

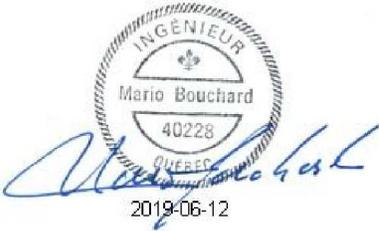
FORT LENNOX NHS - LOT 2
Saint-Paul-de-L'Île-aux-Noix, Québec
MEN'S BARRACK CONSERVATION PROJECT
Client project no. PRO-1396
Riopel project no. APC-2727

SPECIFICATIONS
ARCHITECTURE – STRUCTURE –
ELECTRICITY – MECHANICAL

ISSUED FOR EXECUTION 100%
JUNE 18th, 2019



PART 1 – SEALS AND SIGNATURES

		
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Important note : Refer to the table of contents (section 00 01 10) for the sections applicable to each of the specialties.

END OF SECTION

DIVISIONS	SECTIONS	NUMBER OF PAGES
<u>MULTIDISCIPLINARY</u>		
DIVISION 00	PROCUREMENT AND CONTRACTING REQUIREMENTS	
00 01 07	Seals and signatures page.....	1
00 01 10	Table of contents.....	3
DIVISION 01	GENERAL REQUIREMENTS	
01 00 00	General requirements - Architecture	7
01 14 00	Work restrictions.....	9
01 29 00	Payment procedures	45
01 32 16	Construction progress schedule.....	4
01 33 00	Submittal procedures	5
01 35 29	Health and safety requirements	3
01 35 43	Environmental procedures	20
01 45 00	Quality control	4
01 51 00	Temporary utilities	3
01 52 00	Construction facilities	4
01 55 26	Traffic control.....	2
01 56 00	Temporary barriers and enclosures	3
01 61 00	Common product requirements.....	3
01 73 00	Execution.....	2
01 74 11	Cleaning	3
01 77 00	Closeout procedures	2
01 78 00	Closeout submittals	7
<u>ARCHITECTURE</u>		
DIVISION 02	EXISTING CONDITIONS	
02 41 99	Demolition - short form.....	5
DIVISION 04	MASONRY	
04 03 43	Masonry repairs.....	14
DIVISION 05	METALS	
05 50 00	Metal fabrications - Architecture.....	8
DIVISION 06	WOOD, PLASTICS AND COMPOSITES	
06 20 00	Finish carpentry / Architectural woodwork	13
DIVISION 07	THERMAL AND MOISTURE PROTECTION	
07 26 00	Vapor barrier.....	2
07 92 00	Joint sealants	3
DIVISION 08	OPENINGS	
08 03 11	Historic – Period Wood Doors	4
08 11 00	Metal doors and frames.....	5
08 42 26.33	Swinging safety glass doors and entrances	3
08 50 00	Wooden Windows	6
08 70 00	Window Hardware	3
08 71 00	Doors hardware	9

08 80 50	Glazing	3
DIVISION 09	FINISHES	
09 03 51	Historic – Period plaster finish coating	4
09 21 99	Gypsum board assemblies for minor works	6
09 65 99	Resilient flooring for minor works	6
09 77 20	Decorative wall panels reinforced with fiberglass	3
09 91 23	Interior painting.....	17
DIVISION 10	SPECIALTIES	
10 28 10	Toilet and bath accessories.....	4
DIVISION 11	EQUIPMENT	
11 40 10	Food service equipment.....	44
DIVISION 32	EXTERIOR IMPROVEMENTS	
32 91 19	Topsoil placement and grading	5
32 92 23	Sodding	4
<u>STRUCTURE</u>		
DIVISION 01	GENERAL REQUIREMENTS	
01 11 00	General requirements - Structure.....	3
DIVISION 03	CONCRETE	
03 10 00	Concrete forms.....	3
03 20 00	Concrete reinforcing.....	3
DIVISION 05	METALS	
05 50 00	Metal fabrications - Structure	3
DIVISION 06	WOOD, PLASTICS AND COMPOSITES	
06 10 00	Wood framing	3
DIVISION 31	EARTHWORK	
31 23 10	Excavating and backfilling.....	3
<u>MECHANIC</u>		
DIVISION 20	SEISMIC SYSTEMS	
20 05 48.16	Seismic restraint systems (SRS) – Type P2 Buildings	5
DIVISION 22	PLUMBING	
22 05 00	Common work result for plumbing	4
22 05 05	Selective demolition for plumbing	2
22 05 19	Thermometers and pressure gauges piping systems	2
22 10 10	Plumbing pumps.....	3
22 13 16.13	Sanitary waste and vent piping – cast iron and copper	3
22 13 16.16	Sanitary waste and vent piping – plastic	2
22 33 00	Electrical domestic water heaters	2
22 42 13	Commercial water closets, urinals and bidets.....	3
22 42 16	Commercial lavatories and sinks	2

DIVISION 23	HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)	
23 05 93	Testing, adjusting and balancing for HVAC	5
23 07 13	Duct insulation	4
23 31 13.01	Metal ducts – low pressure to 500 PA	4
23 33 00	Air duct accessories	3
23 34 00	HVAC fans	2
23 37 13	Diffusers, registers and grilles	2

ELECTRICITY

DIVISION 26	ELECTRICAL	
26 05 00	Electricity – common work results for electrical	8
26 05 20	Wire and box connectors (0-1000 V)	2
26 05 21	Wires and cables (0-1000 V)	3
26 05 29	Hangers and supports for electrical systems	2
26 05 31	Splitters, junction, pull boxes and cabinets	2
26 05 32	Outlet boxes, conduit boxes and fitting	3
26 05 33.01	Surface and lighting fixture raceways	2
26 05 34	Conduits, conduit fastenings and conduit fittings	4
26 12 16.01	Dry type transformers up to 600V primary	3
26 24 16.01	Panelboards breaker type	3
26 27 26	Wiring devices	4
26 28 16.02	Moulded case circuit breakers	3
26 28 23	Disconnect switches – fused and non-fused	2
26 50 00	Lighting	3

DIVISION 28	SECURITY AND ELECTRONIC PROTECTION	
28 31 00.01	Electricity – fire alarm systems	10

DIVISION 33	UTILITY SERVICES	
33 65 76	Direct buried underground cable ducts	2

ANNEXES

ENGLOBE EXPERTISE REPORT (FRENCH ONLY) Caractérisation des matériaux susceptibles de contenir de l'amiante et des peintures susceptibles de contenir du plomb	246
PICTURES Photographic Index – September 2018	74
GEOTECHNICAL STUDY (FRENCH ONLY) Réfection de la Caserne de Fort Lennox – rapport de WSP en date du 12 octobre 2017	64
PLANS 1969	52
SURVEY FILE FOR THE RESTORATION OF WOODEN WINDOWS (FRENCH ONLY)	95

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

- .1 The work defined in the drawings and specifications that are the subject of this contract includes but are not limited to:
 - .1 Carry out all interior demolition work while ensuring that all conserved elements are protected;
 - .2 Complete replacement of electro-mechanical networks;
 - .3 Execute all interior works: erection of the walls, doors, frames and hardware, wall finishes, ceilings and floors, etc.
 - .4 Execute all architectural woodwork and preserved items renovations;
 - .5 Execute, according to Engineer and Architect instructions, the scaffolding fixation and the other temporary structure necessary during the works;
 - .6 Fix the existing wood windows, paint them, replace the missing sliding windows and loopholes;
 - .7 Execute various reparation inside the building including, without limitation, the dismantling and the reassembly of bricks pillars, replacement of bricks displaced and cracks reparation in the bricks wall and ceilings
 - .8 Execute excavation and related work linked to the alarm system allowing the connection between the barrack panel to the Officers' quarters;
 - .9 If applicable, include all measures described in Englobe's expertise report for works involving materials that may contain asbestos and paints that may contain lead.
 - .10 Small work of structure for the highest section of the ground floor.

1.2 CONTEXT OF WORK

- .1 Fort Lennox National Historic Site of Canada has been recognized by the Canadian Government as one of the sites having the highest heritage value. The Mens' Barrack is recognized as a classified heritage in view of its significance during the course of history, its architecture and positioning on the island.
- .2 Due to the heritage value of the entire site, the Contractor must pay attention to the protection of all existing elements during the works execution.

1.3 STANDARDS AND CODES

- .1 The entire work must conform to the applicable requirements of the standards (most recent edition) of the Canadian General Standards Board (CGSB), the Canadian Standards Association (CSA), the National Building Code of Canada (NBC) 2015, ASTM American Society for Testing and Materials and other standards and codes identified in the specifications.
- .2 Applicable requirements of standards on drawings and specifications must never be reduced on the grounds that

provincial and local regulations are less stringent. During installation work, when there is a conflict between different regulations or requirements, the highest standards will take precedence.

- .3 Perform work following the application of conservation principles and actions recommended in the *Standards and Guidelines for the Conservation of Historic Places in Canada*, Second Edition.

1.4 WORK EXECUTION ORDER

- .1 Coordinate project schedule based on Parks Canada Agency (PCA) site occupancy during construction.

1.5 USE OF PREMISES BY CONTRACTOR

- .1 The use of the premises is restricted to the areas necessary for the execution of the work, storage and access to allow: (refer to plan A-001):
 - .1 the occupation of the premises by the Parks Canada Agency;
 - .2 completion of works on the Fort Lennox site by two other Contractors.
- .2 For authorized storage and soil application areas, refer to Section 01 52 00 - Construction Facilities.
- .3 Coordinate site use as directed by Agency Representative.
- .4 Use and pay for additional work or storage areas required for the Work execution under this Contract. (as defined on plan A-001).
- .5 Protect the work as directed by Agency Representative to avoid damaging parts to remain in place.
- .6 Repair or replace as directed by the Agency Representative for the purpose of connecting to existing work to an adjacent work, or for harmonization purposes, those parts of the existing work that have been modified during construction.
- .7 Once the Work is completed, the existing buildings must be in an equivalent or better state than the condition it presented before the beginning of the Work.
- .8 It is forbidden to sleep on the site or on the pier during the execution of the work. The Contractor shall perform the work in accordance with the work schedules described in section 1.17 of this section (section 01 00 00) and is responsible for transporting all its workers and employees off the island in accordance with the requirements of section 01 14 00, section 1.4 and for ensuring that they have left the site by the end of the workday.

1.6 WORK MONITORING

- .1 The Architect will permanently monitor Work in a semi-residential presence. A representative supervisor from the Architects firm will

be on site 1 to 5 days a week for the duration of the Work.

- .2 The Archeologist will conduct ongoing surveillance of the following work:
 - .1 When removing the floor from the ground floor;
 - .2 To observe current plumbing and ventilation equipment under the floor for a survey, if deemed appropriate by him;
 - .3 When cleaning the floor surface under the ground floor;
 - .4 For all excavations, even minor excavations, in the basement, for the installation of different equipment;
 - .5 To make a survey of the original architectural components visible under the floor;
 - .6 When digging the shear walls, to conduct surveys deemed relevant by the Archeologist;
 - .7 When removing floor boards from the floor, to check for possible artefact and proceed with relevant readings to document the top of the ground floor;
 - .8 To assess the impact of work in traffic areas and waste areas to ensure the protection of the archaeological substrate.

1.7 MEETINGS

- .1 Immediately after contract award, a kick-off meeting will be held.
- .2 The Architect will organize the site meetings and will be responsible for preparing and distributing the minutes in electronic format.
- .3 Site meetings will be held every two (2) weeks, but the Consultants and the Agency representative will still visit the site each week.
- .4 Other meetings may be convened on an ad hoc basis as needed to resolve project issues.
- .5 The Contractor Project Authority and the Superintendent of Construction shall attend each meeting.
- .6 The main subcontractors must attend any other meeting at which their presence will be requested by the Architect or the Agency representative.
- .7 The Contractor will be required to provide a complete, up-to-date schedule of work at each meeting.

1.8 EXISTING UTILITY SERVICES

- .1 Before interrupting, if required, utility services, inform the Agency representative and the utilities concerned, and obtain the necessary authorizations.
- .2 Prior to the beginning of Work, define the extent and location of utility lines in the work area and inform the Agency representative.
- .3 Submit to Agency Representative for approval a schedule for the shutdown or closure of active facilities or works, including the

interruption of communications or power supply. Respect the approved schedule and inform the parties affected by these inconveniences.

- .4 Provide temporary utility services as directed by the Agency Representative to maintain all systems in place.
- .5 When unlisted utility lines are discovered, immediately inform the Agency representative and record them in writing.
- .6 Protect, move or maintain functional utility lines. If non-functional lines are discovered during the works, seal them in a manner authorized by the competent authorities.
- .7 Record on as-built drawings the location of utility lines that are maintained, relocated or abandoned.
- .8 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.9 REQUIRED DOCUMENTS

- .1 Maintain on site a copy of each of the following documents:
 - .1 Contract drawings;
 - .2 Specifications;
 - .3 Addenda;
 - .4 Reviewed shop drawings;
 - .5 List of unrevised shop drawings;
 - .6 Orders of amendment;
 - .7 Other changes to the contract;
 - .8 Field tests reports;
 - .9 Copy of approved schedule;
 - .10 Health and Safety Plan and other security related documents;
 - .11 Other documents indicated.

1.10 CONSTRUCTION PROGRESS SCHEDULE

- .1 A Construction Progress Schedule – Bar (GANTT) Chart is required and must be up-dated for every scheduled site meeting. Refer to Section 01 32 16 – Construction Progress Schedule.

1.11 ACCESS ROAD AND SOIL PROTECTION

- .1 Due to the archaeological potential of the entire site and the presence of archaeological remains near the surface of the ground, all heavy machinery traffic areas, as well as temporary storage areas of excavated soil, shall be protected.
- .2 Provide special traffic control procedures for heavy machinery.
- .3 The circulation of the Contractor's heavy machinery and various vehicles, with the exception of small ATV type vehicles, shall be done exclusively on existing permanent roads on the site and on temporary traffic lanes equipped with adequate protection.

- .4 All access roads that are part of the landscaping of the site must be protected for the passage of heavy machinery with a geotextile type 918 (or approved equivalent) and gravel or other equivalent system approved by the Agency representative (carpet, plywood or other).
 - .5 Under all temporary traffic lanes that will be constructed to accommodate machinery traffic during construction, the soil must be protected from heavy machinery with a Type 918 geotextile (or approved equivalent) and gravel or other equivalent system approved by the Agency Representative (carpet, plywood or other).
 - .6 Excess excavated soil that has not been reinstalled during backfilling of the perimeter of the building shall be applied to the excess excavation soil application area (Zone B) indicated on the Site Plan (Island and Jetty) / Mobilization - Storage Plan which is part of the architectural drawings.
 - .7 For the protection of the ditch which is part of the road that crosses the island from North to South, refer to section 01 56 00 - Temporary Barriers and Enclosures.
 - .8 All damaged turf surfaces will be rehabilitated with lawn sod turf (grass turf number one: specially sown turf grass grown in sod farms or dedicated fields) and top soil. Refer to Sections 32 91 19 - Topsoil Placement and Grading and 32 92 23 - Sodding.
 - .9 The excavation area must be fenced for the duration of the work.
- 1.12 PHOTOGRAPHIC SURVEY
- .1 A photographic survey will be carried out by the Contractor along with the Agency representative to determine the state of affairs prior to the completion of the Work. An electronic copy must be given by the Contractor to the Agency representative and the Architect.
- 1.13 ASBESTOS AND LEAD CONDITIONS
- .1 See Englobe's expertise report– Caractérisation des matériaux susceptibles de contenir de l'amiante et des peintures susceptibles de contenir le plomb in appendix.
- 1.14 MOBILIZATION PLAN
- .1 Contractor shall submit, for approval by the Agency representative, a site mobilization plan no later than one week after the site start-up meeting.
 - .2 This plan must include the illustration of site fences, position of waste containers, position of storage containers, access and access roads, position of toilets, position of construction caravan, etc.

- .3 The mobilization plan shall include the identification and description of the environmental protection measures required in accordance with Section 01 35 43 - Environmental Protection such as, but not limited to :
 - .1 the required **above-ground** settling, sedimentation and/or filtration system(s) for pumped water from excavations;
 - .2 the protection for the access bridge surface to the fortification to prevent spills in the moat.
- 1.15 POTABLE WATER
- .1 A water supply for completion of work is available on the island.
 - .2 However, the Contractor must ensure at his expense the supply of drinking water for all his employees; the island's water being considered non-potable for human consumption.
 - .3 Water on the island is non-potable and can be used for work purposes only.
- 1.16 KEYS
- .1 A set of keys will be provided to the Contractor for the following doors:
 - .1 bunker;
 - .2 The Contractor shall be responsible for the closure and opening of the Fort, Barracks and Casemates.
 - .3 The Contractor shall provide two separate types of padlocks.
 - .1 One (1) lock with ten (10) copies of keys (for use by Parks Canada and other contractors on site) to be installed in the Fort's front door.
 - .2 Ten (10) identical padlocks with five (5) copies of keys (for Parks Canada use) to be installed in the doors of the Barracks and Casemates.
- 1.17 WORK SCHEDULE
- .1 Since the Contractor will dispose of the keys, provide his own transportation and the risk of noise nuisance is limited, it is the Contractor's responsibility to establish work schedules according to the following restrictions:
 - .1 Unless otherwise specified and approved by the Agency Representative, the Contractor shall perform work during day work hours: from 6:00 am to 7:00 pm.
 - .2 No presence on the site will be tolerated between 19h00 and 6h00. Overnight stays on the site are strictly prohibited

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

**1.1 CONSTRUCTION
CONSTRAINTS**

- .1 Completion of this project must take in consideration multiple constraints which will affect its execution. Therefore, the execution of these works must be establish taking in account the following:
 - .1 Access availability depending on the weather conditions;
 - .2 Site availability for the construction facilities on site;
 - .3 Environmental restrictions;
 - .4 Safety restrictions.
- .2 Ensure that all Contractor personnel working on site are aware of and comply with fire safety, traffic circulation and work safety regulations.

1.2 EMERGENCY

- .1 Parks Canada and the Agency Representative could, in case of an emergency, stop the work at any time if such interruption is needed for the protection of life, protection of the work, protection of the surrounding properties or any other case of force majeure without any possible claim from the Contractor.
- .2 The Contractor takes in account these work restrictions for which no compensation is granted for overtime or for work performed outside the normal work schedule (evening, night and weekend).
- .3 During work, the Contractor must ensure that the work installation on site or the materials storage will not in any way impede the safety of users and equipment.

**1.3 CONSTRUCTION SITE
AND CONTRACTOR'S
SITE ACCESS**

- .1 If any damages is caused to road and installations, the Contractor has the entire responsibility to repair or replace them at his own expense and at the Agency Representative satisfaction.
- .2 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations, and ensure their maintenance.
- .3 Fort Lennox is located on the island of Saint-Paul-de-l'Île-aux-Noix. Access to the island is by boat; there is no access road. The island is only accessible during periods when the river is ice-free. The site is prepared for the winter between November 1st and May 15th, no services are available on the island during this period. Parks Canada cannot guarantee the availability dates of its services, which will depend on weather conditions (frost and floods).

1.4 ACCESS TO SITE
BY PARKS CANADA
SERVICES

.1 Parks Canada Responsibilities:

- .1 For the transportation of motorized vehicles and equipment, the Contractor will be able to use Parks Canada's barge. The barge dimensions are: 19,72 m x 6,25 m with a maximum capacity load of 54 tonnes (depending on water level variation and wave force).
- .2 Travels must be planned in advance. Minimal planning must be given to the barge's captain, once a week, one week in advance. Since four other Contractors will also be using the barge, it is essential that this planning be provided in advance to allow the captain to coordinate and request changes as needed. Upon a 24 hours prior notice, modifications can be accepted or declined by the captain.
Delivery appointments must be planned at set time to avoid unnecessary waste of time.
- .3 The barge will be available between 7h45 and 15h20, two (2) days a week, except during holidays. A maximum of six (6) round travels will be authorized per day but take note that the number of trips may vary depending on weather conditions and the river's water level.
- .4 Maritime transports will always be conditional to weather conditions and water level. Parks Canada therefore will not be able to guarantee transportation services at all time.
- .5 At its sole discretion, the Agency could refuse to transport certain goods if they present a danger to the Agency Employees or for the safety of the boat and passengers. The Agency boat operator will insure that the cargo load does not exceed the capacity load of the boat. The guidelines given to this end by the Agency will be respected.
- .6 Marine transportation by barge can be provided by Parks Canada from May 15 to November 1. During this period, Parks Canada cannot guarantee the availability of the barge, which will depend on weather conditions and the water level of the river. Outside this period, if the conditions are favourable, the barge service may be extended.

.2 Contractor's Responsibilities:

- .1 The Contractor will be responsible for loading and unloading the material, wastes and other items transported by Park Canada boats and crafts.
- .2 The Contractor will be responsible for procuring and providing a boat for the transportation of its employees. A dock site will be available.
- .3 Upon request, the Contractor must ensure boat transportation for his employees as well as the professionals (Architects, Engineers) who will do the site surveillance.
- .4 In addition, the Contractor will be responsible for transportation for the Parks Canada project team:
 - .1 team of archaeologists at the rate of three (3) archaeologists during the days of excavation and one (1) surveyor;

- .2 the Technical Services Coordinator (visit once a week during the entire duration of the project);
 - .3 upon request, other representatives for the FHBRO or environmental protection. Note that for the visits by the Parks Canada project team, it is understood that these will adjust to the schedules of the Contractor or professionals but that an additional trip back (for example before the end of the day work) might be required.
 - .5 All passengers (maximum 2 on the barge) must comply with the orders from the Parks Canada boat conductor and Transport Canada regulations, failing which access to be denied on board.
 - .6 Loading the barge will follow Parks Canada's instructions. Vehicles with trailers may be refused.
- 1.5 ACCESS TO SITE BY THE BRIDGE
- .1 The bridge giving access to the interior of the Fort once on the island can withstand loads of vehicles of 236kN, or 23 tons.
 - .2 The speed of vehicles when traveling on the bridge shall not exceed 10 km / h.
 - .3 The dimensions of the bridge and entry door inside the Fort are reduced. It is the responsibility of the Contractor to ensure that equipment passes without damaging them. The approximate door dimensions are $\pm 2\,900$ mm ($\pm 9'-6"$) wide by $\pm 2\,675$ mm ($\pm 8'-9"$) in height. The Contractor is responsible for checking the exact dimensions on site.
 - .4 It is the responsibility of the Contractor to provide the necessary protection to the satisfaction of the Architect and the Agency Authority to protect the bridge throughout the duration of the project.
- 1.6 ARCHEOLOGY
- .1 Specific Conditions:
 - .1 Fort Lennox National Historic Site of Canada has been recognized by the Government of Canada as one of the sites of highest heritage value. Thus, on this property, all soil excavation work, recognized as potentially containing archaeological remains, must be monitored by a federally designated archaeologist.
 - .2 All storage areas, machinery or high pedestrian traffic areas, construction site trailer areas and any other areas that may affect the soil, both on the surface and at depth, must be protected. Refer to the requirements of section 01 00 00 - General requirements - architecture, paragraph 1.11 Access road and soil protection.
 - .2 Access and Collaboration:
 - .1 The archeologist must be notified of excavation at least 72 hours in advance.

- .2 For this project, archaeologist is the archaeologist and/or archaeology team designated by the federal government and/or Parks Canada.
 - .3 Parks Canada will pay for the services of the archaeologist and/or archaeology team designated by the federal government and/or Parks Canada.
 - .4 For this project, all soils have been identified as containing archaeological remains and therefore the presence of an archaeologist is required during all excavation work.
 - .5 The presence of an archaeologist will also be required if an incidental discovery of artifacts occurs while performing work other than excavation work, such as demolition work.
 - .6 For this project, the Contractor must provide a maximum of two (2) excavation trenches at a time due to archaeologists.
 - .7 It is the contractor's responsibility to ensure the availability and presence of the archaeologist designated by Parks Canada during the work being monitored.
 - .8 To avoid loss of archeological information on the site, the Contractor must cooperate and comply to all directives given by the Project Manager during the excavation works.
 - .9 The Contractor must facilitate the access to the work and collaborate with the Archaeologist. The archaeologist or his representative will be on site, depending on the needs related to the protection and recording of the remains. Their role will be to guide the Contractor to avoid any loss of archaeological information and gather information about the remains.
 - .10 Furthermore, the Contractor must allow the archaeological team to carry out to archeological examination and surveys.
 - .11 Examination, surveys and recordings to be done in archeology requires archeologists to be physically inside the excavation holes.
 - .12 The Contractor shall provide for the Archeologist presence at all times during excavations. The Archeologist will be located inside the trench and will perform manual excavations at the same time as the mechanical excavations. Provide the necessary safety measurements.
- .3 Archeological Findings:
- .1 The Contractor must notify the Parks Canada Representative or, if not present, the Archaeologist or his representative of any discoveries made on site and wait for instructions before resuming work.
 - .2 Vestiges, antiquities or other elements of any historical, archeological or scientific interest (vestige, object or object fragment) found on site or in the areas to be excavated or demolished are the property of the Crown. To that effect, the Contractor shall protect them and obtain instructions from Project Authority in this regard.
 - .3 In the event of a chance discovery, do not move and/or touch the artifacts and notify the Parks Canada Representative and/or archaeologist as soon as possible.

.4 Works Stops:

- .1 The Contractor must anticipate in his contract, at his own expense, stops, of one (1) hour per half day of excavation in the areas requiring the presence of the Archaeologist (as described in point 1.1 of the present article). Subsequently, these stops, if unused, will be cumulated and may be used as needed, later. A record of unused time will be kept by the Parks Canada Representative in agreement with the Contractor and the Archaeologist.
- .2 For a stop of more than thirty (30) minutes, the Parks Canada Representative will assess the implication of this stop and will notify the Contractor. To allow the continuation of the Archaeologist's work, the Contractor could be asked to relocate the machinery to another area. If the relocation is impossible, the Contractor will be compensated from the bank of hours or, if the bank is exhausted, according to the agreements set in place on the first site meeting.
- .3 The thirty (30) minute stop per half-day of excavation as described in paragraph.1 shall apply to each excavation trench in progress during that half-day. Thus, if during a half-day, the Contractor plan for two (2) excavation trenches at a time in accordance with subsection.1, then the Contractor shall provide, at its own expense, stops equal to 2×30 minutes of stop per half-day, for a total of 60 minutes for that half-day.

.5 Excavation:

- .1 Excavation works must be carried out by alternate passes, according to the architectural drawings' phasing and following the indication on site by the Archeologist.
- .2 Preservation of the historical / archeological character:
 - .1 Due to the site's archeological potential, all excavations will be done under the supervision a Parks Canada Archeologist.
 - .2 All excavations will be done with a toothless bucket to assure preservation of vestiges and allow archeological data reading.
 - .3 In the event of a finding (ancient walls, pieces of wood, artefacts, etc.) during the Work's execution, the Contractor must immediately suspend work and notify Parks Canada Representative.
 - .4 Parks Canada Representative will judge the value of the findings and will communicate the course of action, if any.
 - .5 Excavation works could continue in other authorized areas by the Parks Canada Representative.
- .3 Considering the possibility of archaeological findings, the Contractor is here advised that when doing works, manual excavation might be required as well as all the necessary works to insure protection of all findings. The Contractor will be compensated according to the agreements set in place on the first site meeting

.6 Protection of vestiges and works:

- .1 During the excavations and all works, the Contractor must take all the reasonable precautions, to protect all unearthed vestiges and to allow their examination by the Archaeologists. Parks Canada will not tolerate any derogation in this regard. If by negligence the Contractor deteriorates any vestiges, he will be held responsible and the Agency will judge the implications.

- 1.7 BUILDING SMOKING ENVIRONMENT

 - .1 Observe the no smoking instructions. Smoking is prohibited inside buildings and within a radius of 9 meters around buildings, in the barge boarding area and aboard the barge.
 - .2 No cigarette butts or residues can be left on the site.

- 1.8 SITE CLEANING AND KEEPING AND ENVIRONMENTAL PROTECTION

 - .1 The Contractor must, at all time, keep the areas free of material accumulations, waste materials, garbage and debris. He must do a complete and final cleaning at the satisfaction of Parks Canada during and at the end of the works.
 - .2 The Contractor is responsible for transporting his wastes, garbage and debris to the appropriate areas, according the regulation in force.

- 1.9 WINTER CONDITIONS

 - .1 The Contractor must include in his schedule and in the price of his bid all costs related to winter conditions work and implementation. These fees must include, but not be limited to:
 - .1 all required protections for new and existing installations;
 - .2 snow removal;
 - .3 heating (see also paragraph 1.11. of section 01 52 00 – Construction Facilities);
 - .4 canvas, construction of insulated temporary partitions, etc.
 - .2 Parks Canada will not maintain any winter supplement requests.
 - .3 No matter the climate and weather conditions, no delay can be claimed. The Contractor will have to deal with the climatic and meteorological conditions to maintain his work schedule. No loss of productivity can be claimed by the Contractor for climatic or weather reasons. It is the Contractor's responsibility to provide and install all temporary protection to ensure the execution of the work according to the requirements mentioned in the construction documents and according to the standards of the manufacturers.
 - .4 If all or part of the work is performed during the winter or during what can be judged as winter conditions, the Contractor must ensure sufficient temperature at all times to maintain the works, including

during periods when the Contractor is not working on the work in question (evening, night, weekend).

- .5 At certain stages of the project, this temperature must be as specified in the various sections and technical clauses of this contract. Under no circumstances will work be carried out under the temperature and humidity limits specified by the manufacturers, the technical requirements and clauses of this contract or recognized by the rules of art. Where more than one data exists for the same work, the most stringent requirement applies.
- .6 At all times, the Act Respecting Occupational Health and Safety must be respected in this regard.
- .7 The Contractor is responsible for clearing snow on site so that access to all parts of the work is possible without difficulty.
- .8 The Contractor must also clear the snow on all parts of the completely or partially finish work to ensure the safety and protection of the works.
- .9 The snow removal from the construction area is at the Contractor's expense. The Contractor is also responsible for the snow removal of all access outside existing road. Coordinate the management and disposal of contaminated snow at an approved site with the Agency representative.
- .10 A precise Winter Conditions Plan related to the project schedule must be prepared by the Contractor and submitted to the Agency Representative and the Architect for comment. This plan must be submitted no later than fifteen (15) calendar days following the order to begin the work.
- .11 Starting September 1st, a specific site log will have to be kept by the Contractor with regards to the winter conditions. This log must specify, for each day, and including the weekends:
 - .1 the outside temperature;
 - .2 the total precipitation of the day (specify whether it's snow or rain);
 - .3 the temperature and humidity level maintained in the areas where work is performed;
 - .4 the work that is done.

1.10 WEEK-END WORKS

- .1 If the Contractor anticipates work on Sundays, holidays or nights, he must submit a written request to the Parks Canada Agency at least five (5) working days prior to these works.
- .2 Unless otherwise indicated, weekend work is accepted but Parks Canada will not provide any service (barge or other).

- 1.11 WORKS PERFORMED BY OTHERS .1 The Contractor must cooperate with the other Contractors working on site.
- 1.12 SITE INSPECTION .1 The Contractor's decision to start the works either partially or totally implies that he accepts the existing conditions as satisfactory. If the Contractor proceeds to his work on surfaces or in defective conditions, corrections or rework will be made at his expense
- 1.13 BLASTING .1 No blasting work of any nature is allowed.
- 1.14 ENVIRONMENTAL RESTRICTIONS .1 Environmental Restrictions are presented in section 01 35 43 – Environmental Procedures.
.2 The works must respect the federal, provincial and local requirements regarding noise.
- 1.15 MEDIA .1 The Contractor must not respond to inquiries or project inquiries from the media. Such requests should be directed to the Project Manager or Agency Representative for action.
.2 Any communication or publication by the Contractor to the public (media, social media, among others) must be formally approved by Canada. Canada reserves the right not to allow the publication of project information without the possibility of recourse.
.3 Canada reserves the right to document the work that is the subject of this contract by all relevant means to support its mission of information and broadcasting to the public. The Contractor grants the full and unrestricted use of any visual or sound material produced under the contract and which may, notwithstanding the rules of individual rights to the image, include the visibility of employees and materials.
.4 All documents produced by the Contractor at the request of Canada, including photos, videos, 3D or laser surveys, among others, must be provided in digital format and will be governed by the provisions on intellectual property as defined in Article 1.16 below.
.5 Publications (media) and printed material intended for the general public must be produced in both official languages, where applicable.
.6 No advertising sign from the Contractor will be permitted.
- 1.16 INTELLECTUAL PROPERTY .1 Copyright, the right to patents and any other intellectual property right for anything that was first conceived, developed and implemented by the Contractor in the performance of the Work

under the contract are vested to the Contractor. The Contractor grants Canada a non-exclusive, irrevocable, worldwide, royalty-free license to use, copy, transform or translate the material for government purposes. Copyrights on the translation of the material will belong to Canada. The license granted under the contract will survive the termination or expiry of the contract.

- .2 The Contractor warrants that he has all the rights necessary to grant the license mentioned above.

**1.17 ADDITIONAL STOPS,
RESTRICTIONS AND
WORK INTERRUPTIONS**

- .1 The Contractor must include in its bid four (4) half-day stoppages, which are attributable to unforeseen activities and/or functions to date. Anticipate an advanced notice of at least 24 hours prior to a half-day stoppage of work.
- .2 The Contractor must include in its bid one (1) one-day stoppage of work, which is attributable to unforeseen activities and/or functions to date. Anticipate an advanced notice of at least 24 hours prior to a one-day stoppage of work.
- .3 The Contractor must include in its bid four (4) periods of restrictions for two-hour work stoppages, which are due to unforeseen activities and/or functions to date. Anticipate an advanced notice of zero (0) hour prior to a work stoppage of two hours duration.
- .4 Include the costs of these work stoppages for restrictions and interruptions in the market price. The completion date will be extended based on the cumulative duration of the work stoppages requested.

**1.18 WORK IN
THE ATTIC**

- .1 In order to carry out the ceiling hatches work, the contractor must carry out work in the attic of the building according to the following constraints:
 - .1 Limited access
 - .2 The attic shall be considered as a confined space
 - .3 Fire risk
 - .4 Fragility of the second floor ceiling
 - .5 Risk of falling
 - .6 Heritage value of the building and the elements on
Components of the system
- .2 The contractor shall prepare and submit a work and safety plan, the plan shall be revised, if necessary, to the satisfaction of professionals and Parks Canada;
 - .1 All workers are trained to perform work in a confined space in accordance with the requirements of the CNESST;
 - .2 Provide mechanical ventilation during the work;
 - .3 Workers shall have their appropriate PPE during the work;
 - .4 If required, provide a temporary lifeline;

- .5 Never walk on the ceiling;
 - .6 Provide safety platforms made of planks attached to roof trusses to facilitate and secure workers' work, mitigate the risk of falling through the ceiling, protect the building;
 - .7 Welding, flare cutting and the use of any equipment producing intense heat is not permitted;
 - .8 Provide emergency lighting, minimum level according to CNESST requirements;
 - .9 Provide the necessary protective structures to ensure that the heritage elements of the building are not damaged. Indicate these structures in the work and safety plan;
 - .10 Plan to clean the attic once the work is completed, as indicated in section 01 74 11 - Cleaning;
 - .11 No breakthroughs in existing elements will be possible without the prior approval of the Agency representative and professionals. Indicate the holes planned for mobilization in the attic in the work and safety plan;
- .3 The Contractor must plan for the possibility of finding contaminants and/or pests and/or insects and/or animals (not limited to: wasps, mice, fiants, etc.)

1.19 CAMERAS AND PICTURES

- .1 During the work, cameras will be installed at the site. Images and videos from the cameras will comply with Parks Canada's media policies as described in paragraph 1.15 of this section. The Contractor must work with Parks Canada to install these cameras on site.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

NOT USED.

PART 2 - DESCRIPTION OF PRICES REQUESTED ON THE BIDDING FORM

MULTIDISCIPLINARY SECTION

2.1 ITEM 1 – WORKSITE ORGANIZATION, ENVIRONMENT AND GENERAL ARTICLES

- .1 Worksite organisation – Item 1.1
 - .1 The price in item 1.1 of the Bid form is a lump sum price that covers all the costs of the measures and installations necessary to carry out the work and is not part of other payment items on the Bid form.
 - .2 The price mainly includes the costs of, but is not limited to, the following:
 - .1 All that is described in section 01 00 00 00 - General Requirements;
 - .2 All that is described in section 01 14 00 – Work Restrictions, such as construction constraints, access to the site and site, archaeological standards, work stoppages, winter conditions and other work conditions;
 - .3 All that is described in Section 01 52 00 – Construction Facilities, such as site offices, site fences, backup electrical power, site lighting, furniture, telephone and related services, site office and warehouse heating and ventilation, scaffolding, site signage, and maintenance;
 - .4 All that is described in Section 01 33 00 – Submittal Procedures;
 - .5 All that is described in Section 01 35 29 – Health and Safety Requirements;
 - .6 All that is described in Section 01 56 00 – Temporary Barriers and Enclosures, except for access roads and temporary bridges (under Item 1.3);
 - .7 All that is described in Section 01 74 11 – Cleaning;
 - .8 Maintenance of the site and its access as well as snow removal and de-icing of the site;
 - .9 All that is required in the following sections and whose direct or indirect cost cannot be attributed to any of the other Items of the Bid form:
 - .1 Section 01 77 00 – *Closeout Procedures*;
 - .2 Section 01 78 00 – *Closeout Submittals*;
 - .10 Survey fees that are not attributed to any of the other items of the Bid form;
 - .11 Protection of existing public utilities in the work areas. If the Contractor damages these installations during his work, he must replace them at his own expense.
 - .3 25% of the total amount in the tender for this Item will be paid in the first monthly payment, provided Work as started.
 - .4 Other monthly payments for this item will be paid following a percentage consistent with the overall Work progress up to 75% of the total progress.
 - .5 The final 25% will be paid along with the payment issued upon delivery of the *Substantial Performance of Work certificate*.
- .2 Protection and environmental Procedures – Item 1.2
 - .1 The price under item 1.2 of the bid form is a unit price per month that covers all costs incurred for environmental protection measures, in accordance with the specifications, as well as all costs of materials, labour, tools, equipment, administration and profit, and all costs related to measures to be taken in connection with the handling of existing materials that may contain asbestos and lead required for temporary access as described in section 01 56 00 - Temporary Access and Protection Works in the

- specifications.
- .2 The price includes, but is not limited to, the following:
 - .1 Everything described in section 01 35 43 - Environmental Protection, such as the preparation, submission and implementation of the environmental protection plan.
 - .2 Construction of access roads to the site;
 - .3 Protecting the soil of all developed access roads;
 - .4 Construction of temporary bridges for ditch crossings;
 - .5 Temporary protection on the fortification access deck to prevent spills under the moat
- .3 Monthly payments for this item will be paid following a percentage consistent with the overall Work progress.

2.2 ITEM 2 - EXISTING CONDITIONS – DEMOLITION AND HAZARDOUS MATERIALS

- .1 Démolition sélective items architecture Article 2.1
 - .1 The price in item 2.1 of the bidding form is a global fixed price that includes all costs of materials, labour, tools, equipment, administration and profit as well as all costs related to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead, required for the completion of small-scale demolition work in the Men's Barracks.
- .2 The price includes, but is not limited to:
 - .1 demolition of plywood/wood studs interior partitions to be demolished as indicated on the architectural drawings;
 - .2 removal of the ground floor;
 - .3 all that is described in section 02 41 99 - Demolition – Short Form;
 - .4 marking of the boards and baseboard pieces to be removed and the creation of a photographic file;
 - .5 removal of boards and baseboards;
 - .6 installation of barriers to provide temporary protection while the floor is open;
 - .7 removal of toilet partitions, their doors and all accessories and hardware attached to the partitions;
 - .8 removal of hand dryers, paper dispenser, soap dispenser, soap dispenser, sanitary napkin receptacle, grab bar, and all other accessories and equipment in the washrooms;
 - .9 removal of doors and frames and existing hardware;
 - .10 removal of all components of existing partitions;
 - .11 removal of ceramic floor tiles and wall baseboards;
 - .12 removal of the wooden staircase leading to the elevated section;
 - .13 removing the subfloor to the existing wood joist;
 - .14 removal of the existing carpet;
 - .15 dismantling of the joists, healds and wooden wall of the Jewish staircase (including, among other things, the disposal of debris and cleaning);
 - .16 demolition work on sections of stone rubble walls (including demolition, disposal of debris, levelling of surfaces and application of levelling mortar on top of walls);
 - .17 work to remove stones from the bottom of the technical void;
 - .18 dismantling of existing plumbing systems and appliances (including, among other things, the disposal of debris, cleaning and protection of preserved elements);
 - .19 dismantling of existing fans, ducts and accessories (including but not limited to debris disposal and cleaning);
 - .20 demolition, dismantling and relocation of electrical distribution services;
 - .21 demolition, dismantling and relocation of telecommunication services;
 - .22 demolition and dismantling of lighting equipment;
 - .23 demolition and dismantling of fire alarm panels and supply of the new main fire alarm panel installed in the officers' quarters.

- .3 Progressive payments under this item will be paid at each settlement at a percentage consistent with the progress of the selective demolition work described in Article 2.1 for this settlement.

ARCHITECTURE DIVISION

2.3 ITEM 3 – VAPOUR BARRIER

- .1 New polythene - Article 3.1
 - .1 The price in item 3.1 of the bid form is a unit price per square metre which includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to carry out the work related to the installation of the new polythene in the basement
 - .2 The price includes, but is not limited to, the following:
 - .1 Everything described in section 07 26 00 - Vapour Barrier;
 - .2 If necessary, the supply and installation of equipment for basement drainage systems, including generators, pumps, pipes, fittings and all accessories;
 - .3 The supply of all material and labour necessary for the execution of the dewatering work;
 - .4 Transport, sorting and disposal of stones and residues cleaned underground;
 - .5 Work stoppages resulting from archaeological monitoring as described in section 01 14 00 - work restrictions.

2.4 ITEM 4 – MASONRY REPAIRS

- .1 Repointing and consolidating foundations - Article 4.1
 - .1 The price in item 4.1 of the bid form is a planned allocation that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the repointing and consolidation of building foundations required during underground drilling work but whose scope cannot be clearly defined at the time of bidding, in accordance with the requirements of section 04 03 43 – Masonry repairs.
 - .2 The price includes, but is not limited to, the following:
 - .1 The removal of all the soil (clay) that has replaced the deteriorated mortar between the stones of the foundation walls;
 - .2 The stripping of mortar joints in foundation walls;
 - .3 The repointing of the foundation walls.
 - .4 Work stoppages resulting from archaeological monitoring as described in section 01 14 00 - Work Restrictions;
 - .5 the removal and replacement of moving stones.
 - .3 Excluded from this article are the following items :
 - .1 Disassembly and reassembly including repointing and consolidation of the foundations of the exterior staircase leading to the ramparts included under article 4.2.
- .2 Disassembly and reassembly of the external rear staircase - Article 4.2
 - .1 The price in item 4.2 of the bidding form is a global fixed price that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the removal, repair and replacement of stones on the exterior staircase leading to the ramparts

- (complete dismantling), in accordance with the requirements of section 04 03 43 – Masonry Repairs.
- .2 The price includes, but is not limited to, the following:
 - .1 the constitution of a photographic file and a record of all stones removed and their markings;
 - .2 the complete dismantling of the staircase;
 - .3 complete reassembly of the staircase;
 - .4 all costs of scaffolding and lifting equipment, materials, labour, tools and equipment required;
 - .5 costs related to temporary protective installations at the top and bottom of the stairs;
 - .6 repointing and consolidation of existing foundations during reassembly.
 - .7 removal and storage of the guardrail;
 - .8 the installation of the guardrail on the ascending staircase.
 - .9 painting the existing iron railing in accordance with the requirements of section 09 91 23 - Paintings - interior work in the specifications;
 - .10 cleaning of the staircase guardrail after completion of the work.
 - .3 Excluded from this article are the following items relating to the repair of damaged stones and the replacement of stones too damaged to be repaired:
 - .1 Repair of cracked stones. This item should be included under Article 4.5 - repair of cracked stones.
 - .2 Repairing stones with pinball machines. This item should be included under article 4.6 - Repair of stones with dutchmen.
 - .3 New stone surface veneers. This item should be included under Article 4.7 - New Stone Surface Veneers.
 - .4 New stones to be provided for the staircase. This item should be included under Article 4.8 - New stones to be provided for the stairs.
 - .5 New procedures to be provided for the staircase. This item should be included under Article 4.9 - New procedures to be provided for the staircase
 - .6 Removal and replacement of the staircase guardrail. This item should be included under Article 4.3 - Removal and replacement of the guardrail from the exterior staircase.
 - .3 **CANCELED** - Article 4.3
 - .4 **CANCELED** - Article 4.4
 - .5 Repair of cracked stones - Article 4.5
 - .1 The price in item 4.5 of the bid form is a unit price for the repair of cracked stones that will be identified during the dismantling and reassembly of the exterior staircase, in accordance with the requirements of section 04 03 43 - Masonry Repairs
 - .2 The unit price includes all costs of scaffolding and lifting equipment, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required.
 - .3 The unit price includes, but is not limited to, the following:
 - .1 crack consolidation with two stainless steel studs per crack;
 - .2 grouting in cracks;
 - .3 surface finishing of cracks with limestone restoration mortar.
 - .6 Stone Repair with dutchmen - Articles 4.6
 - .1 The price in items 4.6 of the bidding form is a unit price for the repair with pinball of the stones that will be identified during the dismantling and reassembly of the external staircase, in accordance with the requirements of section 04 03 43 – Masonry Repairs.
 - .2 The unit price includes all costs of scaffolding and lifting equipment, materials, labour,

- tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required.
- .3 The unit price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings for new pinball machines to be provided;
 - .2 preparation of the stone for the installation of the dutchman;
 - .3 the size of the dutchman in an existing stone that has been set aside upon disassembly, or the supply and transport of the stone required for the dutchman if it is not possible to cut the dutchman in an existing stone set aside;
 - .4 finishing the dutchman in the same way as the finish of the stone to be repaired;
 - .5 supply and installation of stainless steel studs with the specified adhesive, including drilling holes in the face of the existing stone and in the back of the dutchman;
 - .6 placing the dutchman with the specified grout;
 - .7 the surface finish of the joints between the repaired stone and the dutchman.

 - .7 New Stone Surface Veneers - Article 4.7
 - .1 The price in item 4.7 of the bidding form is a unit price for the replacement with new stone veneer of the surface of the stones that will be identified during the dismantling and reassembly work on the exterior staircase as having exfoliation or major chipping, in accordance with the requirements of section 04 03 43 – Masonry Repairs
 - .2 The unit price includes all costs of scaffolding and lifting equipment, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required.
 - .3 The unit price includes, but is not limited to, the following:
 - .1 removal of the surface of stones whose surface is to be replaced;
 - .2 preparation and submission of shop drawings for new facing plates;
 - .3 the supply and transport of new limestone facing slabs;
 - .4 the finishing of the new facing plates in the same way as the original finish of the stones to be repaired;
 - .5 supply and installation of stainless steel dowels with the specified adhesive, including drilling holes in the face of existing stones and in the back of veneers;
 - .6 placing facing plates on existing stones, using the specified grout.

 - .8 New stones to be provided for the stairs - Article 4.8
 - .1 The price in item 4.8 of the bid form is a unit price for the removal, replacement and reinstallation of stones that will be identified during the dismantling and reassembly of the exterior staircase as new stones to be provided, in accordance with the requirements of section 04 03 43 - Masonry repairs
 - .2 The unit price includes all costs of scaffolding and lifting equipment, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required.
 - .3 The unit price includes, but is not limited to, the following:
 - .1 removal of stones to be replaced;
 - .2 preparation and submission of shop drawings for new stones to be supplied;
 - .3 the supply of stones of the same dimensions as the existing stones;
 - .4 the finishing of the exterior face of the new stones to the same as the original finish of the stones they replace, in accordance with the specifications;
 - .5 stone installation.

 - .9 New procedures to be provided for the stairs - Article 4.9
 - .1 The price in item 4.9 of the bid form is a unit price for the removal, replacement and

- reinstallation of the stone steps of the stairs that need to be disassembled, in accordance with the requirements of section 04 03 43 - Masonry repairs
- .2 The unit price includes all costs of scaffolding and lifting equipment, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required.
 - .3 The unit price includes, but is not limited to, the following:
 - .1 removal of the steps to be replaced;
 - .2 preparation and submission of shop drawings for new procedures to be provided;
 - .3 the supply of steps of the same dimensions as the existing steps;
 - .4 the finishing of the exterior face of the new steps to the same as the original finish of the steps they replace, in accordance with the specifications;
 - .5 step installation.
- .10 Disassembly and reassembly of the cracked vault - Article 4.10
- .1 The price in item 4.10 of the bid form is a global fixed price that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the dismantling and reassembly of the cracked vault at the bottom of the Jewish staircase, in accordance with the requirements of section 04 03 43 - Masonry repairs and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 the constitution of a photographic file and a record of all existing removed bricks and their markings;
 - .2 disassembly and complete reassembly of the vault;
 - .3 temporary shoring according to the method approved by the structural engineer;
 - .4 all costs of scaffolding and lifting equipment, materials, labour, tools and equipment required.
 - 3 Excluded from this article are the following items relating to the repair of damaged stones and the replacement of stones too damaged to be repaired:
 - .1 Replacement of cracked bricks. This item should be included under sections 4.14 - Option A: Supply of recovered hand-made bricks and 4.15 - Option B: Supply of new worked bricks.
- .11 Disassembly and reassembly of the first layer of toilet corner brick - Article 4.11
- .1 The price in item 4.11 of the bid form is a unit price per square metre which includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the replacement of the first layer of brick in the corner of the old washrooms, in accordance with the requirements of section 04 03 43 - Masonry repairs and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 disassembly and complete reassembly of the vault;
 - .2 if necessary, temporary shoring according to the method approved by the structural engineer;
 - .3 all costs of scaffolding and lifting equipment, materials, labour, tools and equipment required.
 - .3 Excluded from this article are the following items relating to the repair of damaged stones and the replacement of stones too damaged to be repaired:
 - .1 New bricks for replacement. This item should be included under sections 4.14 - Option A: Supply of recovered hand-made bricks and 4.15 - Option B: Supply of new worked bricks.

- .12 Disassembly and reassembly of bricks - Punctual repair - Article 4.12
 - .1 The price in item 4.12 of the bid form is a unit price per square metre which includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the spot replacement of damaged bricks that will be identified during the performance of the work, in accordance with the requirements of section 04 03 43 - Masonry repairs and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 removal and replacement of damaged bricks;
 - .2 if necessary, temporary shoring according to the method approved by the structural engineer;
 - .3 all costs of scaffolding and lifting equipment, materials, labour, tools and equipment required.
 - .3 Excluded from this article are the following items relating to the repair of damaged stones and the replacement of stones too damaged to be repaired:
 - .1 New bricks for replacement. This item should be included under sections 4.14 - Option A: Supply of recovered hand-made bricks and 4.15 - Option B: Supply of new worked bricks.
- .13 Replacement of missing bricks - Article 4.13
 - .1 The price in item 4.13 of the bid form is a unit price that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the spot replacement of missing bricks that will be identified during the performance of the work, in accordance with the requirements of section 04 03 43 - Masonry repairs and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 replacement of missing bricks;
 - .2 if necessary, temporary shoring according to the method approved by the structural engineer;
 - .3 all costs of scaffolding and lifting equipment, materials, labour, tools and equipment required.
 - 3 Excluded from this article are the following items relating to the repair of damaged stones and the replacement of stones too damaged to be repaired:
 - .1 New bricks for replacement. This item should be included under sections 4.14 - Option A: Supply of recovered hand-made bricks and 4.15 - Option B: Supply of new worked bricks.
- .14 Option A: Supply of Recovered Hand-Made Bricks - Article 4.14
 - .1 The price in item 4.14 of the bid form is a unit price per square metre for the supply of hand-made recovered bricks, in accordance with the requirements of section 04 03 43 - Masonry repairs.
 - .2 Unit price includes all delivery, storage costs, labour time related to the search and delivery of equipment, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead and materials used for storage and delivery.
 - .3 The unit price includes, but is not limited to, the following:
 - .1 the supply of recovered bricks.
- .15 Option B: Supply of new worked bricks - Article 4.15
 - .1 The price in item 4.15 of the bid form is a unit price per square metre for the supply of new bricks, in accordance with the requirements of section 04 03 43 - Masonry repairs.

- .2 Unit price includes all delivery, storage, labour time related to brick modification and equipment delivery, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead and materials used for storage, delivery and modification of bricks
- .3 The unit price includes, but is not limited to, the following:
 - .1 the supply of new bricks;
 - .2 the modification of the bricks using a method accepted by the Architect to give them an irregular shape such as existing bricks.

- .16 Punctual repair of masonry joints - Article 4.16
 - .1 The price in item 4.16 of the bid form is a unit price per linear metre which includes all costs of scaffolding, materials, labour, tools and equipment required for the spot repair of masonry joints that will be identified during the performance of the work, in accordance with the requirements of section 04 03 43 - Masonry repairs and architectural drawings.

2.5 ITEM 5 - CARPENTRY AND CABINET MAKING

- .1 Replacement of Floors - Section 5.1
 - .1 The price in item 5.1 of the bid form is a unit price per square metre which includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the reinstallation of the ground floor sections of the wooden floor of the Barracks and Officers' Lodge once the underground work has been completed, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 storage of boards and baseboard sections removed during the performance of the fire alarm system work;
 - .2 replacement of boards and baseboard sections after basement work is completed;
 - .3 final cleaning after completion of work.

- .2 New Slatted Wood Floors - Article 5.2
 - .1 The price in item 5.2 of the bid form is a unit price per square metre which includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to install a new section of wooden slat flooring at the location of the former washrooms, in accordance with the requirements of section 06 20 00 – Finish Carpentry / Architectural woodwork and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings and samples;
 - .2 the installation of the samples of works and their approval by the Architect;
 - .3 sanding and varnishing of floor slats as they exist;
 - .4 installation of the floor and baseboards;
 - .5 final cleaning after completion of work.
 - .3 Excluded from this article are items:
 - .1 Lowering the structure of the existing raised floor. This item must be included under the items in item 15 of the Structure section.
 - .2 Demolition of the existing raised floor and its cladding. This item must be included under Article 13.11 - Existing Ceramic Demolition and Raised Floor

- .3 Loopholes Sliding Windows - Article 5.3
 - .1 The price in item 5.3 of the bid form is a unit price that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture and installation of new loophole sliding windows at the locations indicated on the architectural plans, in accordance with the requirements of Section 08 50 00 - Wooden Windows.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings for new loopholes sliding windows;
 - .2 the manufacture of new sliding loophole windows similar to existing ones;
 - .3 painting of new sliding windows as prescribed in section 09 91 23 – Interior Painting of the specifications;
 - .4 installation of new sliding windows.
- .4 Screens in wooden frames - Article 5.4
 - .1 The price in item 5.4 of the bid form is a unit price that includes all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture and installation of new wood-framed screens for upstairs windows, in accordance with the requirements of section 08 50 00 - Wooden Windows and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 removal of existing nets;
 - .2 preparation and submission of workshop drawings for new nets;
 - .3 manufacture of new nets similar to existing ones;
 - .4 painting of new mosquito nets as prescribed in section 09 91 23 - Interior Painting of the specifications;
 - .5 installation of new screens.
- .5 Windows to be replaced and/or repaired - Article 5.5
 - .1 The price in item 5.5 of the bid form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the replacement and/or repair of wooden windows according to the scope of work defined in the Appendix "Survey file for the restoration of wooden windows".
 - .2 The price includes, but is not limited to, the following:
 - .1 removal of existing windows;
 - .2 preparation and submission of shop drawings;
 - .3 removal of rotten sections of window sills;
 - .4 the manufacture of new pieces of small wood of the same profile and dimensions as those that are missing or have been removed;
 - .5 repair of missing parts and sections removed from the small wood with new pieces.
 - .6 removal of broken or cracked glazing tiles;
 - .7 the provision and installation of new glazing tiles to replace those that have been removed and those that are missing;
 - .8 removal and replacement of all missing or damaged sealants;
 - .9 manufacture of new windows or components to be repaired similar to existing ones;
 - .10 installation of new or repaired existing windows.
- .6 Replacement/repair of window latches - Article 5.6
 - .1 The price in item 5.6 of the bid form is a unit price (a latch) for the replacement of existing ground floor and first floor window latches that are missing or damaged, in accordance

- with the requirements of section 08 70 00 - Window hardware in the specifications and architectural drawings.
- .2 The price includes, but is not limited to, the following:
 - .1 removal of damaged latches;
 - .2 preparation and submission of shop drawings for new latches;
 - .3 manufacture of new forged metal latches identical to existing latches;
 - .4 finishing the new latches with the treatment formula specified in the quotation;
 - .5 installation of new latches on windows.

 - .7 Reproduction - solid plywood door - Article 5.7
 - .1 The price under item 5.7 of the bidding form is a unit price that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in connection with the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture and installation of new solid plywood doors at the locations indicated on the architectural plans, in accordance with the requirements of Section 08 03 11 - Historic Works - Period Wood Doors.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings for new doors such as existing solid doors, including heritage hardware;
 - .2 the manufacture of new doors similar to existing ones;
 - .3 painting of new sliding doors as prescribed in section 09 91 23 - Painting - interior work in the specifications;
 - .4 installation of new doors;
 - .5 manufacturing and installation of heritage hardware

 - .8 Replacement of window hinges - Article 5.8
 - .1 The price in item 5.8 of the bid form is a unit price (a hinge) for the replacement of missing or damaged hinges on existing windows, in accordance with the requirements of Section 08 70 00 - Window Hardware in the Specifications and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 removal of damaged hinges;
 - .2 preparation and submission of shop drawings for new hinges;
 - .3 the manufacture of new forged metal hinges identical to existing hinges;
 - .4 finishing the new hinges with the treatment formula specified in the quotation;
 - .5 installation of new hinges on windows.

 - .9 Replacement of window handles - Article 5.9
 - .1 The price in item 5.9 of the bid form is a unit price (a handle) for the replacement of existing window handles that are missing or damaged, in accordance with the requirements of Section 08 70 00 - Window Hardware in the Specifications and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 removal of damaged handles;
 - .2 preparation and submission of shop drawings for new handles;
 - .3 manufacture of new forged metal handles identical to existing handles;
 - .4 finishing the new handles with the treatment formula specified in the quotation;
 - .5 installation of new handles on windows.

 - .10 Replacement of window anchors - Article 5.10
 - .1 The price in item 5.10 of the bid form is a unit price (one anchor) for the replacement of missing or damaged existing window anchors in accordance with the requirements of section 08 70 00 - Window hardware in the specifications and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 removal of damaged anchors;

- .2 preparation and submission of shop drawings for new anchoring tabs;
 - .3 manufacture of new forged metal anchors identical to existing anchors;
 - .4 finishing the new anchoring lugs with the treatment formula specified in the quotation;
 - .5 installation of new window anchors.
- .11 Stripping and painting of ground floor windows - Article 5.11
- .1 The price in item 5.11 of the bid form is a unit price (stripping and painting of a window) which includes all costs of scaffolding, materials, labour, tools and equipment required for the complete stripping and painting of existing windows on the ground floor, in accordance with the requirements of section 09 91 23 - Interior Painting of the specifications.
 - .2 The price includes, but is not limited to, the following:
 - .1 stripping to wood of all painted wooden surfaces;
 - .2 sanding before applying the finishing paint;
 - .3 packaging of bare wood;
 - .4 the application of a minimum of three coats of paint;
 - .5 window cleaning.
- .12 Stripping and painting of windows on the first floor - Article 5.12
- .1 The price in item 5.12 of the bid form is a unit price (stripping and painting of a window) which includes all costs of scaffolding, materials, labour, tools and equipment required for the complete stripping and painting of existing windows on the floor, in accordance with the requirements of section 09 91 23 - Interior Painting of the specifications.
 - .2 The price includes, but is not limited to, the following:
 - .1 stripping to wood of all painted wooden surfaces;
 - .2 sanding before applying the finishing paint;
 - .3 packaging of bare wood;
 - .4 the application of a minimum of three coats of paint;
 - .5 window cleaning.
- .13 New laminated bench - Article 5.13
- .1 The price in item 5.13 of the bid form is a unit price (per bench) for all costs of materials, labour, tools and equipment required for the manufacture, delivery and installation of new laminate benches, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets and workshop drawings;
 - .2 the supply, storage and installation of equipment;
 - .3 on-site measurement before manufacture;
 - .4 on-site adjustment and all materials required to upgrade custom furniture;
 - .5 all hardware components;
- .14 **CANCELED** - Article 5.14
- .15 **CANCELED** - Article 5.15
- .16 Punctual repair of mouldings - Article 5.16
- .1 The price in item 5.16 of the bid form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the spot repair of wood mouldings, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets for the products used;

- .2 manufacture and submission of work samples;
- .17 Replacement of damaged wooden slats - Article 5.17
 - .1 The price in item 5.17 of the bid form is a unit price per square metre which includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to replace damaged wooden slats to be replaced, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings and samples;
 - .2 the installation of the samples of works and their approval by the Architect;
 - .3 sanding and varnishing of floor slats as they exist;
 - .4 installation of the floorboard;
- .18 Punctual repair of damaged or punctured wooden slats - Article 5.18
 - .1 The price in item 5.18 of the bid form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the spot repair of damaged or punctured wooden slats, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets for the products used;
 - .2 manufacture and submission of work samples;
- .19 Punctual reinforcement for drilling on the floor - Article 5.19
 - .1 The price in item 5.19 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the punctual reinforcement of the wooden batten floor following the drilling work, in accordance with the requirements of the architectural drawings.
- .20 Brushing of Barracks' Woodwork - Article 5.20
 - .1 The price in item 5.20 of the bid form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to brush woodwork that is not reconditioned, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and Architectural Drawings.
- .21 Waste bin module in washrooms - Article 5.21
 - .1 The price in item 5.21 of the bid form is a unit price for all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply new bin modules to washrooms, in accordance with the requirements of section 06 20 00 – Finish carpentry / Architectural woodwork and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets and workshop drawings;
 - .2 the supply, storage and installation of equipment;
 - .3 on-site measurement before manufacture;
 - .4 the rods and joints required for installation;

- .5 on-site adjustment and all materials required to upgrade custom furniture;
- .6 all hardware components;
- .7 plastic garbage cans inside furniture.

2.6 ITEM 6 – METAL SCREENS

- .1 Metal screens - fireplaces - Article 6.1
 - .1 The price in item 6.1 of the bid form is a unit price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture and installation of new metal screens in the opening of chimney holes.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of workshop drawings for new nets;
 - .2 the manufacture of new screens;
 - .3 installation of new screens.
- .2 Metal screens - loopholes - Article 6.2
 - .1 The price in item 6.2 of the bid form is a unit price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture and installation of new metal screens similar to existing screens to be replaced in loopholes.
 - .2 The price includes, but is not limited to, the following:
 - .1 removal of existing nets;
 - .2 preparation and submission of workshop drawings for new nets;
 - .3 manufacture of new screens similar to existing ones;
 - .4 installation of new screens.

2.7 ITEM 7 – DOOR HARDWARE

- .1 Door retention - concrete - Article 7.1
 - .1 The price in item 7.1 of the bid form is a unit price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new door retainers installed in the concrete/masonry section of the exterior wall of the fire hall, in accordance with the requirements of section 05 50 00 – Metal fabrications - Architectural Specifications and Plans.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings;
 - .2 manufacture and submission of samples of works;
 - .3 the supply and installation of all elements specified in the architectural details that are not necessarily wrought metal;
 - .4 the supply of the padlock indicated in the architectural details
- .2 Door Retention - Wood - Article 7.2
 - .1 The price in item 7.2 of the bid form is a unit price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain

asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new door retainers installed in the wooden batten floor section, in accordance with the requirements of section 05 50 00 – Metal fabrications - Specifications and Architectural Drawings Architecture.

- .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings;
 - .2 manufacture and submission of samples of works;
 - .3 the supply and installation of all elements specified in the architectural details that are not necessarily wrought metal;
 - .4 the supply of the padlock indicated in the architectural details;
 - .5 reinforcements under the wooden floor to accommodate ground recessed parts.
- .3 **CANCELED** - Article 7.3
- .4 **CANCELED** - Article 7.4
- .5 **CANCELED** - Article 7.5
- .6 **CANCELED** - Article 7.6
- .7 **CANCELED** - Article 7.7
- .8 **CANCELED** - Article 7.8
- .9 Hardware Inspection Visit - Article 7.9
 - .1 The price in item 7.9 of the bid form is an allowance covering all travel, inspection and report writing costs required for the hardware consultant's inspection visit as part of the interim acceptance visit to the project in accordance with the requirements of section 08 71 00 - Door hardware and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 the Contractor's due diligence
 - .2 its preliminary corrective measures and following the visit of the hardware consultant.

2.8 ITEM 8 – WROUGHT METALS

- .1 New removable universal access ramp - Article 8.1
 - .1 The price in item 8.1 of the bid form is a unit price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new removable universal access ramps, in accordance with the requirements of section 05 50 00 - Metal fabrications - Specifications and Architectural Drawings Architecture.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings;
 - .2 manufacture and submission of book samples and samples;
 - .3 the supply and installation of all elements specified in the architectural details that do not necessarily involve wrought metals such as concrete slabs embedded in the ground and ground supports;
 - .4 structural validation of the ramp, approved and signed by a structural engineer;
 - .5 the creation of an installation and uninstallation guide for the seasonal storage of access ramps.
 - .6 the presence of the Archaeologist during excavation work for the embedding of

concrete slabs on the ground.

- .2 New weapon space workbench - Article 8.2
 - .1 The price in item 8.2 of the bid form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of the new weapon space workbench, in accordance with the requirements of section 05 50 00 - Metal Fabrications - Specifications and Architecture Drawings Architecture.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings and samples;
 - .2 the supply and installation of all elements specified in the architectural details which do not necessarily relate to wrought metals.
- .3 New ground access hatch - ground floor - Article 8.3
 - .1 The price in item 8.3 of the bid form is a unit price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new ground floor access doors, in accordance with the requirements of section 05 50 00 - Metal Fabrications - Specifications and Architecture Drawings Architecture.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings;
 - .2 on-site measurements of existing elements;
 - .3 planing existing wood joists if necessary to level the wood batten floor.
 - .3 The following items are excluded from this article:
 - .1 Structural reinforcement around the access hatch. This item must be included under items 18.1 – Floor Trap Doors on the ground floor in the Structure section.
- .4 New ceiling access hatch - floor - Article 8.4
 - .1 The price in item 8.4 of the bid form is a unit price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new floor ceiling access hatches, in accordance with the requirements of section 05 50 00 - Metal Fabrications - Specifications and Architecture Drawings Architecture.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings;
 - .2 on-site measurements of existing elements
 - .3 The following items are excluded from this article:
 - .1 Structural reinforcement around the access hatch. This item must be included under items 18.2 – Trap doors on the roof of the second floor in the Structure section.
- .5 New guardrail for exhibition space - floor - Article 8.5
 - .1 The price in item 8.5 of the bid form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of the new guardrail for the upstairs display space, in accordance with the requirements of section 05 50 00 - Metal fabrications- Specification

- and Architectural Plan Architecture.
- .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings and samples;
 - .2 the supply and installation of gate hardware;
 - .3 the supply and installation of all elements specified in the architectural details which do not necessarily relate to wrought metals.

 - .6 New stainless steel counter - cloakroom - Article 8.6
 - .1 The price in item 8.6 of the bid form is a unit price per linear metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of the new stainless steel counter, in accordance with the requirements of section 05 50 00 - Metal fabrications - Architectural Specifications and Plans.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings and samples;
 - .2 the supply and installation of all elements specified in the architectural details which do not necessarily relate to wrought metals
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.

2.9 ITEM 9 – SEALANT ET JOINTS

- .1 Silicone gasket - Article 9.1
 - .1 The price in item 9.1 of the bid form is a unit price per linear metre which includes all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the installation of silicone gaskets when required as part of the project, in accordance with the requirements of section 07 92 00 - Joint sealants and Architectural Drawings.

- .2 Fireproof Sealant - Article 9.2
 - .1 The price in item 9.2 of the bid form is a global fixed price which includes all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to install the various fire stopping devices required for partitions and walls requiring fire resistance, in accordance with the requirements of section 07 92 00 - Joint sealants and Architectural Drawings.

- .3 Doors and Windows Caulking - Article 9.3
 - .1 The price in item 9.3 of the bid form is a unit price per linear metre which includes all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to repair and replace interior caulking for all exterior doors and windows on the ground floor and first floor, in accordance with the requirements of Section 07 92 00 - Joint sealants and Architectural Drawings.

2.10 ITEM 10 – LANDSCAPE DESIGN

- .1 Landscape Design - Article 10.1
 - .1 The price in item 10.1 of the bid form is a unit price per square metre for topsoil, finishing grading and plate sodding, in accordance with the requirements of Sections 32 91 19 - Topsoil placement and grading and 32 92 23 - Sodding and the installation of concrete slab at the base of universal access ramps in accordance with the architectural details.
 - .2 This item covers all work required to restore to good condition the surfaces of the grassed area where excavation work will take place, the surfaces on which scaffolding will be installed, the land application area (Zone B), the storage areas (Zones A and C), as well as any other grassed area that will be damaged by vehicle traffic and the Contractor's activities during the performance of the Contract work.
 - .3 All surfaces damaged by the Contractor due to poor traffic management, movement and/or implementation to allow the various works under the contract will be at the Contractor's expense.
 - .4 The price includes, but is not limited to, the following:
 - .1 soil preparation for topsoil placement;
 - .2 preparation of the ground for the installation of concrete slabs at the base of the universal access ramps;
 - .3 the supply, transport and spreading of soil improvers;
 - .4 the supply, transport, spreading and spreading of topsoil;
 - .5 finishing levelling prior to turfgrassing;
 - .6 supply, transport and installation of sod plates;
 - .7 cleaning up the premises;
 - .8 any incidental expenses.

2.11 ITEM 11 – ACCESSORIES AND EQUIPMENT

- .1 Toilet Paper Dispenser - Section 11.1
 - .1 The price in item 11.1 of the bid form is a unit price for all costs of providing materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new toilet paper dispensers to be installed in accordance with the requirements of Section 10 28 10 - Toilet and Bath Accessories and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation.
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.
- .2 Mirror - Article 11.2
 - .1 The price in item 11.2 of the bid form is a unit price for all costs of providing materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new mirrors to be installed in accordance with the requirements of Section 10 28 10 - Toilet and Bath Accessories and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets and shop drawings;
 - .3 on-site measurements, delivery, supply and installation.

- .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.

- .3 Washer - Dryer – Article 11.3
 - .1 The price in item 11.3 of the bidding form is a unit price for all costs of providing materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new dryer and washer to be installed in accordance with the requirements of the architectural and mechanical/electrical drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation;
 - .4 the electrical and mechanical connections (connecting pipe, electrical wires, etc.) necessary for the proper functioning of the equipment;
 - .5 the manpower time and accessories required to level the equipment assembly.

- .4 Sanitary napkin container– Article 11.4
 - .1 The price in item 11.4 of the bidding form is a unit price for all costs of providing materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new sanitary napkin receptacles to be installed in accordance with the requirements of section 10 28 10 - Toilet and bathroom accessories and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation.
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.

- .5 Changing Table– Article 11.5
 - .1 The price in item 11.5 of the bid form is a unit price for all costs of providing materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new changing tables to be installed in accordance with the requirements of Section 10 28 10 - Toilet and Bathroom Accessories and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation.
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.

- .6 Hand Paper Dispenser– Article 11.6
 - .1 The price in item 11.6 of the bidding form is a unit price for all costs of providing materials, labour , tools, equipment, administration and profit, as well as all costs related

- to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new hand paper dispensers to be installed in accordance with the requirements of section 10 28 10 - Toilet and bathroom accessories and architectural drawings.
- .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners and finishing silicone gaskets;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation.
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.
- .7 Wall Hooks – Article 11.7
- .1 The price in item 11.7 of the bidding form is a unit price for all costs of providing the materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of a new wall hook to be installed in accordance with the requirements of Section 10 28 10 - Toilet and Bathroom Accessories and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation.
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.
- .8 Grab bar – Article 11.8
- .1 The price in item 11.8 of the bid form is a unit price for all costs of providing materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery, storage and installation of new grab bars to be installed in accordance with the requirements of Section 10 28 10 - Toilet and Bathroom Accessories and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 installation fasteners;
 - .2 preparation and submission of technical data sheets;
 - .3 delivery, supply and installation.
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.
- .9 **CANCELED** – Article 11.9
- .10 **CANCELED** – Article 11.10
- .11 Hand soap dispenser – Article 11.11
- .1 The price in item 11.11 of the bidding form is a unit price for all costs of providing materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery,

storage and installation of new hand soap dispensers to be installed in accordance with the requirements of section 10 28 10 - Toilet and bathroom accessories and architectural drawings.

- .2 The price includes, but is not limited to, the following:
 - .1 fasteners for installation and finishing silicone gaskets;
 - .2 preparation and submission of technical data sheets and shop drawings;
 - .3 delivery, supply and installation;
 - .4 connection with electrical services.

