers on each face to maintain the requisite distance between reinforcement and wall face and so that vertical bars are plumb. Provide a minimum of 10 mm diameter spreader bars spaced at 2 m centres in both directions.

.5 Set column and wall dowels prior to concreting with wooden templates or other approved means.

.6 Do not drive or force reinforcement into fresh concrete.

.7 Preassemble column and beam cages as necessary. Do not "spring" or bend ties and stirrups in order to place longitudinal reinforcement.

.8 Pre-tie reinforcement for footings and lower into place so as not to disturb the soil at founding elevation.

3.3 FIELD BENDING

.1 Do not field bend reinforcement except where indicated or authorized in writing by Consultant.

.2 When field bending is authorized, bend without heat, applying a slow and steady pressure.

.3 Replace bars which develop cracks or splits.

3.4 WELDED WIRE FABRIC

.1 Where no reinforcement is shown, provide 152 x 152 MW9.8/MW9.8 welded wire fabric at mid-depth in slabs on grade.

.2 *Supply welded wire fabric in flat sheets on grade and install between pours.

.3 Lap ends and sides of fabric not less than 150 mm.

3.5 CONSTRUCTION JOINTS

.1 Obtain approval from the Consultant for locating and details of construction joints not shown.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

.1 Provide all material and labour required for the completion of the Contract. Breakdown of Work by Section is for guidance only and is not necessarily complete.

.2 Work Furnished and Installed:

.1 Cast-in-place concrete.

.3 Work Furnished but not Installed:

.1 Concrete for masonry including lintels, band courses and piers.

.4 Related Work Specified Elsewhere:

.1 Concrete Reinforcement, Section 03200.

.2 Backfilling below base course beneath slabs and behind walls under Section 02200.

.3 Sub-grade material including moisture barrier, Section 02200.

.4 Grouting beneath base plates bearing on masonry, Section 04100.

1.2 STANDARDS, CODES AND ACTS

.1 Conform with the Ontario Building Code 2006 under O. Reg. 403/97, and amendments O. Reg. 22,102 and 122/98, O. Reg. 152,278,593 and 597/99, O. Reg. 205/00, O. Reg. 283/01, O. Reg. 220/02, O. Reg. 304 and 305/03, O. Reg. 23 and 245/04 and O. Reg. 145, 146, 236 and 389/05 and any other applicable acts of any authority having jurisdiction and the following:

.1 CAN/CSA-A23.1-04, Concrete Materials and Methods of Concrete Construction, Canadian Standards Association.

.2 CSA-A23.3-04, Design of Concrete Structures for Buildings, Canadian Standards Association.

.3 ASTM C260-01, Standard Specification for Air-Entraining Admixtures for Concrete, ASTM International.

.4 ACI-347-04 - Guide to Formwork for Concrete, American Concrete Institute.

.5 CAN/CSA-S269.3-M92 (R2003) - Concrete Formwork, Canadian Standards Association.

.2 Where there are differences between the specifications, drawings, codes, standards or acts, the most stringent shall govern.

1.3 TOLERANCES

.1 Perform placing operations so that completed work will be within the tolerances set out in CAN/CSA-A23.1.

.2 These tolerances are acceptable with regard to visual and structural requirements. Interfacing tolerances may not be compatible with the above. Review and coordinate interfacing tolerances so that the various elements come together properly.

1.4 CONCRETE MIX DESIGN

.1 Design of Mix

.1 Design the mix in accordance with CSA – A23.1 so that concrete will be homogeneous, uniformly workable, and readily placeable into corners and angles of forms and around reinforcement by the methods of placing and consolidation employed on the work, but without permitting materials to segregate or excessive free water to collect on the surface. The concrete, when hardened, shall have the qualities specified.

.2 Cement Type: 10 Normal.

.3 Specified Strength: As called for on drawings.

.4 Water Cement Ratio, Slump and Air Content: As called for on the Drawings. These requirements are for concrete at the point of placing.

.5 Nominal Size of Coarse Aggregate: 20 mm.

.6 Admixtures: Type WN water reducing admixture.

.7 Fly Ash: Except as noted above, cementing materials for concrete shall contain 40% fly ash by mass. Do not use fly ash in concrete that will be exposed to view and in concrete that will be exposed to freeze-thaw cycles or de-icing chemicals.

.8 Do not use recycled concrete aggregate in slabs or in concrete exposed to view. Except as noted, recycled concrete shall constitute up to 100% of the coarse aggregate for concrete.

.9 Use of calcium chloride is not permitted.

1.5 SAMPLES AND ASSISTANCE

.1 General

.1 Supply samples of all materials and the following, the cost of which shall be paid for by this trade.

.2 Concrete Test Cylinders

.1 Cooperate in the execution of the concrete cylinder testing program. Furnish concrete required, protect specimens against injury and loss, and assist in the sampling and storage of specimens.

.2 Sample concrete and cast cylinders in accordance with CAN/CSA-A.23.1.

.3 In accordance with requirements of CAN/CSA-A.23.1, provide storage facilities for the initial 24 hours of site storage of all cylinders and the subsequent site storage of field cured cylinders. Suitably equip the 24 hour storage facility with humidity and temperature control equipment and maximum/minimum thermometers. It shall be sufficiently large to handle the maximum number of cylinders required at any one time.

.4 Provide sufficient field curing storage facilities so that cylinders representing the various areas can be safely stored in locations representing the curing conditions for those areas. Move the field-cured cylinder storage facilities from area to area as the work progresses.

.3 Soil Inspection

.1 Assist the testing company or soils investigation firm to make their inspections or tests.

.4 Cold Weather Concreting Plan

.1 Submit for review a plan for cold weather concreting. Included as a minimum:

• Curing period for concrete selected if accelerators are to be used to reduce the length of time winter heat is required.
• Method of application of winter heat to the concrete and soil for the initial curing period, be it through construction of a heated enclosure or application of radiant, hydronic heaters such as Ground Heaters® or approved equivalent.
• Method of protection of the concrete and soil for the balance of the curing period, be it through the use of insulating blankets, straw, fill or other methods.
• Method of pre-heating of embedded elements such as reinforcing steel and cast-in inserts.

1.6 SUBMITTALS

.1 Submit the following for review by the Consultant:

.2 Certificates

.1 Prior to beginning work and when any change in materials or source of supply is proposed, provide the following certificates prepared by an approved inspection company. The cost of this work shall be borne by the Contractor.

• Certification that aggregates and cements proposed for the work comply with requirements of specifications and CSA-A.23.3.
• Certification that compressive strength, water-cement ratio, slump, entrained air content and other specified properties will be met, using the proposed mixes.
• Give proportions by dry weight of cement, coarse and fine aggregate, type and amount of admixture or air entraining agents, and water-cement ratio, for the mix proposed for each class of concrete.
• State for each mix if fly ash is used in lieu of cement.
• Verification that air entraining admixtures is compatible with water reducing admixtures.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Use excess concrete for: additional paving, flowable fill, storm structure covers, underground utility pipe kickers.

.2 Use trigger operated spray nozzles for water hoses.

.3 Designate a cleaning area for tools to limit water use and runoff. Cleaning area should be a portion of the site which is be paved at a later date.

.4 Carefully coordinate the specified concrete work with weather conditions.

.5 Ensure emptied containers are sealed and stored safely for disposal away from people.

.6 Prevent plasticizers, water-reducing agents and air-entraining agents from entering drinking water supplies or streams. Using appropriate safety precautions collect liquid or solidify liquid with an inert, non-combustible material and remove for disposal. Dispose of all waste in accordance with applicable local, provincial and national regulations.

.7 Choose least harmful, appropriate cleaning method which will perform adequately.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Concrete

.1 Conform to CAN/CSA-A.23.1.

.2 Coarse Aggregate: from locally quarried non-alkali reactive rock, Mineral or Air-cooled Blast Furnace Slag

.3 Recycled Concrete Coarse Aggregate: Clean, hard, strong, durable particles, free of absorbed chemicals, coatings and other fine materials, crushed from concrete having a compressive strength not less than 35 MPa

.4 Supplementary Cementing Materials: Type F Fly Ash to CAN/CSA-A23.5

.5 Cementitious Hydraulic Slag: to CAN/CSA-A363

.6 Water: to CAN/CSA-A23.1

.7 Admixtures: Air entraining agents or water reducing admixtures conforming to CSA CAN3-A266.1.

.8 Chemical admixtures: to ASTM C494. Consultant to approve accelerating or set retarding admixtures during cold and hot weather placing.

.9 Concrete retarders: to ASTM C494 water based, low VOC, solvent free. Do not allow moisture of any kind to come in contact with the retarder film.

.10 Curing Compound: Water based curing compound conforming to CSA-A.23.1. such as Safe Cure & Seal (J-18, J-19) by Dayton/Richmond or approved equivalent.

.11 Grout Beneath Base Plates: Non-shrink flowable grout In-Pakt or equal having a compressive strength at 28 days of at least 35 MPa.

PART 3 - EXECUTION

3.1 CONCRETE WORK AT EXISTING STRUCTURE

.1 Before proceeding with any work in or adjacent to the existing structure, verify that conditions are as indicated on the drawings. If they are not, do not proceed until the Consultant has given instructions.

.2 Where openings are shown to be cut into the existing structure, drill at corners and saw cut remainder such that saw cuts do not extend into structure to be retained.

3.2 FOOTINGS

.1 Found footings on naturally consolidated undisturbed soil capable of safely supporting 150 kPa within acceptable limits of settlement.

.2 Founding elevations, based upon the report of the sub-surface investigation, at which it is presumed these conditions pertain are shown on the foundation plan.

.3 Founding elevations must be verified by the sub-surface investigation firm before footings are placed.

.4 See Section 02200 for excavation and backfilling requirements for footings and for the procedure of adjusting contract price where changes to foundations are required.

.5 Install footings adjacent to existing footings in the sequences indicated, and against undisturbed soil as shown, and so that the stability of the existing footings and existing slabs on grade are maintained at all times.

.6 Prior to proceeding with the work, determine the exact founding elevations of existing footings adjacent to the new work. Report these findings to the Consultant before proceeding further.

.7 If, upon excavating to the elevations shown, the required soil conditions are not fulfilled, or if they are fulfilled at a higher elevation, the Consultant will provide instructions as to how to proceed.

.8 Keep a record of footing founding elevations.

.9 Construct footings in a particular area commencing from the lowest footing elevation and proceeding to the higher elevation.

.10 Proceed in a similar manner for continuous footings to walls which vary in founding elevation by commencing with the continuous footing at the lowest elevation.

.11 Remove water, disturbed soil or foreign matter from footing excavations before placing concrete. Do not permit the soil at founding elevations to soften due to the presence of water in the excavations or construction activity.

.12 During cold weather, prevent soil adjacent to and beneath all footings from freezing. Do not pour footings on frozen soil on soil which has been allowed to freeze and thaw. If the soil at specified founding elevations is frozen or was frozen and thawed, remove affected material and found footings on unaffected soil with the required characteristics at no extra cost to the Owner.

.13 Extras will be paid only if upon excavating to the specified founding elevations, it is found that soil conditions do not meet the requirements set forth. No extras will be paid if soil becomes weakened through agencies within the control of the Contractor, such as through the action of ground water, inadequate protection from weather, construction activity, over-excavation, or through undermining by the installation of nearby electrical or mechanical services.

3.3 PLACING CONCRETE

.1 Conform to requirements of CAN/CSA-A.23.1 and the following:

.2 Immediately before placing concrete, clean forms and reinforcement of foreign matter.

.3 During hot weather conditions, do not use concrete mixed more than 1 hour after introduction of mixing water or 1-1/2 hours during other periods.

3.4 PROTECTION

.1 General

.1 Conform to the requirements of CAN/CSA-A.23.1 and the following to protect freshly deposited concrete from freezing, premature drying and extremes of temperature. Maintain concrete with minimal moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and to achieve the specified strength of the concrete.

.2 Cold Weather Concreting

.1 Between the 15th of October of any year and the 15th of April of the following year, provide on hand and ready for use all equipment necessary for adequate cold weather protection and curing before concrete placement is begun.

.2 When fresh concrete is to be cast against existing concrete, prevent the loss of heat by extending the protection for the fresh concrete at least 600 mm over the existing.

.3 Insulate, or enclose within the protective housing, tie rods, reinforcement or metal which projects from the concrete being protected.

.4 Construct enclosures tight and safe for wind and snow loadings.

.5 Maintain housing, enclosures and supplementary heat in place for entire period of protection, except that sections may be temporarily removed as required to permit placing additional forms or concrete provided the uncovered concrete is not permitted to freeze. Make up time lost from the required period of protection at the required temperature before protection is discontinued and removed.

.6 Dispose heating units to avoid heating concrete locally or drying it excessively. Avoid high temperature and dry heating within enclosures.

.7 Take particular care to maintain edges and corners of concrete at the required temperature owing to their greater vulnerability to freezing.

.3 Protection of Completed Work

.1 Take suitable measures to prevent spalling and cracking damage occurring to the structure due to water freezing in expansion joints, small holes, slots, depressions and take suitable measures to prevent damage occurring to foundations and the like due to frost action in the soil or backfill.

.2 The application of de-icing salts on completed work is not permitted.

.3 During the curing period, take suitable measures to protect the surface of the concrete from pitting and loss of fines due to rain.

3.5 SLABS ON GRADE

.1 General

.1 Do not place concrete slabs on grade until the specified sub-floor material has been placed, inspected and approved.

.2 Do not place concrete on a frozen sub-grade, or on one that contains frozen materials.

.3 Do not place concrete on a sub-grade that has been frozen and thawed until the sub-grade has been reviewed by the Geotechnical Consultant and approved. If, in the Consultant's opinion, the safe bearing capacity of the sub-grade has been reduced to below 25 kPa, remove the affected materials and replace with compacted granular fill at no additional cost to the Owner.

.4 Place 175 mm of a 19 mm maximum size clear crushed stone followed by a 25 mm depth of 6 mm crushed stone over the sub-base to depths shown. Thoroughly roll and consolidate to the lines and levels required.

.5 Upon approval of the placement of the sub-floor material and setting of reinforcing, place and consolidate concrete and finish and cure as specified herein.

.2 Joints

.1 Where slabs abut adjacent construction, provide a layer of joint filler between.

.2 Saw-cut slabs on grade exposed to view in the finished building into panels as shown with a maximum length between saw-cuts equal to 30 times the slab thickness. e.g. a 100 mm thick slab will required saw-cuts at 3 m c/c. Arrange panels as shown or to the Consultant's approval.

.3 Carry out cutting in accordance with recommendations contained in ACI 302.1R but in any event between 6 and 18 hours after placement of concrete.

.4 After a period of at least 28 days, fill saw-cuts with mortar containing cement, sand and latex bonding agent. Ensure that joints to be filled are clean, dry and free of foreign matter.

.5 Mask edges of saw-cuts to prevent concrete floors from becoming stained.

.6 Construction joints may be provided in slabs on grade so that pours on any one day may be kept to reasonable sizes. Locate construction joints to the Consultant's approval.

.7 In exposed concrete, provide a reglet at construction joints of the approximate width of a saw-cut and fill the reglet as specified for saw-cuts.

3.6 GROUTING BENEATH BASE PLATES

.1 Grout beneath plates bearing on concrete with an approved non-shrink flowable grout. Conform to the manufacturer's directions for mixing and placing grout. Completely fill voids below plates. Fill voids left by shims after shims are removed.

.2 During cold weather, preheat base plates and footings and maintain temperature at minimum 12 degrees C. for 6 days after grouting.

3.7 REINFORCED BLOCK LINTELS

.1 Supply and place concrete and reinforcing steel for reinforced block lintels in accordance with the requirements of Typical Detail and this specification.

.2 Accurately place and secure reinforcement in the cavity prior to concreting. Trowel top of lintel as required to permit laying of succeeding block course.

3.8 MAKING GOOD

.1 Where directed by the Consultant, make good temporary openings left in concrete construction around pipes, ducts and the like using a mortar of the same proportions as the surrounding work. Reinforce mortar with mesh or the like where openings exceed 75 mm. Roughen existing surfaces to receive mortar or apply suitable bonding agent such that mortar will be securely bonded to existing concrete.

3.9 TREATMENT OF FORMED SURFACES NOT DESIGNATED AS ARCHITECTURAL CONCRETE

.1 General

.1 After stripping for forms, the bared surface of concrete will be inspected by the Consultant. Do not proceed with repairs or surface treatment to concrete prior to the Consultant's inspection.

.2 After the Consultant's inspection, remove or cut back 25 mm, bolts, ties, nails or other metal not specifically required for construction purposes.

.3 Where no serious defects are revealed by the Consultant's inspection, cut out areas of moderate honeycombing to sound concrete. Saturate with water and fill with cement mortar of the same general composition as that used in the concrete.

.4 Where serious defects are found, such as large voids or extensive honeycombing, repair the defect as directed by the Consultant.

.5 Where surfaces are to be plastered, damp-proofed, waterproofed or similarly finished, remove fins, ridges or bulges which would interfere with the application of the final finishes.

.6 Remove traces of form lining compound from concrete surfaces which may affect the bonding of following surface application.

.2 Surfaces Exposed to View

.1 In addition to the above requirements, go over the surface, remove ties, nails, timber, inserts, minor imperfections, leaving the surface clean.

.2 Where major defects are revealed, repair as the Consultant directs.

.3 Where in the Consultant's opinion defects are minor, repair as follows or as the Consultant may otherwise direct. Cut out affected areas, saturate cut out areas, voids, pit holes and form tie holes with water and fill with a cement mortar containing an approved type of latex bonding agent. Mortar mix and application shall be in accordance with the recommendations of the manufacturers of the bonding agent.

.4 After the mortar stiffens, wipe the whole surface clean such that no material remains on the surface, except that within the voids and such that finished surface is clean and smooth. Cure the patched areas by keeping moist for at least 7 days.

.5 Where directed by the Consultant, power stone concrete surfaces to remove surface imperfections remaining after the treatment noted above has been carried out.

END OF SECTION

FA49.1020-11 SECTION 04100 – MORTAR AND GROUT FOR MASONRY

PART 1 – GENERAL

1.1 RELATED WORK

.1 Masonry procedures: Section 04050 Masonry Procedures

.2 Masonry accessories: Section 04150 Masonry Accessories

.3 Masonry reinforcing and tying: Section 04160 Masonry Reinforcing and Connectors

.4 Brick repairs: Section 04500 Masonry Restoration

.5 Masonry restoration: Section 04500 Masonry Restoration

.6 Sealants: Section 07900

1.2 REFERENCES

.1 CSA A179-M94 Mortar and Grout for Unit Masonry.

.2 CSA A82.56M-1976, Aggregates for Masonry Mortar

.3 ASTM C207-79 (1988) Hydrated Lime for Masonry Purposes

1.3 SAMPLES

.1 Submit samples in accordance with Section 01001 General Requirements.

.2 Submit to 100x100x12mm size samples of uncoloured mortar and of coloured mortar.

PART 2 – PRODUCTS

2.1 MATERIALS

.1 Water: potable, clean and free from soluble salts and other contaminates.

.2 Aggregates:

.1 Sand: to CSA A82.56M, (Aggregates for Masonry Mortar) sharp, screened and washed pit sand, free or any organic material, grading and colour to approval of consultant and to match existing approved mortar.

.3 Bedding mortar shall be Betomix Plus Type ‘N’ (1-1-6) pre-bagged mortar as manufactured by Daubois Inc. mixed in strict accordance with manufacturers instructions for clay brick.

.4 Pointing mortar shall be XHN – 60, hydraulic lime pointing mortar as manufactured by Daubois Inc. mixed in strict accord with manufacturers specifications.

.4 Hydraulic lime based injection grout shall be ‘Grout F-20’ from Dubois Inc.

.5 Admixture for colour:

Inorganic pigment, dry powder, mineral oxide type as manufactured by Harcross Pigments Canada. Provide custom blended pigment as required, to match existing mortar.

2.2 SOURCES

.1 Use same manufacturer, brands and suppliers for sources of mortar materials for entire project.

2.3 BACKPOINTING, BEDDING, POINTING AND REPAIR MORTAR

.1 Mortars are based on the proportions specifications of CSA A179-1994.

.2 Mortar shall match original in colour, texture and strength.

PART 3 – EXECUTION

3.1 PREPARATION OF MORTARS

.1 Mix mortar in strict accord with manufacturers printed instructions.

END OF SECTION

FA49.1020-11 SECTION 04500-MASONRY PROCEDURES AND RESTORATION

PART 1 - GENERAL

1.1 RELATED WORK

.1 Section 03200 Concrete Reinforcing
.2 Section 03300 Cast-in-place Concrete
.3 Section 04100 Mortar and Grout for Masonry
.4 Section 07120 Waterproofing Membrane
.5 Section 07900 Sealants

1.2 INTENT

.1 Work in this Division and this Section involves the conservation and repair of existing historic masonry.

.2 The intent is to carry out the work described herein in accordance with established procedures for historic masonry conservation.

.3 The intent of conservation is to preserve wherever possible the character and materials of the buildings and not necessarily to restore the building facades to their original, pristine, as built condition.

.4 Provisions of this Section apply to all other Sections of this Division.

1.3 QUALITY ASSURANCE

.1 Corporate Qualifications: Only the following 6 invited firms may undertake work of Division 4 of the specifications:

.1 Clifford Masonry, Toronto, Telephone (416) 691- 2341
.2 Universal Restoration, Mississauga, Telephone (905) 212-9191
.3 Roof Tile Management, Mississauga, Telephone (905) 672-9992

.2 Staff Qualifications:

.1 Submit with tender the resumes for the project manager, site supervisor and other senior masonry personnel who shall be engaged fulltime in Work of this Contract. Include staff who will be responsible for repair of stone, cutting out and repointing work, rebuilding work. These staff shall have previous experience in the roles to which they will be assigned in this Contract, and the resumes shall clearly demonstrate the staff's experience in similar roles in past projects.

Resumes shall indicate employment history for the past seven (7) years in work similar to Work of this Contract, their roles and responsibilities in Work of this Contract and in past projects, and a minimum of 3 positive references from different project Consultants for past similar work, and current contact telephone numbers for each reference as further described below.

.2 The project manager and masonry site supervisor shall have a minimum of 6 years experience in historic masonry preservation work in their respective roles, with a minimum of 3 projects of similar nature, complexity, contract cost and scale, as demonstrated by a minimum of 3 positive references from different project Consultants for at least 3 similar projects within the last 4 years.

.3 The stone mason responsible for repair of stone in this Work shall have a minimum of 6 years experience in historic stone masonry preservation and repair work, with a minimum of 3 projects of similar nature, complexity, contract cost and scale, as demonstrated by a minimum of 3 positive references from different project Consultants for at least 3 similar projects within the last 4 years.

.4 The other senior site staff shall have a minimum of 3 years experience each in historic masonry preservation work, with a minimum of 3 projects of similar nature and complexity, as demonstrated by a minimum of 3 positive references from employers or project Consultants for at least 3 projects within the last 4 years, or have a minimum of two years training under in an acceptable training program in historic masonry preservation.

.5 The Consultant reserves the right to contact any or all references listed. Failure to comply with any of the requirements for past experience or references as described above may, at the Consultant's sole discretion, be grounds to disqualify any tender. Failure of listed referees to provide positive references as described above may, at the Owner's sole discretion, be grounds to disqualify any tender.

.6 The masonry site supervisor shall afford continuous supervision of work of Division 4.

.7 For other workers employed in this project, employ only specialized, skilled, and competent workers who shall have had considerable experience, or evidence of experience on site, in this type of work, as aceptable to the Consultant. Submit, if requested, within two working days a detailed list of projects and experience relating to all of the above workers. Such list shall include at a minimum the project name, person's duties, length of employment, positive reference letters from past employers, and a current reference contact name and phone.

.8 The Contractor expressly agrees to immediately remove from the work any person for whom proof of experience or capabilities, satisfactory to the Consultant, cannot be supplied, at no effect on Contract Price or Contract Time.

.9 Notwithstanding the above clauses, the Contractor retains sole liability for the work of the Contractor's forces and trades.

1.4 REFERENCES

.1 CAN/CSA-A179-04 (R2009) Mortar and Grout for Unit Masonry.
.2 CAN/CSA-A371-04 (R2009) Masonry Construction for Buildings.
.3 CAN/CSA-A370-04 (R2009) Connectors for Masonry.
.4 S304.1-04 (R2010) Design of Masonry Structures.
.5 Additional material standards as relevant and referenced in related sections.
.6 Definitions as relevant are referenced in related sections.