- .12 Miscellaneous Signage – Article 11.12
 - .1 The price in item 11.12 of the bidding form is a global fixed price for all costs of scaffolding, materials, labour and tools required for the manufacture, supply and installation of the signal elements indicated in the architectural plans.
 - .2 The price includes, but is not limited to, the following:
 - .1 the supply, manufacture and installation of male/female toilet signs (one per toilet) and "authorized personnel only" signs as indicated on the architectural plan;
 - .2 preparation and submission of shop drawings;

2.12 ITEM 12 – INTERNAL SYSTEM

- .1 Acoustic partitions ITS 45 – Article 12.1
 - .1 The price in item 12.1 of the bidding form is a unit price per square metre for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new partitions requiring ITS 45 acoustics, in accordance with the requirements of section 09 21 99 - Partitions - small-scale works and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 prior tracing for approval by the Architect
 - .2 preparation and submission of technical data sheets;
 - .3 installation of partitions. ;
 - .4 paint of the new partitions
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 - New Nailing Bottom.

- .2 F.S. 1 hre partitions – Article 12.2
 - .1 The price in item 12.2 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new 1-hour fire-resistant partitions, in accordance with the requirements of Section 09 21 99 - Small Work Partitions and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 prior tracing for approval by the Architect
 - .2 preparation and submission of technical data sheets;
 - .3 installation of partitions.
 - .4 paint of the new partitions
 - .3 The following items are excluded from this article:
 - .1 Provision of nailing bottoms. This item should be included under Article 12.10 -

- .6 Standard door– Article 12.6
 - .1 The price in item 12.6 of the bidding form is a unit price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new standard doors, in accordance with the requirements of section 08 11 00 - Metal Doors and Frames and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 workshop painting of doors and frames and site alterations, if necessary
 - .2 preparation and submission of shop drawings and samples;
 - .3 door installation
 - .4 coordination with the Key Path Agency;
 - .5 preparation and installation of hardware in doors;
 - .6 on-site adjustment of the various hardware components
- .7 Double glass door with double fixed panels– Article 12.7
 - .1 The price in item 12.7 of the bidding form is a unit price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the manufacture, delivery and installation of new standard doors, in accordance with the requirements of section 08 42 26.33 - Swing doors and all-glass entrances and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of shop drawings and data sheets, including hardware;
 - .2 installation of fixed doors and panels.
 - .3 coordination with the Key Path Agency;
 - .4 preparation and installation of hardware in doors;
 - .5 on-site adjustment of the various hardware parts;
 - .6 reinforcements under the wooden floor to accommodate ground recessed parts
 - .7 custom fabrication and installation of the curved head moulding following the vault of the glass wall and bottom mouldings;
 - .8 putty to joint the peripheral mouldings with the existing brick wall.
- .8 **CANCELED** – Article 12.8
- .9 **CANCELED** – Article 12.9
- .10 New nailing bottom– Article 12.10
 - .1 The price in item 12.10 of the bidding form is a global fixed price for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to install new nailing bottoms in new partitions or on existing walls, in accordance with the requirements of section 06 20 00 - Joinery / Cabinet Making and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 replacement of the nailing bottom in the officers' quarters for the installation of the new fire alarm panel
 - .2 the installation of all nailing bottoms for the installation of accessories and wall equipment
 - .3 the installation of the necessary nailing bottoms for electromechanical devices in the technical rooms.

- .11 Demolition and new blowing of officers' logistics – Article 12.11
 - .1 The price in item 12.11 of the bidding form is a global fixed price for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for demolition and installation of a new blowing under the replaced fire alarm panel, in accordance with the requirements of the architectural drawings.

2.13 ITEM 13 – FINISHES

- .1 New ceiling plaster – Article 13.1
 - .1 The price in item 13.1 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to install plaster repairs to the floor ceiling, in accordance with the requirements of Section 09 03 51 - Historic Works - Plaster Coated Finish Coating and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 the necessary scaffolding up to the highest point of the ceiling;
 - .2 analysis of the layers and composition of the existing plaster;
 - .3 preparation of the surfaces to be applied;
 - .4 removal of bubbles in existing plaster.
- .2 Repair of wooden lath – Article 13.2
 - .1 The price in item 13.2 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to repair wooden lath under the plaster of the floor ceiling and to repair the lath of partitions drilled in the officers' quarters, in accordance with the requirements of Section 09 03 51 - Historic Works - Plaster Coated Finish Coating and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 the necessary scaffolding up to the highest point of the ceiling;
 - .2 repair of the existing lath following electromechanical and architectural work;
 - .3 repair of the wall lattice of the bulkheads drilled in the officers' quarters.
- .3 Ceiling paint – second floor – Article 13.3
 - .1 The price in item 13.3 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to paint the plaster ceiling, in accordance with the requirements of Section 09 91 23 - Painting - Interior Work and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of data sheets and samples;
 - .2 the supply of alternative materials;
 - .3 the necessary scaffolding up to the highest point of the ceiling;
- .4 New Lime Painting - Ground Floor – Article 13.4
 - .1 The price in item 13.4 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required

- for existing lime wall and masonry vault whitewash, in accordance with the requirements of Section 09 91 23 - Painting - Interior Work and Architectural Drawings.
- .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of data sheets and samples;
 - .2 preparation of work samples and professional approval time
 - .3 the necessary scaffolding up to the highest point of the ceiling;

 - .5 New resilient floor covering on a roll – Article 13.5
 - .1 The price in item 13.5 of the bidding form is a unit price per square metre for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the supply, delivery and installation of the new resilient flooring on a roll, in accordance with the requirements of Section 09 65 99 - resilient flooring - small-scale work and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of data sheets and samples;
 - .2 the supply of alternative materials;
 - .3 all accessories and mouldings required for installation according to architectural plans and details.

 - .6 New reinforced plastic wall covering – Article 13.6
 - .1 The price in item 13.6 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the supply, delivery and installation of the new reinforced plastic wall covering, in accordance with the requirements of Section 09 77 20 - Fiberglass Reinforced Decorative Wall Panels and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of data sheets, shop drawings and samples;
 - .2 all accessories and mouldings required for installation according to architectural plans and details.

 - .7 **CANCELED** – Article 13.7

 - .8 Sandblasting and varnishing of the wooden floor - ground floor– Article 13.8
 - .1 The price in item 13.8 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the sanding, repair and varnishing of the fire station wooden floor, in accordance with the requirements of section 06 20 00 - Carpentry / Cabinet Making, section 09 91 23 - Painting - Interior Work and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of data sheets and samples;
 - .2 removal of existing varnish, preparation, sanding and varnishing of the floor;
 - .3 samples of works as requested in the quotation;
 - .3 The following items are excluded from this article:
 - .1 Removing and replacing the floor. This item should be included under Article 5.1 - Removal and Replacement of Floors

- .9 Double coat of wood floor varnish – Article 13.9
 - .1 The price in item 13.9 of the bid form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the additional varnishing layer of the fire hall wooden floor, in accordance with the requirements of section 09 91 23 - Painting - Interior work and architectural drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 the supply and application of a second coat of varnish for specific areas indicated on the architectural plan;
 - .3 The following items are excluded from this article:
 - .1 Removing and replacing the floor. This item should be included under Article 5.1 - Removal and Replacement of Floors
 - .2 Preparation, repair, sandblasting and first coat of varnish.
- .10 **CANCELED** – Article 13.10
- .11 **CANCELED** – Article 13.11
- .12 **CANCELED** – Article 13.12
- .13 Painting of visible electromechanical elements – Article 13.13
 - .1 The price in item 13.13 of the bidding form is a unit price per square metre for all costs of scaffolding, materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to paint new electromechanical components visible on the ground floor and first floor of the fire station and in the officers' quarters, in accordance with the requirements of Section 09 91 23 - Painting - Interior Work and Architectural Drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of data sheets and samples;
 - .2 the supply of alternative materials;
 - .3 the necessary scaffolding up to the highest point of the ceiling (floor and ground floor);
 - .4 painting existing electromechanical elements

2.14 ITEM 14 – KITCHEN

- .1 New display case refrigerator – Article 14.1
 - .1 The price in item 14.1 of the bid form is a unit price for all costs of materials, , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new kitchenette display refrigerator, as prescribed in Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up
- .2 New Panini Grill – Article 14.2

- .1 The price in item 14.2 of the bid form is a unit price for all costs of materials, , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new panini grill for the kitchenette, as prescribed in Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up
- .3 New 2-door undercounter refrigerator– Article 14.3
- .1 The price in item 14.3 of the bid form is a unit price for all costs of materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new 2-door undercounter refrigerator for the kitchenette, as prescribed in Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up
- .4 New freezer 1 undercounter door – Article 14.4
- .1 The price in item 14.4 of the bid form is a unit price for all costs of materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new freezer 1 kitchenette sub-counter door, in accordance with the requirements of Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up
- .5 New soup stove – Article 14.5
- .1 The price in item 14.5 of the bid form is a unit price for all costs of materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new kitchenette soup stove, in accordance with the requirements of Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.

- .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up

- .6 New glass washer – Article 14.6
 - .1 The price in item 14.6 of the bid form is a unit price for all costs of materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new kitchenette glass washer, in accordance with the requirements of Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up

- .7 New espresso machine– Article 14.7
 - .1 The price in item 14.7 of the bid form is a unit price for all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new kitchenette espresso machine, as prescribed in Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets;
 - .2 the supply, storage and installation of equipment.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 - Assistance set up

- .8 Custom equipment:– Article 14.8
 - .1 The price in item 14.8 of the bid form is a unit price for all costs of materials, labour , tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required to supply the new kitchenette cabinets, as prescribed in Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
 - .2 The price includes, but is not limited to, the following:
 - .1 preparation and submission of technical data sheets and workshop drawings;
 - .2 the supply, storage and installation of equipment;
 - .3 on-site measurement before manufacture;
 - .4 the rods and joints required for installation;
 - .5 on-site adjustment and all materials required to upgrade custom furniture;
 - .6 all hardware components;
 - .7 coordination of openings and bores for the installation of electromechanical equipment and related services.
 - .3 The following items are excluded from this article:
 - .1 Delivery. This item must be included under article 14.15 - Delivery
 - .2 Assistance for implementation. This item should be included under article 14.16 -

Assistance set up

- .9 **CANCELED** – Article 14.9
- .10 **CANCELED** – Article 14.10
- .11 **CANCELED** – Article 14.11
- .12 **CANCELED** – Article 14.12
- .13 **CANCELED** - Article 14.13
- .14 **CANCELED** - Article 14.14
- .15 Delivery - Article 14.15
 - .1 The price in item 14.15 of the bidding form is a global fixed price that includes all costs of materials, labour, tools, equipment, administration and profit, as well as all costs related to measures to be taken in relation to the handling of existing materials likely to contain asbestos and existing paints likely to contain asbestos and lead required for the delivery of equipment and furniture for the kitchenette, in accordance with the requirements of Section 11 40 10 - Food Services - Standard Equipment and Kitchen Designs.
- .16 Delivery - Article 14.16
 - .1 The price in item 14.16 of the bidding form is an allowance covering all travel, inspection and labour costs required for the assistance of the cook in the installation of the various components of the kitchenette, in accordance with the requirements of Section 11 40 10 - Food Services - Routine Equipment and the drawings of the cook.

STRUCTURE SECTION

2.15 ITEM 15 - LOWERING OF THE WASHROOM FLOOR

- .1 **CANCELED** – Article 15.1
- .2 **CANCELED** – Article 15.2
- .3 **CANCELED** – Article 15.3
- .4 Joist installation – Article 15.4
 - .1 The price in article 15.4 of the bid form is the unit price, which includes all the costs of the materials, labour, tools and equipment required to install the joists.
 - .2 The price covers but is not limited to the:
 - .1 Installation of new sill plates and crossbeams;
 - .2 Application of the self-adhesive waterproofing membrane.

2.16 ITEM 16 - FOUNDATION FIREWALLS

- .1 Foundation firewalls – Article 16.1
 - .1 The price in article 16.1 of the bid form is the price per linear metre, which includes all the costs of the labour, tools and equipment required to build the two

foundation firewalls.

- .2 The price covers but is not limited to the:
 - .1 Excavation;
 - .2 Installation of the reinforcement bars;
 - .3 Formwork;
 - .4 Concreting;
 - .5 Installation of steel components and anchor bolts;
 - .6 Creation of openings to run mechanical conduits;
 - .7 Creation of openings for the installation of the firewalls device to run the electrical conduits.

2.17 ITEM 17 - FOUNDATION WALL AND JEWISH STAIR COLUMNS

- .1 Foundation wall – Article 17.1
 - .1 The price in article 17.1 of the bid form is the price per linear metre, which includes all the costs of the materials, labour, tools and equipment required to build the foundation wall.
 - .2 The price covers but is not limited to the:
 - .1 Formwork;
 - .2 Installation of the reinforcement rods;
 - .3 Concreting.
- .2 Steel columns – Article 17.2
 - .1 The price in article 17.2 of the bid form is the unit price, which includes all the costs of the materials, labour, tools and equipment required to install the steel columns.
 - .2 The price covers but is not limited to the:
 - .1 Installation of base plates and anchors;
 - .2 Installation of angles to support the floor around the columns;
 - .3 Application of paint.
- .3 Temporary supports – Article 17.3
 - .1 The price in article 17.3 of the bid form is an overall lump sum price, which includes all the costs of the materials, labour, tools and equipment required to install the temporary supports to temporarily support the staircase during the work.

2.18 ITEM 18 - TRAPDOORS

- .1 Floor trap doors on the ground floor – Article 18.1
 - .1 The price in article 18.1 of the bid form is the unit price, which includes all the costs of the materials, labour, tools and equipment required to make the floor openings for the ground floor trapdoors.

- .2 The price covers but is not limited to the:
 - .1 Installation of temporary supports under the joists to be cut;
 - .2 Installation of reinforcements.
 - .2 Trapdoors in the ceiling on the second floor – Article 18.2
 - .1 The price in article 18.2 of the bid form is the unit price, which includes all the costs of the materials, labour, tools and equipment required to make openings to install trapdoors in the ceiling on the second floor.
 - .2 The price covers but is not limited to the:
 - .1 Installation of scaffolding and temporary supports under the wooden components to be cut;
 - .2 Installation of reinforcements.
- 2.19 ITEM 19 - EXCAVATION AND EXTERIOR BACKFILL
- .1 Excavation and backfill – Article 19.1
 - .1 The price in article 19.1 of the bid form is the price per cubic metre, which includes all the costs of the labour, tools and equipment required to do the excavation and backfill work to make openings in the foundation walls to run electrical services.
 - .2 The price covers but is not limited to the:
 - .1 Excavation and backfill;
 - .2 Replacement of rigid insulation;
 - .3 The work down time resulting from the archeological monitoring as described in section 01 14 00 – Work Restrictions.
 - .2 Removal and reinstallation of section of the French drain – Article 19.2
 - .1 The price in article 19.2 of the bid form is the price per linear metre, which includes all the costs of the materials, labour, tools and equipment required to remove and reinstall section of the drain.
 - .2 The price covers but is not limited to the:
 - .1 Removal and installation of clean stone and geotextile membrane;
 - .2 Supplying and installation of the clean stone for fill to be installed around the French drain and the watertight membrane to wrap the clean stone;
 - .3 Supplying and installation of the French drain and the components to be used to secure section of the French drain;
 - .4 The work down time resulting from the archeological monitoring as described in section 01 14 00 – Work Restrictions.
- 2.20 ITEM 20 - OPENINGS IN THE EXTERIOR FOUNDATION WALLS
- .1 Openings – Article 20.1
 - .1 The price in article 20.1 of the bid form is the unit price, which includes all the costs of the labour, tools and equipment required to make openings in the exterior foundation walls to run conduits for the electrical intake.

- .2 The price covers but is not limited to the:
 - .1 All drilling required in the barrack's foundation walls;
 - .2 All screeding and repairs required on the masonry of the foundation walls;
 - .3 Caulking;
 - .4 Removal and reinstallation of joists;
 - .5 The work down time resulting from the archeological monitoring as described in section 01 14 00 – Work Restrictions.

2.21 ITEM 21 - OPENINGS IN THE INTERIOR FOUNDATION WALLS

- .1 Openings to be expanded for the mechanical and electrical – Article 21.1
 - .1 The price in article 21.1 of the bid form is the unit price, which includes all the costs of the labour, tools and equipment required to make openings in the foundation walls from the inside to run mechanical and electrical conduits.
 - 2 The price covers but is not limited to the:
 - .1 Removal of joists and sill plates;
 - .2 Demolition of the stone walls;
 - .3 Installation of new sill plates and joists;
 - .4 Repairs and screeding of surfaces;
 - .5 Caulking.
- .2 Drilling for mechanical and electrical conduits – Article 21.2
 - .1 The price in article 21.2 of the bid form is the unit price, which includes all the costs of the labour, tools and equipment required to make openings in the foundation walls from the inside to run plumbing pipes and electrical conduits.
 - .2 The price covers but is not limited to the:
 - .1 All drilling required in the barrack's foundation walls;
 - .2 All screeding and repairs required on the masonry of the foundation walls;
 - .3 Caulking;
 - .4 Removal and reinstallation of joists.

2.22 ITEM 22 - OPENINGS TO BE SEALED IN THE BUNKER WALLS

- .1 Openings to be sealed – Article 22.1
 - .1 The price in article 22.1 of the bid form is the unit price, which includes all the costs of the materials, labour, tools and equipment required to seal the openings in the two bunkers located in the service space.
 - .2 The price covers but is not limited to the:
 - .1 Surface preparation;
 - .2 Installation of sealer strips;
 - .3 Installation of reinforcement rods;
 - .4 Formwork;
 - .5 Concreting.

2.23 ITEM 23 - ENLARGEMENT OF THE CONCRETE PADS IN THE BUNKERS

- .1 Concrete pads – Article 23.1
 - .1 The price in article 23.1 of the bid form is the unit price, which includes all the

costs of the materials, labour, tools and equipment required to enlarge the concrete pads in the two bunkers located in the service space.

- .2 The price covers but is not limited to the:
 - .1 Surface preparation;
 - .2 Installation of studs and wire mesh;
 - .3 Formwork;
 - .4 Concreting;
 - .5 Concrete finishing.

2.24 ITEM 24 - CAULKING OF THE JOINTS BETWEEN THE VAULTS AND THE EXTERIOR WALLS

- .1 Caulking of joints – Article 24.1
 - .1 The price in article 24.1 of the bid form is the linear metre price, which includes all the costs of materials, labour, tools and equipment required to caulk the joints between the vaults and the exterior walls.
 - .2 The price covers but is not limited to the:
 - .1 Installation of scaffolding;
 - .2 Removal of repair mortar;
 - .3 Cleaning of joint surfaces;
 - .4 Installation of backing foam;
 - .5 Sealant application.

FIRE PROTECTION SECTION - ANNULÉ

2.25 ITEM 25 – ANNULÉ

2.26 ITEM 26 - ANNULÉ

MECHANIC SECTION

2.27 ITEM 27 - PLUMBING

- .1 **CANCELED** – Article 27.1
 - .1 The price of article 27.1 on the bid form is a global price that includes all the costs of materials, manpower, tools and equipment required to perform the dismantling of the existing plumbing network and fixtures.
 - .2 The price includes, but is not limited to, the following:
 - .1 Disposal of debris;
 - .2 Cleaning.
 - .3 Protection of the retained elements.
- .2 Piping insulation – Article 27.2
 - .1. The price of article 27.2 on the bid form is a lot price lot that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the piping insulation.

- .2. The price includes, but is not limited to, the following:
 - .1 Domestic cold water
 - .2 Domestic hot water
 - .3 Vents
- .3 Pumps – Article 27.3
 - .1. The price of article 27.3 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the pumps.
 - .2. The price includes, but is not limited to, the following:
 - .1 Domestic hot water recirculation pump
 - .2 Sanitary pumps for the sewers
- .4 Supply piping – Article 27.4
 - .1. The price of article 27.4 on the bid form is a per-metre price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the supply piping.
 - .2. The price includes, but is not limited to, the following:
 - .1 Domestic cold water – all diameters
 - .2 Domestic hot water – all diameters
 - .3 Domestic hot water recirculation all diameters
- .5 Drainage piping – Article 27.5
 - .1. The price of article 27.5 on the bid form is a per-metre that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the drainage piping.
 - .2. The price includes, but is not limited to, the following:
 - .1 Sanitary drainage of all diameters.
- .6 Ventilation piping– Article 27.6
 - .1. The price of article 27.6 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the ventilation piping.
 - .2. The price includes, but is not limited to, the following:
 - .1 Piping and et accessories of all diameters.
- .7 Electric water heater – Article 27.7
 - .1. The price of article 27.7 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of an electric water heater.
 - .2. The price includes, but is not limited to, the following
 - .1 Water heater
 - .2 Accessories
 - .3 Drip pan
- .8 WC – Article 27.8
 - .1. The price of article 27.8 on the bid form is a unit price that includes all the

- costs of materials, manpower, tools and equipment required to perform the installation of a WC.
- .2. The price includes, but is not limited to, the following:
 - .1 WC
 - .2 Seats and other accessories.
- .9 Bathroom sink – Article 27.9
- .1. The price of article 27.9 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation sinks
 - .2. The price includes, but is not limited to, the following:
 - .1 Bathroom sinks
 - .2 Faucets and other accessories
- .10 Single kitchen sink – Article 27.10
- .1. The price of article 27.10 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of a Single kitchen sink.
 - .2. The price includes, but is not limited to, the following:
 - .1 Single kitchen sink – all models
 - .2 Faucets and other accessories
- .11 Double sink – Article 27.11
- .1. The price of article 27.11 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of a Double sink.
 - .2. The price includes, but is not limited to, the following:
 - .1 Double sinks
 - .2 Faucets and other accessories
- .12 Service sink – Article 27.12
- .1. The price of article 27.12 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of a service sink.
 - .2. The price includes, but is not limited to, the following:
 - .1 Service sink
 - .2 Faucets and other accessories
 - .3 Plaques de protection
- .13 Floor drains, clean outs and indirect returns – Article 27.13
- .1. The price of article 27.13 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of floor drains, clean outs and indirect returns.
 - .2. The price includes, but is not limited to, the following:
 - .1 All floor drains with or without funnel
 - .2 Cleanouts

- .3 All indirect returns including for dehumidifiers

- .14 Laundry service – Article 27.14
 - .1. The price of article 27.14 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the laundry service.
 - .2. The price includes, but is not limited to, the following:
 - .1 Valves
 - .2 Boxes

- .15 Water entrance and backflow – Article 27.15
 - .1. The price of article 27.15 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the water entrance and backflow
 - .2. The price includes, but is not limited to, the following:
 - .1 Backflow
 - .2 Connection to existing aqueduct and its piping
 - .3 All accessories

- .16 Domestic hot water circulation network – Article 27.16
 - .1. The price of article 27.16 on the bid form is a per-metre price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the Domestic hot water circulation network.
 - .2. The price includes, but is not limited to, the following:
 - .1 Domestic hot water circulation piping
 - .2 All accessories except the pump

- .17 Portable extinguisher – Article 27.17
 - .1. The price of article 27.17 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation the Portable extinguishers.

2.28 ITEM 28 - HVAC

- .1 **CANCELED** – Article 28.1

- .2 Testing, calibration and balancing– Article 28.2
 - .1. The price of article 28.2 on the bid form is a lot price that includes all the costs of materials, manpower, tools and equipment required to perform the testing, calibration and balancing.
 - .2. The price includes, but is not limited to, the following:
 - .1 Balancing works
 - .2 Preliminary and final reports
 - .3 Resuming of works.
 - .4 Site visits during construction.

- .3 Insulation for air ducts– Article 28.3
 - .1. The price of article 28.3 on the bid form is a lot price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the duct insulation
 - .2. The price includes, but is not limited to, the following:
 - .1 Insulation and accessories of the evacuation network.

- .4 Metal air ducts– Article 28.4
 - .1. The price of article 28.4 on the bid form is a per-kg price that includes all the costs Of materials, manpower, tools and equipment required to perform the installation of the metal air ducts
 - .2. The price includes, but is not limited to, the following:
 - .1 All the ducts and accessories of the evacuation network

- .5 Fire damper– Article 28.5
 - .1. The price of article 28.5 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of an air damper.
 - .2. The price includes, but is not limited to, the following:
 - .1 Fire dampers
 - .2 Flanges

- .6 Fan– Article 28.6
 - .1. The price of article 28.6 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of a fan.
 - .2. The price includes, but is not limited to, the following:
 - .1 All fans
 - .2 Accessories

- .7 Diffusers, registers and grills– Article 28.7
 - .1. The price of article 28.7 on the bid form is a unit price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the diffusers, registers and grills.
 - .2. The price includes, but is not limited to, the following:
 - .1 all models of evacuation grills

- .8 Controls– Article 28.8
 - .1. The price of article 28.8 on the bid form is a per-point price that includes all the costs of materials, manpower, tools and equipment required to perform the installation of the control units.
 - .2. The price includes, but is not limited to, the following:
 - .1 High temperature controls – technical room

- .2 Start-up of the evacuation ventilation

ELECTRICAL SECTION

2.29 ITEM 29 – ELECTRICAL DISTRIBUTION

- .1 The price of each article must include the materials, all the manpower, tools and required equipment, start-up, identification and guarantee.
- .1 Feeder 100A, 600V – Article 29.1
The price of article 29.1 in the bid form is a price for Conductors, conduits, grounding, 600V existing panel connection, 90A circuit breaker
- .2 Transformer 75 kVA – Article 29.2
The price of article 29.2 in the bid form is a unit price including 75 kVA transformer and its accessories, connection to the 600 V line and the grounding.
- .3 Panel 400A, 120/208V, 3 phase – Article 29.3
The price of article 29.3 in the bid form is a unit price including a complete panel including the connection to the line and the grounding of the panel
- .4 Panel 225A, 120/208V, 3 phase– Article 29.4
The Price of article 29.4 of the bid form is a unit price including a complete panel including the connection to the line and the grounding of the panel.
- .5 Panel 200A, 120/240V, 1 phase – Article 29.5
The unit price of article 29.5 of the bid form is a unit price including a complete panel including the connection to the line and the grounding of the panel.
- .6 Feeder 400A, 120/208V, 3 phase, – Article 29.6
The unit price of article 29.6 of the bid form is a price calculated by metre including the conductors, conduits, ground, connectors and fixtures, and the connection of the line to the secondary transformer circuit.
- .7 Feeder 120/208V, 3 phase – Article 29.7
The unit price of article 29.7 of the bid form is a price calculated by metre including the conductors, conduits, grounding, connectors and fixtures, and the connection of the line up to the panel.
- .8 Feeder 120/240V, single phase – Article 29.8
The unit price of article 29.8 of the bid is a price calculated by metre including the conductors, conduits, grounding, connectors and fixtures, and the connection of the line up to the panel.
- .9 **CANCELED** – Article 29.9

- .10 **CANCELED** – Article 29.10
- .11 **CANCELED** – Article 29.11
- .12 Underground conduit – Article 29.12
The unit price of article 29.12 of the bid form is a per-metre price including PVC conduits, elbows, adaptors, galvanized steel conduits and sealants.
- .13 100 mm spare conduit, crawl space – Article 29.13
The unit price of article 29.13 of the bid form is a per-meter price consisting of aluminum conduits, fittings, fixtures and brackets, offsets, elbows, pull cord, connecting rings, and sealant.

2.30 ITEM 30 – ELECTRICAL SERVICES

- .1 The price of each article must include the materials, all the manpower, tools and required equipment, start-up, identification and guarantee.
- .1 Duplex wall receptacle – Article 30.1
The unit price of article 30.1 of the bid form includes the socket, the box and the finishing plate, complete connection using a TECK cable installed in the crawl space to the electrical panel.
- .2 GFCI wall receptacle – Article 30.2
The unit price of article 30.2 of the bid form includes the socket, the box and the cover plate, complete connection using a TECK cable installed in the crawl space to the electrical panel.
- .3 Receptacle for clothes dryer – Article 30.3
The unit price of article 30.3 of the bid form includes the socket, the box and the cover plate, complete connection using a TECK cable installed in the crawl space to the electrical panel of the dryer plug.
- .4 Recessed floor plug – Article 30.4
The Price of article 30.4 of the bid form includes two outlets, the box and the cover plate, the complete connection using a TECK cable installed in the crawl space to the electrical panel.
- .5 Service for glass washer – Article 30.5
The Price of article 30.5 of the bid form includes a box, TECK cable up to the panel, connection of the glass washer.
- .6 Service for espresso machine – Article 30.6

The Price of article 30.6 of the bid form includes a box, TECK cable up to the panel, connection of the espresso machine.

.7 Service for panini grill – Article 30.7

The Price of article 30.7 of the bid form includes a box, TECK cable up to the panel, connection of the panini grill.

.8 Service for the coffee machine – Article 30.8

The Price of article 30.8 of the bid form includes a box, TECK cable up to the panel, connection of the coffee machine.

.9 Service for refrigerated counter and freezer – Article 30.9

The Price of article 30.9 of the bid form includes a box, TECK cable up to the panel, connection of the refrigerated counter and freezer.

.10 Service for the kitchen counter– Article 30.10

The Price of article 30.10 of the bid form includes a box, TECK cable up to the panel, connection of the kitchen counter.

.11 Service for future hand dryer – Article 30.11

The Price of article 30.11 of the bid form includes an outlet box, cover plate, TECK cable up to the place beside the electrical panel. The cable must be long enough to be connected to the electrical panel in the future.

.12 Heating unit – Article 30.12

The Price of article 30.12 of the bid form includes a heating unit with installation accessories, thermostat, and supply circuit connected to the panel

.13 Heat trace cable – Article 30.13

The Price of article 30.13 of the bid form is a per-metre price including a heat trace cable, mounting and connection kit, attach cables, warning strip, and connection to the controller.

.14 Controller and temperature sensor – Article 30.14

The Price of article 30.14 of the bid form includes controller and temperature sensor, sensor connection to controller and the connection of the controller to the electrical panel.

2.31 ITEM 31 – LIGHTING

- .1 The price of each article must include the materials, all the manpower, tools and required equipment, start-up, identification and guarantee.

- .1 Light fixture type A – Article 31.1
The unit price of article 31.1 of the bid form includes a light fixture connected to the circuit.
- .2 Light fixture type B – Article 31.2
The unit price of article 31.2 of the bid form includes a light fixture connected to the circuit.
- .3 Light fixture type C – Article 31.3
The unit price of article 31.3 of the bid form includes a light fixture connected to the circuit.
- .4 Light fixture type D – Article 31.4
The unit price of article 31.4 of the bid form includes a light fixture connected to the circuit.
- .5 Light fixture type E1 – Article 31.5
The unit price of article 31.5 of the bid form includes a light fixture connected to the circuit.
- .6 Light fixture type E2 – Article 31.6
The unit price of article 31.6 of the bid form includes a light fixture connected to the circuit.
- .7 Track and fixtures type F1 – Article 31.7
The unit price of article 31.7 of the bid form includes the track, mounting and connection hardware, ducts and conductors, the junction box installed on the moulding, TECK cable installed in the crawlspace and connected to the dimmer or lighting panel accordingly.
- .8 Track and fixtures type F1U – Article 31.8
The unit price of article 31.8 of the bid form includes of the bid form includes the track, mounting and connection hardware, ducts and conductors, the junction box installed on the moulding, TECK cable installed in the crawlspace and connected to the dimmer or lighting panel accordingly.
- .9 Track and fixtures type F2 – Article 31.9
The unit price of article 31.9 of the bid form includes the track, mounting and connection hardware, ducts and conductors, the junction box installed on the moulding, TECK cable installed in the crawlspace and connected to the electrical panel.
- .10 Track and fixtures type F3 – Article 31.10

The unit price of article 31.10 of the bid form the track, mounting and connection hardware, ducts and conductors, the junction box installed on the moulding, TECK cable installed in the crawlspace and connected to the electrical panel.

- .11 Track and fixtures type F4 – Article 31.11
The unit price of article 31.11 of the bid form includes the track, mounting and connection hardware, ducts and conductors, the junction box installed on the moulding, TECK cable installed in the crawlspace and connected to the electrical panel.
- .12 Dimmer panel – Article 31.12
The unit price of article 31.12 of the bid form includes the complete dimmer panel, its mounting hardware and the display control panel.
- .13 Wall switch– Article 31.13
The unit price of article 31.13 of the bid form includes the on-off switch, the box, cover plate, conduit and conductor up to the light.
- .14 Lighting circuit – Article 31.14
The unit price of article 31.14 of the bid form includes the conduit and conductor, junction box at the baseboard, TECK cable to the electrical panel.
- .15 Exit sign – Article 31.15
The unit price of article 31.15 of the bid form includes running man pictogram panel.

2.32 ITEM 32 – TELECOMMUNICATION

- .1 The price of each article must include the materials, all the manpower, tools and required equipment, start-up, identification and guarantee.
 - .1 Connection panel – Article 32.1
The unit price of article 32.1 of the bid form includes a connection panel consisting of an H frame, a connection panel with copper cables, a connection panel for fibre.
 - .2 Telecommunications outlet– Article 32.2
The unit price of article 32.2 of the bid form includes a telecommunications outlet box with plate, copper cable, conduit up to the connection panel and connection to the panel.
 - .3 Extension of the existing conduits– Article 32.3
The unit price of article 32.3 of the bid form includes the extension of the conduits in the officers' quarters (Museum) and the extension of the conduit to the patch panel in the men's barrack.

- .4 Connection cables – Article 32.4
The unit price of article 32.4 of the bid form includes a fibre optic cable and a multiconductor table, the connections to the two ends and the grounding.

2.33 ITEM 33 – FIRE ALARM

- .1 The price of each article must include the materials, all the manpower, tools and required equipment, start-up, identification and guarantee.

- .1 Main control panel – Article 33.1
The unit price of article 33.1 of the bid form includes the main fire alarm panel installed in the officer's quarters (Museum).
- .2 Annunciator panel c/w heated cabinet – Article 33.2
The unit price of article 33.2 of the bid form includes an annunciator panel installed in the men's barracks.
- .3 Manual pull station – Article 33.3
The unit price of article 33.3 of the bid form includes a manual pull station, mounting box, outlet box, conduit and conductor.
- .4 Horn with strobelight – Article 33.4
The unit price of article 33.4 of the bid form includes a horn, mounting box, outlet box, conduit and conductor connected to signaling loop.
- .5 Fire detector – Article 33.5
The unit price of article 33.5 of the bid form includes a detector mounting base, outlet box, conduit and conductor connected to detection loop.
- .6 Supervision/ command module– Article 33.6
The unit price of article 33.6 of the bid form includes an intelligent module, an outlet box, conduits and conductors connected detection loop & devices.
- .7 Detection loop – Article 33.7
The unit price of article 33.7 of the bid form includes a cable, the conduits, and an end of line resistor in an outlet box.
- .8 Signaling loop – Article 33.8
The unit price of article 33.8 of the bid form includes a cable, conduits, and an end of line resistor in an outlet box.
- .9 **CANCELED** – Article 33.9

- .10 Complete verification of the fire alarm system – Article 33.10

The global price for article 33.10 of the bid includes a complete verification of the fire alarm system for all the devices for the buildings on the island according to ULC-S536 including a certificate.

SECTION 3 – PRODUCTS

NO OBJECT

SECTION 4 – EXECUTION

NO OBJECT

END OF SECTION

PART 1 - GENERAL

1.1 DEFINITIONS

- .1 Activity: An element of Work performed during course of Project. An activity normally has an expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): A graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: Original approved plan (for Project, workpackage, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five (5) day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: Number of work periods (not including holidays or other nonworking periods) required to complete an activity or other Project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: A summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: A significant event in Project, usually completion of major deliverable.
- .8 Project Schedule: The planned dates for performing activities and the planned dates for meeting milestones. A dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: Overall system operated by Agency Representative to enable monitoring of project work in relation to established milestones.

1.2 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately ten (10) working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of

beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

- 1.3 SUBMITTALS
- .1 Submit documents and sample in accordance with Section 01 33 00 – Submittals Procedures.
 - .2 Submit to Agency Representative, no later than ten (10) business days after contract award, a bar chart (GANTT chart) that will serve as a master plan and will be used for the planning and monitoring of the work, and for the production of progress reports.
- 1.4 MASTER PLAN
- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
 - .2 Agency Representative will review and return revised schedules within five (5) working days.
 - .3 Revise impractical schedule and resubmit within five (5) working days.
 - .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.
- 1.5 PROJECT MILESTONES
- .1 Project milestones form interim targets for Project Schedule.
 - .2 Given the site's access constraints, the Contractor must perform and complete all the work within the following period:
 - between August 30th and November 1st 2019.
 - between May 15th and September 15th 2019
 - .3 The realisation of the entire excavation work should be done within the following period:
 - All outdoor excavation work must be carried out outside the frost period, as an indication, within the time period between May 15th and September 15th.
 - .4 The Contractor can execute a maximum of three (3) trenches of excavations at a time due to the archaeologists.
 - .5 The contractor must submit all shop drawings and data sheets requested to the Professionals' plans and specifications no later than one (1) month after receipt of the letter of intent provided to the contractor by Parks Canada. The contractor and its subcontractors must therefore begin their survey upon receipt of the letter of intent in order to provide shop drawings in a timely manner.
 - .6 The Contractor must plan to complete the complete demolition of the project within the current year, i.e. before November 1st, 2019. Complete demolition includes, but is not limited to, removing floors,

demolishing all electromechanical elements shown on engineers' plans, demolishing partitions and fixed furniture according to architectural plans, etc.

1.6 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 When preparing the project schedule, the Contractor must take into account the holding on the Fort Lennox site of a nautical festival open to the public that will be held from July 6th thru July 8th, 2018 inclusively. During these three days (July 6th to July 8th), the Contractor won't be allowed to use the parking lot of the jetty. In the preceding and following days of July 3rd to July 5th and from July 9th to July 12th inclusively, the jetty will be used to assemble and dismantle equipment for the festival. The Contractor must collaborate with the contractors who will perform this assembly and dismantling to allow the smooth running of the nautical festival.
- .3 The detailed Project Schedule must include at least the minimum milestones corresponding to the following activities.
 - .1 Award of the contract;
 - .2 Mobilization;
 - .3 Samples;
 - .4 Excavation, drainage and backfill;
 - .5 Shop Drawings;
 - .6 Fire alarm;
 - .7 Demolition of existing walls;
 - .8 Dismantling of flooring and moldings to be reinstalled;;
 - .9 Demolition needed for the passage of systems (mechanical, electrical and other);
 - .10 Demolition of the existing washrooms area;
 - .11 Structure of the Jews' stair;
 - .12 Patching of existing elements;
 - .13 Refurbishment of windows;
 - .14 New wall constructions;
 - .15 Electro-mechanical work;
 - .16 Supply and installation of furniture and accessories;
 - .17 Finishing work.

1.7 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule before every site meeting reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.8 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify

activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

- .2 Weather related delays with their remedial measures will be discussed and negotiated.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

1.1 ADMINISTRATIVE TERMS

- .1 No later than one (1) month after receipt of the letter of intent and in a predetermined order to avoid delaying the completion of the work, submit the required data sheets, shop drawings and samples to the consultants for review. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed. The Contractor must provide a follow-up table of the elements to be submitted according to the plans and specifications of the Professionals
- .2 Submit a follow-up table of shop drawings, data sheets and samples of products and works.
- .3 Do not proceed with Work affected by submittal until review is complete.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units converted values are acceptable.
- .6 Review submittals prior to submission to Consultants. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .7 Notify Consultants, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent Work are co-ordinated.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Consultants' review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultants' review.
- .11 Keep one reviewed copy of each submission on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which

- are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
 - .3 Adjustments made on shop drawings by Consultants are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
 - .4 Make changes in shop drawings as Consultants may require, consistent with Contract Documents. When resubmitting, notify Consultants in writing of revisions other than those requested.
 - .5 Accompany submissions with transmittal letter, containing:
 - .1 Date;
 - .2 Project title and number;
 - .3 Contractor's name and address;
 - .4 Identification and quantity of each shop drawing, product data and sample;
 - .5 Other pertinent data.
 - .6 Submissions must include:
 - .1 Date and revision dates;
 - .2 Project title and number;
 - .3 Name and address of:
 - .1 Subcontractor;
 - .2 Supplier;
 - .3 Manufacturer;
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication;
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances;
 - .3 Setting or erection details;
 - .4 Capacities;
 - .5 Performance characteristics;
 - .6 Standards;
 - .7 Operating weight;
 - .8 Wiring diagrams;
 - .9 Single line and schematic diagrams;
 - .10 Relationship to adjacent work.
 - .7 Distribute copies of shop drawings and data sheets once the

- Consultant has completed the verification.
- .8 Submit electronic copy of shop drawings for each requirement requested in in the technical sections of the specification.
 - .9 If no shop drawing is required due to the use of a standard manufacturing product, submit an electronic copy of manufacturer's data sheets or manufacturer's documentation as specified in the technical sections of the specification.
 - .10 Submit electronic copies of test reports for requirements requested in specification Sections and as requested.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within three (3) years of date of contract award for project.
 - .11 Submit electronic copies of certificates for requirements requested in specification Sections and as requested.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
 - .12 Submit electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
 - .13 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested.
 - .1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
 - .14 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested.
 - .15 Delete information not applicable to project.
 - .16 Supplement standard information to provide details applicable to project.
 - .17 If upon review by Consultants, no errors or omissions are discovered or if only minor corrections are made, [transparency]

[copies] will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

- .18 The review of shop drawings is for the sole purpose of ascertaining conformance with the general concept of the data indicated on them.
 - .1 This review does not imply that the Agency approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.3 SAMPLES

- .1 Submit for review samples in duplicate (2) as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .3 Where colour, pattern or texture is criterion, submit full range of samples.
- .4 Adjustments made on samples by Consultants are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to proceed with Work.
- .5 Make changes in samples which Consultants may require, consistent with Contract Documents.
- .6 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 MOCK-UPS

- .1 Erect mock-ups in accordance with specifications and drawings.
- .2 All patrimonial works will require samples of works, whether or not indicated in the specific quotation section.

**1.5 PROGRESS
PHOTOGRAPHS**

- .1 Submit one (1) copy of the digital photographic record, high resolution, in .jpg or .tif format, presented in electronic format.

- .2 Project identification: project name and number and date of photograph.
- .3 Number of viewpoints:
 - .1 The viewpoints and their location will be determined by the on-site Consultant in coordination with the Contractor and the Parks Canada Agency Representative.
- .4 Frequency of submission of photos:
 - .1 Once before mobilization;
 - .2 At least once at each key milestone following the progress schedule, in particular;
 - .1 Once the work is completed;
 - .2 Once before the works are concealed;
 - .3 After demobilization.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
 - .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
 - .3 Province of Quebec
 - .1 An Act Respecting Occupational Health and Safety, R.S.Q. last edition.
- 1.2 SUBMITTALS
À SOUMETTRE
- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit site-specific Health and Safety Plan prior to commencement of Work that must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
 - .3 Submit copies of Contractor's authorized representative's work site health and safety inspection reports to Agency Representative.
 - .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
 - .5 Submit copies of incident and accident reports.
 - .6 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures.
 - .7 Agency Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor after receipt of plan. Revise plan as appropriate and resubmit plan to Agency Representative within five (5) days after receipt of comments from Agency Representative.
 - .8 Agency Representative review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
 - .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Agency Representative.

- 1.3 SAFETY ASSESSMENT
- .1 Perform site specific safety hazard assessment related to project.
 - .2 Take note that due to the site's access specific conditions, emergency response time is estimated at 45 minutes.
- 1.4 PROJECT/SITE CONDITIONS
- .1 See Englobe's expert report in appendix – Caractérisation des matériaux susceptibles de contenir de l'amiante et des peintures susceptibles de contenir le plomb.
- 1.5 GENERAL REQUIREMENTS
- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
 - .2 Agency Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- 1.6 RESPONSIBILITY
- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
 - .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- 1.7 COMPLIANCE REQUIREMENTS
- .1 Comply with Act Respecting Occupational Health and Safety, R.S.Q., last edition.
 - .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.
- 1.8 UNFORSEEN HAZARDS
- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations and advise Agency Representative verbally and in writing.

- 1.9 POSTING OF DOCUMENTS .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations, and in consultation with Agency Representative.
- 1.10 CORRECTION OF NON-COMPLIANCE .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Agency Representative.
- .2 Provide Agency Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Agency Representative may stop Work if non-compliance of health and safety regulations is not corrected.
- 1.11 BLASTING .1 Blasting or any other use of explosives is strictly prohibited.
- 1.12 WORK STOPPAGE .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTION
- .1 01 00 00 – General Requirements.
 - .2 01 14 00 – Work Restrictions
 - .3 01 35 29 – Health and Safety Requirements.
 - .4 01 56 00 – Temporary Barriers and Enclosures.
 - .5 01 74 11 – Cleaning.
 - .6 05 50 00 – Metal Fabrications.
 - .7 09 03 61 – Historic Repainting – Exterior Surfaces.
 - .8 31 23 10 – Excavation and Backfilling.
 - .9 32 91 19 – Topsoil Placement and Grading.
 - .10 32 92 23 – Sodding.
- 1.2 DEFINITIONS
- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
 - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- 1.3 REFERENCES
- .1 CSA Group
 - .1 CAN/CSA-Z94.4-F11, Selection, use, and care of respirators.
 - .2 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Assessment Act (S.C.2012, c. 19, s. 52).
 - .2 Canadian Environmental Protection Act (S.C. 1999, c. 33).
 - .3 Amended 2013-10-25
 - .1 Ministère du Travail du Québec
 - .2 Commission des normes, de l'équité et de la santé et de la sécurité du travail (CNESST)

- .3 Act Respecting Occupational Health and Safety L.R.Q., c. S-2.1;
- .4 Regulation respecting occupational health and safety c. S-2.1, r. 13;
- .5 Safety Code for the construction industry, R.R.Q., c. S-2.1, r. 4;
- .6 Regulation respecting the quality of the work environment, R.R.Q., c. S-2.1, r. 11;
- .7 Hazardous Products Information Regulation, c.S-2.1, r.8.1.
- .8 Act Respecting the Conservation and Development of Wildlife (LRQ, ch. C-61.1)
- .9 Regulation respecting wildlife habitats (C-61.1, r.18)
- .10 Fisheries Act (R.S.C., 1985, c. F-14)

- .4 Régie du bâtiment du Québec (RBQ)
 - .1 Building Act, L.R.Q., B-1.1.
 - .2 Regulation respecting the application of the Building Act, c. B-1.1, r.1.
 - .3 Construction Code, c. B-1.1, r.2
 - .4 Safety Code, c. B-1.1, r.3

- .5 Commission de la construction du Québec (CCQ) / Régie du bâtiment du Québec (RBQ)
 - .1 Act respecting Labour Relations, Vocational Training and Workforce Management in the Construction Industry. L.R.Q., R-20
 - .2 Regulation respecting the application of the Act respecting labour relations, vocational training and workforce management in the construction industry, R.R.Q., c. r-20, r.1.

- .6 Ministère du Développement durable, de l'Environnement et des Parcs
 - .1 Sustainable Development Act, L.R.Q., chapitre d-8.1.1;
 - .2 Environment Quality Act, L.R.Q., chapitre Q-2;
 - .3 Act to affirm the collective nature of Water Resources and to promote better governance of water and associated environments, L.R.Q., chapitre C-6.2;
 - .4 Regulation respecting hazardous materials, c. Q-2, r.32;
 - .5 Clean Air Regulation, c. Q-2, r. 4.1;
 - .6 other laws and associated regulations.

- .7 Transports Canada
 - .1 Transportation of Dangerous Goods Act (TDGA) and amendments.
 - .2 Transportation of Dangerous Goods Regulation (TDG Regulation).
 - .3 See the amended regulations.

- .8 Environment Canada
 - .1 Canadian Environmental Protection Act, 1999 (S.C. 1999, c.33)
 - .2 Statutory Instruments Act (R.S.C., 1985, c. S-22)
 - .3 Regulations Amending the PCB Regulations (SOR/2010-57).
 - .4 Species at Risk Act (S.C. 2002, c. 29)

- .5 Manual for spills of hazardous materials
- .6 Amendments, other laws and associated regulations.
- .7 **Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment (CCME), 2003. Canadian Water Quality Guidelines.**

- .9 Government of Canada
 - .1 National Building Code, Canada.
 - .2 National Fire Code, Canada 2010.
 - .3 Workplace Hazardous Materials Information System (WHMIS) / Health Canada.
 - .4 Canada Labor Code, Part II, Canada Occupational Safety and Health Regulations (COHSR).

- .10 National Fire Protection Association
 - .1 NFPA 80A, 5000, 730, 251, 241, 72, 70A, 10, etc.

- .11 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S702-14, CAN/ULC-S704-11, etc.

1.4 ENVIRONMENT
DESCRIPTION

- .1 Located in the municipality of Saint-Paul-de-l'Île-aux-Noix, the Fort-Lennox National Historic Site of Canada occupies the island of Île-aux-Noix, which is anchored in the middle of the Richelieu River.

- .2 From an ecological point of view, the Richelieu River is of great interest in many places and is the main site, along with its banks, where sensitive components have been identified.

- .3 Île-aux-Noix represents a natural environment with an area of 55 ha. There we find fauna and flora habitats associated with wetlands and wildlife, particularly in the northern part of the island.

- .4 For the realization of the project the biological environment considered corresponds to an area of 653 ha (see map).

- .5 In the biological environment considered, the following special status species have been listed:

Espèce (nom commun)	Espèce (nom scientifique)	Statut provincial ¹	Statut fédéral ²
<i>Poissons</i>			
Chevalier de rivière	<i>Moxostoma carinatum</i>	Vulnérable (octobre 2009)	Préoccupante (décembre 2007)
Méné d'herbe	<i>Notropis bifrenatus</i>	Vulnérable (octobre 2009)	Préoccupante (juin 2004)
<i>Reptiles</i>			
Tortue géographique	<i>Graptemys geographic</i>	Vulnérable (mars 2005)	Préoccupante (2005)
Tortue molle à épines	<i>Apalone spinifera</i>	Menacée (mars 2000)	Menacée (2005)
<i>Oiseaux</i>			
Petit Blongios	<i>Ixobrychus exilis</i>	Vulnérable (octobre 2009)	Menacée (juin 2003)
Paruline azurée	<i>Dendroica cerulea</i>	Menacée (octobre 2009)	Préoccupante (2005)
Râle jaune	<i>Coturnicops noveboracensis</i>	Menacée (octobre 2009)	Préoccupante (2003)

¹ Espèce désignée au Québec en vertu de la Loi sur les espèces menacées ou vulnérables (LEMV),

² Espèce inscrite à l'Annexe 1 de la Loi sur les espèces en péril (LEP)

.6 Bats.

- .1 The presence of bats in the site's buildings has been known for several years.
- .2 Since 2010, bats in Quebec have been threatened by an infection known as white-nose syndrome caused by a fungus (*Pseudogymnoascus destructans*). This infection caused the death of over 94% of bats in many hibernacula in Quebec and eastern North America. At the federal level, an Emergency Order was made by the Committee on the Status of Endangered Wildlife in Canada 2012 (COSEWIC 2012) and finally three species were designated as Endangered (COSEWIC 2014) and became subject to SARA (Species at Risk Act).
- .3 In case of doubt or presence, refer to Agency Representative.
- .4 Note that bats are protected under the federal Species at Risk Act and therefore subject to fines. No action shall be taken by the Contractor without the written consent of the Agency Representative.
- .5 Special attention to the presence of bats may therefore require strict conservation measures in case of their presence.

.7 Turtles.

- .1 The presence of turtles on the site whose status is of concern has been known for several years.
- .2 Special attention to the presence of turtles may therefore require strict conservation measures in case of their presence.
- .3 In case of doubt or presence, refer to the Agency Representative.
- .4 Unless otherwise instructed by the Agency Representative, if a turtle nest is discovered during the project's excavation work, proceed as follows:
 - .1 Excavate delicately (bucket without teeth) in order to recover the eggs;
 - .2 Put the eggs in a box with a little sand in the bottom and

- cover the eggs with 10cm of sand;
- .3 Do not turn eggs too much;
- .4 Put the small box in the ground in the sun at the same level as the ground;
- .5 Wait for additional instructions from the Agency Representative.

- .8 The work sites and the nature of the work do not affect the critical habitat or the individuals of the special status species identified in this sector. **The quality of water discharges, the prevention of sedimentation and suspension of fine particles in the water of the Richelieu River is the main mitigation measure to ensure the protection of these species.**

- .9 MONARCH BUTTERFLIES
 - .1 TO PROTECT THE MONARCH BUTTERFLY (SPECIES DESIGNATED "ON THE WAY OF DISPARITION" BY COSEWIC in 2017) it is prohibited to mow milkweed plants between May 15th and the first ground frosts.

- 1.5 CONTRACTOR'S OBLIGATIONS
 - .1 Parks Canada Agency holds environmental authorizations for the planned work.
 - .2 Work must be performed to the satisfaction of the Parks Canada Agency or its Designated Representative with respect to environmental protection standards and regulations. The Contractor is required to comply with the environmental guidelines and must anticipate the costs associated with these guidelines.
 - .3 Contractor must ensure that his work complies with:
 - .1 Laws and regulations of municipal, provincial and federal environmental authorities.
 - .2 Requirements set out in this specification.
 - .3 Requirements of the conditions associated with each environmental authority.
 - .4 Other standards and guidelines that may be established by the supervisor designated by the Parks Canada Agency.
 - .4 In the event that unplanned work is required by the Contractor, and the work requires environmental authorizations, the Contractor shall, in addition to notifying and obtaining the approval of the Agency Representative, shall obtain the necessary authorizations and permits from the organizations concerned to carry out its work. Fees and deadlines for compliance with and enforcement of the environmental requirements contained in these authorizations and permits must be anticipated and assumed entirely by the Contractor.
 - .5 From a perspective of good management of environmental risks, public health and equipment, Contractor shall during Work, at the request of the Parks Canada Agency or his Designated Representative, implement various environmental procedures

(indoor and outdoor). See PART 3 – EXECUTION of this section.

1.6 NOTIFICATION

- .1 Agency Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Agency Representative of proposed corrective action and implement them promptly with the approval by Agency Representative
- .3 Contractor must wait for the written approval of the Agency Representative before proceeding with the implementation of the proposed measures.
- .4 If necessary, the Agency Representative will issue stop order of work until satisfactory corrective action has been taken.
- .5 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

**1.7 APPROVAL /
INFORMATION
SUBMITTALS**

- .1 Data Sheets
 - .1 Submit manufacturer's data sheets, instructions and documentation for hazardous materials used on site. Data sheets must indicate the products' characteristics, performance criteria, dimensions, limits and finish.
- .2 Mobilization Plan
 - .1 Refer to Section 01 00 00 - General Requirements for the Mobilization Plan to be submitted. The mobilization plan shall include the identification and description of the environmental protection measures required in accordance with PART 3 - EXECUTION of this section.
- .3 Environmental Protection Plan
 - .1 From a perspective of good management of environmental risks, public health and equipment, the Parks Canada Agency or its Designated Representative may request that Contractor submit an Environmental Protection Plan if the good practices established in this specification is not respected by the Contractor.
 - .2 Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction and their relevant environmental procedures.
 - .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
 - .4 The Environmental Protection Plan may concern:
 - .1 Air pollution control plan detailing provisions to assure

that dust, debris, materials, and trash, do not become air borne and travel off project site. Work may generate dust (asbestos, silica, biological contaminant, physical, chemical or other undefined dust). **Due to the certainty regarding dust dispersion, Parks Canada Agency or its Representative requires the Contractor to work inside enclosures both outdoor (scaffolding) and indoor, in accordance with the demands of the Agency Representative and regulations, during the duration of the works. See Article 3.6 – Scaffolded Environment in this section.**

- .2 Drawings showing locations of proposed temporary excavations, granular materials or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .3 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans include measures to minimize amount of materials transported onto public roads by vehicles or runoff.
- .4 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.
- .5 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .6 Non-Hazardous and hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .7 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .8 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

3.1 DRAINAGE AND EXCAVATIONS

- .1 Refer to Section 01 14 00 – Work Restrictions, art. 1.6 ARCHEOLOGY, paragraph .5 Excavation.
- .2 Provide temporary drainage and pumping as necessary to keep excavations and site free from water during works.
- .3 Pumped water within work areas must be pumped to a waterway (moat). **Discharges must adhere to the Canadian Water Quality Guidelines of the Canadian Council of Ministers of the Environment (CCME) and any other applicable standards and regulations.** The installation of **above-ground** settling, sedimentation and/or filtration systems is mandatory for pumped water from excavations. The use of a settling bag or settling pouch (silt bag) is recommended.
- .4 Water whose quality has been affected must be rejected according to the requirements of article 3.2. below.
- .5 Only excavated material (excess excavations - only earth and soil from the NHS) will be accepted in the "zone B" application area. All other excess debris or materials (backfill and temporary protection, mortar residues, etc.) will be managed outside the NHS by the Contractor for processing to an authorized site in accordance with current regulations.

3.2 WORK ADJACENT TO WATERWAYS / WATERWAYS, BODY OF WATER AND GROUNDWATER PROTECTION

- .1 Contractor must implement measures to prevent any release of materials or products (such as waste, construction debris, residual materials, hazardous materials) into the Richelieu River or waterways.
- .2 If this was to occur, all materials or products must be removed without delay from the river or waterway (moat) in order to keep this water environment clean and free of contamination.
- .3 Waterway Work
 - .1 There are no waterway work in this contract.
 - .2 The Contractor shall not carry out any work in the Richelieu River or in its riparian protection band as defined in the Protection Policy for Lakeshores, Riverbanks, Littoral Zones and Floodplains, except for the work planned for the project and approved in the environmental authorizations.
 - .3 Water free flow must be maintained at all times during work.
 - .4 Do not dump excavated fill, waste material or debris in waterways.

- .5 Wetlands (existing ditch along the way to the garage) located near the access road will be clearly delineated to avoid machinery in these areas.
- .4 Water discharge
 - .1 The work planned in this contract involves the generation of three types of discharge water:
 - .1 Pumped water: water from excavation drainage.
 - .2 Non-controlled toxic water: water from wet curing, stone cutting, other masonry activities carried out directly on the facade of the building and whose water discharge cannot be recovered.
 - .3 Controlled toxic water: Any water whose quality has been affected, directly or indirectly, in whole or in part, by the activities on site such as water resulting from masonry activities and whose water discharge can be recovered (cleaning tools, mortar preparation and other masonry activities).
 - .2 Discharges from pumped water may be released into the Richelieu River or any other aquatic environment only if these discharges meet the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines and any other standard and regulation in force. The installation of **above-ground** settling, sedimentation and/or filtration systems is mandatory for pumped water from excavations. The use of a settling bag or settling pouch (silt bag) is recommended.
 - .3 Releases from uncontrolled toxic water may not be released directly into a waterway, body of water or on the ground. They must be managed according to the conditions of Article 3.6 of PART 3 - EXECUTION and meet the requirements of the regulations in force. No water discharge will be tolerated into the sewer and drainage system.
 - .4 Discharges from controlled toxic water may not be released directly into a waterway, body of water or on the ground. They must be decanted and managed by the Contractor according to the regulations in force.
 - .5 No water discharge into the sewer system will be authorized. The sewer and drainage systems of the island are supported by a leaching field and a geo-filter: a spill in these networks could damage the systems.
- .5 Disposal of soiled snow
 - .1 Snow from snow-clearing operations of work areas to be disposed by Contractor in an area designated for this purpose, in agreement with the Agency Representative. No soiled snow can be disposed in the Richelieu River.
 - .2 **Discharges from snowmelt must be in accordance with the Canadian Water Quality Guidelines of the Canadian Council of Ministers of the Environment (CCME).**

3.3 EQUIPEMENT,
VEHICLES AND
MACHINERY

- .1 Traffic on the site
 - .1 Machinery circulation must be only inside existing permanent roads and designated work areas. See section 01 00 00 – General Requirements, Article 1.11. ACCESS ROADS AND SOIL PROTECTIONS.
 - .2 Outside working hours or during prolonged site closures, Contractor must not leave any equipment or machinery within 30 m of any waterway or body of water unless permitted in environmental authorizations, or having obtained prior authorization from the Agency Representative. If this is not possible, soil protection measures must be provided under the equipment or machinery for the entire period mentioned above (e.g. containment bins with a volume equivalent to at least 150% of the equipment or machinery fuel tank volume).
- .2 Refueling and maintenance of machinery
 - .1 Maintenance, refueling and cleaning of machinery and equipment containing petroleum products must be carried out on a site designed for this purpose where there is no risk of soil contamination as well as groundwater and surface water contamination. This designated site must be located more than 30 m from the Richelieu River. Otherwise, the surface of this site must be impermeable and have the capacity to contain all hydrocarbons in case of spills or leaks. All these activities must be carried out under specific "ad hoc" authorization by the supervisor or Agency Representative.
 - .2 Oil changes of mobile equipment are prohibited on site; only non-mobile equipment oil changes are permitted. When draining oil from non-moving equipment, Contractor must install spill recovery equipment (retention type) or provide minimal soil protection (e.g. hydrophobic absorbent pads).
 - .3 Used oils must be recovered, put in barrels, identified and disposed of with residual hazardous materials at an authorized recycler by the MDDELCC.
 - .4 Clean-up water of equipment must not be discharged directly into a waterway, body of water or on the ground. These waters must meet the CCME water quality criteria prior to discharge in the environment.
 - .5 At all times, equipment used must be in good working order, clean and free of fuel, oil or grease leaks. If not, they must be immediately removed from the site. Machinery will be inspected and cleaned before work to be done.
 - .6 Favor the use of digging and leveling equipment that work with vegetable oil within 30 m of an aquatic environment or for excavations within one meter of a water table.
 - .7 Considering the natural wealth (waterway-moat and fauna) and archaeological wealth of the site, **there will be no tolerance towards spills**. The Agency Representative may request removal of an equipment or refusal to site access of an equipment if the equipment is likely to cause or causes repeated spills due to its condition, age or maintenance.

3.4 MANAGEMENT AND
SPILL PREVENTION

- .1 In the event of an environmental incident, Contractor will promptly notify the Agency Representative and comply with the following rules:
 - .1 Control all leaks.
 - .2 Contain spilled material.
 - .3 Obtain authorization from Agency Representative before beginning any excavation necessary for the recovery of contaminants in the soil.
 - .4 Collect contaminants and contaminated materials.
 - .5 Complete an Environmental Incident Report (see Environmental Incident Report – Incident Hazardous Materials Spill - Appendix 2 at the end of this section).
- .2 In the event of an environmental incident, Contractor is responsible for immediately communicating with the authorities (Emergency Environment and Environment Canada) as soon as he becomes aware of the event.
- .3 Contractor is responsible for all costs related to the decontamination and disposal of contaminated soil following a spill or leak of a contaminant arising directly or indirectly from his activities. Contractor must dispose of these contaminated materials at a site duly authorized by the MDDELCC. Proof of disposal must be forwarded to the Agency Representative.
- .4 It is prohibited to mix contaminated soils with clean soils or with less contaminated soils or materials in order to dispose of them in a less restrictive way.
- .5 Contractor must permanently have on the job site a sufficient amount of emergency kits for the recovery of petroleum products. The kit must contain enough absorbent material to allow for quick and effective intervention, both in an aquatic environment and across the width of the waterway, as well as on the ground within the perimeter of the machinery involved. This kit must include containment booms and related accessories (gloves, etc.) to deal with minor accidental spills and assure containment, recovery and storage of soiled material and management of contaminated soils and equipment.
- .6 Kits will be easily accessible at all times for a quick response at anywhere on site. Workers likely to use kit must be properly trained. Kits' location on site must be indicated to the Agency Representative.
- .7 Considering the natural wealth (waterway-moat and fauna) and archaeological wealth of the site, **there will be no tolerance towards spills**. The Agency Representative may request removal of an equipment or refusal to site access of an equipment if the equipment is likely to cause or causes repeated spills due to its condition, age or maintenance.

- .8 Given the importance of the archaeological richness of Fort Lennox soils, when a spill occurs immediately notify the Archaeologist assigned to the project. No excavation to remove contaminated soil can be executed without the presence and/or the authorization of the archaeologist.
- .9 In order to avoid spills in the moat, the surface of the fortification access bridge must be protected with a continuous protective surface composed of plywood or other means approved by the Agency Representative. The proposed installation must fulfill the functions of protection of the deck surface and of prevention from spills or the fall of building materials in the moat; in this sense a border of 15 centimeters in height will be constructed to avoid these situations. Contractor must provide the replacement of the entire protective surface every two months. Contractor is responsible for the maintenance of this protective surface. Agency Representative may request that an impervious surface (membrane or other watertight device) be installed over the protective surface.

3.5 AIR QUALITY PROTECTION

- .1 No particle or dust emissions are tolerated on site above the standards established by the Clean Air Regulation (Q-2, r 4.1), that is, dust must not be visible more than 2 m from the emission point.
- .2 Due to the certainty regarding dust dispersion, Contractor will be required to work inside enclosures, both outdoor and indoor, and in accordance with the requests of the Departmental Representative and regulations, during the duration of the works. Contractor must provide dust screens and tarpaulins and other necessary protective devices on scaffolds or others so as to properly surround work and control dust emissions into the NHS environment (soils, water, air). See Article 3.6 below of PART 3 – EXECUTION of this section.
- .3 Contractor is required to:
 - .1 Avoid idling any vehicle, equipment and machinery when not in use.
 - .2 Repair without delay equipment and machinery that produces excessive emissions of exhaust fumes.
 - .3 Maintain the equipment's antipollution system in good condition.

3.6 SCAFFOLDED ENVIRONMENT

- .1 Proceed to the installation of the scaffolding. Fix according to standards.
- .2 Provide dust screens, tarpaulins (covers), railings, support elements and other necessary protective devices on the scaffolding to properly surround the work.
- .3 All scaffolding must be surrounded by a dust screen to control the air quality. Dust emissions must comply with the regulations in

force.

- .4 Surround the scaffolding, sides and roof (ceiling), with a protective screen as specified by the Representative of the Agency. Validate according to the works.
- .5 All ground surfaces on which scaffolding will be installed must be protected by a geotextile. The geotextile will control the possible infiltration of dust in the soil and must be replaced and/or repaired at the request of the Agency Representative. A new geotextile will be installed each time the scaffold is moved or modified at the base. Contractor is solely responsible for the maintenance of the geotextile surface. The surface of the geotextile should be cleaned regularly to avoid the dispersion of residues (dust and others) in the soil, air, waterway or groundwater/water table) and a vacuum cleaner should be used to clean it at the end of each working day.

3.7 NOISE PROTECTION

- .1 Work must meet federal, provincial and local noise regulations.
- .2 Contractor must control noise levels from the site by the following measures:
 - .1 Machinery, equipment and any vehicle must have functioning silencers at all times.
 - .2 Slamming of the dump trucks' rear panels must be avoided at all times.
 - .3 Promote the use of equipment generating low noise level.

3.8 HYDROCARBONS AND HAZARDOUS MATERIALS MANAGEMENT

- .1 Petroleum products and all other hazardous materials must be stored more than 30 m from any body of water. These products must be stored in dedicated and confined areas. Hazardous materials storage must comply with the provisions of the Regulation respecting hazardous materials (Q-2, r.32).
- .2 Stationary equipment and machinery (generators, compressors, etc.) located on the shoreline or in dry work areas must be equipped with oil recovery tanks in case of leaks or spills (volume equivalent to at least 150% of equipment or machinery fuel tank volume). Unless this equipment have certified double wall tanks, these tanks must be kept functional at all times.
- .3 At least 48 hours prior to arrival at the site, Contractor to provide Agency Representative with the MSDS of intended products to use.
- .4 Disposal of new hazardous materials is prohibited. At the end of Work, Contractor must take back all his unused hazardous materials in order to leave the site perfectly clean.
- .5 Hazardous residual materials are to be disposed in an authorized

site by the MDDELCC.

**3.9 TEMPORARY
SANITARY
FACILITIES**

- .1 In the case of use of temporary sanitary facilities, waste water from temporary sanitary facilities must be disposed in accordance with the regulations in force and in a place authorized by the MDDELCC. Proof of disposal must be forwarded to the Agency Representative.
- .2 Sanitary facilities must be located more than 30 m from any aquatic habitat.

**3.10 BACKFILL AND
EXCAVATED FILL
MATERIAL
MANAGEMENT**

- .1 Backfill material required for the execution of the work must be free from anthropogenic contamination (*Criteria A of the Politique de protection des sols et de réhabilitation des terrains contaminés*).
- .2 Excavated fill materials (sediments, stones, soils) must be segregated according to their nature in anticipation of their potential reuse on site.
- .3 Surplus excavated fill materials that will not be reused on site must be placed in the areas provided for this purpose and in accordance with the regulations in force.
- .4 Stacks of fine materials must be covered to limit erosion by wind or surface runoff. Sediment barriers must be installed around all stacks of fine materials to prevent run-off of water to waterways. At the end of the work, the materials that constitute the sediment barrier will be managed by the Contractor outside the NHS for their process to an authorized site in accordance with the regulations in force.
- .5 During excavation work, Contractor must immediately report to Agency Representative any discovery of soil contamination (visual sign or smell) before proceeding with the work.
- .6 Only excavated materials (excess excavation - only earth and soil from the NHS) will be accepted in the "zone B" application area. All other excess debris or materials (backfill and temporary protection, mortar residues, etc.) will be managed outside the NHS by the Contractor for processing to an authorized site in accordance with current regulations.
- .7 Surplus stone (new stone and/or excess stone removed from wall) will be kept on site and stored by the Contractor in the location designated by the Agency Representative.

- 3.11 FIRES
- .1 Fires and burning of rubbish on site not permitted.
 - .2 Provide supervision, attendance and fire protection measures as directed.
- 3.12 SITE CLEARING AND PLANT PROTECTION
- .1 Any clearing (mowed) area or vegetation modification must be approved by Agency representative. In order to protect the monarch butterfly (a species designated as "endangered" by COSEWIC in 2017) it is prohibited to mow milkweed plants between May 15th and the first ground frosts.
 - .2 Storage areas to be cleared (mowed) before storage.
 - .3 Before commencing storage, areas to be cleared (mowed) must be identified by marking and signage.
 - .4 Clearing must be limited to the areas required for the work.
 - .5 Any deforestation, clearing or discard outside the Parks Canada Agency property and work areas is prohibited.
 - .6 Tree felling is forbidden.
 - .7 If necessary, mature trees in work area will be protected by establishing a 3 m radius buffer zone of around them.
 - .8 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.
 - .9 Clearing/mowing residues must be placed on the storage area.
 - .10 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
 - .11 Minimize stripping of topsoil and vegetation.
- 3.13 POLLUTION CONTROL
- .1 Maintain temporary erosion and pollution control features installed under this contract.
 - .2 Control emissions from equipment and plant to local authorities' emission requirements.
 - .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures where indicated as directed by the Agency Representative.
 - .4 Cover waste with tarpaulin or geotextile to prevent blowing dust or

debris. Remove dust on temporary roads.

- .5 Surface clean-up waters discharge must comply with the Canadian Water Quality Guidelines of the Canadian Council of Ministers of the Environment (CCME).
- .6 All necessary measures will be taken to minimize suspension and transport of fine particles materials in the canal, the moat, in the Richelieu River or any other aquatic environment.
- .7 Accidental spillage of concrete into work area will be collected and concrete residues will be disposed of with construction waste at a site authorized for this purpose.

**3.14 WILDLIFE
PROTECTION**

- .1 Contractor must comply with the requirements of the Environment Quality Act (L.R.Q., c. Q-2), the Act Respecting the Conservation and Development of Wildlife (L.R.Q., c. C-61.1) and the Fisheries Act (R.S.C., 1985, c. F-14), the Species at Risk Act (S.C. 2002, c. 29), in addition to complying with the requirements of each of the environmental authorizations associated with the habitats and wildlife species to be protected.
- .2 Water withdrawal in the Richelieu River or any other aquatic environment:
 - .1 Taking water from the Richelieu River is not permitted.
 - .2 Contractor must comply with the provisions for pump water from a fish habitat described in the Regulation respecting wildlife habitats (C-61.1, r.18). Contractore must notify the Agency Representative at least 2 days before the start of the planned pumping.

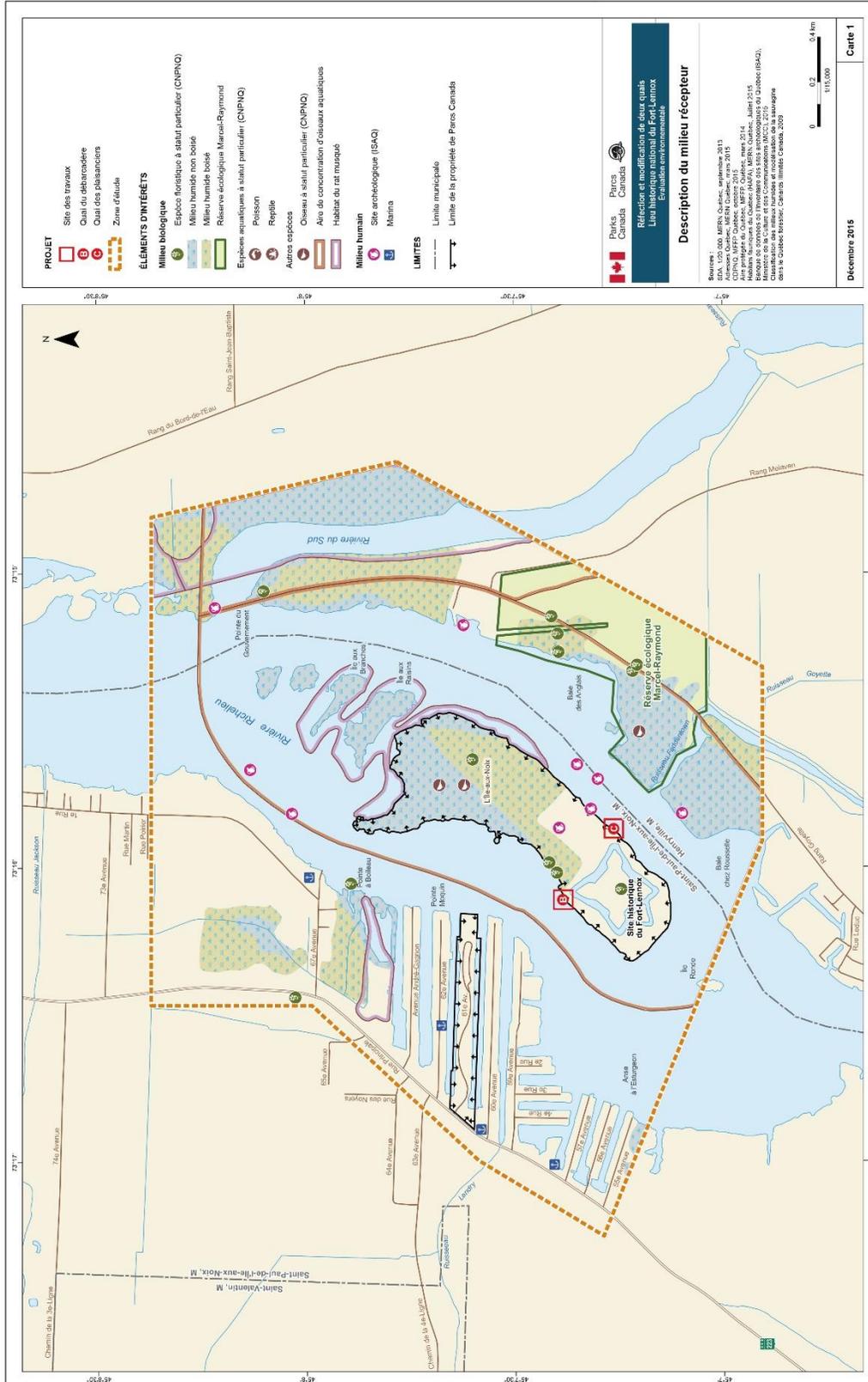
3.15 CLEANING

- .1 Perform cleaning in accordance with Section 01 74 11 - Cleaning.
- .2 Leave the premises clean at the end of each working day.
- .3 Waste Management: sort waste for reused/recycled and recycling in accordance with Article 1.3 of Section 01 74 11 – Cleaning
- .4 Ensure that waterways and storm sewers remain free of wastes and volatile materials.

**3.16 SITE REMEDIAL
WORK**

- .1 When the work is complete, all sediment retention devices will be removed.
- .2 Grass surfaces damaged during work are to be repaired with turf patches.
- .3 Stone dust/gravel surfaces damaged by the work are to be repaired with stone dust/gravel as existing.

MAP – DESCRIPTION DU MILIEU RÉCEPTEUR / BIOLOGICAL ENVIRONMENT CONSIDERED





Description of the recovery method (include equipment and products used): Description de la méthode de récupération (y compris les équipements et les produits utilisés):			
Description of the measures taken following the spill, if any, to prevent a subsequent occurrence: Le détail des mesures prises par la suite pour prévenir d'autres déversements, le cas échéant:			
Total duration of recovery operation - Durée totale des opérations de récupération			
Started: Début:	Date (AAAA/MM/JJ - AAAA/MM/JJ)		
	Time - Heure		
Completed: Fin:	Date (AAAA/MM/JJ - AAAA/MM/JJ)		
	Time - Heure		
Storage - Temporary location: Entreposage - Lieu temporaire:			
Storage - Permanent location: Entreposage - Lieu permanent:			
FINAL DISPOSAL OF THE CONTAMINANT - DISPOSITION DÉFINITIVE DU CONTAMINANT			
Disposal by: Disposition effectuée par:		Consignee - Destinataire	Date (YYYYMMDD-AAA/MM/JJ)
A waybill (transportation manifest) has been completed and attached to this report: Une feuille de route (manifeste de transport de déchets dangereux) a été complétée et jointe au présent rapport:			<input type="checkbox"/> Yes Oui <input type="checkbox"/> No Non
SAFETY MEASURES TAKEN - MESURES DE SÉCURITÉ PRISES			
During response: Durant l'intervention:		After response: Après l'intervention:	
Nature and extent of damages: Nature et importance des dommages:			
Supplementary recommendations: Recommandations complémentaires:			
Response team - Équipe d'intervention:	Name(s) - Nom(s)	Organization(s) - Organisation(s)	Telephone #s - #s de téléphone
Premiers Répondants	Titre et fonction	Name(s)-Nom(s)	Coordonnées
Poste de Consultation	Titre et fonction	Name(s)-Nom(s)	Coordonnées
Consultants et entrepreneurs principaux	Société	Coordonnées	Listes des fournitures et services



REPORT PREPARED BY - RAPPORT PRÉPARÉ PAR			
Name - Nom	Title - Titre	Telephone # - # de téléphone	
Signature:	Date (AAAA/MM/JJ - AAAA/MM/JJ)	<input type="checkbox"/> ATTACHED: Other relevant reports, photos or documents CI-JOINT: Autres rapports, photos ou documents pertinents	
	Distribution Original = NEOC	Copy = Region & HQ - Technical Services/Environment Copie = Région et AC - Services techniques/Environnement	

END OF SECTION

PART 1 – GENERAL

- 1.1 SECTION CONTENT
- .1 Inspection ;
 - .2 Independent inspection agencies;
 - .3 Access to Work;
 - .4 Procedures;
 - .5 Rejected Work;
 - .5 Reports;
 - .6 Tests and mix designs;
 - .7 Mock-ups;
 - .8 Mill Tests.
- 1.2 RELATED SECTIONS
- .1 01 33 00 – Submittal procedures;
 - .2 01 78 00 – Closeout submittals.
- 1.3 INSPECTION
- .1 Allow Professionals access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
 - .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Professionals instructions, or law of Place of Work.
 - .3 If Contractor has covered or allowed to cover a work before it has been subjected to the inspections, approvals or special tests required, he must uncover such work, have inspections or required tests satisfactorily completed following the competent authorities standards, then return the work to its original condition and pay the costs.
 - .4 Professionals may order the inspection of any part of the work whose accordance with the contractual documents and the quality of execution is in doubt. If, upon examination, the work in question is found not in accordance with the requirements of the contractual documents, the Contractor must take the necessary measures to make the work comply with the specified requirements, and pay the inspection and repair costs. If such work in question is found in accordance with the requirements of the contractual documents, the Owner shall pay cost of inspection and replacement thus incurred. Also refer to article 1.7 REJECTED WORK of this section.
- 1.4 INDEPENDENT INSPECTION AGENCIES INDÉPENDANTS
- .1 In the event that tests or inspections are required during the course of the work, the Professionals will retain the services of independent testing and inspection organizations. The cost of these services will be borne by Parks Canada.

- .2 Provide equipment required for executing inspection and testing by appointed agencies.
 - .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
 - .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by the Professionals at no cost to Parks Canada. Pay costs for retesting and reinspection.
- 1.5 ACCESS TO WORK
- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
 - .2 Co-operate to provide reasonable facilities for such access.
- 1.6 PROCEDURES
- .1 Notify appropriate agency and the Professionals in advance of requirement for tests, in order that attendance arrangements can be made.
 - .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
 - .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.
- 1.7 REJECTED WORK
- .1 In the event that additional inspections are required due to the negligence of the Contractor, Parks Canada reserves the right to defray the fees established according to the current scales of the professional orders, out of the amount of the contract, as well as other inspection and repair fees if applicable.
 - .2 If, during the works and until their final acceptance and subject to the provisions of article 1.7.6 below, the Agency Representative or the Professionals declare that certain parts of the works are not in accordance with the requirements of the Contract, Contractor must demolish and re-execute them at his own expense.
 - .3 Contractor must immediately remove from the site the defective materials that the Professional refuses for non-compliance with the contractual documents, whether or not the materials have been incorporated into the work. Defective materials and work must be immediately replaced or re-executed, at the expense of the Contractor in accordance with this section.
 - .4 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or

not, which has been rejected by the Professionals as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

- .5 If, as a result of these replacements, the work of another subcontractor is destroyed or damaged, Contractor must repair it at his expense in accordance with this article.
- .6 If, in the opinion of the Professional, it is not expedient to correct defective Work or Work not performed in accordance with contract documents, Parks Canada may deduct from the contract price the difference in value between the work performed and that called for by the contract documents, amount of which will be determined by the Agency Representative.

1.8 REPORTS

- .1 Submit three (3) copies of inspection and test reports to the Professionals.
- .2 Provide copies to subcontractor of work being inspected or tested.

1.9 TESTS AND MIX DESIGNS

- .1 Submit three (3) copies of test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by the Professional and may be authorized as recoverable.

1.10 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct in locations acceptable to the Professionals as specified in specific Section.
- .3 Prepare mock-ups for the Professional's review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Professionals will assist in preparing schedule fixing dates for preparation.
- .6 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.
- .7 All patrimonial works will require samples of works, whether or not indicated in the specific quotation section.

1.11 MILL TESTS .1 Submit mill test certificates as required of specifications Sections.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 SECTION CONTENT
 - .1 Installation and Removal;
 - .2 Dewatering;
 - .3 Water supply;
 - .4 Heat and Ventilation;
 - .5 Temporary Power and Light;
 - .6 Temporary communication facilities;
 - .7 Fire Protection.

- 1.2 RELATED SECTIONS
 - .1 01 52 00 – Construction facilities.

- 1.3 INSTALLATION AND REMOVAL
 - .1 Provide temporary utilities controls in order to execute work expeditiously.
 - .2 Remove from site all such work after use.

- 1.4 DEWATERING
 - .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

- 1.5 WATER SUPPLY
 - .1 Parks Canada will provide continuous supply of water for construction use. However, water may not be considered potable for human consumption. See section 01 00 00.
 - .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.

- 1.6 HEAT AND VENTILATION
 - .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
 - .2 Provide temporary heat and ventilation in enclosed areas as required to:
 - .1 Facilitate progress of Work;
 - .2 Protect Work and products against dampness and cold;
 - .3 Prevent moisture condensation on surfaces;
 - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials;
 - .5 Provide adequate ventilation to meet health regulations for safe working environment.
 - .3 Maintain temperatures of minimum 10degrees Celsius in areas where construction is in progress.

- .4 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction;
 - .2 Ventilate storage spaces containing hazardous or volatile materials;
 - .3 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
 - .5 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
 - .1 Conform with applicable codes and standards;
 - .2 Enforce safe practices;
 - .3 Prevent abuse of services;
 - .4 Prevent damage to finishes;
 - .5 Vent direct-fired combustion units to outside.
 - .6 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.
- 1.7 TEMPORARY POWER AND LIGHT
- .1 Parks Canada will pay for temporary power during construction for temporary lighting and operating of power tools.
 - .2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.
 - .3 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.
 - .4 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of the Professionals provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract.
- 1.8 TEMPORARY COMMUNICATION FACILITIES
- .1 Provide and pay for temporary telephone, fax, data, hook up, lines and equipment necessary for own use and use; Contractor must ensure the connection of these facilities to the main networks and assume the costs of all these services.
 - .2 A network is available on the island.
- 1.9 FIRE PROTECTION
- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

- .2 Burning rubbish and construction waste materials is not permitted on site.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 REFERENCES .1 References
.1 Canadian Standards Association (CSA International)
.1 CAN/CSA-S269.2 – Access Scaffolding for Construction Purposes.
- 1.2 SUBMITTALS .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- 1.3 INSTALLATION AND REMOVAL .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
.2 Identify areas which have to be gravelled to prevent tracking of mud.
.3 Identify areas where the soil is to be protected with geotextile and gravel, carpets or other approved means.
.4 Indicate use of supplemental or other staging area.
.5 Provide construction facilities in order to perform work expeditiously.
.6 Remove from site all such work after use.
- 1.4 SCAFFOLDING .1 Scaffolding in accordance with CAN/CSA- S269.2.
.2 Provide and maintain scaffolding, ladders, platforms and temporary stairs necessary for the execution of the work, and to maintain it.
- 1.5 HOISTING .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
.2 Hoists and cranes to be operated by qualified operator.
- 1.6 SITE STORAGE/LOADING .1 Ensure that work is performed within the limits indicated in the contract documents. Do not clutter the premises unreasonably with materials and equipment.
.2 Storage must be within the two (2) zones indicated on the Site Plan (Island and Jetty) / Mobilization-Storage Plan which is part of architectural drawings.

- .3 The two (2) areas planned for storage are as follows:
 - .1 an area (zone A) near the barracks, for storage of materials;
 - .2 an area (zone C) outside the Fort, the boundaries of which will be indicated on site by the archaeologist designated by Parks Canada Agency prior to mobilization.
- .4 The Contractor shall protect the soil of Zones A and C, so as to preserve the archaeological fabric, by placing a geotextile type 918 covered with gravel, or carpets, or any other means deemed appropriate by the Agency Representative.
- .5 Do not overload or allow overload of any part of the structure so as not to compromise integrity.
- .6 All storage areas must be fenced.
- .7 The Contractor shall also protect the soil under all scaffolds and platforms for the work execution by placing a type 918 geotextile covered with gravel, or carpet, or any other means deemed appropriate by the Agency Representative.
- .8 In addition to storage areas, an area is planned for excess excavation soil application (Zone B). Also refer to the Site Plan (Island and Jetty) / Mobilization-Storage Plan which is part of architectural drawings.
- .9 When spreading surplus soil in Zone B, soils shall be laid from the back of the area and forward. The thickness of the soil fill must not exceed 0.30 m (approximately 1 foot). At the end of the work, finish soil leveling and sodding to Zone B, as described in Sections 32 91 19 and 32 92 23.

1.7 OFFICES

- .1 Contractor will have to set up the site office in a tent (or other shelter) to be installed in the picnic area north of the Men's Barracks. This tent will serve as both a construction office and an office for the Architect in Residence.
 - .1 A floor located 0.3 m above the ground must be built inside the construction site trailer, and the ground below must be protected in the same way as the storage areas (gravel covered geotextile or carpet).
 - .2 Furnish tent with table and chairs for site meetings, a table for spreading drawings and a 3 drawer filing cabinet.
 - .3 If the contractor is planning a prefabricated installation, he must ensure that the dimensions are compatible with the access door and bridge as described in Specification Section 01 14 00 - Work Restrictions.
- .2 Provide marked and fully stocked first-aid case in a readily available location.
- .3 Keep the premises clean. Clean once a week.

- .4 If needed, subcontractors to provide their own offices as necessary. Direct location of these offices.

- 1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE
 - .1 Provide and maintain, in 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 manner to cause least interference with work activities.

- 1.9 SANITARY FACILITIES
 - .1 Contractor shall supply chemical toilets in sufficient quantity for all employees. The existing sanitary facilities in the Men's Barracks will not be available to the workers.
 - .2 Sanitary facilities must be located more than 30 m from any aquatic habitat.
 - .3 Refer to Section 01 35 43 - Environmental Procedures, for the disposal of waste water.

- 1.10 CONSTRUCTION SIGNAGE
 - .1 Provide signage for traffic control on Island and jetty, following requirements in Section 01 35 00 - Traffic Control.

- 1.11 ELECTRICITY
 - .1 Electricity is provided by Parks Canada. Contractor is responsible for providing backup electricity, for example, where a generator is required for the work.
 - .2 When the work is done under winter conditions, the contractor shall supply electricity by generator. The site's electrical system may not be used to maintain the temperature or humidity of the structures under winter conditions (refer also to paragraph 1.9 of Specification Section 01 14 00 - Work Restrictions)

- 1.12 SANDING WORKSHOP
 - .1 Contractor must erect an on-site workshop with all the needed sanding equipment for the salvaged and refurbished woodwork, as well as any other carpentry work.
 - .2 Contractor is responsible for connecting all temporary utilities services required for this work.
 - .3 Provide and maintain good ventilation.
 - .4 No particulate or dust emissions are tolerated on the site, see Section 01 35 43 - Environmental Procedures.

- 1.13 CLEANING
- .1 Remove construction debris, waste materials, packaging material from work site daily.
 - .2 Store materials resulting from demolition activities that are salvageable.
 - .3 Stack stored new or salvaged material not in construction facilities.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 REFERENCES
- 1 Ministère des Transports, de la Mobilité durable et de l'Électrification des transports du Québec (MTMDET)
- .1 Volume V - Road Signage - Works, from the collection Standards - Road structures.
- 1.2 PROTECTION OF THE PUBLIC MOVEMENT
- .1 Comply with the requirements of applicable laws, regulations and ordinances governing the movement and use of pavements where work is required or where materials and equipment are to be transported.
- .2 No lane shall be closed without the written authorization of the Agency Representative.
- .1 Before diverting traffic, install appropriate signage in accordance with the requirements specified in Volume V - Road Signage - MTMDET Works.
- .3 Construct and maintain an access road to the land bordering the site, and to any other indicated area, unless there are other access roads authorized by the Agency Representative.
- 1.3 DEVICES INFORMATION AND WARNING
- .1 Provide and install delineators, barricades and other equipment warning devices, in accordance with the requirements indicated in Volume V - Road signs - Work of the MTMDET and according to the indications on the plans.
- .2 Place signals and other devices at recommended locations in Volume V - Road signs - Work of the MTMDET.
- .3 Placing signs indicating the entry and exit of trucks before the barge, and signs indicating the reductions in speed.
- .4 Before commencing work, consult with the Agency Representative to develop a list of signals and other devices required for the work. If the situation on the site changes, revise the list to the satisfaction of the Agency Representative.
- .5 Maintain all signalling devices as follows.
- .1 Check signals daily to ensure they are legible, in good condition, in the right place, and that they meet needs. Clean, repair or, as appropriate, replace signals to maintain clarity and reflectance.
- .2 Remove or cover signals that do not apply to existing situations, which may vary from day to day.

- 1.4 TRAFFIC CONTROL .1 Provide on site the services of competent flagmen whose training and equipment comply with the requirements indicated in Volume V - Road Signs - MTMDET Work, for the following situations:
- .1 When public traffic must bypass vehicles or equipment that block the roadway, in whole or in part.
 - .2 Where temporary protective measures are required during the installation or removal of signalling devices.
 - .3 When emergency protective measures are required due to the inability to obtain signalling devices quickly.
 - .4 In all cases where other signalling devices do not provide complete protection for workers, equipment and public traffic.
 - .5 Public traffic may not be interrupted due to the work for more than 15 minutes.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 1.59-[97], Alkyd Exterior Gloss Enamel.
 - .2 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
 - .2 Canadian Standards Association (CSA International)
 - .1 CSA-O121-[M1978(R2003)], Douglas Fir Plywood.
- 1.2 INSTALLATION AND REMOVAL OF EQUIPMENT
- .1 Submit to Agency Representative, at least 3 days prior to the start of work, a plan for the installation of temporary access and of temporary enclosures (storage areas).
 - .2 Provide, set up or arrange the temporary access and temporary enclosures necessary to allow the work to be completed as soon as possible.
 - .3 Disassemble equipment and evacuate from site when no longer needed.
- 1.3 GUARD RAILS AND BARRICADES
- .1 Provide secure, rigid guard rails and barricades around storage areas, deep excavations, open edges of floors, etc.
 - .2 Provide as required by governing authorities.
 - .3 See CNESST regulations for deep excavation work.
- 1.4 SHELTERS, ENCLOSURES AND CLOSURES AGAINST WEATHER
- .1 If needed, provide watertight closures for door and window openings and any other openings required for the work of this contract.
 - .2 Enclosures must be able to withstand wind pressures, which have been calculated.
- 1.5 DUST TIGHT SCREENS
- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
 - .2 Maintain and relocate protection until such work is complete.
- 1.6 ACCESS TO SITE
- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

- .2 Protect the surface of all access roads by covering with a Type 918 geotextile (or approved equivalent) and gravel, carpet or other means deemed appropriate by Agency Representative.
- .3 For existing gravel roads on the site to be used by the Contractor, if equipment to be used is wider than the existing road, protect the required width for the equipment's passage by covering the existing road and the adjacent soil of a Type 918 geotextile (or approved equivalent) and gravel, carpet or any other means deemed appropriate by the Agency Representative.

1.7 TEMPORARY BRIDGES FOR CROSSINGS OF DITCH

- .1 The ditch that runs on the full length of the road that crosses the island from North to South must be preserved and protected. This ditch was built at the same time as this old road. It is therefore a cultural resource to protect.
- .2 To maintain the natural appearance of the ditch, Contractor must build temporary bridges necessary to cross said ditch in order to reach the soil application area (zone B) and the temporary storage area (zone C).

1.8 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Agency Representative locations and installation schedule prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

PART 2 - PRODUCTS

2.1 GEOTEXTILE MEMBRANE

- .1 3.5 mm thick needlepunched nonwoven synthetic membrane geotextile, such as Texel 918 membrane, or approved equivalent.

2.2 GRAVEL

- .1 Crushed stone 0-3/4" (0-20 mm).

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Within text of each specifications section, reference may be made to reference standards.
 - .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
 - .3 Where there is doubt as to the conformity of certain products or systems with the relevant standards, the Agency Representative reserves the right to inspect it by testing.
 - .4 If the products or systems are in accordance with the contract documents, the costs incurred by these tests will be borne by the Agency representative, otherwise they will have to be borne by the Contractor.
- 1.2 AVAILABILITY
- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Agency Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of work.
 - .2 In event of failure to notify Agency Representative or Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Agency Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.
- 1.3 STORAGE, HANDLING AND PROTECTION
- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
 - .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
 - .3 Store products subject to damage from weather in weatherproof enclosures.
 - .4 Store cementitious and hydraulic binders products clear of earth or concrete floors, and away from walls.
 - .5 Keep sand, when used for grout or mortar materials, clean and dry. Store on wooden platforms and cover with waterproof tarpaulins during inclement weather.

- .6 Contractor must ensure that the existing floor and the woodwork are kept in a heated and well-ventilated area located on the site, see section 01 52 00 – Construction Facilities.
 - .7 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
 - .8 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
 - .9 Remove and replace damaged products at own expense and to satisfaction of Agency Representative.
 - .10 Touch-up damaged factory finished surfaces to Agency Representative satisfaction. Use touch-up materials to match original. Do not paint over name plates.
- 1.4 TRANSPORTATION
- .1 Pay costs of transportation of products required in performance of Work.
- 1.5 MANUFACTURER'S INSTRUCTIONS
- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
 - .2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Agency Representative may establish course of action.
 - .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.
- 1.6 QUALITY OF WORK
- .1 Ensure Quality of Work is of highest standard, performed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Agency Representative if required Work is such as to make it impractical to produce required results.
 - .2 Do not employ anyone unskilled in their required duties. Agency Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
 - .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Agency Representative, whose decision is final.

- .4 Also refer to section 01 45 00 – Quality Control.
- 1.7 CO-ORDINATION .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- 1.8 REPAIR AND REMEDIAL WORK .1 Refer to Section 01 73 00 – Execution.
- 1.9 PROTECTION OF WORK IN PROGRESS .1 Prevent overloading of any part of building.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 SUBMITTALS .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- 1.2 MATERIALS .1 Required for original installation.
.2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.
- 1.3 PREPARATION .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
.2 After uncovering, inspect conditions affecting performance of Work.
.3 Beginning of cutting or patching means acceptance of existing conditions.
.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
.5 Provide protection from elements for areas which are to be exposed to weather elements by uncovering work; maintain excavations free of water.
- 1.4 EXECUTION .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
.2 Fit several parts together, to integrate with other Work.
.3 Uncover Work to install ill-timed Work.
.4 Remove and replace defective and non-conforming Work.
.5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- 1.5 WASTE MANAGEMENT AND DISPOSAL .1 Separate waste materials for reuse and recycling in accordance with article 1.3 of Section 01 74 11 - Cleaning.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

1.1 PROJECT CLEANLINESS

- .1 Maintain work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times and dispose of them as directed by Agency Representative. Do not burn waste materials on site, unless approved by Agency Representative.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Provide and use marked separate bins for recycling.
- .6 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .9 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .10 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.2 WASTE MANAGEMENT AND DISPOSAL

- .1 CRD waste management:
 - .1 The Contractor must recover maximum amount of CRD waste (Construction, Renovation, Demolition) produced by construction for recovery.
 - .2 Remove all packaging materials from site and forward to appropriate recycling facilities.
 - .3 Place all paper, plastic, polystyrene, corrugated cardboard or other packaging materials in appropriate on-site bins for recycling.
 - .4 Place in designated containers toxic or hazardous waste.

1.3 FINAL CLEANING

- .5 Handle or dispose of hazardous materials in accordance with the Canadian Environmental Protection Act, the Transportation of Dangerous Goods Act, and regional and municipal regulations.
- .6 It is forbidden to dump products into sewers, waterways or other places where it could pose a risk to health or environment.
- .1 When work is substantially performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining work.
- .2 Earth, stones and brick surplus to be left on site in designated areas.
- .3 Remove waste products and debris other than that caused by others, and leave work clean and suitable for occupancy.
- .4 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste products and debris [other than] [including] that caused by owner or other contractors.
- .6 Remove waste materials from site at regularly scheduled times or dispose of as directed by Agency Representative. Do not burn waste materials on site, unless approved by Agency Representative.
- .7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, etc.
- .10 Clean lighting reflectors, lenses, and other lighting surfaces.
- .11 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .12 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .13 Remove dirt and other disfiguration from exterior surfaces.
- .14 Clean equipment and appliances, and clean or replace filters of mechanical systems as needed.
- .15 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

1.1 ADMINISTRATIVE TERMS

- .1 Work Acceptance Procedure
 - .1 Contractor's Inspection:
Contractor must inspect work, identify defects and deficiencies and make the necessary repairs to ensure that everything meets the requirements of contract documents.
 - .1 Notify Consultant once the Contractor's inspection is complete, and submit a document certifying that the corrections have been made.
 - .2 Request Consultant's inspection.
 - .2 Consultant's Inspection:
 - .1 Consultant and Contractor will perform inspection of work to identify obvious defects or deficiencies.
 - .2 Contractor to correct work accordingly.
 - .3 Completion: submit a written document certifying that following have been performed.
 - .1 Work has been completed and inspected for compliance with contract documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Devices, equipment and systems have been tested and are fully operational.
 - .4 Operation of systems have been demonstrated to Owner's personnel.
 - .5 Work is complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When items noted above are completed, request final inspection of work by Agency Representative, Consultant and Contractor.
 - .2 If work is deemed incomplete by Agency Representative Consultant, complete outstanding items and request reinspection.

1.2 FINAL CLEANING

- .1 Perform cleaning work in accordance with Section 01 74 11 – Cleaning.
 - .1 Remove waste and surplus materials, rubbish and construction facilities from the site.
- .2 Waste management and disposal : separate waste materials for reuse and recycling in accordance with Article 1.3. of Section 01 74 11 – Cleaning.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

1.1 ADMINISTRATIVE TERMS

- .1 Meeting on warranties prior to the Completion of the Work.
 - .1 One week before the Completion of the Work, hold a meeting with the Contractor's Representative, the Parks Canada Agency Representative and the Consultant, during which the work requirements will be reviewed.
 - .2 Agency Representative will indicate the communication procedure to follow in the cases indicated below.
 - .1 Notice of defect for items, materials or systems covered by a warranty.
 - .2 Determination of priorities for fault types.
 - .3 Determination of a reasonable intervention time.

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .3 Two (2) weeks prior to Substantial Performance of the Work, submit to the Professionals operating and maintenance manuals in English and French.
- .4 Copy will be returned with the Professionals' comments.
- .5 Revise content of documents as required prior to final submittal.
- .6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .7 Furnish evidence, if requested, for type, source and quality of products provided.
- .8 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .9 Pay costs of transportation.

1.3 FORMAT

- .1 Organize data as instructional manual, to be submitted in three (3) copies.
- .2 Binders: vinyl, hard covered, 3 « D » ring, loose leaf 219 mm x 279 mm with spine and face pockets.
- .3 Cover: identify each binder with type or printed title « Project Record Documents », list title of project and identify subject matter of contents.

- .4 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .5 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .6 Text: manufacturer's printed data, or typewritten data.
- .7 Drawings: provide with reinforced punched binder tab. Bind in with text, fold larger drawings to size of text pages.
- .8 Provide electronic files of drawings in .pdf format.

**1.4 CONTENTS -
EACH VOLUME**

- .1 Table of Contents of each volume: provide title of project.
 - .1 date of submission of documents;
 - .2 names, addresses and telephone numbers of Consultant and Contractor with name of responsible parties;
 - .3 list of products and systems, indexed according to the volume content.
- .2 For each product or system:
 - .1 list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Products Data sheets: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten text: as required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

**1.5 AS-BUILTS AND
SAMPLES**

- .1 Maintain at site for Agency Representative one record copy of:
 - .1 contract drawings;
 - .2 specifications;
 - .3 addenda;
 - .4 change orders and other modifications to contract;
 - .5 reviewed shop drawings, product data and samples;
 - .6 field test records;
 - .7 inspection certificates;
 - .8 manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.

- .1 Provide files, racks, and secure storage.
 - .3 Label record documents and file in accordance with section number listings in list of contents of this project manual.
 - .1 Label each document « Project Record » in neat, large, printed letters.
 - .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
 - .5 Keep record documents and samples available for inspection by Agency Representative.
- 1.6 RECORDONG ACTUAL SITE CONDITIONS
 - .1 Record information on set of opaque drawings and in copy of project manual provided by Agency Representative.
 - .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
 - .3 Record information concurrently with construction progress.
 - .1 Do not conceal work until required information is recorded.
 - .4 Contract drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .2 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .3 Field changes of dimension and detail.
 - .4 Changes made by change orders.
 - .5 Details not on original contract drawings.
 - .6 References to related shop drawings and modifications.
 - .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by addenda and change orders.
 - .6 If applicable, provide digital photos for project file.
- 1.7 EQUIPMENT AND SYSTEMS
 - .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control and as specified in individual specification sections.
- .15 Additional requirements: as specified in individual specification sections.

1.8 MATERIALS AND FINISHES

- .1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

- .3 Additional requirements: as specified in individual specifications sections.

- 1.9 SPARE PARTS
 - .1 Provide spare parts, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site at the location as directed by the Agency Representative; place and store.
 - .4 Receive and catalogue items. Submit inventory listing to Agency Representative. Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit prior to final payment.

- 1.10 MAINTENANCE MATERIALS
 - .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site at the location as directed by the Agency Representative; place and store.
 - .4 Receive and catalogue items. Submit inventory listing to Agency Representative. Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit prior to final payment.

- 1.11 SPECIAL TOOLS
 - .1 Provide special tools, in quantities specified in individual specification section.
 - .2 Provide items with tags identifying their associated function and equipment.
 - .3 Deliver to site at the location as directed by the Agency Representative; place and store.
 - .4 Receive and catalogue items. Submit inventory listing to Agency Representative. Include approved listings in Maintenance Manual.

- 1.12 STORAGE, HANDLING AND PROTECTION
 - .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
 - .2 Store in original and undamaged condition with manufacturer's seal and labels intact.

1.13 WARRANTIES AND BONDS

- .3 Store components subject to damage from weather in weatherproof enclosures.
 - .4 Store paints and freezable materials in a heated and ventilated room.
 - .5 Remove and replace damaged products at own expense and to satisfaction of the Agency Representative.
- .1 Develop warranty management plan to contain information relevant to warranties.
 - .2 Submit warranty management plan, thirty (30) days before planned pre-warranty conference, to Agency Representative approval.
 - .3 Warranty management plan to include required actions and documents to assure that Agency representative receives warranties to which it is entitled.
 - .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
 - .5 Submit, warranty information made available during construction phase, to Agency Representative approval prior to each monthly pay estimate.
 - .6 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to table of contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, signed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-sign submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
 - .7 Conduct ten (10) month warranty inspection, measured from time of acceptance, by Agency Representative.
 - .8 Include information contained in warranty management plan as follows :
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.

- .2 Model and serial numbers.
 - .3 Location where installed.
 - .4 Name and phone number of manufacturers or suppliers.
 - .5 Names, addresses and telephone numbers of sources of spare parts.
 - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .7 Cross-reference to warranty certificates as applicable.
 - .8 Starting point and duration of warranty period.
 - .9 Summary of maintenance procedures required to continue warranty in force.
 - .10 Cross-Reference to specific pertinent operation and maintenance manuals.
 - .11 Organization, names and phone numbers of persons to call for warranty service.
 - .12 Typical response time and repair time expected for various warranted equipment.
- .4 Contractor's plans for attendance at three (3) and ten (10) month post-construction warranty inspections.
- .9 Respond in a timely manner to oral or written notification of required construction warranty repair work.
- .10 Written verification will follow oral instructions.
- .1 Failure to respond will be cause for the Agency Representative to proceed with action against Contractor.

PART 2 - PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 11 00 – General requirements - Structure
 - .2 Section 01 00 00 – General requirements
 - .3 Section 01 29 00 – Payment procedures
 - .4 Section 01 73 00 – Execution
- 1.2 SCOPE OF WORK
- .1 The work described in this section includes, but is not limited to:
 - .1 The demolition of the plywood/wood studs interior partitions of the ground floor as indicated on the architectural drawings;
 - .2 The removal and disposal of the existing carpet at Bay No. 9 and no. 10 on the ground floor as indicated on the architectural drawings;
 - .3 All openings, minor work and patching required for electrical work;
 - .4 Removal of gutter sections to be replaced or modified.
 - .5 Demolition of all existing electromechanical installations.
- 1.3 REFERENCES
- .1 CSA International
 - .1 CSA S350-FM1980(R2003), Code of Practice for Safety in Demolition of Structures.
- 1.4 SUBMITTALS
- .1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Before proceeding with demolition of load bearing walls and where required by authority having jurisdiction submit for review by Consultant shoring and underpinning drawings prepared by qualified professional Engineer registered or licensed in the Province of Quebec showing proposed method.
 - .3 Shop drawings and calculation data must bear the seal and signature of a qualified Engineer recognized in the Province of Quebec.
- 1.5 CONDITIONS OF IMPLEMENTATION
- .1 Verify the Englobe's expertise report (Caractérisation des matériaux susceptibles de contenir de l'amiante et des peintures susceptibles de contenir du plomb), attached in appendix to the specifications, and take the necessary measures, if necessary, to

protect the environment.

- .2 If a material resembling spray or trowel applied asbestos or other designated substance and materials listed as hazardous be encountered in course of deconstruction, stop work, take preventative measures, and notify Agency Representative immediately.
 - .1 Resume work only after receiving written instructions from the Agency Representative.
- .3 Notify the Agency Representative before obstructing access to the building or interrupting services.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

3.1 INSPECTION

- .1 Inspect building with Agency Representative and Consultant, and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities and keep in good condition those that are still operating in the field.
- .3 Notify utility companies and obtain necessary approvals from them prior to commencing demolition work.
- .4 Disconnect, cap, plug or divert, as required, existing utility lines located in the field, where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and those previously capped or plugged in the field, and indicate location (horizontal and vertical) on the as-built drawings. Support, shore up and maintain in place the pipes and conduits encountered.
 - .1 Immediately notify Agency Representative and the appropriate utility company in case of damage to any utility or service designated to remain in place.
 - .2 Immediately notify Agency Representative should uncharted utility or service be encountered, and await written instructions regarding remedial action.

3.2 PREPARATION

- .1 Protection of structures in place
 - .1 Take the necessary measures to prevent movement, settlement or other damage to the structures and parts of

- building to be preserved. Provide shoring and bracing of structures as required.
- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building equipment, systems and mechanical and electrical installations and utilities.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
- .5 Provide weather protection in areas likely to be exposed after demolition work. The Contractor is liable for any damage resulting from lack of protection during Work.
- .6 Do work in accordance with Section 01 35 29 - Health and Safety Requirements.
- .7 Inform Consultants prior to dismantling any items or equipment that cannot be dismantled without damage.

**3.3 DEMOLITION/
REMOVAL WORKS**

- .1 Remove part and structures indicated on plans.
- .2 Perform all piercings, minor works and patching required for electrical, mechanical and fire alarm work.
- .3 Perform careful dismantling and demolish only the necessary parts of works.
- .4 Refer to requirements and demolition drawings for items and materials to be salvaged for reuse.
- .5 Carefully remove items to be reused, store them, protect them and re-install under appropriate section of specification and as indicated in drawings.
- .6 Dispose of removed materials, except where specified otherwise, in accordance with authority having jurisdiction and in accordance with Section 01 74 11 – Cleaning.
- .7 Surfaces and structures outside the demolition zones must be restored to the condition where they were before work began.
- .8 During demolition work, provide special protection for preserved heritage elements.

**3.4 DRILLING,
ADJUSTMENT AND
SEALING**

- .1 Contractor is responsible for the execution of all cutting, drilling, patching and repair operations and shall co-ordinate their execution to minimize their extent. Contractor must include in the price of its bid any drillings, patches, trenches, openings to existing floors, walls and ceilings that are required for the completion of the Work, even those that are required in addition to those indicated at drawings.

- .2 Cutting, drilling, patching and repair work must be performed by qualified workers, respecting the solidity and appearance of the work, ensuring the same degree of fire resistance as the surrounding materials. Carry out drilling, cutting and patching according to existing conditions.
- .3 Converse with Professionals before proceeding to drillings or boring and thus define the acceptable moments and methods for the execution of works. All drills in heritage materials (stone walls, brick walls, coated on latis, floors, etc.) must be agreed in advance with the Architect and Agency Representative.
- .4 Obtain the written approval of the Structural Engineer before drilling a bearing or inserting a sleeve in it.
- .5 Submit a request in advance for cutting or modification work that will affect :
 - .1 the structural integrity of a building element;
 - .2 the performance, maintenance or safety of an element in operation;
 - .3 the aesthetic qualities of the visible elements;
 - .4 the integrity of elements exposed to the weather.
- .6 Inspection :
 - .1 Verify existing conditions, including components that may be damaged or displaced during cutting and patching.
 - .2 After uncovering the works, check conditions hindering Work execution.
 - .3 Beginning cutting and patching work implies Contractor's acceptance and satisfaction of existing conditions.
- .7 Use methods that will not damage adjacent parts of structure and provide suitable surfaces required for patching and finishing.
- .8 Carry out the necessary drilling, fitting and sealing to ensure that the structures to be connected and linked to others are precise and tight.
- .9 Use materials similar to existing materials. For any material change, submit a substitution request to the Architect.
- .10 When elements or accessories are moved or removed, repair or restore finished surfaces with materials similar to existing ones.
- .11 Fit the structure tightly around pipings, sleeves, electrical conduits and other penetrating elements.
- .12 When a new structure is to be connected to an existing structure and the existing structure is to be modified, carry out the necessary drilling, sealing and patching work to adapt it to the structure already in place.
- .13 Make penetrations so that the edges are clean and smooth, and

make sure the joints are the least apparent as possible.

- .14 Adjust the various elements together to ensure uniformity of the whole. Make all the necessary corrections to obtain an optimum assembly.
- .15 Advise in advance any other concerned sub-contractors.
- .16 The General Contractor must repair and restore the integrity of a modified structure: restore the original waterproofness of a wall or floor, ensure the continuity of a fire-rated wall or partition, maintain full integrity of waterproofness, moisture, noise, smoke, fire, etc. The General Contractor will be sure to supervise the Work execution as to finish the surfaces in continuity with the existing one.
- .17 Finish surfaces to ensure uniformity with adjacent finishes. In the case of continuous surfaces, finish to the nearest intersection between two elements; in the case of an assembly of elements, remake the complete finish in its entirety.

3.5 CLEANING

- .1 Cleaning during works: perform cleaning works in accordance with Section 01 74 11 – Cleaning.
 - .1 Leave the premises clean at the end of each working day.
- .2 Final Cleaning: remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
- .3 Refer to specifications and demolition drawings for materials to be salvage for reuse.
- .4 Waste Management: sort waste for reused/recycled and recycling in accordance with Article 1.3. of Section 01 74 11 – Cleaning.
 - .1 Remove bins and recycling bins from site and forward materials to appropriate facilities.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CAN3-A371-94, Masonry Construction for Buildings
 - .2 CAN/CSA A179-94 Appendice A, Mortar and Grout for Unit Masonry
- .2 American Society for Testing & Materials (ASTM)
 - .1 ASTM C270-99, Standard Specification for Mortar for Unit Masonry
 - .2 ASTM C141-96, Standard Specification for Hydrated Hydraulic Lime for Structural Purposes

1.2 RELATED SECTIONS

- .1 Section 02 41 99 – Démolition – Short Form
- .2 Section 09 91 23 – Painting – Interior Work

1.3 SCOPE OF WORK

The Work described in this section includes but is not limited to:

- .1 Drilling of the foundation walls to bore holes, where indicated in the engineering's drawings, to allow the passage of ducts related to the fire alarm system and the new electro-mechanic system;
- .2 Repairing of fallen or damaged bricks, as indicated by the Architect on the architectural drawings or during the executing of the work;
- .3 Disassembly and reassembly of the existing stairs leading to the rampart, located close to the bunker, as indicated on the architectural drawings;
- .4 Replacing stones or bricks too damaged to be repaired, as indicated by the Architect in the architectural drawings or during the executing of the work;
- .5 Repairing cracks in the existing walls and brick vaults, as indicated by the Architect on the architectural drawings or during the executing of the work;

Work also includes temporary shoring and supports, and all necessary protections needed for the execution of the works mentioned above.

1.4 SAMPLES

- .1 Where indicated by the Architect, build a mock-up of each of the following works : replacement with the prescribed mortar of a stone that's part of the stair that has to be reassembled, repointing of the foundation and replacement with the prescribed mortar of a brick that has to be reassembled on a surface of one (1) square meter of a part of the existing walls or existing vault, all to be witnessed by the Architect and mortar manufacturer's representative(s), in a way to demonstrate, before the beginning of the works, that the methods, techniques and dosages are well understood. Allow the mock-ups to dry during a period of at least three days before obtaining the Architect's approval for the color of the mortar.

- .2 Where indicated by the Architect and with the prescribed methods and products, make a sample of each of the following repairs: Dutchman repair as prescribed in article 3.4 and a split stone repair as prescribed in article 3.6, so as to demonstrate that the methods, techniques and expected results are well understood.
 - .3 Make, at the locations indicated by the Architect and with the prescribed methods and products, one (1) cracked stone repair samples as prescribed in section 3.3, in order to demonstrate that the methods, techniques and expected results are well understood.
 - .4 Submit, in accordance with Section 01 33 00 - Submittal Procedures, two (2) 150mm x 150mm (6 "x 6") samples of specified limestone for each of the four (4) finishes (bush-hammered to produce manually on site, picked to produce manually on site, tooled with two grooves per inch to produce in workshop, tooled 1/8" to produce in workshop) for approval by Architect before the start of the work.
 - .5 Submit, in accordance with Section 01 33 00 - Submittal Procedures, two (2) samples of each clay bricks prescribed in article 2.3.
 - .6 Submit, in accordance with Section 01 33 00, two (2) samples of the stainless steel dowels specified in article 2.4.
- 1.5 PRODUCT DATE
- .1 Submit, in accordance with Section 01 33 00 - Submittal Procedures, the product data sheets for each of the mortars and grouts specified in article 2.1, the stone specified in article 2.2 and the adhesive specified in article 2.5.
- 1.6 SHOP DRAWINGS
- .1 Submit, in accordance with Section 01 33 00 - Submittal Procedures, shop drawings for each new stone to be provided for replacement stones and new stone facings.
- 1.7 CLEANING TEST
- .1 When the stair is done being reassembled, perform cleaning tests on two (2) square meters of wall surfaces using a low pressure water jet and a flexible non-metallic bristle brush.
 - .2 Notify Architect twenty-four (24) hours in advance before beginning cleaning tests.
 - .3 Use the lowest water pressure possible. Begin using low pressure water (100 psi). If the results are not to the satisfaction of the Architect, gradually increase the pressure, with the Architect's permission, to a maximum of 400 psi
 - .4 If cleaning with clean water and brush does not remove all stains, mortar and other soils, wait for instructions from Architect before testing other methods or cleaning products.

- 1.8 QUALIFICATION .1 At least a third of the workers on the site must be journeymen (minimum ratio of 1 journeyman for 2 apprentices).
- 1.9 DELIVERY, STORAGE AND HANDLING .1 Materials delivered on site must be dry.
- .2 Keep materials dry until used. Protect against weather, freezing and contamination.
- .3 Upon delivery, ensure that manufacturers' seals and labels are intact.
- .4 Keep and hand over purchase orders, shipping labels, receipts, etc. to Architect to prove that the specified materials have been ordered and received, and to account for the number of grout bags used.
- .5 Protect existing disassembled stones from exposure to water, weather and any mechanical damage by placing them in a shed or under a polythene enclosure that completely covers them. Do not set down the stones directly on the ground. Stones stored in the scaffolded environment must be protected under a polythene enclosure that covers them completely.
- .6 Remove rejected or contaminated materials from site.
- 1.10 ENVIRONMENTAL REQUIREMENTS .1 Protect mortar from rain and snow. Store masonry materials in dry area and use only dry elements.
- .2 Obtain approval from Architect for methods of enclosure and protection.
- .3 Do not repoint or grout when the temperature is below 4°C or above 38°C, or if the temperature is above 32°C with a wind exceeding 13 km/h, or when these temperature limits cannot be met within 72 hours of application of the mortar or grout.
- .4 Depending on the season, do not apply grout if frost may occur within fourteen (14) days of grouting.
- .5 When outside temperature is 10°C or less:
- .1 Store mortar mixtures for immediate use in heated enclosures and allow materials to reach a temperature of at least 10°C (same as room air).
- .2 Heat water to at least 20°C and no more than 30°C.
- .3 When laying the mortar, its temperature must be at least 15°C and at most 30°C.
- .4 Do not mix mortar with water above 30°C.
- .6 Protection during mortar's curing period:

- .1 Protect repointed joints from direct sunlight, wind, and rain and maintain a moist environment to allow mortar to dry slowly for 72 hours after mortar application, covering walls with tightly woven jute (burlap) covers that must be constantly kept wet so that it remains humid. Wet jute covers should be about 1 to 2 inches (25 to 50mm) from the walls and should not come in direct contact with their surface. These humid covers must be protected from the sun and winds through impermeable tarpaulins.
- .7 Do not perform water cleaning of masonry walls when temperature is below 10°C.

1.11 QUALITY CONTROL

- .1 Due to the heritage value of the building, Contractor shall pay special attention to the completion of the masonry repair work so that all repairs are as discreet as possible.
- .2 The color and finish of the new stones to be installed will be as close as possible to those of the existing adjacent stones.
- .3 The color and finish of the pieces of stone used for dutchman repairs shall correspond as closely as possible to those of the stones in which the dutchmen are inserted.
- .4 The colors of restoration mortars used for cracked stone repairs shall be as close as possible to those of existing stones.

PART 2 - PRODUCTS

2.1 MORTARS

- .1 Type 1 Mortar, but not limited to, for laying stones above ground level when reassembling the stair, for laying stones when reassembling vault and new wall sections that are hidden by the existing bathroom floors and for resetting bricks where indicated by the Architect : mortar specially formulated for the laying of masonry elements on historical buildings, based on pure hydraulic lime from St-Astier (France), wellgraded sand and colorants, not containing any cement, premixed at the factory, having the following technical specifications:
 - .1 Compressive strength (ASTM C-109) :
 - 7 days: 2,8 MPa (400 psi)
 - 28 days: 7,2 MPa (1 000 psi)
 - 90 days: 9,6 MPa (1390 psi)
 - .2 Flexural strength (ASTM C-348):
 - 7 days: 1,1 MPa (160 psi)
 - 28 days: 2,6 MPa (370 psi)
 - .3 Water vapour transmission (ASTM E-96): 19 Perms
 - .4 Water retention, ASTM C-1403: min.70 % of initial flow
 - .5 Drying shrinkage (ASTM C596M): 0,06 % at 91 days
 - .6 Specific gravity: 1870 kg/m³ (117 lb/pi³)
 - .7 Water absorption (ASTM C-1403):

24 hours : 130 g/100 cm²

- .8 Freeze/thaw resistance (ASTM C-666M): 40 cycles
- .9 Accepted Product: XHN-101 mortar from Daubois Inc., or approved equivalent.
- .10 Provide for the use of two colors of Type 1 Mortar, one for laying stones, and one for laying bricks. Color matching existing ones has to be approved by the Architect.

- .2 Type 2 Mortar, but not limited to, for laying steps and stairs landing stones and for filling empty joints when consolidating foundations : mortar composed of natural cement, of type S hydraulic lime and of wellgraded sand, premixed at the factory, having the following technical specifications:
 - .1 Compressive strenght (ASTM C-109):
 - 7 days: 2 MPa (290 psi)
 - 28 days: 5 MPa (725 psi)
 - 90 days: 10 MPa (1450 psi)
 - .2 Accepted Product: RosenMix 500 mortar from King, or approved equivalent.

- .3 Type 4 Mortar, but not limited to, for craked stone repairs: mortar specially designed for the restoration of limestone.
 - .1 Accepted Product: RECONSTEC 300 or 350 mortar from KING, or approved equivalent.
 - .2 Provide for the use of two colors of Type 4 Mortar to make it possible to harmonize repairs to different surface conditions of existing stones.

- .4 Injection grout (Type 6) for split stone repairs and dutchman repairs:
 - .1 Accepted Product: hydraulic cement-based injection grout Reconstec 700F from KING, or approved equivalent.

- .5 Water: Clean and free of contaminants that could be harmful to mortar properties.

- .6 Use of calcium chloride or any other adjuvant is strictly prohibited.

2.2 STONES

- .1 New stone for replacement stones and dutchman repairs : limestone Pierre Grise de Montréal de St-Jacques, dimensions to be determined when performing the work (same dimensions as stones or pieces of stone to be replaced), with similar finish to the original finish of the stones to be repaired or replaced, having the following physical properties:
 - .1 Compressive strength: 130.1 MPa
 - .2 Modulus of Rupture: 17.52 MPa
 - .3 Density: 2710 kg / m³
 - .4 Absorption: 0.17%
 - .5 Silica (SiO₂): N/A
 - .6 Color: medium gray with light blue hue

- .2 Stone Finish to be done in workshop by the supplier of the new stones: the following two types of finishing are to be reproduce:

- .1 Tooled finish 1/8" similar to the original
 - .2 Tooled finish 1/2" similar to the original, to be executed using a 3/8" wide chisel to gouge two grooves per inch.
 - .3 Stone Finish to be done manually on site by masons: the following two types of finishing will have to be made on site by masons:
 - .1 Bush-hammered finish similar to the original.
 - .2 Picked finish similar to the original.The new stones to be provided for the replacement of stones having these original types of finish will have to be delivered on site without finishing.
- 2.3 BRICKS
- .1 Bricks for replacement of damaged bricks and replacement of missing bricks: recycled clay bricks, recovered from dismantling of other buildings, same dimensions as existing bricks (plan two cuts for each brick to obtain the existing dimensions) and similar in color and texture to existing bricks, without cracks, abrasions or chips, cleaned of any trace of mortar which may affect their bond and adhesion to the work..
- 2.4 DOWELS
- .1 Dutchman repairs dowels and for repairing split stones: 316 stainless steel threaded rods: 3/8" (10 mm) diameter, 4" (100 mm) in length.
 - .2 Dowels for cracked stones repair: 316 stainless steel threaded rods: 1/4" (7 mm) diameter, 4" (100 mm) in length
- 2.5 ADHÉSIVE
- .1 Adhesive for setting dowels: Hilti HIT-HY 200 hybrid structural adhesive mortar, two-component structural adhesive, or approved equivalent.
- 2.6 CLEANING TOOLS
- .1 Brushes: Use only soft bristle brushes made of natural fibers for cleaning masonry work.
 - .2 Scrapers: Use only wood or plastic scrapers of for cleaning masonry work.

PART 3 - EXÉCUTION

3.1 MIXING OF MORTAR AND INJECTION GROUT

- .1 Mix using clean mechanical mixer free of dried mortar, rust and other contaminants. Do not thaw equipment with salt or anti-freeze agents.
- .2 Prepare mortars and grout following manufacturer's instructions of

premixed materials as to the proportions and steps to be followed for the successive introduction of materials into the mixture. Always mix one bag at a time.

- .3 Type 1 and Type 3 mortars must be used and set up definitively within 1.5 hours (1-1/2 h) after mixing if temperature is 25°C or higher, and 2-1/2 hours after mixing if the temperature is lower than 25°C. Beyond these limits, the mortar must be discarded.
- .4 Type 2 mortar must be used and set up definitively within forty (40) minutes after mixing. Beyond this limit, the mortar must be discarded.
- .5 Do not retemper. If it loses its plasticity, simply mix again without adding water.

3.2 CONSOLIDATION AND REPOINTING OF FOUNDATIONS

- .1 General: Do work in accordance with the requirements of the CAN3-A371-94 standard and in accordance with the requirements of section 01 35 43 – Environmental Procedures.
- .2 Provide temporary drainage and pumping of water as necessary to keep excavations free from water, to a above-ground settling, sedimentation and/or filtration system, during the foundations repointing and consolidating, the groundwater level being above the base of the foundations
- .3 An archaeologist must be present throughout the excavation work. No excavation work must be undertaken in the absence of an archaeologist.
- .4 Allow the archaeologist to examine the cleared foundations before undertaking consolidation and repointing work of the foundations. Provide a period of three (3) hours for the archaeologist's review, once the excavation is complete, before the masons can begin their work of cleaning the foundation wall.
- .5 Once the archaeologist has completed his work, clean all the earth (clay) that has taken the place of the deteriorated mortar between the stones of the foundation.
- .6 Fill empty joints in the foundation walls, according to prior instructions of the Architect, full depth, with Type 2 mortar No repointing work can be done without prior visit and instructions of the Architect.
- .7 If the mortar of certain joints of the foundation wall is intact, hollow out these joints to a minimum depth of 50 mm. Clean these joints with water and repoint them with Type 2 mortar. No repointing work can be done without prior visit and instructions of the Architect.
- .8 Finish recessed joints from stone surface with appropriate grouting

tool approved for concave compacted joints.

- .9 Continue to pump water for a minimum of 3 hours after completion of the consolidation and repointing work of the foundation that is below groundwater level to allow for the initial setting of the mortar.
- .10 As soon as water pumping stops, backfill the lower part of the foundations (below the groundwater level) by putting back the excavated material (clay).
- .11 Protect the joints of the upper part of the foundations (out of the water table) with jute covers kept wet, as prescribed in article 1.10, paragraph 6. For the foundations, the wet cure period may be limited to 24 hours rather than the 72-hour period specified in said article.
- .12 Once the wet cure of the mortar is completed, backfill the foundations by putting back the excavated material.

3.3 CRACKED STONE REPAIRS

- .1 Repair in situ cracked stones.
- .2 Inject into deep cracks Reconstec 700F (type 6) injection grout according to manufacturer's recommendations.
- .3 Consolidate stones with deep cracks (cracks greater than 5 mm on the surface) by inserting two (2) 10 mm stainless steel dowels into these stones:
 - .1 Drill 5-inch (125 mm) deep, with fitting diameter sized holes, diagonally through cracks and into the stone interior.
 - .2 When drilling holes, keep the removed stone cores.
 - .3 Insert 10 mm diameter stainless steel dowels into holes using HIT-HY 200 adhesive to secure, filling void-free holes up to 25 mm (1 inch) from stone face. sans vides jusqu'à 25 mm (1 pouce) de la surface de la pierre.
 - .4 Use cores removed when drilling holes, cut to 25 mm in length, as Dutchman to fill out the holes of stone surface. Apply Reconstec 700 grout, mixed with less water than indicated if it should be injected, over the entire surface of the existing stone where the Dutchman will be inserted. Install the Dutchman with the Reconstec 700 grout and temporarily secure it to allow the grout to set.
- .4 Finish deep crack repairs with Reconstec 300 or 350 mortar (Type 4).
- .5 Repair surface cracks with Reconstec 300 or 350 mortar (Type 4) following manufacturer's recommendations.

3.4 STONE REQUIRING DUTCHMAN REPAIR

- .1 Remove the surface of the stones to be repaired with Dutchman repairs to a depth of 100 mm and even the face of the existing masonry at this depth.

- .2 Whenever possible, select Dutchman in existing stones that will not be reused when reassembling stair, because they have been identified by the Architect as to be replaced and set aside during disassembly. Cut each Dutchman for which this is possible in a piece of stone set aside whose finish corresponds to that of the stone to be repaired.
 - .3 À défaut de pouvoir tailler un flipot dans une pierre existante mise de côté dont la finition correspond à celle de la pierre à réparer, utiliser dans la mesure du possible un morceau d'une pierre mise de côté et effectuer manuellement au chantier la finition requise pour correspondre à celle de la pierre à réparer.
 - .4 Use the new specified stone (Pierre Grise de Montréal de St-Jacques) for Dutchman when it is impossible to do so using existing stones set aside.
 - .5 Have the workshop execute the stone finish of Dutchman made of new stone (Pierre Grise de Montréal de St-Jacques) which must have a 1/8" tooled finish and those which must have a tooled finish with two grooves per inch.
 - .6 Manually execute on site the stone finish of Dutchman which must have a bush hammered finish and those which must have a picked finish.
 - .7 Drill holes of a fitting diameter and of 50 mm deep in existing stone face and the back of Dutchman. Recover the stone dust released during drilling to use around the stone surface finish of the edge joints of the Dutchman repair.
 - .8 Insert 10 mm diameter stainless steel dowels into holes using HIT-HY 200 adhesive to secure, filling the mounting holes without voids.
 - .9 Thoroughly saturate the existing stones to be repaired and the Dutchman with water before installing the Dutchman to ensure the grout adhesion.
 - .10 Apply Reconstec 700 grout, mixed with less water than indicated if it should be injected, over the entire surface of the existing stone where the Dutchman will be inserted. Install the Dutchman with the Reconstec 700 grout and temporarily secure it to allow the grout to set.
 - .11 Finish joint surface between existing stone and Dutchman by adding stone dust to grout to conceal joints.
- 3.5 NEW STONE FACING
- .1 Replace with new stone facing (Pierre Grise de Montréal de St-Jacques) the face of exfoliated or flaked stones indicated on the architectural drawings and those identified by the architect during the execution of the works.

- .2 Remove the face of the stones to be replaced by a new stone facing on a depth of 100 mm from the surface of the adjacent stones and even the face of the existing masonry at this depth.
 - .3 Have the workshop execute the stone finish of the new stone facing which must have a 1/8" tooled finish and those which must have a tooled finish with two grooves per inch.
 - .4 Manually execute on-site the stone finish of new stone facing that must have a bush hammered finish and those that must have a picked finish.
 - .5 Drill holes of a fitting diameter and of 50 mm deep in existing stone face and in the back of new stone facing.
 - .6 Insert 10 mm diameter stainless steel dowels into holes using HIT-HY 200 adhesive to secure, filling the mounting holes without voids.
 - .7 Thoroughly saturate the existing stones to be repaired and the new stone facing with water before installing the new facing to ensure the grout adhesion.
 - .8 Apply Reconstec 700 grout, mixed with less water than indicated if it should be injected, over the entire surface of the existing stone where the new facing will be installed. Install the new stone facing with the Reconstec 700 grout and temporarily secure it to allow the grout to set.
- 3.6 SPLIT STONE REPAIRS
- .1 Drill holes of a fitting diameter and 50 mm deep in both broken faces of stone to be repaired. Recover the stone dust released during drilling to be used around the visible edge of the stone finish once the stone is put back in place.
 - .2 Insert 10 mm diameter stainless steel dowels into holes using HIT-HY 200 adhesive to secure, filling the mounting holes without voids.
 - .3 Thoroughly saturate with water the pieces of stone to be repaired before bonding to ensure grout adhesion.
 - .4 Apply Reconstec 700 grout, mixed with less water than indicated if it should be injected, over the entire surface of the split stones. Assemble the pieces of stone with the Reconstec 700F grout and temporarily secure it to allow the grout to set.
 - .5 Finish the surface of the visible edges of the repaired stone by adding stone dust to the grout to conceal the joints.
- 3.7 DISASSEMBLY OF THE RAMPARTS STAIR
- .1 Before dismantling the staircase stones and during all dismantling, the contractor shall make a complete survey of the location and

- necessary repairs for each staircase stone (provide a photographic report and drawing records).
- .2 Before removal, mark stones on facing using markers that may be completely erased without damaging the stone, using a ballpoint pen on masking tape attached to the stone, or chalk without wax directly on the stone. Ensure that the marking system will withstand handling and cleaning and will last until the final marking of stones. Ensure that markings and adhesives can be removed with a vegetable fiber brush, used either dry or with water, without damaging stones, and without the use of solvent, acid or other chemical product.
 - .3 Create a photographic record of the stairway to be dismantled and reassembled.
 - .4 Construct temporary shoring and cradling to support the structure, as indicated on the drawings provided by the contractor to the structural engineer, as mentioned in section 01 11 00 – General conditions structure.
 - .5 Before disassembling stairway stones, remove, while taking care not to cause damage all elements of its ornamental iron railing and place in storage in a sheltered area
 - .6 To loosen stones, use approved methods that do not cause stone damage. Do not use a grinding wheel or circular saw, pneumatic chisel, or steel tools that would put constant pressure on the edge of the stone. Have the Architect approve the use of mechanical tools before beginning the loosening work.
 - .7 Place stones removed on wood surfaces during handling, avoiding contact with metal. When the stones are lowered to the ground, place them directly on the wooden platforms that will be used for their storage. If the scaffolding has sufficient bearing capacity and subject to the approval of the structural engineer, storage of the stones directly on the platforms of the scaffolding will be permitted. Make sure the sharp edges of stones do not come into contact with any hard object.
 - .8 In freezing weather, keep the stones dry. Protect wet stones from freezing
 - .9 Do cleaning operations of disassembled stones at above freezing point temperature, or inside a heated enclosure. After cleaning, protect wet stones against freezing until dry.
 - .10 Use a vegetable fiber brush and water to clean stones. Do not use high pressure water jet
 - .11 Do the final marking after cleaning, on a surface that ensures both good adhesion and good readability, and which will not be visible after reassembly of the walls. Make sure that the product used for the marking will not compromise mortar adhesion on stone during

reassembly.

- .12 Keep all removed stones, even those identified to be replaced. The stones identified to be replaced will have to be set aside, in order to be able to use pieces of these stones for Dutchman repairs of other stones.

3.8 REASSEMBLY OF THE RAMPARTS STAIRWAY

- .1 Reassemble the stairway using existing stones that have been remove during disassembly except for stones indicated by the architect to be replaced.
- .2 Before reassembly, repair the stones identified to be repaired by the architect following the disassembly. Repair stones by following the methods in articles 3.5, 3.6, 3.7 and 3.8, as applicable
- .3 Use Type 1 mortar for the entire structure reassembly of the stairway, except steps and landing stones.
- .4 Use Type 2 mortar the reassembly of steps and landing stones of the stairway.
- .5 Reset existing stones, except where the architect requests replacement of original stone (s) with new stone.
- .6 Set stones plumb, true and level on a generous layer of mortar, ensuring horizontal joints are the same height as were original joints.
- .7 Finish recessed joints from stone surface with appropriate grouting tool approved for concave compacted joints.
- .8 Throughout work, carefully remove excess mortar from masonry face before it sets using jute cloth or a suitable stiff bristle brush (no wire brush).
- .9 Finish joints neatly.
- .10 Finish joints using Type 1 mortar by beating vigorously, when the joints are firm, finish by beating vigorously with a brush (AB 206 P brush from Marino., or equivalent).
- .11 Finish joints using Type 2 mortar, when firm, with a round iron.
- .12 Protect joints for 72 hours with tarpaulins kept wet as prescribed in article 1.10, paragraph 6.
- .13 When the reassembly of the rear stairway and the initial setting of its joints is completed, proceed to final cleaning of this part of the building as indicated in Article 3.11.
- .14 Reinstall all original elements of the iron railing of the stairway.

**3.9 DISASSEMBLY AND
REASSEMBLY OF
VAULTS AND CRACKED
BRICK WALLS**

- .1 Make a photographic record of vaults and brick walls to disassemble and reassemble.
- .2 To remove bricks, use approved methods that do not cause bricks damage. Have the architect approve the use of mechanical tools before undertaking disassembly work of bricks.
- .3 As the dismantling progresses, note the pattern of assembly of the bricks, taking additional photos, in order to reproduce the same assembly when reassembling.
- .4 Store the removed bricks on wooden platforms placed on impermeable sheets on the floor. Do not stack more than four (4) rows of bricks on the platforms to avoid overloading the floor.
- .5 Clean bricks to remove all traces of mortar using a vegetable fiber brush .
- .6 Rebuild the vaults and walls using existing bricks removed during disassembly. Reproduce the original assembly. For cracked bricks, punctually replace with the bricks, as described in section 2.3. Seek approval of the architect for each brick replacement.
- .7 Use Type 1 mortar for reassembling walls.
- .8 Install bricks plumb, true and level over a generous layer of mortar, ensuring that horizontal joints are the same height as original joints were.
- .9 Finish recessed joints from stone surface with appropriate grouting tool approved for concave compacted joints.
- .10 Throughout work, carefully remove excess mortar from masonry face before it sets using jute cloth or a suitable stiff bristle brush (no wire brush).
- .11 Finish joints neatly. When the joints are firm, finish by beating vigorously with a brush (AB 206 P brush from Marino., or equivalent).
- .12 Protect joints for 72 hours with tarpaulins kept wet as prescribed in article 1.10, paragraph 6., taking care to protect the wood floor from any moisture.

**3.10 RESETTING AND
REPLACEMENT OF
BRICKS**

- .1 As indicated on architectural drawings, where bricks are missing

(punctual interventions in the vaults of the ground floor) or when wall sections are damaged to replace (raised floor of existing bathrooms), put back in place removed or displaced bricks.

- .2 If needed, where there are insufficient loose bricks to fill openings or to repair surfaces, use new bricks as described in article 2.3.
- .3 Use type 1 mortar for resetting bricks.
- .4 To the extent that it is possible to determine what was the original assembly, reproduce it when resetting the bricks.
- .5 Install bricks plumb, true and level over a generous layer of mortar, ensuring horizontal joints are the same height as original joints were.
- .6 Finish recessed joints from stone surface with appropriate grouting tool approved for concave compacted joints.
- .7 Carefully remove excess mortar from masonry face before it sets using jute cloth or a suitable stiff bristle brush (no wire brush).
- .8 Finish joints neatly. When the joints are firm, finish by beating vigorously with a brush (AB 206 P brush from Marino., or equivalent).
- .9 Protect joints for 72 hours with tarpaulins kept wet as prescribed in article 1.10, paragraph 6., taking care to protect the wood floor from any moisture.

3.11 CLEANING

- .1 As the work progresses, clear the surfaces of excess mortar and grout, stains and other soils resulting from the work described and included in this contract.
- .2 In the days following initial setting, perform cleaning with clear water and a non-metallic bristle brush, to remove from the surface of the wall any mortar residue, any stone dust or mortar produced during repointing or reassembly of the wall and other dirt, including biological growths and traces of efflorescence.
- .3 Perform cleaning using the lowest possible water pressure as determined during the cleaning test performed in accordance with article 1.7.
- .4 For interior works, plan to protect the wood floor against moisture for all cleanings.

END OF SECTION

PART 1 - GENERAL

- 1.1 SCOPE OF WORD .1 The work described in this section includes, but is not limited to, all materials, equipment, tools and labour required to:
- .1 Manufacture, supply and installation of new ramps with removable universal access;
 - .2 Fabrication, supply and installation of a guardrail on the floor;
 - .3 The manufacture, supply and installation of prefabricated access hatches to the ground floor and upper floor ceiling;
 - .4 Manufacture, supply and installation of the new weapons space workbench
 - .5 Manufacturing, supply and installation of the new stainless-steel counter for the employee cloakroom cabin.
 - .6 Manufacturing, supplying and installing custom specialized hardware and reproducing existing heritage hardware
- 1.1 RELATED SECTIONS .1 Section 01 33 00 – Submittal Procedures.
.2 Section 06 20 00 – Finish Carpentry / Architectural Woodwork.
.3 Section 08 71 00 – Doors Hardware.
- 1.2 REFERENCES .1 ASTM International
- .1 ASTM A 53/A 53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A 269, Standard Specification for Seamless and Welded Austenitic Stainless-Steel Tubing for General Service.
 - .3 ASTM A 307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - .4 ASTM D 520, Standard Specification for Zinc Dust Pigment.
 - .5 ASTM A 780, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
 - .6 ASTM A 240, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - .7 ASTM A 276, Standard Specification for Stainless Steel Bars and Shapes.
- .2 CSA International
- .1 CSA G40.20/G40.21, General Requirements for Rolled and Welded Structural Steel/Construction Steels.
 - .2 CAN/CSA G164, Hot-dip galvanizing of irregular

- .3 shaped objects.
- .3 CSA W48, Filler Metals and Associated Materials for Arc Welding (prepared in collaboration with the Canadian Welding Bureau).
- .4 CSA W59, Welded Steel Construction.
- .3 Health Canada - Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDSs).
- 1.3 SUBMITTALS FOR APPROVAL / INFORMATION
 - .1 Submit the required documents/samples in accordance with section 01 33 00 – Submittal Procedures.
 - .2 Provide shop drawings for the following items:
 - .1 Workshop drawings of the guardrail on the first floor;
 - .2 Workshop drawings of the new stainless-steel counter for the employee cloakroom cabin;
 - .3 Workshop drawings of ramp modules for people with reduced mobility approved and signed by a structural engineer;
 - .4 Workshop drawings of custom hardware and reproductions of heritage hardware;
 - .5 Workshop drawings for each access hatch to the ground floor and upper floor ceiling;
 - .6 Workshop drawings of the new weapons space workbench
 - .3 Shop drawings must indicate or show materials, thickness, finishes, connections, screws and bolts, welding joints and folds, anchor mouldings and angles, supports, reinforcing elements, details, planned bores, accessories and locations of engraved identifications.
 - .4 Samples of works:
 - .1 Perform work samples in accordance with section 01 33 00 – Submittal Procedures.
 - .2 Provide the following samples of works:
 - .1 One (1) example of installation of each custom door retainer (installation in concrete/masonry and installation in wood floor);
 - .2 One (1) example of installation and manufacture of each heritage hardware reproduction element;
 - .3 One (1) example of custom adjustable fasteners at the junction of two sections of the access ramp;
 - .4 At the Architect's request, carry out all other work samples at the locations indicated by the Architect.
 - .3 Allow 48 hours for the Agency representative to inspect the work sample before starting the work.
 - .4 Once accepted, the work sample will be the

minimum standard to be met for product and process quality for similar wrought metal work. The sample of the work may be part of the final work.

- .5 Samples:
- .1 Submit the following samples for approval:
 - .1 Two 300mm x 300mm samples of perforated metal panels;
 - .2 Two samples of each type of custom door restraint;
 - .3 Two samples of the castors used in the manufacture of the weapon space workbench;
 - .4 Two 300mm x 300mm samples of each stainless-steel plate gauge used to manufacture the weapon space workbench and stainless-steel counter in the employee cloakroom cabin;
 - .5 Two 300mm x 300mm samples of the grating used in the manufacture of handicapped access ramps;
 - .6 Two samples of minimum 300mm x 300mm of concrete slabs placed for the installation of universal access ramps;
 - .7 Two samples of the "Dek- Block" type ground supports installed for the installation of universal access ramps;
 - .8 Two samples of the screws and studs used to install the universal access ramps.

 - .6 Assembly / disassembly guide:
 - .1 The contractor shall provide the Agency with an assembly and dismantling guide so that it can store the universal access ramps at the end of each season and reassemble them at the beginning of the following season;
 - .2 The guide must show in axonometry the different assembly/disassembly steps accompanied by an explanatory text. To facilitate the naming and differentiation of the different sections of the universal access ramps, a number or letter should be associated with each section and identified on the section (refer to section 2.2);
 - .3 The tools required for the assembly and disassembly of access ramps shall be identified in a list at the beginning of the guide and identified at each step of the guide.
 - .4 The guide shall be approved by the Architect and the Agency representative before being included in the project completion documents.

1.4 QUALITY CONTROL

- .1 The Contractor is responsible for the selection of its subcontractors and must ensure that the subcontractor has the experience required for the type of work required under

the mandate. In the event of a problem, Parks Canada reserves the right to request the subcontractor to provide proof of a minimum of 5 years in the field of metal works.

- .2 The required wrought metal hardware parts shall be manufactured by a tradesperson with extensive experience in this type of work.
- 1.5 TRANSPORT, STORAGE AND HANDLING
- .1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions in accordance with the section.
 - .2 Delivery and Acceptance: Deliver materials and equipment to the site in their original packaging, which must be labelled with the name and address of the manufacturer.
 - .3 Storage and handling;
 - .1 Store materials and equipment in a clean, dry and well-ventilated area in accordance with the manufacturer's recommendations.
 - .2 Replace damaged materials and equipment with new materials and equipment.