1.5 SUBMITTALS

.1 Make submittals in accordance with Section 01001 General Requirements.
.2 Submit product data and manufacturers' literature for all products specified under work of this Section and for all tools to be used under work of this Section. Data shall include details of all tools, machinery and equipment required to complete the work. Remove rejected items from site.
.3 After 1 meter square section of the stone wall construction is complete, Consultant must review and approval section. If not completely satisfied the consultant have full authority to request section to be rebuilt. This processes shall be repeated until satisfactory results are obtained to the satisfaction of the Consultant.
.4 All submittals, samples test panels and mock-ups for work of Division 4 shall be made ready for review over a period of not more than 2 working days. Organise mock-ups to suit phasing of the work.
  .1 Provide no less than 10 working days notice from the date section will be available for review.
  .2 Where all specified items are not available for review on specified date, reimburse the Consultant (by credit to the Contract) for the Consultant's cost to provide additional review services. Such additional services include but are not limited to the time and disbursement costs of the Consultant, their subconsultants, and additional testing and inspection.
.5 Construct section of exterior masonry, showing colours, textures, use of reinforcement, ties, flashing, jointing, coursing, mortar and quality of work, as applicable of:
    .1 raking out of mortar, 1 m^2 panel to brick work.
    .2 raking out of mortar, 1 m^2 panel raking out out of narrow joints between smooth faced stone units.
    .3 raking out of mortar, 1 m^2 panel raking out of joints between rock faced stone units.
    .4 repointing, 0.5 m^2 panel to brick work.
    .5 repointing, 0.5 m^2 panel to each of rock faced and smooth stone work.

.6 dry set up panel prepared the day before.
.7 cleaning 1 m² panel for each type of cleaning type specified, on each type of substrate, and representative of full range of soiling or stain encountered in the work.
.8 cleaning 2 – 0.5m² panels to remove stains and to ascertain most effective and efficient type of cleaning.
.11 other mock-ups as requested in other Sections.

.6 Accepted samples and mock-ups accepted by the Consultant shall form the standard for products, method and quality of the work to be performed throughout the project, and thereby be considered acceptable.

.7 Submit laboratory test reports certifying compliance of any new or replacement brick masonry units and mortar ingredients with specification requiremnts.

.8 Submit samples in duplicate on date of mock-up review on site, as follows:

.1 One of each type of masonry accessory specified.
.2 One of each type of masonry reinforcement and tie proposed for use.
.3 One of each type of proposed sand (s) for use in mortar in 500 ml plastic container with screw top lid and with source and contents clearly marked.
.4 One of each type of cleaning chemical or material specified in 250 ml containers with safety screw caps where appropriate and with contents clearly marked.
.5 Feebly hydraulic lime putty as ready for use, in 500 ml plastic container with screw top lid and with source and contents clearly marked;
.6 Moderately hydraulic lime as ready for use;
.7 As required for testing purposes.
.8 Lime putty and coarse stuff for each type of masonry and joint width.

.9 On date of mock-up review on site, demostrate to Consultant cutting out, repointing, grouting, and mortar mixing operations, for each masonry type, mortar mix, and grout mix.

.10 Submit all tools used in work of Division 4 for Consultant's review on date of mock-up review. Use only accepted tools.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to job site in dry condition.

.2 Keep materials dry until use, except where use of water is specified.

.3 Store all materials on pallets held off the ground by means of planks or timb skids and protect with waterproof non-staining covers.

.4 Handle all materials to prevent damage. Do not incorporate damaged, chipped, or contaminated materials into the work.

1.7 SEQUENCING

.1 The masonry restoration work shall be carried out in the following sequence:

.1 execute masonry cleaning test panels to demonstrate efficacy of cleaning for removal of residue stains;

.2 Document existing conditions. Photograph areas to be dis-assemblied. Photograph all elevations, inside and outside in high resolution. Photographs must be clear and in focus. Refer to Section 01380 - Construction Photographs;

.3 Dismantling of stone walls and backpointing defective mortar joints behond dismantled area;

.4 Completion re-assembly of a section of the wall to be reviewed. Refer to item 1.4 Submittals in the Section;

.5 Acquire consultant approval. If consultant rejects section of work, repeat item 1.7.1.4 until consultant provides approval to continue work;

.6 Re-assembly and reconstruction of dismantled remaining areas to be rebuilt, repairs and replacement in stone;

.7 Remaining stone masonry repairs to exterior;

.8 final pointing;

.9 final cleaning.

1.8 UNIT PRICES

.1 Refer to Section 01030 Unit Prices.

1.9 ENVIRONMENTAL REQUIREMENTS

.1 Refer to Section 01100 Environmental Considerations.

1.10 OPERATING AND MAINTENANCE MANUAL

.1 Provide the following information for incorporation into the Operating and Maintenance Manual specified in Section 01001 Operating and Maintenance manual;

.1 Mortar mix recipes, including precise data on materials, their sources and relative quantities, suficient to allow exact replication of mixes, including colour, by others.

.2 Manufacturer, name, colour and texture and test data (initial rate of absorption, compressive strength 24 hour absorption) of existing and new bricks.

.3 Supplier, original building, and test data (initial rate of absorption, compressive strength, 24 hour absorption) for replacement bricks salvaged from off-site sources.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Mortar Materials as specified in:

.1 Section 04100 Mortar and Grout for Masonry

.2 Replacement Stone if required:

.1 Stone shall be to match existing in colour and texture; Gray Credit Valley Sandstone or equal. Provide to suit 5” bed width, split face and bed, random heights in 4”, 6” and 8” evenly distributed. Provide sample panel of one square metre for approval.

2.2 EQUIPMENT

.1 In addition to other equipment and tools required to execute the work satisfactorily, the following specialty tools and equipment shall be provided.

.2 Tools for cutting out defective joints shall be hand tools with blades narrower than the joint width being removed, including but not limited to chisels with dust channels; for fine joints use tools such as flat-bladed quirks, light hammers, hackssaw blades and cutting wires. At the Consultant’s sole discretion, low impact pneumatic carving tools may be permitted when equipped with appropriate points and chisels and skilled use is demonstrated to the satisfaction of the Consultant, and final cleaning and removal of mortar is by hand tools.

.3 Rotary saws:

.1 Use of rotary saws or cutting disks or other power tools for the removal of defective mortar is prohibited.

.4 Pointing tools shall be a range of pointing slicks selected to fit into the various joint widths found in the work. Maintain a full range of slicks on site for use by masons. Custom fabricate slicks as required.

.5 Joint finishing tools: custom fabricate joint tools required to replicate the historic joint detail in the existing work.

PART 3 - EXECUTION

3.1 PREPARATION

.1 Seal and protect all openings, doors, windows and adjacent areas to prevent damage and the spread of construction dust, water or other materials into the building or onto adjacent sidewalks, or onto occupants' furnishings and equipment in accordance with Section 01535 Temporary Facilities.

.2 All sills and projecting courses are to be covered with rigid protection, secured into joints, for the duration of the work.

3.2 INSPECTION

.1 Advise Consultant in writing of conditions that differ materially from conditions at close of Tender.

3.3 CUTTING OUT OF JOINTS

.1 In preparation for repointing remove defective mortar where cutting out and repointing work indicated. Where documents indicate a percentage of joints to be cut out and repointed, percentages shown refer to estimated quantity of defective mortar joints.

.2 Mortar is defective when; it is cracked; it is spalled, chalked, dusted, friable, or otherwise crumbling and excessively weathered back; it is a hard, dense, Portland cement rich based mortar; or the Consultant so states in writing.

.3 Cutting out of mortar shall be carried out using specified equipment and tools appropriate to the joint type, width and location, cutting away from the arises to prevent plucking, spalling or other damage to the masonry; fine bladed quirks, hacksaw blades, cutting wires, or similar tools are to be used where fine joints are encountered.

.4 Where mortar is found to be defective beyond specified raking depths, continue raking until sound mortar is encountered. Cost of additional cutting out shall be included in the unit prices quoted or the stipulated sum quoted, as applicable, and no extra be paid for additional depth of mortar removal.

.5 If masonry unseats or mortar bond with existing masonry units is broken, remove unit and reset.

.6 Clean joints back for the full specified depth, removing all mortar on the masonry surfaces, to a square surface of existing mortar at back of joint.

.7 Clear out all loose particles with compressed air and leave ready for Consultant's review.

.8 Prevent damage to masonry units. All damaged units shall be replaced to the satisfaction of the Consultant at no change in the Contract Price or Contract Time.

.9 Provide access, permit Consultant's review, correct any defects and obtain Consultant's acceptance of all raked joints prior to commencing pointing.

.10 Depth of Raking: to at least twice the width of the joint to a minimum depth specified, as measured from the arris of the masonry unit. Minimum depth of raking out for brick masonry: 30 mm minimum; for stone masonry: 35 mm minimum.

.11 Where stability of structure is degraded by work of this Section, provide temporary bracing in accordance with Section 02070 Selective Demolition. Maintain stability of structure at all times.

3.4 STONE DISMANTLING AND REMOVAL

.1 Dismantle stone areas where indicated, salvaging suitable materials as specified below for re-use where indicated.

.2 Loosen stones using approved methods that will cause no damage either to stones, or other elements.

.3 Do not use circular millstone or saw, pneumatic chisel or hammer, or other steel tools exerting concentrated pressure on edge of masonry.

.4 When temperature is below freezing point, do not attempt to loosen wet masonry.

.5 All stone is to be carefully cut out in order to salvage materials. Stone shall be cleaned of all mortar using hand tools, avoiding damage to any face or arris.

.6 Store stone on site and make available for inspection by Consultant to determine suitability for re-use. Re-use all stone elements, unless otherwise indicated or specified.

.7 Masonry units to be stored on non-staining wood pallets, not in contact with the ground, metallic items, or vegetation.

.8 Use water and non-metallic scrub brushes to remove any surface staining.

.9 Dry wet stones under cover, preventing any condensation from covers from contracting stones. Drying of stones may be accelerated by fans or unit heaters. Inspect stones for re-use for evidence of material deterioration, and advise Consultant of findings.

.10 Carefully remove, clean, and salvage for re-use all metal ties, cramps and masonry reinforcing, which are free of excessive corrosion when removed from the existing masonry assembly. Drill out tightly fitted elements to prevent spalling or fracturing of stone face.

.11 Where stability of structure is degraded by work of this Section, provide temporary bracing in accordance with Section 02070 Selective Demolition. Maintain stability of structure at all times.

3.5 BACKPOINTING

.1 Obtain Consultant's acceptance of raked out work prior to commencing pointing operations.

.2 Where cut out joints are deeper than raking out depths specified above, backpoint joints to bring mortar face to specified depth for raked out joints, in preparation for finish pointing. Cost of backpointing shall be included in the unit prices quoted or the stipulated sum quoted, as applicable, and no extra shall be paid for backpointing of joints within the limits indicated. Contract shall include backpointing to an average depth of 100 mm for 25% of all joints designated for cutting out and repointing.

.3 Immediately prior to pointing, thoroughly wet joints in order to control absorption.

.4 Allow water to soak into masonry and mortar, leaving no standing water but remaining wet.

.5 For backpointing, fill all joints full with pointing mortar, compacting mortar firmly into joints to ensure positive adhesion to all inner surfaces. Place mortar in layers, maximum 20 mm thick, minimum 12 mm thick, allowing each layer to set to thumbprint hard before placing next layer. Bring face of mortar in backpointed joint to specified depth for raked out joint, measured from the arris of the masonry unit, leave ready for final pointing.

.6 Prevent mortar from being placed or smeared onto face of brick and stone units. Protect masonry faces by installing non-damaging temporary protection to masonry units where required to keep mortar from masonry unit faces, and to prevent mortar staining of masonry faces during backpointing work.

.7 Keep work clean, remove all droppings and work areas as work proceeds, and gain at the end of each day.

.8 Backpointing shall not be covered with pointing mortar for a period of 7 days minimum.

3.6 RE-INSTALLATION OF ENTRANCE BALUSTRADE

.1 General:

.1 On acceptance of as-built and photographic documentation of existing walls by Consultant at dismantled areas of balustrade, re-erect walls and balustrade to original coursing, bedding, lines and dimensions, re-using stone. Re-install removed and salvaged stones in original position, based on previously prepared and accepted as-built and photographic documentation.

.2 Install new non-ferrous metal ties to replicate original metal ties, reinforcing or anchors in original location. Install new ties and anchors to supplement existing to meet requirements of NBC and CSA, and in accordance with 3.9 above. Fully bed ties, reinforcing, or anchors in mortar.

.3 Bed stones fully in mortar, tooled and compacted to original details.

.4 Lay heavy stones and projecting stones only after loadbearing elements below are able to support all imposed loads. Bed all coping stones in full mortar bed.

.5 Upon completion of slab waterproofing relay flagstone paving in mortar bed to suit.

3.7 REMOVAL OF EFFLORESCENCE

.1 Provide catchment system to collect all efflorescence removed from building. Remove all efflorescence from site.

.2 In all areas of efflorescence lightly dry brush surfaces to remove all surface powder. Use non-metallic bristle brushes only. Do not mark surface of masonry.

.3 Repeat wherever efflorescence reappears, throughout duration of work.

3.8 WORKMANSHIP

.1 Do masonry work in accordance with CAN3-A371 except where specified otherwise.

.2 Build masonry plumb, level, and true to line, with vertical joints in alignment.

.3 Lay out coursing and bond to match existing walling and achieve continuity of bond above and below openings, with minimum of cutting

.4 Mortar colour to match existing original mortar colour as identifed on site by Consultant, and in accordance with other specification sections.

.5 Completed repointing shall be consistent in finish, colour and texture, and free of cracks, voids, hollows, and other imperfections which may admit water into the building enevelope. Cut out and repoint all areas of new repointing which exhibit cracks, loss of bond, or other imperfections, or which fail to match accepted samples.

3.9 TOLERANCES

.1 Tolerances in notes to Clause 5.3 of CAN3-A371 apply for brickwork, except that joint thickness for newly laid up work shall not vary from the existing by more than 2 mm +/-.

3.10 EXISTING WORK

.1 Where existing finishes, materials, elements, or other components are damaged or disturbed from their condition at the time of tender closing by Work of this Contract, restore same to at least their condition at time of tender closing. Use materials and technologies to match existing, acceptable to the Consultant.

.2 Without limiting the above, all masonry which is chipped, cracked, and otherwise damaged by Work of this Contract shall be repaired or replaced to the satisfaction of the Consultant. Repalcement masonry units shall comply with the

provisions of the specifications for replacement masonry units, and be satisfactory to the Consultant.

3.11 CUTTING

.1 Cut out neatly for recessed or built-in-objects, and for penetrations of masonry by work of other trades.

.2 Make cuts straight, clean, and free from uneven edges.

3.12 FIELD QUALITY CONTROL

.1 Inspection and testing of materials before, during and after installation may be carried out by Testing Laboratory designated by Consultant.

.2 Owner will pay costs of testing and inspection.

3.13 PROTECTION

.1 Refer to additional protection requirements in relevant sections.

3.14 CLEANING

.1 Remove all debris arising from work of this Section from the site. Remove temporary protection from building and leave building good order.

.2 Clean all exterior surfaces on a regular basis of dust, dirt, and debris arising from work of this Section.

.3 Remove all markings from face of masonry as work proceeds using potable water and sponges. Pressure washing of masonry prohibited, except where specified.

END OF SECTION

PART I - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

.1	Paint	Section 09900
.2	Mechanical	Division 15
.3	Electrical	Division 16

1.2 SHOP DRAWINGS

.1 Submit Shop Drawings. Show and describe detail work of this Section including large scale details of members and materials, of connections, joining details, anchorage devices, dimensions, gauges, thick nesses, description of materials, metal finishing specifications, as well as all other pertinent data and information.

1.3 FABRICATI0N

.1 Design, fabricate and erect structural steel members in accordance with CAN/CSA-S16.1-M89.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Structural Steel - CAN/CSA-G40.21-M92

.2 Welding Materials - CSA W59-1989, CSA W 55.2-57;for stainless steel, ASTM A371; for aluminum, CSA-W59-1989.

.3 Guardrails and handrails – hot dipped galvanized. Conform to ASTM A36, ASTM A53, ASTM A123, ASTM A143, ASTM A153, ASTM A385, ASTM A563, ASTM A780, ASTM D2092.

.5 Anchors, Fasteners, and Accessories: Provide all required anchors, fasteners, miscellaneous components, and accessories as required for complete and finished railing installations. Bolts, nuts and washers shall conform to ASTM A307, A449, A563, as applicable, and shall be galvanized in accordance with ASTM A153. A self-closing gate shall guard openings in the railing (OSHA 1910.23). Safety chains shall not be used unless specifically shown on the drawings.

.6 Sheet Steel - wiped coated, ASTM A 446; structural quality Grade A or B, maximum permissible working stress. Grade A 137,895 kPa; Grade B.154,442 kPa.

.7 Prime Paint - CGSB 1-GP-40.

.8 Bituminous Paint - CGSB-1-GP-108.

.9 Touch-up Paint - zinc rich, "Galvafroid" by W. R. Meadows of Canada Ltd. or other approved alternative.

PART 3 - EXECUTION

3.1 WORKMANSHIP

.1 Use only workmen skilled in the work of this Section. Do work to best standard practice and in accordance with laws, by-laws and regulations which govern. Conform to the requirements of the authorities.

.2 Fit and assemble work in shop where possible. Execute work according to details and approved shop drawings. Where shop fabrication is not possible, make trial assembly in shop.

.3 Welding: CSA W59.M1989. File or grind exposed welds smooth and flush, so as to be invisible after painting.

.4 Make workmanship of best grade of modern shop and field practice known to recognized manufacturers specializing in this work. Fit joints and intersecting members accurately. Make work in true plumb, true, square, straight, level and accurate to sizes and shapes detailed, free from distortion or defects detrimental to appearance or performance.

.5 Insulate metals where necessary to prevent corrosion due to contact between dissimilar metals and between metals and masonry, concrete or plaster. Use bituminous paint, butyl tape, building paper or other approved means.

.6 Supply all fastenings, anchors and accessories required for fabrication and erection of the work. Make exposed metal fastenings and accessories of same material, texture, colour and finish as base metal on which they occur unless otherwise shown or specified. Keep exposed fastenings to an absolute minimum and inconspicuous, spacing them evenly and setting them out neatly. Make fastenings of permanent type.

.7 Draw mechanical joints to hairline tightness and seal countersunk screws and access holes for locking screws with metal filler where these occur on exposed surface.

.8 Thoroughly clean all ferrous metals, by methods suitable to remove burrs, weld spatter, rust, loose mill scale, oil, grease, dirt and other foreign matter. Apply one coat of prime paint to all surfaces except those requiring field welding. Brush on thoroughly and work well into all crevices.

.9 After erection and installation, thoroughly clean the work and apply field touch up of same formula as shop coat to all damaged or unpainted surfaces. Work all paint well into all joints, crevices and open spaces.

.10 Galvanizing - Do all galvanizing after welding.

3.2 INSTALLATION

.1 Install Work plumb, true, square, straight, level, and accurately and tightly fitted together and to surrounding work.

.2 Work supplied by this Section shall include anchor baits, bolts, washers and nuts, lag screws, expansion shields, toggles, straps, sleeves, brackets, clips, and other items necessary for secure installation as required by loading and jurisdictional authorities.

.3 Attach Work to masonry with lead plugs and galvanized steel or other corrosion resistant fastenings to support load with a safety factor of three.

.4 Insulate between dissimilar metals; or between metal, and masonry or concrete with bituminous paint to prevent electrolysis.

3.3 ADJUSTMENT AND CLEANING

.1 Refinish shop applied finished in field only with approval of Consultant.

.2 Clean off dirt and surfaces resulting from installation Work,

3.4 SHOP FINISH

.1 Thoroughly clean all ferrous metals, by methods suitable to remove burrs, weld spatter, rust, loose mill scale, oil, grease, dirt and other foreign matter. Apply one coat of prime paint to all surfaces except those requiring field welding. Brush thoroughly and work well into all crevices.

.2 All metal work specified in this Section shall be thoroughly painted one coat of grey metal primer of type approved by the Consultant before delivery to the Site. Metal parts in contact shall be primed before shop assembly. Should in the opinion of the Consultant, priming become sufficiently damaged during erection or through lack of protection, he may require this Contractor to make good the prime coat.

.3 Back paint with asphaltic paint wherever metal is in contact with concrete, masonry or mortar.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

.1 Concrete sections.

1.2 DELIVERY AND STORAGE

.1 Accept delivery of hardware, doors and frames. Arrange for proper sequence and scheduling of delivery so as not to delay the progress of the Work. Prevent materials not reasonably required from accumulating.

.2 Provide dry storage areas. Stack materials with 6" (150 mm) min. clearance off the floor.

.3 Protect fire-retardant materials against high humidity and moisture.

1.3 PROTECTION

.1 Protect installed hardware from damage and blemishes.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Wood materials - straight, sawn square, true, dressed four sides, properly sized and shaped to correct dimensions from nominal sizes indicated or specified.

.2 Lumber grade and moisture content - comply with the official grading rules of NLGA for the particular lumber and grade, and structurally complying with the latest requirements of the Ontario Building Code. Comply with CSA Standard 0141 Softwood Lumber. Use only grade marked lumber.

.3 All wood materials - well seasoned NLGA, free from defects which impair strength and durability. Moisture content limit: S-GRN: Unseasoned; S-DRY: Maximum 19% moisture content: KD: Maximum 12% moisture content. Provide maximum 12% moisture control for exterior locations and 8% maximum for interior locations.

.4 Blocking, cant strips, grounds, nailing strips - NLGA No. 2 Ontario White Pine, No. 2 Red Pine, or Construction No.1 Jack Pine all complying with the grading rules of the NLGA, or Construction, Douglas Fir dense complying with COFI standard grading and dressing rules.

.5 Douglas Fir plywood - comply with CSA Standard 0121, COFI Exterior. Western softwood plywood - comply with CSA Standard 0151, COFI Waterproof glue WSP. Exposed two sides shall be grade G2S, and exposed one side shall be grade G/Solid.

.6 Wood preservative - Solignum manufactured by Sturgeons Ltd., Pentox manufactured byOsmose Wood Preserving Co. of Canada Ltd., Rez Sanding Sealer manufacturer by Monsanto Co. Ltd. or other approved manufacturer. For painted surfaces use clear type and for concealed surfaces use green tinted type. Pressure Treatment to conform to CAN/CSA-080 Series-M89.

.7 Rough hardware - nails, screws, bolts, lag screws anchors, special fastening devices and supports as required for the erection of all carpentry items.

PART 3 EXECUTION

3.1 PREPARATION

.1 Examine surfaces to receive the work of this Section and proceed only when conditions are satisfactory for a proper installation.

3.2 INSTALLATION - GENERAL

.1 Provide running members of the longest lengths obtainable.

.2 Slowly feed machine-dressed members using sharp cutters. Provide finished members free from drag, feathers, slivers or roughness of any kind. Remove machine marks by sanding.

.3 Machine sand Surfaces exposed in the finished work and hand sanded to an even smooth surface free of scratches.

.4 Properly frame material with tight joints and rigidly secure in place. Use glue-blocks where necessary.

.5 Design construction methods for expansion and contraction of the materials.

.6 Conceal joints and connections wherever possible. Locate prominent joints only where directed.

.7 Match joints made on the site with joints made in the shop.

.8 Unless otherwise specified glue and blind screw or nail all work. Set and fill and plug surface screws using matching wood plugs.

.9 Accurately scribe, cope and mitre members where required to produce hairline joints.

.10 Erect work plumb, level, square and to the required lines.

.11 Do not regard blocking, strapping and other rough carpentry indicated as complete or exact. Provide rough carpentry items required for the installation of the Work of other Sections.

3.3 INSTALLATION - ROUGH CARPENTRY

.1 Blocking and Grounds - Fasten wood nailers, blocking, bucks, grounds curbs, copings and strapping solidly to supporting materials in true planes so that they will remain straight and not be loosened by work of other Trades.

.2 Framing - Do all wood framing in accordance with applicable Sections of the Building Code (Ont. Reg. 413/90) and to CAN/CSA 086.1-M89 as applicable.

.3 Wood Cants and Copings - Fasten wood cant blocking to structure with 3/16" (4.5 mm) dia. bolts 30" (750 mm) o.c. Fasten curbs as indicated. Wood cants to be preservative treated.

.4 Preservative - Preserve concealed wood members in contact with exterior walls and roof before fixing in place. Preserve all other wood indicated to be preserved. Preserve wood by immersing in preservative for at least one hour.