PART 2 - PRODUCTS

- 2.1 MATERIAL
- .1 Steel profiles and plates: 300W grade, according to CSA G40.20/G40.21.
 - .2 Steel pipes: in accordance with ASTM A 53/A 53M standard, standard series
 - .3 Welding materials: in accordance with CSA W59 standard.
 - .4 Welding electrodes: Compliant with CSA W48 series standards.
 - .5 Bolts and anchor bolts: in accordance with ASTM A 307.
 - .6 Stainless steel tubes: in accordance with ASTM A 269
 - .7 Grout: Non-shrink, non-metallic, fluid and with a strength of 15 MPa after 24 hours.
- 2.2 METALLIC WORKS / GENERAL INFORMATION
- .1 The works must be straight, square, well aligned and in accordance with the prescribed dimensions; the joints must be tightened and properly secured.
 - .2 Unless otherwise specified, self-tapping and indestructible screws must be used for screw connections.

- .3 As far as possible, the works should be adjusted and assembled in the workshop and delivered ready for assembly.
 - .4 The visible welds must be continuous along the entire length of the joint; they must be filed or ground to a smooth and even surface.
 - .5 For stainless steel, provide a type 316 in accordance with ASTM A 240 and ASTM A 276. Provide welds protected from oxidation with a 316 welding wire.
 - .6 For galvanized steel, plan all drilling, threading and welding possible before the hot-dip galvanizing phase. Galvanize the product after manufacture.
 - .7 For touch-ups on galvanized steel following defects or welding and drilling work after the galvanizing phase: Use zinc-rich paint in accordance with ASTM A-780 "Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings" and CGSB CAN/CGSB-1.181 (Removed) "Zinc-rich, organic and prepared coatings" and recognized by Underwriters Laboratories under the components program such as ZRC Worldwide's "ZRC Galvilitite Repair Galvanizing Compound" coating. The dry film of the coating must contain 95% zinc metal. The product must be applied according to the manufacturer's recommendations and the part to be repaired must be properly prepared. No substitutes or alternative materials. Any other product deemed equivalent (equal to or greater than the specified material) must be approved.
- 2.3 REMOVABLE UNIVERSAL ACCESS RAMP
- .1 Provide for the manufacture of the removable universal access ramps presented on the architectural plans in accordance with the details and dimensions provided.
 - .2 Plan to identify the different sections of the access ramps according to the name provided in the assembly / disassembly guide. These identifications must be engraved in each removable section in an inconspicuous place. Prefer surfaces facing ground in the first instance and surfaces facing the outside of the ramp in the second instance. Provide information on workshop drawings for approval.
 - .3 All access ramp components will be made of 316 stainless steel.
- 2.4 WEAPONS SPACE WORKBENCH
- .1 Plan the fabrication of the weapon space workbench presented on the architectural plans according to the details and dimensions provided.

- .2 All workbench components shall be 316 stainless steel.
- 2.5 FLOOR ACCESS HATCH .1 Plan the manufacture of access hatches presented in the architectural plans according to the details and dimensions provided.
- .2 All access hatches shall be as Cendrex PPA-RE model or approved equivalent. The model must be custom-made according to the dimensions and specifications in the architectural details.
- .1 Recessed aluminium access hatch with floor covering as existing (custom withdrawal), single leaf opening
- .2 Door: 6.4mm diamond pattern aluminum plate
- .3 Frame: 51mm x 51mm x 51mm x 6.4mm aluminium angle iron
- .4 Hinge: Robust 2mm commercial grade aluminium piano hinge
- .5 Handle/Lock: 102mm removable handle
- .6 Minimum load capacity of 14kN/m², for heavy pedestrian traffic.
- 2.6 CEILING ACCESS HATCH .1 Plan the manufacture of access hatches presented in the architectural plans according to the details and dimensions provided.
- .2 All access hatches shall be as Cendrex AHD-PLY model or approved equivalent. The model must be custom-made according to the dimensions and specifications in the architectural details.
- .1 Recessed aluminium access hatch with floor covering as existing (custom withdrawal), single leaf opening.
- .2 Door: 16 gauge stainless steel, type 316, bent 90 degrees 3.8mm on all four sides to ensure structural rigidity, brushed finish no. 4.
- .3 Frame: 22 gauge stainless steel type 316 with 70mm plaster cord at the perimeter.
- .4 Hinge: Heavy-duty 316 stainless steel 2mm commercial grade piano hinge.
- .5 Handle/lock: Standard lock operated by flat screwdriver
- 2.7 GUARDRAIL ON THE EXHIBITION AREA FLOOR .1 Plan the manufacture of the floor railing presented in the architectural plans according to the details and dimensions provided.
- .2 All railing components shall be painted black steel, refer to the requirements of section 09 91 23 - Painting - Interior Works and Paint System No. 6.
- 2.8 NEW STAINLESS STEEL COUNTER – .1 Plan the manufacture of the new cloakroom cabin counter for the employee presented on the architectural plans in

- CLOAKROOM CABIN
- accordance with the details and dimensions provided.
- .2 All cloakroom cabin counter components shall be 316 stainless steel.
- 2.9 CUSTOM MADE AND HERITAGE HARDWARE .1 Reproduced heritage hardware:
- .1 Reproduced heritage hardware from the doors shall be executed in accordance with the details included in the 1969 plans and in accordance with existing elements.
- .2 Hardware shall operate silently, easily and without undue effort. It must be rigid and have a constant alignment. The finish of screws, bolts and other hardware fasteners must match the finish of existing heritage elements.
- .3 All forged metal parts will be made using traditional forging techniques. All cuts will be made hot with a chisel and all drilling will be done with a punch.
- .4 Finishing:
- .1 Formula for the treatment of forged metal:
- a) Six (6) parts of pure flax oil or single boiled flax oil, heated for 20 minutes.
- b) Four (4) parts turpentine.
- c) Four (4) ounces of alum (powdered).
- d) One (1) four (4) ounce natural resin jar to be diluted in alcohol.
- Items c) and d) are available in pharmacies.
- .2 Method:
- a) Prepare the mixture by first using only three (3) of the four parts of turpentine.
- b) Heat the mixture until it smokes and then add the last part of turpentine.
- c) Allow to cool for 24 hours.
- d) Simply soak the object to be treated in the cooled mixture
- .2 Custom made hardware
- .1 Custom door retainers will be made of galvanized steel according to the dimensions in the plans and architectural details.

PART 3 - EXECUTION

- 3.1 EXAMINATION .1 Verification of conditions: before proceeding with the installation of the metal structures, ensure that the condition of the surfaces/supports previously installed under other sections or contracts is acceptable and allows the work to be carried out in accordance with the manufacturer's written instructions.
- .1 Perform a visual inspection of surfaces/supports
- .2 Immediately inform the Architect of any

- unacceptable conditions identified.
- .3 Begin installation work only after correcting unacceptable conditions.
- 3.2 INSTALLATION
- .1 Unless otherwise specified, perform welding work in accordance with CSA W59.
- .2 Assemble the square, plumb and level metal structures, aligned and precisely adjusted, and ensure that joints and crossings are tight.
- .3 Provide and install appropriate anchors approved by the Architect, such as dowels, staples, anchor rods, expansion bolts, expansion shells and wing bolts.
- .4 Fasteners shall be compatible with the material through which they pass or to which they are attached, and of the same finish as the latter.
- .5 Provide the necessary components for work performed by other trades, in accordance with the nomenclature and workshop drawings submitted.
- .6 Assemble the elements on site using bolts in accordance with CSA S16 or by welding.
- .7 Structures intended to accommodate hardware shall be prepared, drilled, cut or otherwise worked in a precise and clean manner, without damaging their finish and without compromising their strength and rigidity.
- 3.3 CLEANING
- .1 Cleaning during the work: carry out the cleaning work in accordance with section 01 74 11 - Cleaning.
- .1 Leave the premises clean at the end of each work day.
- .2 Final cleaning: Dispose of excess materials/materials, waste, tools and equipment from the site in accordance with section 01 74 11 - Cleaning.
- 3.4 PROTECTION
- .1 Protect installed equipment and components from damage during construction.
- .2 Repair damage to adjacent materials and equipment caused by the installation of metal structures.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

- .1 Contractor must provide all materials, products, materials, equipment, labour and services required for complete performance of the work described in this section and/or shown in drawings, so that completed work fulfills its intended purpose.
- .2 Are included all accessories and minor works which, although not necessarily mentioned in this specification or shown in drawings, are necessary for proper and complete performance of work according to the quality standards cited in reference and/or recognized in the industry and according to best practices.
- .3 Work described in this section includes, but is not limited to:
 - .1 all carpentry and cabinet making required as indicated on plans and specifications other than those described in section 08 50 00 - Windows.
 - .2 Including:
 - .1 work to remove sections of wooden flooring at the Barracks required in accordance with other work and as indicated on the plans;
 - .2 replacing open floor sections;
 - .3 all spot repairs to wooden floor slats, baseboards and bottom wall mouldings with holes and openings or damaged because of the removal and demolition of existing fixed furniture as shown on the plans;
 - .4 if a one-time repair is not possible, the replacement of the necessary wooden slats, baseboards and mouldings with an element of the same size and species;
 - .5 all minor work (maintenance or occasional repairs) on wall panelling / closets as indicated on the architectural plans;
 - .6 the supply and installation of new wooden slats to the floor, baseboards and mouldings as shown on the plans;
 - .7 all spot repairs to the woodwork of the loopholes' frames as indicated on the plans;
 - .8 the reinstallation of the woodwork of the frames of the loopholes uninstalled by others as indicated on the plans;
 - .9 removal of wall panelling / closets as shown on the plans;
 - .10 the supply and installation of any support structures/reinforcements required for ground floor or first floor floors according to new openings and/or access hatches;
 - .11 the supply and installation of new storage benches;
 - .12 all punctual repairs required to the existing wooden handrail/guard railing on the Jewish staircase as shown on the plans;
 - .13 the supply and installation of a new wooden guardrail on the Jewish staircase as shown on the plans;
 - .14 the fixed furniture of the kitchen area;

- .15 all preparation (sanding) and finishing (varnishing) work on wooden floors;
 - .16 all furs, shims, nailing strips, nailing bottoms, etc. required for the project;
 - .17 the supply and installation of the removable table of the weapons area;
 - .18 the supply and installation of a waste bin module under washroom sinks;
 - .19 the supply and installation of a counter in the cabin employees 111;
 - .20 work to restore the handrails of the inner staircase (Jewish staircase)
- .4 After installing wood floors, baseboards and mouldings, **and before preparing and applying varnishes:**
- .1 the Contractor shall notify the Architect and the Agency Representative so that the installation work can be inspected by them;
 - 2 Following inspection of the installation work and approval, the Contractor shall proceed with the requested samples of preparation works;
 - .3 once the floor preparation method has been approved, the Contractor may proceed with the work sample for floor varnishing, and subsequently with the final varnishing.
- 1.2 RELATED SECTIONS
- .1 Section 01 33 00 – Submittal Procedures.
 - .2 Section 01 61 00 – Common Products Requirements.
 - .3 Section 06 10 00 – Rough Carpentry.
 - .4 Section 08 50 00 – Windows.
 - .5 Section 09 91 23 – Interior Painting.
 - .6 Section 11 40 10 – Food Service – Common Equipment.
 - .7 Division 21 – Fire Suppression.
 - .8 Division 22 – Plumbing.
 - .9 Division 26 – Electrical.
- 1.3 REFERENCES
- .1 American National Standards Institute (ANSI)
 - .1 ANSI/HPVA HP-1, Standard for Hardwood and Decorative Plywood.
 - .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
 - .1 AWMAC's Standards (NAAWS).
 - .3 Canadian Standards Association (CSA)
 - .1 CSA B-111-1974 (R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O112.4 SERIES-(R2014), Standards for Wood Adhesives.
 - .3 CSA O121-17, Douglas Fir Plywood.
 - .4 CSA O141-91, Softwood Lumber.
 - .5 CSA O151-17, Softwood Plywood.
 - .6 CSA O153-13, Poplar Plywood.

- .4 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001, FSC Principle and Criteria for Forest Stewardship.
 - .2 FSC-STD-20-002, Structure and Content of Forest Stewardship Standards V2-1.
 - .3 FSC certification organizations.
 - .5 National Electrical Manufacturers Association (NEMA)
 - .1 ANSI/NEMA LD-3-[05], High-Pressure Decorative Laminates (HPDL).
 - .6 National Hardwood Lumber Association (NHLA)
 - .1 Standard Grading Rules for Canadian Lumber (2017).
- 1.4 SUBMITTALS
FOR APPROVAL /
INFORMATION
- .1 Submit documents and samples required in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Submit duplicate samples of specified nails.
 - .3 Submit data sheets for products included in 2.1.3.
 - .4 Shop drawings:
 - .1 Submit shop drawings for following items including:
 - .1 New storage benches;
 - .2 New wooden railing of Jews staircase;
 - .3 new removable table for weapons area
 - .4 reproduction of heritage door P131B
 - .5 fixed furniture kitchen area
 - .6 cabin counter 111
 - .7 bin module under toilet sinks 109, 116 and 122
 - .8 Laying plan for new sections of wooden floors, including baseboards and moulding.
 - .2 Drawings must show construction and assembly details, materials, profiles, thicknesses, fasteners and other related details and finishes.
 - .3 Shop drawings for layout of the new floor sections must clearly show layout of wooden slats, varying lengths and widths of slats, in order to clearly illustrate continuity with slats existing arrangement.
 - .5 Samples:
 - .1 Unless specified otherwise, submit duplicate samples, size 200mm X 200 mm, or 200mm long, of plastic laminates.
 - .2 Submit duplicate samples of available plastic laminates colors for color selection purposes.
 - .3 Submit duplicate samples showing details of joints, edges, cuts and profiles of plastic laminates.
 - .6 Mock-ups and testing:

- .1 Construct mock-ups for punctual repairs to existing wooden floor slats showing holes and openings as indicated to plans:
 - .1 One (1) mock-up for typical repair using plastic wood sealer;
 - .2 One (1) mock-up for typical repair using glue and sawdust dust;
 - .3 One (1) mock-up for typical repair using a dutchman;
 - .4 One (1) mock-up for typical repair using a wood replacement part.
- .2 Construct mock-up for new sections of wooden floor to be provided and installed on the ground floor of the Barrack:
 - .1 Mock-up shall be ± 20 square metres ($\pm 1/3$ of a bay) and shall include baseboards and mouldings
 - .2 Purpose of mock-up is to ensure that wood slats are created according to size of the existing floor and same wood species. It's important to aim for visual uniformity of new floor and to plan details not to confuse the new with the old.
 - .3 Mock-up shall be construct at transition of existing floor and new one to be installed.
- .3 Perform tests and a work sample for the preparation of wooden floors (sandblasting):
 - .1 Testing and sampling of the structure shall be ± 1 square metre.
 - .2 The tests are intended to ensure that the most gentle method is used when removing varnish that has deteriorated too much and preparing existing slats for a new coat to be applied.
 - .3 Plan at least three (3) preparation tests.
 - .4 The accepted test may constitute the sample of work.
- .4 Perform tests / work sample for finishing wood floors (varnish):
 - .1 The test / work sample shall be ± 1 square metre.
 - .2 Tests shall be performed on a section at the transition of the existing reinstalled floor and the new installed floor in order to properly evaluate the result on these two conditions.
 - .3 Plan at least three (3) finishing tests with reworking of the preparation if necessary.
- .5 Once accepted, the structural samples will be the minimum standard to be met for batten layout, product quality and implementation for similar work. The sample of the work may be part of the final work.
- .7 Photographic file: see article 1.5 below.

1.5 TEMPORARY MARKING AND PHOTOGRAPHIC RECORD

- .1 Before removal sections of the existing wood floors of the Men's Barrack, mark each plank and piece of baseboard by using a ballpoint pen on an adhesive tape attached to the plank or baseboard. Use a type of tape that can be removed by simply

cleaning with soap and water, without damaging planks and without using of solvent or other chemical.

- .2 Provide a photographic record existing floor sections to be opened and baseboard sections to be removed. Photography must be taken before, during and after work to ensure good documentation. A digital copy of photographic record shall be provided to the Architect and the Agency Representative.
- .3 Following removal, perform final marking of planks and baseboards. Mark number with a permanent marker on back of each piece of plank and baseboard, so that it is not visible after their replacement. Make sure permanent marking is legible.

**1.6 DELIVERY, STORAGE
AND HANDLING**

- .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Protect millwork against dampness and damage during and after delivery.
- .3 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.
- .4 Store millwork to protect them from marks, scratches and scratches.
- .5 Replace damaged materials.

1.7 WARRANTY

- .1 Provide a written and signed document, issued on behalf of Owner, certifying boards and laminates against warping, subsidence, splitting and delamination of veneer, for a period of two (2) years from date of provisional receipt of work.

PART 2 - PRODUCTS

**2.1 WOODWORK
MATERIALS**

- .1 This article covers the materials and equipment required for the work in this section, including new storage benches to be provided. Excluded from this article are materials and equipment for the fixed furniture of the kitchen area which are covered under article 2.2.

- .2 Softwood according to CSA O141:

- .1 For floors, baseboards and mouldings:
 - .1 White pine as existing, with a moisture content of at most 19%.
 - .2 For wall panelling / wardrobes:
 - .1 White pine as existing, with a moisture content of at most 19%.
 - .3 For repairs to the existing handrail and for the new railing on the Jewish staircase:
 - .1 White pine as existing, with a moisture content of at most 19%.
 - .4 For wall panelling / wardrobes:
 - .1 White pine as existing, with a moisture content of at most 19%.
 - .5 For new storage benches:
 - .1 White pine as existing, with a moisture content of at most 19%.
 - .6 For support structures/reinforcements required for ground floor or first floor floors based on new openings and/or access hatches:
 - .1 Douglas fir as existing, with a moisture content of at most 15%.
 - .7 For nailing bottoms: Balsam fir (or Douglas fir under Architect's approval), with a moisture content of not more than 19%.
- .3 Accessories:
 - .1 Floor Nails: Compliant with CSA B111, common nails, galvanized, of the same length as the nails originally used to install the floor.
 - .2 Wood screws: stainless steel, of the type and size suitable for the application.
 - .3 Filler: compatible for floor application, indoor and outdoor use, sanding resistant.
 - .4 Glue: PVA wood glue as recommended for the type of application, for indoor and outdoor use, resistant to moisture and water, solvents, heat, mildew and sanding.
 - .4 Varnish: refer to section 09 91 23 - Painting
 - .5 Soap for cleaning before sanding:
 - .1 Accepted product: Soap as recommended by the paint manufacturer or approved equivalent
 - .6 Putty to fill cracks / holes in existing wood elements:
 - .1 Accepted Product: Elastic oil-based putty like Glazol by UGL or approved equivalent
 - .7 Shellac to seal knots in wood:
 - .1 Accepted product: Pure shellac as recommended by the paint manufacturer or approved equivalent.
 - .8 Liquid paint stripper: Liquid paint stripper as recommended by the manufacturer or approved equivalent.

**2.2 CABINET-MAKING
MATERIALS**

- .1 This article covers the materials and equipment required for the fixed furniture in the kitchen area and the counter in the employee's cabin. Refer to the kitchen plan.
- .2 Douglas fir plywood: in accordance with CSA 0121, classification "construction", category "standard".
- .3 Poplar plywood: in accordance with CSA 0153, classification "construction", category "standard".
- .4 High-pressure decorative laminates for flat surfaces, all exposed surfaces: in accordance with NEMA LD3 standard, ordinary quality, type VGL (for vertical surfaces), 1.5 mm thick, with decorative face.
- .5 Composite panels with decorative melamine coating:
 - .1 Thermofused melamine: meets NEMA LD3 standard, category VGL (for vertical surfaces). Highly resistant wear resistance: resistance to at least 400 cycles (minimum standard of abrasion resistance of high-pressure laminates).
 - .2 Impregnate the melamine resin applied by hot pressing on a particle board according to the thickness indicated in drawings.
 - .3 When both sides of the panel are visible, they shall must both be coated. When only one side of the support is coated, the back must have a back sheet non-decorative.
 - .4 Edge finishing: polyester self-adhesive edges to match the coating.
- .6 Nails and Jumpers: Compliant with CSA 8111.
- .7 Wood screws: stainless steel, of the type and size suitable for the application.
- .8 Laminate Adhesive: Recommended by the decorative laminate manufacturer, low VOC content.
 - .1 VOC emission tests shall be carried out in accordance with ASTM 02369 and ASTM 02832.
- .9 Counter with 18-gauge stainless steel surface.
 - .1 18/10 Chromium alloy.
 - .2 Double reinforcement under the counter.
 - .3 Backsplash with return as shown in the drawings.
 - .4 Single 90° flange with return under the counter.

PART 3 - EXECUTION

**3.1 EXISTING
CARPENTRY**

- GENERAL .

- 1 Unless otherwise indicated in the plans, all existing woodwork elements such as woodwork, closets, door frames, doors, interior window frames, loophole frames, etc., must be retained as is.
- .2 The Contractor is required to gently brush the various existing and retained wood elements to remove loose paint chips and flakes. Wipe surfaces with clean, dry cloths.

3.2 REMOVAL OF
WOOD FLOORS
AND WOOD
BASEBOARD

- .1 Remove sections of existing wooden floors on the ground floor of the Barracks as shown on the architectural plans.
- .2 Before removing them, mark each board and baseboard piece using a ballpoint pen on an adhesive tape attached to the board or baseboard piece. Use a type of adhesive tape that can be removed by simple cleaning with soap and water, without damaging the boards and without using solvents or other chemicals.
- .3 Create a photographic record of the floor sections to be opened and the baseboard sections to be removed in accordance with section 1.5 of this section.
- .4 Remove, taking care not to damage, existing boards from the floor sections to be opened. Do not cut boards, baseboards or mouldings.
- .5 After removal, perform final marking of boards and baseboard pieces. Write your number with a permanent marker underneath each board and on the back of each piece of baseboard, so that it is not visible after replacement. Ensure that the permanent marking is clearly legible.
- .6 As soon as the permanent marking of the boards and baseboard pieces is completed, remove the adhesive tapes used for their temporary marking and thoroughly clean, with soap and water, to remove any traces of adhesive from the surface of the boards and baseboards.

3.3 TEMPORARY
STORAGE

- .1 Temporarily store on site or inside buildings, under approval and according to the instructions of the Agency Representative, away from inclement weather, boards and sections of baseboards and mouldings removed and to be reinstalled.
- .2 Temporarily store on site or inside buildings, under the approval and instructions of the Agency Representative, away from inclement weather, wall panelling, and wardrobes removed and to be reinstalled.

- .3 All heritage wood elements must be stored in heated rooms and with a humidity level that allows a maximum of 17% humidity in the wood.
- 3.4 PUNCTUAL REPAIRS OF FLOORS AND OTHER WOODWORK
- .1 Perform spot repairs to the wooden slats of existing floors and other woodwork as shown on the plans.
 - .2 Prefer repair methods with minimal intervention. To this end, sample typical repair works as described in Article 1.4.6. of this section.
 - .3 Eliminate overflows. Cut or file any excess wood. Remove adhesive traces, then plane and sand to ensure flatness between the different elements.
 - .4 In the event that a punctual repair is not possible, provide for the replacement of the wooden part by a new part identical to the existing one (dimensions, profiles, species, assembly, etc.).
- 3.5 INSPECTION
- .1 Verification of conditions: Before proceeding with the installation of carpentry or cabinet making works, ensure that the condition of surfaces/supports previously installed under other sections or contracts is acceptable and allows the work to be carried out in accordance with the requirements.
 - .1 Perform a visual inspection of the surfaces/supports in the presence of the Professional.
 - .2 Inspect wooden parts for traces of fungi, mould, rot, deterioration or insect attack.
 - .3 Immediately inform the Agency Representative of any unacceptable conditions identified.
 - .4 Begin installation work only after correcting unacceptable conditions and receiving written approval from the Professional.
- 3.6 REINSTALLATION OF FLOOR SECTIONS
- .1 Secure the boards by nailing them into the tongue and groove joints to conceal the nails.
 - .2 Assemble the floor to ensure the necessary strength and rigidity.
 - .3 Replace the removed baseboard and moulding sections.
 - .4 After installing wood floors, baseboards and mouldings, **and before preparing and applying varnishes:**
 - .1 The Contractor shall notify the Architect and the Agency Representative so that the installation work can be inspected by them;
 - .2 Following inspection of the installation work and approval, the

Contractor shall proceed with the requested samples of preparation works;

- .3 Once the floor preparation method has been approved, the Contractor may proceed with the work sample for floor varnishing, and subsequently with the final varnishing.

3.7 SANDING

- .1 The Contractor shall erect a sandblasting workshop on site with all necessary equipment for salvaged and refurbished woodwork and all other woodworking work. Refer to section 01 52 00 – Construction Facilities.
- .2 Perform work samples for each element to be sandblasted as described in Article 1.4.6. of this section.
- .3 Throughout the sandblasting and varnishing of the elements, ensure that the identification of the element as described in paragraph 3.2 of this section is retained or re-entered.
- .4 Clean floor boards, baseboards and handrail sections with linseed oil soap on all sides. Rinse with water and let dry.
- .5 Strip, scrape or remove any loose or flaking paint and sand the contour to a smooth profile.
- .6 Sand with medium-grained paper on all sides for the first time. Remove all residues and sandblasting dust.
- .7 Repair holes and cracks with a joint compound suitable for the surface to be repaired.
- .8 Sand again with fine grained paper on all sides. Remove all residues and sandblasting dust.
- .9 Seal the knots with shellac.
- .10 Wipe a wet cloth in the direction of the wood grain, allow to dry and treat the surfaces according to the systems defined in section 09 91 23 – Interior Painting

3.8 MANUFACTURING - GENERAL

- .1 Manufacture millwork and cabinetry components in accordance with AWMAC standards and strictly to the dimensions and details specified in approved shop drawings and plans.
- .2 Obtain the required site dimensions before shaping the elements.
- .3 Unless otherwise specified, assembly shall be done mid-wooden, with grooves and tongues, and/or mortise and tenon, or dowels and blocks glued, in other cases, with joinery glue, concealed nails and screws. Drown the head of the finishing nails and drive the screws into countersunk holes, fill the holes with a tinted or natural filling paste, as appropriate, then sand until a smooth surface is

obtained, ready to finish.

- .4 All joints shall be located and concealed as far as possible, colours and patterns shall be continuous. Make joints to conceal withdrawals.
- .5 Perform perfectly butted, tight, flush joints. Bevel the edges slightly.
- .6 Fasteners, staples and nails shall be concealed. All accessories or structures attached to the partitioning shall be securely fastened to the nailing bottoms provided for in the partitioning or structure, to keep the surfaces uniform, plumb and level.

**3.9 MANUFACTURING -
FIXED FURNITURE
KITCHEN**

- .1 Manufacture fixed kitchen furniture in accordance with AWMAC standards and strictly to the dimensions and details specified in the approved kitchen plans and shop drawings.
- .2 Drown the head of the finishing nails and drive the screws into countersunk holes; fill the holes with a filling compound, then sand until a smooth surface is obtained, ready to finish.
- .3 Factory installation of door, shelf, drawer, etc. hardware. Unless otherwise specified, install the racks.
- .4 Unless otherwise specified, cabinet shelves shall be mounted on recessed adjustable racks.
- .5 Make the necessary openings for plumbing fixtures, attachments, accessories, electrical outlet boxes and other appliances.
- .6 When assembling the components to be delivered to the site in the factory, consider the difficulties of handling the structures and the free space in the openings of the buildings.
- .7 The components in which appliances, equipment and other materials are to be installed or which are to be attached to such appliances shall be of appropriate dimensions, obtained in advance.
- .8 The colours and patterns of the laminate sheets to be joined shall be uniform.
- .9 Laminate must be glued to the substrate in accordance with the adhesive manufacturer's instructions. It must perfectly fit the substrate and adhere to it over its entire surface. The sheets used must be up to 3,050 mm long and must not have joints within 600 mm of the opening for a sink.
- .10 The exposed edges of the substrate shall be covered with a strip of flat surface laminate. The visible edges must be chamfered uniformly at about 20 degrees. The edges of the laminate should

not be mitre-cut.

- .11 Clean drawers, cabinet interiors, exterior surfaces of cabinetry.
- .12 Remove excess glue from the surfaces of the substrate.

3.10 INSTALLATION

- .1 Accurately place and secure all structures and components of this section at a level and level and plumb. Position the joinery works and secure or anchor them firmly.
- .2 Compliance: Unless otherwise specified, perform cabinet work in accordance with the applicable quality standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC).
- .3 For fixed furniture in the kitchen area:
 - .1 Provide and install sturdy fasteners to secure wall-mounted cabinets.
 - .2 Use tightening bolts for work surface joints.
 - .3 Draw and cut the elements to the appropriate contours on adjacent walls so that they fit snugly into recesses and around pipes, columns, plumbing and electrical fixtures, electrical outlets or any other objects that protrude, pass through or penetrate.
 - .4 Apply a thin bead of sealant in the joint between the laminate backsplash and the adjacent wall covering.
 - .5 Adjust hardware parts accurately and secure them in accordance with the manufacturer's written instructions.
 - .6 Install laminate on site where indicated. Glue the laminate over the entire surface of the substrate. In the corners, make perfectly butted joints. Use full-size laminate sheets. Seal at approved locations only. Bevel the edges slightly.
 - .7 When installing the laminate on site, offset the joints of the face sheet from those of the substrate.

3.11 BRUSHING OF EXISTING MOULDINGS

- .1 For all wooden heritage elements that are not reconditioned in accordance with architectural plans, provide for brushing to remove scales from existing paint.
- .2 For brushing, use a soft bristle brush that will not leave a trace or damage heritage elements.
- .3 Wipe with a damp cloth to remove excess dust / remaining residue.

3.12 CLEANING

- .1 Cleaning during the work: carry out the cleaning work in accordance with section 01 74 11 - Cleaning.
 - .1 Leave the premises clean at the end of each work day.
- .2 Final cleaning: Dispose of excess materials/materials, waste, tools and equipment from the site in accordance with section 01 74 11 - Cleaning.

3.13 PROTECTION

- .1 Protect joinery and cabinetry from damage during construction and until final inspection.
- .2 Repair damage to adjacent materials and equipment caused by carpentry and cabinet making.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELEADED SECTIONS .1 Section 01 33 00 –Submittal procedures.
- 1.2 REFERENCES .1 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-51.34, Polyethylene Sheet Vapour Barrier for Buildings.
- 1.3 DOCUMENTS/
SAMPLES TO SUBMIT
FOR APPROVAL .1 Submit the required documents and samples in accordance with section 01 33 00 – Submittal procedures.
.2 Technical data sheet
.1 Submit the required data sheets, product specifications and manufacturer's documentation. The technical data sheets must indicate:
.1 product characteristics;
.2 performance criteria;
.3 constraints.
.3 Submit a copy of the Material Safety Data Sheets required under the Workplace Hazardous Materials Information System (WHMIS).
.4 Quality Assurance
.1 Instructions: Submit installation instructions provided by the manufacturer and comply with the manufacturer's requirements, recommendations and written specifications, including any technical bulletin, handling, storage and installation instructions and data sheet instructions.
- 1.4 SCOPE OF WORK .1 The work described in this section includes, but is not limited to:
.1 removal of the existing vapour barrier;
.2 cleaning large stones and debris in the basement;
.3 installation of the new vapour barrier;
.4 adding stone to the new polythene

PART 2 - PRODUCTS

- 2.1 SHEETS VAPOR BARRIER .1 Polyethylene films: conform to CAN/CGSB-51.34 standard, 0.15 mm thick.

- 2.2 ACCESSORIES .1 Joint sealing tape: airtight, pressure-tight adhesive tape of the type recommended by the vapour barrier manufacturer, 25 mm wide.

PARTIE 3 - EXECUTION

- 3.1 INSTALLATION
- .1 Clean the floor under the flooring beforehand by removing stones and debris from the existing vapour barrier. Remove the existing vapour barrier. Basement clean-up work is subject, like excavation work, to ongoing archaeological monitoring as defined in paragraph 1.6 of section 01 14 00 - Work Restrictions.
 - .2 Remove large stones and debris to level the ground before installing the new vapour barrier.
 - .3 Install the new vapour barrier on the cleaned floor, taking care to seal the sheets together. Do not seal the vapour barrier around the perimeter with existing foundations.
 - .4 Apply a uniform 25mm layer of crushed stone +/- 50mm thick over the entire surface of the new vapour barrier.
 - .5 To minimize the number of joints, use sheets of the largest possible size.
 - .6 Ensure that the leaves form a continuous barrier between them. If necessary, repair perforations and tears with a sealing tape before hiding the work under the stone.
- 3.2 CLEAN-UP
- .1 Perform cleaning work in accordance with section 01 74 11 - Cleaning.
 - .2 Once installation work is complete, remove excess materials and materials, waste, tools and equipment from the site.

FIN DE LA SECTION

PART 1 - GENERAL

- 1.1 SCOPE OF WORKS
- .1 The work described in this section includes supply, preparation and application of required sealants, including but not limited to :
 - .1 Weatherproofing sealing of the partitions, doors and interior windows of the barracks.
 - .2 Firestopping sealants and systems.
- 1.2 REFERENCES
- .1 Most recent editions and revision of following standards :
 - .1 Underwriters Laboratories of Canada (ULC).
 - .2 ULC-S115, Standard Method of Fire Tests of Firestop Systems.
 - .2 Most recent editions and revisions of NBC and NFC, federal versions.
- 1.3 RELATED SECTIONS
- .1 Section 08 50 00 – Windows.
 - .2 Section 09 21 99 – Gypsum board assemblies for minor works.
- 1.4 SUBMITTALS
- .1 Submit required documents in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit weatherproofing sealant data sheet prescribed in section 2.1 and firestop sealant data sheet prescribed in section 2.2.
 - .3 Provide range of color samples of sealant prescribed in section 2.1 to allow the Architect to choose the color to use.
 - .4 Firestop sealing : Included in this scope of work, all accessories and minor works that, although not all of which are indicated on drawings or specifications, when required for completion of work or in accordance with the intent and spirit of the contract, are to be performed. The execution of this work shall be in all respects in conformity with the quality standards mentioned in reference and/or recognised in industry and according to the best rules of the art.
- 1.5 PROJECT CONDITIONS
- .1 Follow the manufacturer's recommendations for temperature, relative humidity and moisture content of the substrate for the application and drying of sealants, including special instructions for their use. Apply joint sizes as prescribed.
 - .2 Apply sealant and support material at a minimum temperature of 5 degrees Celsius.
 - .3 Ensure that the product supplied is used within the time prescribed by the manufacturer following the date of manufacture.

1.6 ENVIRONMENTAL
REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

PART 2 - PRODUCTS

2.1 WEATHERPROOFING
SEALANT

- .1 Sealant for perimeter of existing doors and windows, inside side : one-component silicone sealant, balanced adhesive strength, medium modulus, class 35, type S, grade NS, in accordance with ASTM C 920, two colors to Architect's choice (provide 1 standard color and 1 custom color).
 - .1 Accepted product : Scellant Dow Corning CWS, or approved equivalent.

2.1 FIRESTOPPING
SEALANT

- .1 Flexible firestop acrylic sealant for fire rated joints and for sealing floor and wall assemblies.
 - .1 Accepted product : Hilti CP 606, or approved equivalent.
 - .2 Color : Red.
- .2 High-performance intumescent firestop sealant, water-based, for use with non-combustible items including steel and copper pipes, rigid steel conduits and metal electrical metallic tubings.
 - .1 Accepted product : Hilti FS-ONE MAX, or approved equivalent.
 - .2 Color : Red.
- .3 Firestop mortar or flexible firestop foam for small-sized and large-sized mixed penetrations.
 - .1 Accepted product : Hilti CP 637 and Hilti CP 660 (provide for handset with Hilti CFS-BL firestop block for large opening), or approved equivalent.
 - .2 Color : Red.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair work. Dry joint surfaces.
- .2 Before applying primer and sealant, mask adjacent surfaces needed using masking tape to prevent tarnish.
- .3 Ensure joint surfaces are dry, clean and frost free.

- .4 Prepare surfaces in accordance with manufacturer's directions.
- .5 Firestop sealing : Check size and condition of openings to be sealed to determine the thickness of material required and method of installation to be used. If no sealant matches a situation described in point 2.2, confirm the system to be used with the Architect before sealing the opening.

3.2 APPLICATION

- .1 Application of weatherproofing sealant
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 If necessary, apply a masking tape to the edge of the surfaces to be joined to achieve clean joints.
 - .3 Apply sealant in continuous beads, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .4 Apply sealant using gun with proper size nozzle.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .7 Cure sealant in accordance with sealant manufacturer's instructions.
- .2 Application of firestopping sealant
 - .1 Install fire and smoke barrier assembly materials and components in accordance with ULC requirements and manufacturer's instructions.
 - .2 Seal voids and holes around pipes or objects that pass through, in whole or in part, fireproofing assemblies, and also seal joints of assemblies, not crossed by pipes or objects, to ensure continuity of protection barrier and maintain integrity of firewall.
 - .3 Shape exposed surfaces or smooth them with a trowel until a neat finish is obtained.
 - .4 Remove any surplus sealant as soon as work is progressed and completed.

3.3 INSPECTION

- .1 Before concealing firestopping sealants and systems, advise the Architect that work is ready for inspection.

3.4 CLEANING

- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess sealant as work progresses and at the end of work. Remove excess product burrs from adjacent surfaces using recommended cleaning product.
- .3 Remove masking tape after initial set of sealant.

END OF SECTION

PART 1 - GENERAL

- | | | | |
|-----|------------------------------------|--|---|
| 1.1 | RELATED
SECTIONS | .1
.2 | Section 01 33 00 – Submittal Procedures.
Section 08 71 00 – Doors Hardware. |
| 1.2 | REFERENCES | .1
.1
.2
.1
.2
.3
.1 | Architectural Woodwork Manufacturers Association of
Canada (AWMAC)
.1 Architectural Woodwork Quality Standards Illustrated
.2 Canadian Standards Association (CSA)/CSA International
.1 CAN/CSA-O132.2, Wood Flush Doors.
.2 CAN/CSA-O141, Softwood Lumber.
.3 National Lumber Grading Authority (NLGA)
.1 NLGA, Classification Rules for Canadian Softwood
Lumber. |
| 1.3 | SCOPE OF WORK | .1
.1
.2 | The work described in this section includes, but is not limited
to, all materials, equipment, tools and labour required for:
.1 The manufacture, supply and installation of new
doors, similar to those still in place, as indicated on
architectural drawings.
.2 The Contractor and his subcontractor shall make the
necessary adjustments to the new doors and certify the
proper operation of all their mechanisms. |
| 1.4 | QUALITY CONTROL | .1
.2 | Shop Drawings: Submit shop drawings of the doors to be
reproduced indicating materials, fixing and installation
methods, assembly of components, location of hardware
parts to be reproduced and dimensions of components and
finished product.
.2 Reproduction of period doors shall be subject to the approval
of the Architect and the Agency representative. Allow 48
hours for inspection of the structure before final installation. |
| 1.5 | TRANSPORT, STORAGE
AND HANDLING | .1
.2
.3 | Transport, store and handle materials and equipment in
accordance with section 01 61 00 – Common Product
Requirements.
.2 Store or install doors in an enclosed space at controlled room
temperature and humidity.
.3 Once the necessary adjustments and cut-outs have been
completed, paint according to paint system #07 of section
09 91 23 – Interior Painting. |

- .4 The contractor is responsible for protecting the new door to protect it from scratches and contamination due to handling or other damage.
- 1.6 WARRANTY .1 The Contractor shall provide a written warranty that new wooden doors are warranted against peeling, discoloration of exterior and interior finishes, material defects, assembly and labour for a period of two (2) years from the date of provisional acceptance of the work, and that the adjustment, finishing and proper operation of the restored window hardware is warranted for a period of two (2) years from the date of provisional acceptance of the work.
- .2 The warranty shall be signed by the Contractor and the Specialized Contractor (Subcontractor) confirming that they are jointly and severally bound by this warranty.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 All materials shall comply with the standard in accordance with the requirements of the following articles.
- .2 Wood for the manufacture of new doors:
Eastern white pine, branded C.D. Select, kiln-dried, with a maximum moisture content of 7%, for painting finishes, with profiles and dimensions identical to the existing door elements to be reproduced.
- 2.2 FINISHING .1 All doors reproduced shall be painted in accordance with section 09 91 23 – Interior Painting.
- .2 The paint will be custom blue in colour as it exists. Provide a sample for approval according to section 09 91 23 – Interior Painting.
- 2.3 ACCESSORIES .1 Nails, screws, bolts and other fasteners: stainless steel, of dimensions appropriate for their intended use.
- 2.4 DOORS HARDWARE .1 The hardware of the new doors (hinges, handles and latches) shall be identical to the existing ones (refer to the 1969 plans in the appendix) and shall comply with the requirements of the section 05 50 00 – Metal Fabrication. Ensure optimal operation and adjustment of hardware components once installed

PART 3 - EXECUTION

- 3.1 FABRICATION
- .1 Manufacture wooden doors in accordance with the annex to the 1969 plans and the following requirements.
 - .2 Fabricate these square, plumb and precision structures with a maximum tolerance of ± 1.5 mm.
 - .3 Doors shall be mounted in such a way as to provide a neat, solid and tight fit.
 - .4 Reproduced hardware must be as efficient as possible and securely attached.
- 3.2 INSTALLATION
- .1 Install wooden doors in accordance with the following requirements.
 - .2 Have experienced workers install and adjust any work required by this specification and indicated in the architectural drawings, in accordance with the shop drawings reviewed and, if necessary, corrected.
 - .3 Install new level, square and plumb doors ensuring that they are not warped or twisted.
 - .4 Secure the doors to the frame with appropriate anchors using shims.
 - .5 Check the movement of all doors to ensure that they can move freely. Adjust the articulated parts so that they work smoothly.
 - .6 Install hardware parts as shown in approved drawings.
- 3.4 CLEANING
- .1 Cleaning during the work: carry out the cleaning work in accordance with section 01 74 11 - Cleaning.
 - .1 Leave the premises clean at the end of each work day.
 - .2 Remove all traces of primer and caulking and of waterproofing.
 - .3 Clean the glazing with a non-abrasive product.
 - .2 Final cleaning: Dispose of excess materials/equipment, waste, tools and equipment from the site in accordance with section 01 74 11 - Cleaning.
- 3.4 PROTECTION
- .1 Protect installed equipment and components from damage during construction.
 - .2 The Contractor shall repair at its own expense all damage to adjacent materials and equipment caused by the installation of the doors.

END OF SECTION

PART 1 - GENERAL

1.1. RELATED SECTIONS

- .1 Section 01 61 00 General product requirements.
- .2 Section 08 71 00 Door hardware.
- .3 Section 08 80 50 Glazing.
- .4 Section 09 21 99 Partitions – minor works
- .5 Section 09 91 23 Painting - interior work

1.2. RÉFÉRENCES

- .1 American Society for Testing and Materials (ASTM International).
 - .1 ASTM A 653/A653M-15e1, Standard specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-1.181-99, Zinc Rich Coating, Prepared Organic.
- .3 Canadian Standards Association (CSA International).
 - .1 G40.20-F13/G40.21-F13, General requirements for rolled or welded construction / structural steel
 - .2 CSA W59-13, Welded steel construction (arc welding).
 - .3 CAN/CSA-A440.4-07(C2016), Window and door installation and skylights
- .4 Canadian Steel Door Manufacturers Association (CSDMA).
 - .1 CSDMA, Specifications for Commercial Steel Doors and Frames, 1990.
 - .2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 1990.
- .5 National Fire Protection Association (NFPA).
 - .1 NFPA 80-2016, Standard for Fire Doors and Fire Windows.
 - .2 NFPA 252-2017, Standard Methods of Fire Tests of Door Assemblies.
- .6 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN/ULC-S104-15, Standard method for fire tests of door assemblies
 - .2 CAN/ULC-S105 :2016, Standard specification for fire door frames meeting the performance required by CAN/ULC-S104

1.3. SHOP DRAWINGS

- .1 Submit the required shop drawings in accordance with section 01 33 00 - Documents and samples to be submitted
- .2 Shop drawings must indicate each type of proposed frame, the nature of the materials used, the thickness of the bare metal, the reinforcement parts, the location of the anchors and visible fasteners, the strength level and the types of finishing coatings.
- .3 Shop drawings must include a list of doors with markings and numbers corresponding to those used on the drawings and on the list of doors.

1.4. SAMPLES

- .1 Submit the required samples in accordance with section 01 33 00 - Documents and samples to be submitted.
- .2 Upon request from the Professional, submit, as a sample, a 300 mm x 300 mm corner for each type of frame proposed. The sample must show a cut-out to receive a hinge.

1.5. WARRANTY

- .1 For the work in this section 08 11 00, the warranty period of twelve (12) months has been extended to two (2) years. Provide a written and signed document certifying steel doors and frames against any deformation due to anticipated load, corrosion, subsidence, edge cracking and joint defects, for a period of two (2) years from the date of issuance of the certificate of substantial completion.

PART 2 - PRODUCTS

2.1. INTERIOR WELDED STEEL FRAME

- .1 Frame materials: 1.52mm cold rolled steel (16 gauge) in accordance with ASTM A653M zinc-treated steel.
- .2 Steel wall anchors at least 1.14mm (18 gauge) thick and steel floor anchors at least 1.52mm (16 gauge) thick. The wall anchorage devices must be placed immediately above or below each hinge reinforcement on the hinge post and directly opposite on the lock post. Add an anchor to the floor for each jamb. They must be adapted to the type of wall construction.
- .3 Hinge reinforcements: 3.8mm (10 gauge) rolled steel, perforated and threaded. 1.52mm (16 gauge) thick continuous steel hinge reinforcements, full length. Striker reinforcements: 1.52mm embossed and threaded steel case (16 gauge), 1.9mm steel door closer reinforcement (14 gauge).
- .4 The reinforcement of the upper hinge will be of a fortified type for intensive use.
- .5 Lock and hinge reinforcements: protected with lock casings 1mm thick rolled steel protection in the walls of masonry.
- .6 Shock absorber: rubber shock absorber inserted by pressure into pre-drilled holes, door leaf frame: 3 shock absorbers on strike plate jamb, door frame with two leaves: 2 shock absorbers at the head.
- .7 The frames must be manufactured in accordance with the standards of the CSDMA.
- .8 The frames must be manufactured according to the maximum front dimensions and the indicated profiles.

- .9 Frames must be cut, reinforced, drilled as required to receive the necessary mortised and jugged hardware parts, using templates provided by the supplier of the finishing hardware parts. The frames must be reinforced if necessary to accommodate the hardware parts to be surface mounted.
- .10 Mortises must be protected with steel mortise covers.
- .11 Unless otherwise specified, the fasteners must be concealed.
- .12 The frames must be retouched with primer paint where the zinc coating has been damaged during manufacture.
- .13 Studs with a rabbet height of 1520 mm or less must be equipped with 2 anchors; one additional anchor must be provided for each additional 760 mm segment or segment portion.
- .14 The acoustically insulated door frames will be filled with sound-absorbing wool during on-site assembly. Refer to the materials of the acoustic partitions in section 09 21 99 – Gypsum board assemblies for minor works.

**2.2. INTERIOR STEEL DOORS
WITH OR WITHOUT FIRE
RESISTANCE**

- .1 Door materials: Metal panels made of 1.14mm (18 gauge) cold-rolled steel sheet, zinc-treated and levelled with a tensioner in accordance with ASTM A653M.
- .2 The sides of the door will have a 3mm x 51mm (1/8" x 2") bevel
- .3 The interior of the non-acoustically insulated steel doors will consist of a honeycomb core.
- .4 Provide a 1.52mm (16 gauge) U-shaped steel profile welded by electrical resistance at the top and bottom of the door every 152mm (6") center to center.
- .5 Provide a 1.52mm (16 gauge) by 155mm (6") high steel door closer reinforcement in the shape of a "U" filled with insulation of the same type as that of the door, installed in the top of the door.
- .6 The reinforcement of the upper hinge will be of a fortified type for intensive use.
- .7 Hinge reinforcements: 3.8mm (10 gauge) rolled steel, perforated and threaded.
- .8 Lock reinforcement: 1.14 gauge steel (18 gauge) embossed and threaded.
- .9 Glazing beads: same material as the doors, 1.52mm thick (16 gauge).

10. Fire approval labels: fixed with metal rivets.
- .11 Doors must be flat, hinged and have an opening for the installation of glazing or louvres, as shown on the plans.
- .12 Doors shall be of special construction, proven and/or designed to be part of a fully functional assembly consisting of a door, frame, gaskets and hardware parts, in accordance with the requirements of ASTM E 330.
- .13 Doors must be cut, reinforced and pre-drilled as required to accommodate mortised and gabarized hardware.
- .14 Doors must be retouched with primer paint where the zinc coating has been damaged during manufacturing.
- .15 Approved fire doors must be provided for openings to be closed by elements with a fire resistance rating, according to the list or nomenclature established. Products must be tested in accordance with ASTM E 152 standards, be certified by a nationally recognized organization providing factory inspection service and be manufactured in accordance with the details specified in the monitoring procedures and factory inspection manuals published by the certification organization and provided to the different manufacturers.
- .16 The interior of the acoustic doors shall be made of soundproofing material meeting the ITS specifications of the door chart, sheet A900 of the architectural plans.

2.3. WELDED FRAMES

- .1 Welding must be performed in accordance with CSA W59.
- .2 The frame elements must be precisely assembled, mechanically or mitre-jointed, and then firmly welded together, with the weld being placed on the inner wall of the profiles.
- .3 The butt joints between the elements of the mullions, transom rails, central rails and sills and supports must be precisely counter-profiled.
- .4 Welded joints and corners must be ground to a flat surface, filled with metallic filler and then sanded to a smooth and uniform finish.
- .5 The floor anchors must be securely fastened inside each of the studs.
- .6 Two temporary spacers must be welded to each of the frames to keep them straight during transport.

PART 3 - EXECUTION

3.1. FRAME INSTALLATION

- .1 Unless otherwise specified, install fire doors and fireproof frames with the appropriate certification label in accordance with NFPA 80.

- .2 Install doors and frames in accordance with the CSDMA installation guide.
- .3 Install the elements straight, square, levelled and at the appropriate height.
- .4 Attach the anchors to the adjacent components.
- .5 Securely hold the frames in position with bracing until they are installed. Install temporary wooden spacers horizontally one-third of the way through the opening to maintain the width of the frames constant. Install a vertical forestay under the top rail in the centre of the bay when the width of the bay is greater than 1200 mm. Remove the wooden spacers once the frames are in place.
- .6 Leave the necessary clearances for bending to prevent the loads exerted by the framework from being transmitted to the frames.
- .7 Caulk the perimeter of the frames between them and adjacent elements.

3.2. DOOR INSTALLATION

- .1 Install doors and hardware parts using the templates provided, in accordance with the manufacturer's instructions and the requirements of section 08 71 00 - Door Hardware.
- .2 For fire doors, provide a uniform distance between the doors and frame studs and between the doors and the finished floor or threshold, as follows:
 - .1 hinge side: 1.0 mm;
 - .2 lock side and top rail: 1.5 mm;
 - .3 finished floor and alone: 13mm.
- .3 Adjust moving parts so that the doors operate smoothly.
- .4 Install the louvers if applicable to the drawings.

3.3. TOUCH-UPS EXECUTION

- .1 Retouch surfaces that have been damaged during installation with a primer paint.
- .2 Cover the exposed surface of the frame anchorages and surfaces showing imperfections of metal filler, then sand to a smooth, uniform finish.

3.4. GLAZING INSTALLATION

- .1 Install glazing according to section 08 80 50 - Glazing.

FIN DE LA SECTION

PART 1 – GENERAL

1.1. RELATED SECTIONS

- .1 Section 01 33 00 - Submittal procedures
- .2 Section 01 61 00 - Common product requirements
- .3 Section 08 71 00 - Doors hardware

1.2. REFERENCES

- .1 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
- .2 Aluminum Association (AA).
 - .1 DAF 45-03(R2009), Designation System for Aluminum Finishes.

1.3. SUBMITTALS

- .1 Product Data :
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings :
 - .1 Submit shop drawings in accordance with section 01 33 00 - Submittal Procedures.
 - .2 Drawings must indicate each type of door, sizes, hardware locations, rail shapes and materials.
 - .3 Submit complete list of hardware for safety glass doors.
- .3 Manufacturer's Instructions :
 - .1 Submit installation instructions provided by the manufacturer.
 - .2 Provide instructions for operation and maintenance of doors and hardware parts.

1.4. TRANSPORTATION, STORAGE ET HANDLING

- .1 Transport, store and handle equipment and materials in accordance with section 01 61 00 – Common product requirements.
- .2 Wrap the finished doors and protect their finish until installation.

PART 2 - PRODUCTS

2.1. DOORS

- .1 Model :
 - .1 Double swivel glass doors and continuous rails system ties, model « Prel-Gard de Prelco » or approved equivalent, of dimensions as shown in the drawings.
- .2 Glass
 - .1 Clear safety glass in accordance with CAN/CGSB-12.1, of 12 mm thickness.
 - .1 Type : 2, tempered ;
 - .2 Category : B, floating ;
 - .3 Class : I.
- .3 Aluminium continuous rails :
 - .1 Top and bottom aluminium rails, square model, de 92 mm high.
 - .2 Aluminium alloy AA6063-T5 and clear anodic finish no. 101 in accordance with designation AA-M12-C22-A31.

2.2. FABRICATION

- .1 Cut glass to required size, finish edges as detailed, provide cutouts for hardware and other attachments before heat treatment.
- .2 Attach top and bottom rails and hardware before shipping doors to job site.

PART 3 - EXECUTION

3.1. MANUFACTURER'S INSTRUCTIONS

- .1 Compliance : comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2. INSTALLATION

- .1 Install doors and hardware in accordance with manufacturer's printed instructions.
- .2 Adjust operable parts for correct function.

3.3. DOORS ADJUSTMENT

- .1 Just prior to completion of construction work, readjust the doors and their hardware parts to ensure they are working properly.

3.4. CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean aluminum with damp rag and approved non-abrasive cleaner in accordance with manufacture's instructions.
- .3 Clean glass and glazing materials with approved non-abrasive cleaner in accordance with manufacture's instructions.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

FIN DE LA SECTION

PART 1 - GENERAL

- 1.1 SCOPE OF WORK
- .1 The work described in this section includes, but is not limited to, all materials, equipment, tools and labor required to perform the:
 - .1 Restoration of existing wooden windows as indicated in the architectural drawings identified as inoperable, including scraping, sanding, priming and painting of all the window's components, replacement of their missing or rotten muntin bars, adjustment or replacement as needed of their hardware (see appendix "Survey file for the restoration of wooden windows") noting window's defect in the summer of 2018)
 - .2 Replacement of missing, broken or cracked window panes glazing from existing wooden windows.
 - .3 Replacement of the seventeen (17) exterior screens to the second floor windows equipped by such, including the removal of their existing screens, and the supply and installation of new exterior screens.
 - .4 Fabrication, supply and installation of new sliding window of gunsplits, similar to existing ones still in place, where they are missing, as indicated in the architectural drawings.
 - .2 L'Entrepreneur et son sous-traitant effectueront les ajustements nécessaires des fenêtres existantes et certifieront le bon fonctionnement de tous leurs mécanismes.
 - .3 After the restoration of the windows' wood elements, and before the application of the primer and paint, Contractor will notify the Consultant so that the wood elements' restoration works may be inspected by him.
- 1.2 RELATED SECTIONS
- .1 Section 08 70 00 – Windows Hardware.
 - .2 Section 08 80 50 – Glazing.
 - .3 Section 09 91 23 – Painting – interior work.
- 1.3 REFERENCES
- .1 Canadian Standards Association (CSA)
 - .1 CAN/CSA A440-F00/A440.1 C2005. A440 – Windows / Special Publication A440.1-00 – User Selection Guide to CSA Standard A440-00 – Windows
- 1.4 DOCUMENTS/SAMPLES TO SUBMIT FOR APPROVAL
- .1 Submit required documents and samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Shop Drawings: Submit shop drawings of the following items to be replaced:

- .1 Sliding windows of gun slits;
- .2 wooden frames exterior screens.
- .3 Samples
 - .1 Submit for approval two (2) 200 mm length samples for each muntin bars types required for the existing window repairs.
 - .2 The samples must faithfully reproduce the profile of the original parts they are to replace
- .4 Samples of works:
 - .1 Perform work samples in accordance with section 01 33 00 – Submittal Procedures.
 - .2 Provide the following samples of works:
 - .1 One (1) example of each repair required according to the appendix "Survey file for the restoration of wooden windows".
 - .2 Replacement of one (1) exterior screen by drink;
 - .3 One (1) reproduction of a new window sliding loopholes.
 - .4 At the Architect's request, carry out all other work samples at the locations indicated by the Architect.
 - .3 Allow 48 hours for inspection of the work sample by the Agency representative before starting the works.
 - .4 Once accepted, the work sample shall constitute the minimum standard to be met for product quality and implementation for similar work in painting. The sample of work may be part of the final work.

1.5 WARRANTY

- .1 Contractor will provide a written warranty that the restored windows and new wood windows are guaranteed against peeling, exterior and interior finishes discoloration, defects in materials, assemblies and labor for a period of two (2) years from the date of the Provisional Acceptance of the works, and that the fit, finish and proper operation of the restored window hardware is warranted for a period of two (2) years from the date of the provisional acceptance of works
- .2 The warranty must be signed by the Contractor and by the specialized Contractor (subcontractor) confirming that they are jointly bound and in solidarity with each other by this warranty.

PART 2 - PRODUCTS**2.1 MATERIALS**

- .1 All materials must comply with CSA A440/A440.1 and the requirements of the following articles.
- .2 Wood for repairs and for the manufacture of new windows: eastern white pine, marked with Select Grade C.D, oven-dried, with

maximum moisture content of 7%, for a painted ready finish, profiles and dimensions identical to the elements of the removed windows to be replaced and existing windows to restore.

2.2 WOODEN WINDOWS

- .1 New windows and all new components of restored windows will be similar in size, appearance and operation to existing windows.
- .2 Window glazing: in accordance with Section 08 80 50 – Glazing

2.3 SCREENS

- .1 New exterior screens and all their components will be similar in size and appearance to existing exterior screens they are replacing.

2.4 FINISH

- .1 All exterior and interior elements of windows and wood frames (restored windows, new windows and exterior screens) will be painted in accordance with Section 09 03 61 – Historic Repainting – Exterior Surfaces.
- .2 The paint color will be white as the existing one. Provide a sample for approbation in accordance with Section 09 91 23 – Painting – Interior work.

2.5 ACCESSORIES

- .1 Nails, screws, bolts and other fasteners: stainless steel, of appropriate dimensions for the purpose for which they are intended.

2.6 WINDOW HARDWARE

- .1 Window hardware to be restored must be removed to allow stripping and painting of windows.
- .2 Removed hardware (hinges and latches) condition must be inspected. Hardware will be refurbished (repaired, lubricated, adjusted, cleaned) in accordance with Section 08 70 00 – Windows Hardware, before being reinstalled. Any item that is too damaged to be repaired must be replaced to identical.
- .3 All retained window hardware shall be refurbished (repaired, lubricated, adjusted, cleaned, etc.) and reinstalled in accordance with Section 08 70 00 – Windows Hardware, once new window painting is dry. Ensure optimal operation and adjustment of hardware once installed.
- .4 New window hardware (hinges and latches) shall be identical to the existing hardware and conform to the requirements of Section 08 70 00 – Windows Hardware. Ensure optimal operation and adjustment of hardware once installed.

- 2.7 CAULKING .1 Interior caulking of wooden windows will be done using sealant, in accordance to Section 07 92 00 – Joint Sealants.

PART 3 - EXECUTION

- 3.1 FABRICATION .1 Fabricate windows and wood exterior screens in accordance with the requirements of CSA A440/A440.1 and the following requirements.
- .2 Fabricate true, plumb and with precision with maximum tolerance of ± 1.5 mm.
- .3 Frames and screens shall be assembled to form a neat and tight joint, solid and well fitted.
- .4 Hardware must be highly efficient and securely fastened, whether existing restored or new.
- 3.2 WINDOW RESTAURATION .1 Carefully remove windows indicated on the architectural drawings as having an operation problem.
- .2 Remove all hardware (hinges and latches) from removed windows.
- .3 Clean each removed hardware, inspect condition and refurbish (repair, lubricate, adjust) as required, as specified in Section 08 70 00 – Windows Hardware.
- .4 If certain hardware parts appear to be too damaged to obtain a satisfactory result by reinstalling them, notify the Agency Representative and await instructions.
- .5 If any hardware is to be replaced, fabricate new replacement hardware, as specified in Section 08 70 00 – Windows Hardware.
- .6 Prepare removed windows and their frames according to the procedures described in section 09 91 23 - Interior Painting before painting.
- .7 Following stripping, remove any rotted parts from window frames.
- .8 Replace removed wood elements and missing elements of existing parts (including muntin bars) with new pieces of wood of the same profile and dimensions as existing parts.
- .9 Ensure fasteners are secure for all elements. Consolidate as needed.
- .10 Replace, if necessary, missing or broken glazing pane in

accordance with Section 08 80 50 - Glazing.

- .11 After repairs have been completed, paint the windows in accordance with Section 09 91 23 – Painting – Interior work.
- .12 Allow windows to dry for a minimum of forty-eight (48) hours after painting before reinstalling hardware.
- .13 Reinstall original hinges and latches on windows or install new replacement hardware if required. Make sure all shutters work flexibly.
- .14 Scrape existing interior sealant joints to allow the installation of new sealant joints, in accordance with the Section 07 92 00 – Joint Sealants.

3.3 INSTALLATION

- .1 Install wood windows in accordance with the requirements of CSA A440 A440.1 and the following requirements.
- .2 Install and adjust by experienced workers any work prescribed in this specification and indicated on the architectural drawings, in accordance with the revised and, if necessary, corrected shop drawings.
- .3 Install new and restored windows with true, square and plumb, making sure they are free from warping and twisting.
- .4 Using shims, securely fasten windows to framing with appropriate anchors.
- .5 Check all moving shutters to ensure they can move freely. Adjust articulated parts to work smoothly.

3.4 CLEANING

- .1 Cleaning during works: perform cleaning works in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave the premises clean at the end of each working day.
 - .2 Remove all traces of primer and caulking and sealing.
 - .3 Clean glazing with a non-abrasive product.
- .2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site, in accordance with Section 01 74 11 - Cleaning.

3.5 PROTECTION

- .1 Protect installed equipment and components from damage during construction.
- .2 Contractor shall repair at his own expense all damage to adjacent materials and equipment caused by the windows' installation.

FORT LENNOX NHS

Men's Barrack Conservation Project
Client project no. PRO-1396
Riopel project no. APC-2727

WOODEN WINDOWS

08 50 00

Page **6** of **6**

END OF SECTION

PART 1 - GENERAL

- 1.1 SCOPE OF WORK
- The work described in this section includes but is not limited to:
- .1 Operation inspection, adjustment, cleaning, refurbishing and finishing of existing hardware parts of all windows.
 - .2 Fabrication and installation of new hardware identical to the existing parts to replace those that are missing or too damaged to be repaired.
- 1.2 RELATED SECTION
- .1 Section 08 50 00 – Wooden Windows.
- 1.3 SAMPLES
- .1 All existing hardware types that may need to be replaced are available on site and can be used as a model when making new replacement parts.
- 1.4 SHOP DRAWINGS
- .1 Submit shop drawings for new hardware to be manufactured in accordance with Section 01 33 00 - Submittal Procedures.
- 1.5 QUALITY CONTROL
- .1 The Contractor is responsible for the selection of its subcontractors and must ensure that the subcontractor has the experience required for the type of work required under the mandate. In the event of a problem, Parks Canada reserves the right to request the subcontractor to provide proof of a minimum of 5 years in the field of heritage hardware forge.

PART 2 - PRODUCTS

- 2.1 FASTENING
- .1 Provide all necessary fasteners for proper and satisfactory operation of hardware, as indicated on drawings and in accordance with samples.
 - .2 Visible fasteners to match finished hardware.
 - .3 Nails will be of forged type with rosacea head.
- 2.2 WINDOW HARDWARE
- .1 The new window hardware will be fabricated in accordance with the details included in the reference drawings 'Serrurerie des fenêtres' from 1979.

PART 3 - EXECUTION

WINDOW HARDWARE

- 3.1 INSTALLATION
- .1 Works intended to receive hardware must be prepared, drilled, cut or otherwise worked in a precise and clean manner, without their finish being damaged and without their sturdiness and rigidity being compromised.
 - .2 Hardware must operate silently, easily and without undue effort. Hardware must be rigid and have a constant alignment. Screws, bolts and other hardware fasteners finish must match the finish of the existing article.
 - .3 The nails used to attach the bolts to the frames shall be riveted behind the frames.
- 3.2 FABRICATION
- .1 All wrought iron parts will be fabricated using traditional forging techniques. All cuts will be executed with a hot scissor and all the holes will be punched.
 - .2 No electrical or other welding on visible or hidden parts will be accepted.
 - .3 Hardware parts will be fabricated according to the dimensions and profiles shown in the reference drawings and according to the samples provided.
 - .4 The latches' assemblies must be riveted behind the plates.
- 3.3 CLEANING OF EXISTING HARDWARE
- .1 Contractor will submit to Architect a method by which the cleaning of existing hardware parts will be carried out and will submit a mock-up from the existing parts provided.
 - .2 Straighten, if required, supplied parts.
 - .3 Protect surfaces to be cleaned and prevent surface contamination from salts, acids, alkalis and other corrosive chemicals, grease, oil and solvents.
- 3.4 FINISH
- .1 Formula for ironwork processing:
 - a) Six (6) parts of pure linseed oil or simple boiled linseed oil, heated for 20 minutes.
 - b) Four (4) parts of turpentine.
 - c) Four (4) ounces of alum (powder).
 - d) One (1) small four-ounce natural resin jar dilute in alcohol. Articles c) and d) are available in pharmacies.
 - .2 Method:
 - .1 Prepare mixing by first using only three (3) of the four parts of turpentine.
 - .2 Heat the mixture until it fumes and then add the last part of turpentine.

WINDOW HARDWARE

- .3 Allow to cool for 24 hours.
- .4 Simply dip the object to be treated into the cooled mixture.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
 - .1 Section 01 33 00 – Submittal procedures.
 - .2 Section 01 61 00 – Common product requirements
 - .3 Section 01 78 00 – Closeout submittals
 - .4 Section 08 11 00 – Metal doors and frames
 - .5 Section 08 42 26.33 – Swinging all glass entrances

- 1.2 REFERENCES
 - .1 American national standards institute (ANSI) :
 - .1 ANSI A156.1 Standard for Butts and Hinges
 - .2 ANSI A156.2 Bored and Preassembled Locks and Latches
 - .3 ANSI A156.3 Exit Devices.
 - .4 ANSI A156.4 Door Controls – Closers
 - .5 ANSI A156.5 Auxiliary Locks and Associated Products.
 - .6 ANSI A156.6 Architectural Door Trim
 - .7 ANSI A156.8 Door Controls - Overhead Stops and Holders
 - .8 ANSI A156.10 Power Operated Pedestrian Doors.
 - .9 ANSI A156.12 Interconnected Locks and Latches.
 - .10 ANSI A156.13 Mortise Locks and Latches Series 1000
 - .11 ANSI A156.14 Sliding and Folding Door Hardware.
 - .12 ANSI A156.15 Release Devices - Closer Holder, Electromagnetic and Electromechanical.
 - .13 ANSI A156.16 Auxiliary Hardware
 - .14 ANSI A156.17 Self-closing Hinges and Pivots.
 - .15 ANSI A156.18 Materials and Finishes.
 - .16 ANSI A156.19 Power Assist and Low Energy Power - Operated Doors.
 - .17 ANSI A156.20 Strap and Tee Hinges and Hasps.
 - .2 The standard position of hardware parts must meet the requirements of the Canadian Metric Conversion Guide for Steel Frames and Doors (Modular Construction) prepared by the Canadian Steel Frame and Door Manufacturers' Association.

- 1.3 DOCUMENTS / SAMPLES TO SUBMIT FOR APPROVAL
 - .1 Provide the maintenance sheet, parts list and manufacturer's instructions for each type of door closer, lock, door stopper and emergency exit accessories and attach them to the maintenance manual referred to in the article relating to the general conditions.
 - .2 Train maintenance personnel in cleaning and caring for hardware parts. Plan a training and information session of at least two (2) hours.
 - .3 In accordance with the requirements of section 01 33 00 –

- Submittal Procedures to be submitted, submit one (1) sample of each type of hardware used.
- .4 Label each sample with the appropriate quotation paragraph, number, trade name, finish and supplier's signature.
 - .5 Samples, once properly labelled, will be submitted to the Architect for verification and approval.
 - .6 Submit samples at least 15 days before the hardware slip is presented.
 - .7 Samples will be kept at the site office for the duration of the work and will be given to the supplier once the work is completed.
 - .8 Provide shop drawings of "custom" and heritage hardware parts for Architect's approval. Shop drawings must indicate the dimensions, materials, expected movement of the part, welds, installation techniques and intended location.
- 1.4 QUALITY ASSURANCE AND WARRANTY
- .1 Only authorized distributors of specified products with a place of business in Quebec are eligible to bid on this project.
 - .2 The firm selected to carry out the supply of this section shall have in its employ an AHC consultant, an active and in good standing member of the DHI Quebec Chapter. This AHC certified consultant will be responsible for the execution of the project and for coordinating it with the various stakeholders throughout the duration of the work.
 - .3 Use hardware parts approved and labelled to ULC standards for fire doors and emergency exits.
- 1.5 TRANSPORT, STORAGE AND HANDLING
- .1 Store finishing hardware parts in a clean, dry, locked room.
 - .2 Identify each piece of hardware with the number of the door and the floor on which the door is installed.
- 1.6 DOCUMENTS / ITEMS TO BE DELIVERED AT THE COMPLETION OF WORK
- .1 Provide the necessary sets of English keys for door closers, locks and accessories for emergency exits.
 - .2 Submit the required documents/elements in accordance with section 01 78 00 – Closeout Submittals.
 - .3 Operations and Maintenance Sheets: Provide instructions for the use and maintenance of door hardware, which will be incorporated

into the maintenance manual.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

Hinges	MCKINNEY
Locks	SARGENT
Door Closer	SARGENT
Protection Plates	TRIMCO
Bumpers	TRIMCO
Floor Door Closer	RIXSON
Dropout Thresholds	LEGACY
Waterproofing linings	LEGACY
Miscellaneous	SEE SPECIFICATIONS

2.2 REQUIREMENTS

- .1 Except in the special cases prescribed in the hardware slip, all hardware required for this work shall be of a robust and institutional type. For the finish refer to the list.
- .2 Submit a list of hardware parts in electronic format in accordance with the requirements of the hardware table and the hardware slip in section 5.0. The hardware list shall include for coordination purposes at installation the numerical and written descriptions of each item as well as any notes written on the hardware slip, all as specified in this document.
- .3 The hardware slip is provided as a guide to establish the type, function, quality and minimum weight of the required items. It should not be interpreted as a quantity list. The contractor must therefore check the list with the plans and provide any additional hardware items not on this list that are required to complete the door installation work.
- .4 Fabricate hardware parts in accordance with the applicable ANSI standard.
- .5 In the absence of an ANSI standard, the hardware part must be able to perform its function and be of recognized use.
- .6 Any request for acceptance of an equivalent product shall be submitted in writing to the Architect at least 10 working days prior to the bid closing date. This must be accompanied by the technical data sheet of the specified product and the technical data sheet of the proposed equivalent product, all submitted in a clear and legible table which highlights the main characteristics. The

architect undertakes to reply in writing at least 5 working days before the closing date of the tenders. Only an equivalent product is considered, a product with the same mechanical and functional characteristics, meeting the same ANSI/BHMA standard, with a guarantee equal to or greater than the specified product and having no impact on the owner's maintenance stocks and willingness to standardize his installations. Any request for acceptance that does not meet these criteria will be considered null and void and inadmissible.

2.3 FIXING PARTS

- .1 Provide screws, bolts, expandable buffers and other fastening devices necessary for the satisfactory securing and proper functioning of hardware parts.
- .2 Exposed fasteners must match the finish of the hardware parts.
- .3 Use fasteners made of material compatible with the material through which they pass.
- .4 Even if optionally provided by manufacturers, self-tapping and/or self-drilling screws will not be tolerated for the installation of hinges, panic locks, door closers and locking arms. All these items must be installed with the screws provided by the manufacturer and will have been previously machined in the doors and frames.

2.4 PROTECTION AGAINST VANDALISM

- .1 Even if not specifically described in this section or indicated on the hardware slip, provide protective parts such as latch protectors, hinge with non-removable plug, etc., for all exterior doors.

2.5 REQUIREMENTS

- .1 All locks and cylinders shall be subject to the existing master key system to be defined with the client. Provide (5) copies of each master key, regardless of its level.
- .2 Provide five (5) copies of each of the keys of each of the locks included in this contract including the control keys for installing and removing the removable cylinders.
- .3 Stamp code numbers on keys and barrels (hidden).
- .4 Provide and install temporary cylinders and keys during construction work. Provide the control keys required for the installation of construction and permanent cores.
- .5 Provide the necessary assistance to the owner to establish the key coding charter. Submit it for approval by the architect and the owner.

.1 Group 01

Existing exit door or door leading to the exit			
Qty	Description	Finish	Manufacturer
1	Custom door retention - by wrought metal For installation in wooden slat floors: refer to detail 16 of sheet A500		
OR			
1	Custom door retention - by wrought metal For installation in concrete-stone floors: refer to detail 11 of sheet A500		
<ul style="list-style-type: none"> Important note: keep all existing heritage hardware on the doors as is. Prefer installation in wooden slats. If this application is not possible depending on the location of the door, use the retention in the stone concrete. 			

.2 Group 02

Electromechanical room, janitorial, sprinkler room			
Qty	Description	Finish	Manufacturer
3	Hinges TA2714 114MM X 101MM NRP	652	MCKINNEY
1	Deposit function lock WBS-8204 LNJ	630	SARGENT
1	Door closer x stop MC-1431-CPS	689	SARGENT
1	High security mortise cylinder certified UL437 x existing key system	626	TO CONFIRM
1	Protective plate K0050-CSK 203mm x 865mm	630	TRIMCO
1	Self-adhesive seal 588 1S-BK x 17'	BLACK	LEGACY
1	Built-in dropout threshold 7553MA x 915mm		LEGACY
<ul style="list-style-type: none"> Important note: fire resistance door 45 min 			

.3 Group 03

Disabled toilets cabin door			
Qty	Description	Finish	Manufacturer
3	Hinges TA2714 114MM X 101MM NRP	652	MCKINNEY
1	Privacy function lock WBS-8265 LNJ	630	SARGENT
1	Hook 3072	630	TRIMCO
1	Door closer x stop DA-MC-1431-CPS	689	SARGENT
1	Protective plate K0050-CSK 203mm x 865mm	630	TRIMCO
1	Self-adhesive seal 588 1S-BK x 17'	BLACK	LEGACY
1	Built-in dropout threshold 7553MA x 915mm		LEGACY

.4 Group 04

Standard toilet cabin door			
Qty	Description	Finish	Manufacturer
1	Spring hinge assembly 1522 114mm x 101mm	652	MCKINNEY
1	Privacy function lock WBS-8265 LNJ	630	SARGENT
1	Hook 3072	630	TRIMCO
1	Surface stop arm 10-236	630	RIXSON
1	Self-adhesive sealing gasket 588 1S-BK x 17'	BLACK	LEGACY
1	Built-in dropout threshold 7553MA x 915mm		LEGACY

.5 Group 05

Changing room door			
Qty	Description	Finish	Manufacturer
3	Hinges TA2714 114MM X 101MM NRP	652	MCKINNEY
1	Privacy function lock WBS-8265 LNJ	630	SARGENT
1	Surface stop arm 10-236	630	RIXSON
1	Hook 3072	630	TRIMCO

.6 Group 06

Double glazed doors			
Qty	Description	Finish	Manufacturer
2	Door top suspension plates PT20		PRELCO
2	Door bottom suspension plates PT10		PRELCO
2	Mounting plates for transom and side daylight PT41		PRELCO
1	Double door stops for transom PT70		PRELCO
2	Deadbolt lock AR20		PRELCO
2	Floor dust strikes 582-N		PRELCO
2	Built-in door closer MAB 7310		PRELCO
2	Pull and push tubular handles PG-G		PRELCO
2	Straight U-profile for fixed partition wall Custom made – by wrought metal		

1	Curved U-shaped profile for fixed partition walls Custom made – by wrought metal		
2	High security mortise cylinder certified UL437 x existing key system	626	TO CONFIRM
<ul style="list-style-type: none"> All PRELCO hardware will be finished with a clear anodized finish. Provide the reinforcements under the wooden batten floor necessary for the hardware elements on the floor. 			

.7 Group 07

Floor doorway			
Qty	Description	Finish	Manufacturer
1	Swivel assembly 4007RB	626	MCKINNEY
1	Warehouse function lock WBS-8204 LNJ x 82-01XX (coordinate the length of the "lip" of the strike with the installation of the frame and door)	630	SARGENT
1	High security mortise cylinder certified UL437 x existing key system	626	TO CONFIRM
1	Off (strike side) 5874CA x 1067mm		LEGACY
<ul style="list-style-type: none"> Important note: Coordinate the installation of all components for perfect operation. The signboard "authorized personnel only" by others. 			

.8 Group 08

Chicane door- Existing			
Qty	Description	Finish	Manufacturer
	Plan to redo all the heritage hardware elements, as shown in the typical door drawings of the 1969 plans in the appendix. - by wrought metals.		

2.7 SUPPLEMENTARY INFORMATION

- .1 All locks and key cylinders shall be subject to a master key system, to be determined with the owner, and a construction key system. Provide the control keys required for the installation of construction and permanent cores.
- .2 Self-adhesive gaskets shall be installed at the very end of the work, when everything has been cleaned and the paint has had time to dry for at least 5 days.
- .3 Delivery time for hardware may be up to 8 weeks after approval of the hardware list.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Provide complete instructions and installation templates to the steel door and frame manufacturer to allow factory preparation of the planned hardware.
- .2 Each piece of hardware must be accompanied by the manufacturer's installation instructions.

- .3 Install hardware parts in standard positions that meet the requirements of the Canadian Steel Frame and Door Manufacturers Association.
 - .4 Installation will be done by installers who have worked with this type of hardware. It includes adjusting and checking the operation of the various elements during installation and before acceptance of the work.
 - .5 Install plumb hardware, with screws and bolts provided by the manufacturer and according to instructions. The parts will be flush-mounted with the face of the doors. Adjust moving parts so that the doors operate smoothly.
- 3.2 RESPONSABILITY
- .1 Finishing hardware shall be suitably adapted to the specified use and shall be suitable for the designated area. In the event that any hardware as indicated, specified or requested does not meet the projected or required requirements, a modification may be appropriate or adaptable to the designated location. The hardware supplier will promptly seek the necessary correction or modification well in advance to avoid a delay in the manufacture and delivery of the hardware.
 - .2 During construction, he will make the necessary checks to ensure that the finishing hardware provided is properly installed and will inform the contractor.
- 3.3 INSPECTION
- .1 At the end of the work, an audit will be conducted by the architect's consultant to certify that the hardware delivered and installed is as per the specifications and the approved list. Provide a monetary allowance as described in section 01 29 00 - Payment Procedure.
 - .2 Criteria to be met for the consultant's inspection:
 - .3 Before requesting an inspection of the hardware, the contractor shall conduct his own verification and confirm it in writing upon request.
 - .4 If, in the opinion of the Consultant, the work appears to have been performed, the Consultant will systematically perform the first audit and, if necessary, a first list of work to be corrected will be issued.
 - .5 Once the contractor has certified that all identified defects have been corrected, they will be verified by the consultant.
 - .6 If the work is not completed, and the Consultant is required to issue further lists and perform further audits, these will be the responsibility of the Contractor until the work is certified by the Consultant. Each additional visit will be invoiced to the contractor at a rate of \$750.00 each + taxes for the first 15 doors + \$25.00 + taxes for each additional door.

- .7 The Contractor shall also provide the Architect and Consultant with the assistance required during their inspections.

END OF SECTION

PART 1 - GENERAL

- 1.1 SCOPE OF WORK
- .1 This section outlines the general requirements and the prerequisite procedures for the supply and installation of new and existing glazing for the new and/or existing windows according to the appendix "Dossier de relevé pour la restauration des fenêtres de bois".
- 1.2 RELATED SECTION
- .1 Section 08 50 00 – Wooden Windows.
- 1.3 SUBMITTALS
- .1 Submit required documents and samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit manufacturer's data sheets, instructions and documentation for glazing and sealants.
 - .3 Samples
 - .1 Submit for approval two samples of 200 mm x 200 mm of the prescribed glazing.
- 1.4 DELIVERY, STORAGE AND HANDLING
- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
 - .2 Delivery and Acceptance: Deliver materials and equipment to site in their original packaging, which must be labeled with the name and address of the manufacturer.
 - .3 Storage and Handling
 - .1 Store materials in accordance with the supplier's recommendations.
 - .2 Replace defective or damaged materials and equipment with new materials and equipment
- 1.5 SITE CONDITIONS
- .1 Install glazing putty when ambient temperature is 10 degrees C minimum. Maintain ventilated environment for 24 hours after application of glazing mastic.
 - .2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

PART 2 - PRODUCTS

- 2.1 MATERIAL
- .1 Glass : Use glass tiles provided by the Agency. Plan necessary cuts to fit new glass tiles with the existing windows.
 - .2 Glazing putty: superior quality elastic oil-based putty for the such as Glazol by UGL or equivalent approved.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- .1 Verification of conditions: before proceeding with installation of glazing, ensure that the condition of surfaces/supports previously implemented under other sections is acceptable and allows the work to be carried out in accordance with the written instructions of the manufacturer.
 - .1 Ensure that the wooden frames of the windows whose glazing are to be replaced are in good condition, that any necessary repairs have been completed and that they are ready to receive the glazing.
 - .2 Make a visual inspection of the surfaces.
 - .3 Notify immediately Architect of any unacceptable conditions found.
 - .4 Begin installation work only after correcting unacceptable conditions and receiving written approval from Architect.
- 3.2 PREPARATION
- .1 Clean contact surfaces with solvent and wipe dry.
 - .2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
 - .3 Prime surfaces scheduled to receive sealant.
- 3.3 INSTALLATION
- .1 Place setting blocks.
 - .2 Rest glazing on setting blocks and push against tape for full contact at perimeter of light or unit.
 - .3 Install removable stop. Exert pressure on tape for full continuous contact.
 - .4 Apply glazing putty to form a uniform and level bead, shaped using the appropriate tool or wiped with a solvent to obtain a smooth finish.
- 3.4 CLEANING
- .1 Cleaning during works: perform cleaning in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave the premises clean at the end of each working day.

- .2 Remove all traces of primer and caulking and sealing.
 - .3 Remove glazing materials from finish surfaces.
 - .4 Clean glass using a non-abrasive product.
- .2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site, in accordance with Section 01 74 11 - Cleaning.

3.5 PROTECTION

- .1 Protect installed equipment and components from damage during construction.
- .2 Repair damage to materials and adjacent materials and equipment caused by glazing installation.

END OF SECTION

PART 1 - GENERAL

- | | | | |
|-----|---|--|---|
| 1.1 | RELATED
SECTIONS | .1
.2
.3 | Section 01 33 00 – Submittal Procedures
Section 01 45 00 – Quality Control.
Section 09 91 23 – Interior Painting. |
| 1.2 | REFERENCES | .1
.1
.2
.3
.4

.2
.1 | ASTM International
ASTM C 35, Standard Specification for Inorganic
Aggregates for Use in Gypsum Plaster.
ASTM C 206, Standard Specification for Hydrated
Lime Finishing.
ASTM C 841, Standard Specification for Indoor
Installation of Lath and Furring.
ASTM C 842, Standard Specification for the Indoor
Application of Gypsum Plaster.

CSA International
CSA A3000, Compendium of Binding Materials. |
| 1.2 | SUBMITTALS FOR
APPROVAL /
INFORMATION | .1
.2
.1
.2
.1
.2

.3

.4 | Submit the required documents/samples in accordance with
section 01 33 00 – Submittal Procedures.

Samples of works:
Perform work samples in accordance with section 01
33 00 – Submittal Procedures.
Provide the following samples of works:
One (1) example of repair of the floor ceiling
on lath with a minimum area of 300mm x
300mm.
At the Architect's request, carry out all other
work samples at the locations indicated by
the Architect.

Allow 48 hours for the Agency representative to inspect the
work sample before starting work.

Once accepted, the work sample will be the minimum
standard to be met for the quality of products and
workmanship for similar painting work. The sample of the
work may be part of the final work. |
| 1.4 | QUALITY CONTROL | .1 | The Contractor is responsible for the selection of its
subcontractors and must ensure that the subcontractor has
the experience required for the type of work required under
the mandate. In the event of a problem, Parks Canada
reserves the right to request the subcontractor to provide
proof of a minimum of 5 years in the field of plaster coating
in heritage buildings. |

- 1.5 DELIVERY, STORAGE AND HANDLING .1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.
- .2 Delivery and Acceptance: Deliver materials and equipment to the site in their original packaging, which must be labelled with the name and address of the manufacturer.
- .3 Storage and handling
- .1 Store materials and equipment in a clean, dry, heated and well-ventilated area in accordance with the manufacturer's recommendations.
- .2 Replace damaged materials and equipment with new materials and equipment.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Wooden slats:
Eastern white pine, branded C.D. Select, kiln-dried, with a maximum moisture content of 7%, with profiles and dimensions identical to the existing lath elements.
- .2 Coating: refer to paragraph 3.1, sub-paragraph.3.
- 2.2 DOSING .1 Refer to paragraph 3.1, sub-paragraph .3.

PART 3 - EXECUTION

- 3.1 ON-SITE CONDITION VERIFICATION .1 Before the work begins, examine the structure with the Architect and the Agency representative to detect surfaces where the plaster is deteriorated, which had not previously been identified and indicated on the plan.
- .2 Provide for the creation of a photographic report in accordance with section 01 33 00 – Submittal Procedures to be submitted with an annotated plan to define the existing conditions of the lath and plaster coating before work begins.
- .3 Prior to the commencement of the work, the Contractor shall conduct an analysis of the existing coating in relation to its number of layers, the thickness of each layer and their composition (including the dosage of each component). He shall validate the installation method and, if it differs from this quotation, provide his application method for approval by the Architect.
- 3.2 PROTECTION MEASURES .1 Protect adjacent surfaces and structures by covering or masking them.

- 3.3 PREPARATORY WORK .1 Remove sections of plaster coating as indicated on the architectural drawings.
- .2 Bevel the edges of the existing plaster so that the new plaster can be joined to it.
- .3 Repair of the support batten: remove and replace damaged batten strips with new wooden ones if necessary. Provide the same batten spacing as the original spacing. Have the Agency representative approve any replacement of existing slats.
- 3.4 COATING APPLICATION .1 Apply the plaster coating according to period methods to preserve the authentic appearance of the original structure.
- .2 Unless otherwise specified, apply the plaster coating in accordance with ASTM C 842.
- .3 The following application method is conditional on the analysis of the layers and the dosage of the existing plaster. If this method is not suitable for the plaster in place, the Contractor shall provide its method for approval by the Architect.
- .4 First layer:
.1 Apply a first layer thickness to be defined according to the analysis of the existing plaster, using a trowel, exerting enough pressure for the plaster to penetrate the spaces between the slats and the substrate. Make the surface as flat as possible.
.2 After the initial setting of the coating (2 to 4 days), scratch the surface with a broom.
.3 Maintain the first layer wet for three (3) days.
.4 Allow the first coat to cure for ten (10) days, taking care to ventilate the area well.
- .5 Second layer:
.1 Wet the first coat 4 hours before applying the second coat;
.2 Apply the second coat according to a thickness to be defined according to the analysis of the existing plaster.
.3 Keep the latter wet for two (2) days.
.4 Allow this layer to cure for 10 days.
- .6 Top coat:
.1 Wet the body coat thoroughly with the plaster and remove any remaining water from the surface.
.2 Apply the top coat according to a thickness to be defined according to the analysis of the existing plaster.

- .3 Smooth the top coat with a wooden trowel to give it the desired texture and overall appearance.
 - .4 Allow to cure for 10 days.
 - .5 Trowel the new plastered surface until a smooth finish is obtained, harmonizing with that of the existing structure.
 - .7 Cure:
 - .1 Allow the plaster to set for 10 days. Maintain the temperature between 13 and 21 degrees Celsius and the relative humidity between 30 and 40%.
- 3.5 CLEANING
 - .1 Clean up spills and splashes of plaster immediately with a clean sponge and water.
- 3.6 PROTECTION OF FINISHED WORK
 - .1 During the execution of the plastered coating, protect adjacent finished structures with polyethylene sheeting or construction paper.
 - .2 Once work completed, remove excess materials, tools, equipment and debris from the site.

END OF SECTION

PART 1 - GENERAL

1.1 EXIGENCES CONNEXES

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 61 00 – Common product requirements.
- .3 Section 08 11 00 – Metal doors and frame.
- .4 Section 10 28 10 – Toilet and Bath accessories.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM C 1396/C 1396M-09a, Standard Specification for Gypsum Wallboard.
 - .2 ASTM C 475/C 475M-02(2007), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .3 ASTM C 645-09a, Standard Specification for Nonstructural Steel Framing Members.
 - .4 ASTM C 754-09a, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - .5 ASTM C 840-08, Standard Specification for Application and Finishing of Gypsum Board.
 - .6 ASTM C 1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .7 ASTM C 1047-10, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - .8 ASTM C919, Standard Practice for Use of Sealants in Acoustical Applications
 - .9 ASTM C1280, Standard Specification for Application of Exterior Gypsum Veneer Base
- .2 Association of the Wall and Ceilings Industries International (AWCI)
- .3 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-10, Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies.

1.3 SUBMITTALS

- .1 Submit the required documents and samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Data sheets:
 - .1 Submit the required data sheets as well as the manufacturer's instructions and documentation for gypsum board, frames and sealants. The data sheets must indicate the characteristics of the products, performance criteria, dimensions, limits and finish.

**1.4 DELIVERY,
STORAGE AND
HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements :
 - .1 Store materials off ground, in a dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store materials inside, level, under cover. Keep dry. Protect from weather, other elements and damage from construction operations and other causes, in accordance with manufacturer's written instructions.
 - .3 Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.
 - .4 Store partition materials to protect them from marks and scratches.
 - .5 Replace damaged materials and equipment with new materials and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 **NON-STRUCTURAL METAL FRAMING**
 - .1 Non-load bearing channel stud framing: dimensions in accordance with ASTM C 645, roll formed from 0.53 mm thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board with knock-out service holes at 610 mm centres.
 - .1 U-Shaped channels for interior walls: 92.1 mm studs, 0.53 mm thick (25 gauge).
 - .2 Ceiling and floor tracks: in accordance with ASTM C645, size to suit studs and provided, with 32 mm high flanges for floor tracks and 50 mm high flanges for ceiling tracks, 0, 53 mm thick.
 - .3 Metal stiffeners: 1,4 mm thick cold rolled steel sections, coated with rust inhibitive coating.
 - .4 Acoustic Sealant: CGSB 19-GP-21M.
 - .5 Insulating strip: moisture resistant 3 mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required.
- .2 **GYPSUM BOARDS**
 - .1 Standard board: to ASTM C36/C36M, regular, thickness as

indicated on drawings, Type X when required, 1200 mm wide x maximum practical length, ends square cut and beveled edges on the sides.

- .2 Moisture and Mold Resistant Gypsum boards:
 - .1 Moisture and Mold Resistant Gypsum boards, to ASTM C 1396, ASTM C 1629 and CAN/CSA-A82.27, 15.9 mm thick, 1200 mm wide x maximum practical length, ends square cut and beveled edges on the sides. These boards will be installed in places requiring resistance to moisture and mildew, replacing ordinary gypsum.
 - .2 Acceptable Products: CertainTeed ProRoc M2Tech or approved equivalent by the Architect.
- .3 INSULATION
 - .1 Stone wool-based batt : acoustical and fire-resistant interior partitions :
 - .1 Compliant with CAN/ULC-S702, Type 1
 - .2 Compliant with ASTM C665, Type 1
 - .3 Compliant with CAN/ULC-S114, Non-combustible
 - .4 Density (ASTM C 612), min : 40 kg/m³
 - .5 Superficial combustibility characteristics: compliant with CAN/ULC S102
 - .1 Flame spread index, max : 0
 - .2 Smoke developed index, max : 0
 - .6 Thickness : as indicated on drawings.
 - .7 Acceptable Product : « AFB » from Roxul ou approved equivalent.
 - .4 ACCESSORIES
 - .1 Steel Drill Screws: to ASTM C 1002
 - .2 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047, galvanized metal, 0.5 mm base thickness, perforated flanges, one piece length per location.
 - .3 Sealant for acoustic insulation of soundproof walls: Conforms to ASTM C 919.
Acceptable Product: Tremco Acoustical Sealant or approved equivalent.
 - .4 Joint compound: to ASTM C 475, asbestos-free, type as recommended by board manufacturer for required application.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Unless otherwise specified, install studs to allow installation of screwed gypsum board in accordance with ASTM C 754.
- .2 Align partition tracks at floor and ceiling and secure at 600 mm on centre.

- .3 Place studs vertically at 600 mm on centre and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .6 Provide 40 mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.
- .7 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .8 Extend partitions to ceiling height except where noted otherwise on drawings.
- .9 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Make an expansion joint in the tracks by doubling the studs that compose them or by using perforated deflection tracks.
- .10 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .11 Install insulating strip under studs and tracks around perimeter of sound control partitions.

3.2 GYPSUM BOARD AND ACCESSORIES APPLICATION

- .1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.
- .2 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.
- .3 Install [19 x 64] mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .4 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .5 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.

- .6 In the case of acoustic partitions, install the acoustic insulation and sealant in order to obtain a sound insulation corresponding to that of test assembly. Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, etc, in partitions where perimeter sealed with acoustic sealant.
- .7 Install gypsum board in the direction that will minimize the number of butt joints. Offset end joints by at least 250 mm.
- .8 Install gypsum board after waiting frames, anchors, shims, acoustic insulation materials and electrical and mechanical installations have been approved.
- .9 Screw one (1) layer of gypsum board onto framing studs or furs. Set screws at 300 mm c/c.
- .10 Install water-resistant gypsum boards at locations to receive vinyl panels and located near wash tubs and janitorial facilities. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.

3.3 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre using contact adhesive for full length.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .3 Install insulating strips continuously at edges of gypsum board and casing beads.
- .4 Install access doors to electrical and mechanical fixtures specified in respective sections.
 - .1 Rigidly secure frames to furring or framing systems.
- .5 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .6 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.

- .7 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

3.4 CLEANING

- .1 Cleaning during works: perform cleaning in accordance with Section 01 74 11 – Cleaning.
- .2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site, in accordance with Section 01 74 11 – Cleaning.

3.5 PROTECTION

- .1 Protect installed equipment and components from damage during construction.
- .2 Repair damage to materials and adjacent materials and equipment caused by partition installation.

END OF SECTION

PART 1 - GENERAL

1.1. RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 61 00 – Common Product Requirements.

1.2. REFERENCES

- .1 American society for testing and materials International (ASTM):
 - .1 ASTM D 2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
 - .2 ASTM F 1066 Standard Specification for Vinyl Composition Floor Tile
 - .3 ASTM F 1303 Standard Specification for Sheet Vinyl Floor Covering with Backing.
 - .4 ASTM F 1913, Performance Standards for Homogeneous Single Layered Vinyl Floor Covering.

1.3. SUBMITTALS

- .1 Submit data sheets in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit data sheets for flooring, which must indicate the physical characteristics, performance characteristics, dimensions, patterns, colors and installation methods.
- .3 Submit two copies of WHMIS (Workplace Hazardous Materials Information System) Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. The data sheets must specify the VOC emission rate of the adhesive products during the application.
- .4 Submit two (2) samples measuring 305 X 305 mm of each type and color of flooring, and two (2) samples measuring 300 mm in length of each type and color of wall bases.

1.4. CLOSEOUT SUBMITTAL

- .1 Provide maintenance instructions for resilient flooring for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.
- .2 Submit required documents/elements in accordance with Section 01 78 00 - Closeout Submittals.
- .3 Provide 10 square meters of each color, pattern and type sheet resilient flooring required to maintain work in good condition.
- .4 Provide a 2% quantity at least of the total number required for the work of each color, pattern and type for wall bases and cove caps and fillers, and store at the indicated location.

- .5 Extra materials to be in one piece and from same production run as installed materials. Clearly identify each roll and each container of adhesive.

1.5. DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements and manufacturer's written instructions.
- .2 Delivery and Acceptance: Deliver materials and equipment to site in original packaging, labelled with manufacturer's name and address.
- .3 Store materials and equipment indoors in a dry, clean and well-ventilated area as recommended by the manufacturer.
- .4 Store resilient flooring to protect them from marks and scratches.
- .5 Replace defective or damaged materials and equipment with new materials and equipment.

1.6. ON-SITE
CONDITIONS

- .1 Maintain ambient air and substrate surface at a temperature between 18°C and 30 ° C for a period of 48 hours prior to and during installation and for 48 hours after completion of work.
- .2 Maintain ambient relative humidity between 40% and 60% for 48 hours prior to, during and after installation.
- .3 Moisture content: ensure that the water content and alkalinity of the substrate are within the limits prescribed by the flooring manufacturer, carry out a minimum of 3 tests. Prepare tests to determine moisture content of substrate and submit reports to the Professional.
- .4 Provide a high ventilation rate, with maximum supply of fresh air, throughout installation. Prevent contaminated air from recirculating through parts or all of distribution system.

1.7. QUALITY CONTROL

- .1 All Work in this section will be carried out by skilled labor specialized in the installation of resilient sheet flooring, labor to be accredited and under the supervision of the manufacturer.
- .2 Contractor must have five (5) years of experience minimum in the field. At the Professional's request, Contractor must provide proof of his skills as described in this paragraph and provide a document stating that installer is a member of the "fédération québécoise des revêtements de sol (FQRS)".

1.8. WARRANTY

- .1 Provide a written document, signed and issued on the Owner's behalf stating that the manufacturer warrants material (resilient flooring and rubber wall bases) against manufacturing defects for a period of five (5) years from end of Work.

PART 2 - PRODUCTS

2.1. MATERIALS –
RESILIENT
FLOORING

- .1 General: All resilient flooring, wall bases and accessory products must come from a single manufacturer.
- .2 Underlayment Membrane: 1.4mm High-density synthetic rubber such as Johnsonite SureStart or approved equivalent.
- .3 Vinyl Sheet: In conformity with ASTM F 1913, 2 mm thick and 2m roll as Johnsonite Aria 3.0 series or approved equivalent, color #657 Cabana.
- .4 Adhesive as recommended by resilient sheet flooring manufacturer and compatible with the subfloors in place.

2.2. ACCESSORIES

- .1 Wall bases: Rubber wall bases with coved profile, at least 1200mm long maximum length by 100mm high and 3mm thick, with manufactured inside and outside corners for coved wall bases.
 - .1 Type: rubber, 3.0 mm thick.
 - .2 Model: coved profile
 - .3 Height: 100 mm.
 - .4 Length: of at least 1200mm in length.
 - .5 Acceptable product: Johnsonite Wall Base or approved equivalent.
 - .6 Color: color #05 Stone.
- .2 For flash coving as indicated in drawings.
 - .1 See Article 2.1.3.
 - .2 Height: 100mm.
 - .3 With the least possible seams.
 - .4 Cove filler strips such as Johnsonite CFS-00 or approved equivalent.
 - .5 Cove caps such as Johnsonite SCC-XX-B Finish or approved equivalent.
- .3 Adhesive of types recommended by resilient flooring manufacturer for specific material on applicable substrate.

PART 3 - EXECUTION

3.1. EXAMINATION

- .1 Using test methods recommended by flooring manufacturer, ensure wood floors are clean, smooth, flat and dry. The surface must be free of all dust, loose particles, solvents, paint, grease, oil, wax, alkali, sealing/curing compounds, old adhesive, and any other foreign material, which could affect the installation and adhesive bond to the substrate. Do not use oil based sweeping compounds.

3.2. PREPARATION

- .1 Clean floor and prohibit circulation until underlayment membrane is installed.
- .2 Install underlayment membrane perpendicularly to resilient flooring and following manufacturer's instructions and

3.3. APPLICATION : FLOORING

- .1 After underlayment membrane installation, Contractor must clean before proceeding with the installation of resilient flooring the entire surface to be covered according to the manufacturer's recommendations.
- .2 Apply adhesive uniformly using recommended trowel according to flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place. Clean excess adhesive immediately.
- .3 Lay flooring as recommended by manufacturer, with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
- .4 Cold weld vinyl sheet seams following manufacturer's instructions.
- .5 As installation progresses, and immediately after installation, roll flooring, in both direction, with 75 kg minimum roller to ensure full adhesion.
- .6 Cut flooring and adjust carefully around fixed objects, without interrupting continuity and full width of sheet material.
- .7 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .8 Install vinyl edge strips at unprotected or exposed edges where flooring terminates.
- .9 Prohibit traffic on floors for 48 hours after flooring installation.

**3.4. APPLICATION :
BASE**

- .1 Lay out wall bases to keep number of joints at minimum. Use longest wall bases lengths available or make the joints from manufactured premoulded inside and outside corners.
- .2 Clean substrate and prime with one coat of adhesive.
- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of 1:1000.
- .6 Cut out baseboards and adjust them to door frames and other obstacles. Where door frames are recessed, install pre-molded end pieces.
- .7 In the inset corners, make counter-profile joints. Use pre-molded corner pieces for protruding corners that are square. Use pre-molded straight sections to form protruding corners that are not square.

3.5. FLASH COVING

- .1 For rooms where it is indicated on architectural plans to install resilient flooring on the bottom of walls:
 - .1 Rise the floor covering according to the manufacturer's recommendations.
 - .2 Use Johnsonite CFS-00 Cove Filler bands or approved equivalent.
 - .3 Apply resilient flooring adhesive to the wall using a handle comb or brush as recommended by the manufacturer.
 - .4 Precisely adjust the floor covering to raise it on the wall.
 - .5 Pass a cylinder over the baseboard thus obtained with a small hand roller according to the manufacturer's instructions.

3.6. CLEANING

- .1 Clean and clear site daily of all unused debris and materials generated by work in this section.
- .2 Remove all traces of adhesive and other filth on resilient flooring throughout installation.
- .3 Clean newly installed floor and wall bases in accordance with flooring manufacturer's written instructions.

3.7. PROTECTION

- .1 Protect new floors during all stages of work until final inspection.
- .2 Repair damage to adjacent materials and equipment caused by the resilient flooring installation.

END OF SECTION

PART 1 - GENERAL

- | | | | |
|-----|---|--|---|
| 1.1 | RELATED
SECTIONS | .1
.2
.3 | Section 01 33 00 – Submittal procedures
Section 09 21 99 – Gypsum board assemblies for minor works
Section 10 28 10 – Toilet and bath accessories |
| 1.2 | REFERENCES | .1
.1
.2
.3
.4
.5
.6 | ASTM International
ASTM D 256, Test methods for the determination of the Izod impact resistance of plastics Pendulum
ASTM D 570, Standard Test Method for Water Absorption of Plastics
ASTM D 638, Standard Test Method for Tensile Properties of Plastics
ASTM D 790, Standard Test Method for Bending Properties of Reinforced and Unreinforced Plastics and Electrical Insulating Materials.
ASTM D 2583, Standard Test Method for Hardness Indentation of Rigid Plastics Using a Barcol Impressor
ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials. |
| 1.3 | DOCUMENTS /
SAMPLES TO
SUBMIT FOR
APPROVAL | .1
.2
.1
.3
.4
.1
.2
.3
.4
.5
.6 | Submit the required documents/samples in accordance with section 01 33 00 – Submittal procedures.
Provide shop drawings for the following items:
Elevation drawings of each partition with wall covering including panel joints and all necessary mouldings.
Shop drawings shall indicate or show the materials, thickness, finishes, assemblies, mouldings, details, planned drill holes, accessories and dimensions of each panel.
Provide the following manufacturer's information:
Preparation instructions and recommendations.
Storage and Handling Requirements and Recommendations.
Installation methods.
Material Safety Data Sheet for Adhesives.
Provide for approval two 300mm x 300mm panel samples of each finish and color requested.
Provide for approval two 300mm long samples of each type and colour of finishing mouldings required. |
| 1.4 | WARRANTY | .1 | Provide a one (1) year warranty against defects in materials and workmanship from the date of provisional acceptance |

of completion of the work.

- 1.5 TRANSPORT, STORAGE AND HANDLING .1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.
- .2 Delivery and Acceptance: Deliver materials and equipment to the site in their original packaging, which must be labelled with the name and address of the manufacturer.
- .3 Storage and handling
- .1 Store materials and equipment in a clean, dry and well-ventilated area in accordance with the manufacturer's recommendations.
- .2 Replace damaged materials and equipment with new materials and equipment.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Panels:
- .1 Thermosetting polyester resin panels reinforced with glass fibre according to ASTM D 5319.
- .1 Thickness: 3 mm
- .2 Width: 1.2 m
- .3 Length: 2.4 m
- .2 Resistant to mildew, corrosion, stains, dents, surface peeling and splintering.
- .3 Responding to the following physical properties
- .1 Flexible rigidity: 1.0 x 10⁴ psi according to ASTM D 790
- .2 Flexural elasticity: 3.1 x 10⁵ psi according to ASTM D 790
- .3 Tensile strength: 7.0 x 10³ psi according to ASTM D 638
- .4 Tensile modulus of elasticity: 1.6 x 10⁵ psi according to ASTM D 638
- .5 Water absorption: 0.72% according to ASTM D 570
- .6 Abrasion resistance: 35 55 according to ASTM D 2583
- .7 Izod impact resistance: 72 ft. lbs / inch according to ASTM D256
- .4 Rear surface: smooth
- .5 Acceptable Product: Marlite FRP Standard, color S490N, smooth finish or approved equivalent
- .2 Accessories:
- .1 Mouldings: Provide all necessary mouldings, finished in clear anodized aluminum.
- .2 Fasteners: embedded nylon rivets, color and length according to project conditions

- .3 Adhesive and sealant: as recommended by the manufacturer

PART 3 - EXECUTION

- 3.1 PREPARATION
 - .1 Examine the partitions on which the panels will be placed to ensure that the corners are straight and square, the surfaces are smooth, uniform, clean and free of foreign matter and the joints and cracks are smooth with the adjacent surface. Check that the studs do not exceed 610mm centre to centre.
 - .2 Repair all wall defects before installing panels.
- 3.2 INSTALLATION
 - .1 Comply with the installation procedures and sequence recommended by the manufacturer.
 - .2 Cut the sheets to allow a 3mm gap for each 2.4m panel. Cut and drill with a carbide-tipped saw blade or steel drills or cut with shears.
 - .3 Predrill the oversized 3mm mounting holes with a high speed drill. Fix according to the manufacturer's recommendations.
 - .4 Apply mouldings to panels using manufacturer's recommended silicone sealant. Provide a sealant joint between the panels/mouldings and adjacent finishes to prevent water infiltration behind the panels.
- 3.3 CLEANING
 - .1 Cleaning during the work: carry out the cleaning work in accordance with section 01 74 11 - Cleaning.
 - .1 Leave the premises clean at the end of each work day.
 - .2 Final cleaning: Dispose of excess materials/materials, waste, tools and equipment from the site in accordance with section 01 74 11 - Cleaning.
 - .3 Remove excess sealants from panels and mouldings. Clean the panels with a damp cloth and a soap solution or mild cleaner. Refer to the manufacturer's cleaning recommendations. Do not use abrasive cleaners.
- 3.9 PROTECTION
 - .1 Protect installed equipment and components from damage during construction.
 - .2 Repair damage to adjacent materials and equipment caused by the installation of wall panels.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

- .1 The work described in this section includes the supply and installation of the required paint products for, including but not limited to:
 - .1 The painting of new wooden sliding windows of gun slits;
 - .2 The painting of the new wooden exterior screens of the second floor windows;
 - .3 The complete stripping and painting of the existing ground floor and second floor windows;
 - .4 The lime whitewashing of the masonry walls, vaults, partitions, etc. of the Men's Barracks' ground floor, including the supply of lime;
 - .5 The painting of the new gypsum partitions of the ground floor;
 - .6 The painting of new doors and metal frames of the ground floor;
 - .7 The painting of the existing iron railing of the rear stairway;
 - .8 Varnishing of wooden floors and baseboards on the ground floor;
 - .9 Painting of visible electrical and mechanical elements;
 - .10 All other painting work included in drawings and specifications.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 61 00 – Common Product Requirements.
- .3 Section 06 20 00 – Finish Carpentry / Architectural Woodwork.
- .4 Section 08 11 00 - Metal Doors and Frames.
- .5 Section 08 50 00 - Windows.
- .6 Section 09 21 99 – Gypsum Board Assemblies for Minor Works.

1.3 REFERENCES

- .1 Department of Justice Canada (Jus):
 - .1 Canadian Environmental Protection Act (CEPA), 1999, ch.33.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .3 Master Painters Institute (MPI)
 - .1 Maintenance Repainting Manual [current edition], Master Painters Institute (MPI) including Identifiers, Evaluation, Systems, Preparation and Approved Products List.
- .4 National Fire Code of Canada (NFC), 2015.

1.4 QUALITY CONTROL

- .1 Regulatory Agency Sustainability Approvals:
 - .1 Conform to applicable standards and requirements for exterior repainting work including cleaning, preparation and priming.
 - .2 Depending on the systems, comply with the latest MPI requirements for painting and refurbishing work, including those for surface cleaning and preparation and the application of primer or paint finish.
 - .3 Retain purchase orders, invoices and other documents to establish

compliance with specified MPI requirements or other requirements included in this section and produce them at the request of the Agency Representative and Architect.

- .2 Quality control:
 - .1 The Contractor is responsible for the selection of its subcontractors and must ensure that the subcontractor has the experience required for the type of work required under the mandate. In the event of a problem, Parks Canada reserves the right to request the subcontractor to provide proof of a minimum of 5 years in the field of painting in heritage project.
 - .2 Qualified journeymen: as identified by local jurisdiction.
 - .3 Apprentices: work under direct supervision of qualified journeyman in accordance with applicable trade regulations.
 - .4 At least one-third of the workers on site must be journeymen (minimum ratio of 1 journeyman to 2 apprentices).
- .3 Unless otherwise specified, the products used, whether primary or printing products, paints, coatings, varnishes, dyes, lacquers, fillers, thinners, solvents and others, must appear on the latest version of the list of products approved in the MPI Architectural Painting Specification Manual, and all products forming the chosen paint system must be from the same manufacturer.
- .4 Mock-ups:
 - .1 Execute mock-ups in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Provide following mock-ups:
 - .1 Minimum one (1) complete window assembly including an exterior wood screen;
 - .2 Minimum one linear meter of paint application on the existing iron railing of the rear stairway, including balusters and at least one post;
 - .3 Two (2) mock-ups of an area equivalent to at least two (2) square meters, location to be determined on site by Architect, for the lime whitewashing;
 - .4 At the Architect's request, perform any other mock-up where indicated by the Architect. Prepare the designated surface or element for each color range and, depending on the specified requirements, apply the prescribed paint or coating in accordance with the selected colors, textures and gloss levels.
 - .3 Allow 48 hours for inspection of mock-up by Agency Representative before proceeding with work.
 - .4 Once accepted, the mock-up will be the minimum standard for product quality and workmanship for similar painting jobs. Mock-up may remain as part of finished work.

1.5 SCHEDULING

- .1 Submit schedule of various stages of paint work to Architect for review at least 48 hours prior to start of scheduled work.
- .2 Obtain written authorization from Architect for any modification in work schedule.
- .3 Schedule paint work to avoid interruption due to other trades.

1.6 ACTION AND
INFORMATION
SUBMITTALS

- .1 Submit samples, specification sheets and manufacturer's instructions for the application of each paint product and coating in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit data sheets for the products prescribed in article 2.7.
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for paints and coating products and include product characteristics, performance criteria, vehicle type, pigments, finish and limitations.
 - .2 Submit WHMIS MSDS in accordance with Section 01 35 29 – Health and Safety Requirements.
- .3 Samples:
 - .1 Submit full range of coating colour sample matches for review and selection.
 - .2 **To reproduce a specific colour in the case of a linseed oil system (System No. 5 and No. 7 of this section), Contractor must provide a paint sample from the existing historic elements to the supplier who will provide the recipe. Allow six (6) weeks for the color reproduction process.**

1.7 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for paints and coatings for incorporation into manual.
 - .1 Provide records of products used. List products in relation to finish system and include following:
 - .1 Product name, type and use (e.g. materials and location).
 - .2 Manufacturer's product number.
 - .3 Colour code numbers.
 - .4 Manufacturer's Material Safety Data Sheets.
- .3 Submit maintenance record of painting work.

1.8 REPLACEMENT
PRODUCTS AND
MATERIAL

- .1 Submit replacement products and material from same production batches as implemented. Cover them with protective packaging, properly marked with appropriate labels and in accordance with Section 01 78 00 – Closeout Submittals.
- .2 Submit one-gallon (4 liters) container of each type and color for paints and coatings. Identify type and color with established colour schedule and finish system.
- .3 Deliver replacement products and material and store them at location indicated by the Owner.

1.9 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Labels: to indicate:
 - .1 Type of paint or coating.
 - .2 Compliance with applicable standard.
 - .3 Colour number in accordance with established colour schedule.
 - .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in a dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect paints and coatings.
 - .3 Keep areas for storage, cleaning and preparation, clean and orderly.
 - .4 Remove paint materials from storage in quantities required for same day use.
 - .5 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
 - .6 Store materials and equipment within temperature range between 7°C to 30°C.
 - .7 Store materials and supplies away from heat generating devices and sensitive materials above minimum temperature as recommended by manufacturer.
 - .8 Replace defective or damaged materials with new.
- .4 Remove defective and unauthorized materials and products from site.
- .5 Keep areas used for storage, cleaning and surface preparation clean and in good order. Once work is done, return these areas to their original state of cleanliness.
- .6 Fire Safety Requirements:
 - .1 Provide two (2) 9 kg type ABC dry chemical fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site daily.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada (NFC).

1.10 PROJECT / SITE
REQUIREMENTS

- .1 Substrate and ambient temperatures: in accordance with limits prescribed by manufacturer.
- .2 Apply paint finish in areas where:

- .1 Dust is no longer being generated by related construction operations or particles blown by the wind or the ventilation system and, therefore, likely to alter the finished surfaces.
- .2 Wind conditions are such that airborne particles will not affect quality of finished surface.
- .3 Perform painting work only on properly prepared surfaces whose moisture content does not exceed the limit values specified in this section.
- .4 Apply paint only when the previous coat is dry or sufficiently hardened, unless otherwise approved by the manufacturer of the paint or coating used.
- .5 Heating, ventilation and lighting
 - .1 Prior to painting work, verify that adequate and continuous ventilation can be ensured on one hand and, on the other hand, whether appropriate heating systems can be used to raise ambient air and substrate temperature at 10°C or more at least 24 hours before the start work, and maintain these temperatures during and after the execution of the work, until the surfaces have sufficiently dried and hardened.
 - .2 Ventilate enclosed spaces. Provide continuous ventilation for seven (7) days after completion of work.
 - .3 Provide and temporarily install all necessary heaters and ventilators. The use of gas fire heating units is forbidden.
 - .4 Before starting painting work, check that the lighting level of the surfaces to be painted is at least 323 Lux. Adequate fixtures or lighting systems must be provided by the General Contractor.
- .6 Substrate and ambient air temperature, humidity and moisture content levels:
 - .1 Do not perform repainting work when:
 - .1 Ambient air and substrate temperatures are below 10°C.
 - .2 Substrate temperature is over 32°C, unless the paint formula to be used is designed for application at high temperatures.
 - .3 Substrate and ambient air temperatures are expected to fall outside paint manufacturer's or MPI prescribed limits.
 - .4 Substrate is wet, damp or frosted.
 - .5 Maximum moisture content of substrate exceeds:
 - .1 12% for wood;
 - .2 12% for gypsum board;
 - .3 6% for plaster;
 - .4 12% for masonry.
 - .6 Relative humidity is above 85%.
 - .7 Dew point is less than 3°C variance between air/surface temperatures.
 - .8 Precipitation is forecast to occur before paint has thoroughly cured.
 - .9 It is foggy, misty, raining, icing or snowing at site.
 - .10 Test surfaces and substrate for moisture using a properly calibrated electronic Moisture Meter
 - .2 Damp and cold weather conditions:
 - .1 Provide and maintain cover for paint finish.
 - .2 Heat substrates and surrounding air to comply with temperature and humidity conditions required.
 - .3 Protect until paint is dry.

.4 Protect until weather conditions are suitable.

.7 Perform work on surfaces exposed to direct, intense sunlight in early morning.

1.11 WARRANTY

.1 Provide a written warranty to the Agency for a period of one year from the acceptance of the work covering all defects of materials and installation during this period.

.2 Under the terms of this warranty, all defects in this section will be corrected immediately at the expense of the Contractor.

PART 2 - PRODUCTS

2.1 ACCEPTED
MANUFACTURERS

.1 Unless otherwise specified, use products from the recognized manufacturers listed below:

.1 Sico;

.2 Woodmate;

.3 or materials and/or substitutes products approved during the bidding period.

2.2 MATERIALS

.1 Paint products and coatings listed in the latest edition of the MPI Approved Products List may be used in this work.

.2 All products must be from a single manufacturer for each system used.

.3 Unless otherwise specified, paints, coatings, adhesives, solvents, cleaners, lubricants and other products used shall have the following characteristics:

.1 products must not contain methylene chloride, chlorinated hydrocarbons, toxic metallic pigments;

.2 products must be made without any ozone depleting compounds in the upper atmosphere;

.3 products must be made without any compound that promotes smog formation in the lower atmosphere;

.4 products manufactured such that materials capable of generating a biochemical oxygen demand (BOD) in the undiluted effluent of a production facility discharging into a natural watercourse or sewage treatment facility, not providing secondary treatment, should not exceed a concentration of 15mg/L;

.5 products manufactured such that materials carrying total suspended solids (TSS) in the undiluted effluent of a production facility discharging into a natural watercourse or wastewater treatment facility, not providing secondary treatment, do not exceed a concentration of 15mg/L.

.4 Paint products and coatings must be manufactured and transported in such a way that all stages of the process, including the waste disposal generated during the work, comply with the requirements of applicable laws, regulations and government regulations, including, in the case of facilities located in Canada, the Fisheries Act and the Canadian Environmental Protection Act (CEPA).

- .5 Unless otherwise specified, paint products and coatings should not contain halogenated solvents, formaldehyde, mercury, lead, cadmium, hexavalent chromium or any of their derivatives.

2.3 COLORS

- .1 If required, Architect will provide color list after contract award.
- .2 Colors will be chosen from the full range of colors and tints offered by the manufacturers.
- .3 If particular products are offered in a limited range of colors, the colors of the products actually used will be selected from that restricted range.
- .4 In three (3) coat paint systems, the second coat shall be slightly lighter in color than the top coat to facilitate visual identification of each coat.

2.4 MIXING AND TINTING

- .1 Pigment to manufacturer's proprietary pigment of known performance.
- .2 Vehicle to manufacturer's proprietary vehicle of known performance.
- .3 Colouring matter to manufacturer's proprietary vehicle of known performance.
- .4 Perform colour tinting operations prior to delivery of paint to site.
- .5 Obtain Agency Representative's written approval for on-site tinting of paint materials.
- .6 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .7 Where thinner is used, addition not to exceed paint manufacturer's recommendations.
- .8 Do not use kerosene or other organic solvents to thin water-based paints.
- .9 Thin paint for brush in accordance with paint manufacturer's recommendations.
 - .1 Obtain instructions in writing from manufacturer and provide copy of instructions to Agency Representative.
- .10 Re-mix paint in containers prior to and during application. Ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.5 GLOSS / SHEEN

- .1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following MPI gloss/sheen standard values presented in the following table:

Gloss Level	Units @ 60°	Units @ de 85°
G1 – Matte or Flat finish	0 to 5	10 maximum

G2 – Velvet finish	0 to 10	10 to 35
G3 – Eggshell finish	10 to 25	10 to 35
G4 – Satin finish	20 to 35	35 minimum
G5 – Semi-gloss finish	35 to 70	
G6 – Gloss finish	70 to 85	
G7 – High-Gloss finish	more than 85	

- .2 Gloss level ratings of all painted surfaces shall be as specified herein and as noted on Finish Schedule.
- .3 For the linseed oil system, the gloss levels of the surfaces shall comply with the manufacturer's standard for the linseed oil paint system.
- .4 For the existing rear stairway railing: glossy finish.

2.6 PAINT SYSTEMS – GENERAL

- .1 The systems described in the following article apply for normally covering colors. For deep or high contrast colors whose opacity reduces the hiding power, the systems described in the following article must be adapted by replacing the number of topcoats indicated, usually 2 layers, with an additional layer of finish (i.e. counting one more layer), so as to have usually 3 layers. Use the manufacturer's chart to determine which colors will require an additional layer.
- .2 The systems described in the following article apply to new substrates. For old substrates, the systems described in the following paragraph must be adapted by removing the primer if recommended by the manufacturer.
- .3 Unless otherwise specified, use the "premium grade" for each paint system where it exists.

2.7 PAINT SYSTEMS

- .1 **System no. 1: For gypsum board partitions and temporary partitions:**
 - .1 Apply one (1) coat of SICO EXPERT Series 870-177 interior and exterior 100% acrylic primer-sealer or approved equivalent;
 - .2 Apply two (2) topcoats of SICO EXPERT Series 875-6XX 100% Acrylic Latex Paint, interior and exterior or approved equivalent;
 - .3 Color: Sico 6000 series, **color to be chosen by the Architect.**
- .2 **System no. 2: For the lime whitewashing of the masonry walls, partitions, vaults and other brick or stone masonry elements of the ground floor of the Barracks:**
 - .1 Mix in the following proportions: 1 gallon of water, 1 gallon of lime and 1 gallon of SICO EXPERT Series 875-6XX 100% Acrylic Latex Paint, interior and exterior or approved equivalent;
 - .2 Unless otherwise indicated, apply two (2) coats of the mixture;
 - .3 Wait for Architect's approval between each layer.
 - .4 Final coating must allow the reading of bricks and masonry joints.
 - .5 Color: Sico 6000 series, **color to be chosen by the Architect.**
- .3 **System no. 3: For the second floor plaster ceilings surfaces:**
 - .1 Apply one (1) coat of SICO EXPERT Series 870-177 interior and exterior 100% acrylic primer-sealer or approved equivalent;
 - .2 Apply two (2) topcoats of SICO EXPERT Series 875-6XX 100%

- Acrylic Latex Paint, interior and exterior or approved equivalent;
- .3 Color: Sico 6000 series, **color to be chosen by the Architect.**
- .4 **System no. 4: For galvanized steel of interior doors and frames:**
 - .1 One (1) coat of SIERRA PERFORMANCE RUSTOLEUM "GRIPTEC" VOC-free primer that meets Green Seal requirements or approved equivalent;
 - .2 Two (2) coats of SIERRA PERFORMANCE RUSTOLEUM "METALMAX" VOC-free acrylic urethane paint meeting "Green Seal" requirements or approved equivalent;
 - .3 Color: **Architect's choice.**
 - .5 **System #5: Semi-transparent linseed oil and alkyd based stain system for wood floors and wood baseboards:**
 - .1 Dye:
 - .1 Dyeing based on linseed oil and alkyd to dyed, UV resistant, water repellent, retarding the growth of mould and having good resistance to marking
 - .1 Linseed oil paint shall be solvent-free.
 - .2 VOC content 250 g/L
 - .3 Accepted product: Woodmate 1075 Stain distributed by MF paint or approved equivalent.
 - .2 Preparation: refer to section 3.5 and 3.6 of this section and section 06 20 00 – Finish Carpentry / Architectural Woodwork.
 - .3 Note that cloths soaked in linseed oil paint are flammable. Plan to dispose of them carefully after having them immersed in water.
 - .6 **System #6: For interior metal surfaces made of steel, galvanized steel or other materials and exposed electromechanical system components**
 - .1 One (1) coat of VOC-free primer meeting Green Seal requirements, SIERRA RUSTOLEUM GRIPTEC or approved equivalent;
 - .2 Two (2) coats of VOC-free acrylic urethane paint, meeting Green Seal, SIERRA RUSTOLEUM PERFORMANCE METALMAX or approved equivalent requirements;
 - .3 Color: at the Architect's discretion.
 - .7 **System no. 7: Opaque linseed oil and alkyd based stain system for wooden windows, new wooden door and Jewish staircase (handrail preserved) :**
 - .1 Dye:
 - .1 Dyeing based on linseed oil and alkyd to dyed, UV resistant, water repellent, retarding the growth of mould and having good resistance to marking
 - .1 Linseed oil paint shall be solvent-free.
 - .2 VOC content 250 g/L
 - .3 Accepted product: Woodmate 1075 Stain distributed by MF paint or approved equivalent.
 - .2 Preparation: refer to section 3.5 and 3.6 of this section and section 06 20 00 – Finish Carpentry / Architectural Woodwork.
 - .3 Note that cloths soaked in linseed oil paint are flammable. Plan to dispose of them carefully after having them immersed in water.
 - .8 **System no. 8: For plywood panels of electrical/mechanical rooms:**

.1 Apply one coat of intumescent paint such as SICO EXPERT 609-114 (matte white color) or approved equivalent at 133 square feet per 3.78 liters of paint per coat.

.9 **Systems described above are not exhaustive.** It is up to the Contractor to submit a proposal each time a surface to be painted not described above is met, and to execute the preparation and application work according to the systems approved by the Architect, and according to the manufacturer's recommendations accepted materials listing.

2.8 ACCESSORIES

- .1 Obtain approval of Agency Representative for use of power tools.
- .2 Use tools that do not damage adjacent materials.

PART 3 – EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections are acceptable for painting in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Agency Representative.
 - .2 Perform tests to verify the moisture content of surfaces to be painted using a properly calibrated electronic Moisture Meter; except test concrete floors for moisture using a simple "cover patch test". The maximum moisture content may not exceed the limit values specified in this section.
 - .3 Inform Agency Representative of unacceptable conditions immediately upon discovery.
 - .4 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Agency Representative.
 - .5 Work must not begin until unsatisfactory condition or defects have been corrected, and the substrates are found to be acceptable within the manufacturer's recommended range. Start of work must in no way be regarded as acceptance of the substrates, which must comply with the requirements of this section.

3.2 PROTECTION OF ON-SITE CONDITIONS

- .1 Protect existing building surfaces and adjacent structures with non-staining covers, masking against paint spatters, markings and other damage. If surfaces in question are damaged, clean and repair them in accordance with the Architect's instructions.
- .2 Protect items permanently attached to surfaces, for example, the fire resistance certification labels for doors and frames.
- .3 Protect factory-finished equipment and components.
- .4 Before start of painting work, remove cover plates from electrical appliances, lighting fixtures, hardware installed on the doors as well as all other accessories, fixtures. Remove hardware from windows before painting. Identify all items and store these items in a safe place and

reinstall once painting is complete.

- .5 As painting operations progress, place "WET PAINT" signs in pedestrian and vehicle traffic areas.
- .6 If necessary, cover or move furniture items and transportable materials to facilitate painting. Put back in place these items and materials as work progresses.

3.3 MANUFACTURER'S INSTRUCTIONS

- .1 Comply with manufacturer's recommendations or written instructions, including product bulletins and data sheets, as well as instructions for handling, storage and product application.

3.4 GENERAL

- .1 Unless otherwise specified, prepare surfaces and paint according to the requirements of the MPI Architectural Painting Specification Manual.
- .2 Apply paint products in accordance with manufacturer's written instructions.

3.5 CLEANING AND SURFACE PREPARATIONS – GENERAL

- .1 Clean and prepare exterior and interior surfaces in accordance with the requirements of the MPI Architectural Painting Specification Manual or as directed by the manufacturer of the linseed oil and alkyd based system. Refer to this document for specific requirements that will be added to the following instructions:
 - .1 Remove dust, dirt and other foreign matter by vacuuming and wiping surfaces with clean, dry rags.
 - .2 Wash surfaces with biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other contaminants from surfaces.
 - .3 For linseed oil systems, wash surfaces with linseed oil soap and clean with hot water using a stiff bristle brush. In the presence of mould, first clean the surface with pure ammonia, rinse and clean with linseed oil soap. Ensure that the existing substrate is not damaged by the process.
 - .4 After thoroughly brushing surfaces, rinse with clean water until no foreign matter remains.
 - .5 Do not use high pressure cleaning equipment. Use trigger operated spray nozzles for water hoses at normal municipal supply pressure.
 - .6 Allow surfaces to drain completely and dry thoroughly. Allow sufficient drying time and check the moisture content of the substrates with an electronic moisture meter before starting work.
 - .7 To prepare surfaces for water-based paint, it is recommended to use water-based cleaning products rather than organic solvents.
 - .8 Once dry, many water-based paints cannot be removed with water. The use of mineral spirits or organic solvents for cleaning these paints should be minimized.
 - .9 For the preparation of wood surfaces, refer to section 06 20 00 – Finish Carpentry / Architectural Woodwork.

- .10 Clean metal substrates to be painted by removing rust, rolling scale, welding slag, dirt, oil, grease and other foreign matter in accordance with MPI requirements. Remove all traces of stripping material, then clean the corners and recesses of the surfaces with clean brushes, dry compressed air or brushing followed by cleaning with a vacuum cleaner.
- .11 Do not apply paint to prepared surfaces until accepted by Architect.
- .12 Before applying primer or basecoat and between subsequent coats, prevent cleaned surfaces from being contaminated with salts, acids, alkalis, corrosive chemicals, grease, oil and solvents. Touch up and apply the primer or basecoat, paint, or other pre-treatment product as soon as possible after cleaning, before surface is contaminated again.
- .13 Sand and dust surfaces between layers as needed to ensure proper adhesion of the next layer and to eliminate visible defects at a distance of 1000 mm or less.
- .14 Where possible, apply a basecoat to the concealed surfaces of new wood structures prior to placement. Use basecoat products prescribed for exposed surfaces.
 - .1 Apply vinyl basecoat product in accordance with the requirements for product number 36 of MPI's list for knots, gums, sap and resinous surfaces.
 - .2 Seal cracks and nail holes with pore filler.
 - .3 Dye filler before application on stained wood products.
- .15 Touch-up surfaces coated with a shop-applied primer in accordance with the requirements of the relevant section. Significant alterations, including cleaning and painting of field assemblies, welds, rivets, bolts, nuts and washers, and rusted or improper surfaces, must be performed by the component supplier in question.
- .16 For existing or new exterior woodwork:
 - .1 Surface preparation: Sand and scrape all flaking surfaces, wash with phosphate trisodium (T.P.S.) and rinse with clean water until no powdery deposits are obtained. Allow to dry to a maximum of 12% moisture in the substrate.
 - .2 Apply to knots only one coat of Shellac 4 lbs Zinsser product or approved equivalent.
- .17 For windows to be stripped, provide a method of hot stripping wood surfaces of openings:
 - .1 Use an infrared scraper, adapted to your needs.
 - .2 Heat the paint until it smokes, and bubbles appear, about 20 to 40 seconds. Consult the manufacturer's instructions for use of the device. Immediately remove the paint with a paint spatula or scraper.
 - .3 Remove paint residue from corners with a brass wire brush.
 - .4 Lightly sand the stripped wood before painting.

3.6 APPLICATION FOR THE LINSEED-BASED SYSTEM

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.
 - .1 Install a minimum of **three coats** of dyeing based on linseed oil and

- alkyd on all surfaces requiring to dye.
- .2 Apply dyeing materials in accordance with paint manufacturer's written application instructions.
 - .1 Apply dyeing :
 - .1 To adequately prepared surfaces and within moisture limits.
 - .2 When previous coat of dyeing is dry and adequately cured.
 - .3 In accordance with manufacturer's written instructions.
 - .2 Do not apply dyeing to silicone.
 - .3 Apply paint with brush.
 - .1 Obtain Agency Representative's approval of application method before commencing work.
 - .2 Thoroughly mix dyeing before and during painting
 - .3 Apply dyeing thinly, especially on non-porous surfaces.
 - .4 Thoroughly mix dyeing before and during painting.
 - .4 Brush Application:
 - .1 Apply dyeing in a uniform layer using brush suitable for application.
 - .2 Work dyeing into cracks, crevices and corners.
 - .3 Brush runs and sags and overlap marks.
 - .4 Remove runs and sags from finished work and repaint.
 - .5 Roller or Spray Application:
 - .1 Roller or Spray Application is not permitted.
 - .6 Difficult to access places: apply coating with dipping sheepskins, daubers or other special tools when no other method is practical. Obtain approval of method from Agency Representative.
 - .7 Apply dyeing coats in continuous manner.
 - .8 Allow surfaces to dry and cure between coats for minimum time period as recommended by manufacturer.
 - .1 24 hours dry time between coats in ideal conditions. Environmental factors such as high humidity and/or low temperatures will increase dry and cure times. Adjust painting schedule to suit conditions.
 - .9 Minimum dry film thickness of coats: not less than that recommended by manufacturer.
 - .10 Repaint thin spots and bare areas before applying next coat of paint.
 - .11 Sand and dust between coats to remove visible defects.
 - .12 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents between applications of coats.
 - .13 Finish to windows: includes top, bottom and side edges.
 - .1 Dyeing surfaces concealed by hardware.

3.7 APPLICATION
FOR OTHER
SYSTEMS

- .1 Apply paint with brush and roller. Unless otherwise indicated, apply the product according to the manufacturer's instructions. The chosen method of application must be approved by the Architect before the start of the work. For historical surfaces (such as plaster from the ceiling on the first floor), brush application is required. Roller or spray application followed by wiping is also accepted.
- .2 Brush and roller application.

- .1 Apply an even coat of paint with a brush and/or roller suitable for application.
 - .2 Allow paint to penetrate cracks, crevices and corners.
 - .3 Apply paint with gun, pad or sheepskin to surfaces and corners inaccessible with a brush. Use a brush, pad or sheepskin when it is impossible to paint certain surfaces or corners with a roller.
 - .4 Remove runs and drips with a brush or roller and cover any marks left. Roller-painted surfaces must be free of roller marks and excess paint.
 - .5 Remove runs, drips and brush marks on finished surfaces and repaint all over these surfaces.
-
- .3 Spray application: according to manufacturer's written instructions.
 - .4 Use pad or sheepskin or soak only if there are no other means of painting hard-to-reach surfaces.
 - .5 Apply each coat of paint as to obtain a continuous film of uniform thickness. Repaint stripped surfaces or those covered with a film deemed too thin before applying the next layer.
 - .6 Allow surfaces to dry and harden properly after cleaning and between each successive layer, following waiting minimum time recommended by the manufacturer.
 - .7 Sand and dust surfaces between layers to eliminate visible defects.
 - .8 Finish surfaces above and below sightlines in accordance with requirements for adjacent surfaces, including top of cabinets and wardrobes and projecting banks.
 - .9 Finish alcoves and storage as indicated for adjoining rooms.
 - .10 Finish bottom of walls to floor and/or concrete slab where no baseboard will be installed later.
 - .11 Finish top, bottom, edges and door openings after adjustment in accordance with requirements for door siding faces.
 - .12 Repair and re-finish surfaces adjacent to new construction to provide continuity with new finishes and colors. Perform re-finishing to the nearest intersection between different substrate or until the next change of plan, and as approved by the Professional.
 - .13 Repair and refinish existing surfaces damaged by the work of this mandate. Re-finish to maintain appearance continuity, to the nearest intersection between different substrate or until the next change of plan, and as approved by the Professional. Perform re-finishing to match existing items.

**3.8 MECHANICAL AND
ELECTRICAL
EQUIPMENT**

- .1 Do not paint over name plates or instruction labels.
- .2 Unless otherwise specified, apply paint to piping, electrical conduits, vent

ducts, brackets / suspensions and other visible interior electrical and mechanical components so that the color and finish of those painted surfaces harmonizes with those of contiguous surfaces.

- .3 Other unfinished Areas (Room # 100 - Electrical Room, # 101 - Janitorial, # 136 - Sprinkler Room): leave piping, electrical conduits, ventilation ducts, supports / suspensions and other electrical components. and mechanical appearing in their original finish, and touch-up only scratches and other marks made on existing coatings.
- .4 Do not paint the sprinkler's heads.

3.9 FIELD QUALITY CONTROL

- .1 Architect will inspect the painting work in their different phases.
- .2 Inform Architect when a surface and a product applied on site are ready to be inspected. Do not apply the next layer until the previous layer has been approved.
- .3 Interior surfaces to be painted must be inspected by Architect prior to the start of work or after the application of a basecoat layer which has revealed defects in the substrate.
- .4 Standard of acceptance:
 - .1 When viewed using natural prevailing sunlight at peak period of day (mid-day) on surface viewed, surfaces to indicate following:
 - .1 Windows: no defects visible from a distance of 1000 mm at 90 degrees to surface.
 - .2 Final coat: to exhibit uniformity of colour and sheen across full surface.
 - .2 Advise Agency Representative when each surface and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved by Agency Representative.
 - .3 Co-operate with Paint Inspection Agency and provide access to areas of work.
 - .4 Manufacturer's Field Services:
 - .1 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
 - .5 Conduct moisture tests on substrates.
 - .1 Use calibrated electronic moisture meter.

3.10 HARDWARE RE-INSTALLATION

- .1 Clean and re-install hardware items removed and stored previous to commencement of the Work.
- .2 Re-install hardware items in original locations.
- .3 Make sure all windows operate freely.

3.11 CLEANING

- .1 Cleaning during works: clean in accordance with Section 01 74 11 - Cleaning.

- .1 Leave work area clean at end of each day.
- .2 Reinstall and clean removed items after painting is completed.
- .3 Remove paint where spilled, splashed or splattered as work progresses using means and materials that are not detrimental to affected surfaces.
 - .1 Clean and restore as directed by Agency Representative.
- .4 Wipe spills and spots immediately with a damp cloth.
- .5 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .6 Waste Management: separate waste materials in accordance with Article 1.3 of Section 01 74 11 – Cleaning.
- .7 Reduce the amount of contaminants entering waterways, sanitary/storm drain systems and into the ground.
 - .1 Adhere to the following procedures:
 - .1 Retain cleaning water for water-based materials. Allow sediments to be filtered out. Do not use free-draining water to clean equipment.
 - .2 Return oil-soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .3 Dry empty paint cans prior to disposal or recycling.
 - .4 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store product in well-ventilated fire-safe area at moderate temperature.
- .8 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling facility.
- .9 Keep work area free from unnecessary accumulation of tools, equipment, surplus materials, and debris.
- .10 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with Federal, Provincial and Municipal regulations and following Section 01 35 43 – Environmental Procedures.
- .11 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil-based materials as well as cleaning and protective materials, paints, thinners, paint removers/strippers in accordance with Federal, Provincial and Municipal regulations and following Section 01 35 43 – Environmental Procedures.
- .12 Clean painting equipment in leak-proof containers that will permit particulate matter to settle out and be collected. Dispose of sediment remaining from cleaning operations in accordance with Federal, Provincial and Municipal regulations and following Section 01 35 43 – Environmental Procedures.

3.12 CLEAN-UP

- .1 Clean and reinstall all hardware removed to execute of painting.

- .2 Remove protective coverings and warning signs as soon as practical after completion of work.
- .3 Remove paint splashings on exposed surfaces. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly painted surfaces from drips and dust, to the Professional's satisfaction of the Professional, and avoid scratching new coatings.
- .5 Return the premises used for storage, mixing and handling of paints and cleaning of tools and equipment used in their initial state of cleanliness, to the satisfaction of the Agency Representative.

END OF SECTION

PART 1 – GENERAL

1.1. SCOPE OF WORK

1. Work described in this section covers the supply and installation of all existing and new washroom accessories required for the layout shown in the drawings, unless otherwise indicated.

1.2. RELATED SECTIONS

1. Section 07 92 10 – Joint Sealants.
2. Section 06 20 00 – Finish Carpentry.
3. Section 08 80 50 – Glazing.

1.3. REFERENCES

1. ASTM International
 1. ASTM A 167-99(2009), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 2. ASTM B 456-03, Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
 3. ASTM A 653/A 653M-09, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 4. ASTM A 924/A 924M-09, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
2. Canadian General Standards Board (CGSB)
 1. CAN/CGSB-1.81-M90, Air Drying and Baking Alkyd Primer for Vehicles and Equipment.
 2. CAN/CGSB-1.88-92, Gloss Alkyd Enamel, Air Drying and Baking.
 3. CGSB 31-GP-107MA-90, Non-inhibited Phosphoric Acid Base Metal Conditioner and Rust Remover.
3. Canadian Standards Association (CSA)/CSA International
 1. CAN/CSA-B651-F04, Barrier-Free Design.
 2. CAN/CSA-G164-FM92(C2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

1.4. SHOP DRAWINGS

1. Submit shop drawings in accordance with Section 01 30 00 – Submittal Procedures.
2. Shop drawings must indicate size and description of components, base material, surface finish inside and out, hardware and locks, , description of rough-in-frame and building-in details.

1.5. SUBMITTALS

1. Provide maintenance data for toilet and bath accessories for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
2. Provide the Agency Representative with the special tools required to access, assemble and disassemble bathroom accessories.

**1.6 MANUFACTURER'S
INSTRUCTION**

1. Provide maintenance instructions of washroom accessories as prescribed in Section 01 33 00 – Submittal Procedures.

1.7 FABRICATION

1. Hot-dip galvanize concealed ferrous metal anchors and fastening devices in accordance with CSA Standard G164-M1981.
2. Shop assemble components and package complete with anchors and fittings.
3. Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates, details and instructions for building in anchors and inserts.
4. Provide steel anchor plates and components for installation on studding and building framing.

**1.8 DELIVERY,
STORAGE AND
HANDLING**

1. Delivery and Acceptance: Deliver materials and equipment to work site in their original packaging, which must be labeled with the name and address of the manufacturer.
2. Store materials and equipment indoors, in a dry, clean, dry, well-ventilated area as recommended by the manufacturer.
3. Store toilet accessories and fixtures to protect them from marks, scratches.
4. Replace defective or damaged materials and equipment with new materials and equipment.

1.9 EQUIVALENTS

1. Accessories listed in the architectural and engineering drawings are acceptable products. However, equivalents may be proposed. Equivalents must be submitted during the bidding period and must meet the same technical and aesthetic criteria. They must be approved by the Architect, Engineers and the Agency Representative.

PART 2 – PRODUCTS

2.1 MATERIALS

1. For the list of products, refer to the architectural and engineering drawings.

PART 3 – EXECUTION

3.1. INSTALLATION

1. Install and securely attach toilet accessories according to the manufacturer's recommendations and according to the heights and locations indicated on drawings. Any changes in location required by site conditions must be approved by the Architect.
2. All accessories in universal cabins or wc rooms will be installed at the heights recommended by the standards in force (CNB), unless otherwise specified.
3. If undetermined on the drawings, all accessories in the accessible washroom will be installed at the heights recommended by the applicable standards (NBC), unless otherwise specified.
4. If undetermined on the drawings, all other accessories will be installed at locations and heights recommended by the manufacturer.
5. Install and secure accessories rigidly in place as follows:
 1. Stud walls: install, by means of dowels or threaded studs, steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.
 2. It will be prohibited to fix in masonry walls unless approved by the professional.
 3. If needed, for solid masonry or concrete: use bolt with lead expansion sleeve set into drilled hole.
6. Use tamper proof screws/bolts for fasteners.
7. Install and secure accessories plumb, level, square and well aligned. Ensure that the grab and support bars are securely attached to the supports to resist failure-free loads and stresses.
8. Fill units with necessary supplies shortly before final acceptance of building.
9. Install mirrors in accordance with Section 08 80 50 - Glazing.
10. Install grab bars on built-in anchors provided by bar manufacturer.
11. Clean all devices and accessories just before final acceptance of the building.

3.2. FITTING

1. Adjust bathroom accessories and their components as to operate properly, in accordance with the manufacturer's written instructions.

2. Accurately adjust and lubricate moving parts to ensure smooth operation.

3.3. PROTECTION

1. Protect installed items from damage during construction work.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 33 00 – Submittal Procedures.
 - .2 Section 01 61 00 – Common product requirements.
 - .3 Section 06 20 00 – Finish Carpentry / Architectural Woodwork.
- 1.2 EQUIPMENT SUPPLIER RESPONSABILITIES
- .1 Read all plans, equipment list and tender documents carefully.
 - .2 The bidder must be sure to understand the full extend of the work and services required.
 - .3 Check the conditions of delivery, reception and handling.
 - .4 All bids must include the supply, transportation and assistance to installation of equipment (as specified on the equipment list) without any change or substitution. Only suppliers who have complied with all of these standards in their bid will be considered.
 - .5 All bids must include 1-year warranty extensions or more depending on the manufacturer including parts and labor on all equipment. Provide item list with extensions.
 - .6 Any supplier may submit an alternative price for any piece of equipment equivalent and of equal or superior quality. For any alternative, the supplier must indicate the price difference with the original specification and provide all the technical data with its price as well as the warranties.
 - .7 The equipment supplier must check all the dimensions and conditions of the site before making the custom parts.
 - .8 The equipment supplier must provide the customer, from the installation, with the operating manuals including the maintenance instructions and the spare parts list. Include the list of service company names including telephone numbers and warranty certificates in the short and long term.
 - .9 Any add part (filler) vertical or horizontal required between installed equipment and cabinetry, must be provided and installed at no additional cost.
- 1.3 SCOPE OF WORK
- .1 The work to be carried out must include all the manpower, materials, tools necessary for the installation and start-up of any piece of equipment.
 - .2 Provide and install all New Equipment As described.
 - .3 Manufacture and install all stainless steel furniture as described.

- .4 Close and seal with a stainless steel gasket if the space is larger than 1/8 "between the pieces of equipment, backsplash, countertops and the wall.
 - .5 Assisting the General Contractor, cabinetmaker, plumber and electrician.

- 1.4 PLUMBING FIXTURES
(ON EQUIPMENT)
 - .1 Refer to Engineering plans and sheets and engineer plans
 - .2 Supply and install all supply valves as described on the equipment list.
 - .3 Supply and install all drains, overflow, connecting hoses, ready to be connected by plumber.
 - .4 Provide and install complete corner drains In the sinks on measures with removable stainless steel overfills in accordance with industry standards as well as a removable protection grid.