END OF SECTION

PART 1 – GENERAL

1.1 WORK INCLUDED

.1 To apply all membrane waterproofing to all areas as indicated on Drawings.

1.2 INSPECTION AND TESTING

.1 Conform to Inspection and Testing Section 01040.

.2 Testing will include laboratory testing of random samples of materials taken from those delivered to site.

.3 Inspection shall include the following:

.1 Examination of surfaces to receive waterproofing.

.2 Check on methods of application.

.3 Manufacturers representative shall inspect work prior to, periodically during and upon completion and provide written reports to Consultant.

.4 Provide Consultant with timely notice of the schedule for work of this Section.

1.3 QUALIFIED APPLICATORS

.1 Waterproofing shall be applied by a waterproofing specialist of recognized standing having not less than five years of proven experience in this type of Work and who has the necessary equipment and skilled mechanics to carry out the work satisfactorily, and can substantiate this to the entire satisfaction of the Consultant.

1.4 PROTECTION

.1 Comply with Manufacturer's printed recommendations respecting protection.

.2 Provide all protective measures required to prevent injury to waterproofing until work has been approved.

.3 Protect all work performed under separate Sections while the Work of this Section is being effected.

.4 Repair all damage resulting from performance of the Work of this Section, in an approved manner.

1.5 PRODUCT HANDLING

.1 Store materials in weathertight enclosure raised clear of the ground so they are protected from sunlight, weather exposure, moisture and deterioration.

.2 Comply with Manufacturer's printed recommendations for handling of materials. Ensure copy of recommendations is on site during application.

1.6 WARRANTY

.1 Warranty Work of this Section for a period of two years against any defects attributable to faulty or inadequate materials, or faulty or poor workmanship and provide prompt correction in case of failure.

1.7 QUALITY ASSURANCE

.1 Materials and workmanship to meet or exceed the requirements of CAN/CSA, ASTM, CGSB, CAN/UL and manufacturer's printed instructions.

PART 2 – PRODUCTS

2.1 MATERIALS

.1 Waterproofing membrane for special requirements of stone. A self-curing liquid rubber polymer and a reinforcing fabric applied together to form a flexible, seamless waterproofing membrane that bonds to concrete and mortar. Approved product are called Laticrete 9235 Waterproofing Membrane and Latapoxy 310 Stone Adhesive manufactured by Laticrete.

.2 Waterproof Sleeve, a belt of linking rubber sections to form a water-tight mechanical seal between the pipe/conduit and the hole through which it passes. Synthatic rubber with heavy-duty plastic or steel pressure plates which is resistant to sunlight and ozones. All bolts and nuts are plated with an anti-corrosive coating. Belt is to provide a watertight seal to withstand up to 20 psig. Proper size model and number of sections are to be choosen for application, and rubber to be made from EPDM or Nitrile. Approved product is called PipeSeal manufactured by Flexicraft Industries.

PART 3 – EXECUTION

3.1 APPLICATION

.1 Laticrete 9235 Waterproofing Membrane: follow manufacturer's installation instructions. Surface temperature must be 7-32 degrees C during application and for 24 hours after installation. Do not expose material to sun or weather. Protect from traffic or water until fully cured. Allow membrane to cure fully before flood testing. Provide flood test per manufacturer's instructions prior to applying stones. Colded weather will require a longer cure time. Pre-treat corners, coves and seams as per manufacturer's instructions.

.2 Waterproof Sleeve: follow manufacturer's installation instructions.

3.2 INSPECTION

.1 Inspect membrane for punctures, mis-aligned seams and fishmouths, apply additional layer of membrane over affected area, extending minimum of 6" (150 mm) beyond damaged area in all directions.

END OF SECTION

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

.1 All thermal insulation and vapour barrier work throughout the entire Project not specified under other Sections is included in the Work of this Section, to provide a complete thermal and vapour seal within the building.

1.2 RELATED WORK SPECIFIED ELSEWHERE

.1 Masonry	Section 04210
.2 Rough Carpentry	Section 06100

1.3 REQUIREMENTS OF REGULATING AGENCIES

.1 Where combustible insulation or vapour barrier materials are specified herein, comply with applicable code requirements including supply and installation of approved non-combustible backing and independently supported, non-combustible insulation covering, except where noted specifically as Work of other Sections.

1.4.1 DELIVERY AND STORAGE

.1 Store packaged materials in their original wrappings or containers with manufacturer's labels and seals intact. Store flammable materials outside the building and protect from all weather hazards and open flame. Abide by all fire protection regulations imposed by the authorities having jurisdiction, and take precautionary measures to avoid fire.

.2 Do not store insulation in direct contact with the earth, road surface or floors. Place suitable forms or skids under the insulation upon delivery to protect the insulation from absorbing dampness from the surrounding terrain or floor. Cover material with approved tarpaulins and secure.

.3 In cold weather, provide warm storage for adhesives such that their consistency is suitable for ease of application.

1.5 PROTECTION

.1 Protect surfaces, and in particular the building cladding finish, from being marred or contaminated by the materials.

1.6 QUALITY ASSURANCE

.1 Applicator of sprayed insulation shall be trained and approved by insulation manufacturer.

PART 2 – PRODUCTS

2.1 MATERIALS

.1 Wall insulation shall be rigid extruded polystyrene insulation, Dow Channel Mate. Thickness as per Drawings.

.2 Insulation Fastening channel/furring channel shall be Multi-Clinch metal channel #100, installed in accord with manufacturers direction.

PART 3 – EXECUTION

3.1 PREPARATION

.1 Ensure that surfaces to receive adhesive or insulation are dry, firm, straight, slightly textured for *bond, and* free from loose material, projections, ice, frost. slick, grease, oil or other matter detrimental to bond of the adhesive or uniform bedding of the insulation.

.2 Maintain surface and ambient temperatures constantly between 38 deg.C. and 10 deg.C during application and curing of adhesive except as permitted otherwise by the Consultant in writing.

.3 Report surfaces left unacceptable by other trades to the Consultant.

3.2 INSTALLATION - GENERAL

.1 Install insulation to thicknesses shown on the Drawings.

.2 Install all material. in accordance with manufacturer's printed instructions unless otherwise specified herein.

END OF SECTION

PART 1 – GENERAL

1.1 SUMMARY

.1 Comply with Division One as applicable.

.2 Refer to other sections for other caulking and sealants.

1.2 REFERENCES

.1 CAN/CGSB-19.13-M87 Sealing Compound, One-Component, Elastomeric, Chemical Curing.

1.3 DELIVERY, STORAGE, AND HANDLING

.1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture and water.

1.4 ENVIRONMENTAL AND SAFETY REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

.3 In Owner occupied areas of the building, ventilate area of work as directed by Consultant by use of approved portable supply and exhaust fans.

1.5 SUBMITTALS

.1 Submit products data sheets for all materials for work of this Sect ion, complete with confirmation of suitability for intended uses

1.6 WARRANTY

.1 Provide minimum 20-year manufacturer's warranty on sealants used in he Work. Warranty shall include labour and materials to replace failed sealants.

.2 At no cost to Owner remedy any defect in work, including work of this and other Sections due to faults in materials and workmanship provided under this Section appearing within a period of two (2) years from date of Substantial Performance.

1.7 QUALITY ASSURANCE

.1 Sealants must be installed by a qualified caulking contractor with a minimum 5 years experience and a proven record of good quality workmanship.

.2 Sealants must be appropriate for the application and materials to be caulked.

PART 2 – PRODUCTS

2.1 SEALANT MATERIALS

.1 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants, and recommended by manufacturers for intended uses.

.2 Acceptable manufacturers, unless otherwise indicated:
- .1 Tremco
- .2 Dow Corning
- .3 Sternson

.3 Where sealants are specified with primers use only these primers. Sealant colour as selected by Consultant. Use paintable sealants at interior locations.

.4 Standard of acceptance for sealants between the following materials:

- .1 Other joints: single component silicone to CAN/CGSB 19.13 as recommended by manufacturer for intended purpose.

.6 Other sealants, where recommended by particular product manufacturers for system performance may be accepted for use upon application to the Consultant. Submit product data for comparative evaluation.

2.2 BACK-UP MATERIALS

.1 Extruded foam backer rod as recommended by sealant manufacturer for location, joint forming materials, and use. Size: oversize 30 to 50%

.2 Bond Breaker Tape: sealant manufacturer's recommended polyethylene bond breaker tape.

2.3 REPAIR MORTAR

.1 Waterplug by O-BASF The Chemical Company or approved equal. One-component, quick-setting, Portland-cement-based hydraulic repair mortar. Properties: cement, graded silica, calcium hydrocide, fillers, and additives. Conforms to ASTM C109, ASTM C190, ASTM C348. Use for sealing cracks in concrete, and anchoring hardware.
.2 Top-coat with alkali-resistant acrylic coating or used in conjunction with Thorocoat to match concrete colour if required.

2.45 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

PART 3 – EXECUTION

3.1 PREPARATION OF JOINT SURFACES

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of back-up materials and sealants

.2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

3.2 PRIMING

.1 Where necessary to prevent straining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions.

3.3 BACKUP MATERIAL

.1 Apply bond breaker tape where required to manufacturer's instructions.

.2 Install joint filler to achieve correct joint and shape.

3.4 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.5 APPLICATION

.1 Caulk and seal between materials listed in 2.1 above, and between all other dissimilar materials, and at all other joints to minimize maintenance concerns of soil accumulation in joints.

.2 Sealants.
- .1 Apply sealants in accordance with manufacturer's instructions.
- .2 Apply sealant in continuous beads.
- .3 Apply sealant using gun with proper size nozzle.
- ,4 Use sufficient pressure to fill voids and joints solid.
- .5 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, and embedded impurities.
- .6 Tool exposed surfaces to give slightly concave shape.
- .7 Remove excess compound promptly as work progresses and upon completion.

.3 Curing.
- .1 Cure sealants in accordance with sealant manufacturer's instructions.
- .2 Do not cover up sealants until proper curing has taken place

.4 Clean-up.
- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess and droppings, using recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

END OF SECTION

CHAPPELL HOUSE FOUNDATION RENO

4300 RIVERWOOD PARK LN.
MISSISSAUGA, ONTARIO.

Item 4, Appendix 3
Heritage Advisory Committee
Agenda – April 23, 2013

1 / A1 GENERAL NOTES

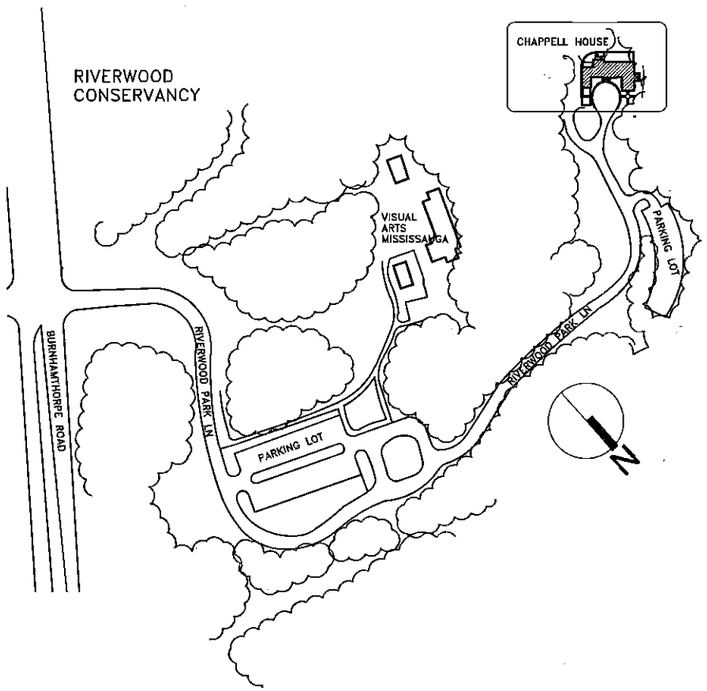
OVERALL SCOPE OF WORK CONSISTS OF 2 AREAS AROUND THE BUILDING:

THE VAULT/MAIN ENTRANCE: REMOVE AND REBUILD ALL POSSIBLE DETERIORATING FOUNDATION WALL AROUND THE VAULT LOCATED IN THE BASEMENT BELOW THE MAIN ENTRANCE. PROVIDE PROPER DRAINAGE SYSTEM AND FOUNDATION WALL PROTECTION. PORCH FLOOR AND BALUSTRADE WALLS WILL NEED TO BE REBUILT TO MATCH EXISTING. RE-GARDING IS REQUIRED AROUND THE PORCH.

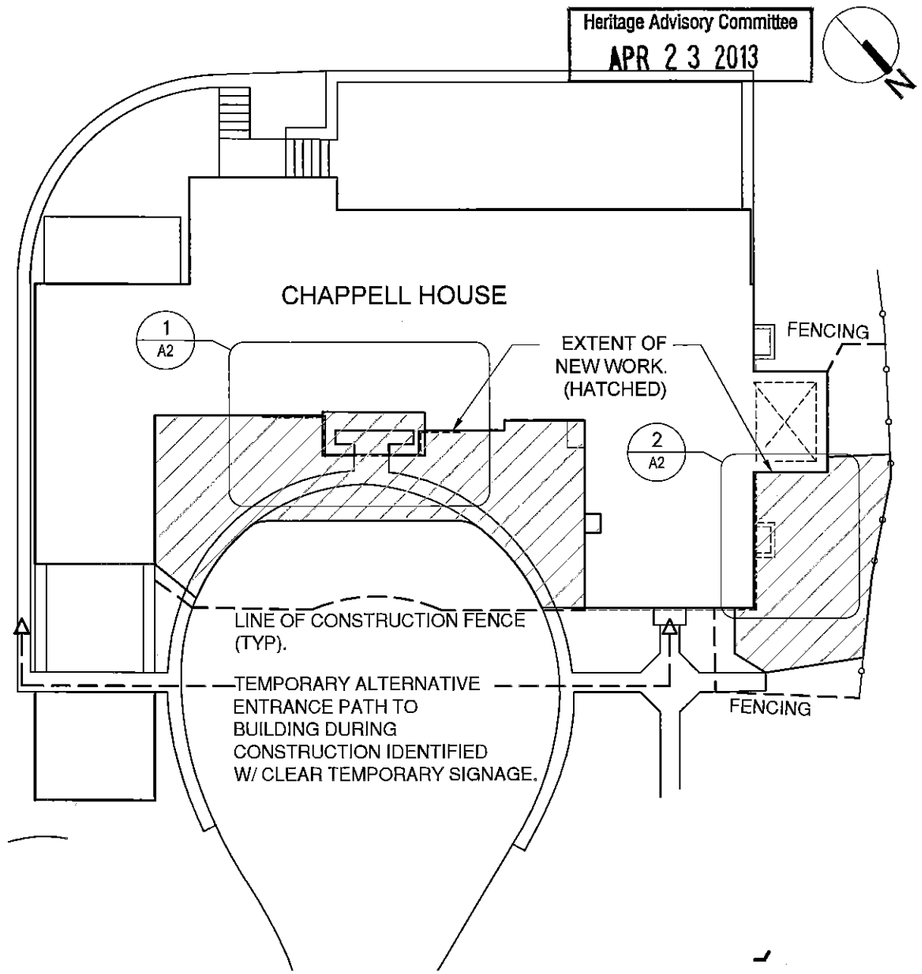
NORTH BASEMENT WALL: PROVIDE PROPER FOUNDATION DRAINAGE SYSTEM. UNDERPINNING UNDER SOLARIUM. NEW WINDOW WELL. REBUILDING LOW STONE LANDSCAPING WALL. RE-GARDING IS REQUIRED ALSO.