- 1.5 ELECTRICAL ACCESSORIES
(ON EQUIPMENT)
 - .1 Refer to the plans and Technical sheets and engineering plans
 - .2 Install according to CSA standards.
 - .3 Provide and install, with the equipment, the junction boxes necessary for the final spur by the electrician.
 - .4 Provide a minimum of six feet male and wire plugs as specified.

- 1.6 CUSTOM MADE EQUIPMENT TO MEASURE
 - .1 Refer to the Custom Equipment Designs
 - .2 All materials must be of the highest quality according to the rules of art.
 - .3 Stainless steel must have a minimum calibration of 16 Ga for all Work surface top, 20 for visible vertical parts (doors and sides) in accordance with the latest standards, type 304, Finish No 4.
 - .4 Galvanized steel must be of type "color bond" zinc coating quality 3 ounces, 85 gr per m2.
 - .5 The working table legs must be made of 1 5/8 "diameter stainless steel and fitted with adjustable clogs.
 - .6 The wheels of the equipment must be homologated " NSF".

- .7 Any refrigerant or heating equipment must be insulated in addition to the insulation, any ice receptacle must have a double removable perforated bottom.
 - .8 Provide complete workshop drawings including a description of all materials and hardware used.
- 1.7 PROCEDURES
- .1 Provide the necessary assistance to contractors and subcontractors in plumbing, electricity and ventilation at all times. Inform them of the exact location of the anchors, the Branches, and floor basins and/or open drains.
 - .2 Coordinate with the General Contractor The delivery and handling of the equipment provided.
 - .3 Assist the general contractor in the installation of all the equipment provided and those already purchased by the customer.
 - .4 Ensure that the installation of equipment's Is In accordance with the security codes and the building in force. Follow manufacturer's recommendations and guidelines.
 - .5 Provide access panels and ventilation grilles where necessary. Ensure that the equipment is set up according to the releases requested by the manufacturers.
 - .6 Provide and install casters (NSF), flexible hoses and additional wiring on any equipment that will need to be moved for service.
 - .7 Provide stainless steel shims if required. No other material will be accepted.
 - .8 The equipment permanently installed must be fixed securely to the floor and/or furniture
 - .9 Seal at the base any equipment that cannot be cleaned underneath.
- 1.8 SUBMISSIONS
- .1 Neither the client nor the consultants assume responsibility for the instructions given orally.
 - .2 Provide a detailed list of each item to be supplied and installed including model number and unit price.
 - .3 Include in the submission the costs of transportation, handling, supervision, implementation and final installation. As well as employee training.

- .4 Include in the submission all costs related to the addendum (if any) with the issue and date of issue.
- .5 Notify the consultant of any errors, omissions or ambiguities noted. Verify carefully the dimensions and quantities shown on the plans and the equipment list. Any correction and/or accuracy will be issued as an addendum.
- .6 Complete the documents supplied with the unit and total price.

PART 2 - PRODUCTS

CAFÉ FORT LENNOX
FORT LENNOX COFFEE

ITEM <i>ITEM</i>	4
DESCRIPTION ABRÉGÉE <i>SHORT DESCRIPTION</i>	réfrigérateur vitrine refrigerated showcase
DESCRIPTION <i>DESCRIPTION</i>	
QUANTITÉ <i>QUANTITY</i>	1
MARQUE <i>MAKE</i>	CDS
MODÈLE <i>MODEL</i>	SQR 6
OPTIONS <i>OPTIONS</i>	fini extérieur stratifié Wilsonart # D381-60 Fashion Grey exterior finish plastic laminate Wilsonart # D381-60 Fashion Grey
	vitre côté en ligne avec base side glass in line with base

DIMENSIONS <i>DIMENSIONS</i>	LARGEUR <i>WIDTH</i>	PROFONDEUR <i>DEPTH</i>	HAUTEUR <i>HEIGHT</i>
POUCES <i>INCHES</i>	72	30	50
MILLIMÈTRES <i>MILLIMITERS</i>	1829	762	1270

PLOMBERIE / <i>PLUMBING</i>				
EAU FROIDE <i>COLD WATER</i>	EAU CHAUDE <i>HOT WATER</i>	DRAIN DIRECT <i>DIRECT DRAIN</i>	DRAIN OUVERT <i>OPENED DRAIN</i>	HAUTEUR HEIGHT (po. In. / mm)

ÉLECTRICITÉ / <i>ELECTRICITY</i>							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
120			15,0	1/2		5-15R	24 610

CUBE

PRODUCT SPECIFICATIONS

ITEM NO. _____
 PROJECT: _____
 DATE: _____

SQR REFRIGERATED DISPLAY CASE



SQR 4848 W/STAINLESS STEEL SHELVES

- SQR 3 36"L.X30"D.X50"H.
- SQR 4 48"L.X30"D.X50"H.
- SQR 5 60"L.X30"D.X50"H.
- SQR 6 72"L.X30"D.X50"H.
- SQR 8 96"L.X30"D.X50"H.

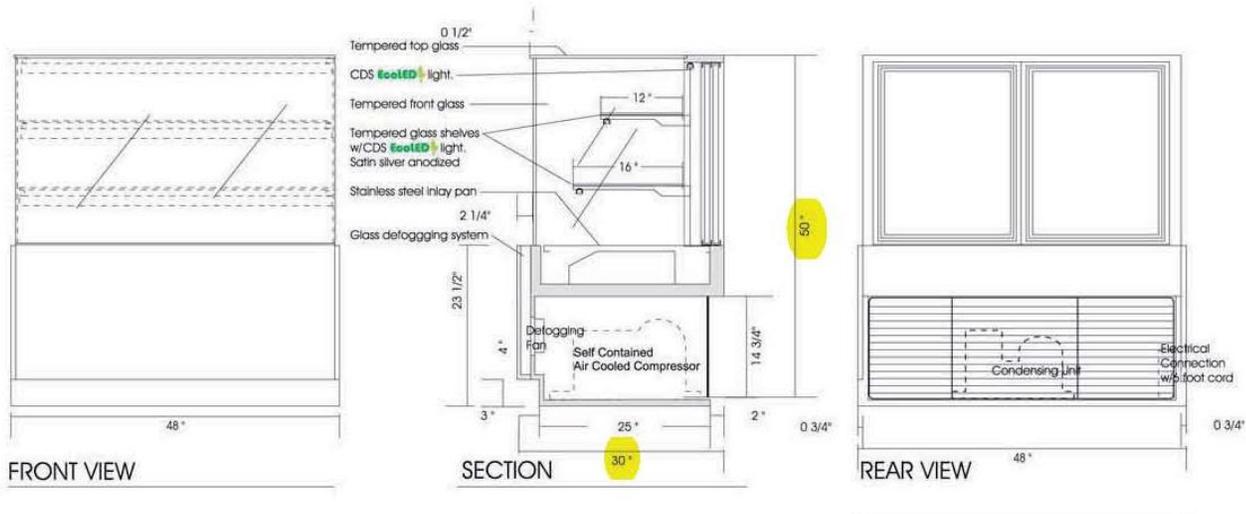
STANDARD FEATURES

1. Top LED light.
2. Top glass.
3. Two (2) tempered glass shelves w/LED shelf lights.
4. Stainless steel inlay pan.
6. Thermo-pane rear sliding glass doors.
7. Standard high pressure laminate - Black.
8. Self contained condensing unit.

OPTIONS

- Exterior plastic laminate of choice. Wilsonart # D381-60 Fashion Grey
- Stainless steel shelves.
- Powder coated metal components.
- Custom units on request.
- Solid side gables with mirrored interiors.
- Remote condensing unit.

MODEL	DIMENSIONS	H.P.	ELECTRICAL	SHIPPING WT.
SQR 3	36"L.X30"D.X50"H.	1/3 H.P.	115V/1/60HZ/ 9.0 AMPS	340 lb.
SQR 4	48"L.X30"D.X50"H.	1/3 H.P.	115V/1/60HZ/10.0 AMPS	420 lb.
SQR 5	60"L.X30"D.X50"H.	1/2 H.P.	115V/1/60HZ/12.0 AMPS	540 lb.
SQR 6	72"L.X30"D.X50"H.	1/2 H.P.	115V/1/60HZ/13.0 AMPS	620 lb.
SQR 8	96"L.X30"D.X50"H.	3/4 H.P.	115V/1/60HZ/16.0 AMPS	880 lb.



Operating temperature of 2° to 4° Celsius (37° to 40°F.) under normal store conditions of 24°C (75°F.) with 50% relative humidity. Condensation on glass may occur under hot & humid conditions. Product entering the display case must be 4°Celsius (40°F) or lower.

* Due to constant improvements, specifications are subject to change without notice.



Canadian Display Systems Inc.
 1-800-895-5862 (Toll Free)
 cds1@on.aibn.com
 www.canadiandisplayssystems.com



ITEM <i>ITEM</i>	7
DESCRIPTION ABRÉGÉE <i>SHORT DESCRIPTION</i>	grilloir à panini panini grill
DESCRIPTION <i>DESCRIPTION</i>	
QUANTITÉ <i>QUANTITY</i>	1
MARQUE <i>MAKE</i>	Eurodib
MODÈLE <i>MODEL</i>	PDR300
OPTIONS <i>OPTIONS</i>	

DIMENSIONS <i>DIMENSIONS</i>	LARGEUR <i>WIDTH</i>	PROFONDEUR <i>DEPTH</i>	HAUTEUR <i>HEIGHT</i>
POUCES <i>INCHES</i>	20 1/2	17 1/2	9 1/2
MILLIMÈTRES <i>MILLIMITERS</i>	521	445	241

PLOMBERIE / <i>PLUMBING</i>				
EAU FROIDE <i>COLD WATER</i>	EAU CHAUDE <i>HOT WATER</i>	DRAIN DIRECT <i>DIRECT DRAIN</i>	DRAIN OUVERT <i>OPENED DRAIN</i>	HAUTEUR HEIGHT (po. In. / mm)

ÉLECTRICITÉ / <i>ELECTRICITY</i>							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
208 / 240		3	15,7			6-20R	45 1143



SFE SERIES



ELIO, CORT
& PD SERIES

PANINI GRILLS

Features and Benefits



- **Compact** Easy to handle and position.
- **Food type** The different working surface styles makes it suitable for cooking meat, fish, eggs, vegetables, cheese and other food that can be grilled. Ideal for sandwiches, breads of different sizes and thickness.
- **Heavy duty machine** Long life cast iron plates, which ensure hygiene, and is resistant to oxidation.
- **Stainless Steel** Construction.
- **Non stick** Cast iron plates with ceramic coating treatment. Plates won't chip or peel, is extremely tough and long lasting.
- **Thermostat** Adjustable up to 572°F (300°C). Large panini models have 2 adjustable thermostats, which enables to use plates separately.
- **Self balancing upper plates** Automatically adjust to the thickness of the food product and stays in place.
- **Hinge mechanism** Adjustable with an allen key w/ out removing the spring cover.
- **Grease drawer** Front-mounted and easy to remove.
- **Spring cover** Easy to remove.
- **Heating elements** (2) shock proof, coated heating elements.
- **Performance** The fine grain cast iron plates provides an even greater heat retention.
- **Warranty** (1) year parts and labor.

eurodib

PD Series
LARGE



Power 208-240V, 3000W, 15.7A, 6-20P
Cooking Surface 19.7" x 10"
Dimensions 20.5" W x 9.5" H x 17.5" L
Weight 62 lbs

PDR3000 All sides ribbed

ITEM ITEM	9
DESCRIPTION ABRÉGÉE SHORT DESCRIPTION	réfrigérateur 2 portes sous-comptoir under counter 2 doors refrigerator
DESCRIPTION DESCRIPTION	réfrigérateur sous-comptoir avec réfrigérant hydrocarbure respectant la norme ADA Undercounter ADA Compliant Solid Door Refrigerator with Hydrocarbon Refrigerant
QUANTITÉ QUANTITY	1
MARQUE MAKE	True
MODÈLE MODEL	TUC-48-ADA-HC
OPTIONS OPTIONS	serrure (installée en usine). Une par porte requise. Barrel locks (factory installed). Requires one per door.

DIMENSIONS DIMENSIONS	LARGEUR WIDTH	PROFONDEUR DEPTH	HAUTEUR HEIGHT
POUCES INCHES	48 5/16	31 1/16	33 11/16
MILLIMÈTRES MILLIMETERS	1227	789	856

PLOMBERIE / PLUMBING				
EAU FROIDE COLD WATER	EAU CHAUDE HOT WATER	DRAIN DIRECT DIRECT DRAIN	DRAIN OUVERT OPENED DRAIN	HAUTEUR HEIGHT (po. In. / mm)

ÉLECTRICITÉ / ELECTRICITY							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
120			3,0	1/5		5-15R	24 610

 TRUE FOOD SERVICE EQUIPMENT, INC. 2001 East Terra Lane • O'Fallon, Missouri 63366-4434 • (636)240-2400 Fax (636)272-2408 • Toll Free (800)325-6152 • Intl Fax# (001)636-272-7546 Parts Dept. (800)424-TRUE • Parts Dept. Fax# (636)272-9471 • www.truemfg.com	Project Name: _____	AIA #
	Location: _____	SIS #
	Item #: _____ Qty: _____	
	Model #: _____	
Model: TUC-48-ADA-HC Undercounter: ADA Compliant Solid Door Refrigerator with Hydrocarbon Refrigerant		



TUC-48-ADA-HC

- ▶ Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- ▶ 3" (77 mm) diameter stem castors standard. 34" (864 mm) work surface height. Complies with the Americans with Disabilities Act (ADA) requirements.
- ▶ Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydrocarbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- ▶ Oversized, environmentally friendly forced-air refrigeration system holds 33°F to 38°F (.5°C to 3.3°C).
- ▶ All stainless steel front, top and ends. Matching aluminum finished back.
- ▶ Interior - attractive, NSF approved, clear coated aluminum liner with stainless steel floor.
- ▶ Heavy duty PVC coated wire shelves.
- ▶ Foamed-in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).

ROUGH-IN DATA

Specifications subject to change without notice.
 Chart dimensions rounded up to the nearest 1/8" (millimeters rounded up to next whole number).

Model	Doors	Shelves	Cabinet Dimensions (inches) (mm)			Counter Height	HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
			L	D†	H*							
TUC-48-ADA-HC	2	4	48 3/8 1229	30 1/8 766	29 3/4 756	34 864	1/8 1/4	115/60/1 230-240/50/1	3.0 1.63	5-15P ▲	7 2.13	260 118

† Depth does not include 1" (26 mm) for rear bumpers.
 * Height does not include 4" (102 mm) for castors.

▲ Plug type varies by country.

 9/15 Printed in U.S.A.	APPROVALS:	AVAILABLE AT:
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Model: TUC-48-ADA-HC	Undercounter: ADA Compliant Solid Door Refrigerator with Hydrocarbon Refrigerant	
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STANDARD FEATURES

DESIGN

- True's undercounter units are designed with enduring quality that protects your long term investment.
- True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM

- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- Oversized, factory balanced refrigeration system with guided air flow to provide uniform product temperatures.
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser maintains cabinet temperatures of 33°F to 38°F (5.6°C to 3.33°C) for the best in food preservation.
- Sealed, cast iron, self-lubricating evaporator fan motor(s) and larger fan blades give True undercounter units a more efficient, low velocity, high volume airflow design. This unique design ensures faster temperature recovery and shorter run times in the busiest of foodservice environments.
- Condensing unit access in back of cabinet, slides out for easy maintenance.

CABINET CONSTRUCTION

- Exterior - stainless steel front, top and ends. Matching aluminum finished back.

- Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with covered corners.
- Insulation - entire cabinet structure and solid doors are foamed-in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- 3" (77 mm) diameter stem castors. 34" (864 mm) work surface height. Compliant with American Disabilities Act (ADA) requirements.

DOORS

- Stainless steel exterior with white aluminum liner to match cabinet interior.
- Each door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing doors with 90° stay open feature. Doors swing within cabinet dimensions.
- Magnetic door gaskets of one piece construction, removable without tools for ease of cleaning.

SHELVING

- Four (4) adjustable, heavy duty PVC coated wire shelves 21 5/16" L x 16" D (548 mm x 407 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pillars made of same material as cabinet interior; shelves are adjustable on 1/2" (13 mm) increments.

MODEL FEATURES

- Evaporator is epoxy coated to eliminate the potential of corrosion.
- NSF-7 compliant for open food product.

ELECTRICAL

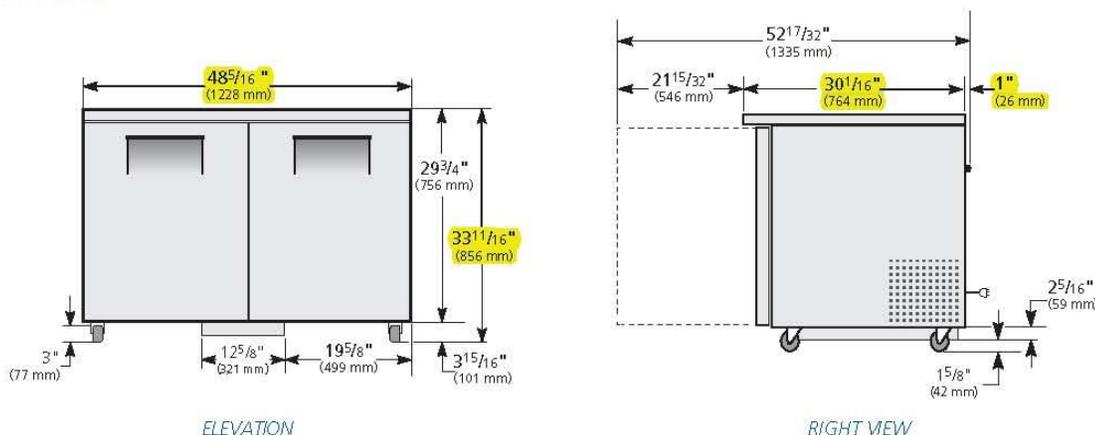
- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.



OPTIONAL FEATURES/ACCESSORIES

- Upcharge and lead times may apply.
- 230 - 240V / 50 Hz
 - Barrel locks (factory installed). Requires one per door.
 - Single oversheff.
 - Double oversheff.
 - Stacking collar.
 - 30" (762 mm) deep, 1/2" (13 mm) thick, white polyethylene cutting board. Requires "L" brackets.
 - 30" (762 mm) deep, 1/2" (13 mm) thick, composite cutting board. Requires "L" brackets.
 - Heavy duty 16 gauge top.
 - Exterior rectangular digital temperature display (factory installed).
 - Standard height units with 5" (127 mm) diameter castors. 36" (915 mm) work surface height.
 - Low profile models with 3 1/8" (810 mm) work surface height.

PLAN VIEW



WARRANTY*
 Three year warranty on all parts and labor and an additional 2 year warranty on compressor. (U.S.A. only)

*RESIDENTIAL APPLICATIONS: TRUE assumes no liability for parts or labor coverage for component failure or other damages resulting from installation in non-commercial or residential applications.

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER
 SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

	Model	Elevation	Right	Plan	3D	Back
	TUC-48-ADA-HC	TFQY19E	TFQY19S	TFQY02P	TFQY193	

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ITEM ITEM	10
DESCRIPTION ABRÉGÉE SHORT DESCRIPTION	congélateur 1 porte sous-comptoir under counter 1 door freezer
DESCRIPTION DESCRIPTION	congélateur sous-comptoir avec réfrigérant hydrocarbure respectant la norme ADA Undercounter ADA Compliant Solid Door Freezer with Hydrocarbon Refrigerant
QUANTITÉ QUANTITY	1
MARQUE MAKE	True
MODÈLE MODEL	TUC-27F
OPTIONS OPTIONS	serrure (installée en usine) Barrel lock (factory installed)

DIMENSIONS DIMENSIONS	LARGEUR WIDTH	PROFONDEUR DEPTH	HAUTEUR HEIGHT
POUCES INCHES	27 9/16	31 1/16	33 11/16
MILLIMÈTRES MILLIMITERS	700	789	856

PLOMBERIE / PLUMBING				
EAU FROIDE COLD WATER	EAU CHAUDE HOT WATER	DRAIN DIRECT DIRECT DRAIN	DRAIN OUVERT OPENED DRAIN	HAUTEUR HEIGHT (po. In. / mm)

ÉLECTRICITÉ / ELECTRICITY							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
120			5,0	1/3		5-15R	24 610

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		S/S #
Model: TUC-27F-ADA-HC	Undercounter: ADA Compliant Solid Door Freezer with Hydrocarbon Refrigerant	



TUC-27F-ADA-HC

- ▶ True's undercounter units are designed with enduring quality that protects your long term investment.
- ▶ Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- ▶ 3" (77 mm) diameter stem castors standard. 34" (864 mm) work surface height. Complies with the Americans with Disabilities Act (ADA) requirements.
- ▶ Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydrocarbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- ▶ Oversized, environmentally friendly forced-air refrigeration system holds -10°F (-23.3°C). Ideally suited for both frozen foods and ice cream.
- ▶ All stainless steel front, top and ends. Matching aluminum finished back.
- ▶ Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.
- ▶ Heavy duty PVC coated wire shelves.
- ▶ Automatic defrost system time-initiated, time-terminated.
- ▶ Foamed-in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).

ROUGH-IN DATA

Specifications subject to change without notice.
 Chart dimensions rounded up to the nearest 1/8" (millimeters rounded up to next whole number).

Model	Doors	Shelves	Cabinet Dimensions (inches) (mm)			Counter Height	HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
			L	D†	H*							
TUC-27F-ADA-HC	1	2	27 7/8 702	30 1/8 766	29 3/4 756	34	1/8 N/A	115/60/1	5.0 N/A	5-15P	7 2.13	200 91

† Depth does not include 1" (26 mm) for rear bumpers.
 * Height does not include 4" (102 mm) for castors.

 9/15 Printed in U.S.A.	APPROVALS:	AVAILABLE AT:
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Model: TUC-27F-ADA-HC	Undercounter: ADA Compliant Solid Door Freezer with Hydrocarbon Refrigerant	
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STANDARD FEATURES

DESIGN

- True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM

- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser; maintains -10°F (-23.3°C) cabinet temperatures. Ideally suited for both frozen foods and ice cream.
- Sealed, cast iron, self-lubricating evaporator fan motor and larger fan blades give True undercounter units a more efficient, low velocity, high volume airflow design. This unique design ensures faster temperature recovery and shorter run times in the busiest of food service environments.
- Condensing unit access in back of cabinet, slides out for easy maintenance.
- Automatic defrost system time-initiated, time-terminated.

CABINET CONSTRUCTION

- Exterior - stainless steel front, top and ends. Matching aluminum finished back.
- Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.

- Insulation - entire cabinet structure and solid door are foamed-in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- 3" (77 mm) diameter stem castors. 34" (864 mm) work surface height. Compliant with American Disabilities Act (ADA) requirements.

DOOR

- Stainless steel exterior with white aluminum liner to match cabinet interior.
- Door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing door with 90° stay open feature. Doors swing within cabinet dimensions.
- Magnetic door gaskets of one piece construction, removable without tools for ease of cleaning.

SHELVING

- Two (2) adjustable, heavy duty PVC coated wire shelves 23 3/4" L x 16" D (591 mm x 407 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on 1/2" (13 mm) increments.

COUNTERTOP PAN CAPACITY

- Comes standard with 16 (1/2 size) 6 7/8" L x 6 1/4" W x 4" D (175 mm x 159 mm x 102 mm) clear polycarbonate, NSF approved, food pans in countertop prep area. Also accommodates 6" (153 mm) and 8" (204 mm) deep food pans (supplied by others).

- Countertop pan opening designed to fit varying size pan configurations with available pan divider bars. Varying size pans supplied by others.

MODEL FEATURES

- Evaporator is epoxy coated to eliminate the potential of corrosion.
- NSF-7 compliant for open food product.

ELECTRICAL

- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.

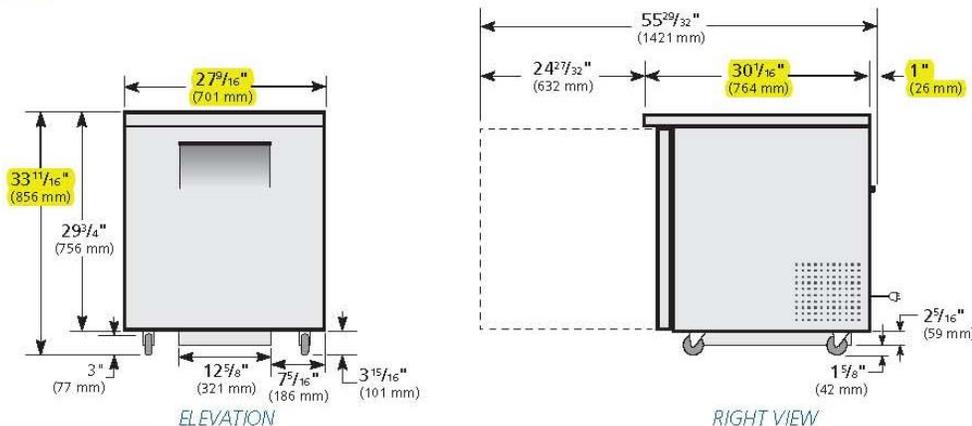


OPTIONAL FEATURES/ACCESSORIES

- Upcharge and lead times may apply.
- 6" (153 mm) standard legs.
 - 6" (153 mm) seismic/flanged legs.
 - 5" (127 mm) diameter stem castors.
 - Single overshell.
 - Double overshell.
 - Stacking collar.
 - 30" (762 mm) deep, 1/2" (13 mm) thick, white polyethylene cutting board. Requires "L" brackets.
 - 30" (762 mm) deep, 1/2" (13 mm) thick, composite cutting board. Requires "L" brackets.
 - Heavy duty 16 gauge tops.
 - Exterior rectangular digital temperature display (factory installed).
 - Low profile models with 31 7/8" (810 mm) work surface height.

Barrel lock (factory installed)

PLAN VIEW



WARRANTY*
 Three year warranty on all parts and labor and an additional 2 year warranty on compressor. (U.S.A. only)

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

	Model	Elevation	Right	Plan	3D	Back
	TUC-27F-ADA-HC	TFQY016E	TFQY016S	TFQY01P	TFQY0163	

*RESIDENTIAL APPLICATIONS: TRUE assumes no liability for parts or labor coverage for component failure or other damages resulting from installation in non-commercial or residential applications.

TRUE FOOD SERVICE EQUIPMENT

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ITEM <i>ITEM</i>	12
DESCRIPTION ABRÉGÉE <i>SHORT DESCRIPTION</i>	réchaud à soupe soup warmer
DESCRIPTION <i>DESCRIPTION</i>	rethermalisateur par induction encastré drop-in induction rethermalizer
QUANTITÉ <i>QUANTITY</i>	1
MARQUE <i>MAKE</i>	Vollrath
MODÈLE <i>MODEL</i>	741101D
OPTIONS <i>OPTIONS</i>	47492 anneau décoratif en inox pour réchaud encastré 11 Qt. 47492 decorative stainless steel ring for 11 Qt. induction drop-in

DIMENSIONS <i>DIMENSIONS</i>	LARGEUR <i>WIDTH</i>	PROFONDEUR <i>DEPTH</i>	HAUTEUR <i>HEIGHT</i>
POUCES <i>INCHES</i>	13 7/8		12 7/16
MILLIMÈTRES <i>MILLIMETERS</i>	352		316

PLOMBERIE / <i>PLUMBING</i>				
EAU FROIDE <i>COLD WATER</i>	EAU CHAUDE <i>HOT WATER</i>	DRAIN DIRECT <i>DIRECT DRAIN</i>	DRAIN OUVERT <i>OPENED DRAIN</i>	HAUTEUR HEIGHT (po. In. / mm)

ÉLECTRICITÉ / <i>ELECTRICITY</i>							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
120		0,80	6,7			5-15R	24 610



Outperform every day.™

Project:

Item Number: 12

Quantity: 1

MIRAGE® DROP-IN INDUCTION WARMERS AND RETHERMALIZERS



DESCRIPTION

Mirage® Drop-in Induction Warmers and Rethermalizers use innovative induction technology to run dry (without a water bath), improve food quality and minimize food waste, while using a fraction of the energy. They are shipped complete with an induction-ready inset and slotted hinged cover. The cover is not NSF.

WARMER PERFORMANCE CRITERIA

Mirage® Drop-in Induction Warmers are designed to hold heated prepared foods at temperatures above the HACCP "danger zone" of 140° F (60° C). The performance standard is measured using the NSF mixture preheated to 165° F (73.9° C). The unit will hold the temperature of this product above 150° F (65.6° C). The temperature will be maintained best when the food product is held using pans with covers, and the food product is stirred regularly.

RETHERMALIZER PERFORMANCE CRITERIA

The Mirage® Drop-in Induction Rethermalizers are designed to take a container of cooked food from a chilled state (below 40.0° F [4.4° C]) through the HACCP "danger zone" of 165° F (73.9° C) in less than 90 minutes. The performance standard is measured using the NSF mixture chilled to 35° F (1.7° C). The electric unit will raise the temperature of this product above 165° F (73.9° C) in less than 90 minutes. The temperature will be maintained above 150° F (65.6° C) when the food product and pan or inset are used with a standard pan or inset cover, and the food product is stirred regularly.

Agency Listings



This device complies with Part 18 FCC Rules.

Cover is not NSF.

Due to continued product improvement, please consult www.vollrath.com for current product specifications.

ITEMS

- 74701DW Induction Warmer, 7Qt. (US/CAN)
- 74701D Induction Rethermalizer, 7 Qt. (US/CAN)
- 741101DW Induction Warmer, 11 Qt. (US/CAN)
- 741101D Induction Rethermalizer, 11 Qt. (US/CAN)**

FEATURES

- 3D induction coil heats food evenly and efficiently. Dry use. Heat is transferred directly to the induction-ready inset, which eliminates the need to monitor and refill water levels.
- Three temperature sensors have direct contact with the inset to provide very accurate temperature control. Sensors help prevent food in near-empty insets from burning, which maintains food quality and reduces food waste.
- Sensors measure differences in food temperatures. This drives the Stir Indicator LED that informs operators the food product should be stirred.
- Advanced solid state controls with highly visible white LEDs include: temperature control in °F and °C; four presets - broth soups, crème soups, chili, mac and cheese; rethermalize mode (800W units only); stirring indicator; and a locking function that prevents untrained operators from changing settings.
- Includes cover item 47488 for 7 Qt. or 47490 for 11 Qt., and inset item 88184 for 7 Qt. or item 88204 for 11 Qt. Covers and insets are also sold separately.
- Requires use of included Vollrath induction-ready inset.
- Meets NSF4 Performance Requirements for rethermalization and hot food holding equipment.
- Bottom exit 6' (1.8 m) power cord.
- Bottom exit 58" (1.5 m) control cord.
- Includes mounting hardware.

WARRANTY

All models shown come with Vollrath's standard warranty against defects in materials and workmanship. For full warranty details, please refer to www.vollrath.com.

ACCESSORIES

- 47491 decorative stainless steel ring for 7 Qt. induction drop-in
- 47492 decorative stainless steel ring for 11 Qt. induction drop-in**

CLEARANCE AND ENVIRONMENT REQUIREMENTS

- All models require unrestricted intake and exhaust air ventilation for proper operation of the controls. The maximum intake temperature must not exceed 110°F (43°C). Temperatures are measured in ambient air while all appliances in the kitchen are in operation.
- Zero clearance between the sides of the drop-in and any surrounding surface.

Approvals	Date

Mirage® Drop-in Induction Warmers and Rethermalizers

The Vollrath Company, L.L.C.



Outperform every day.™

www.vollrath.com

The Vollrath Company, L.L.C.

1236 North 18th Street
 Sheboygan, WI 53081-3201 U.S.A.
 Main Tel: 800.624.2051 or 920.457.4851
 Main Fax: 800.752.5620 or 920.459.6573
 Customer Service: 800.628.0830
 Canada Customer Service: 800.695.8560

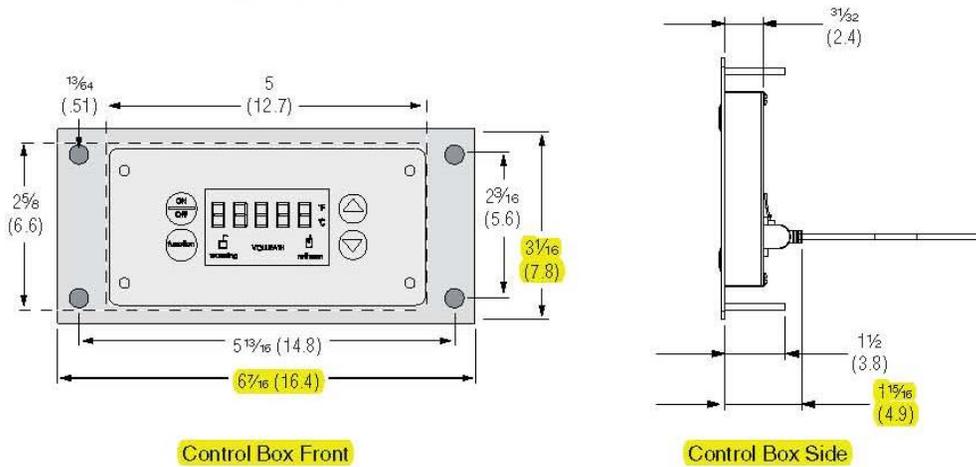
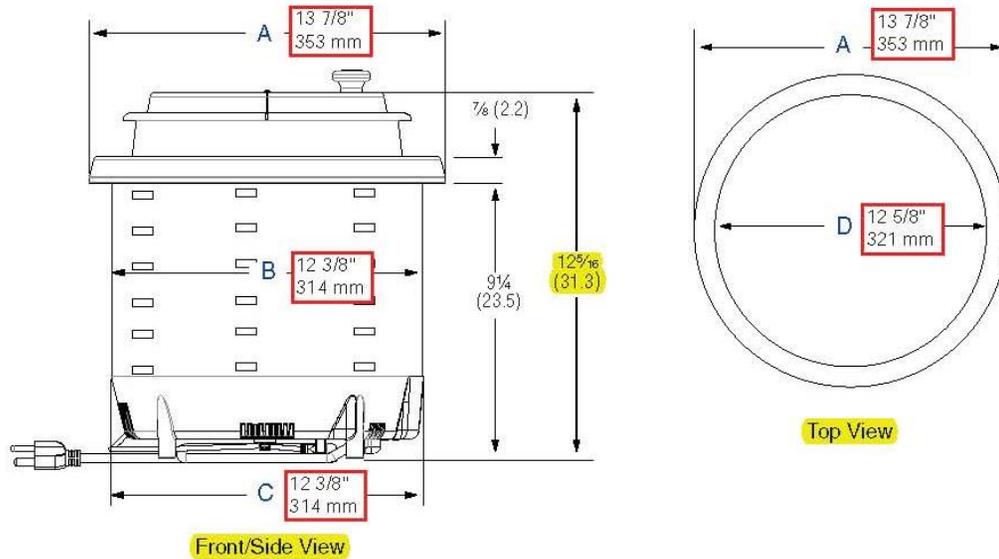
Technical Services
techservicereps@vollrathco.com
 Induction Products: 800.825.6036
 Countertop Warming Products: 800.354.1970
 All Other Products: 800.628.0832

Mirage® Drop-in Induction Warmers and Rethermalizers

The Vollrath Company, L.L.C.

MIRAGE® DROP-IN INDUCTION WARMERS AND RETHERMALIZERS

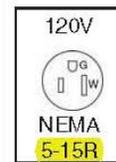
DIMENSIONS (shown in inches (cm))



SPECIFICATIONS

Item No.	Capacity QT (L)	Description	Dimensions					Voltage	Watts	Amps	Plug
			(A) Overall Width	(B) Drop-in Body Width	(C) Drop-in Max Width	Well Depth	(D) Cutout Diameter				
74701DW	7	Warmer	11 7/8	10 9/8	10 7/16	6 7/8	10 5/8	120	250W	2.1	NEMA
74701D	(6.6)	Rethermalizer	(30.3)	(26.4)	(26.5)	(17.6)	(27)		800W	6.7	5-15P
741101DW	11	Warmer	13 7/8	12 3/8	12 7/16	6 7/8	12 5/8	120	250W	2.1	NEMA
741101D	(10.4)	Rethermalizer	(35.3)	(31.4)	(31.2)	(17.6)	(32.1)		800W	6.7	5-15P

Receptacle



Outperform every day.
www.vollrath.com

The Vollrath Company, L.L.C.
 1236 North 18th Street
 Sheboygan, WI 53081-3201 U.S.A.
 Main Tel: 800.624.2051 or 920.457.4851
 Main Fax: 800.752.5620 or 920.459.6573
 Customer Service: 800.628.0830
 Canada Customer Service: 800.695.8560

Technical Services
techservices@vollrathco.com
 Induction Products: 800.825.6036
 Countertop Warming Products: 800.354.1970
 All Other Products: 800.628.0832

ITEM <i>ITEM</i>	14
DESCRIPTION ABRÉGÉE <i>SHORT DESCRIPTION</i>	évier sink
DESCRIPTION <i>DESCRIPTION</i>	évier simple encastré, trois (3) trous drop-in sink, three (3) holes
QUANTITÉ <i>QUANTITY</i>	1
MARQUE <i>MAKE</i>	Kindred
MODÈLE <i>MODEL</i>	QSL2020/10/3 FUN # 113.0045.222
OPTIONS <i>OPTIONS</i>	

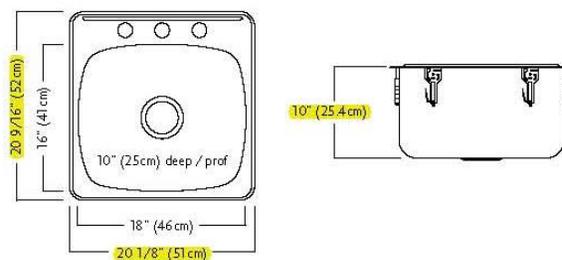
DIMENSIONS <i>DIMENSIONS</i>	LARGEUR <i>WIDTH</i>	PROFONDEUR <i>DEPTH</i>	HAUTEUR <i>HEIGHT</i>
POUCES <i>INCHES</i>	20 1/8	20 9/16	10
MILLIMÈTRES <i>MILLIMITERS</i>	511	522	254

PLOMBERIE / <i>PLUMBING</i>				
EAU FROIDE <i>COLD WATER</i>	EAU CHAUDE <i>HOT WATER</i>	DRAIN DIRECT <i>DIRECT DRAIN</i>	DRAIN OUVERT <i>OPENED DRAIN</i>	HAUTEUR HEIGHT (po. In. / mm)
		1 1/2		12 305

ÉLECTRICITÉ / <i>ELECTRICITY</i>							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm

 **KINDRED**

QSL2020/10



QSL2020/10 SPECIFICATION

Model QSL2020/10 is a single bowl ledgeback sink manufactured by Franke Kindred Canada Limited from 20 gauge, 18-8 stainless steel. Product has a bright mirror finished rim and satin finished bowl. Sink is fully undercoated and has the EZTorque installation system. Basket strainer waste fitting (3 1/2", 89 mm), and installation kit are included. Sink bowl has a 41 Litre (10.8 U.S. gallon) capacity. Sink is backed with a limited buyer lifetime warranty.

- O.D. 20 9/16" x 20 1/8" x 10" (52 x 51 x 25 cm)
- **Recommended for minimum 24" cabinet**

QSL2020/10/3 3 hole - 1 1/2" diameter, 4" center-to-center FUN#113.0045.222

QSL2020/10/4 4 hole - 4th hole on right hand side FUN#113.0045.223

QSL2020/10/1 1 hole on center FUN#113.0045.221

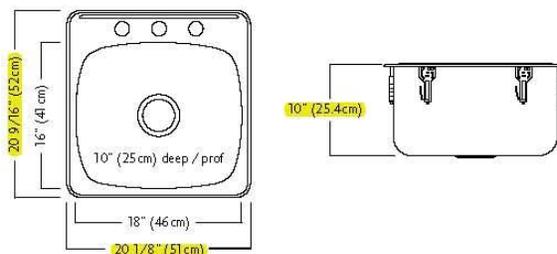
Franke Kindred Canada Limited
P.O. Box 190, 1000 Franke Kindred Road, Midland, Ontario, Canada, L4R 4K9 Phone: 866-687-7465 Fax: 800-361-8408

Plumbing Fixture / Kitchen Sinks 15410

Franke Kindred Canada Limited Printed in Canada 61558 0218

 **KINDRED**

QSL2020/10



QSL2020/10 DONNÉES TECHNIQUES

Le modèle QSL2020/10 est un évier à une cuvette avec plage arrière, fabriqué d'acier inoxydable 18-8 calibre 20, par Franke Kindred Canada Limitée. Le rebord a un fini miroir luisant, alors que la cuvette a un fini satiné. L'évier est revêtu d'un enduit sur toute la surface inférieure avec système d'installation EZTorque. Une bonde d'évier à crépine-panier de 89 mm (3 1/2 po) et un nécessaire d'installation sont compris. La cuvette a une contenance de 41 litres (10.8 gal. U.S.). Une garantie à vie limitée est offerte à l'acheteur.

- Dimensions hors-tout: 52 x 51 x 25 cm (20 9/16 x 20 1/8 x 10 po)
- **Recommandé pour armoire d'un minimum de 61 cm (24 po)**

QSL2020/10/3 3 trous - 1 1/2 po de diamètre, 4 po d'entraxe **FUN#113.0045.222**

QSL2020/10/4 4ème trou - à la droite **FUN#113.0045.223**

QSL2020/10/1 1 trou au centre **FUN#113.0045.221**

Franke Kindred Canada Limitée
C.P. 190, 1000 Franke Kindred Road, Midland, Ontario, Canada L4R 4K9 Téléphone: 866-687-7465 Télécopieur: 800-361-8408

ITEM <i>ITEM</i>	15
DESCRIPTION ABRÉGÉE <i>SHORT DESCRIPTION</i>	robinet faucet
DESCRIPTION <i>DESCRIPTION</i>	robinet monté en surface, cartouche Eterna un quart de tour avec ressorts, leviers, bec 10" pivotant, aérateur 2,2 GPM Deck Mount Workboard Faucet, Quarter-Turn Eterna Cartridges w/ Spring Checks, Lever Handles, 10" Swing Nozzle, 2.2 GPM Aerator
QUANTITÉ <i>QUANTITY</i>	1
MARQUE <i>MAKE</i>	T&S
MODÈLE <i>MODEL</i>	B-1122
OPTIONS <i>OPTIONS</i>	

DIMENSIONS <i>DIMENSIONS</i>	LARGEUR <i>WIDTH</i>	PROFONDEUR <i>DEPTH</i>	HAUTEUR <i>HEIGHT</i>
POUCES <i>INCHES</i>	12 5/8	11 1/2	7 7/16
MILLIMÈTRES <i>MILLIMETERS</i>	321	292	189

PLOMBERIE / <i>PLUMBING</i>				
EAU FROIDE <i>COLD WATER</i>	EAU CHAUDE <i>HOT WATER</i>	DRAIN DIRECT <i>DIRECT DRAIN</i>	DRAIN OUVERT <i>OPENED DRAIN</i>	HAUTEUR HEIGHT (po. In. / mm)
1/2	1/2			12 305

ÉLECTRICITÉ / <i>ELECTRICITY</i>							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm



T&S BRASS AND BRONZE WORKS, INC.

2 Saddleback Cove / P.O. Box 1088
 Travelers Rest, SC 29690

Model No.

B-1122

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com



ADA Compliant

This Space for Architect/Engineer Approval

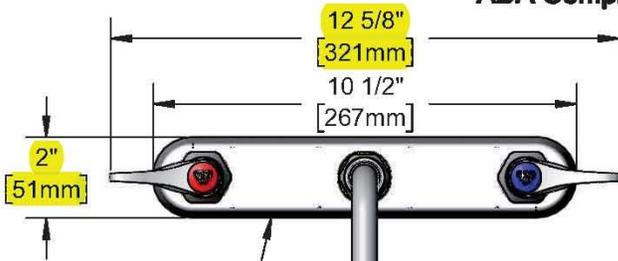
Job Name _____ Date _____

Model Specified _____ Quantity _____

Customer/Wholesaler _____

Contractor _____

Architect/Engineer _____

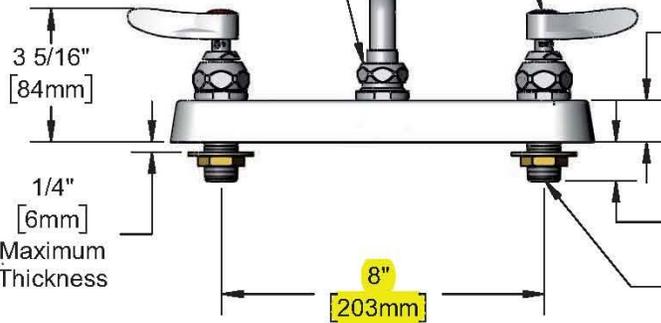
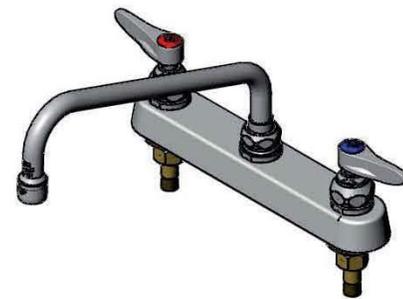


Polished Chrome Plated Escutcheon

061X-A22
 10" Swing Nozzle w/
 2.2 GPM Aerator

Quarter-Turn Eterna
 Cartridges w/ Spring
 Checks & Lever Handles
 w/ Color Coded Indexes

Swivel Joint
 Converts to Rigid
 w/ 014200-45
 Lock Washer
 (Included)

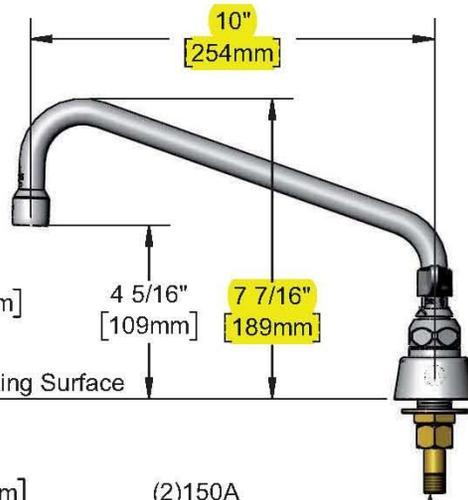


1" [26mm]

Mounting Surface

1" [25mm]

1/2" NPT
 Male Inlets



(2)150A
 Optional Tailpieces &
 Nuts For 1/4" NPT
 Connection (Included)

Rough-In Requirement:
 (2) \varnothing 1" [25mm] Mounting Holes

Product Specifications:

8" Deck Mount Workboard Faucet, Quarter-Turn Eterna Cartridges w/ Spring Checks, Lever Handles, 10" Swing Nozzle, 2.2 GPM Aerator & 1/2" NPT Male Inlets

Product Compliance:

ASME A112.18.1 / CSA B125.1
 NSF 61 - Section 9
 NSF 372 (Low Lead Content)
 ANSI A117.1 (ADA)

Drawn: KJG | Checked: JRM | Approved: JHB | Date: 06/12/17 | Scale: 1:4 | Sheet: 1 of 2



T&S BRASS AND BRONZE WORKS, INC.

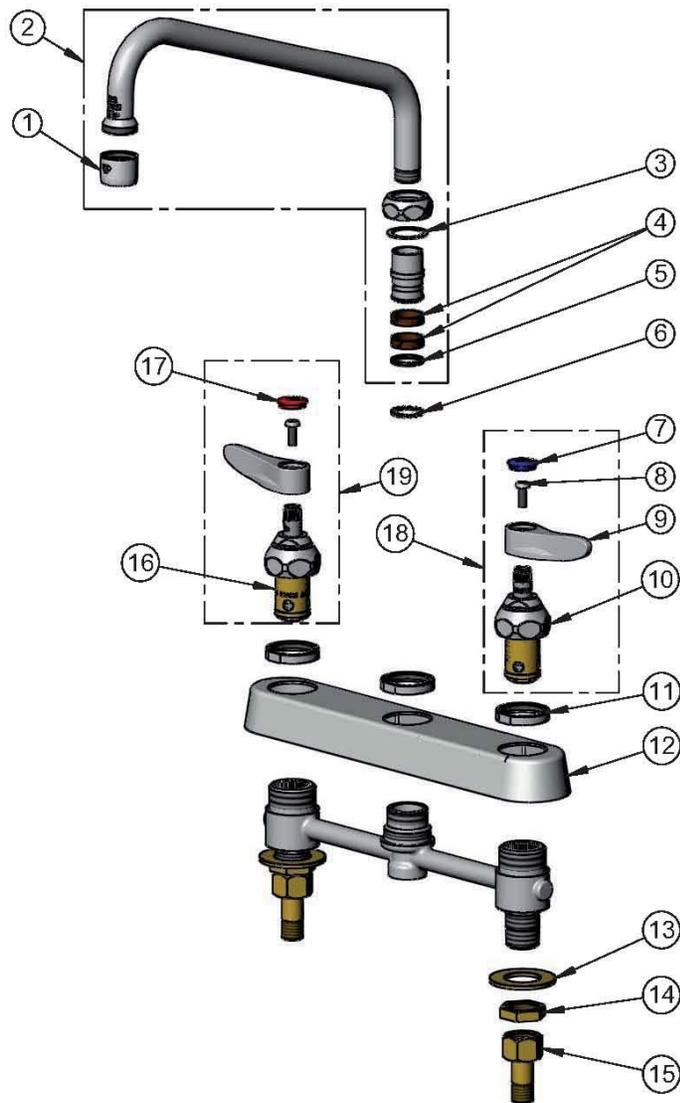
2 Saddleback Cove / P.O. Box 1088
 Travelers Rest, SC 29690

Model No.

B-1122

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com



ITEM NO.	SALES NO.	DESCRIPTION
1	B-0199-01	2.2 GPM Aerator, 55/64"-27 UN Female
2	061X-A22	10" Swing Nozzle w/ 2.2 GPM Aerator
3	009538-45	Swivel Washer
4	011429-45	Swivel Sleeves (2)
5	001074-45	O-Ring
6	014200-45	Star Washer, Anti-Rotation
7	018506-19NS	Blue Button Index, Press-in
8	000925-45	Lab Handle Screw
9	001638-45NS	Lever Handle (New Style)
10	012442-40NS	Quarter-Turn New Style Eterna Cartridge w/ Spring Check, LTC
11	019376-40	Escutcheon Lock Nut
12	019375-40	B-1120 Eterna Workboard Escutcheon
13	000999-45	Brass Lock Washer
14	002954-45	Shank Lock Nut
15	150A	1/4" NPT Tailpiece & Nut
16	012443-40NS	Quarter-Turn New Style Eterna Cartridge w/ Spring Check, RTC
17	001193-19NS	Red Button Index, Press-in
18	002711-40NS	Quarter-Turn Eterna Cartridge w/ Spring Check, Handle, Blue Index & Screw, LTC
19	002712-40NS	Quarter-Turn Eterna Cartridge w/ Spring Check, Handle, Red Index & Screw, RTC

Product Specifications:

8" Deck Mount Workboard Faucet, Quarter-Turn Eterna Cartridges w/ Spring Checks, Lever Handles, 10" Swing Nozzle, 2.2 GPM Aerator & 1/2" NPT Male Inlets

Product Compliance:

ASME A112.18.1 / CSA B125.1
 NSF 61 - Section 9
 NSF 372 (Low Lead Content)
 ANSI A117.1 (ADA)

Drawn: KJG | Checked: JRM | Approved: JHB | Date: 06/12/17 | Scale: NTS | Sheet: 2 of 2

ITEM ITEM	16
DESCRIPTION ABRÉGÉE SHORT DESCRIPTION	lave-verre glass washer
DESCRIPTION DESCRIPTION	lave-verre sous-comptoir haute température avec récupérateur d'énergie hight temperature undercounter glass wahser with energy recovery
QUANTITÉ QUANTITY	1
MARQUE MAKE	Hobart
MODÈLE MODEL	LXGeR-Short
OPTIONS OPTIONS	ensemble de branchement power cord kits

DIMENSIONS DIMENSIONS	LARGEUR WIDTH	PROFONDEUR DEPTH	HAUTEUR HEIGHT
POUCES INCHES	23 15/16	26 13/16	33 15/16
MILLIMÈTRES MILLIMETERS	608	681	862

PLOMBERIE / PLUMBING				
EAU FROIDE COLD WATER	EAU CHAUDE HOT WATER	DRAIN DIRECT DIRECT DRAIN	DRAIN OUVERT OPENED DRAIN	HAUTEUR HEIGHT (po. In. / mm)
3/4		1 1/2		18 457

ÉLECTRICITÉ / ELECTRICITY							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
120 / 208		4,90	30,5		●		18 457

Item # 16

Quantity 1

C.S.I. Section 11400



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LXGeR and LXGePR
advansys GLASSWASHER

STANDARD FEATURES

- **Racks per hour**

	Light	Normal
LXGeR	30	24
LXGePR	38	29
- .62 gallons of water per rack – LXGeR
 1.14 gallons of water per rack – LXGePR
- Hot water or chemical sanitation units available
- **Steam Elimination and Energy Recovery (LXGeR model only)**
- PuriRinse cycle (Potable water rinse to remove chemical residue) (LXGePR model only)
- Low chemical alert indicators
- Sense-A-Temp™ booster heater capable of 70 rise, provided on LXGeR models
- Chemical pump “auto-prime”
- Advanced Service diagnostics
- Clogged wash arm sensing
- Custom cycle selection – light, normal
- Automated delime cycle – includes booster deliming
- Deep drawn stainless steel tank
- Microcomputer, top mounted controls with advanced digital cycle/temperature display
- Revolving upper and lower anti-clogging wash arms
- Snap-in revolving upper and lower rinse arms
- Removable stainless steel scrap screen
- Corrosion resistant pump
- Energy Saver mode
- Automatic pumped drain
- 12" door opening
- Dirty water indicator
- Automatic fill
- Detergent, rinse aid and delime pumps standard (plus sanitizer pump on chemical machine)
- Electric tank heat
- One dishrack – one glass/wine rack
- Customizable “advansys” button to select favorites function
- Auto clean cycle washes down inside of machine at shutdown

MODELS

- LXGeR – Energy Recovery
- LXGePR – PuriRinse

STANDARD VOLTAGES

- 120/208-240(3W)/60/1 (LXGeR model only)
- 120/60/1 (LXGePR model only)

ACCESSORIES

- Power cord kits
- DWT-LXe drain water tempering kit

Specifications, Details and Dimensions on Back.



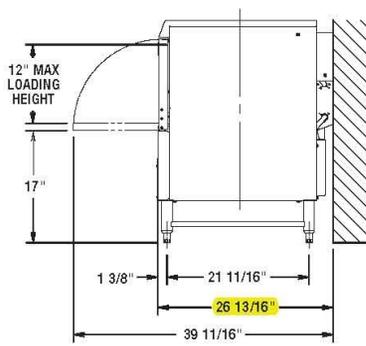
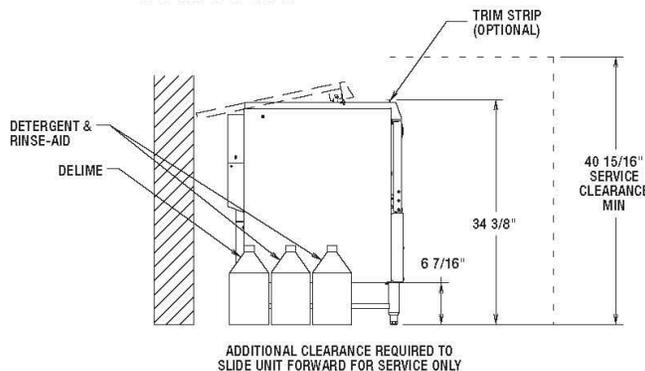
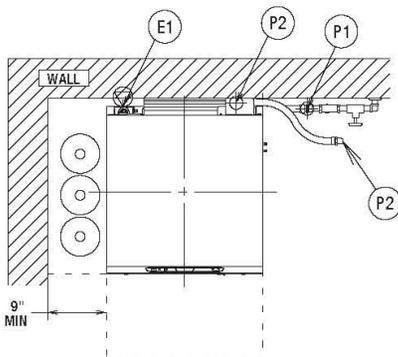
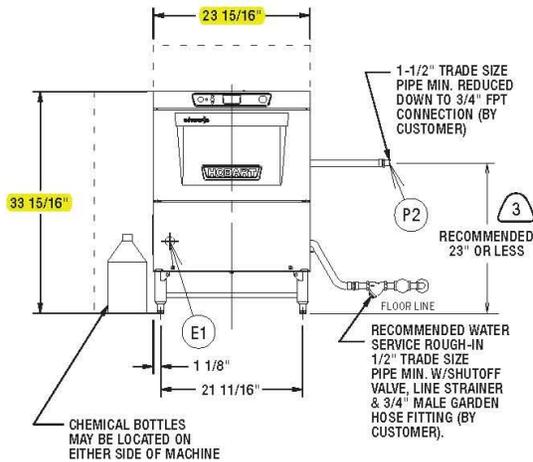
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LXGeR and LXGePR advansys GLASSWASHER

LXGeR SHORT
 advansys GLASSWASHER



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HEAT OUTPUT, BTU/HR			SHIPPING WEIGHTS	
MODEL	LATENT	SENSIBLE	NET WEIGHT OF MACHINE	LXGeR
LXGeR	1100	2000	165 LBS	
			DOMESTIC SHIPPING WEIGHT	165 LBS

MODEL	VOLTS/HERTZ/PHASE	RATED AMPS	MIN SUPPLY CKT CONDUCTOR AMPACITY	MAX PROTECTIVE DEVICE
LXGeR	120/208-240(3W)/60/1*	30.5	40	40

WARNING

Do not premix other chemicals and sodium hypochlorite (liquid bleach). Mixing may cause hazardous gas to form.

NOTICE

Required flowing water pressure to the dishmachine is 15-65 PSIG. If pressures higher than 65 PSIG are present, a pressure regulating valve must be installed in the water line to the dishmachine (by others).
 Pressure gauge not required on pumped rinse machines.
 Important: The chemical containers should be placed no higher than 16" above floor. If chemical containers are to be placed in cabinet adjacent to machine, a 1/2" dia. hole is required in the cabinet to run chemical supply line.

Notes:

- All vertical machine dimensions taken from floor may be increased by .875" or decreased by .375".
- Moist air escapes from the door. Use only moisture resistant materials adjacent to dishmachine sides and top.
- A vent hood is not recommended above the undercounter dishmachine since it does not produce excessive vapors.

Plumbing notes:

- Water hammer arrestor (meeting ASSE-1010 Standard or equivalent) to be supplied (by others) in common water supply line at service connection.
- Recommended water hardness to be 3 grains or less for best results.
- If drain hose is looped above a sink, the loop must not exceed 44" AFF.

CONNECTION INFORMATION
 (AFF = ABOVE FINISHED FLOOR)

LEGEND

- E1 ELECTRICAL CONNECTION: 1-3/8" DIA. HOLE FOR 1" TRADE SIZE CONDUIT; 10-5/8" AFF.
- P1 SINGLE FILL AND RINSE CONNECTION: 3/4" FEMALE GARDEN HOSE FITTING ON 6' LONG HOSE SUPPLIED WITH MACHINE.; 65-85°F (COLD) RECOMMENDED FOR LXGeR.
- P2 DRAIN CONNECTION: 5/8" BARB FITTING WITH 6' LONG HOSE SUPPLIED WITH MACHINE.

WARNING

Electrical and grounding connections must comply with the applicable portions of the National Electrical Code and/or other local electrical codes.

Plumbing connections must comply with applicable sanitary, safety and plumbing codes. Drain and fill line configurations vary, some methods are shown on this drawing.

NOTE: FOR SUPPLY CONNECTIONS, USE COPPER WIRE ONLY RATED AT 90°C MINIMUM.

*THIS SYSTEM REQUIRES THREE POWER WIRES WHICH INCLUDES A CURRENT CARRYING NEUTRAL, AN ADDITIONAL FOURTH WIRE MUST BE PROVIDED FOR MACHINE GROUND.

ACCESSORY CORD KIT AVAILABLE FOR ALL MACHINES

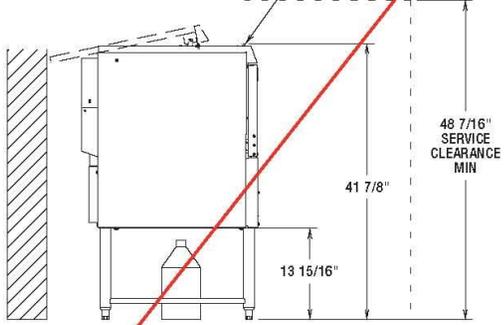
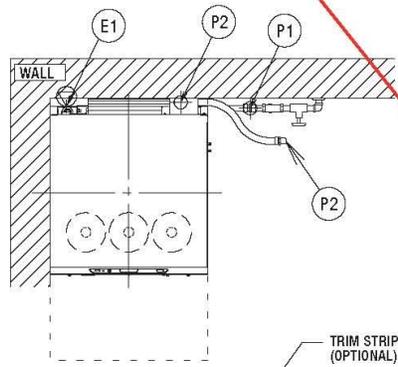
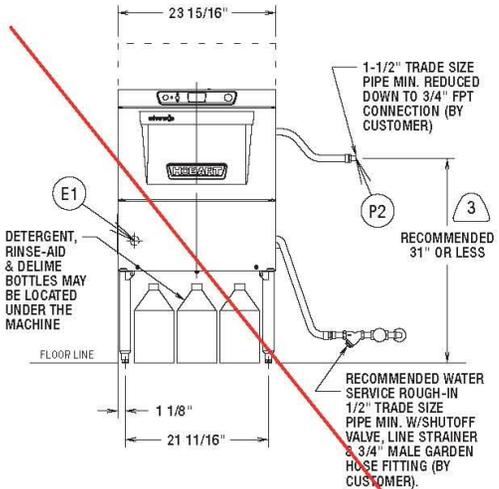
MODELS:
 LXGeR SHORT
 00-950418
 REV B



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LXGeR TALL

advansys GLASSWASHER



WARNING
 Do not premix other chemicals and sodium hypochlorite (liquid bleach). Mixing may cause hazardous gas to form.

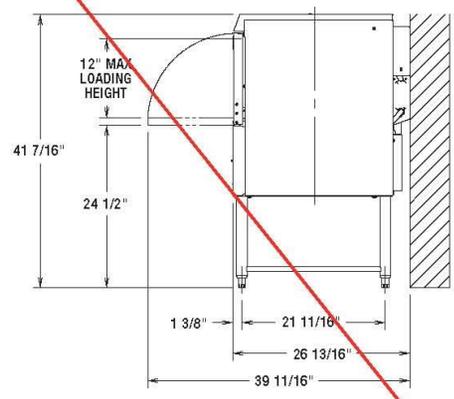
NOTICE
 Required flowing water pressure to the dishmachine is 15-65 PSIG. If pressures higher than 65 PSIG are present, a pressure regulating valve must be installed in the water line to the dishmachine (by others).
 Pressure gauge not required on pumped rinse machines.
 Important: The chemical containers should be placed no higher than 24" above floor. If chemical containers are to be placed in cabinet adjacent to machine, a 1/2" dia. hole is required in the cabinet to run chemical supply line.

- Notes:
- All vertical machine dimensions taken from floor may be increased by .875" or decreased by .375".
 - Moist air escapes from the door. Use only moisture resistant materials adjacent to dishmachine sides and top.
 - A vent hood is not recommended above the undercounter dishmachine since it does not produce excessive vapors.
- Plumbing notes:
- Water hammer arrestor (meeting ASSE-1010 Standard or equivalent) to be supplied (by others) in common water supply line at service connection.
 - Recommended water hardness to be 3 grains or less for best results.
 - If drain hose is looped above a sink, the loop must not exceed 51" AFF.

CONNECTION INFORMATION
 (AFF = ABOVE FINISHED FLOOR)

LEGEND
 E1 ELECTRICAL CONNECTION: 1-3/8" DIA. HOLE FOR 1" TRADE SIZE CONDUIT; 18-1/8" AFF.
 P1 SINGLE FILL AND RINSE CONNECTION: 3/4" FEMALE GARDEN HOSE FITTING ON 6' LONG HOSE SUPPLIED WITH MACHINE.; 55-85°F (COLD) RECOMMENDED FOR LXGeR.
 P2 DRAIN CONNECTION: 5/8" BARB FITTING WITH 6' LONG HOSE SUPPLIED WITH MACHINE.

WARNING
 Electrical and grounding connections must comply with the applicable portions of the National Electrical Code and/or other local electrical codes.
 Plumbing connections must comply with applicable sanitary, safety and plumbing codes. Drain and fill line configurations vary, some methods are shown on this drawing.



ADDITIONAL CLEARANCE REQUIRED TO SLIDE UNIT FORWARD FOR SERVICE ONLY

HEAT OUTPUT, BTU/HR			SHIPPING WEIGHTS		LXGeR
MODEL	LATENT	SENSIBLE	NET WEIGHT OF MACHINE	DOMESTIC SHIPPING WEIGHT	
LXGeR	1400	2000	165 LBS	185 LBS	

MODEL	VOLTS/HERTZ/PHASE	RATED AMPS	MIN SUPPLY CKT CONDUCTOR AMPACITY	MAX PROTECTIVE DEVICE
LXGeR	120/208-240(3W)/60/1*	30.5	40	40

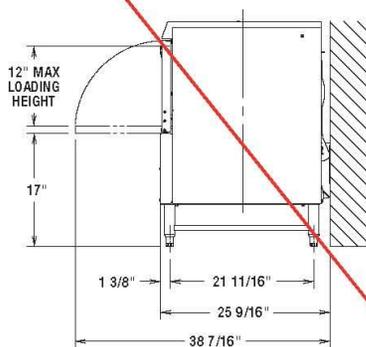
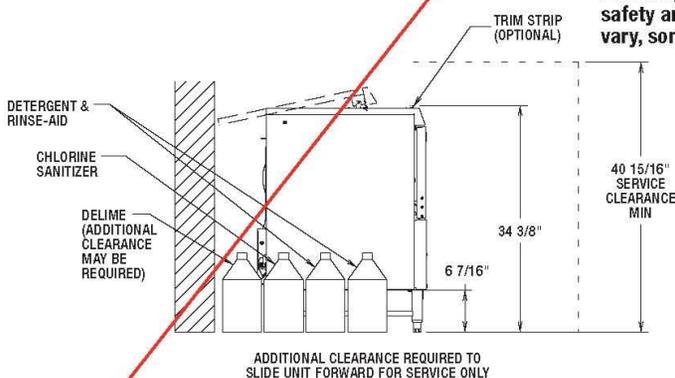
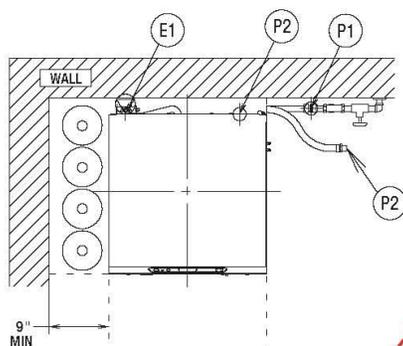
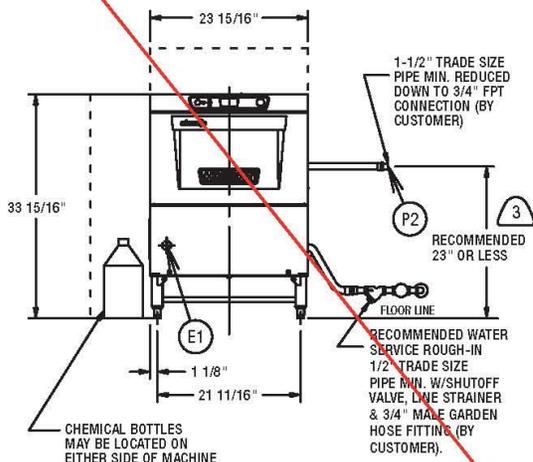
NOTE: FOR SUPPLY CONNECTIONS, USE COPPER WIRE ONLY RATED AT 90°C MINIMUM.
 * THIS SYSTEM REQUIRES THREE POWER WIRES WHICH INCLUDES A CURRENT CARRYING NEUTRAL, AN ADDITIONAL FOURTH WIRE MUST BE PROVIDED FOR MACHINE GROUND.
 ACCESSORY CORD KIT AVAILABLE FOR ALL MACHINES

MODELS:
 LXGeR TALL
 00-950418
 REV B

LXGePR SHORT advansys GLASSWASHER

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HEAT OUTPUT, BTU/HR			SHIPPING WEIGHTS	
MODEL	LATENT	SENSIBLE	NET WEIGHT OF MACHINE	LXGePR
LXGePR	1900	800	150 LBS	
			DOMESTIC SHIPPING WEIGHT	170 LBS

MODEL	VOLTS/HERTZ/PHASE	RATED AMPS	MIN SUPPLY CKT CONDUCTOR AMPACITY	MAX PROTECTIVE DEVICE
LXGePR	120/60/1	15.4	20	20

WARNING

Do not premix other chemicals and sodium hypochlorite (liquid bleach). Mixing may cause hazardous gas to form.

NOTICE

Required flowing water pressure to the dishmachine is 15-65 PSIG. If pressures higher than 65 PSIG are present, a pressure regulating valve must be installed in the water line to the dishmachine (by others).
 Pressure gauge not required on pumped rinse machines.
 Important: The chemical containers should be placed no higher than 16" above floor. If chemical containers are to be placed in cabinet adjacent to machine, a 1/2" dia. hole is required in the cabinet to run chemical supply line.
 Use only 6% or 8.4% sodium hypochlorite (liquid bleach) as sanitizing chemical to insure proper operation of dishmachine.
 Certain materials including silver plate, aluminum and pewter are attacked by sodium hypochlorite (liquid bleach). See instructional manual.

Notes:

- All vertical machine dimensions taken from floor may be increased by .875" or decreased by .375".
- Moist air escapes from the door. Use only moisture resistant materials adjacent to dishmachine sides and top.
- A vent hood is not recommended above the undercounter dishmachine since it does not produce excessive vapors.

Plumbing notes:

- Water hammer arrestor (meeting ASSE-1010 Standard or equivalent) to be supplied (by others) in common water supply line at service connection.
- Recommended water hardness to be 3 grains or less for best results.
- If drain hose is looped above a sink, the loop must not exceed 44" AFF.

CONNECTION INFORMATION
 (AFF = ABOVE FINISHED FLOOR)

LEGEND

- E1 ELECTRICAL CONNECTION: 1-3/8" DIA. HOLE FOR 1" TRADE SIZE CONDUIT; 10-5/8" AFF.
- P1 SINGLE FILL AND RINSE CONNECTION: 3/4" FEMALE GARDEN HOSE FITTING ON 6' LONG HOSE SUPPLIED WITH MACHINE; 120°F WATER MIN. FOR LXGePR, 140°F RECOMMENDED.
- P2 DRAIN CONNECTION: 5/8" BARB FITTING WITH 6' LONG HOSE SUPPLIED WITH MACHINE.

WARNING

Electrical and grounding connections must comply with the applicable portions of the National Electrical Code and/or other local electrical codes.

Plumbing connections must comply with applicable sanitary, safety and plumbing codes. Drain and fill line configurations vary, some methods are shown on this drawing.

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 ACCESSORY CORD KIT AVAILABLE FOR ALL MACHINES

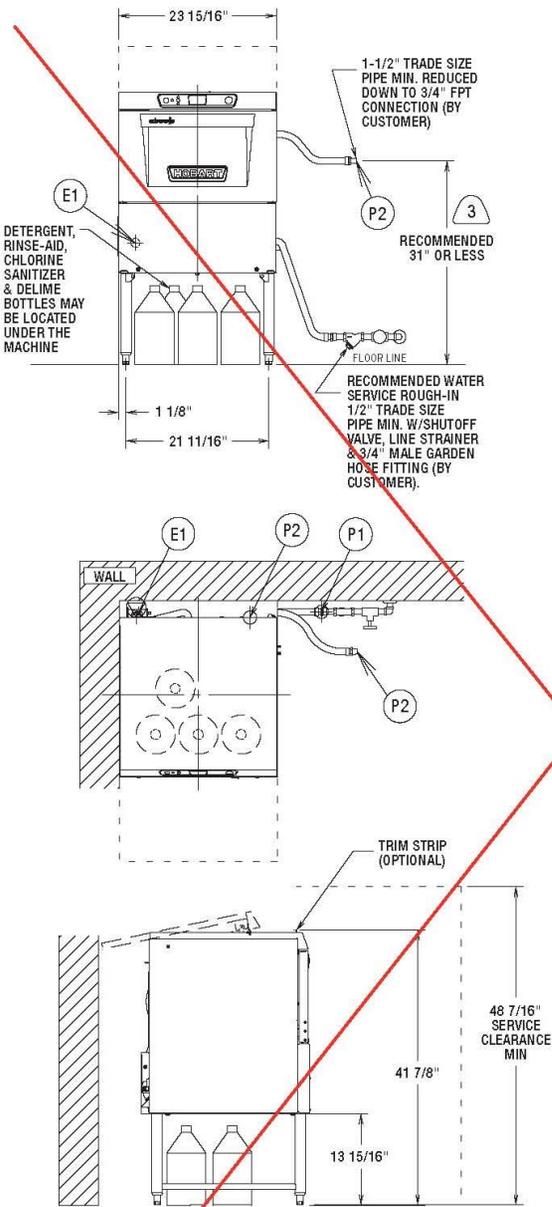
MODELS:
 LXGePR SHORT
 00-950419
 REV B



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LXGePR TALL

advansys GLASSWASHER



⚠ WARNING
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Plumbing notes:

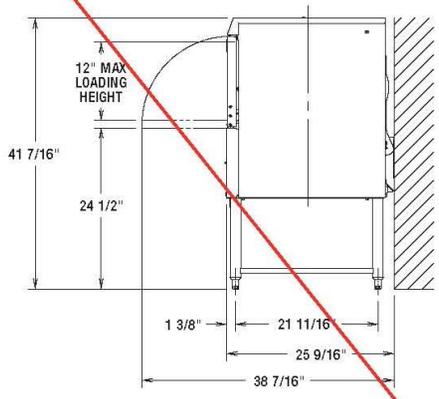
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- Recommended water hardness to be 3 grains or less for best results.
- If drain hose is looped above a sink, the loop must not exceed 51" AFF.

CONNECTION INFORMATION
 (AFF = ABOVE FINISHED FLOOR)

LEGEND

E1 ELECTRICAL CONNECTION: 1-3/8" DIA. HOLE FOR 1" TRADE SIZE CONDUIT; 18-1/8" AFF.
 P1 SINGLE FILL AND RINSE CONNECTION: 3/4" FEMALE GARDEN HOSE FITTING ON 6' LONG HOSE SUPPLIED WITH MACHINE.; 120°F WATER MIN. FOR LXGePR, 140°F RECOMMENDED.
 P2 DRAIN CONNECTION: 5/8" BARB FITTING WITH 6' LONG HOSE SUPPLIED WITH MACHINE.

⚠ WARNING
 Electrical and grounding connections must comply with the applicable portions of the National Electrical Code and/or other local electrical codes.
 Plumbing connections must comply with applicable sanitary, safety and plumbing codes. Drain and fill line configurations vary, some methods are shown on this drawing.



HEAT OUTPUT, BTU/HR			SHIPPING WEIGHTS	
MODEL	LATENT	SENSIBLE	NET WEIGHT OF MACHINE	LXGePR
LXGePR	1800	800	150 LBS	
			DOMESTIC SHIPPING WEIGHT	170 LBS

MODEL	VOLTS/HERTZ/PHASE	RATED AMPS	MIN SUPPLY CKT CONDUCTOR AMPACITY	MAX PROTECTIVE DEVICE
LXGePR	120/60/1	15.4	20	20

NOTE: FOR SUPPLY CONNECTIONS, USE COPPER WIRE ONLY RATED AT 90°C MINIMUM.
 ACCESSORY CORD KIT AVAILABLE FOR ALL MACHINES

MODELS:
 LXGePR TALL
 00-950419
 REV B

LXGeR and LXGePR advansys GLASSWASHER

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SPECIFICATIONS

DESIGN: Front opening, equipped for installation in either freestanding or undercounter-type operations.

CONSTRUCTION: 300 series stainless steel tank, door and top panel.

PUMP: Centrifugal-type, integral with motor, horizontally mounted. Pump capacity 38 gpm.

MOTOR: Single phase, furnished for all electrical specifications. Factory sealed lubrication. Inherent overload protection with auto reset.

WASH AND RINSE CYCLE: Complete automatic type, controlled by solid-state electronics. Cycle may be interrupted any time by opening door. Cycle continues when door is closed.

- Initial cycle fills wash tank, to be recirculated each wash cycle. Some wash water is drained off before rinse cycle. Rinse cycle refreshes wash water and tank heat.

RINSE PUMP: Powered by a single phase motor, the rinse pump is made of high strength engineered composite material.

BLOWER: The blower is a 60mm x 300mm tangential wheel powered by a 2-pole single phase motor for quiet and reliable operation, LXGeR only.

CONDENSER COIL: The condensing system uses a tube and fin coil constructed of copper and corrosion resistant aluminum. The condenser coil allows for energy recovery from waste heat in the moisture laden air that would normally escape into the environment after a dishwashing cycle, LXGeR only.

RINSE AND SANITATION:

- **LXGeR:** Sanitation is accomplished by means of a built-in booster heater designed to raise temperature of water to a minimum of 180°F from an incoming water temperature of 55°F.

- **LXGePR:** Sanitation is accomplished by injection of proper amount of sodium hypochlorite solution (liquid bleach) into final rinse water to achieve a minimum of 50PPM sanitizing solution. Injection of sodium hypochlorite is accomplished by a built-in sanitizing chemical pump. Minimum required hot water temperature is 120°F.
 - Potable water rinse to remove chemical residue.
 - To be used with sanitizer approved for use with post sanitizing rinse
- **CHECK SANITIZER CONCENTRATION:** PuriRinse must be off (hold Wash button for 5 seconds). Verify that there is sufficient chemical supply. Run cycle and use test strips on wetted surface of glasses after cycle is complete. If concentration is below minimum required, contact your local Hobart Service office.

ENERGY RECOVERY: Heat energy is recovered from the condensation of vapors in the chamber at the end of each cycle. This pre-heats the water for the next rinse cycle from 55°F up to 140°F.

PUMPED DRAIN: Machine automatically drains water through a built-in pump. Maximum 38" drain height permitted.

ELECTRIC BOOSTER HEATER: 4.9 KW electric booster with Sense-A-Temp™ technology adequately sized to raise 55°F inlet water to 180°F, with the aid of the energy recovery system.

RACKING: Machines accommodate racks from 10" x 20" to 20" x 20".

NOTE: Certain materials, including silver, aluminum and pewter are attacked by Sodium Hypochlorite solution in the chemical sanitizing mode of operation.

SPECIFICATIONS: Listed by Underwriters Laboratories Inc. and NSF International.

 701 S Ridge Avenue, Troy, OH 45374 1-888-4HOBART • www.hobartcorp.com	<h2 style="margin: 0;">LXGeR and LXGePR</h2> <h3 style="margin: 0;">advansys GLASSWASHER</h3>
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MACHINE RATINGS	LXGePR		LXGeR	
	Light	Normal	Light	Normal
Racks per Hour Rate	38	29	30	24
Dishes per Hour (25 per Rack Avg.)	950	725	750	600
Glasses per Hour (36 per Rack Avg.)	1368	1044	1080	864
Controls	Microcomputer			
Tank Capacity - Gallons	2.9			
Overall Dimensions - H x W x D (Short)	34 ³ / ₈ " x 23 ¹⁵ / ₁₆ " x 25 ⁵ / ₁₆ "		34 ³ / ₈ " x 23 ¹⁵ / ₁₆ " x 26 ¹³ / ₁₆ "	
Overall Dimensions - H x W x D (Tall)	41 ⁷ / ₈ " x 23 ¹⁵ / ₁₆ " x 25 ⁵ / ₁₆ "		41 ⁷ / ₈ " x 23 ¹⁵ / ₁₆ " x 26 ¹³ / ₁₆ "	
Cycle Time - Seconds	94	124	120	146
Tank Heat	1.8 KW			
Electric Booster Heater	N/A		4.9 KW	
Water Usage Per Rack - Gallons	1.14		.62	
Drain Design	Pumped			
Door Opening Height	12"			
Detergent Pump	Standard			
Rinse-Aid Pump	Standard			
Delime Pump	Standard			
Sanitizer Pump	Standard		N/A	
Chemical Prime (auto prime)	Standard			
Peak Drain Flow - GPM	4.0			
Advanced Service Diagnostics	Standard			
Advanced Cleaning Cycle	Standard			
70° Rise Sense-A-Temp™ Booster Heater	N/A		Standard	
Incoming Water Temperature Required (minimum)	120°		55°	

LXGeR and LXGePR
advansys GLASSWASHER



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1-888-4HOBART • www.hobartcorp.com

As continued product improvement is a policy of Hobart, specifications are subject to change without notice.

ITEM <i>ITEM</i>	17
DESCRIPTION ABRÉGÉE <i>SHORT DESCRIPTION</i>	barbotine slush machine
DESCRIPTION <i>DESCRIPTION</i>	machine à barbotine double à remplissage manuel double hopper slush machine with manual fill
QUANTITÉ <i>QUANTITY</i>	1
MARQUE <i>MAKE</i>	Bunn
MODÈLE <i>MODEL</i>	ULTRA-2 BLK/SST # 34000.0081
OPTIONS <i>OPTIONS</i>	par fournisseur by supplier

DIMENSIONS <i>DIMENSIONS</i>	LARGEUR <i>WIDTH</i>	PROFONDEUR <i>DEPTH</i>	HAUTEUR <i>HEIGHT</i>
POUCES <i>INCHES</i>	16	25 1/2	32
MILLIMÈTRES <i>MILLIMITERS</i>	406	648	813

PLOMBERIE / <i>PLUMBING</i>				
EAU FROIDE <i>COLD WATER</i>	EAU CHAUDE <i>HOT WATER</i>	DRAIN DIRECT <i>DIRECT DRAIN</i>	DRAIN OUVERT <i>OPENED DRAIN</i>	HAUTEUR HEIGHT (po. In. / mm)

ÉLECTRICITÉ / <i>ELECTRICITY</i>							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
120		1,44	12,0			5-15R	24 610

Ultra-2 HP BLK/SST Manual Fill

32.0" x 24.5" x 16.0"
 (81.3cm x 62.2cm x 40.6cm)



- Two large 3gal (11.4L) hoppers for optimum cooling and serving capacity
- Enhanced "no-lube" design on faucets and seals which simplifies installation and cleaning
- Full 2-year parts and 1-year labor warranty, 5-year parts and 1-year labor warranty on compressor and 3-year parts and labor warranty on electronics. See the product manual for additional details.
- Refrigeration system internally monitored to ensure long lasting performance
- Reversing auger design quickens freeze time and reduces air mixing
- Very simple to program and run with touchpad display, which also guides cleaning and preventive maintenance
- Sanitation listed by NSF to Standard 18 (includes dairy & alcohol)

Agency:



Specifications

Product #: 34000.0081

Water Access: Not Plumbed

Finish: Stainless/Black

Hoppers: Two

Handle: Extended Handle

Additional Features

Electrical & Capacity

Volts	Amps	Watts	Cord Attached	Plug Type	8oz cups/hr 236ml cups/hr	Input H ₂ O Temp.	Phase	# Wires plus Ground	Hertz
120	12	1440	Yes	NEMA 5-15P	-	60°F (15.5°C)	1	2	50/60

Plumbing Requirements

PSI	kPa	Fitting Supplied	Water Flow Required (GPM)
-	-	-	-

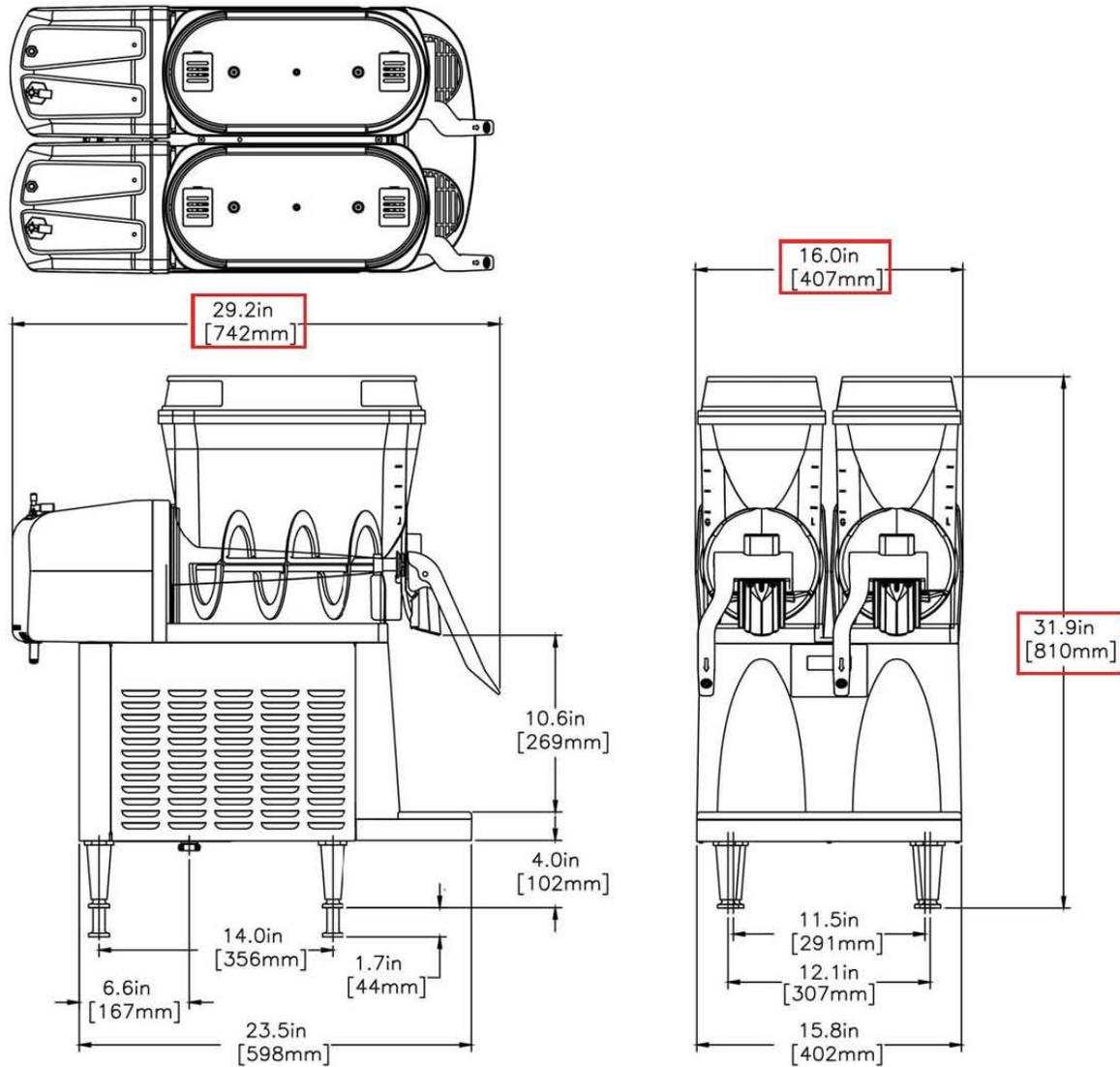
CAD Drawings

2D	Revit	KLC
•		



BUNN® reserves the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, improvements, additions or replacements for previously purchased equipment. For most current specifications and other info visit bunn.com.

Created on:
 03/06/2018



	Unit			Shipping				
	Width	Height	Depth	Width	Height	Depth	Weight	Volume
English	16.0 in.	32.0 in.	24.5 in.	- in.	- in.	- in.	135.760 lbs	-
Metric	40.6 cm	81.3 cm	62.2 cm	- cm	- cm	- cm	61.581 kgs	-



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Created on: 03/06/2018

Related Products & Accessories: Ultra-2 HP BLK/SST Manual Fill(34000.0081)

 <p>DRIP TRAY ASSY, LOWER-BLK</p> <hr/> <p>Product #: 28086.0001</p>	<p>COVER, DRIP TRAY ULTRA 2 BLK</p> <hr/> <p>Product #: 32068.0001</p>	<p>ULTRA LAF KIT, SEP WATER LINES</p> <hr/> <p>Product #: 37960.0000</p>	<p>KIT, CFV UPGRADE W/ HPRS ULTRA-2 BLK .035</p> <hr/> <p>Product #: 44071.0101</p>
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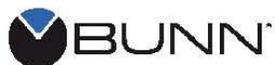


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Serving & Holding Options: Ultra-2 HP BLK/SST Manual Fill(34000.0081)

Serving and Holding selections are currently unavailable. Please contact your sales representative to find out more information.



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03/06/2018

ITEM ITEM	18
DESCRIPTION ABRÉGÉE SHORT DESCRIPTION	machine à espresso espresso machine
DESCRIPTION DESCRIPTION	machine à espresso automatique avec mousser à lait et dispensateur à eau chaude automatic espresso machine with steam wand and hot water dispenser
QUANTITÉ QUANTITY	1
MARQUE MAKE	Bunn
MODÈLE MODEL	BW3-CTS 43500.0010
OPTIONS OPTIONS	

DIMENSIONS DIMENSIONS	LARGEUR WIDTH	PROFONDEUR DEPTH	HAUTEUR HEIGHT
POUCES INCHES	20 1/2	23 5/8	27 5/8
MILLIMÈTRES MILLIMITERS	521	600	702

PLOMBERIE / PLUMBING				
EAU FROIDE COLD WATER	EAU CHAUDE HOT WATER	DRAIN DIRECT DIRECT DRAIN	DRAIN OUVERT OPENED DRAIN	HAUTEUR HEIGHT (po. In. / mm)
3/8				24 610

ÉLECTRICITÉ / ELECTRICITY							
VOLTAGE	PHASE	KW	AMP	C.V. / H.P.	EMB. DIRECT DIRECT CONNECTION	PRISE / NEMA OUTLET / NEMA	HAUTEUR / HEIGHT po. In. / mm
208		6,20	30,0		●		24 610

BW3-CTS

27.6" x 23.6" x 20.5"
 (70.1cm x 59.9cm x 52.1cm)



- Two-Step Model (automatic espresso + steam wand) with hot water dispense
- Intellisteam® wand automatically steams to proper milk temperature - no need to monitor with a thermometer
- Steam 1L of milk in under one minute
- Two hoppers allow for your choice of fresh espresso beans
- Easy-to-use touch screen with beautiful graphics guides the operator
- Handsome polished housing
- Hopper capacity of 3.3lb (1.5kg)
- Dispense spout adjusts from 3" to 6.8"
- Heated stainless steel brew chamber
- Heavy duty grinder
- Modular design of systems - maintenance is fast and easy
- Simple cleaning process with reminder and lockout
- Built-in troubleshooting menu
- P/N 43500.0010 shown. Contact BUNN for available machine packages

Agency:



Specifications

Product #: 43500.0010

Steps: 2 Steps

Water Access: Plumbed

Legs: 4" Black Legs

Additional Features

Electrical & Capacity

Volts	Amps	Watts	Cord Attached	Plug Type	8oz cups/hr 236ml cups/hr	Input H ² O Temp.	Phase	# Wires plus Ground	Hertz
208	30	6200	Yes/	-	-	60°F (15.5°C)	1	2	60

Plumbing Requirements

PSI	kPa	Fitting Supplied	Water Flow Required (GPM)
30-60	207-414	3/8" BSPP	-

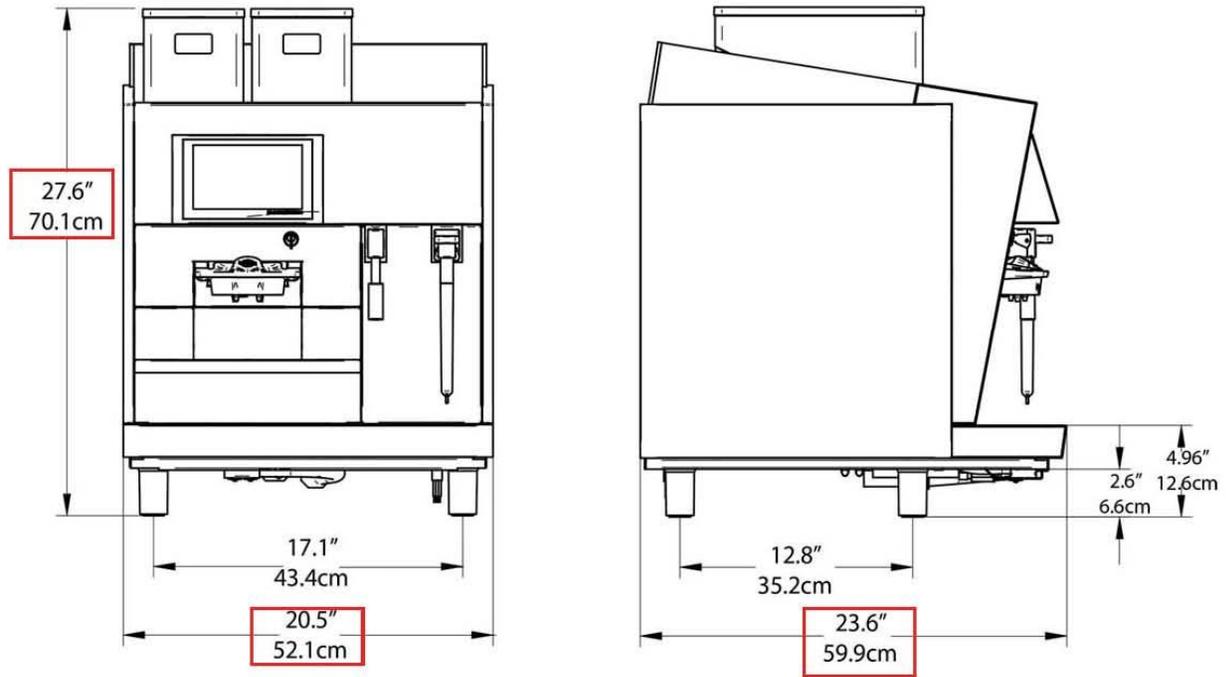
CAD Drawings

2D	Revit	KLC



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Created on: 05/11/2018



	Unit			Shipping				
	Width	Height	Depth	Width	Height	Depth	Weight	Volume
English	20.5 in.	27.6 in.	23.6 in.	- in.	- in.	- in.	177.960 lbs	-
Metric	52.1 cm	70.1 cm	59.9 cm	- cm	- cm	- cm	80.723 kgs	-



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Created on:
05/11/2018

Related Products & Accessories: BW3-CTS(43500.0010)

 <p>CLEANING KEY, ASSY Product #: 43500.1070</p>	 <p>MILK CONTAINER 5L ASSEMBLY Product #: 43500.1201</p>	 <p>CLEANING TABLETS 90 TABS/JAR Product #: 43500.1325</p>	 <p>CLEANING TABLETS 36 JARS/CS Product #: 43500.1326</p>	 <p>thermoplan Milk System Cleaning TABLETS, 62 MILK SYSTEM CLEANING -1 JAR Product #: 43500.1446</p>
 <p>KIT, C300 WATER CONDITIONER.ASSY Product #: 45961.0000</p>	 <p>NO IMAGE AVAILABLE KIT, WATER FILTER CARTRIDGE C300 Product #: 45961.1001</p>	 <p>KIT, C500 ESPRESSO WATER COND ASSY Product #: 47152.0000</p>	 <p>KIT, WATER FILTER CARTRIDGE C500 Product #: 47159.0000</p>	 <p>BRUSH, ANGLED 12 INCH Product #: 47745.0000</p>
 <p>MILK SYS CLEANING TABLETS (12/CS) Product #: 49140.0002</p>				



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Created on:
05/11/2018

Serving & Holding Options: BW3-CTS(43500.0010)

Serving and Holding selections are currently unavailable. Please contact your sales representative to find out more information.



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Created on:
05/11/2018

PART 3 – EXECUTION

NOT USED.

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Agriculture and Agri-Food Canada
 - .1 The Canadian System of Soil Classification, third edition, 1998.
 - .2 Canadian Council of Ministers of the Environment (CCME)
 - .1 PN1340-2005, Guidelines for compost quality.
 - .3 U.S. Environmental Protection Agency (EPA)/Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.
- 1.2 SCOPE OF WORKS
- .1 The work described in this section includes, but is not limited to:
 - .1 Soil preparation for placement of topsoil, supply and application of soil amendment products, provision, placement and spreading of topsoil, and finish grading prior to the installation of turf grass in the case of grass surfaces.
 - .2 Soil preparation for placement of topsoil, supply and application of soil amendment products, provision, placement and spreading of topsoil, supply and placement of granular foundations, and finish grading prior to the installation of the granular topping in the case of gravel surfaces.
- 1.3 RELATED SECTIONS
- .1 Section 31 23 10 – Excavation and backfilling.
 - .2 Section 32 92 23 – Sodding.
- 1.4 DEFINITIONS
- .1 Compost
 - .1 A mixture of soil and decomposing organic matter used as a fertilizer, mulch, or soil conditioner.
 - .2 Compost is processed organic matter containing 40% or more organic matter as determined by the Walkley-Black or LOI test (loss by calcination).
 - .3 Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25) (50)), and contain no toxic or growth inhibiting contaminants.
 - .4 Composed bio-solids must meet the requirements of the Guidelines for Compost Quality, Category (A) (B) produced by the Canadian Council of the Ministers of the Environment (CCME).
- 1.5 SUBMITTALS FOR APPROVAL
- .1 Submit required documents and samples in accordance with Section 01 33 00 – Submittal Procedures.

- .2 Documents to be submitted for quality control purposes.
 - .1 Certificates : submit documents signed by the manufacturer, certifying that the products, materials and equipment meet the requirements regarding physical characteristics and performance criteria.

- 1.6 QUALITY ASSURANCE
 - .1 Pre-installation meeting : conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements, in accordance with Section 01 32 16 – Construction Progress Schedules – Bar (GANTT) Chart.

- 1.7 WASTE MANAGEMENT AND DISPOSAL
 - .1 Divert unused soil amendments from landfill to official hazardous material collections site approved by Agency Representative.
 - .2 Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

- 2.1 TOPSOIL
 - .1 Topsoil for seeded areas : mixture of particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth.
 - .1 Soil texture based on The Canadian System of Soil Classification : to consist of 20 to 70% sand, minimum 7% clay, and contain 2 to 10% organic matter by weight.
 - .2 Contain no toxic elements or growth inhibiting materials.
 - .3 Containing no biological products (seed or seeds) of exotic or invasive plants.
 - .4 Finished surface free from :
 - .1 Debris and stones over 50 mm diameter;
 - .2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume
 - .5 Consistence : friable when moist.

- 2.2 SOIL AMENDMENTS
 - .1 Fertilizer
 - .1 Fertilizer : major soil nutrients present in following amounts.
 - .2 Nitrogen (N) : 20 to 40 micrograms of available N per gram of topsoil.
 - .3 Phosphorus (P) : 40 to 50 micrograms of phosphate per gram of topsoil.
 - .4 Potassium (K) : 75 to 110 micrograms de potassium per gram of topsoil.
 - .5 Calcium, magnesium, sulfur and micro-nutrients present in balanced ratios to support germination and/or establishment of intended vegetation.

- .6 Ph value : 6.5 to 8.0.
 - .2 Peatmoss
 - .1 Derived from partially decomposed species of Sphagnum Mosses.
 - .2 Elastic and homogeneous, brown in colour.
 - .3 Free of wood and deleterious material which could prohibit growth.
 - .4 Shredded particle minimum size 5 mm.
 - .3 Sand : washed coarse silica sand, medium to coarse textured.
 - .4 Organic matter : compost Category A, according to CCME document PN1340, unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements.
 - .5 Limestone
 - .1 Ground agricultural limestone.
 - .2 Gradation requirements (percentage passing by weight) : 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.
 - .6 Fertilizer : industry accepted standard medium containing nitrogen, phosphorous, potassium and other micro-nutrients suitable to specific plant species or application or defined by soil test.
- 2.3 GRANULAR MATERIALS
- .1 Granular bases:
 - .1 Crushed, pit run or screened stone, gravel or sand consisting of hard durable particles free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
 - .2 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes must comply with the existing conditions.
 - .2 Granular topping:
 - .1 Screenings: hard, durable, crushed stone particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
 - .2 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117.
- 2.4 SOURCE QUALITY CONTROL
- .1 Advise Agency Representative of sources of topsoil to be utilized with sufficient lead time for testing.
- 2.5 ENVIRONMENTAL PROCEDURES
- .1 Any biological product (seed and seeds) of exotic and/or invasive plants is prohibited.

PART 3 - EXECUTION

3.1 TEMPORARY MEANS OF EROSION CONTROL AND SEDIMENTS

- .1 Implement temporary erosion and sediment control measures to prevent soil loss from stormwater runoff or wind erosion and entrainment of this soil into the environment or on adjacent properties and footpaths. These measures must be consistent with the site-specific erosion and sediment control plan and prepared in accordance with the most stringent requirements of EPA document 832/R-92-005 or those established by the competent authorities.
- .2 Inspect, maintain, and repair control methods as required until permanent vegetation is established.
- .3 Remove control methods at the appropriate time and restore and stabilize surfaces disturbed during the work.

3.2 PREPARATION OF EXISTING GRADE

- .1 Verify that grades are correct.
 - .1 If discrepancies occur, notify Agency Representative and do not commence work until instructed by Agency Representative.
- .2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.
 - .1 Remove soil contaminated with calcium chloride, toxic materials and petroleum products.
 - .2 Remove debris which protrudes more than 75 mm above surface.
 - .3 Dispose of removed material off site.
- .4 Cultivate entire area which is to receive topsoil to minimum depth of 100 mm.
 - .1 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.3 PLACING AND SPREADING OF TOPSOIL / PLANTING SOIL

- .1 Place topsoil after Agency Representative has accepted subgrade.
- .2 For sodded areas keep topsoil 15 mm below finished grade.
- .3 Spread topsoil as indicated to following minimum depths after settlement :
 - .1 135 mm for sodded areas.
- .4 Manually spread topsoil/planting soil around trees, shrubs and

obstacles.

**3.4 GRANULAR
MATERIALS**

- .1 Refer to Section 31 23 10 - Excavation and Backfilling for backfill material installation.
- .2 Granular bases:
 - .1 Place the materials of the granular foundations in order to obtain the minimum thicknesses according to the existing conditions and indications of the Engineer.
 - .2 Spread and compact granular materials in uniform layers not exceeding 100 mm compacted thickness.
 - .3 Compact to a density of no less than 100% Standard Density in accordance with ASTM D 698 or as directed by the Engineer.
- .3 Granular topping:
 - .1 Place granular topping to obtain a compacted thickness as specified by the Engineer and in regard to existing conditions.
 - .2 Place in layer of 50mm compacted thickness. Compact layer to 100% Standard Density in according to ASTM D 698 or as directed by the Engineer.

3.5 FINISH GRADING

- .1 Grade to eliminate rough spots and low areas and ensure positive drainage.
 - .1 Prepare loose friable bed by means of cultivation and subsequent raking.
- .2 Consolidate topsoil to required bulk density using equipment approved by Agency Representative.
 - .1 Leave surfaces smooth, uniform and firm against deep footprinting.

3.6 ACCEPTANCE

- .1 Agency Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

3.7 SURPLUS MATERIAL

- .1 Dispose of materials except topsoil not required off site.

3.8 CLEANING

- .1 Perform cleaning according to Section 01 74 11 – Cleaning.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 - GENERAL

- 1.1 REFERENCES .1 Bureau de normalisation du Québec (BNQ)
.1 NQ 0605-300 Nursery and Turf Products
- 1.2 SCOPE OF WORKS .1 The work described in this section includes, but is not limited to, the supply and laying of sod to repair damaged surfaces of the land where the excavation will take place, the surfaces on which scaffolding will be installed, the area of soil application (Zone B), the storage areas (Zones A and C), and any other grassed area that will be damaged by the Contractor's vehicles and activities during the performance of the contract work.
- 1.3 RELATED SECTIONS .1 Section 32 91 19 – Topsoil Placement and Grading.
- 1.4 ADMINISTRATIVE TERMS .1 Scheduling
.1 Schedule sod laying to coincide with preparation of soil surface.
.2 Meeting prior to implementation : Hold a meeting to review the requirements of the work, the instructions for implementation and the terms of the warranty, in accordance with Section 01 32 16 – Construction Progress Schedules – Bar (GANNT) Chart.
- 1.5 SUBMITTALS FOR APPROVAL .1 Submit required documents and samples in accordance with Section 01 33 00 – Submittal Procedures.
.2 Product data sheets
.1 Submit the required product data sheets as well as the manufacturer's instructions and documentation for sod, geotextile and fertilizer. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.
.2 Submit two (2) copies of Material Safety Data Sheets (MSDS) for Workplace Hazardous Materials Information System (WHMIS), in accordance with Section 01 35 29 – Health and Safety Requirements.
.3 Certificates : Submit documents signed by the manufacturer, certifying that the products, materials and equipment meet the requirements for the physical characteristics and performance criteria of the seed mixture, seed purity and turf quality.
.4 Test reports : Submit test reports certifying that the products,

materials and equipment meet the requirements for physical characteristics and performance criteria of the seed mixture, seed purity and turf quality.

1.6 TRANSPORT, STORAGE AND HANDLING

- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
- .2 Delivery et Acceptance: Deliver materials and equipment to site in their original packaging, which must be labeled with the name and address of the manufacturer.
- .3 Storage and Handling
 - .1 Store materials in accordance with supplier's recommendations.
 - .2 Replace defective or damaged materials and equipment with new materials and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Number One Turf Grass Nursery Sod : sod that has been especially sown and cultivated in nursery fields as turf grass crop.
 - .1 Turf Grass Nursery Sod types
 - .1 Number One Kentucky Bluegrass Sod: Nursery Sod grown solely from seed of cultivars of Kentucky Bluegrass, containing not less than 50% Kentucky Bluegrass cultivars.
 - .2 Number One Named Cultivars : Nursery Sod grown from certified seed.
 - .2 Turf Grass Nursery Sod quality
 - .1 Not more than one (1) broadleaf weeds and up to 1% native grasses per 40 square meters.
 - .2 Density of sod sufficient so that no soil is visible from height of 1500 mm when mown to height of 50 mm.
 - .3 Mowing height limit : 35 to 65 mm.
 - .4 Soil portion of sod : 6 to 15 mm in thickness.
- .2 Sod establishment support
 - .1 Biodegradable geotextile fabric with square mesh.
 - .2 Wooden pegs : 17 mm x 8 mm x 200 m.
 - .3 Biodegradable starch pegs : 7mm x 8mm x 200mm.
- .3 Water
 - .1 Supplied by Agency Representative at designed source.
- .4 Fertilizer
 - .1 To Canada « Fertilizers Act » and « Fertilizers Regulations ».
 - .2 Complete, synthetic, slow release with 65% of nitrogen content in water-insoluble form.

2.2 SOURCE QUALITY CONTROL

- .1 Obtain approval from Agency Representative of sod at source.
- .2 When proposed source of sod is approved, use no other source without written authorization from Agency Representative.

PART 3 - EXECUTION

3.1 INSPECTION

- .1 Verification of conditions: Before proceeding with sod installation, ensure that the condition of surfaces / supports previously implemented under other sections or contracts is acceptable and allows the work to be carried out in accordance with the written instructions of manufacturer.
 - .1 Make a visual inspection of surfaces / supports in the presence of the Agency Representative.
 - .2 Notify the Agency Representative immediately of any unacceptable conditions found.
 - .3 Begin installation work only after correcting unacceptable conditions and receiving written approval from the Agency Representative.

3.2 PREPARATION

- .1 Verify that grades are correct and prepared in accordance with Section 32 91 19 - Topsoil Placement and Grading. If discrepancies occur, notify Agency Representative and do not commence work until instructed by Agency Representative.
- .2 Do not perform work under adverse field conditions such as frozen soil, excessively wet soil or soil covered with snow, ice, or standing water.
- .3 Fine grade surface free of humps and hollows to smooth, even grade, and elevations indicated, to tolerance of plus or minus 15 mm, surface to drain naturally.
- .4 Remove and dispose of weeds, debris, stones 50 mm in diameter and larger, soil contaminated by oil, gasoline and other deleterious materials, off site according to regulations and standards in force.

3.3 SOD PLACEMENT

- .1 Ensure that sod sections are laid under the supervision of a certified plantation supervisor.
- .2 Lay sod within 24 hours of being lifted if air temperature exceeds 20 degrees Celsius.
- .3 Lay sod sections in rows, joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements.
- .4 Roll sod as directed by Agency Representative. Provide close contact between sod and soil by light rolling. Use of heavy roller to

correct irregularities in grade is not permitted.

3.4 CLEANING

- .1 Cleaning during works : perform cleaning works in accordance with Section 01 74 11 – Cleaning.
 - .1 Leave the premises clean at the end of each working day.
 - .2 Keep pavements and adjacent surfaces clean and free of mud, dirt and debris at all times.
- .2 Final Cleaning : remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
 - .1 Clean and repair areas affected by works.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL

- .1 The Contractor must perform all work in accordance with the requirements of the National Building Code of Canada 2015;
- .2 The Contractor must consider that references to codes and standards are from the most recent edition;
- .3 Prior to the start of work, check the elevations and the dimensions relating to the existing structure (if necessary), access conditions, the clutter of the premises, the Owner's requirements, etc. Advise the Engineer of all dimensions or elevations that do not correspond to the structural plans or of any other error or omission;
- .4 Do not measure the plans to scale; only the dimensions indicated are valid;
- .5 For construction, use the plans issued for construction;
- .6 At all times during construction, the Contractor must not place a load on any part of the structure, which could compromise its safety or cause it to be permanently deformed;
- .7 The Contractor and its subcontractors must take into account that the work depends on the conditions at the site. They are required to complete the structures in accordance with the best practices of their trade;
- .8 The structural plans are complementary and must be read jointly with the plans of the other professionals;
- .9 Only the main openings have been shown on the plans. Coordinate the openings with the plans of the other professionals. Advise the structural engineer of all changes or additional details;
- .10 All changes requested by the Contractor, which require changes to the structure, shall be paid for by the Contractor. The time allotted by the Engineer for the study, calculations and the issuance of sketches due to these changes shall be at the Contractor's expense with advance notice. Make the changes after the Engineer has given his approval.
- .11 The Contractor must advise the Engineer to have the reinforcing bars checked at least twenty-four (24) hours prior to pouring the concrete;
- .12 The Contractor must give consideration to the fact the bottom of the crawl space could be flooded during the work and must anticipate the likelihood of pumping water out.

1.2 SHOP DRAWINGS

- .1 Submit to the Engineer an electronic copy for comments on the shop drawings and the data sheets of the prescribed products. The project name must be clearly indicated on these documents;
- .2 The shop drawings of the steel components must be sealed and signed by an engineer who is a member of the Ordre des Ingénieurs du Québec (O.I.Q.);
- .3 The general contractor must first read the documents before forwarding them to the engineer;
- .4 Starting work for which the shop drawings and the data sheets have not been returned with the engineer's comments is prohibited.

1.3 DEMOLITION

- .1 Perform the structural demolition work in accordance with CSA S350 and the Québec Safety Code;
- .2 Give the Owner, at the location of their choice, the equipment and materials they would like to retain prior to starting the work;
- .3 Demolish all components and structures indicated in the structural plans;
- .4 All temporary support work is under the direction and responsibility of the Contractor. The latter is required to take all necessary action and install a sufficient number of adequate supports to ensure the safety of the structures to be retained and the workers. This work must be in compliance with the codes and legislation in force, particularly the legislation of the CNESST;
- .5 Before the work starts, ensure that the mechanical and electrical services have been shut down in the parts of the building which are to be demolished and that they have been cut at the line separating the parts to retain. Unless otherwise indicated, all other services must be maintained during the work;
- .6 Use the equipment and go ahead with the demolition work in a way that keeps noise and vibrations down to a level that is acceptable to users and the equipment of the building and the two adjacent ones;
- .7 Take care not to damage the portions of the building to be conserved and add all protective structures required prior to the start of the work. Damage caused by the Contractor which is not part of the planned demolitions must be repaired at the Contractor's expense;
- .8 Perform the work to avoid anything collapsing onto the construction to be retained;
- .9 At the end of each workday, ensure that no structure can sink or collapse.
- .10 Demolish in a way that raises the least amount of dust possible and wet down dusty materials;
- .11 Remove from the premises all demolition products, fill and excavation materials as the work progresses. Accumulations of debris are not permitted on the premises;
- .12 During the demolition and dismantling work, the Contractor must take the necessary precautions to avoid damaging the stone and the joists;
- .13 Before drilling into the interior foundation walls, the Contractor must plan on dismantling a minimum of three joists, including those on 16" c/c to provide access for the equipment and the workers and to replace the sill plates. The joists must be reinstalled after the work has been done.
- .14 When dismantling the section of the vault in order to make repairs to the ceiling, the Contractor must provide the Engineer with a shoring plan and their work procedure for approval.

1.4 EXCAVATION

- .1 Archaeology:
- .1 The Fort Lennox National Historic Site has been recognized by the Government of Canada is one of the sites with the greatest heritage value. As a result, all soil excavation on this property may uncover archaeological vestiges, which means that such work must be monitored by an archaeologist appointed by the federal government.
 - .2 Given the probability of finding artifacts during the excavation required to perform the work, all work must be the subject of constant supervision by an archeologist.
 - .3 Refer to the architectural specifications for general requirements dealing with access and collaboration, archaeological discoveries, stoppages of archaeological work, archaeologically related excavation requirements and the protection of vestiges and structures.

1.5 CONCRETE MIX.

- .1 MS-S10 protection pre-bagged concrete mix manufactured by the King company, for the construction of the firewalls and the enlargement of the concrete pads:
- .2 Follow the manufacturer's recommendations regarding the preparation, pouring and curing.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 11 00 – General conditions;
.2 Section 03 20 00 – Reinforcement bars for concrete.
- 1.2 SCOPE OF WORK .1 Provide the materials, accessories, machinery, hoisting equipment and labour to put the formwork in place for the walls;
.2 Install all anchors, plates, supports, bolts, sleeves and other accessories that must be embedded into the concrete and will be provided by the other interested trades;
.3 Make all the openings required in the forms for all disciplines;
.4 Provide and install all of the shoring and temporary bracing, when required.
- 1.3 CODES AND STANDARDS .1 The standards cited in these specifications are the most recent versions;
.2 Erect the concrete forms in accordance with CSA A23.1 and CSA S269.3;
.3 Erect the temporary structures in accordance with CSA S269.1.
- 1.4 COMPLETE STRUCTURES .1 The architectural, structural, mechanical and electrical drawings and specifications are part of a whole for the purpose of completing construction in its entirety. They must be read jointly and severally to take into account everything they involve;
.2 This includes, in addition to the requirements prescribed in the contractual documents, all demolition, drilling and clogging work not specifically indicated but required to put together complete structures.

PART 2 – PRODUCTS

- 2.1 MATERIALS .1 Construction lumber, plywood and other falsework materials in accordance with CAN/CSA O86. All lumber in contact with the concrete must be in new condition;
.2 Interior coating of the formwork (for surfaces that will be showing): use high-density overlay Douglas fir plywood to obtain a smoother concrete finish surface in accordance with CSA O121;
.3 Form oil: a type that does not stain the concrete and will not affect the adherence of a finish coating on the surfaces where it is to be applied;

- .4 Form ties: removable or snap off metal ties designed so that they can be removed from or snapped off up to a depth of at least 15 mm from the surface of the concrete when the forms are removed; the hole diameters must not exceed 25 mm. For visible surfaces, the ties should have removable plastic cones.
- .5 Filling of the tie cones with SikaTop made by Sika or an approved equivalent.

PART 3 – EXECUTION

3.1 CONSTRUCTION

- .1 Before constructing the forms, check the levels and wall alignments, and ensure that the dimensions match those indicated on the drawings;
- .2 Construct the forms to obtain concrete structures whose forms, dimensions and levels are compliant with the indications and located in the areas indicated in the plans;
- .3 Align the form joints and make them waterproof. Keep the number of form joints to a minimum;
- .4 Make the openings as per the instructions in the structural, architectural, mechanical and electrical drawings;
- .5 Clean the forms as the work progresses. Remove pieces of wood, chips and other debris from the bottom of the forms. Flush the surface of the forms to remove all foreign matter that could have remained on the forms. Ensure that the water and debris are expelled outside through the appropriate openings. When work is to be done in cold weather, clean with compressed air. Do not use water;
- .6 Verify the alignment and level of the forms frequently when the concrete is being poured and make any corrections immediately, if necessary;
- .7 The forms must be in a condition that the engineer finds acceptable. Panels with rounded edges or spliced or damaged surfaces will not be accepted;
- .8 The Contractor can use the forms and other temporary structures several times, provided the services have not been split or worn; they can then be repaired to the engineer's satisfaction prior to being reused. However, for exposed formed surfaces, form materials in contact with freshly poured concrete must be new;
- .9 Before closing the forms, advise the engineer beforehand to enable him/her to perform the necessary inspections;
- .10 Before use, apply form oil to the surfaces of the forms. The forms cannot be oiled when the reinforcements are in place.

3.2 TOLERANCES

- .1 Abide by the following tolerances for form construction:
 - .1 Vertical variance: 10 mm for 3 metres, not to exceed 20 mm for 6 or more metres;
 - .2 Wall flatness variance: 10 mm for 3 metres;
 - .3 Horizontal variance: 10 mm for 3 metres;
 - .4 Variance in alignment in comparison with the position established in the plan and the relative position of the walls: maximum 10 mm.

3.3 REMOVAL OF FORMS AND TEMPORARY STRUCTURES

- .1 Once the concrete has been poured, leave the forms in place for at least 7 days;
- .2 The period of time indicated does not relieve the contractor of their responsibility for taking into account the complexity and type of structure along with weather conditions; and for verifying whether the concrete has achieved enough resistance to bear its own weight and other loads placed on it before the forms are removed;
- .3 Based on weather conditions, the concreting process and the curing conditions, the engineer can specify the minimum timeframe that must be adhered to prior to removing the forms of the various pours.

3.4 EMBEDDED PARTS

- .1 Place and secure firmly to the forms all sleeves, fasteners and anchor bolts, and all other parts embedded in the concrete in accordance with the structural, architectural, mechanical and electrical drawings and specifications;
- .2 Coordinate deliveries to the site and the installation of embedded parts with the subcontractors that must provide them;
- .3 The sleeves and pipes can run through the walls provided they do not displace any reinforcements, they are made of iron or galvanized steel at least as thick as a standard pipe, they are not more than 50 mm in inner diameter and they are placed c-c equal to three times their diameter at a minimum;
- .4 Ensure that all indications on the construction drawings concerning sleeves, openings, etc., are compatible with those of the architectural, mechanical and electrical drawings;
- 5 No reinforcements are to be removed or moved to install hardware. If components to be embedded in the concrete cannot be placed in the prescribed locations, have the engineer approve any changes before pouring the concrete;
- .6 Immediately before the concrete is poured, ensure that the dimensions requested in the plans and specifications and the tolerances imposed for all parts are adhered to.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 11 00 – General conditions
.2 Section 03 10 00 – Concrete forms
- 1.2 SCOPE OF WORK .1 Provide all of the materials, equipment and the labour required to manufacture and install the reinforcing steel shown in the plans and/or described in these specifications;
.2 Provide and install the concrete chairs, bar supports and spacers in the walls to support the reinforcing steel.
- 1.3 CODES AND STANDARDS .1 The standards mentioned in these specifications are the most recent ones;
.2 Construct the reinforcing structures as per CSA A23.1;
.3 Recommended standards manual of the Reinforcing Steel Institute of Canada (RSIC);
.4 ASTM A82, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement;
.5 ASTM A 184/A184M, Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
- 1.4 QUALITY CONTROL .1 Allow the engineer easy access to the worksite at all times to enable him/her to verify, examine and monitor the quality and manufacture of the materials;
.2 The installation of the concrete shall not be authorized until the engineer has inspected and improved the reinforcing bars in place.
- 1.5 COMPLETE STRUCTURES .1 The architectural, structural, mechanical and electrical drawings and specifications are part of a whole for the purpose of completing construction in its entirety. They must be read jointly and severally to take into account everything they involve.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Reinforcing steel: 400 MPa (400R) gauge high-adherence carbon steel deformed steel bars as per CAN/CSA-G30.18, unless otherwise indicated;
.2 Concrete chairs, crosspiece bar supports and spacers that are resistant and appropriate for the bars used. Brick other than concrete brick is prohibited in the footings.
.3 Tie wire: cold-stretched annealed wire as per CSA G30.3.
- 2.2 FORMING .1 Form the steel bars in the plant in accordance with the details on the drawings and as per the provisions of CSA A23.1.

PART 3 – EXECUTION**3.1 DELIVERY AND STORAGE**

- .1 Take every precaution to avoid deforming or soiling the bars while they are being transported, handled or stored;
- .2 Handle the bars carefully to avoid deforming them;
- .3 As soon as the reinforcing bars are delivered to the job site, stack them properly on beams to protect them from rust and ensure they are not in contact with the ground;
- .4 If necessary, cover all stored steel with a woven tarp to protect it from the weather.

3.2 INSTALLING THE REINFORCING BARS

- .1 Install, support, space and align the reinforcing bars in the position indicated and fasten them adequately to avoid any movement when the concrete is poured as per CSA A23.1;
- .2 Before pouring the concrete, remove from the bars all excess rust, scale, mud, oil and any other soil that could impair the adherence of the concrete;
- .3 Bars shall be secured to one another to form a lattice that is suitably held in place by concrete chairs, metal spacers or other approved devices. The placement of non-secured bars is prohibited. No reinforcing bars showing on the finished concrete surface shall be tolerated;
- .4 The wall dowels must be placed with forms or templates before concreting;
- .5 Have the engineer verify the reinforcing bars and installation twenty-four (24) hours prior to pouring the concrete.

3.4 CONCRETE COVERING ON THE REINFORCING STEEL

- .1 Concrete poured directly on the ground:
 - .1 75 mm
- .2 Concrete not exposed to weather or in contact with the ground:
 - .1 walls: 20 mm.

3.5 TOLERANCES IN THE INSTALLATION OF THE BARS

- .1 Thickness of the concrete covering: minimum 5 mm, maximum 8 mm;
- .2 Positioning of the bars based on the thickness of the concrete section:
 - .1 Thickness of 200 mm or less: approximately 8 mm.
 - .2 Thickness greater than 200 mm but less than 600 mm: approximately 12 mm.
- .3 Lateral bar spacing: approximately 30 mm.
- .4 Longitudinal positioning of end bars: approximately 50 mm.

3.6 BAR JOINT

- .1 Joint:
 - .1 Unless otherwise indicated, the development lengths and the lap splices of the bars beyond the critical points must be compliant with the provisions of the recommended standards manual of the Reinforcing Steel Institute of Canada (RSIC). Unless otherwise indicated, go with Class B tension lapping;

**3.7 INSTALLATION OF
CHEMICAL ANCHORS**

- .1 Drill a hole 4 mm wider than the bar to be anchored, using a percussion drill.
- .2 Ensure that the drill hole is clean, free of mud and debris, concrete dust and dry. Holes must be rubbed with a metal brush and cleaned with a high-pressure air jet;
- .3 Prepare and apply chemical resin in accordance with the manufacturer's MSDS;
- .4 Fill the hole partially with resin and insert the bar;
- .5 Anchor the bar in the concrete at a minimum depth of 15 times of the bar diameter, unless otherwise indicated on the plans.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 11 00 – General Conditions Structure;
.2 Section 06 10 00 – Wood Framing.
- 1.2 SCOPE OF WORK .1 Provide the labour, equipment and materials required to manufacture and install on site the metal components shown in the plans and/or described in these specifications.
- 1.3 CODES AND STANDARDS .1 The standards shown in these specifications are the most recent ones in force;
.2 Perform the metal fabrications in accordance with CAN/CSA-S16.1;
.3 Perform the welding work in accordance with CSA W59;
.4 Apply paints in accordance with the product manufacturers' requirements and with the Steel Structure Painting Council (SSPC) standards.
- 1.4 COORDINATION .1 Refer to the architectural and structural plans and specifications for all structures that could interfere with or affect the steel structure components;
.2 Verify on site all dimensions and all levels pertaining to the anchor points of the steel structure.
- 1.5 QUALIFICATIONS .1 The metal fabrication Contractor must be recognized as a specialist and a member of the Canadian Institute of Steel Construction;
.2 The Contractor must qualify in accordance with the provisions of the Certification of Companies for Fusion Welding of Steel (CSA Standard W47.1). The Contractor must be accredited in divisions 1 or 2.1 for in-plant manufacture and 2.1 for onsite installation with the Canadian Welding Bureau.
- 1.6 SHOP DRAWINGS .1 Submit an electronic file of the shop drawings to the engineer. These drawings shall be signed and sealed by the manufacturer's engineer, who is a member in good standing of the Ordre des Ingénieurs du Québec;
.2 The shop drawings must clearly indicate the shaping and assembly details, including the cuts, notches, assemblies, drillings and welds;
.3 Prepare the shop drawings, taking into account all related structures. Do the required coordination to avoid any conflict;
.4 No work indicated on the shop drawings shall be done before these drawings have been improved by the Engineer.

- 1.7 DIMENSIONS
- .1 All dimensions relating to the other structures shall be verified with the shop drawings of these structures or checked on site;
 - .2 All dimensions relating to existing construction shall be verified on site.
- 1.8 ASSEMBLIES
- .1 The assemblies performed in plant or at the worksite shall be performed in accordance with the details shown on the structural plans. If no specific information is available, they shall be calculated and executed in accordance with CAN/CSA-S16.01.
- 1.9 HANDLING
- .1 Transport and store materials on site in such a way not to damage the materials of other trades or the new structure;
 - .2 Handle the steel parts in a way that avoids permanent deformations;
 - .3 Carefully handle apparent steel parts or those that have been coated with a special finish at the plant to avoid damaging the surfaces.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Structural steel:
 - .1 Tubular profiles compliant with ASTM-A500 Grade C (345 MPa);
 - .2 Angles and plates in compliance with CAN/CSA-G40.21, grade 300W.
 - .2 Welding materials compliant with CSA W59;
 - .3 In-plant coating applied to the steel components in compliance with ICCA/AFPC 2-75;
 - .4 All materials must be new and free of rust due to prolonged storage outside;
 - .5 All steel profiles must be one piece with no butt welds. All metal parts made of abutted parts shall be rejected by the Engineer.
- 2.2 SHAPING
- .1 Manufacture the steel components as per the indications in the shop drawings and the requirements of CAN/CSA-S16.1;
 - .2 The welds for these apparent assemblies shall be continuous and levelled to obtain smooth and uniform surfaces.

2.3 WELDING .1 Comply with the requirements of CSA W47.1. All welds must be electrical arc welds in accordance with CSA W59.

2.4 PAINT .1 Clean, prepare and coat the steel in accordance with CAN/CSA-S16.1 and ICCA/AFPC 2-75;
.2 Apply the paint in the shop according to the manufacturer's recommendations.

PART 3 - EXECUTION

3.1 INSTALLATION .1 The installation of steel components shall meet the requirements of CAN/CSA-S16.1;
.2 Any welds on the apparent assemblies performed on site shall be continuous and ground down to produce smooth and uniform surfaces.

3.2 PAINT .1 All steel must be painted in the shop and on site in accordance with the following requirements:
.1 Clean and remove grease from steel in accordance with SSPC-SP1.
.2 Prepare the steel surfaces mechanically in accordance with SSPC-SP3.
.3 Apply a coating in the shop to all steel components in accordance with CISC/CPMA 2-75 with any retouching on the site.
.4 Apply a finishing coat of acrylic base DTM-type paint by Sherwin Williams. It must be white with a semi-gloss finish.
.5 Follow the paint manufacturer's recommendations regarding the procedure, coat thickness, atmospheric conditions, temperatures and drying time.

3.3 FINAL CLEANUP .1 When the work has been completed and prior to final acceptance, remove all scaffolding, waste and temporary construction used.
.2 Remove slag, splashes, scrapes and other marks on visible steel components;
.3 Do not use acid to clean the surfaces.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 11 00 – General Conditions;
.2 Section 05 50 00 – Metal Fabrications.
- 1.2 SCOPE OF WORK .1 Provide the labour, equipment and materials required to manufacture and install on site the wood framing components shown in the plans and/or described in these specifications.
- 1.3 CODES AND STANDARDS .1 The standards shown in these specifications are the most recent ones in force;
.2 Canada National Building Code;
.3 Perform carpentry in accordance with CAN/CSA-O86;
.4 Lumber must be compliant with CAN/CSA-O141;
.5 The wood must be compliant with the National Lumber Grades Authority publication entitled “Standard Grading Rules for Canadian Lumber” and identified with a stamp from the NLGA.
- 1.4 DIMENSIONS .1 All dimensions relating to other structures and existing constructions shall be verified on site.
- 1.5 HANDLING .1 Protect materials from inclement weather during transportation and storage on site;
.2 Store the materials in a way that ensures that the parts are not permanently deformed and that the quality of the materials is not adversely affected.
- 1.6 COMPLETE STRUCTURES .1 The architectural, structural, mechanical and electrical drawings and specifications are constituent parts of a whole designed to achieve full construction. They must be read jointly and severally to gain some appreciation of the implications of each;
.2 In addition to the requirements set out in the contractual documents, these implications include all demolition, drilling, connection and finishing work not specifically indicated but required to put together complete structures.

PART 2 - PRODUCTS

- 2.1 LUMBER .1 Species
.1 Spruce-Pine-Fir (S-P-F): Parts whose narrowest dimension is equal to or less than 89 mm: no. 2 or better. Parts whose narrowest dimension is equal to or greater than 114 mm: no. 1 or better
.2 Water content of the wood parts shall be less than 15% when installed on site.
.3 Parts shall be whitened on all four sides (SAS).

- 2.2 WOOD PRESERVATIVE .1 The new sill plates shall consist of grey pressure-treated pine;
.2 Preservative: ACA or CCA with net retention of 9.61 kg per cubic metre of wood;
.3 Application in compliance with the CSA 080 Wood Preservation standard.
- 2.3 ASSEMBLY PARTS .1 Nails: Unless otherwise indicated, use spiral nails coated with white zinc compliant with CSA B111. The nails must be long enough in order for at least half the nail to penetrate the second member;
.2 Screws: compliant with CSA B35.4;
.3 Lag screws: compliant with CSA B34;
.4 All assembly parts likely to corrode shall be hot-tipped galvanized.

PART 3 – EXECUTION

- 3.1 FOUNDATION ANCHORS .1 The wood frame shall be solidly secured to the foundations as follows: bolt the sill plate of the load-bearing walls with bolts 13 mm in diameter, spaced no more than 1200 mm on centres. The bolts must be anchored at least 100 mm in the concrete so that they can be tightened without coming out of the concrete. The sill plate must be installed level on a full bed of mortar or directly on the foundation if the latter is level enough.
- 3.2 FRAME ASSEMBLY .1 General
.1 Assemble components in accordance with CSA 086;
.2 Install the components in accordance with the alignment, the level and elevation specified, assemble them upright and space them out uniformly;
.3 All framing components shall be assembled, anchored, secured, attached and braced to one another to ensure the resistance and stiffness needed to have a stable frame.
.2 Nailing and assemblies:
.1 Comply with the requirements in tables 1.4.5.4.A of the Canada National Building Code;

**Table 1.4.5.4.A
 Nailing of framing components**

Execution detail	Minimum nail length (mm)	Minimum quantity or maximum spacing of nails
Crossbeams on joists	57	2 on each end
Decking consisting of planks exceeding 38 x 140mm at support	82	3
Floor joist at the sill plate – Toenailing	82	2

- .3 Joists:
 - .1 Wood joists: joists shall be installed in accordance with the alignments and spacing indicated in the plans. Bracing shall be provided on each end and spaced no more than 2.1 m apart to avoid warping of the joists.
 - .4 Notches and drilling: no framing component shall be notched, drilled or otherwise damaged in any way, without the engineer's approval.

3.3 PROTECTION AGAINST ROT

- .1 The new sill plates up against the masonry shall be treated with a preservative to prevent rot;
- .2 Existing joists not treated with a pressure applied preservative and in contact with masonry shall be separated by 45 lb. tar paper or by another approved damp proof material.

3.4 CLEANUP

- .1 Clean up the site regularly and get rid of waste, debris, pieces of wood, sawdust, chips, etc.;
- .2 When the work has been completed, do a final cleanup and remove the temporary construction used.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 11 00 – General conditions
.2 Section 01 14 00 – Work Restrictions
- 1.2 GENERAL REQUIREMENTS .1 Visit the site first and examine the current terrain conditions;
.2 Read the legislation, regulations, decrees and security codes concerning the work covered by this section of the specifications and be in strict compliance therewith;
.3 All soil excavation must be monitored by an archaeologist. See section 01 11 00, art. 1.4 and section 01 14 00 – Work Restrictions.
- 1.3 DEFINITION .1 As defined in this section of the specifications, excavation means extracting soil and debris that can be buried in the soil using mechanical devices or manual tools.
- 1.4 SCOPE OF THE WORK .1 Provide all equipment, labour and materials for all excavation and backfill work for the construction as shown in the plans;
.2 Excavate and backfill all of the required trenches to do electrical work.
.3 Excavate and transport off site the networks of decommissioned utilities buried in the soil and any existing debris in the soil;
.4 Backfill the trenches for the electrical conduits to the specified level of the exterior development and the levelling of the surfaces;
.5 Compact the backfill material.
- 1.5 SOIL CONDITIONS .1 The Contractor must take into account the recommendations issued in the geotechnical study report prepared by WSP on October 12, 2017, bearing file number 161-14903-01;
.2 The Contractor must call on its own experts to interpret this data and evaluate potential difficulties and the construction methods to be implemented;
.3 The Contractor must assume full and total responsibility for all use and interpretation of what it has taken from the geotechnical study report.
- 1.6 EXISTING PUBLIC AND PRIVATE UTILITIES NETWORKS .1 The details pertaining to the location where the utilities networks indicated are buried have been provided for information purposes only and are therefore not necessarily accurate or complete;

- .2 Before starting to dig the trenches, advise the Owner, the Engineer and the authorities of public and private utilities companies concerned and determine the location of the underground networks. Clearly mark out locations to avoid any interruption in service during the performance of the work. Verify, coordinate and direct the changes that are needed. The Contractor shall cover the cost incurred by the owners of these utilities concerned and the cost of operations;
 - .3 Confirm the location of underground networks by carefully performing test excavations;
 - .4 Protect from any damage all water, air, sewer, gas, electrical and telephone pipes and all other structures that could be found there. Before moving or disrupting in any way a utility network, obtain the appropriate directives from the Owner or the companies involved. Accept total responsibility for all damage sustained by underground pipes that are damaged during the work.
- 1.7 PROTECTION OF EXISTING STRUCTURES .1 Take all of the necessary precautions to avoid damaging the buildings, underground utilities and other structures that are located near the worksite. Repair all damage caused by the work to the satisfaction of the Owners concerned and cover the cost thereof.
- 1.8 ACCESS ROAD .1 Ensure that the surrounding roads are clean and relatively free of debris resulting from the transportation of materials.
- 1.9 COMPLETE WORK .1 The architectural, structural, mechanical and electrical drawings and specifications constitute a whole for the purpose of achieving total construction. As a result, they must be read jointly and severally in order to take into account all of their implications.

PART 2 - PRODUCTS

- 2.1 BACKFILL MATERIALS .1 Excavation material

PART 3 - EXECUTION

- 3.1 EXCAVATION .1 Excavate according to the dimensions of levels shown on the plans;
- .2 Excavate with regular and rectilinear contours to limit the quantity of backfill;
- .3 The bottom of trench excavations for electrical conduits must consist of undisturbed dry soil that contains no organic matter or any other debris;
- .4 Dig the trenches for the electrical conduits requested in the plans for each of the specialties.

- 3.2 BACKFILL .1 Backfill the trenches with excavation material.
- 3.3 INSTALLATION OF BACKFILL MATERIAL
- .1 Backfill with uniform and successive layers not to exceed 150 mm thickness after compacting;
- .2 Maintain, for the backfill materials, the most suitable degree of humidity to obtain the density required during compacting;
- .3 Do ensure that the French drain and the electrical protective concrete blocks buried in the upper portion of the backfill are not moved or damaged. If necessary, replace or repair these components, verify the water tightness of the joints and assume all of the costs;
- .4 Take particular care when compacting with backfill materials in the more hard-to-reach locations.
- 3.4 COMPACTING
- .1 Bottom of the excavations: all surfaces of the bottom of the trench excavations shall be compacted to a degree that is at least equal to the degree of compacting of the nearby undisturbed soil;
- .2 The backfill material must be compacted to a compacting degree that is at least equal to 90% of the maximum dry density obtained with the Proctor modified test (unless otherwise indicated).
- 3.5 SPECIAL PERFORMANCE DETAILS
- .1 While drilling in the exterior walls during the excavation work, the Contractor must plan on removing section of the French drain and wrapping with clean stone and geotextile membrane and on pumping out the water table and any water in the French drains. The planks located under the foundations must remain constantly submerged. The section of the French drain and the wrapping must be reinstalled after the work is done.
- .2 The electrical and drainage buried in the soil must be inspected and verified before backfilling, which should be done manually with a shovel up to 300 mm above these structures and compacted to 90% of the maximum dry density obtained with the Proctor modified test. The remaining portion of the backfilling shall proceed as specified.

END OF SECTION

Part 1 General**1.1 SUMMARY****.1 Section Includes:**

- .1 Systems and devices for protection against earthquake-induced shock effects from static-supported technical equipment and elastically supported, i.e. vibration-proof, including all mechanical apparatus and systems, control and regulation systems for mechanical and electrical installations of buildings, electrical lighting fixtures, transformers, motor control centers, uninterruptible power supply systems, emergency power systems and fire protection installations.

1.2 RELATED REQUIREMENTS

- .1 All the general requirements described in division 1 are applicable to the present section.

1.3 REFERENCE STANDARDS**.1 CSA Group (CSA)**

- .1 CAN/CSA G40.20/G40.21- , General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

.2 National Research Council Canada (NRC)

- .1 National Building Code of Canada (NBC).

1.4 DEFINITIONS

- .1 Priority Two (P2) Buildings: buildings in which life safety is of paramount concern. It is not necessary that P2 buildings remain operative during or after earthquake activity.
- .2 SRS: acronym for Seismic Restraint System.

1.5 DESCRIPTION**.1 SRS fully integrated into, and compatible with:**

- .1 Noise and vibration controls specified elsewhere.
- .2 Structural, mechanical, electrical design of project.

.2 Systems, equipment not required to be operational during and after seismic event.**.3 During seismic event, SRS to prevent systems and equipment from causing personal injury and from moving from normal position.****.4 Designed by Professional Engineer specializing in design of SRS****1.6 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Shop drawings: Submit drawings stamped and signed by professional engineer registered or licensed in Quebec.

- .2 Submit design data including:
 - .1 Full details of design criteria.
 - .2 Working drawings (prepared to same standard of quality and size as documents forming these documents, materials lists, schematics, full specifications for components of each SRS to be provided.
 - .3 Design calculations (including restraint loads resulting from seismic forces in accordance with National Building Code, detailed work sheets, tables).
 - .4 Separate shop drawings for each SRS and devices for each system, equipment.
 - .5 Identification of location of devices.
 - .6 Schedules of types of SRS equipment and devices.
 - .7 Details of fasteners and attachments to structure, anchorage loadings, attachment methods.
 - .8 Installation procedures and instructions.
 - .9 Design calculations including restraint loads[to NBC and Supplement .
 - .10 Simplified, Detailed work sheets and tables are acceptable.
 - .11 Detailed design of SRS including complete working drawings prepared to same standard of quality and size as Contract Documents , materials lists, design calculations, schematics, specifications.
- .3 Submit additional copy of shop drawings and product data to structural Engineer for review of connection points to building structure.

Part 2 Products**2.1 SRS MANUFACTURER**

- .1 SRS from one manufacturer regularly engaged in SRS production.

2.2 GENERAL

- .1 SRS to provide gentle and steady cushioning action and avoid high impact loads.
- .2 SRS to restrain seismic forces in every direction.
- .3 Fasteners and attachment points to resist same load as seismic restraints.
- .4 SRS of Piping systems compatible with:
 - .1 Expansion, anchoring and guiding requirements.
 - .2 Equipment vibration isolation and equipment SRS.
- .5 SRS utilizing cast iron, threaded pipe, other brittle materials not permitted.
- .6 Attachments to RC structure:
 - .1 Use high strength mechanical expansion anchors.
 - .2 Drilled or power driven anchors not permitted.
- .7 Dry pipe sprinkler systems: refer to Section 21 13 16- Dry Pipe Sprinkler Systems .
- .8 Seismic control measures not to interfere with integrity of fire stopping.

2.3 SRS FOR STATIC EQUIPMENT, SYSTEMS

- .1 Floor-mounted equipment, systems:
 - .1 Anchor equipment to equipment supports.
 - .2 Anchor equipment supports to structure.
 - .3 Use size of bolts scheduled in approved shop drawings.
- .2 Suspended equipment, systems:
 - .1 Use one or combination of following methods:
 - .1 Install tight to structure.
 - .2 Cross-brace in every direction.
 - .3 Brace back to structure.
 - .4 Slack cable restraint system.
 - .2 SCS to prevent sway in horizontal plane, "rocking" in vertical plane, sliding and buckling in axial direction.
 - .3 Hanger rods to withstand compressive loading and buckling.

2.4 SRS FOR VIBRATION ISOLATED EQUIPMENT

- .1 Floor mounted equipment, systems:
 - .1 Use one or combination of following methods:
 - .1 Vibration isolators with built-in snubbers.
 - .2 Vibration isolators and separate snubbers.
 - .3 Built-up snubber system approved by Consultant, consisting of structural elements and elastomeric layer.
 - .2 SRS to resist complete isolator unloading.
 - .3 SRS not to jeopardize noise and vibration isolation systems. Provide 4-8 mm clearance between seismic restraint snubbers and equipment during normal operation of equipment and systems.
 - .4 Cushioning action: gentle and steady by utilizing elastomeric material or other means in order to avoid high impact loads.
- .2 Suspended equipment, systems:
 - .1 Use one or combination of following methods:
 - .1 Slack cable restraint system.
 - .2 Brace back to structure via vibration isolators and snubbers.

2.5 SLACK CABLE RESTRAINT SYSTEM (SCS)

- .1 Use elastomer materials or similar to avoid high impact loads and provide gentle and steady cushioning action.
- .2 SCS to prevent sway in horizontal plane, "rocking" in vertical plane, sliding and buckling in axial direction.
- .3 Hanger rods to withstand compressive loading and buckling.

Part 3 Execution**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 INSTALLATION

- .1 Attachment points and fasteners:
 - .1 To withstand same maximum load that seismic restraint is to resist and in every direction.
- .2 Slack Cable Systems (SCS):
 - .1 Connect to suspended equipment so that axial projection of wire passes through centre of gravity of equipment.
 - .2 Use appropriate grommets, shackles, other hardware to ensure alignment of restraints and to avoid bending of cables at connection points.
 - .3 Piping systems: provide transverse SCS at 10 m spacing maximum, longitudinal SCS at 20 m maximum or as limited by anchor/slack cable performance.
 - .4 Small pipes may be rigidly secured to larger pipes for restraint purposes, but not reverse.
 - .5 Orient restraint wires on ceiling hung equipment at approximately 90 degrees to each other (in plan), tie back to structure at maximum of 45 degrees to structure.
 - .6 Adjust restraint cables so that they are not visibly slack but permit vibration isolation system to function normally.
 - .7 Tighten cable to reduce slack to 40 mm under thumb pressure. Cable not to support weight during normal operation.
- .3 Install SRS at least 25 mm from equipment, systems, and services.
- .4 Miscellaneous equipment not vibration-isolated:
 - .1 Bolt through house-keeping pad to structure.
- .5 Co-ordinate connections with other disciplines.
- .6 Vertical tanks:
 - .1 Anchor through house-keeping pad to structure.
 - .2 Provide steel bands above centre of gravity.

3.3 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services:
 - .1 Arrange with manufacturer's representative to review work of this Section and submit written reports to verify compliance with Contract Documents.
 - .2 Manufacturer's Field Services: consisting of product use recommendations and periodic site visits to review installation, scheduled as follows:
 - .1 After delivery and storage of Products.

- .2 After preparatory work is complete but before installation commences.
- .3 Twice during the installation, at 25 % and 60 % completion stages.
- .4 Upon completion of installation.
- .3 Submit manufacturer's reports to Consultant within 3 days of manufacturer representative's review.
- .2 Inspection and Certification:
 - .1 SRS: inspected and certified by Seismic Engineer upon completion of installation.
 - .2 Provide written report to Departmental Representative with certificate of compliance.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 All general requirements described in Division 1 are applicable to this section of the specification.
- .2 Section 20 05 48.16 applies to the present section.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets
- .3 Shop Drawings:
 - .1 Indicate on drawings:
 - .1 Mounting arrangements.
 - .2 Operating and maintenance clearances.
 - .2 Shop drawings and product data accompanied by:
 - .1 Detailed drawings of bases, supports, and anchor bolts.
 - .2 Acoustical sound power data, where applicable.
 - .3 Points of operation on performance curves.
 - .4 Manufacturer to certify current model production.
 - .5 Certification of compliance to applicable codes.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals .
- .2 Operation and Maintenance Data: submit operation and maintenance data
 - .1 Operation and maintenance manual approved by, and final copies deposited with, Consultant before final inspection.
 - .2 Operation data to include:
 - .1 Control schematics for systems including environmental controls.
 - .2 Description of systems and their controls.
 - .3 Description of operation of systems at various loads together with reset schedules and seasonal variances.
 - .4 Operation instruction for systems and component.
 - .5 Description of actions to be taken in event of equipment failure.
 - .6 Valves schedule and flow diagram.
 - .7 Colour coding chart.
 - .3 Maintenance data to include:

- .1 Servicing, maintenance, operation and trouble-shooting instructions for each item of equipment.
- .2 Data to include schedules of tasks, frequency, tools required and task time.
- .4 Performance data to include:
 - .1 Equipment manufacturer's performance datasheets with point of operation as left after commissioning is complete.
 - .2 Equipment performance verification test results.
 - .3 Special performance data as specified.
 - .4 Testing, adjusting and balancing reports as specified in Section 23 05 93- Testing, Adjusting and Balancing for HVAC .
- .5 Site records:
 - .1 Transfer information weekly to reproducibles, revising reproducibles to show work as actually installed.
 - .2 Use different colour waterproof ink for each service.
 - .3 Make available for reference purposes and inspection.
- .6 As-built drawings:
 - .1 Prior to start of Testing, Adjusting and Balancing for HVAC, finalize production of as-built drawings.
 - .2 Identify each drawing in lower right hand corner in letters at least 12 mm high as follows: - "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (Signature of Contractor) (Date).
 - .3 Perform testing, adjusting and balancing for HVAC using as-built drawings.
 - .4 Submit completed reproducible as-built drawings with Operating and Maintenance Manuals.
- .3 Submit copies of as-built drawings for inclusion in final TAB report.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals.
- .2 Furnish spare parts as follows:
 - .1 One set of packing for each pump.
 - .2 One casing joint gasket for each size pump.
 - .3 One glass for each gauge glass.
- .3 Provide one set of special tools required to service equipment as recommended by manufacturers.
- .4 Furnish one commercial quality grease gun, grease and adapters to suit different types of grease and grease fittings.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements .
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Part 3 Execution**3.1 PAINTING REPAIRS AND RESTORATION**

- .1 Do painting in accordance with Section 09 91 23- Interior Painting .
- .2 Prime and touch up marred finished paintwork to match original.
- .3 Restore to new condition, finishes which have been damaged.