2 / A1 DRAWING LIST

3 / A1 KEY PLAN



4 / A1 SITE AND HOARDING PLAN



TITLE: COVER PAGE

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

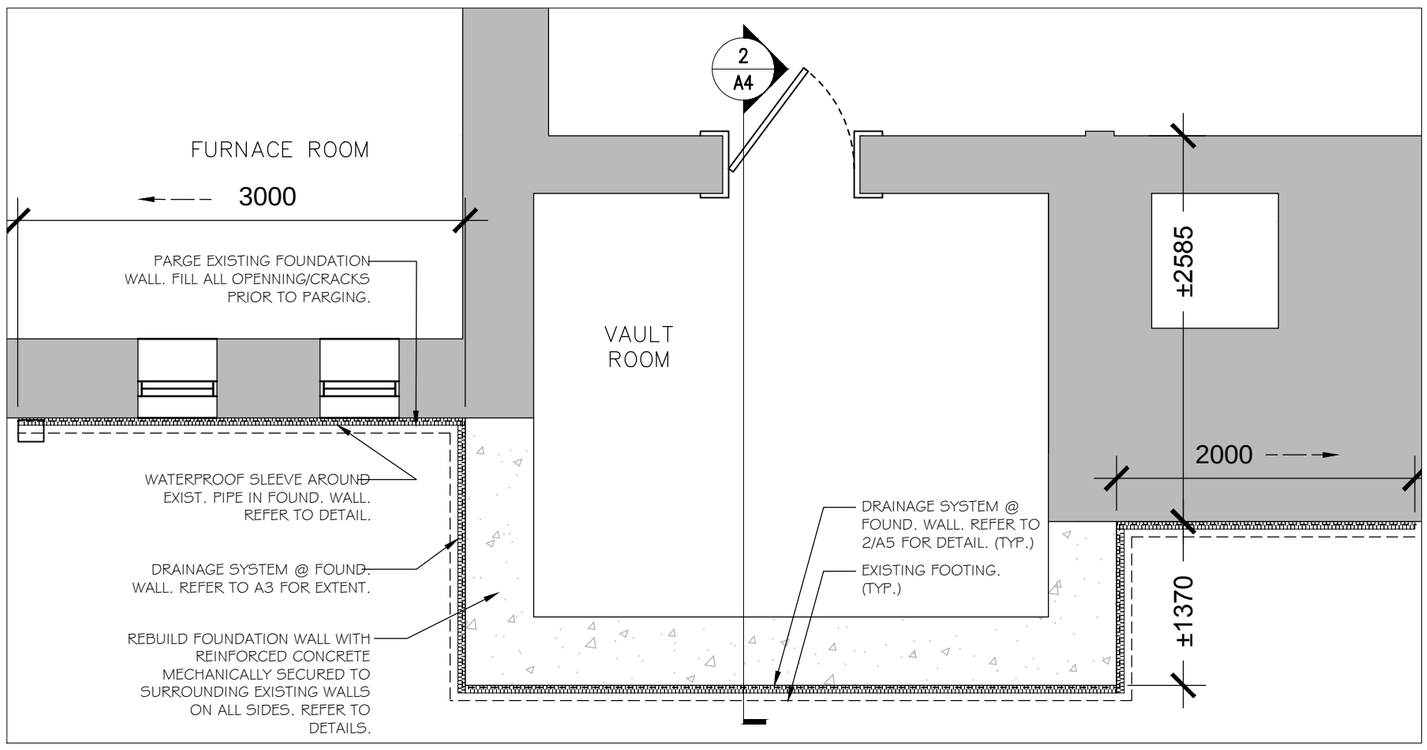
PROJECT #: 1212

DATE: 20 DEC 2012

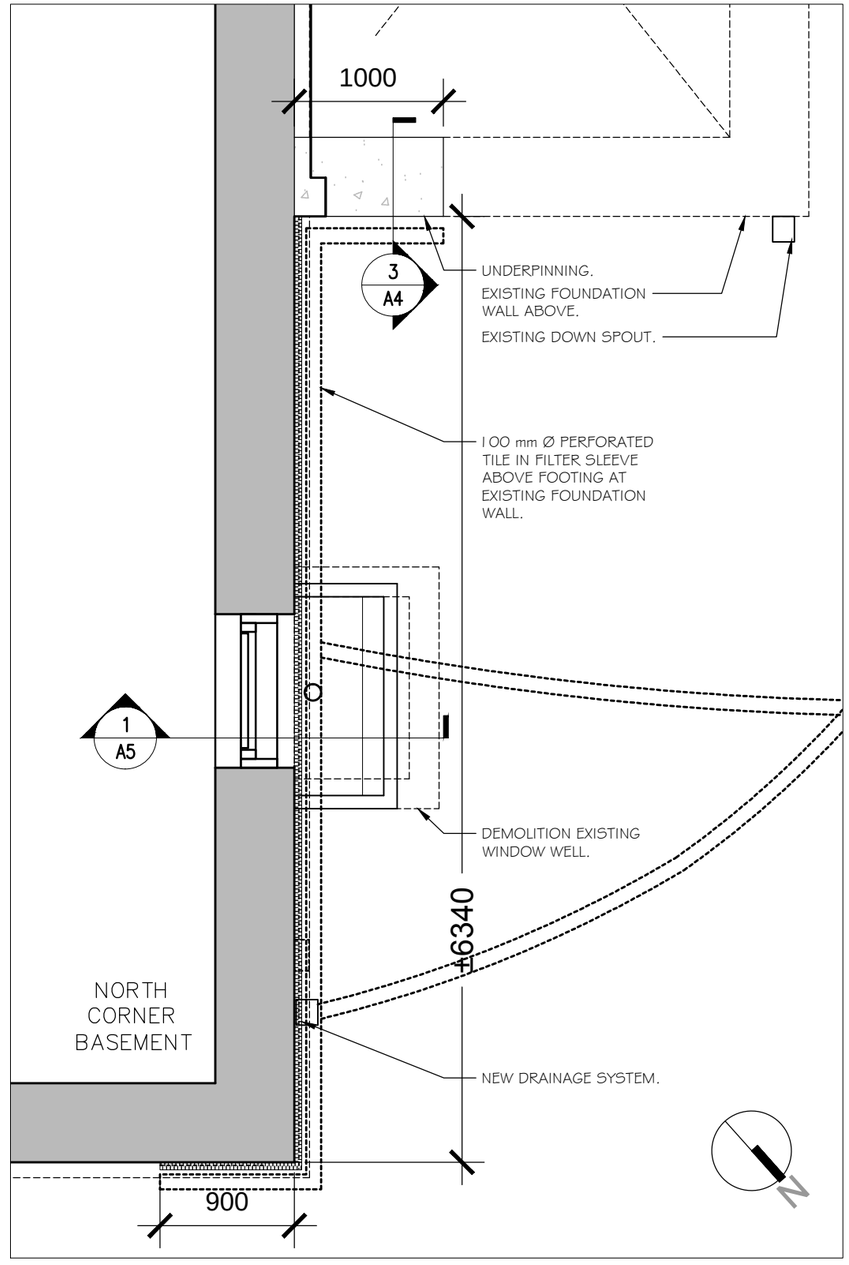
SCALE: NTS

CLIENT: MISSISSAUGA Leading today for tomorrow

SITE PLAN A1



1/A2 FOUNDATION WALL PLAN AT VAULT
1 : 40



2/A2 FOUNDATION WALL PLAN AT NORTH WALL
1 : 40

TITLE: PARTIAL FOUNDATION PLANS

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

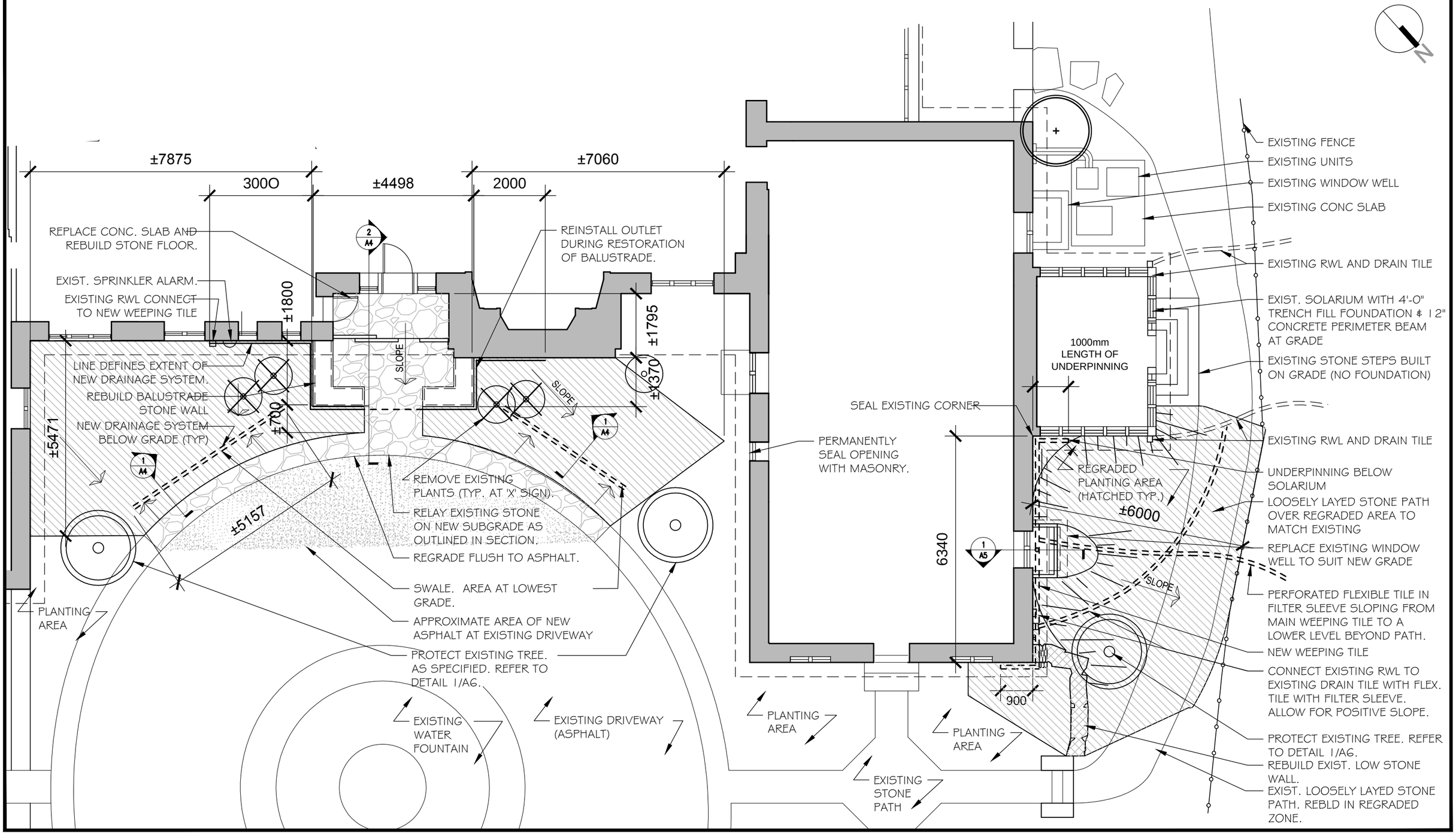
PROJECT #: 1212

SCALE: 1:100

DATE: 20 DEC 2012

CLIENT: MISSISSAUGA Leading today for tomorrow

FOUNDATION PLAN A 2



TITLE: GROUND FLOOR PLAN & PERIMETER

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

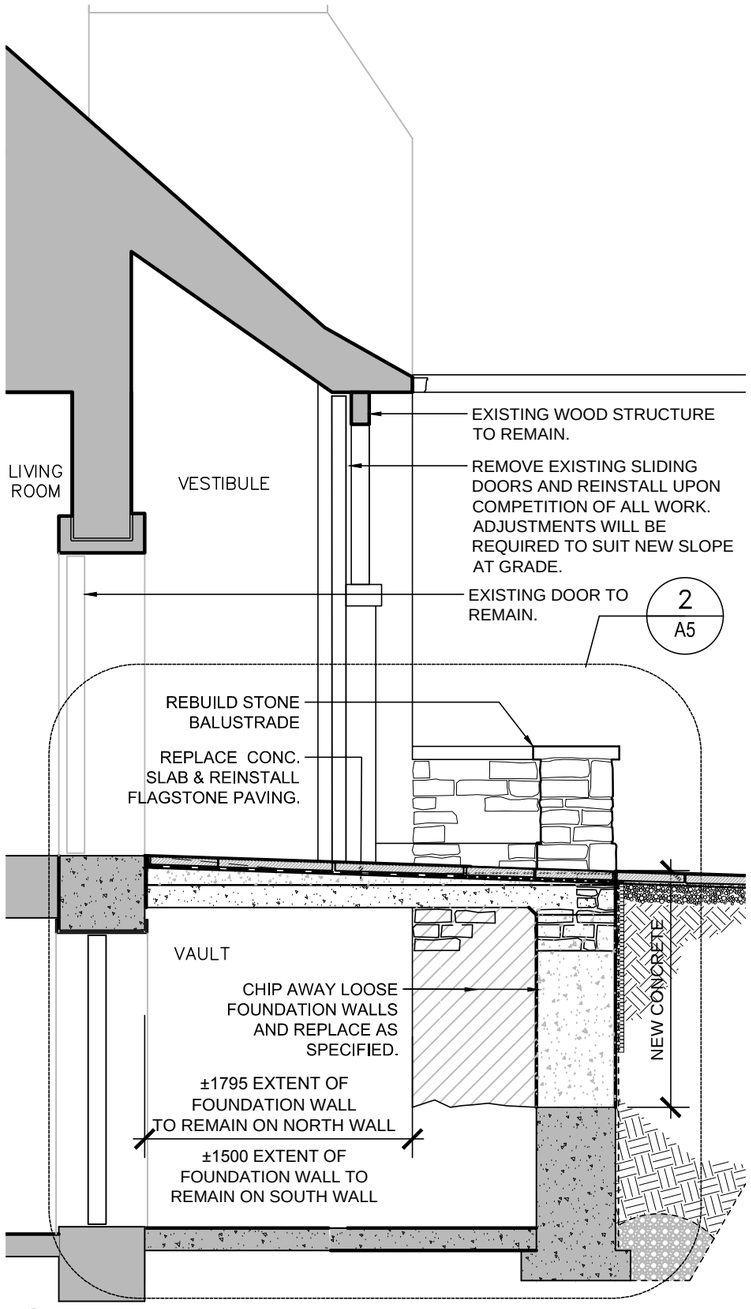
PROJECT #: 1212

SCALE: 1:100

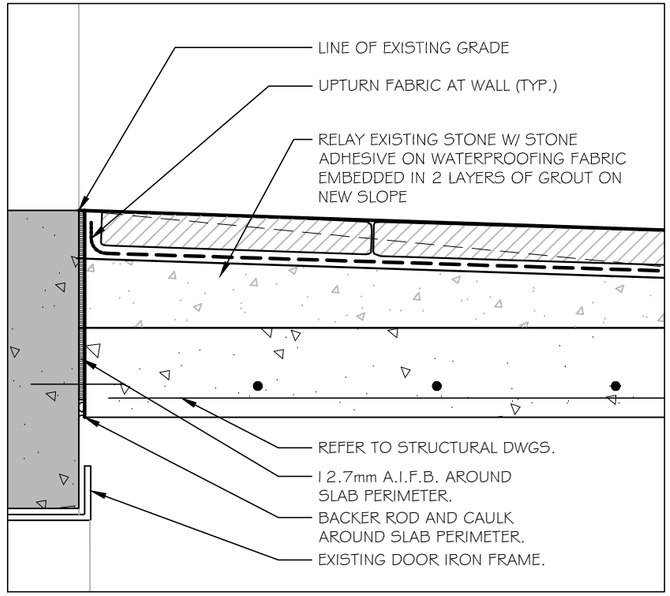
DATE: 20 DEC 2012

CLIENT: MISSISSAUGA Leading today for tomorrow

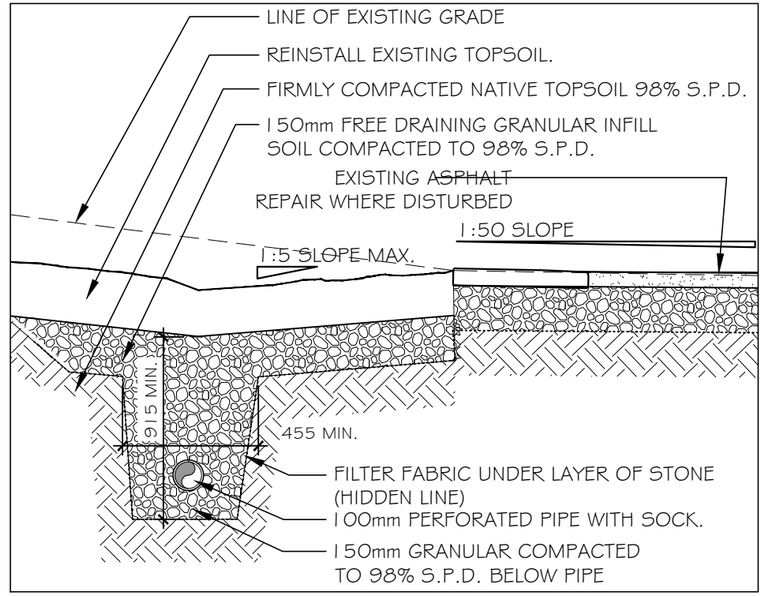
GROUND PLAN A 3



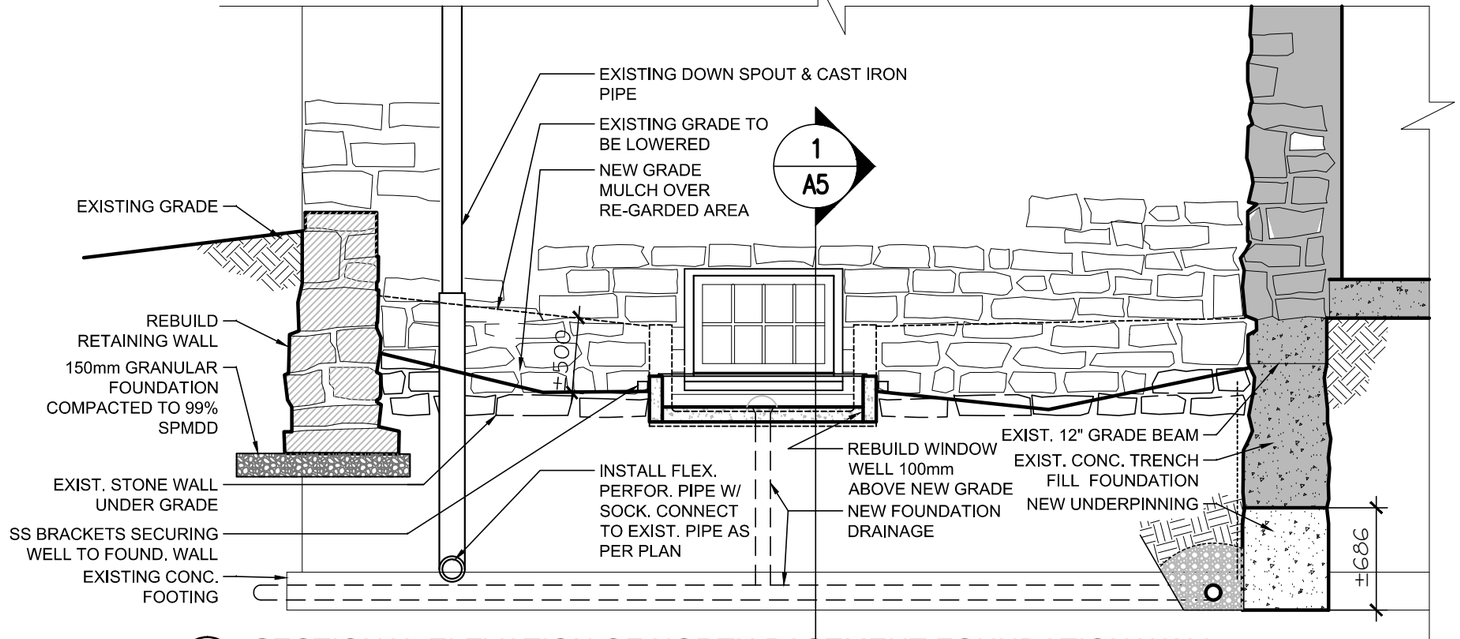
2 A4 SECTION
1 : 40



4 A4 CONNECTION DETAIL (REFER TO 2/A5)
1 : 20



1 A4 SECTION
1 : 20



3 A4 SECTIONAL ELEVATION OF NORTH BASEMENT FOUNDATION WALL
1 : 40

TITLE: SECTION S

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

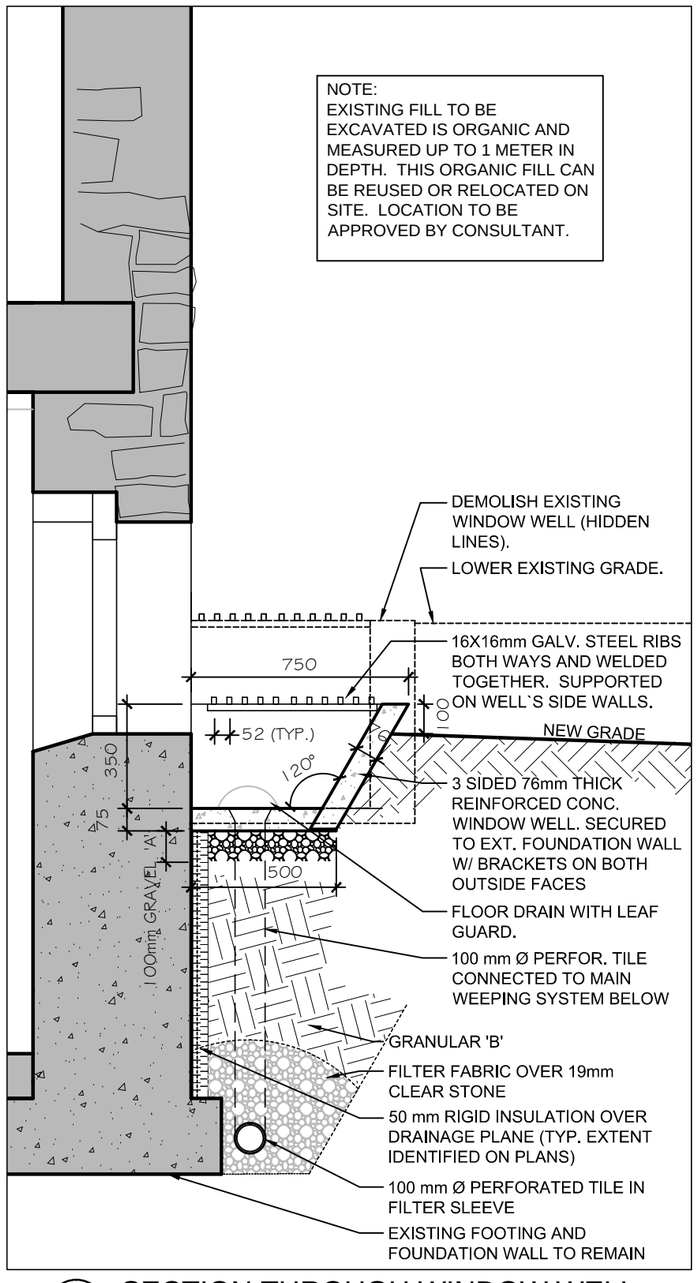
PROJECT #: 1212

SCALE: AS NOTED

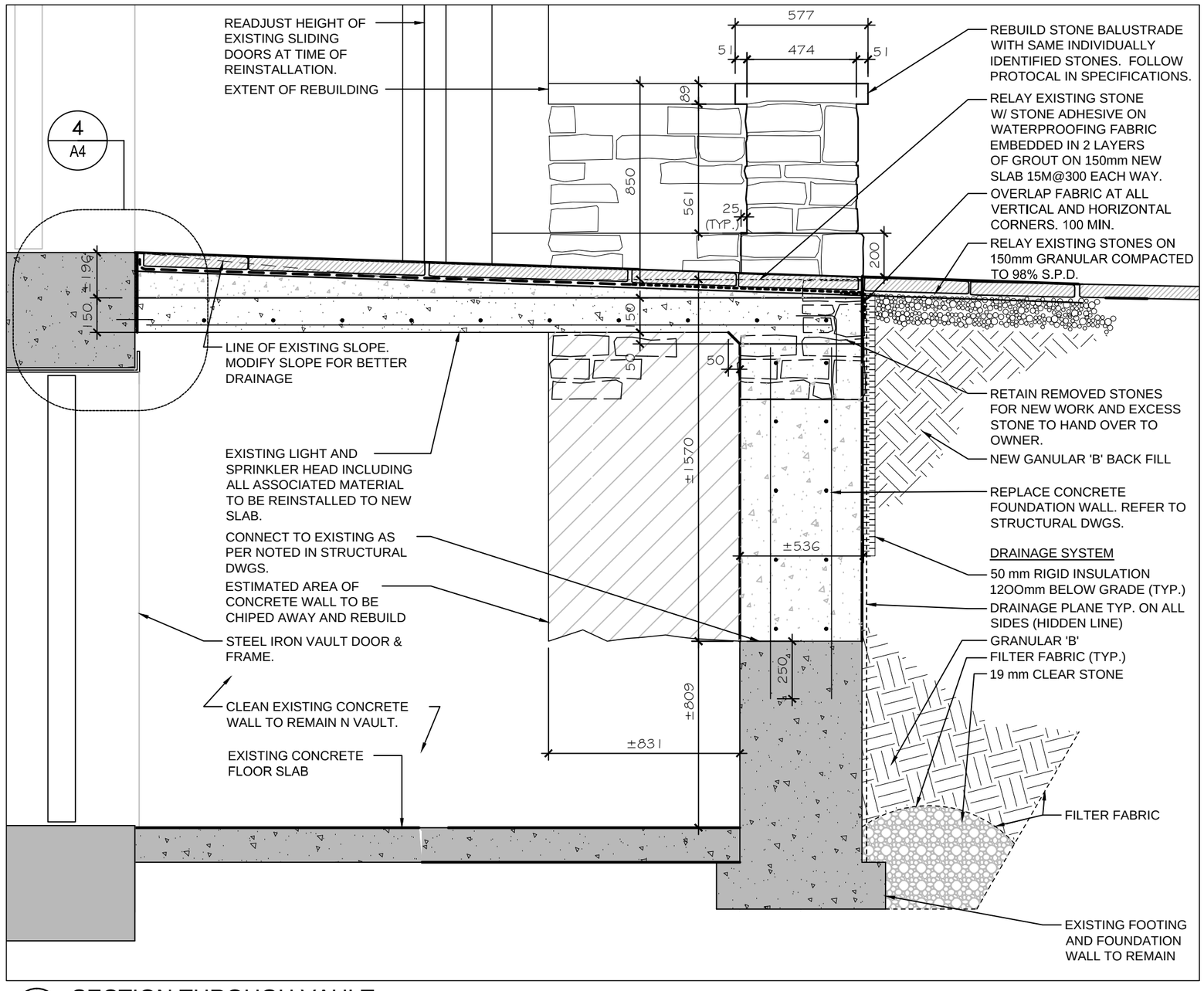
DATE: 20 DEC 2012

CLIENT: MISSISSAUGA Leading today for tomorrow

SECTIONS A4



1 / A5 SECTION THROUGH WINDOW WELL
1 : 20



2 / A5 SECTION THROUGH VAULT
1 : 20

TITLE: SECTION AT NORTH SIDE

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

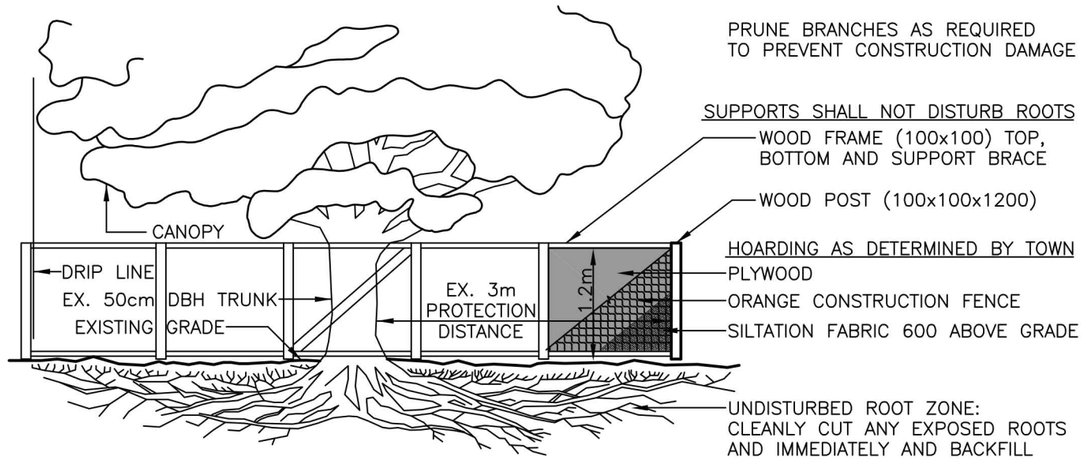
PROJECT #: 1212

SCALE: 1:20

DATE: 20 DEC 2012

CLIENT: MISSISSAUGA Leading today for tomorrow

WALL SECTIONS A 5



MINIMUM TREE PROTECTION DISTANCE FROM TRUNK:

< 10cm DBH	1.2m
10–29cm DBH	1.8m
30–40cm DBH	2.4m
41–50cm DBH	3.0m
51–60cm DBH	3.6m
61–70cm DBH	4.2m
71–80cm DBH	4.8m
81–90cm DBH	5.4m
91–100cm DBH	6.0m
> 100cm DBH	6cm/1cmø

(DIAMETER AT BREAST HEIGHT) DBH = TRUNK DIAMETER AT 1.4m HEIGHT

40cmx60cm SIGN MOUNTED ON ALL SIDES OF BARRIER

TREE PROTECTION ZONE

NO WORK IS PERMITTED WITHIN THE TREE PROTECTION ZONE INCLUDING GRADING, CONSTRUCTION ACCESS AND MATERIAL STORAGE.

TREE PROTECTION NOTES:

1. ALL TREE PROTECTION BARRIERS SHALL BE IN PLACE AND APPROVED BY THE TOWN PRIOR TO CONSTRUCTION ACCESS.

2. ALL SUPPORTS AND STAKES SHALL BE OUTSIDE THE TREE PROTECTION ZONE AND SHALL MINIMIZE ROOT DAMAGE.

3. TREE PROTECTION BARRIERS SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL ALL CONSTRUCTION IS COMPLETE AND APPROVED BY THE TOWN.

4. ALL ARBORICULTURE WORK SUCH AS PRUNING OF BRANCHES AND ROOTS, SHALL BE DONE BY A QUALIFIED TREE WORKER CERTIFIED WITH THE INTERNATIONAL SOCIETY OF ARBORICULTRE APPROVED BY THE TOWN.

1/A6 TYPICAL TREE PRESERVATION DETAILS
NTS

TITLE: SECTION AT NORTH SIDE

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

PROJECT #: 1212
SCALE: AS NOTED
DATE: 20 DEC 2012

CLIENT: MISSISSAUGA Leading today for tomorrow

DETAILS A6

OJDROVIC
ENGINEERING INC.

GEORGE ROBB ARCHITECT

GENERAL NOTES

A. GENERAL

1. THESE DRAWINGS SHOW STRUCTURAL CONTENT ONLY. SEE DRAWINGS OF OTHER DISCIPLINES FOR LIFE SAFETY, ARCHITECTURAL, MECHANICAL AND ELECTRICAL.
2. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS.
3. BEFORE PROCEEDING WITH WORK, VERIFY ALL DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS WITH ACTUAL DIMENSIONS OF EXISTING STRUCTURE. REPORT ANY DISCREPANCIES TO ENGINEER BEFORE PROCEEDING WITH WORK.
4. ALL DIMENSIONS, UNLESS OTHERWISE NOTED, ARE METRIC. ALL LEVELS, UNLESS OTHERWISE NOTED, ARE IN mm. DO NOT SCALE DRAWINGS.
5. THESE DRAWINGS SHOW THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THE JOB SITE, AND DESIGN, INSTALLATION AND SUPERVISION OF ALL TEMPORARY BRACING, SHORING, FORM WORK AND FALSE WORK, REQUIRED TO COMPLETE THE WORK.
6. THE USE OF THESE DRAWINGS SHALL BE STRICTLY LIMITED TO THE INSTRUCTIONS IN THE REVISION BLOCK. BUILDING FROM THESE DRAWINGS SHALL PROCEED ONLY WHEN "ISSUED FOR CONSTRUCTION".
7. ANY DAMAGE TO EXISTING BUILDING OR TO NEIGHBORING PROPERTIES IS NOT PERMITTED. CONTRACTOR IS RESPONSIBLE TO MAKE GOOD ALL UNAVOIDABLE DAMAGE.
8. SHORE ALREADY EXISTING WORK AS REQUIRED UNTIL ALL NEW WORK HAS BEEN COMPLETED AND REVIEWED BY THE CONSULTANT.
9. SHORE FLOORS AS REQUIRED TO SUPPORT CRANES, HOISTS AND OTHER CONSTRUCTION EQUIPMENT, UNTIL COMPLETION OF CONSTRUCTION.
10. CONFORM WITH ALL APPLICABLE CODES AND BY LAWS CONCERNING SAFETY, NOISE AND VIBRATIONS.
11. INFORMATION ABOUT EXISTING BUILDING STRUCTURE IS TRANSFERRED FROM AVAILABLE EXISTING BUILDING DRAWINGS. ENGINEER IS NOT RESPONSIBLE FOR DISCREPANCIES BETWEEN SHOWN EXISTING BUILDING AND ACTUAL CONDITIONS ON SITE.

B. ALTERATIONS AND CONNECTIONS TO EXISTING STRUCTURE

1. EXISTING STRUCTURE SHOWN IS AS PER BUILDING DRAWINGS BY:
   -- ORIGINAL BUILDING: GEORGE ROBB ARCHITECT, DATED DECEMBER 20, 2012
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON PLANS AND ASSUME FULL RESPONSIBILITY FOR THE ACCURACY OF CONSTRUCTION.
3. INSPECT THE EXISTING BUILDING AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS.
4. CHECK ALL DRAWINGS AGAINST ACTUAL CONDITIONS ON SITE PRIOR TO FABRICATING ANY STRUCTURAL STEEL, ORDERING ANCHORS, ETC. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
5. PRIOR TO FABRICATION OF STRUCTURAL STEEL, OPEN UP ALL AREAS WHERE CONNECTIONS ARE TO BE MADE TO EXISTING WORK AND TAKE FIELD MEASUREMENTS. IF REQUIRED, MODIFY METHODS OF CONNECTIONS TO SUIT SITE CONDITIONS FOUND AND REQUEST APPROVAL OF THE ENGINEER. CARRY OUT LOCAL REPAIRS TO THE EXISTING WORK AS NECESSARY AND AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR IS RESPONSIBLE FOR ALL WORK NOT EXPLICITLY SHOWN, NECESSARY TO ACHIEVE FINAL RESULT SHOWN ON CONTRACT DRAWINGS.
7. DO NOT CUT EXISTING CONCRETE REINFORCEMENT UNLESS REVIEWED AND APPROVED BY THE ENGINEER.
8. MODIFY THE LAYOUT OF NEW THROUGH BOLTS, EXPANSION ANCHORS AND OTHER ANCHORING DEVICES REQUIRED TO AVOID EXISTING CONCRETE REINFORCEMENT, OR OTHER UNFORESEEN SITE CONDITIONS. REQUEST APPROVAL BY THE ENGINEER.

C. CODES AND STANDARDS

1. PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, 2006.
2. COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS (LATEST EDITION).

D. MATERIAL AND DESIGN DATA

1. STRUCTURAL STEEL FRAMING: CONFORM TO CAN/CSA-G40.20 AND G40.21, GRADE 350W. ANGLES, CHANNELS AND PLATE SHALL BE GRADE 300W.
2. STRUCTURAL BOLTS, NUTS AND WASHERS: CONFORM TO ASTM A325M.
3. ANCHORS BOLTS: CONFORM TO ASTM 307 UNLESS OTHERWISE NOTED OR SHOWN.
4. ANCHOR RODS: CONFORM TO ASTM A36.

ENGINEER'S STAMP

No.	DATE	DESCRIPTION
1	JAN 18/2013	ISSUED FOR CLIENT REVIEW

TITLE: GENERAL STRUCTURAL NOTES
PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

PROJECT #: 1212
SCALE:
DATE: 18 JAN 2013

CLIENT: MISSISSAUGA Leading today for tomorrow

STRUCTURAL NOTES

S001

5. WELDING OF STEEL STRUCTURE: CONFORM TO CSA STANDARD W59. WELDING SHALL BE PERFORMED BY A COMPANY CERTIFIED UNDER CSA W47.1.

6. CONCRETE: CONFORM TO THE REQUIREMENTS OF CAN/CSA-A23.1-04 - CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION.

   FOUNDATION WALL AND SLABS: CLASS C-1, f'c = 35 MPa AT 28 D.

E. ENVIRONMENTAL DATA AND LOADS

ENVIRONMENTAL DESIGN DATA FOR MISSISSAUGA

SNOW 1/50:	Ss = 1.1 kPa
RAIN 1/50:	Sr = 0.4 kPa

LIVE LOAD

ENTRANCES	4.8 kPa

F. SITE REVIEW RESPONSIBILITIES

1. OJDROVIC ENGINEERING INC. (OEI) WILL PROVIDE GENERAL REVIEW OF CONSTRUCTION IN ACCORDANCE WITH THE PERFORMANCE STANDARDS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO BY MEANS OF A RATIONAL SAMPLING PROCEDURE TO DETERMINE WHETHER THE CONSTRUCTION OF THAT WORK SHOWN ON THE OEI DRAWINGS IS IN GENERAL CONFORMITY WITH THE PLANS, SKETCHES, DRAWING AND SPECIFICATIONS FORMING PART OF THE CONTRACT DOCUMENTS PREPARED BY OEI.

2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR QUALITY CONTROL AND THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT.

3. OEI SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

ENGINEER'S STAMP

No.	DATE	DESCRIPTION
1	JAN 18/2013	ISSUED FOR CLIENT REVIEW

G. SHOP DRAWINGS REVIEW

1. BEFORE ORDERING, CUTTING OR ASSEMBLING ANY MATERIAL, PREPARE SHOP DRAWINGS AS REQUESTED IN CONTRACT DOCUMENTS AND REQUEST REVIEW BY ENGINEER.

2. REVIEW OF SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMANCE WITH THE DESIGN CONCEPT. SUCH REVIEW DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS OR FOR COMPLIANCE WITH CONTRACT DOCUMENTS.

3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS, TECHNIQUES OF CONSTRUCTION AND INSTALLATION, AND FOR COORDINATION OF THE WORK OF ALL SUB-TRADES.

CONSTRUCTION NOTES

A. STRUCTURAL STEEL

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

2. STRUCTURAL STEEL DESIGN IS BASED ON SIMPLE AND CONTINUOUS CONSTRUCTION. AREAS WHERE CONTINUOUS CONSTRUCTION HAS BEEN USED HAVE BEEN IDENTIFIED ON PLANS.

3. STEEL SIZES SHOWN ON PLANS AND DETAILS ARE STANDARD CANADIAN METRIC SIZES.

4. NO STRUCTURAL STEEL SHALL BE CUT IN THE FIELD UNLESS REVIEWED AND APPROVED BY THE CONSULTANT.

5. NO DRILLING, CUTTING, OR WELDING SHALL BE DONE UNLESS APPROVED BY THE ENGINEER.

6. DO NOT PAINT STEEL TO BE FIREPROOFED. FOR FIREPROOFING, SEE SPECIFICATIONS AND ARCHITECTURAL DRAWINGS.

7. COMPANIES ENGAGED IN WELDING SHALL BE CERTIFIED BY THE CANADIAN WELDING BUREAU TO CSA W47.1. COMPANIES SHALL HAVE WELDING PROCEDURES APPROVED AND WELDERS QUALIFIED FOR THE BASE MATERIAL TYPES AND THICKNESSES THAT ARE TO BE WELDED.

8. ALL EXTERIOR STRUCTURAL STEEL INCLUDING LINTELS SHALL BE HOT DIP GALVANIZED.

9. MAINTAIN TEMPORARY BRACING UNTIL COMPLETION OF ENTIRE STRUCTURE INCLUDING ROOF DECKS AND OTHER ELEMENTS WHICH ARE PART OF THE LATERAL LOAD RESISTING SYSTEM. CLEARLY INDICATE ON THE SUBMITTED SHOP DRAWINGS, LOCATIONS AND DESIGN FORCES OF TEMPORARY BRACING.

10. ALL WELDS AND OTHER CONNECTIONS SHALL BE INSPECTED BY CERTIFIED WELDING INSPECTOR.

B. CONCRETE AND REINFORCEMENT

1. ALL DOWELS SHALL HAVE A MINIMUM EMBEDMENT EQUIVALENT TO THE STRAIGHT TENSION EMBEDMENT LENGTH CORRESPONDING TO THE SIZE OF BAR. DOWELS FROM WALLS TO SLABS SHALL HAVE A MINIMUM EMBEDMENT OF 600 mm INTO WALLS AND SLABS UNLESS OTHERWISE NOTED OR SHOWN.

2. PROVIDE DOWELS TO WALLS AND COLUMNS SIMILAR IN NUMBER, SIZE AND SPACING TO THE VERTICAL STEEL IN THE WALL OR COLUMN ABOVE UNLESS OTHERWISE NOTED OR SHOWN.

3. CONSTRUCTION JOINTS:

A) HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE MADE IN BEAMS OR WALLS UNLESS SHOWN ON DRAWINGS OR REVIEWED AND APPROVED BY THE CONSULTANT.

B) VERTICAL CONSTRUCTION JOINTS MAY BE MADE ONLY AT POINTS OF MINIMUM BENDING MOMENT IN BEAMS OR SLABS UNLESS OTHERWISE NOTED OR SHOWN AND THEIR LOCATION SHALL BE REVIEWED AND APPROVED BY THE CONSULTANT.

4. CONTROL JOINTS:

A) UNLESS NOTED OTHERWISE, ALL EXTERIOR WALLS BELOW GRADE SHALL HAVE CONTROL JOINTS AT 6000 mm MAXIMUM.

B) UNLESS NOTED OTHERWISE, ALL SLABS ON GRADE SHALL HAVE CONTROL JOINTS AT 6000 mm MAXIMUM. CUT CONTROL JOINTS AS SOON AS SLAB ON GRADE WILL SUPPORT THE SAW WITHOUT DAMAGE TO SLAB.

5. OPENINGS, SLEEVES, EMBEDDED DUCTS:

A) NO SLEEVES SHALL BE PLACED VERTICALLY OR HORIZONTALLY THROUGH BEAMS UNLESS REVIEWED AND APPROVED BY THE CONSULTANT.

B) NO OPENINGS SHALL BE MADE IN FLAT PLATES OR FLAT SLAB COLUMN STRIPS EXCEPT AS SHOWN ON PLANS OR UNLESS REVIEWED AND APPROVED BY THE CONSULTANT.

6. FOR MINIMUM CONCRETE COVER TO REINFORCEMENT SEE TABLE 17 IN CSA-A23.1-04.

7. COORDINATE AND PROVIDE INSERTS, ANCHOR BOLTS AND ALL CONNECTIONS WITH OTHER TRADES AS REQUIRED.

8. REQUEST REVIEW OF PLACED REBAR BEFORE POURING ANY CONCRETE. PROVIDE MIN. 48 HOUR NOTICE TO ENGINEER.

ENGINEER'S STAMP

No.	DATE	DESCRIPTION
1	JAN 18/2013	ISSUED FOR CLIENT REVIEW

TITLE: GENERAL STRUCTURAL NOTES

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

PROJECT #: 1212

SCALE:

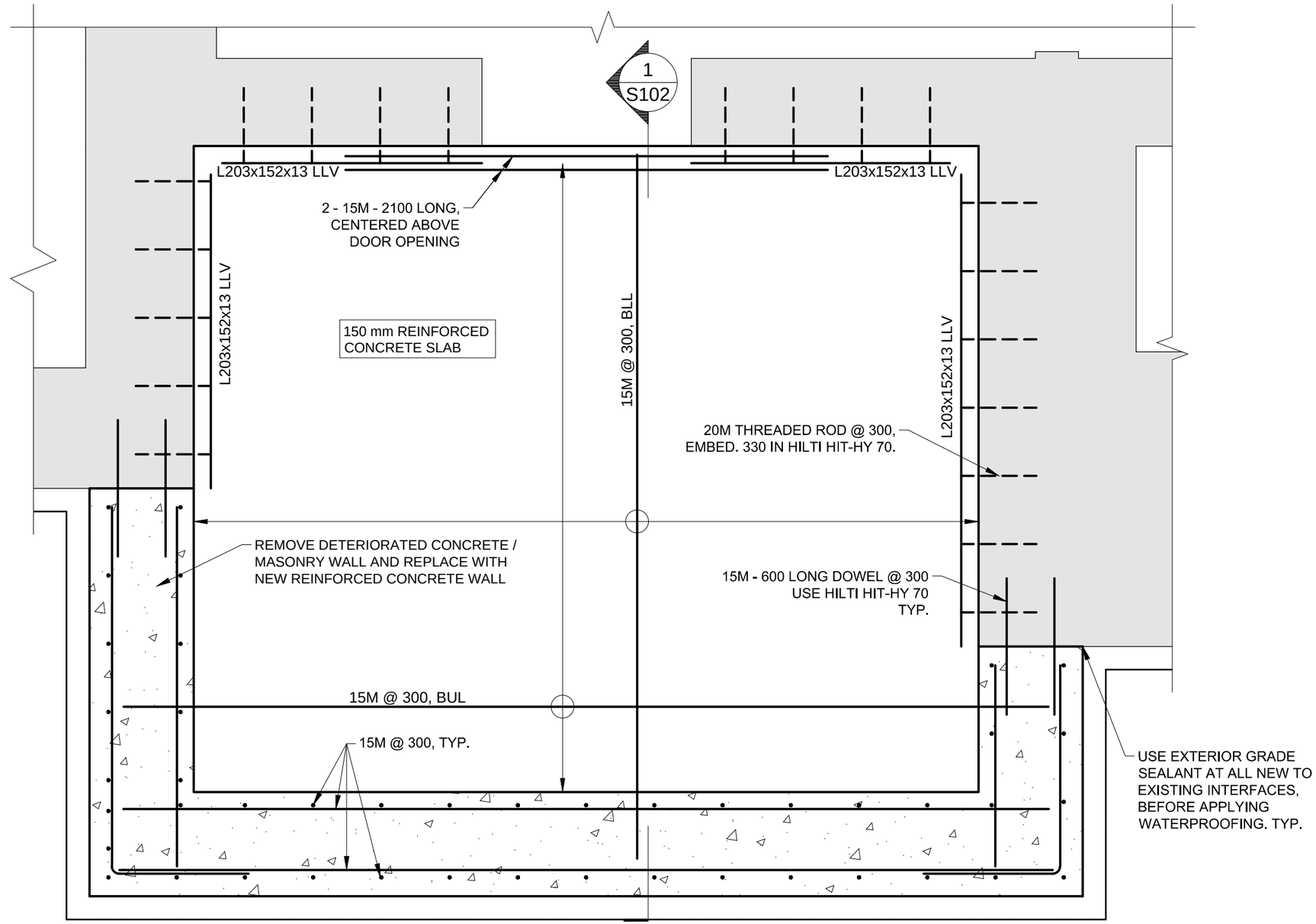
DATE: 18 JAN 2013

CLIENT: MISSISSAUGA Leading today for tomorrow

STRUCTURAL NOTES S003

LEGEND

BLL - BOTTOM LOWER LEVEL
BUL - BOTTOM UPPER LEVEL
EF - EACH FACE
LLV - LONG LEG VERTICAL



1 S101 ROOF FRAMING PLAN
SCALE 1:20

ENGINEER'S STAMP

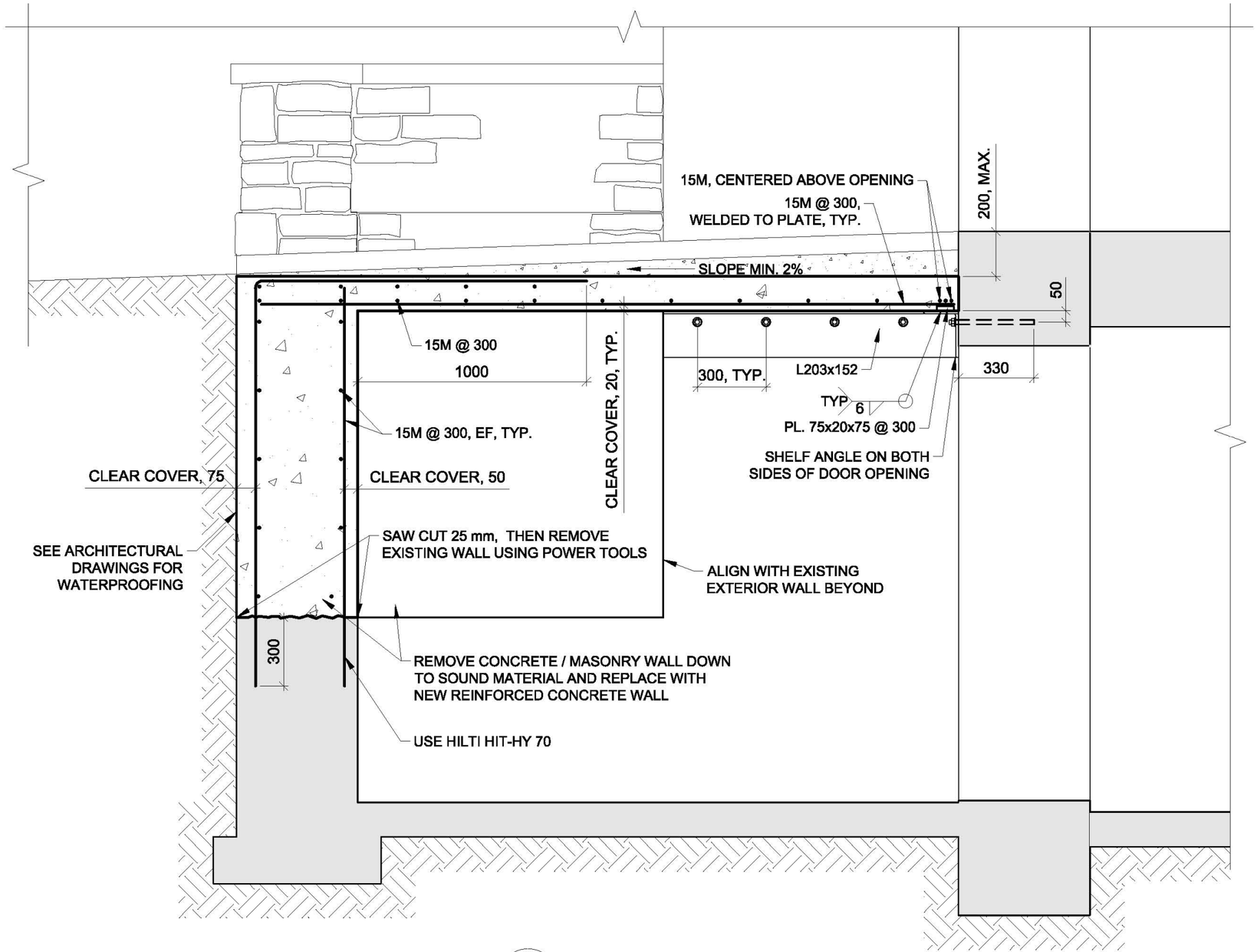
No.	DATE	DESCRIPTION
1	JAN 18/2013	ISSUED FOR CLIENT REVIEW

TITLE: ROOF FRAMING PLAN

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

PROJECT #: 1212
SCALE: 1:20
DATE: 18 JAN 2013

CLIENT: MISSISSAUGA Leading today for tomorrow



1 / S102 STRUCTURAL WALL SECTION
SCALE 1:20

ENGINEER'S STAMP

No.	DATE	DESCRIPTION
1	JAN 18/2013	ISSUED FOR CLIENT REVIEW

TITLE: STRUCTURAL DETAILS

PROJECT: Chappell House - Foundation Repairs
Riverwood Conservancy
4300 Riverwood Park Ln., Mississauga, Ontario

PROJECT #: 1212

SCALE: 1:20

DATE: 18 JAN 2013

CLIENT: MISSISSAUGA Leading today for tomorrow

STRUCTURAL DETAILS S102

OCTOBER, 2012
(rev. February 22, 2013)

HERITAGE IMPACT STUDY

25 QUEEN STREET SOUTH
MISSISSAUGA, ON

Item 5, Appendix 1
Heritage Advisory Committee
Agenda – April 23, 2013

ARCHITECTURAL DESIGN BY:

nia Nadeem Irfan Architect Inc.
10 MILNER BUSINESS COURT
SUITE 213, TORONTO.ON M1B 3C6
T. 416-270-7810 F: 416-800-5434
E: info@niarch.com

HERITAGE IMPACT STUDY BY:

SM DA Strickland Mateljan
Design + Architecture

Overview:

This report is prepared to address the proposed demolition and re-development of the property at 25 Queen Street South, Mississauga, ON. The legal description of the property is Lot 13, Registered Plan 374.

Rick Mateljan of Strickland Mateljan Design Associates Ltd. was engaged by Cordoba Construction Management (agents for the owners Alam & Farida Ansari) to complete a Heritage Impact Study and to comment on an original design by Nadeem Irfan Architect Inc. The site and existing dwelling were photographed and measured in October, 2012. A Chain of Title search was performed by Stephen Nott Conveyancing Services of Brampton, ON. The information from this search was used to establish the timelines and ownership of the property, as set out in Section 3.

This property is located within two Cultural Landscapes (Streetsville Village Core and Mississauga Road Scenic Route) recognized and regulated by the City of Mississauga.

> *"Cultural landscapes are settings that enhance community vibrancy, aesthetic quality, distinctiveness, sense of history and/or sense of place. The City of Mississauga adopted a Cultural Landscape Inventory in 2005. It is the first municipality in the province to do so. All cultural landscapes are listed on the City's Heritage Register. Most landscapes include numerous properties. There are approximately 60 landscapes or features, visually distinctive objects and unique places within landscapes, on the City's Heritage Register.*
>
> *. . . Cultural Landscapes can be defined as a setting which has enhanced a community's vibrancy, aesthetic quality, distinctiveness, sense of history or sense of place."*
>
> *(City of Mississauga website)*

The Cultural Landscape Inventory defines and describes the fundamental characteristics of these Landscapes as follows:

Streetsville:

> *"Despite the encirclement of Streetsville by encroaching urbanization over the past twenty years, the main core of the community retains the distinct scale and character of a rural farming town. New developments continue to respect the scale of shop fronts along the main portion of the street and local features have crept into the many forecourt walls fronting buildings to the north end of the core area. Because of its integration with the surrounding development, the core area remains a local service centre to its surrounding community - albeit to a much larger population base. Care should be taken to ensure that the appearance of Streetsville, including extant churches, cemeteries and public buildings, is retained in the face of future development pressures to ensure that the character of this part of Mississauga remains intact. There are over ninety heritage properties listed, many of which are designated. Streetsville is recognized as a*

significant cultural landscape because it retains a portfolio of heritage buildings of a consistent scale and portrays a period landscape of a small village."

Mississauga Road Scenic Route:

"Mississauga Road is one of the oldest roads in Mississauga. Its alignment varies from being part of the normal road grid in the north to a curvilinear alignment in the south following the top of bank of the Credit River. The scenic quality of the road is notable because it traverses a variety of topography and varying land use from old established residential neighbourhoods to new industrial and commercial areas. From Streetsville south the boulevards and adjacent landscapes are home to some of the oldest and most spectacular trees in the City. It is acknowledged as an important cultural landscape because of its role as a pioneer road and its scenic interest and quality."

(The Landplan Collaborative Ltd., Goldsmith, Borgal & Company Ltd., North South Environmental Inc., Geodata Resources Inc., 2005)

Terms of Reference:

The City requires that at a minimum a Cultural Landscape Heritage Impact Statement must include the following:

1. General requirements:

-property owner contact information
-location map
-a site plan of existing conditions, to include buildings, structures, roadways, driveways, drainage features, trees and tree canopy, fencing and topographical features
-a written and visual inventory (photographs) of all elements of the property that contribute to its cultural heritage value, including overall site views. For buildings, internal photographs and floor plans are also required.
-a site plan and elevations of the proposed development
-for cultural landscapes or features that transcend a single property, a streetscape plan is required, in additions to photographs of adjacent properties
-qualifications of the author completing the report

2. Addressing the Cultural Landscape or Feature Criteria:

-scenic and visual quality
-natural environment
-landscape design
-aesthetic and visual quality
-consistent scale of built features
-illustrates a style, trend or pattern
-illustrates an important phase of social or physical development
-significant ecological interest

3. Property information:

-chain of title, date of construction

4. Impact of Development or Site Alteration:

-destruction of any, or part of any, significant heritage attributes or features
-alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance
-shadows created that alter the appearance of a heritage attribute or change the viability of an associated natural feature, or plantings, such as a garden
-isolation of a heritage attribute from its surrounding environment, context or a significant relationship
-direct or indirect obstruction of significant views or vistas within, from, or of built and natural features
-a change in land use where the change in use negates the properties cultural heritage value
-land disturbances such as change in grade that alter soils and drainage patterns that adversely affect cultural heritage resources

5. Mitigation Measures:

-alternative development approaches
-isolating development and site alteration from the significant built and natural heritage features and vistas
-design guidelines that harmonize mass, setback, setting and materials
-limiting density and height
-allowing only compatible infill and additions
-reversible alterations

6. Qualifications:

-The qualifications and background of the person completing the Heritage Impact Statement will be included in the report. The author must demonstrate a level of professional understanding and competence in the heritage conservation field of study

7. Recommendation:

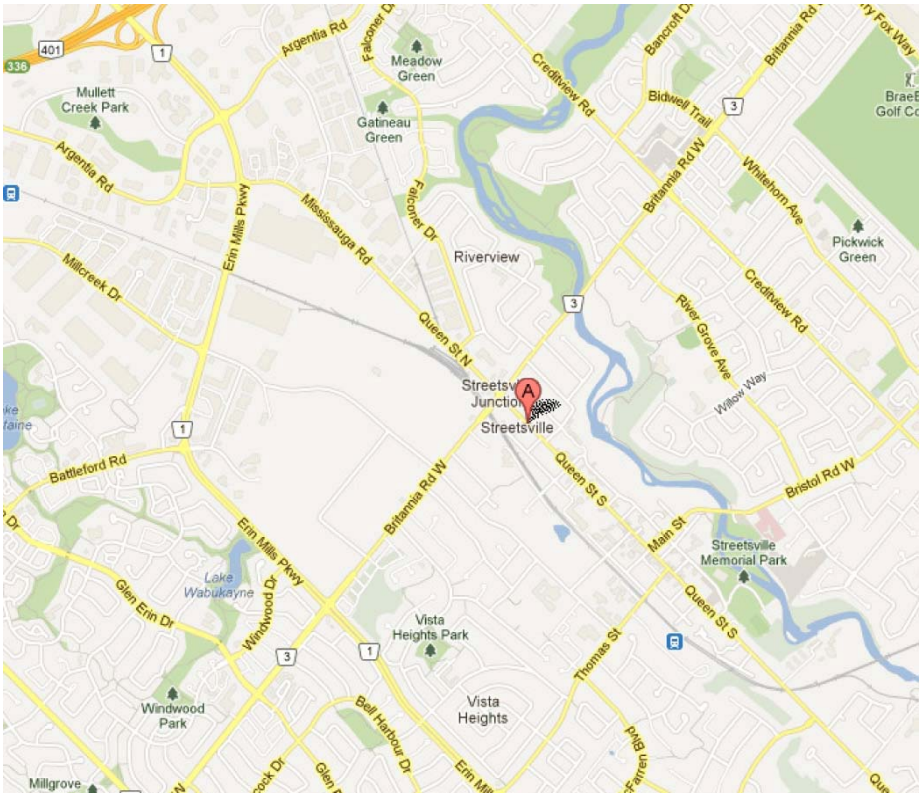
-the consultant should provide a recommendation as to whether the subject property is worthy of heritage designation in accordance with the heritage designation criteria per Regulation 9/06, Ontario Heritage Act

1. General Requirements

Property owners:

The property was acquired in April, 2011 by Alam and Farida Ansari. They may be contacted at their home telephone [redacted] or their cell phones [redacted] (Alam) or [redacted] (Farida). They may also be contacted through their agent, Cordoba Construction Management, 1825 Markham Rd. unit 210, Scarborough ON, 416 844 6471.

Site map:



Context:

The property is located on the east side of Queen Street South, south of Britannia Rd. and north of the historic core of the Village of Streetsville. This is a transitional community characterized by smaller, single family homes that are now being converted

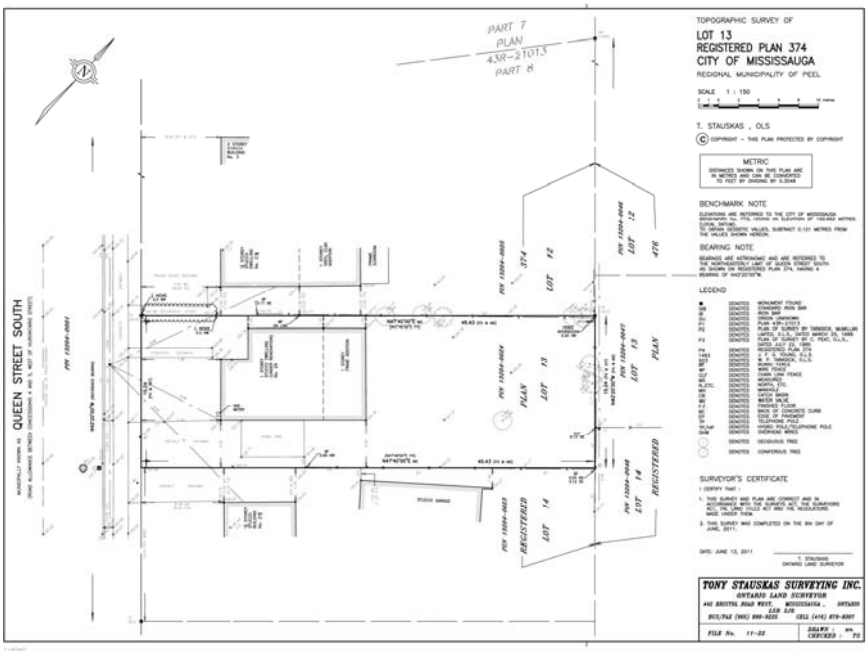
to professional, personal service and medical office uses. There has also been significant re-development and intensification in this area.

The existing buildings to the north and south of the subject site are of similar scale, appearance and style to the subject property and clearly are of the same era. The west side of Queen Street South is a much more diverse built form. Here we see some examples of remaining single family residential frame housing that by its form and detailing would appear to be older than the homes on the east side of Queen Street South. Some of these buildings appear to be original while others have obviously been altered. Directly opposite the subject site and slightly south are examples of recent, two-storey, developer-style single family infill development. Further south of the site at James St. is a newer townhouse infill development. Further west, behind the buildings facing Queen Street South., is a mix of industrial uses bordering the railroad tracks.

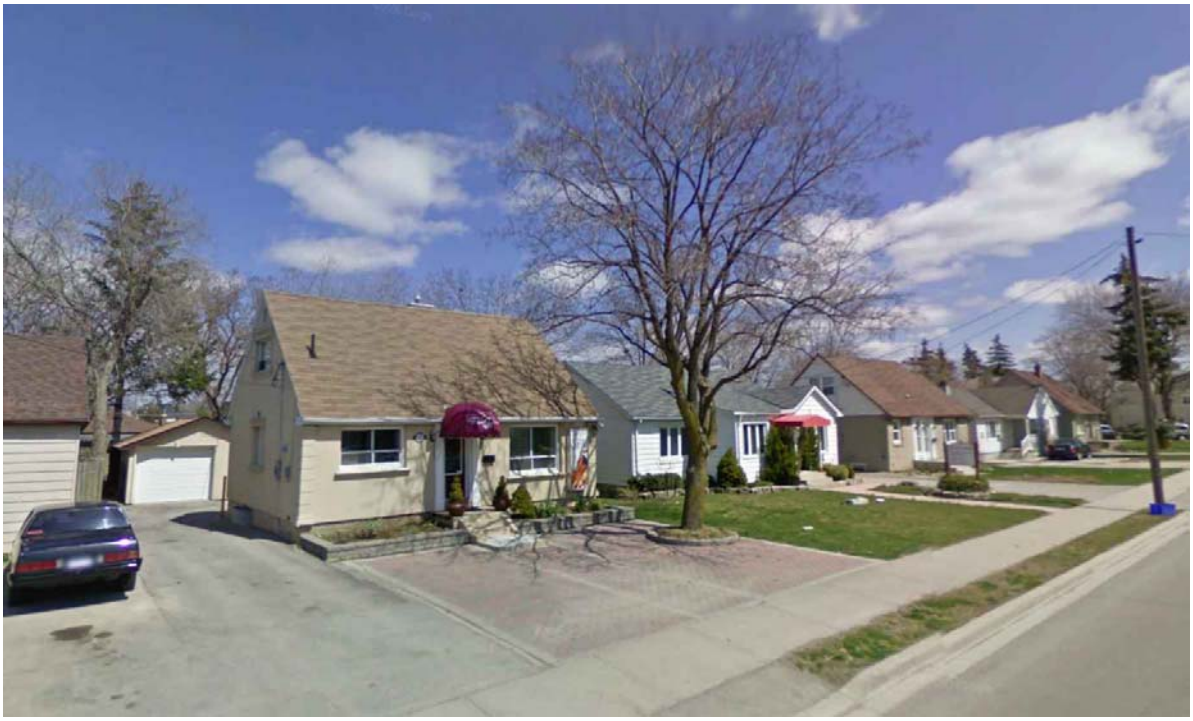
The area is designated as a community node in the Mississauga Official Plan (2011) (presently under appeal). There are a number of specific provisions in the Plan to that encourage:

-the enhancement of the village character of Streetsville
-high level of urban design, landscaping and compact built form
-retention of Queen Street South as a commercial core
-conservation of built heritage features
-designs for new buildings to "enhance the historic character and heritage context of the Streetsville Node through appropriate height, massing, architectural pattern, proportions, setback and general appearance
-development of mix of residential and office uses on second floors and street commercial uses on main floors
-at least two stories and not more than 3 stories of building height
-apparent height of buildings to be reduced through massing and design
-development to reflect existing lotting patterns, setbacks of new buildings should match adjacent buildings
-placement of parking areas to the rear

The property is zoned C4-38 under the City of Mississauga Zoning By-law 225-2007. This is "Mainstreet Commercial" zoning that allows retail stores, restaurants, business and personal service uses but not automotive uses. The by-law also restricts building height to two stories in this local area.



Existing property survey



Streetscape south of subject property

Streetscape north of subject property

Context Plan showing built form on both sides of Queen St. and industrial development beyond

New "developer style" infill residential housing across and south of subject site

Existing older residential building across from subject site

Existing older renovated buildings across and north of subject site

Townhouse infill development across and south of subject site

Existing conditions on site:

The subject property is a level, rectangular lot approximately 15.3m wide x 45.4m deep. Total lot area is approximately 695 m2. The site is bordered to the north and south by a mix of single family residential uses and by commercial uses operating from former single family residential dwellings. To the east is a stable, single family residential neighborhood. There are no significant trees or other natural features on the property.

There are no outbuildings on the property.

The existing house is a one-storey wood frame dwelling. It is not occupied and has been stripped of all interior finishes and most of the exterior finishes. What appears to have been a former attached garage to the south has been demolished completely leaving only a concrete slab and traces on the south wall to indicate its size and location. It is unclear if this garage was part of the original construction or later additions. The building remains a compact and recognizable form. Despite the demolition, the interior partitioning is intact and from this room uses can be deduced. As-built drawings prepared by Camber Design dated May, 2011 (see Appendix) are also available that describe the pre-demolition character of the building (although the garage had already been removed at the time of these drawings).

A 2009 photograph (page 8) shows the garage in place but shows the door covered in siding and a chimney emerging from the garage roof. Clearly the garage had been converted to living space at this time, and may have been functioning as an accessory apartment.

The partial demolition of the building was allowed by a permit issued by the City of Mississauga.

Front elevation (Google Maps 2009 image) showing former garage in place but with garage door covered and chimney in garage space, exterior finishes in place

Front elevation (October 2012) showing garage and exterior finishes removed (note permit for partial demolition in front window)

The building consists of an original component at the front and a large, one-storey addition across the back of the building. This is obvious because of differing materials (the front part of the building is sheathed in “tentest” type sheathing while the back is sheathed in Oriented Strand Board) and because the roof of the addition was over-framed on top of the original and given the partially demolished nature of the building this is plainly visible from inside. The original part of the main floor consists of a small front entry vestibule leading to a living room, kitchen, two bedrooms and bathroom. The rear addition consists of two rooms, one that was probably a master bedroom and a dining room.

The construction of the main part of the house is 2 x 4 studs; 2 x 6 and 2 x 8 roof and ceiling framing with solid board floor and roof sheathing. Waste plumbing is cast iron with threaded steel. The lumber is all of the modern, dimensional variety suggestive of post WW2 construction (see Part 3). The threaded steel waste plumbing would support this same conclusion, and this and the solid board sheathing would suggest not later than the 1950’s. The addition is similar, but with plywood roof sheathing and the previously mentioned OSB wall sheathing. OSB is a newer material that only became available in the 1970’s. City of Mississauga Building Department data records an addition to this building in 1973 (see Part 3), and this seems consistent with the construction of the addition.

South elevation showing addition to and demolition of original building (note recent waterproofing of foundation)

The basement of the original building is concrete block exterior with concrete block piers supporting beams above. This is consistent with post WW2 construction. The addition is built

on a perimeter crawlspace foundation which could not be accessed. There is no finishing in the basement and all of the mechanical equipment has been removed.

Rear elevation

North elevation (addition visible beyond) (note poor connection detail at soffit)

Typical interior framing original part of building

Typical interior framing at addition (note OSB wall sheathing, plywood roof sheathing)

Typical basement concrete block construction

Typical main floor window

Original basement windows remain

Windows in the main floor of the building are wood framed, early thermal units. These are common to both the original building and the addition and are suggestive of 1970's construction. It is probable that the original windows were replaced as part of the 1973 renovation project. The original interior trimwork has all been removed as part of the recent demolition. The majority of the exterior finishing has been removed and what has been exposed is an accretion of finishing materials over time (remnants of stucco, aluminum siding and manufactured stone are visible) that, as much as can be determined, was generally poorly detailed and installed and displays no significant architectural intent or interest.

The remaining exterior trimwork and soffits are similarly generic in nature, poorly detailed, readily available lumberyard type products. Roofs are simple, medium slope and covered in asphalt shingle. There are no original windows or character-defining features. There is no significant architectural interest obvious here.

Analysis:

This home is clearly one of a number of similar ones that were built along the east side of Queen Street South immediately following WW2. As a group they are of some cultural interest in describing the mid-century trend toward sub-urbanization, the urgent need for housing for returned veterans and for post-war immigrants and the consequent housing boom that occurred during these years. Individually, however, their generic nature and lack of detail or

obvious architectural expression means that there is no argument for preservation. In the case of this particular building, any interest that may have once possessed has been stripped away by successive renovations and by the most recent partial demolition. With the possible exception of the rear addition that added more living space and a third bedroom there is little ability here to use this home as a way to track changing cultural expectations.

There is also no significant way that this home attempts to integrate itself into the landscape.

Proposal:

The proposal involves the demolition of the existing home on this site and the construction of a new building of approximately 340 m2 designed by Nadeem Irfan Architect Inc. The new building is proposed to be sited approximately in the same area as the home to be demolished. It will feature commercial uses on the ground floor and one residential apartment above, with parking provided in the rear yard.

The proposed building is a simple, two-storey volume with brick finish and asphalt shingle roof. The roof ridge has been turned at the front so that it runs parallel to the street. This configuration is similar to the existing buildings along the east side of Queen Street South. At the ground floor there is a bay window and door combination that recalls a classic "boomtown" retail storefront arrangement surmounted by three smaller casement windows. This is a feature common many of the existing commercial buildings in the historic downtown core of Streetsville. To the south is a single door that accesses the second floor suite. The roofline is broken above this second door to give a symmetry to the main entry and windows above. This also serves to visually break down the front elevation and reduce the apparent massing of the building.

The building is larger than its immediate neighbours but because of the simplicity of its design it will integrate well into the streetscape. It meets all zoning by-law requirements and meets the intent of the Official Plan policies described above.

2. Criteria

<u>Streetsville Village Core cultural landscape criteria:</u>

-illustrates style, trend or pattern

Analysis:

- the existing one-storey, single family homes on the east side of Queen Street north of the village core can be regarded as illustrating their own style or trend as an example of post-war suburban residential development, but clearly the intent of the Official Plan and zoning by-law is to encourage the re-development of this area with built form and

use more similar to the historic downtown. In this respect both the proposed built form and use are appropriate and support the historic downtown core.

-illustrates an important phase in Mississauga's Social or Physical Development

Analysis:

-the context of this "important phase" is clearly the development of the Village of Streetsville, and by supporting the downtown core the proposal meets this requirement.

-aesthetic and visual quality (built environment)

Analysis:

-this is a part of the community very much in architectural transition and we can anticipate more pressure to demolish and re-develop adjacent properties. The proposed building draws its design cues from both the historic downtown core as well as the immediate local area. The proposed building is a simple form that displays restraint as regards its size, proportion and detailing. It will be an attractive addition to the community, both now and as neighbouring properties are redeveloped.

-historical or archealogical interest

Analysis:

-not applicable. This property was first developed in the 1940's and nothing would suggest particular historical or archealogical interest here.

<u>Additional Mississauga Road Scenic Route criteria:</u>

-scenic and visual quality (landscape environment)

Analysis:

- this immediate area is characterized by relatively dense development that has generally seen front yards given over to parking and a loss of visual quality. By locating the parking at the rear of the site and creating landscaping opportunities at the street line the proposal does meet this requirement

-horticultural interest

Analysis:

-not applicable

-landscape design, type and technological interest

Analysis:

-not applicable

-consistent scale of built features

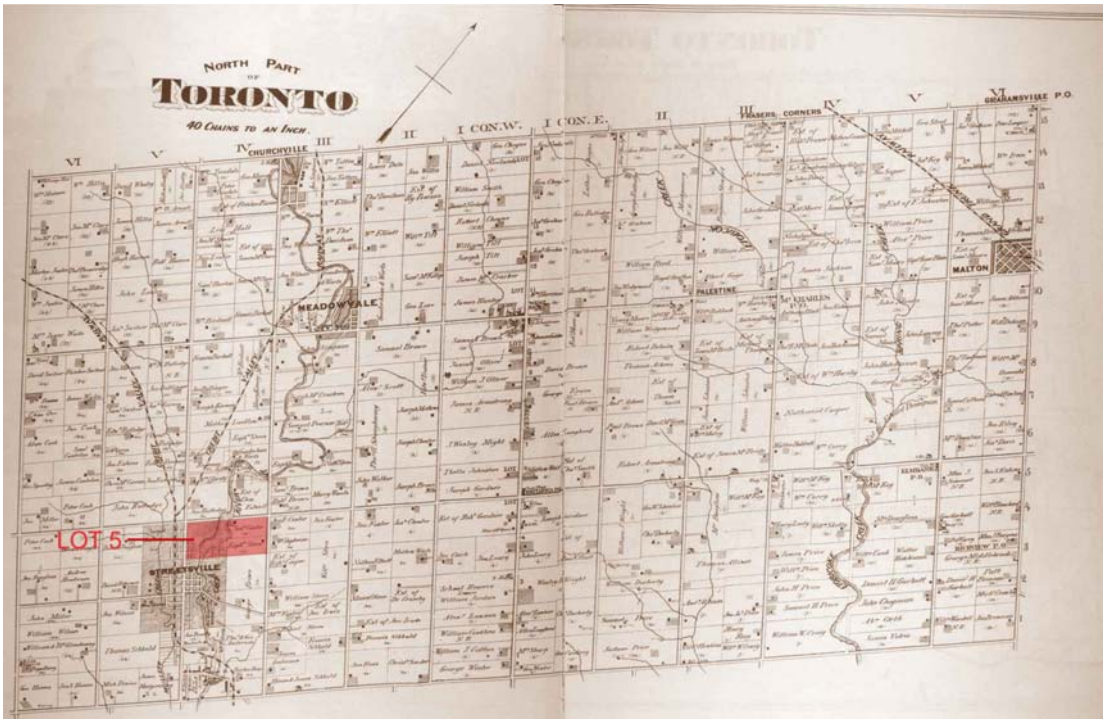
Analysis:

-the proposal is consistent with the scale of the historic downtown core. As the only two-storey building along the east side of Queen Street South it is not entirely consistent with its immediate neighbours but clearly the intent of the Official Plan and zoning by-law is to require development of the type proposed here and not to respect the existing one-storey development. As more of these properties are re-developed, this consistency will re-emerge. It should also be noted that the existing development across the street from the subject site is much more varied, with existing one and two-storey residential development, commercial development and industrial development all in close proximity. In the short term, the scale, massing and detailing of this proposal is such that it will compliment the streetscape. Many of the existing buildings on the east side of Queen Street South are transitioning to commercial uses and clearly this type of development, supported as it is by the Official Plan and zoning by-law, will become more prevalent in the near future.

3. Property Information

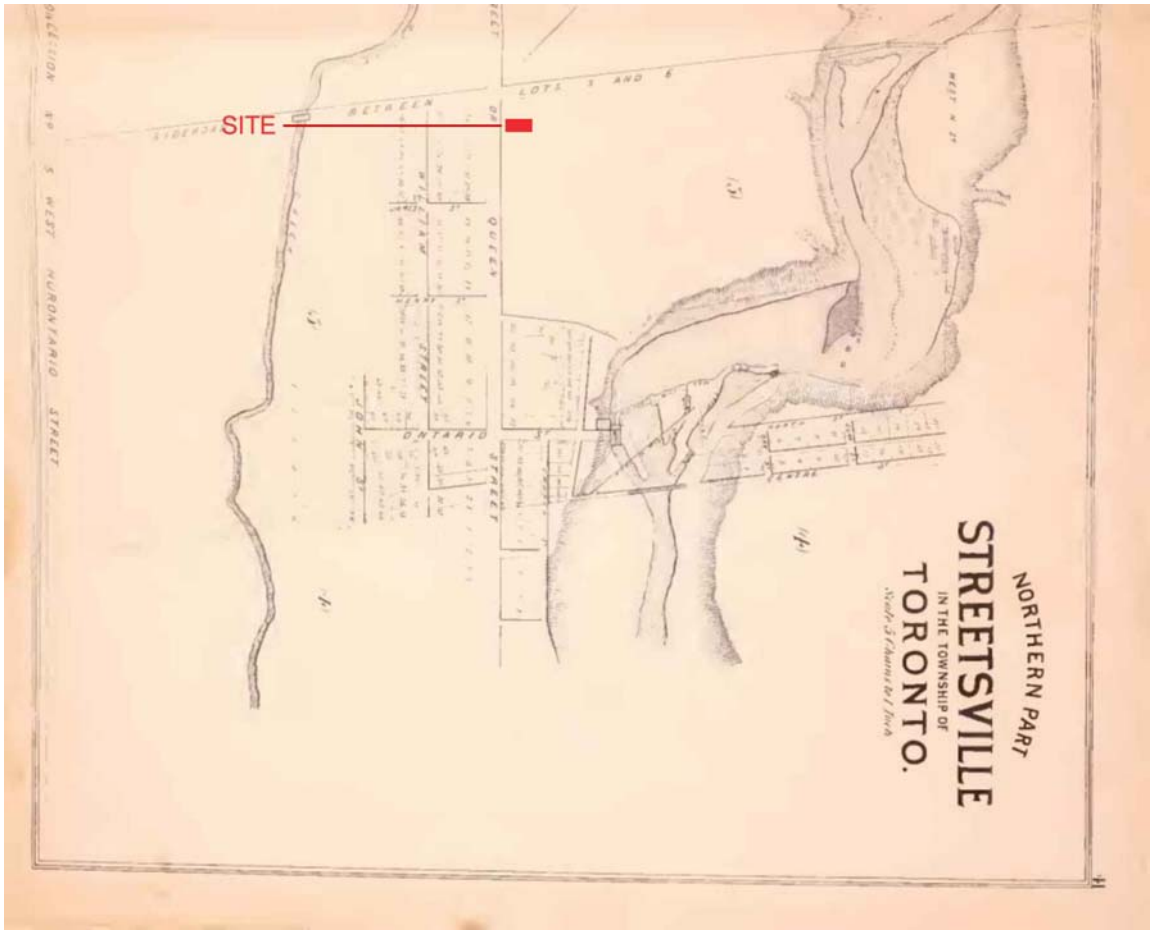
Analysis of land titles information reveals as follows:

This property was part of an approximately 100 acre parcel known as *Lot 5 Concession 4 West of Hurontario Street*. This is part of the "Second Purchase" of lands from the Mississauga First Nation in 1818 and surveyed by Timothy Street and Richard Bristol about 1819.



Concession 4 – Lot 5
Part of Second Purchase of 1818 (map is from Illustrated Historical Atlas of the County of Peel, 1877)

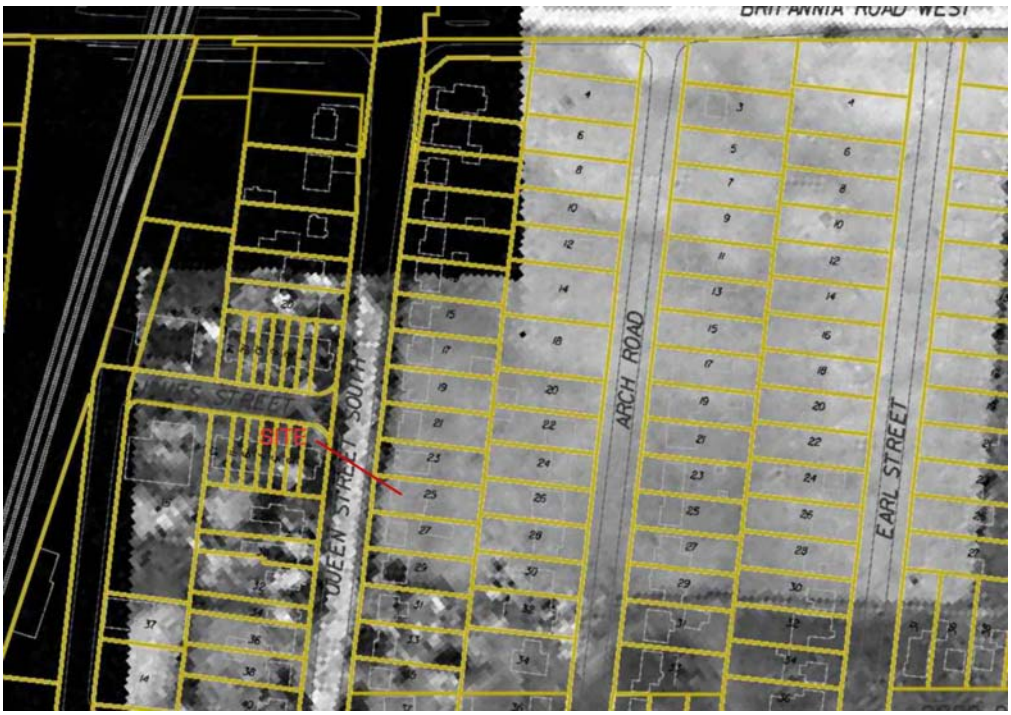
Records of ownership of this property begin in the 1841 with the original Crown patent to Henry Rutledge. The Rutledge family were one of the early settlers in this area and were significant land owners, also owning property to the north and west of this site. In 1858 we see a partial transfer of part of Lot 5 to James E. Rutledge and again a partial transfer in 1869 to James Rutledge (it is unclear if this is the same person). The latter transfer was for $5,600, a very large sum of money at the time. Most transfers at this time were for sums less than $2,000, often less than $500.



Map of Streetsville, 1877 – note that subject site is not developed at this time
(map is from Illustrated Historical Atlas of the County of Peel, 1877)

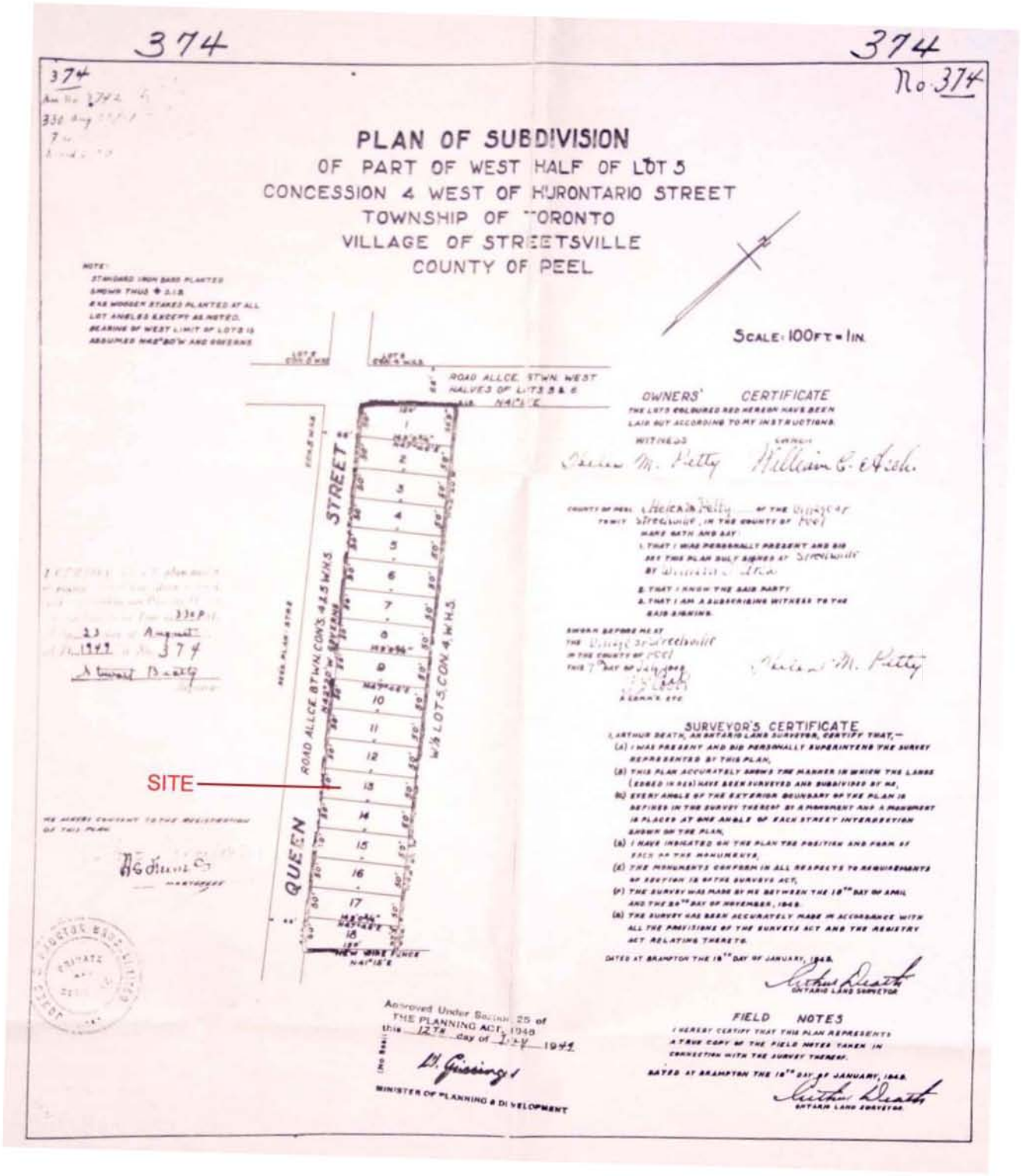
Transfers of property continued within the Rutledge family through the late 19th and early 20th centuries, culminating in a transfer to Nellie Rutledge of lands which include the subject site in 1930. Nellie Rutledge held the lands until 1938 when she sold 45 acres of the west part of lot 5, including the subject property, for $2500 to Elizabeth Hoey and Logan Hoey. This ended almost a century of Rutledge ownership of this property.

The property was vacant at this time, as evidenced by a 1944 air photo that shows no development on these lands.



1944 Air Photo – note that subject site and neighbouring properties not developed at this time (photo is from City of Mississauga web-site)

The Hoeys held the property until 1948 when they sold it to William C. Arch. In 1949 Arch registered a Plan of Subdivision that would shape the development of this part of Queen Street South and would create the subject lot (William Arch's name endures in Arch Rd., located just east of the subject site).



1949 Plan of Subdivision

Development of the property began immediately. In 1950 William Arch sold the newly developed property to Sarah H. Mills, who held it for three years before she sold to Robert Ross and Susan A. Ross in 1953. Presumably there was a house on the property at that time.

By 1954 development of the area was complete, as evidenced by the air photo taken that year.

1954 Air Photo – note development complete along Queen St. S. – lands to east under development (photo is from City of Mississauga web-site)

The Ross' also held the property for only three years, selling to Katherine I. Morgan and Edwin Morgan in 1956. In 1973 it was sold by Mrs. Morgan (presumably following the death of Edwin) to James Wade and Georgette M. Wade. It was during the time of the Ward tenure that the rear addition and presumably the replacement windows and other renovations took place. The Wades sold the property to Lawrence Wren and Marlene Wren in 1975. The Wrens sold to the present owners, Alam & Farida Ansari, in 2011.

Analysis:

This property shares with its neighbours that it is associated with the post-war development of the area and with the sub-urbanization and intensification that occurred during this period. Research has not discovered anything noteworthy or in any way significant about this particular building, however.

The property is notable in that it is associated with the Rutledges, a family of local importance. This connection is very tangential, however, because development of the lands did not begin until after their tenure.

The home is notable in that it served as the home of two long-term owners, Katherine & Edwin Morgan and Lawrence & Marlene Wren. Examination of the available written histories of Streetsville and of the resources and databases of Heritage Mississauga or the Canadiana Room of the Mississauga Central Library failed to find any reference to the Morgan or Wren families in Streetsville.

It would appear, then, that there is little of cultural importance or significance to this building or its owners.

4. Impact of Development or Site Alteration

The proposed development will have minimal impact on the identified heritage attributes in the cultural landscape. The cultural landscape document(s) identify no particular features associated with the existing building at 25 Queen St. S. There will be a change in building form but only as mandated under the Official Plan and zoning by-law. There will be minimal shadow impacts outside of the subject site. The development will result in intensification of the site but this is consistent with similar projects in the immediate area and with the City's vision for future development of this area.

5. Mitigation Measures

-as there are no identifiable detrimental impacts, no mitigation measures are necessary or proposed.

6. Qualifications

-a CV for Rick Mateljan is attached.

7. Recommendations

The property must be evaluated under the criteria for designation under the Ontario Heritage Act.

1. The property has design value or physical value because it,

    i. is a rare, unique, representative or early example of a style, type, expression, material or construction method.

    ii. displays a high degree of craftsmanship or artistic merit, or

    iii. demonstrates a high degree of technical or scientific achievement.

Analysis: The building proposed to be demolished has been stripped of its inside and outside finishing. Nothing about the building would indicate that it was ever rare, unique or displayed a

high degree of craftsmanship or achievement, and clearly now it does not display any of these attributes.

2. The property has historical value or associative value because it,

    i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to the community,

    ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or

    iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.

Analysis: The building proposed to be demolished has associations with the mid-century development of this area, although to no greater a degree than other buildings on the street or in the immediate community. There is no evidence that this building has any significance to any identifiable community or culture. There is evidence of association with the Rutledge family, who were of cultural importance to the community, but the connection is not significant.

3. The property has contextual value because it,

    i. is important in defining, maintaining or supporting the character of an area,

    ii. is physically, functionally, visually or historically linked to its surroundings, or

    iii. is a landmark.

Analysis: The property proposed to be demolished does not maintain the character of the streetscape in a significant way. It is linked to its physical location or surroundings by virtue of the fact that it shares similar massing and form to its neighbours, but this is a weak relationship that grows weaker as other buildings on the street transition to non-residential uses and forms. It is not a landmark.

Conclusion:

The house at 25 Queen Street South is a generic, tract built house whose form and finishes have been compromised by successive renovations, alterations and by the recent partial demolition.

The building does not meet the requirements for designation under Part IV of the Ontario Heritage Act.

8. Provincial Policy Statement:

Under the Provincial Policy Statement,

"Conserved: means the identification, protection, use and/or management of cultural heritage and archaeological resources in such a way that their heritage values, attributes and integrity are retained."

Analysis:

Under this definition, 25 Queen Street South does not warrant conservation.

Bibliography:

Published materials-

Hicks, Kathleen A., Streetsville: from Timothy to Hazel

Illustrated Historical Atlas of the County of Peel

Non-published materials and collections-

Canadiana Room, City of Mississauga Public Library

Heritage Mississauga, including Wm. Perkins Bull collection

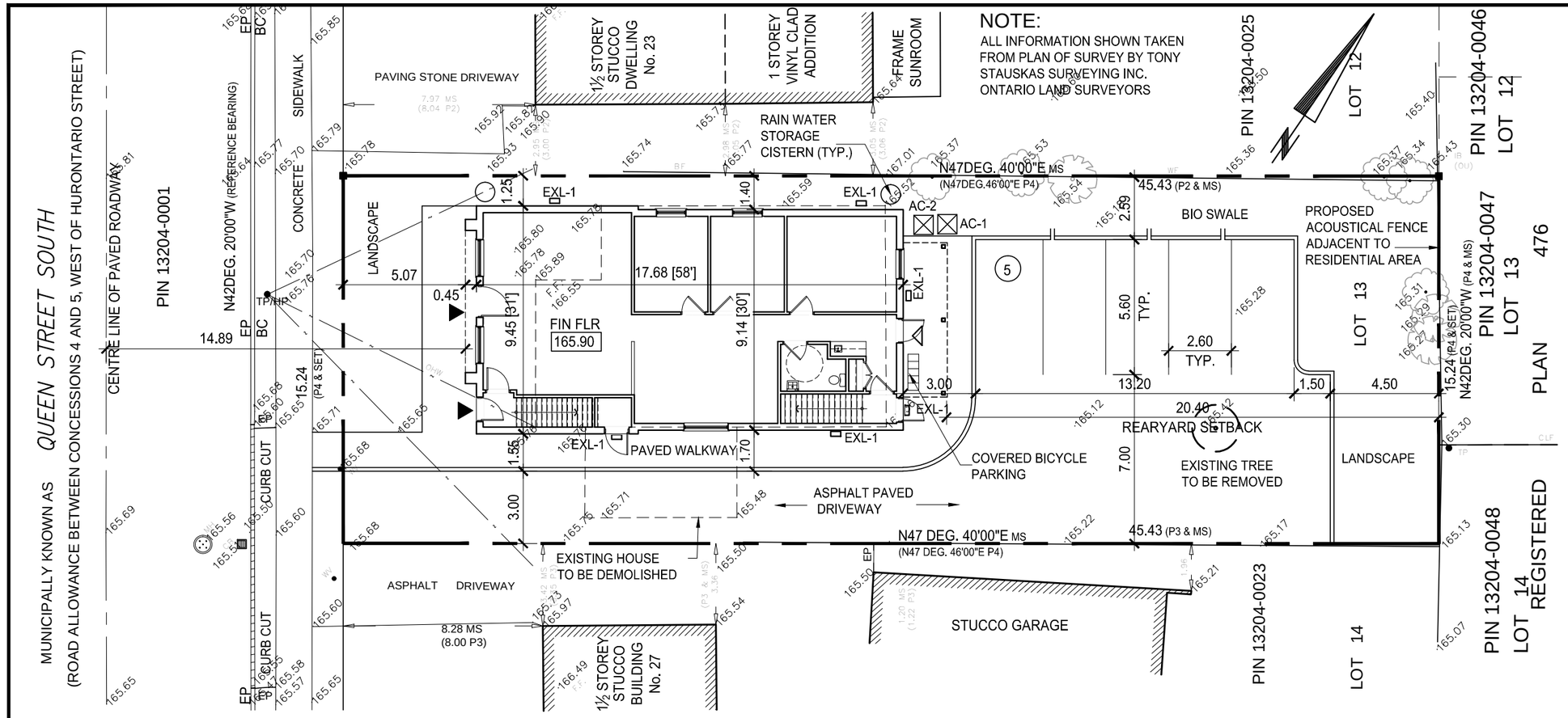
Websites-

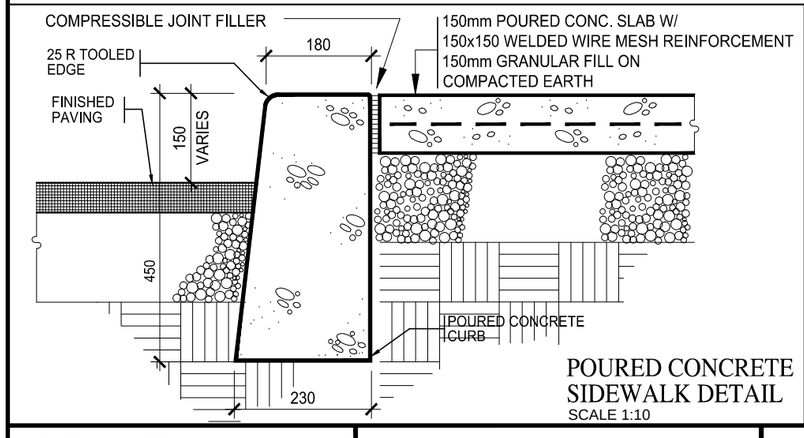
Historic Images database, City of Mississauga

Property Information database, City of Mississauga

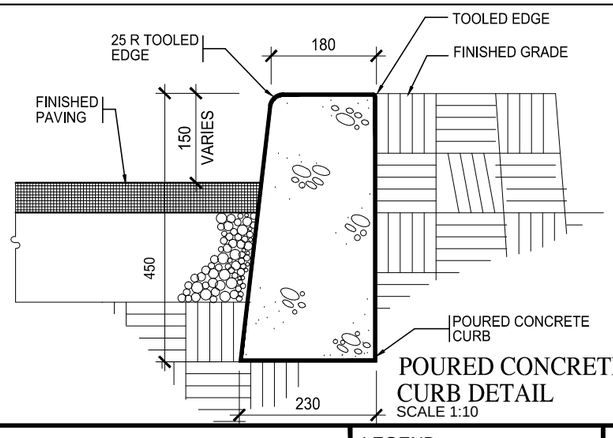
Appendices:

- Site plan, floor plans and elevations of proposed development
- Floor plans and elevations of existing building
- Streetscape drawing showing proposed development in context





POURED CONCRETE SIDEWALK DETAIL
SCALE 1:10



POURED CONCRETE CURB DETAIL
SCALE 1:10

LEGAL DESCRIPTION

TOPOGRAPHIC SURVEY OF
LOT 13
REGISTERED PLAN 374
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL

SITE STATISTICS

LOT AREA:	692.35 sq. m.	
COVERAGE:	- sq.m.	
LANDSCAPE AREA	- sq.m.	-%
PAVED AREA	- sq.m.	-%

FLOOR AREAS		DEDUCTIONS	GFA NON RESIDENTIAL
BASEMENT	163.70 sq.m.	- sq.m.	- sq.m.
GROUND	163.70 sq.m.	23.70 sq.m.	140.00 sq.m.
SECOND	163.70 sq.m.	0.0 sq.m.	0.0 sq.m.
TOTAL	491.10 sq.m.	23.70 sq.m.	140.00 sq.m.

OFFICE GFA NON RES. 140.00 sq.m.

PARKING CALCULATIONS

OFFICE 140 X 3.2/100 = 4.93 ———— 4.48 SPACES OR 4.0 SPACES
(3.2 SPACES/100 sq.m)

SECOND FLOOR APARTMENTS _____ 1.0 SPACE
(1.25 SPACE/DWELLING)

TOTAL PARKING REQUIRED 5.0 SPACES

PARKING PROVIDED: 5.0 SPACES

GENERAL NOTES

1. *ALL DRAWINGS ARE THE PROPERTY OF THE ARCHITECT AND THEY ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT FROM THE ARCHITECT.*
2. *CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK AND TO REPORT ANY DISCREPANCIES TO THE ARCHITECT.*
3. *DO NOT SCALE DRAWINGS.*
4. *ALL CONSTRUCTION TO BE ACCORDING TO BEST COMMON PRACTICE AND CONFORM TO THE ONTARIO BUILDING CODE.*

TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

- *BUILDING ENTRANCE* ▲
- *BUILDING EXIT* △
- *OUTDOOR LIGHTING CUT-OFF WALL PACK* EXL-1
- *OUTDOOR LIGHTING GOOSE NECK WALL & SIGN LIGHTING* EXL-2

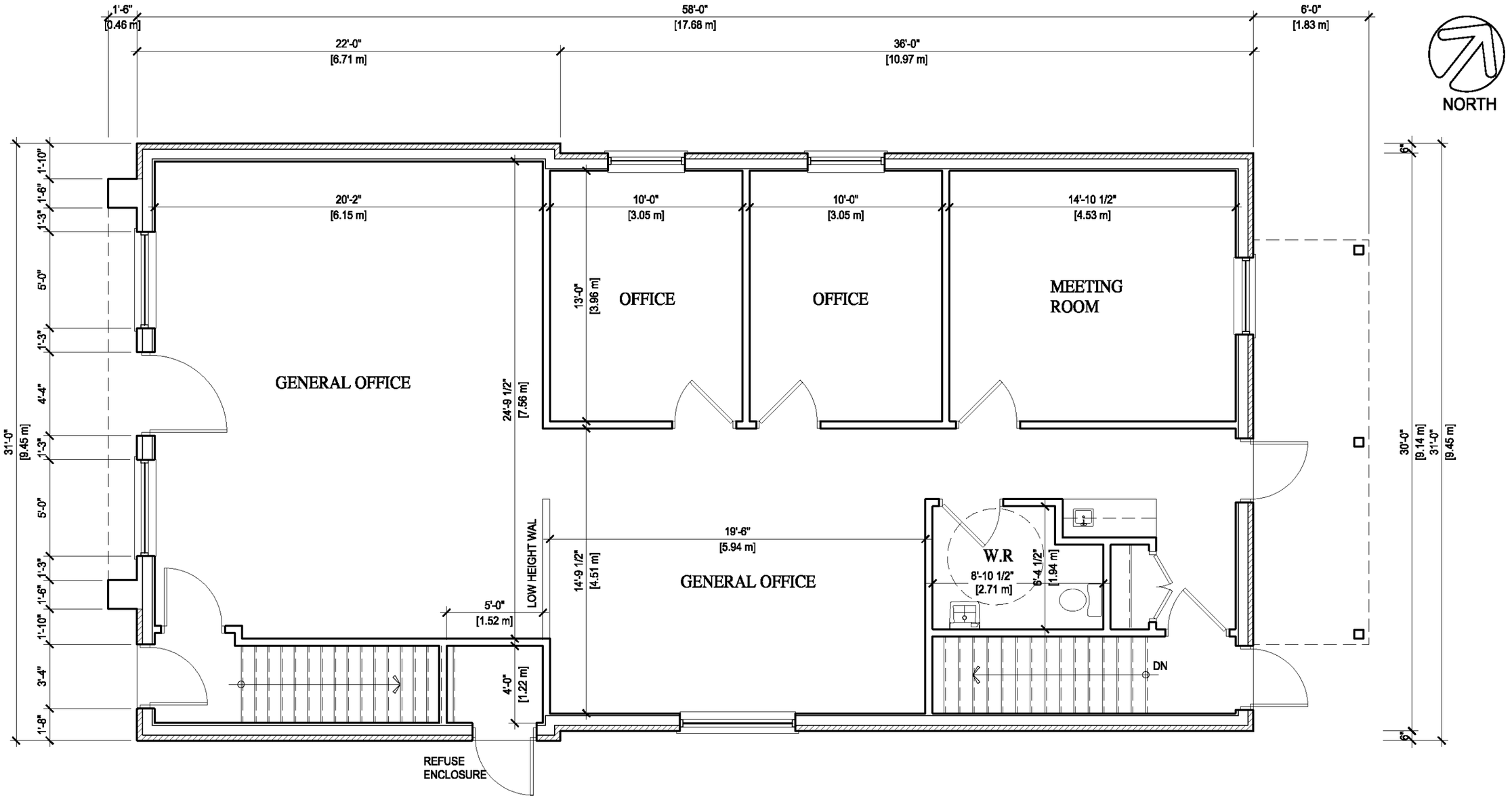
THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE ARCHITECT.

PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

Nadeem Irfan Architect Inc.
10 MILNER BUSINESS COURT
SUITE 213, TORONTO.ON M1B 3C6
T: 416-270-7810 F: 416-800-5434
E: info@niarch.com

DESCRIPTION
SITE PLAN

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A1
SCALE	
1:200	



GENERAL NOTES

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2. *CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK AND TO REPORT ANY DISCREPANCIES TO THE ARCHITECT.*
3. *DO NOT SCALE DRAWINGS.*
4. *ALL CONSTRUCTION TO BE ACCORDING TO BEST COMMON PRACTICE AND CONFORM TO THE ONTARIO BUILDING CODE.*

TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

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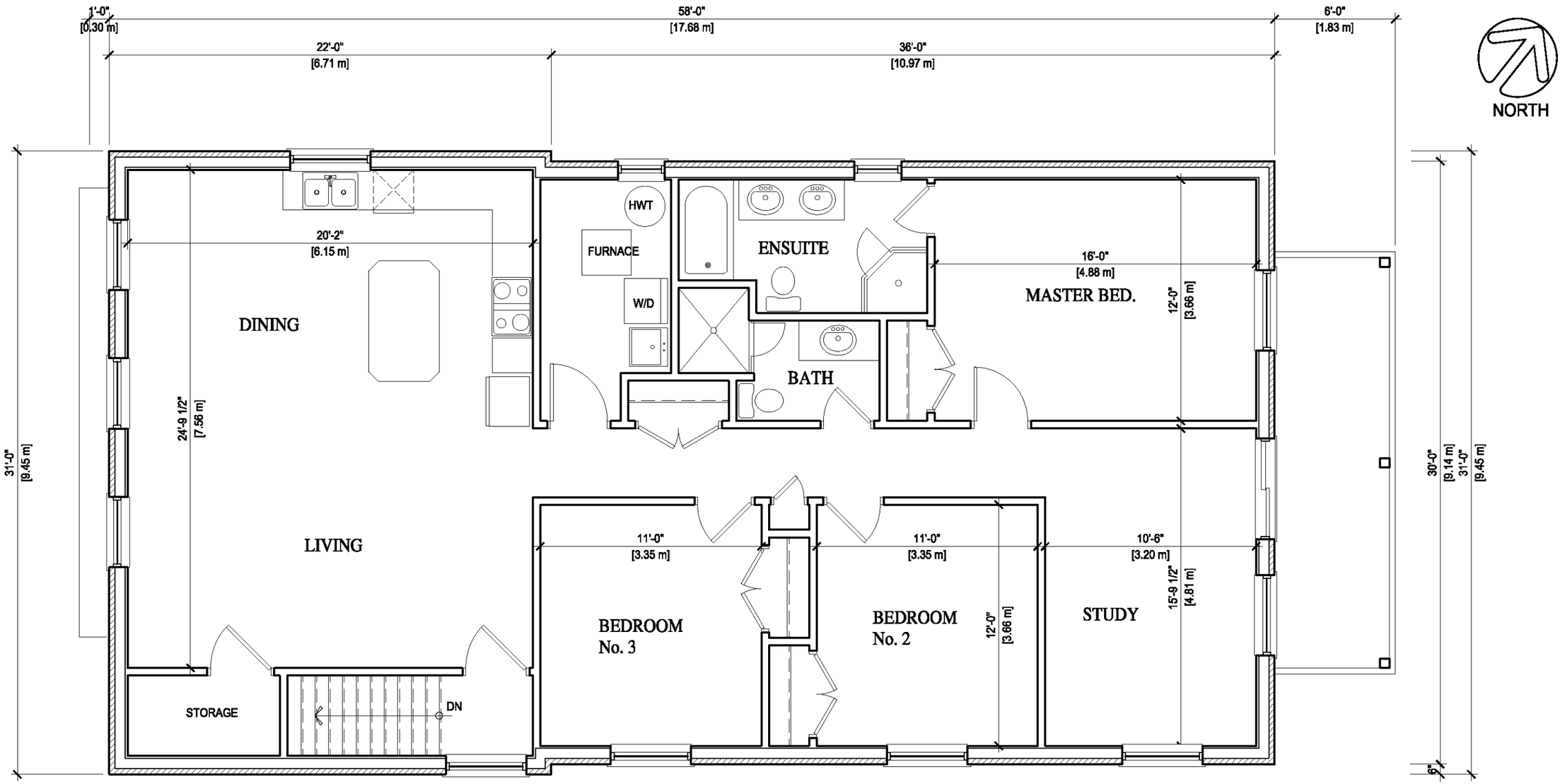
DESCRIPTION
GROUND FLOOR PLAN

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A3
SCALE	
3/16" = 1'-0"	



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TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

Nadeem Irfan
Architect Inc.
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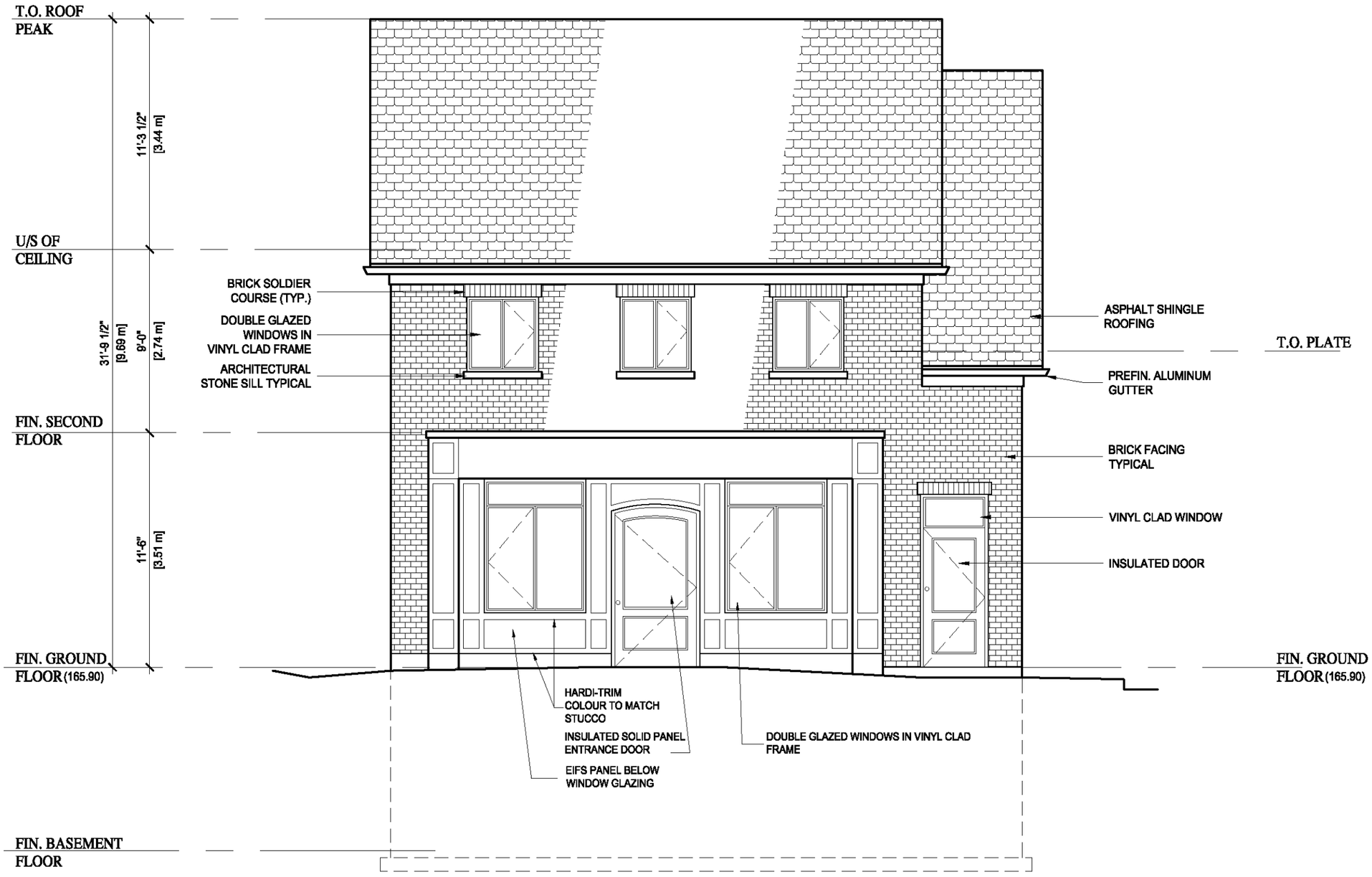
DESCRIPTION
SECOND FLOOR PLAN

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A4
SCALE	
3/16" = 1'-0"	



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TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

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10 MILNER BUSINESS COURT
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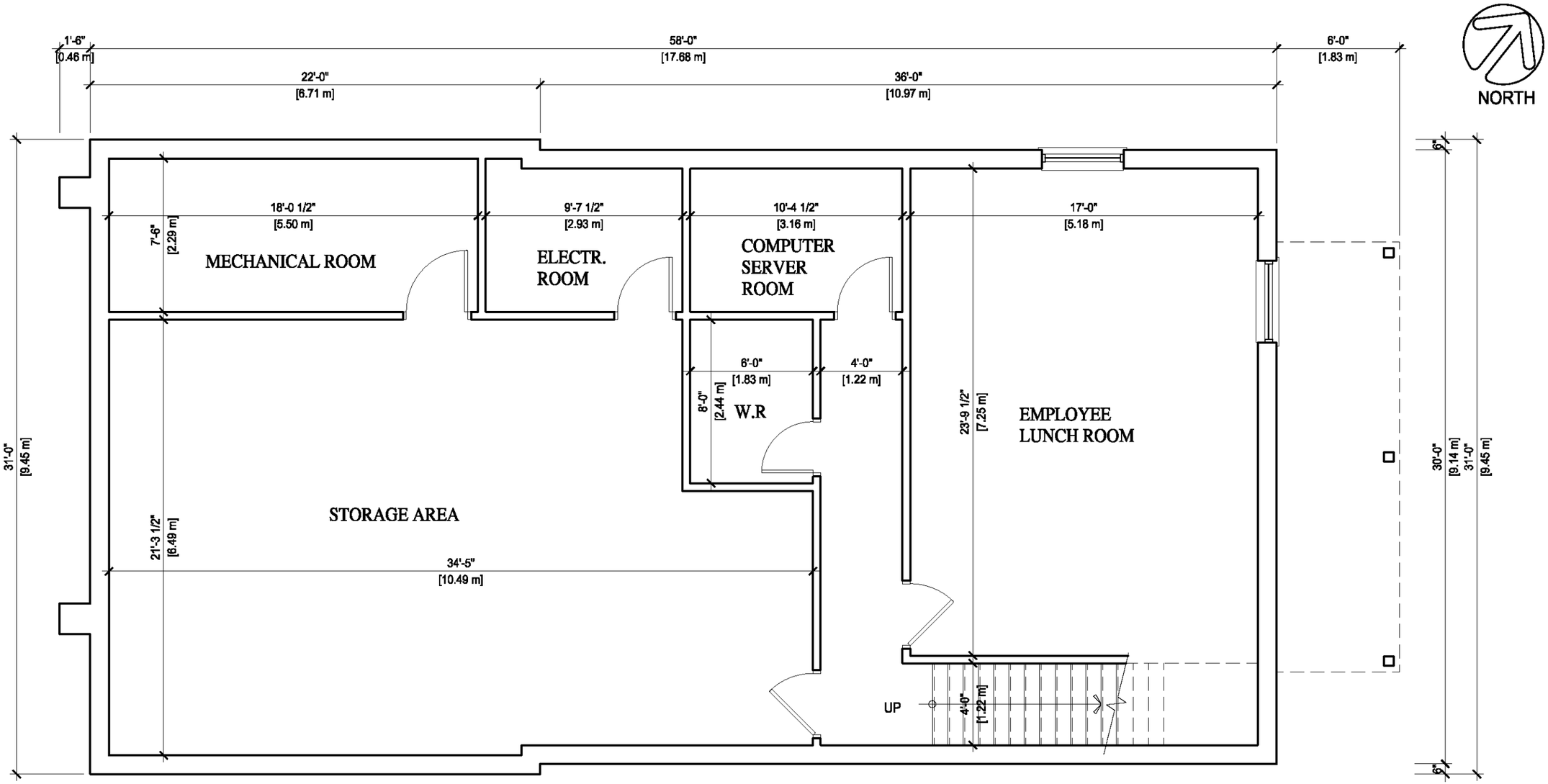
E: info@niarch.com

DESCRIPTION
WEST ELEVATION

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A5
SCALE	
3/16" = 1'-0"	



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TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

Nadeem Irfan
Architect Inc.
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E: info@niarch.com

DESCRIPTION
BASEMENT PLAN

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A2
SCALE	
3/16" = 1'-0"	

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TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

Nadeem Irfan Architect Inc.
10 MILNER BUSINESS COURT
SUITE 213, TORONTO.ON M1B 3C6
T: 416-270-7810 F: 416-800-5434
E: info@niarch.com

DESCRIPTION
SOUTH ELEVATION

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A6
SCALE	
3/16" = 1'-0"	

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TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

Nadeem Irfan Architect Inc.
10 MILNER BUSINESS COURT
SUITE 213, TORONTO.ON M1B 3C6
T: 416-270-7810 F: 416-800-5434
E: info@niarch.com

DESCRIPTION
EAST ELEVATION

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A7
SCALE	
3/16" = 1'-0"	

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TO	REVISIONS	DATE
1	-	-

TO	ISSUED	DATE
CITY	-	-

LEGEND

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PROJECT:
PROPOSED 2 STOREY RESIDENTIAL/ COMMERCIAL BUILDING
25 QUEEN STREET SOUTH, MISSISSAUGA, ONTARIO

Nadeem Irfan Architect Inc.
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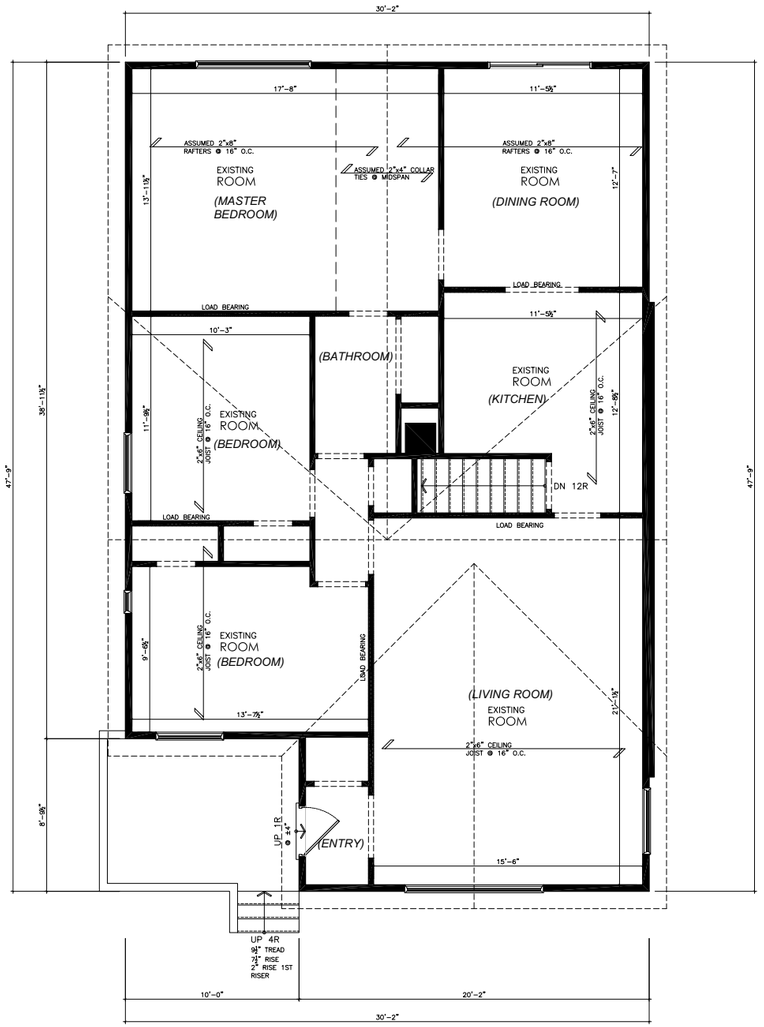
SUITE 213, TORONTO.ON M1B 3C6
T: 416-270-7810 F: 416-800-5434
E: info@niarch.com

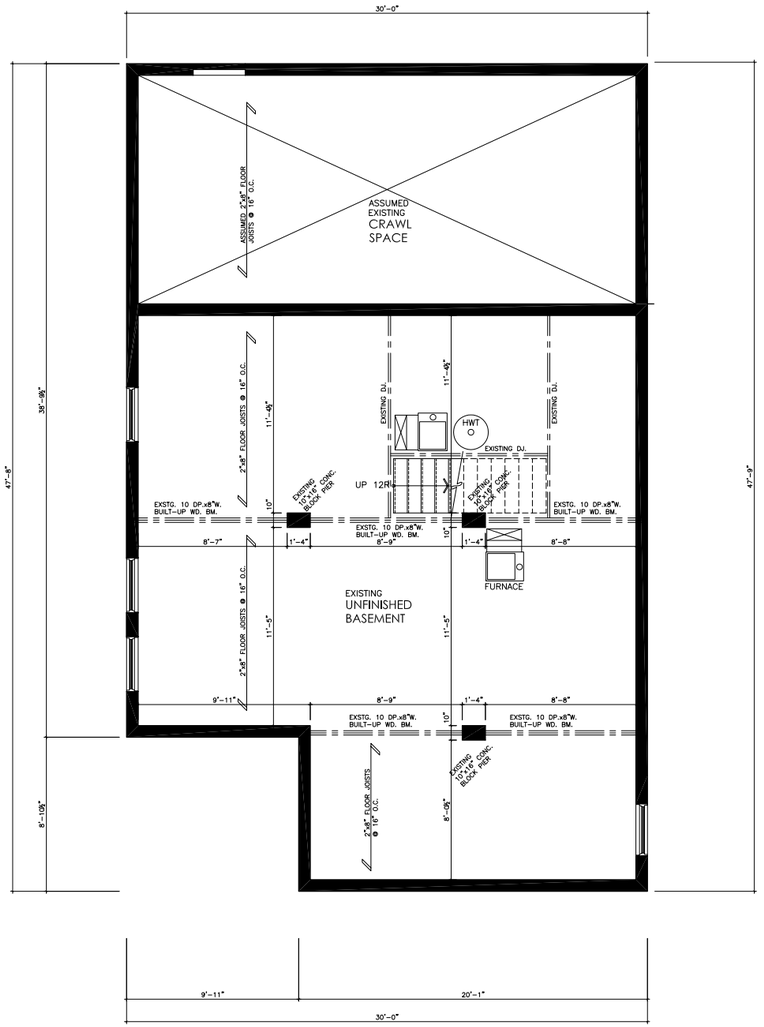
DESCRIPTION
NORTH ELEVATION

DRAWN	PROJECT No.
-	2012-06
PLOTTED DATE	DRAWING No.
FEB. 5-13	A8
SCALE	
3/16" = 1'-0"	



1 / A2 EXISTING FIRST FLOOR PLAN

¼" = 1'-0"



2 / A2 EXISTING BASEMENT PLAN

¼" = 1'-0"

RE-ISSUED FOR BUILDING PERMIT

Project
Interior Alterations & Addition
25 Queen Street South

Client
Pine Glen Developments

Designer

CAMBERDESIGN
5142 Dundas Street W, 2nd Floor, Suite 2
Toronto, Ontario M9A 1C2
T 416 259 4914
F 416 259 9096
E info@camberdesign.ca

Legal

Revision

1	Issued for Building Permit	Aug.16,2011
2	Rev.1 as per City Comments	Sept.26,2011
3	Re-Issued for Building Permit	Nov.14.2011
4	Re-Issued for Building Permit	Jan.24.2012

Qualifications

The undersigned has reviewed and takes responsibility for this design, and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.

QUALIFICATION INFORMATION
Required unless design is exempt under 2.17.5.1. of the Ontario Code

Daniel Venturuzzo — Name — Signature — 29448 BCIN

REGISTRATION INFORMATION
Required unless design is exempt under 2.17.4.1. of the building code

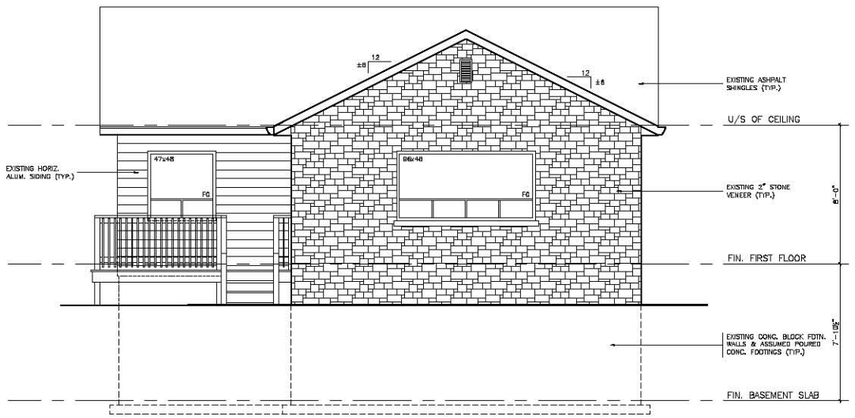
CAMBER DESIGN INC. — Firm Name — 32645 BCIN

Info

Drawn By:
D. Venturuzzo
Checked By:
D. Venturuzzo
Project No.:
442.11
File No.:
442.11-PGD-Queen Street
Date:
May 4, 2011
Scale:
As Noted

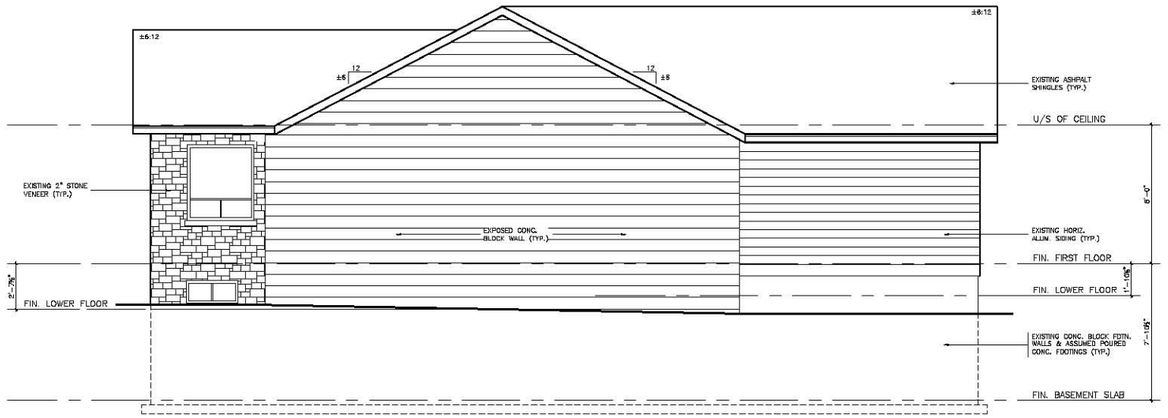
Sheet Title
Existing Plans

Sheet No.
A2



1 / A3 EXISTING FRONT ELEVATION

1/4" = 1'-0"



2 / A3 EXISTING RIGHT SIDE ELEVATION

1/4" = 1'-0"

Project

Interior Alterations & Addition

25 Queen Street South

Client

Pine Glen Developments

Designer

CAMBERDESIGN

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Toronto, Ontario M9A 1C2
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Legal

Revision

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2	Rev. 1 as per City Comments	Sept.26.2011
3	Re-issued for Building Permit	Nov.14.2011
4	Re-issued for Building Permit	Jan.24.2012

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QUALIFICATION INFORMATION
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Daniel Venturuzzo — Signature — 29448 BCIN

REGISTRATION INFORMATION
Required unless design is exempt under 2.17.4.1. of the building code

CAMBER DESIGN INC. — 32645 BCIN
Firm Name

Info

Drawn By: **D. Venturuzzo**
Checked By: **D. Venturuzzo**
Project No.: **442.11**
File No.: **442.11-PGD-Queen Street**
Date: **May 4, 2011**
Scale: **As Noted**

Sheet Title

Existing Elevations

Sheet No.

A3

1 / A4 EXISTING REAR ELEVATION

1/4" = 1'-0"

2 / A4 EXISTING LEFT SIDE ELEVATION

1/4" = 1'-0"

RE-ISSUED FOR BUILDING PERMIT

Project

Interior Alterations & Addition

25 Queen Street South

Client

Pine Glen Developments

Designer

CAMBERDESIGN

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Toronto, Ontario M9A 1C2
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Legal

Revision

1	Issued for Building Permit	Aug.18.2011
2	Rev. (1) as per City Comments	Sept.28.2011
3	Re-issued for Building Permit	Nov.14.2011
4	Re-issued for Building Permit	Jan.24.2012

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Daniel Venturuzzo — Signature — 29448 BCIN

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CAMBER DESIGN INC. — Firm Name — 32645 BCIN

Info

Drawn By: **D. Venturuzzo**
Checked By: **D. Venturuzzo**
Project No.: **442.11**
File No.: **442.11-PGD-Queen Street**
Date: **May 4, 2011**
Scale: **As Noted**

Sheet Title

Existing Elevations

Sheet No.

A4

EXISTING RESIDENCE
23 QUEEN ST. SOUTH

PROPOSED MIXED USE BUILDING
25 QUEEN ST. SOUTH

EXISTING COMMERCIAL USE
27 QUEEN ST. SOUTH

PROPOSED STREETSCAPE
25 QUEEN ST. SOUTH
MISSISSAUGA, ON
FEBRUARY 22, 2013

NTS