3.2 SYSTEM CLEANING

- .1 Clean interior and exterior of all systems including strainers. Vacuum interior of ductwork and air handling units.

3.3 FIELD QUALITY CONTROL

- .1 Site Tests: conduct following tests in accordance with Section 01 45 00- Quality Control and submit report as described in PART 1 -ACTION AND INFORMATIONAL SUBMITTALS.
- .2 Manufacturer's Field Services:
 - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.
 - .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning .
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

3.5 PROTECTION

- .1 Protect equipment and systems openings from dirt, dust, and other foreign materials with materials appropriate to system.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 This Section includes requirements for selective demolition and removal of plumbing, and related mechanical components and incidentals required to complete work described in this Section.

1.2 RELATED REQUIREMENTS

- .1 Section 22 05 00 applies to the present section.

1.3 REFERENCE STANDARDS

- .1 CSA Group (CSA):
 - .1 CSA S350 M198, Code of Practice for Safety in Demolition of Structures.

1.4 DEFINITIONS

- .1 Demolish: Detach items from existing construction and legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.
- .2 Remove: Planned deconstruction and disassembly of electrical items from existing construction including removal of conduit, junction boxes , cabling and wiring from electrical component to panel taking care not to damage adjacent assemblies designated to remain; legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.

1.5 SITE CONDITIONS

- .1 Existing Conditions: Condition of materials identified as being salvaged or demolished are based on their observed condition at time of site examination before tendering .

Part 2 Products**2.1 MATERIALS**

- .1 Plumbing Repair Materials: Use only new materials required for completion or repair matching materials damaged during performance of work of this Section; new materials are required to meet assembly or system characteristics as existing systems indicated to remain and carry CSA approval labels required by the Authority Having Jurisdiction.
- .2 Fire stopping Repair Materials: Use fire stopping materials compatible with existing fire stopping systems where removal or demolition work affects rated assemblies, restore to match existing fire rated performance.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Existing Conditions: Visit site, thoroughly examine and become familiar with conditions that may affect the work of this Section before tendering the Bid.

3.2 PREPARATION

- .1 Protection of Existing Systems to Remain: Protect systems and components indicated to remain in place during selective demolition operations and as follows:
 - .1 Prevent movement and install bracing to prevent settlement or damage of adjacent services and parts of existing buildings scheduled to remain.
 - .2 Notify Consultant and cease operations where safety of buildings being demolished, adjacent structures or services appears to be endangered and await additional instructions before resuming demolition work specified in this Section.
 - .3 Prevent debris from blocking drainage inlets.
 - .4 Protect mechanical systems that must remain in operation.

3.3 EXECUTION

- .1 Disconnect and cap mechanical services in accordance with requirements of local Authority Having Jurisdiction.
- .2 Do not disrupt active or energized utilities without approval of the Consultant.
- .3 Demolish parts of existing building to accommodate new construction and remedial work as indicated.
- .4 At end of each day's work, leave worksite in safe condition.
- .5 Perform demolition work in a neat and workmanlike manner:
 - .1 Remove any tools or equipment after completion of work, and leave site clean and ready for subsequent renovation work.
 - .2 Repair and restore damages caused as a result of work of this Section to match existing materials and finishes.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 22 05 01 applies to the present section.

1.2 REFERENCE STANDARDS

- .1 American Society of Mechanical Engineers (ASME)
 - .1 ASME B40.100, Pressure Gauges and Gauge Attachments.
 - .2 ASME B40.200, Thermometers, Direct Reading and Remote Reading.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-14.4, Thermometers, Liquid-in-Glass, Self Indicating, Commercial/Industrial Type.
 - .2 CAN/CGSB-14.5, Thermometers, Bimetallic, Self-Indicating, Commercial/Industrial Type.
- .3 Efficiency Valuation Organization (EVO)
 - .1 International Performance Measurement and Verification Protocol (IPMVP)
 - .1 IPMVP version.
- .4 Green Seal Environmental Standards (GS)
 - .1 GS-11, Standard for Paints and Coatings.
 - .2 GS-36, Standard for Commercial Adhesives.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for thermometers and pressure gauges and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Certificates:
 - .1 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .4 Test and Evaluation Reports:
 - .1 Submit certified test reports for thermometers and pressure gauges from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.

Part 2 Products**2.1 GENERAL**

- .1 Design point to be at mid-point of scale or range.
- .2 Ranges: as indicated.

2.2 REMOTE READING THERMOMETERS

- .1 112 mm diameter liquid filled activated dial type: to ASME B40.200, accuracy within one scale division, brass movement, stainless steel capillary, stainless steel, spiral armour, stainless steel bulb and polished stainless steel case for wall mounting.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for installation in accordance with manufacturer's written instructions.

3.2 GENERAL

- .1 Install thermometers and gauges so they can be easily read from floor or platform.
 - .1 If this cannot be accomplished, install remote reading units.
- .2 Install between equipment and first fitting or valve.

3.3 PRESSURE GAUGES

- .1 Install in locations as indicated

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by thermometer and gauge installation.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 Section Includes:
 - .1 Materials and installation for plumbing pumps.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet for fixtures and equipment.
- .3 Shop Drawings.
 - .1 Submit shop drawings to indicate:
 - .1 Equipment, including connections, fittings, control assemblies and ancillaries. Identify whether factory or field assembled.
 - .2 Wiring and schematic diagrams.
 - .3 Dimensions and recommended installation.
 - .4 Pump performance and efficiency curves.
- .4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .5 Instructions: submit manufacturer's installation instructions.

Part 2 Products**2.1 DOMESTIC HOT WATER CIRCULATING PUMPS**

- .1 See table on plan
- .2 Supports: provide as recommended by manufacturer.

2.2 BILGE AND SEWAGE PUMP

- .1 See table on plan

Part 3 Execution**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

3.2 INSTALLATION

- .1 Make piping and electrical connections to pump and motor assembly and controls as indicated.
- .2 Ensure pump and motor assembly do not support piping.
- .3 Align vertical pit mounted pump assembly after mounting and securing cover plate.
- .4 Place 150 mm sand under sump pit tank.

3.3 FIELD QUALITY CONTROL

- .1 Site Tests/Inspection:
 - .1 Check power supply.
 - .2 Check starter protective devices.
- .2 Start-up, check for proper and safe operation.
- .3 Check settings and operation of hand-off-auto selector switch, operating, safety and limit controls, audible and visual alarms, over-temperature and other protective devices.
- .4 Adjust flow from water-cooled bearings.
- .5 Adjust impeller shaft stuffing boxes, packing glands.

3.4 START-UP

- .1 General:
 - .1 In accordance with Section 01 91 13- GENERAL COMMISSIONING REQUIREMENTS : General Requirements, supplemented as specified herein.
 - .2 Procedures:
 - .1 Check power supply.
 - .2 Check starter O/L heater sizes.
 - .3 Start pumps, check impeller rotation.
 - .4 Check for safe and proper operation.
 - .5 Check settings, operation of operating, limit, safety controls, over-temperature, audible/visual alarms, other protective devices.
 - .6 Test operation of hands-on-auto switch.
 - .7 Test operation of alternator.
 - .8 Adjust leakage through water-cooled bearings.
 - .9 Adjust shaft stuffing boxes.
 - .10 Adjust leakage flow rate from pump shaft stuffing boxes to manufacturer's recommendations.
 - .11 Check base for free-floating, no obstructions under base.
 - .12 Run-in pumps for 12 continuous hours.
 - .13 Check installation, operation of mechanical seals, packing gland type seals. Adjust as necessary.
 - .14 Adjust alignment of piping and conduit to ensure full flexibility.

- .15 Eliminate causes of cavitation, flashing, air entrainment.
- .16 Measure pressure drop across strainer when clean and with flow rates as finally set.
- .17 Replace seals if pump used to degrease system or if pump used for temporary heat.
- .18 Verify lubricating oil levels.

3.5 PERFORMANCE VERIFICATION

- .1 Application tolerances:
 - .1 Flow: plus 10 %; minus 0 %.
 - .2 Pressure: plus 10 %; Minus 5 %.
- .2 PV Procedures:
 - .1 Fill sump at rate slower than capacity of pump #1.
 - .2 Record levels at which pump #1 starts and stops. Determine flow rate by observing time taken to down water level.
 - .3 Fill sump at rate faster than capacity of pump #1 but slower than capacities of pumps #1 and #2 operating in parallel.
 - .4 Record levels at which pumps start and stop - water level rising and water level falling.
 - .5 Verify operation of alternator.
 - .6 Adjust water level controls as necessary.
 - .7 Fill sump at rate faster than capacities of pumps #1 and #2 operating in parallel.
 - .8 Record levels at pump starts and stops - water level rising and falling.
 - .9 Check operation of alternator.
 - .10 Adjust level controls as necessary.
 - .11 Check level at which high water level alarm starts and stops. Adjust as necessary.
- .3 Check removability of pumps for servicing without interfering with installation or operation of other equipment.
- .4 Verify non-clog capability and maximum size of solids, using procedures recommended by manufacturer.

3.6 REPORTS

- .1 Reports should include the following:
 - .1 PV results on approved PV Report Forms.
 - .2 Product Information report forms.
 - .3 Pump performance curves (family of curves) with final point of actual performance.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 22 05 00 applies to the present section.

1.2 REFERENCE STANDARDS

- .1 ASTM International (ASTM)
 - .1 ASTM B32, Standard Specification for Solder Metal.
 - .2 ASTM B306, Standard Specification for Copper Drainage Tube (DWV).
 - .3 ASTM C564, Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
- .2 CSA Group (CSA)
 - .1 CSA B67-972(R1996) , Lead Service Pipe, Waste Pipe, Traps, Bends and Accessories.
 - .2 CAN/CSA-B70-F06, Cast Iron Soil Pipe, Fittings and Means of Joining.
 - .3 CAN/CSA-B125.3-F05, Plumbing Fittings.
- .3 Green Seal Environmental Standards (GSES)
 - .1 Standard GS-36-00 , Commercial Adhesives.
- .4 National Research Council Canada (NRC)
 - .1 National Plumbing Code of Canada 2015 (NPC).

Part 2 Products**2.1 SUSTAINABLE MATERIAL****2.2 COPPER TUBE AND FITTINGS**

- .1 Above ground sanitary, storm and vent Type DWV to: ASTM B306.
 - .1 Fittings.
 - .1 Cast brass: to CAN/CSA-B125.3.
 - .2 Wrought copper: to CAN/CSA-B125.3.
 - .2 Solder: tin-lead, 50:50, type 50A , to ASTM B32.

2.3 CAST IRON PIPING AND FITTINGS

- .1 Buried sanitary, storm and vent minimum NPS 3 , to: CAN/CSA-B70, with one layer of protective coating.
 - .1 Joints:
 - .1 Mechanical joints:

- .1 Neoprene or butyl rubber compression gaskets: to CAN/CSA-B70.ASTM C564 or
- .2 Hub and spigot:
 - .1 Caulking lead: to CSA B67.
 - .2 Cold caulking compounds.
- .2 Above ground storm, sanitary and vent: to CAN/CSA-B70.
 - .1 Joints:
 - .1 Hub and spigot:
 - .1 Caulking lead: to CSA B67.
 - .2 Mechanical joints:
 - .1 Neoprene or butyl rubber compression gaskets with stainless steel clamps.

Part 3 Execution**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install in accordance with National Plumbing Code.

3.3 TESTING

- .1 Pressure test buried systems before backfilling.
- .2 Hydraulically test to verify grades and freedom from obstructions.

3.4 PERFORMANCE VERIFICATION

- .1 Cleanouts:
 - .1 Ensure accessible and that access doors are correctly located.
 - .2 Open, cover with linseed oil and re-seal.
 - .3 Verify that cleanout rods can probe as far as the next cleanout, at least.
- .2 Test to ensure traps are fully and permanently primed.
- .3 Storm water drainage:
 - .1 Verify domes are secure.
 - .2 Ensure weirs are correctly sized and installed correctly.
 - .3 Verify provisions for movement of roof system.
- .4 Ensure that fixtures are properly anchored, connected to system and effectively vented.

- .5 Affix applicable label (storm, sanitary, vent, pump discharge etc.) c/w directional arrows every floor or 4.5 m (whichever is less).

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 22 05 00 applies to the present section

1.2 REFERENCE STANDARDS

- .1 ASTM International (ASTM)
 - .1 ASTM D2235-, Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
 - .2 ASTM D2564, Standard Specification for Solvent Cements for Poly (Vinyl-Chloride) (PVC) Plastic Piping Systems.
- .2 CSA Group (CSA)
 - .1 CAN/CSA-Series B1800, Thermoplastic Nonpressure Pipe Compendium - B1800 Series.
- .3 National Research Council Canada (NRC)
 - .1 National Plumbing Code of Canada [2015] (NPC).

Part 2 Products**2.1 MATERIAL****2.2 PIPING AND FITTINGS**

- .1 For buried and above ground DWV piping to:
 - .1 CAN/CSA B1800.

2.3 JOINTS

- .1 Solvent weld for PVC: to ASTM D2564.
- .2 Solvent weld for ABS: to ASTM D2235.

Part 3 Execution**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install in accordance with National Plumbing Code .

3.3 TESTING

- .1 Pressure test buried systems before backfilling.
- .2 Hydraulically test to verify grades and freedom from obstructions.

3.4 PERFORMANCE VERIFICATION

- .1 Cleanouts:
 - .1 Ensure accessible and that access doors are correctly located.
 - .2 Open, cover with linseed oil and re-seal.
 - .3 Verify cleanout rods can probe as far as the next cleanout, at least.
- .2 Test to ensure traps are fully and permanently primed.
- .3 Storm water drainage:
 - .1 Verify domes are secure.
 - .2 Ensure weirs are correctly sized and installed correctly.
 - .3 Verify provisions for movement of roof system.
- .4 Ensure fixtures are properly anchored, connected to system and effectively vented.
- .5 Affix applicable label (storm, sanitary, vent, pump discharge) c/w directional arrows every floor or 4.5 m (whichever is less).

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 22 05 00 applies to the present section

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute/Canadian Standards Association (ANSI/CSA)
 - .1 ANSI Z21.10.1/CSA 4.1, Gas Water Heaters - Volume I, Storage Water Heaters With Input Ratings of 75,000 Btu Per Hour or Less.
 - .2 ANSI Z21.10.1A/CSA 4.1A, Addenda 1 to ANSI Z21.10.1-2004/CSA 4.1-2004, Gas Water Heaters Volume I, Storage Water Heaters With Input Ratings of 75,000 Btu Per Hour or Less.
 - .3 ANSI Z21.10.1b/CSA 4.1b] , Addenda 2 to ANSI Z21.10.1-2004/CSA 4.1-2004, Gas Water Heaters - Volume I, Storage Water Heaters With Input Ratings of 75,000 Btu Per Hour or Less.
 - .4 ANSI Z21.10.3A/CSA 4.3, Gas Water Heaters - Volume III - Storage Water Heaters, with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous.
- .2 CSA Group (CSA)
 - .1 CAN/CSA C22.2 No.110, Construction and Test of Electric Storage Tank Water Heaters.
 - .2 CAN/CSA-C191, Performance of Electric Storage Tank Water Heaters for Household Service.
 - .3 CAN/CSA-C309, Performance Requirements for Glass-Lined Storage Tanks for Household Hot Water Service.
- .3 National Research Council Canada (NRC)
 - .1 National Plumbing Code of Canada (NPC).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Data Sheets
 - .1 Submit data sheets required as well as manufacturer's documentation concerning water heaters and their components. Data sheets must indicate the product characteristics, performance criteria, dimensions, limits and finishes. .
- .3 Shop Drawings:
 - .1 Indicate:
 - .1 Equipment, including connections, fittings, control assemblies and ancillaries, identifying factory and field assembled.

Part 2 Products**2.1 COMPONENTS****2.2 ELECTRIC WATER HEATER**

- .1 See description on plans

2.3 TRIM AND INSTRUMENTATION

- .1 Drain valve: NPS 1 with hose end.
- .2 Thermometer: 100 mm dial type with red pointer and thermowell filled with conductive paste.
- .3 Pressure gauge: 75 mm dial type with red pointer, syphon, and shut-off cock.
- .4 Thermowell filled with conductive paste for control valve temperature sensor.
- .5 ASME rated temperature and pressure relief valve sized according to characteristics, having discharge terminating over floor drain and visible to operators.
- .6 Magnesium anodes adequate for 20 years of operation and located for easy replacement.

Part 3 Execution**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install in accordance with manufacturer's recommendations and authority having jurisdiction.
- .2 Provide structural steel required for installation.
- .3 Provide insulation between tank and supports.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 22 05 00 applies to the present section.

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CAN/CSA-B45 Serie, Plumbing Fixtures, (Consists of B45.0, B45.1, B45.2, B45.3, B45.4, B45.5, B45.6, B45.7, B45.8 and B45.9).
 - .2 CSA B125.3, Plumbing Fittings.
 - .3 CSA B651, Accessible Design for the Built Environment.
- .2 Green Seal (GS)
 - .1 GS-36, Adhesives for Commercial Use.
- .3 National Research Council Canada (NRC)
 - .1 National Building Code of Canada (NBC).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for [washroom fixtures] and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Indicate fixtures and trim:
 - .1 Dimensions, construction details, roughing-in dimensions.
 - .2 Factory-set water consumption per flush at recommended pressure.
 - .3 (For water closets, urinals): minimum pressure required for flushing.
 - .4 or restriction requirements.

1.4 CLOSEOUT SUBMITTALS

- .1 Include:
 - .1 Description of fixtures and trim, giving manufacturer's name, type, model, year, capacity.
 - .2 Details of operation, servicing, maintenance.
 - .3 List of recommended spare parts.

Part 2 Products**2.1 MANUFACTURED UNITS**

- .1 Fixtures: manufacture in accordance with CAN/CSA-B45 series.

- .2 Trim, fittings: manufacture in accordance with CSA B125.3.
- .3 Exposed plumbing brass to be chrome plated.
- .4 Fixtures in any one location to be product of one manufacturer and of same type.
- .5 Fittings and accessories in any one location to be product of one manufacturer and of same type.
- .6 Fixture piping:
 - .1 Hot and cold water supplies to fixtures:
 - .1 Chrome plated flexible supply pipes with screwdriver stop, reducers, escutcheon.
 - .2 Waste:
 - .1 Brass P trap with clean out on fixtures not having integral trap.
 - .2 Chrome plated in exposed places.
- .7 Chair carriers:
 - .1 Factory manufactured floor-mounted carrier systems for wall-mounted fixtures.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for washroom fixtures installation in accordance with manufacturer's written instructions.

3.2 ADJUSTING

- .1 Conform to water conservation requirements specified this section.
- .2 Adjustments:
 - .1 Adjust water flow rate to design flow rates.
 - .2 Adjust pressure to fixtures to ensure no splashing at maximum pressures.
 - .3 Adjust flush valves to suit actual site conditions.
 - .4 Adjust urinal flush timing mechanisms.
 - .5 Set controls of automatic flush valves for WCs and urinals to prevent unnecessary flush cycles.
- .3 Checks:
 - .1 Water closets: flushing action.
 - .2 Aerators: operation, cleanliness.
 - .3 Vacuum breakers, backflow preventers: operation under all conditions.
- .4 Thermostatic controls:
 - .1 Verify temperature settings, operation of control, limit and safety controls.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 22 05 00 applies to the present section.

1.2 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-B45 Series, Plumbing Fixtures.
 - .2 CAN/CSA-B125.3, Plumbing Fittings.
 - .3 CAN/CSA-B651, Accessible Design for the Built Environment.
- .2 National Research Council Canada (NRC)
 - .1 National Building Code of Canada (NBC).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Provide manufacturer's printed product literature and datasheets for fixtures, and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

- .1 Include:
 - .1 Description of fixtures and trim, giving manufacturer's name, type, model, year, capacity.
 - .2 Details of operation, servicing, maintenance.
 - .3 List of recommended spare parts.

Part 2 Products**2.1 MANUFACTURED UNITS**

- .1 Sanitary fixtures: manufacture in accordance with CAN/CSA-B45 series.
- .2 Fittings and accessories: manufacture in accordance with CAN/CSA-B125.
- .3 Exposed plumbing brass to be chrome plated.
- .4 Number, locations: architectural drawings to govern.
- .5 Fixtures to be product of one manufacturer.
- .6 Fittings and accessories to be product of one manufacturer.
- .7 Fixture piping:
 - .1 Hot and cold water supplies to each fixture:

- .1 Chrome plated flexible supply pipes each with screwdriver stop, reducers, and escutcheon.
- .2 Waste:
 - .1 Brass P trap with clean out on each fixture not having integral trap.
 - .2 Chrome plated in all exposed places.
- .8 Chair carriers:
 - .1 Factory manufactured floor-mounted carrier systems for all wall-mounted fixtures.

Part 3 Execution**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 ADJUSTING

- .1 Conform to water conservation requirements specified this section.
- .2 Adjustments:
 - .1 Adjust water flow rate to design flow rates.
 - .2 Adjust pressure to fixtures to ensure no splashing at maximum pressures.
- .3 Checks:
 - .1 Aerators: operation, cleanliness.
 - .2 Vacuum breakers, backflow preventers: operation under all conditions.
 - .3 Wash fountains: operation of flow-actuating devices.
- .4 Thermostatic controls:
 - .1 Verify temperature settings, operation of control, limit and safety controls.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 TAB is used throughout this Section to describe the process, methods and requirements of testing, adjusting and balancing for HVAC.
- .2 TAB means to test, adjust and balance to perform in accordance with requirements of Contract Documents and to do other work as specified in this section.

1.2 QUALIFICATIONS OF TAB PERSONNEL

- .1 Provide documentation confirming qualifications, successful experience.
- .2 TAB: performed in accordance with the requirements of standard under which TAB Firm's qualifications are approved:
 - .1 Associated Air Balance Council, (AABC) National Standards for Total System Balance, MN-1.
 - .2 National Environmental Balancing Bureau (NEBB) TABES, Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems.
 - .3 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), HVAC TAB HVAC Systems - Testing, Adjusting and Balancing.
- .3 Recommendations and suggested practices contained in the TAB Standard: mandatory.
- .4 Use TAB Standard provisions, including checklists, and report forms to satisfy Contract requirements.
- .5 Use TAB Standard for TAB, including qualifications for TAB Firm and Specialist and calibration of TAB instruments.
- .6 Where instrument manufacturer calibration recommendations are more stringent than those listed in TAB Standard, use manufacturer's recommendations.
- .7 TAB Standard quality assurance provisions such as performance guarantees form part of this contract.
 - .1 For systems or system components not covered in TAB Standard, use TAB procedures developed by TAB Specialist.
 - .2 Where new procedures, and requirements, are applicable to Contract requirements have been published or adopted by body responsible for TAB Standard used (AABC, NEBB, or TABB), requirements and recommendations contained in these procedures and requirements are mandatory.

1.3 PURPOSE OF TAB

- .1 Test to verify proper and safe operation, determine actual point of performance, evaluate qualitative and quantitative performance of equipment, systems and controls at design, average and low loads using actual or simulated loads

- .2 Adjust and regulate equipment and systems to meet specified performance requirements and to achieve specified interaction with other related systems under normal and emergency loads and operating conditions.
- .3 Balance systems and equipment to regulate flow rates to match load requirements over full operating ranges.

1.4 EXCEPTIONS

- .1 TAB of systems and equipment regulated by codes, standards to satisfaction of authority having jurisdiction.

1.5 CO-ORDINATION

- .1 Schedule time required for TAB (including repairs, re-testing) into project construction and completion schedule to ensure completion before acceptance of project.
- .2 Do TAB of each system independently and subsequently, where interlocked with other systems, in unison with those systems.

1.6 START-UP

- .1 Follow start-up procedures as recommended by equipment manufacturer unless specified otherwise.
- .2 Follow special start-up procedures specified elsewhere in Division 23.

1.7 START OF TAB

- .1 Notify Consultant seven (7) days prior to start of TAB.
- .2 Start TAB when building is essentially completed, including:
- .3 Installation of ceilings, doors, windows, other construction affecting TAB.
- .4 Application of weatherstripping, sealing, and caulking.
- .5 Pressure, leakage, other tests specified elsewhere Division 23.
- .6 Provisions for TAB installed and operational.
- .7 Start-up, verification for proper, normal and safe operation of mechanical and associated electrical and control systems affecting TAB including but not limited to:
 - .1 Proper thermal overload protection in place for electrical equipment.
 - .2 Air systems:
 - .1 Filters in place, clean.
 - .2 Duct systems clean.
 - .3 Ducts, air shafts, ceiling plenums are airtight to within specified tolerances.
 - .4 Correct fan rotation.
 - .5 Fire, smoke, volume control dampers installed and open.
 - .6 Coil fins combed, clean.
 - .7 Access doors, installed, closed.

.8 Outlets installed, volume control dampers open.

1.8 APPLICATION TOLERANCES

- .1 Do TAB to following tolerances of design values:
 - .1 HVAC systems: plus 10 %, minus 10 %.

1.9 ACCURACY TOLERANCES

- .1 Measured values accurate to within plus or minus 2 % of actual values.

1.10 INSTRUMENTS

- .1 Prior to TAB, submit Consultant a list of instruments used together with serial numbers.
- .2 Calibrate in accordance with requirements of most stringent of referenced standard for either applicable system or HVAC system.
- .3 Calibrate within 3 months of TAB. Provide certificate of calibration to Consultant.

1.11 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit, prior to commencement of TAB:
 - .1 Proposed methodology and procedures for performing TAB if different from referenced standard.

1.12 PRELIMINARY TAB REPORT

- .1 Submit for checking and approval of Consultant, prior to submission of formal TAB report, sample of rough TAB sheets. Include:
 - .1 Details of instruments used.
 - .2 Details of TAB procedures employed.
 - .3 Calculations procedures.
 - .4 Summaries.

1.13 TAB REPORT

- .1 TAB report to show results in SI units and to include:
 - .1 Project record drawings.
 - .2 System schematics.
- .2 Submit three (3) copies of TAB Report to Consultant for verification and approval, in French in D-ring binders, complete with index tabs.

1.14 VERIFICATION

- .1 Reported results subject to verification by Consultant.
- .2 Provide personnel and instrumentation to verify up to 30 % of reported results.
- .3 Number and location of verified results as directed by Consultant.
- .4 Pay costs to repeat TAB as required to satisfaction of Consultant.

1.15 SETTINGS

- .1 After TAB is completed to satisfaction of Consultant , replace drive guards, close access doors, lock devices in set positions, ensure sensors are at required settings.
- .2 Permanently mark settings to allow restoration at any time during life of facility. Do not eradicate or cover markings.

1.16 COMPLETION OF TAB

- .1 TAB considered complete when final TAB Report received and approved by Consultant.

1.17 AIR SYSTEMS

- .1 Standard: TAB to most stringent of this section.
- .2 Do TAB of systems, equipment, components, controls specified Division 23
- .3 Qualifications: personnel performing TAB qualified to standards of AABC and NEBB.
- .4 Quality assurance: perform TAB under direction of a qualified supervisor.
- .5 Measurements: to include as appropriate for systems, equipment, components, controls: air velocity, static pressure, flow rate, pressure drop (or loss), temperatures (dry bulb, wet bulb, dewpoint), duct cross-sectional area, RPM, electrical power, voltage, noise, vibration.
- .6 Locations of equipment measurements: to include as appropriate:
 - .1 Inlet and outlet of dampers, filter, coil, humidifier, fan, other equipment causing changes in conditions.
 - .2 At controllers, controlled device.
- .7 Locations of systems measurements to include as appropriate: main ducts, main branch, sub-branch, run-out (or grille, register or diffuser).

1.18 OTHER TAB REQUIREMENTS

- .1 General requirements applicable to work specified this paragraph:
 - .1 Qualifications of TAB personnel: as for air systems specified this section.
 - .2 Quality assurance: as for air systems specified this section.

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Part 3 Execution**3.1 NOT USED**

- .1 Not used.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 All general requirements described in Division 1 are applicable to this section of the specification.

1.2 REFERENCE STANDARDS

- .1 American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
 - .1 ANSI/ASHRAE/IESNA 90.1-[04], SI; Energy Standard for Buildings Except Low-Rise Residential Buildings.
- .2 ASTM International Inc.
 - .1 ASTM B209M, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric).
 - .2 ASTM C335, Standard Test Method for Steady State Heat Transfer Properties of Pipe Insulation.
 - .3 ASTM C411, Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
 - .4 ASTM C449/C449M, Standard Specification for Mineral Fiber-Hydraulic-Setting Thermal Insulating and Finishing Cement.
 - .5 ASTM C547, Standard Specification for Mineral Fiber Pipe Insulation.
 - .6 ASTM C553, Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
 - .7 ASTM C612, Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
 - .8 ASTM C795, Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.
 - .9 ASTM C921, Standard Practice for Determining the Properties of Jacketing Materials for Thermal Insulation.
- .3 Canadian General Standards Board (CGSB)
 - .1 CGSB 51-GP-52Ma, Vapour Barrier, Jacket and Facing Material for Pipe, Duct and Equipment Thermal Insulation.
- .4 Thermal Insulation Association of Canada (TIAC): National Insulation Standards (2005).
- .5 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
 - .2 CAN/ULC-S701, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.3 DEFINITIONS

- .1 For purposes of this section:
 - .1 "CONCEALED" - insulated mechanical services and equipment in suspended ceilings and non-accessible chases and furred-in spaces.
 - .2 "EXPOSED" - means "not concealed" as previously defined.
 - .3 Insulation systems - insulation material, fasteners, jackets, and other accessories.
- .2 TIAC Codes:
 - .1 CRD: Code Round Ductwork,
 - .2 CRF: Code Rectangular Finish.

Part 2 Products**2.1 FIRE AND SMOKE RATING**

- .1 To CAN/ULC-S102:
 - .1 Maximum flame spread rating: 25.
 - .2 Maximum smoke developed rating: 50.

2.2 INSULATION

- .1 Mineral fibre: as specified includes glass fibre, rock wool, slag wool.
- .2 Thermal conductivity ("k" factor) not to exceed specified values at 24 degrees C mean temperature when tested in accordance with ASTM C335.
- .3 TIAC Code C-1: Rigid mineral fibre board to ASTM C612, with factory applied vapour retarder jacket to CGSB 51-GP-52Ma (as scheduled in PART 3 of this Section).
- .4 TIAC Code C-2: Mineral fibre blanket to ASTM C553 faced with factory applied vapour retarder jacket to CGSB 51-GP-52Ma (as scheduled in PART 3 of this section).
 - .1 Mineral fibre: to ASTM C553.
 - .2 Jacket: to CGSB 51-GP-52Ma.
 - .3 Maximum "k" factor: to ASTM C553.

2.3 JACKETS

- .1 Canvas:
 - .1 220 gm/m² cotton, plain weave, treated with dilute fire retardant lagging adhesive to ASTM C921.
- .2 Lagging adhesive: compatible with insulation.

2.4 ACCESSORIES

- .1 Vapour retarder lap adhesive:
 - .1 Water based, fire retardant type, compatible with insulation.
- .2 Indoor Vapour Retarder Finish:

- .1 Vinyl emulsion type acrylic, compatible with insulation.
- .3 Insulating Cement: setting on mineral wool, to ASTM C449.
- .4 ULC Listed Canvas Jacket:
 - .1 220gm/m² cotton, plain weave, treated with dilute fire retardant lagging adhesive to ASTM C921.
- .5 Outdoor Vapour Retarder Mastic:
 - .1 Vinyl emulsion type acrylic, compatible with insulation.
 - .2 Reinforcing fabric: Fibrous glass, untreated 305 g/m².
- .6 Tape: self-adhesive, aluminum, reinforced, 50 mm wide minimum.
- .7 Contact adhesive: quick-setting
- .8 Canvas adhesive: washable.
- .9 Tie wire: 1.5 mm stainless steel.
- .10 Banding: 12 mm wide, 0.5 mm thick stainless steel.
- .11 Fasteners: 2 mm diameter pins with 35 mm square clips, length to suit thickness of insulation.

Part 3 Execution**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 PRE-INSTALLATION REQUIREMENTS

- .1 Pressure test ductwork systems complete, witness and certify.
- .2 Ensure surfaces are clean, dry, free from foreign material.

3.3 INSTALLATION

- .1 Install in accordance with TIAC National Standards.
- .2 Apply materials in accordance with manufacturer's instructions and as indicated.
- .3 Use 2 layers with staggered joints when required nominal thickness exceeds 75 mm.
- .4 Maintain uninterrupted continuity and integrity of vapour retarder jacket and finishes.
 - .1 Ensure hangers, and supports are outside vapour retarder jacket.
- .5 Apply high compressive strength insulation where insulation may be compressed by weight of ductwork.
- .6 Fasteners: install at 300 mm on centre in horizontal and vertical directions, minimum 2 rows each side.

3.4 DUCTWORK INSULATION SCHEDULE

.1 Insulation types and thicknesses: conform to following table:

TIAC Code	Vapour Retarder	Thickness (mm)	
Rectangular cold and dual temperature supply air ducts	C-1	yes	50
Round cold and dual temperature supply air ducts	C-2	yes	50
Rectangular warm air ducts	C-1	no	25
Round warm air ducts	C-1	no	25
Outside air ducts to mixing plenum	C-1	yes	25
Mixing plenums	C-1	yes	25
Exhaust duct between dampers and louvres	C-1	no	25

.2 Exposed round ducts 600 mm and larger, smaller sizes where subject to abuse:

.1 Use TIAC code C-1 insulation, scored to suit diameter of duct.

.1 Finishes: conform to following table:

TIAC Code		
Rectangular	Round	
Indoor, exposed within mechanical room	CRF/1	CRD/2
Indoor, exposed elsewhere	CRF/2	CRD/3

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 All general requirements described in Division 1 are applicable to this section of the specification.
- .2 Section 22 05 48.16 applies to the present section.

1.2 REFERENCE STANDARDS

- .1 American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- .2 ASTM International (ASTM)
 - .1 ASTM A480/A480M, Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip.
 - .2 ASTM A635/A635M, Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements for.
 - .3 ASTM A653/A653M , Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- .3 National Fire Protection Association (NFPA)
 - .1 NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems.
 - .2 NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
- .4 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
 - .1 SMACNA HVAC Duct Construction Standards - Metal and Flexible, 2005.
 - .2 SMACNA HVAC Air Duct Leakage Test Manual, 2012.
 - .3 IAQ Guideline for Occupied Buildings Under Construction 2007.

Part 2 Products

2.1 SEAL CLASSIFICATION

- .1 Classification as follows:

Maximum Pressure Pa	SMACNA Seal Class
500	C
250	C
125	C
125	Unsealed

- .2 Seal classification:

- .1 Class A: longitudinal seams, transverse joints, duct wall penetrations and connections made airtight with sealant and tape.
- .2 Class B: longitudinal seams, transverse joints and connections made airtight with sealant or tape or combination thereof.
- .3 Class C: transverse joints and connections made air tight with gaskets, tape, sealant or combination thereof. Longitudinal seams unsealed.
- .4 Unsealed seams and joints.

2.2 SEALANT

- .1 Sealant: oil resistant, polymer type flame resistant duct sealant. Temperature range of minus 30 degrees C to plus 93 degrees C.

2.3 TAPE

- .1 Tape: polyvinyl treated, open weave fiberglass tape, 50 mm wide.

2.4 DUCT LEAKAGE

- .1 In accordance with SMACNA HVAC Air Duct Leakage Test Manual.

2.5 FITTINGS

- .1 Fabrication: to SMACNA .
- .2 Radiused elbows:
 - .1 Rectangular: radius: 1.5 times width of duct.
 - .2 Round: radius: 1.5 times diameter of the duct.
- .3 Mitred elbows, rectangular:
 - .1 To 407 mm: with double thickness turning vanes.
 - .2 Over 407 mm: with double thickness turning vanes.
- .4 Branches:
 - .1 Rectangular main and branch: with radius on branch 1.5 times width of duct.
 - .2 Round main and branch: enter main duct at 45 degrees with conical connection.
 - .3 Provide volume control damper in branch duct near connection to main duct.
 - .4 Main duct branches: with splitter damper.
- .5 Transitions:
 - .1 Diverging: 20 degrees maximum included angle.
 - .2 Converging: 30 degrees maximum included angle.
- .6 Offsets:
 - .1 Short radiused elbows: as for full radius.
- .7 Obstruction deflectors: maintain full cross-sectional area.
 - .1 Maximum included angles: as for transitions.

2.6 FIRE STOPPING

- .1 Retaining angles around duct, on both sides of fire separation.
- .2 Coordinate with general requirements to ensure fire stopping materials and installation does not distort duct.

2.7 GALVANIZED STEEL

- .1 Lock forming quality: to ASTM A653/A653M, Z90 zinc coating.
- .2 Thickness, fabrication and reinforcement: to SMACNA and ASHRAE.
- .3 Joints: to SMACNA and ASHRAE. Proprietary manufactured flanged duct joint to be considered to be a class A seal.

2.8 HANGERS AND SUPPORTS

- .1 Hangers and Supports:
 - .1 Strap hangers: of same material as duct but next sheet metal thickness heavier than duct .
 - .1 Maximum size duct supported by strap hanger: 500 mm .
 - .2 Hanger configuration: to ASHRAE and SMACNA.
 - .3 Hangers: galvanized steel angle with galvanized steel rods to following table :

Duct Size (mm)	Angle Size (mm)	Rod Size (mm)
up to 750	25 x 25 x 3	6
751 to 1050	40 x 40 x 3	6
1051 to 1500	40 x 40 x 3	10
1501 to 2100	50 x 50 x 3	10
2101 to 2400	50 x 50 x 5	10
2401 and over	50 x 50 x 6	10

- .4 Upper hanger attachments:
 - .1 For concrete: manufactured concrete inserts.
 - .2 For steel joist: manufactured joist clamp.
 - .3 For steel beams: manufactured beam clamps:

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for metal duct installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Consultant.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed from Consultant.

3.2 HANGERS

- .1 Strap hangers: install in accordance with SMACNA.
- .2 Angle hangers: complete with locking nuts and washers.
- .3 Hanger spacing: in accordance with as follows: from SMACNA and ASHRAE

Duct Size (mm)	Spacing (mm)
to 1500	3000
1501 and over	2500

3.3 WATERTIGHT DUCT

- .1 Provide watertight duct for:
 - .1 Fresh air intake.
 - .2 As indicated.
- .2 Form bottom of horizontal duct without longitudinal seams.
 - .1 Weld joints of bottom and side sheets.
 - .2 Seal other joints with duct sealer.

3.4 SEALING AND TAPING

- .1 Apply sealant in accordance with SMACNA.
- .2 Bed tape in sealant and recoat with minimum of 1 coat of sealant to manufacturers recommendations.

3.5 LEAKAGE TESTS

- .1 In accordance with SMACNA HVAC Duct Leakage Test Manual.
- .2 Do leakage tests in sections.
- .3 Make trial leakage tests as instructed to demonstrate workmanship.
- .4 Do not install additional ductwork until trial test has been passed.
- .5 Test section minimum of 30 m long with not less than three branch takeoffs and two 90 degrees elbows.
- .6 Complete test before performance insulation or concealment Work.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 23 31 13.01 applies to the present section.

1.2 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

- .1 SMACNA - HVAC Duct Construction Standards - Metal and Flexible

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for air duct accessories and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Indicate:
 - .1 Flexible connections.
 - .2 Duct access doors.
 - .3 Turning vanes.
 - .4 Instrument test ports.

Part 2 Products**2.1 GENERAL**

- .1 Manufacture in accordance with SMACNA - HVAC Duct Construction Standards.

2.2 FLEXIBLE CONNECTIONS

- .1 Frame: galvanized sheet metal frame
- .2 Material:
 - .1 Fire resistant, self extinguishing, neoprene coated glass fabric, temperature rated at minus 40 degrees C to plus 90 degrees C, density of 1.3 kg/m².

2.3 ACCESS DOORS IN DUCTS

- .1 Non-Insulated Ducts: sandwich construction of same material as duct, one sheet metal thickness heavier, minimum 0.6 mm thick complete with sheet metal angle frame.
- .2 Insulated Ducts: sandwich construction of same material as duct, one sheet metal thickness heavier, minimum 0.6 mm thick complete with sheet metal angle frame and 25 mm thick rigid glass fibre insulation.
- .3 Gaskets: neoprene.
- .4 Hardware:
 - .1 Up to 300 x 300 mm: two sash locks.

2.4 TURNING VANES

- .1 Factory or shop fabricated single thickness or double thickness without trailing edge, to recommendations of SMACNA and as indicated.

2.5 INSTRUMENT TEST

- .1 1.6 mm thick steel zinc plated after manufacture.
- .2 Cam lock handles with neoprene expansion plug and handle chain.
- .3 28 mm minimum inside diameter. Length to suit insulation thickness.
- .4 Neoprene mounting gasket.

2.6 SPIN-IN COLLARS

- .1 Conical galvanized sheet metal spin-in collars with lockable butterfly damper.
- .2 Sheet metal thickness to co-responding round duct standards.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for air duct accessories installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Consultant.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Flexible Connections:
 - .1 Install in following locations:
 - .1 Inlets and outlets to supply air units and fans.
 - .2 Inlets and outlets of exhaust and return air fans.
 - .3 As indicated.
 - .2 Length of connection: 100 mm.
 - .3 Minimum distance between metal parts when system in operation: 75 mm.
 - .4 Install in accordance with recommendations of SMACNA.
 - .5 When fan is running:
 - .1 Ducting on sides of flexible connection to be in alignment.
 - .2 Ensure slack material in flexible connection.
- .2 Access Doors and Viewing Panels:
 - .1 Locations:

- .1 Fire and smoke dampers.
 - .2 Control dampers.
 - .3 Devices requiring maintenance.
 - .4 Required by code.
 - .5 Reheat coils.
 - .6 Elsewhere as indicated.
- .3 Instrument Test Ports:
- .1 General:
 - .1 Install in accordance with recommendations of SMACNA and in accordance with manufacturer's instructions.
 - .2 Locate to permit easy manipulation of instruments.
 - .3 Install insulation port extensions as required.
 - .4 Locations:
 - .1 For traverse readings:
 - .1 Ducted inlets to roof and wall exhausters.
 - .2 Inlets and outlets of other fan systems.
 - .3 Main and sub-main ducts.
 - .4 And as indicated.
 - .2 For temperature readings:
 - .1 At outside air intakes.
 - .2 In mixed air applications in locations as approved by Consultant
 - .3 At inlet and outlet of coils.
 - .4 Downstream of junctions of two converging air streams of different temperatures.
 - .5 And as indicated.
- .4 Turning Vanes:
- .1 Install in accordance with recommendations of SMACNA and as indicated.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 23 31 13.01 applies to the present section.

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute/Air Movement and Control Association (ANSI/AMCA)
 - .1 ANSI/AMCA Standard 99, Standards Handbook.
 - .2 ANSI/ASHRAE 51 (ANSI/AMCA 210), Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.
 - .3 ANSI/AMCA Standard 300, Reverberant Room Method for Sound Testing of Fans.
 - .4 ANSI/AMCA Standard 301, Methods for Calculating Fan Sound Ratings from Laboratory Test Data.
- .2 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - current edition.
 - .1 MPI #18, Primer, Zinc Rich, Organic.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for HVAC fans and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Shop Drawings:
 - .1 Provide:
 - .1 Fan performance curves showing point of operation, bhp and efficiency.
 - .2 Sound rating data at point of operation.
 - .2 Indicate:
 - .1 Motors, sheaves, bearings, shaft details
 - .2 Minimum performance achievable with variable inlet vanes or variable speed controllers as appropriate.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Materials:
 - .1 Submit as required.
 - .1 Provide:
 - .1 Matched sets of belts.

- .2 Furnish list of individual manufacturer's recommended spare parts for equipment, include:
 - .1 Addresses of suppliers.
 - .2 List of specialized tools necessary for adjusting, repairing or replacing.

Part 2 Products**2.1 SYSTEM DESCRIPTION**

- .1 Performance Requirements:
 - .1 Catalogued or published ratings for manufactured items: obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency signifying adherence to codes and standards in force.
 - .2 Capacity: flow rate, static pressure, bhp, efficiency, revolutions per minute, power, model, size, sound power data and as indicated on schedule.
 - .3 Fans: statically and dynamically balanced, constructed in conformity with ANSI/AMCA Standard 99.
 - .4 Sound ratings: comply with ANSI/AMCA Standard 301, tested to ANSI/AMCA Standard 300. Supply unit with ANSI/AMCA certified sound rating seal.
 - .5 Performance ratings: based on tests performed in accordance with ANSI/AMCA Standard 210. Supply unit with ANSI/AMCA certified rating seal, except for propeller fans smaller than 300 mm diameter.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for HVAC fans installation in accordance with manufacturer's written instructions.

3.2 FAN INSTALLATION

- .1 Provide sheaves and belts required for final air balance.
- .2 Bearings and extension tubes to be easily accessible.
- .3 Access doors and access panels to be easily accessible.

3.3 ANCHOR BOLTS AND TEMPLATES

- .1 Size anchor bolts to withstand seismic acceleration and velocity forces

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 23 31 13.01 applies to the present section

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for diffusers, registers and grilles and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Indicate following:
 - .1 Capacity.
 - .2 Throw and terminal velocity.
 - .3 Noise criteria.
 - .4 Pressure drop.
 - .5 Neck velocity.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Materials:
 - .1 Include:
 - .1 Keys for volume control adjustment.
 - .2 Keys for air flow pattern adjustment.

Part 2 Products**2.1 SYSTEM DESCRIPTION**

- .1 Performance Requirements:
 - .1 Catalogued or published ratings for manufactured items: obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency signifying adherence to codes and standards.

2.2 GENERAL

- .1 To meet capacity, pressure drop, terminal velocity, throw, noise level, neck velocity as indicated.
- .2 Frames:
 - .1 Full perimeter gaskets.
 - .2 Plaster frames where set into plaster or gypsum board and as specified.
 - .3 Concealed fasteners.
- .3 Concealed manual volume control damper operators.

- .4 Colour: as directed by Consultant.

2.3 MANUFACTURED UNITS

- .1 Grilles, registers and diffusers of same generic type, products of one manufacturer.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for diffuser, register and grille installation in accordance with manufacturer's written instructions.

3.2 INSTALLATION

- .1 Install in accordance with manufacturer's instructions.
- .2 Install with stainless steel screws in countersunk holes where fastenings are visible.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section [_____]

1.2 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CSA C22.1-12, Canadian Electrical Code, Part 1 (22nd Edition), Safety Standard for Electrical Installations.
- .2 Institute of Electrical and Electronics (IEEE)/National Electrical Safety Code Product Line (NESC)
 - .1 IEEE SP1122-2000, The Authoritative Dictionary of IEEE Standards Terms, 7th Edition.

1.3 DEFINITIONS

- .1 Electrical and electronic terms: unless otherwise specified or indicated, terms used in these specifications, and on drawings, are those defined by IEEE SP1122.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets.
- .3 Shop drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province Quebec, Canada.
 - .2 Submit wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure co-ordinated installation.
 - .3 Identify on wiring diagrams circuit terminals and indicate internal wiring for each item of equipment and interconnection between each item of equipment.
 - .4 Indicate of drawings clearances for operation, maintenance, and replacement of operating equipment devices.
 - .5 If changes are required, notify Departmental Representative, Consultant of these changes before they are made.
- .4 Certificates:
 - .1 Provide CSA certified material & equipment.
 - .2 Where CSA certified equipment material is not available, submit such equipment material to authority having jurisdiction for special approval before delivery to site.

- .3 Submit test results of installed electrical systems and instrumentation.
- .4 Permits and fees: in accordance with General Conditions of contract.
- .5 Submit, upon completion of Work, load balance report as described in PART 3 - LOAD BALANCE.
- .6 Submit certificate of acceptance from authority having jurisdiction upon completion of Work to Departmental Representative.
- .5 Manufacturer's Field Reports: submit to Consultant manufacturer's written report, within 5 days of review, verifying compliance of Work and electrical system and instrumentation testing, as described in PART 3 - FIELD QUALITY CONTROL.

1.5 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data
 - .1 Provide for each system and principal item of equipment as specified in technical sections for use by operation and maintenance personnel.
 - .2 Operating instructions to include following:
 - .1 Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.
 - .2 Start up, proper adjustment, operating, lubrication, and shutdown procedures.
 - .3 Safety precautions.
 - .4 Procedures to be followed in event of equipment failure.
 - .5 Other items of instruction as recommended by manufacturer of each system or item of equipment.
 - .3 Print or engrave operating instructions and frame under glass or in approved laminated plastic.
 - .4 Post instructions where directed.
 - .5 For operating instructions exposed to weather, provide weather-resistant materials or weatherproof enclosures.
 - .6 Ensure operating instructions will not fade when exposed to sunlight and are secured to prevent easy removal or peeling.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location indoors off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

Part 2 Products**2.1 DESIGN REQUIREMENTS**

- .1 Operating voltages: to CAN3-C235.
- .2 Motors, electric heating, control and distribution devices and equipment to operate satisfactorily at 60 Hz within normal operating limits established by above standard.
 - .1 Equipment to operate in extreme operating conditions established in above standard without damage to equipment.
- .3 Language operating requirements: provide identification labels, nameplates for control items in French & English.
- .4 Use one nameplate for both languages.

2.2 MATERIALS AND EQUIPMENT

- .1 Provide material equipment in accordance with Section 01 61 00- Common Product Requirements.
- .2 Equipment, material to be CSA certified. Where CSA certified equipment material are not available, obtain special approval from authority having jurisdiction before delivery to site and submit such approval as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.
- .3 Factory assemble control panels and component assemblies.

2.3 ELECTRIC MOTORS, EQUIPMENT AND CONTROLS

- .1 Verify installation and co-ordination responsibilities related to motors, equipment and controls, as indicated.

2.4 WARNING SIGNS

- .1 Warning Signs: in accordance with requirements of Ministerial Representative.

2.5 WIRING TERMINATIONS

- .1 Ensure lugs, terminals, screws used for termination of wiring are suitable for either copper or aluminum conductors.

2.6 EQUIPMENT IDENTIFICATION

- .1 Identify electrical equipment with nameplates as follows:
 - .1 Nameplates: lamicoïd 3mm thick plastic engraving sheet, matt black finish face, white core, lettering accurately aligned and engraved into core mechanically attached with self tapping screws.
 - .2 Sizes as follows:

NAMEPLATE SIZES			
Size 1	10 x 50 mm	1 line	3 mm high letters
Size 2	12 x 70 mm	1 line	5 mm high letters
Size 3	12 x 70 mm	2 lines	3 mm high letters
Size 4	20 x 90 mm	1 line	8 mm high letters
Size 5	20 x 90 mm	2 lines	5 mm high letters
Size 6	25 x 100 mm	1 line	12 mm high letters
Size 7	25 x 100 mm	2 lines	6 mm high letters

- .2 Labels: embossed plastic labels with 6 mm high letters unless specified otherwise.
- .3 Wording on nameplates to be approved by Departmental Representative prior to manufacture.
- .4 Allow for minimum of twenty-five (25) letters per nameplate.
- .5 Nameplates for terminal cabinets and junction boxes to indicate system and/or voltage characteristics.
- .6 Identify equipment with Size 3 labels engraved "ASSET INVENTORY NO. [_____] Departmental Representative.
- .7 Disconnects, starters and contactors: indicate equipment being controlled and voltage.
- .8 Terminal cabinets and pull boxes: indicate system and voltage.
- .9 Transformers: indicate capacity, primary and secondary voltages.

2.7 WIRING IDENTIFICATION

- .1 Identify wiring with permanent indelible identifying markings, coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.
- .2 Maintain phase sequence and colour coding throughout.
- .3 Colour coding: to CSA C22.1.
- .4 Use colour coded wires in communication cables, matched throughout system.

2.8 CONDUIT AND CABLE IDENTIFICATION

- .1 Colour code conduits, boxes and metallic sheathed cables.
- .2 Code with plastic tape or paint at points where conduit or cable enters wall, ceiling, or floor, and at 15 m intervals.
- .3 Colours: 25 mm wide prime colour and 20 mm wide auxiliary colour.

Type	Prime	Auxiliary
up to 250 V	Yellow	
up to 600 V	Yellow	Green
up to 5 kV	Yellow	Blue
up to 15 kV	Yellow	Red
Telephone	Green	

Other Communication Systems	Green	Blue
Fire Alarm	Red	
Emergency Voice	Red	Blue
Other Security Systems	Red	Yellow

2.9 FINISHES

- .1 Shop finish metal enclosure surfaces by application of rust resistant primer inside and outside, and at least two coats of finish enamel.
 - .1 Paint outdoor electrical equipment "equipment green" finish.
 - .2 Paint indoor switchgear and distribution enclosures light gray.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for [_____]
 - .1 Visually inspect substrate in presence of Departmental Representative and Consultant.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Do complete installation in accordance with CSA C22.1 except where specified otherwise.
- .2 Do overhead and underground systems in accordance with CAN/CSA-C22.3 No.1 except where specified otherwise.

3.3 NAMEPLATES AND LABELS

- .1 Ensure manufacturer's nameplates, CSA labels and identification nameplates are visible and legible after equipment is installed.

3.4 CONDUIT AND CABLE INSTALLATION

- .1 Install conduit and sleeves prior to pouring of concrete.
 - .1 Sleeves through concrete: schedule 40 galvanised steel pipe, sized for free passage of conduit, and protruding 50 mm.
- .2 If plastic sleeves are used in fire rated walls or floors, remove before conduit installation.
- .3 Install cables, conduits and fittings embedded or plastered over, close to building structure so furring can be kept to minimum.

3.5 LOCATION OF OUTLETS

- .1 Locate outlets in accordance with Section 26 05 32- Outlet Boxes, Conduit Boxes and Fittings.
- .2 Do not install outlets back-to-back in wall; allow minimum 150 mm horizontal clearance between boxes.
- .3 Change location of outlets at no extra cost or credit, providing distance does not exceed 3000 mm, and information is given before installation.
- .4 Locate light switches on latch side of doors.
 - .1 Locate disconnect devices in mechanical and elevator machine rooms on latch side of floor.

3.6 MOUNTING HEIGHTS

- .1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.
- .2 If mounting height of equipment is not specified or indicated, verify before proceeding with installation.
- .3 Install electrical equipment at following heights unless indicated otherwise.
 - .1 Local switches: 1400 mm.
 - .2 Wall receptacles:
 - .1 General: 300 mm.
 - .2 Above top of continuous baseboard heater: 200 mm.
 - .3 Above top of counters or counter splash backs: 175 mm.
 - .4 In mechanical rooms: 1400 mm.
 - .3 Panelboards: as required by Code or as indicated.
 - .4 Telephone and interphone outlets: 300 mm.
 - .5 Wall mounted telephone and interphone outlets: 1500 mm.
 - .6 Fire alarm stations: 1500 mm.
 - .7 Fire alarm bells: 2100 mm.
 - .8 Television outlets: 300 mm.
 - .9 Wall mounted speakers: 2100 mm.
 - .10 Clocks: 2100 mm.
 - .11 Door bell pushbuttons: 1500 mm.

3.7 CO-ORDINATION OF PROTECTIVE DEVICES

- .1 Ensure circuit protective devices such as overcurrent trips, relays and fuses are installed to required values and settings.

3.8 FIELD QUALITY CONTROL

- .1 Load Balance:

- .1 Measure phase current to panelboards with normal loads (lighting) operating at time of acceptance; adjust branch circuit connections as required to obtain best balance of current between phases and record changes.
- .2 Measure phase voltages at loads and adjust transformer taps to within 2% of rated voltage of equipment.
- .3 Provide upon completion of work, load balance report as directed in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS, phase and neutral currents on panelboards, dry-core transformers and motor control centres, operating under normal load, as well as hour and date on which each load was measured, and voltage at time of test.
- .2 Conduct following tests in accordance with Section 01 45 00- Quality Control.
 - .1 Power distribution system including phasing, voltage, grounding and load balancing.
 - .2 Circuits originating from branch distribution panels.
 - .3 Lighting and its control.
 - .4 Motors, heaters and associated control equipment including sequenced operation of systems where applicable.
 - .5 Systems: fire alarm, communications.
 - .6 Insulation resistance testing:
 - .1 Measure the insulation value of circuits, cables of existing feeder arteries using a megohmmeter.
 - .2 Check resistance to ground before energizing.
- .3 Carry out tests in presence of Departmental Representative.
- .4 Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.
- .5 Manufacturer's Field Services:
 - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.
 - .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.9 SYSTEM STARTUP

- .1 Instruct Departmental Representative, operating personnel, in operation, care and maintenance of systems, system equipment and components.
- .2 Arrange and pay for services of manufacturer's factory service engineer to supervise start-up of installation, check, adjust, balance and calibrate components and instruct operating personnel.

- .3 Provide these services for such period, and for as many visits as necessary to put equipment in operation, and ensure that operating personnel are conversant with aspects of its care and operation.

3.10 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CAN/CSA-C22.2 No.18-98(R2003), Outlet Boxes, Conduit Boxes and Fittings.
 - .2 CAN/CSA-C22.2 No.65-03(R2008), Wire Connectors (Tri-National Standard with UL 486A-486B and NMX-J-543-ANCE-03).
- .2 Electrical and Electronic Manufacturers' Association of Canada (EEMAC)
 - .1 EEMAC 1Y-2-1961, Bushing Stud Connectors and Aluminum Adapters (1200 Ampere Maximum Rating).
- .3 National Electrical Manufacturers Association (NEMA)

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for wire and box connectors and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for [wire and box connectors] for incorporation into manual.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in dry location indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse packaging materials.

Part 2 Products**2.1 MATERIALS**

- .1 Pressure type wire connectors to: CAN/CSA-C22.2 No.65, with current carrying parts of copper sized to fit copper conductors as required.
- .2 Clamps or connectors for TECK cable, flexible conduit, as required to: CAN/CSA-C22.2 No.18.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for wire and box connectors installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Consultant & Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Remove insulation carefully from ends of conductors, cables and:
 - .1 Apply coat of zinc joint compound on aluminum conductors prior to installation of connectors.
 - .2 Install mechanical pressure type connectors and tighten screws with appropriate compression tool recommended by manufacturer. Installation shall meet secureness tests in accordance with CAN/CSA-C22.2 No.65.
 - .3 Install fixture type connectors and tighten to CAN/CSA-C22.2 No. 65. Replace insulating cap.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 []

1.3 PRODUCT DATA

- .1 Provide product data in accordance with Section 01 33 00- Submittal Procedures.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Packaging Waste Management: remove for reuse packaging materials.

Part 2 Products**2.1 BUILDING WIRES**

- .1 Conductors: stranded for 10 AWG and larger. Minimum size: 12 AWG.
- .2 Copper conductors: size as indicated, with 600 V insulation of cross-linked thermosetting polyethylene material rated RW90 XLPE, RWU90 XLPE.

2.2 TECK 90 CABLE

- .1 Cable: in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Conductors:
 - .1 Grounding conductor: copper.
 - .2 Circuit conductors: copper, size as indicated.
- .3 Inner jacket: polyvinyl chloride material.
- .4 Armour: aluminum.
- .5 Overall covering: thermoplastic polyvinyl chloride, compliant to applicable Building Code classification for this project.
- .6 Fastenings:
 - .1 One hole aluminum straps to secure surface cables 50 mm and smaller. Two-hole straps for cables larger than 50 mm.
 - .2 Channel type supports for two or more cables at
 - .3 Threaded rods: 6 mm diameter to support suspended channels.
- .7 Connectors:
 - .1 Watertight, approved for TECK cable.

2.3 ARMOURED CABLES

- .1 Conductors: insulated, copper, size as indicated.
- .2 Type: AC90.
- .3 Armour: interlocking type fabricated from aluminum strip.
- .4 Type: PVC, flame retardant ACWU90 jacket over thermoplastic armour and compliant to applicable Building Code classification for this project, wet locations & crawl space.
- .5 Connectors: anti short connectors.

2.4 CONTROL CABLES

- .1 Type: LVT: soft annealed copper conductors, sized as indicated:
 - .1 Insulation: thermoplastic.
 - .2 Sheath: thermoplastic jacket, and armour of closely wound aluminum wire.
- .2 Type: low energy 300 V control cable: stranded annealed copper conductors sized as indicated LVT: 2 soft annealed copper conductors, sized as indicated:

Part 3 Execution**3.1 FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Perform tests before energizing electrical system.

3.2 GENERAL CABLE INSTALLATION

- .1 Install cable in trenches in accordance with Section 33 71 73.02 - Underground Electrical Service.
- .2 Lay cable in cable trays in accordance with Section 26 05 36 - Cable Trays for Electrical Systems.
- .3 Terminate cables in accordance with Section 26 05 20 - Wire and Box Connectors - (0-1000 V).
- .4 Cable Colour Coding: to Section 26 05 00 - Common Work Results for Electrical.
- .5 Conductor length for parallel feeders to be identical.
- .6 Lace or clip groups of feeder cables at distribution centres, pull boxes, and termination points.
- .7 Wiring in walls: typically drop or loop vertically from above to better facilitate future renovations. Generally wiring from below and horizontal wiring in walls to be avoided unless indicated.
- .8 Branch circuit wiring for surge suppression receptacles and permanently wired computer and electronic equipment to be 2-wire circuits only, i.e. common neutrals not permitted.

- .9 Provide numbered wire collars for control wiring. Numbers to correspond to control shop drawing legend. Obtain wiring diagram for control wiring.

3.3 INSTALLATION OF BUILDING WIRES

- .1 Install wiring as follows:
 - .1 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
 - .2 In underground ducts in accordance with Section 33.
 - .3 In surface and lighting fixture raceways in accordance with Section 26.

3.4 INSTALLATION OF TECK90 CABLE (0 -1000 V)

- .1 Group cables wherever possible on channels.
- .2 Install cable concealed, securely supported by straps, staples hangers.

3.5 INSTALLATION OF ARMOURED CABLES

- .1 Group cables wherever possible on channels.

3.6 INSTALLATION OF CONTROL CABLES

- .1 Install control cables in conduit.
- .2 Ground control cable shield.

3.7 INSTALLATION OF NON-METALLIC SHEATHED CABLE

- .1 Install cables.
- .2 Install straps and box connectors to cables as required.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for hangers and supports and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements, with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location, off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect hangers and supports from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse packaging materials.

Part 2 Products**2.1 SUPPORT CHANNELS**

- .1 U shape, size 41 x 41 mm, 2.5 mm thick, or as indicated.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for hangers and supports installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Secure equipment to solid masonry, tile and plaster surfaces with lead anchors.
- .2 Secure equipment to poured concrete with expandable inserts.
- .3 Secure equipment to hollow masonry walls or suspended ceilings with toggle bolts.
- .4 Secure surface mounted equipment with twist clip fasteners to inverted T bar ceilings. Ensure that T bars are adequately supported to carry weight of equipment specified before installation.
- .5 Support equipment, conduit or cables using clips, spring loaded bolts, cable clamps designed as accessories to basic channel members.
- .6 Fasten exposed conduit or cables to building construction or support system using straps.
 - .1 One-hole steel straps to secure surface conduits and cables 50 mm and smaller.
 - .2 Two-hole steel straps for conduits and cables larger than 50 mm.
 - .3 Beam clamps to secure conduit to exposed steel work.
- .7 Suspended support systems.
 - .1 Support individual cable or conduit runs with 6 mm diameter threaded rods and spring clips.
 - .2 Support 2 or more cables or conduits on channels supported by 6 mm diameter threaded rod hangers where direct fastening to building construction is impractical.
- .8 For surface mounting of two or more conduits use channels at 1200 mm.
- .9 Provide metal brackets, frames, hangers, clamps and related types of support structures where indicated or as required to support conduit and cable runs.
- .10 Ensure adequate support for raceways and cables dropped vertically to equipment where there is no wall support.
- .11 Do not use wire lashing or perforated strap to support or secure raceways or cables.
- .12 Do not use supports or equipment installed for other trades for conduit or cable support except with permission of other trade and approval of Consultant.
- .13 Install fastenings and supports as required for each type of equipment cables and conduits, and in accordance with manufacturer's installation recommendations.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA C22.1-06, Canadian Electrical Code, Part 1, 20th Edition.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Provide shop drawings: in accordance with Section 01 33 00- Submittal Procedures.
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Waste Management and Disposal:
 - .1 Separate waste materials for recycling.

Part 2 Products**2.1 SPLITTERS**

- .1 Construction: sheet metal enclosure, welded corners and formed hinged cover suitable for locking in closed position.
- .2 Terminations: main and branch lugs to match required size and number of incoming and outgoing conductors as indicated.
- .3 Spare Terminals: minimum three spare terminals or lugs on each connection or lug block sized less than 400 A.

2.2 JUNCTION AND PULL BOXES

- .1 Construction: welded steel enclosure.
- .2 Covers Flush Mounted: 25 mm minimum extension all around.
- .3 Covers Surface Mounted: screw-on covers.

2.3 CABINETS

- .1 Construction: welded aluminum, hinged door, handle, lock 2 keys, latch and catch

Part 3 Execution**3.1 SPLITTER INSTALLATION**

- .1 Mount plumb, true and square to building lines.
- .2 Extend splitters full length of equipment arrangement except where indicated otherwise.

3.2 JUNCTION, PULL BOXES AND CABINETS INSTALLATION

- .1 Install pull boxes in inconspicuous but accessible locations.
- .2 Mount cabinets with top not higher than 2 m above finished floor except where indicated otherwise.
- .3 Install terminal block as indicated in Type T cabinets.
- .4 Only main junction and pull boxes are indicated. Install additional pull boxes as required by CSA C22.1.

3.3 IDENTIFICATION

- .1 Equipment Identification: to Section 26 05 00 - Common Work Results for Electrical.
- .2 Identification Labels: size 2 indicating voltage and phase, system name or as indicated.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA C22.1-06, Canadian Electrical Code, Part 1, 20th Edition.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit samples for floor box in accordance with Section 01 33 00 - Submittal Procedures.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for recycling.

Part 2 Products**2.1 OUTLET AND CONDUIT BOXES GENERAL**

- .1 Size boxes in accordance with CSA C22.1.
- .2 102 mm square or larger outlet boxes as required.
- .3 Gang boxes where wiring devices are grouped.
- .4 Blank cover plates for boxes without wiring devices.
- .5 347 V outlet boxes for 347 V switching devices.
- .6 Combination boxes with barriers where outlets for more than one system are grouped.

2.2 GALVANIZED STEEL OUTLET BOXES

- .1 One-piece electro-galvanized construction.
- .2 Single and multi gang flush device boxes for flush installation, minimum size 76 x 50 x 38 mm or as indicated. 102 mm square outlet boxes when more than one conduit enters one side with extension and plaster rings as required.
- .3 Utility boxes for outlets connected to surface-mounted EMT conduit, minimum size 102 x 54 x 48 mm.

- .4 102 mm square or octagonal outlet boxes for lighting fixture outlets.
- .5 Extension and plaster rings for flush mounting devices in finished [tile] [plaster] walls.

2.3 MASONRY BOXES

- .1 Electro-galvanized steel masonry and multi, single gang boxes for devices flush mounted in exposed block walls.

2.4 CONCRETE BOXES

- .1 Electro-galvanized sheet steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

2.5 FLOOR BOXES

- .1 Cylindrical aluminum floor box Ø-100mm x 70mm high, waterproof and moisture-proof, compatible with existing wood boards, featuring a solid brushed Stainless Steel faceplate, 7mm dia. thickness. Compartmented housing 120V / Telecommunication. Threaded openings for conduits and cables at the bottom of the case. Fixing bar mounting plate with four (4) 15A, 120V single socket and four telecommunication RJ-45, Cat. 6. Circular screwed, tamperproof lid (2 key holes supplied), glued gasket, cover dimensions: dia. 90 mm, thickness 2 mm.

2.6 CONDUIT BOXES

- .1 Cast FS, FD aluminum boxes with factory-threaded hubs and mounting feet for surface wiring of devices.

2.7 FITTINGS - GENERAL

- .1 Bushing and connectors with nylon insulated throats.
- .2 Knock-out fillers to prevent entry of debris.
- .3 Conduit outlet bodies for conduit up to 35 mm and pull boxes for larger conduits.
- .4 Double locknuts and insulated bushings on sheet metal boxes.

Part 3 Execution**3.1 INSTALLATION**

- .1 Support boxes independently of connecting conduits.
- .2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of debris during construction. Remove upon completion of work.
- .3 For flush installations mount outlets flush with finished wall using plaster rings to permit wall finish to come within 6 mm of opening.
- .4 Floor openings for recessed boxes shall be made by a cabinetmaker under the guidance of the general contractor.

- .5 Provide correct size of openings in boxes for conduit, mineral insulated and armoured cable connections. Do not install reducing washers.
- .6 Vacuum clean interior of outlet boxes before installation of wiring devices.
- .7 Identify systems for outlet boxes as required.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CAN/CSA-C22.2 No. 62-93(R2003), Surface Raceway Systems.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
 - .3 Quality assurance submittals: provide following in accordance with Section 01 45 00 - Quality Control.
 - .1 Manufacturer's Instructions: provide manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.
 - .4 Describe the pipe type using terminology used in this section.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Waste Management and Disposal:
 - .1 Separate waste materials for recycling compliant with section 01 74 19 – Waste removal

Part 2 Products**2.1 SURFACE RACEWAY SYSTEM (WIRING PULLED IN)**

- .1 One piece steel, free of sharp edges to CAN/CSA-C22.2 No. 62.
- .2 Corners, pull boxes, elbows, tees, two pieces assembly to facilitate site wiring.
- .3 Finish: White enamel, specification color number as per Architect choice.
- .4 Switch, receptacle, extension boxes, adapters and fittings required for complete installation.

2.2 LIGHTING FIXTURE RACEWAY

- .1 Light fixture support system using channel type raceway with snap-on cover.
- .2 Channel: dimension & thickness as per indicated.

- .3 Clamp hangers with rod hangers.

2.3 FITTINGS

- .1 Elbows, tees, supports, connectors couplings and fittings: to CAN/CSA-C22.2 No. 62.

Part 3 Execution

3.1 INSTALLATION

- .1 Install raceway systems as indicated and in accordance with manufacturer's instructions.
- .2 Install supports, elbows, tees, connectors, fittings, bushings, adaptors as required.
- .3 Keep number of elbows, offsets and connections to minimum.
- .4 Use wiring with mechanical protection in channel raceways.
- .5 Install barriers in raceways for different services where required by code.
- .6 Install wiring after installation of raceway system is complete.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product data: submit manufacturer's printed product literature, specifications and datasheets.
 - .1 Submit cable manufacturing data.
- .3 Quality assurance submittals:
 - .1 Test reports: submit certified test reports.
 - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .3 Instructions: submit manufacturer's installation instructions.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling.

Part 2 Products**2.1 CABLES AND REELS**

- .1 Provide cables on reels or coils.
 - .1 Mark or tag each cable and outside of each reel or coil, to indicate cable length, voltage rating, conductor size, and manufacturer's lot number and reel number.

2.2 CONDUITS

- .1 Rigid metal conduit: to CSA C22.2 No. 45, hot dipped galvanized steel threaded.
- .2 Epoxy coated conduit: to CSA C22.2 No. 45, with zinc coating and corrosion resistant epoxy finish inside and outside.
- .3 Electrical metallic tubing (EMT): to CSA C22.2 No. 83, with couplings.
- .4 Rigid PVC conduit: to CSA C22.2 No. 211.2.
- .5 Flexible metal conduit: to CSA C22.2 No. 56, liquid-tight flexible metal, aluminum.

2.3 CONDUIT FASTENINGS

- .1 One hole steel straps to secure surface conduits NPS 2, 50 mm and smaller.
 - .1 Two hole steel straps for conduits larger than NPS 2, 50 mm.
- .2 Beam clamps to secure conduits to exposed steel work.

- .3 Channel type supports for two or more conduits at 1500 mm.
- .4 Threaded rods, [6] mm diameter, to support suspended channels.

2.4 CONDUIT FITTINGS

- .1 Fittings: to CAN/CSA C22.2 No. 18, manufactured for use with conduit specified.
Coating: same as conduit.
- .2 Ensure factory "ells" where 90 degrees bends for 25 mm, NPS 1 and larger conduits.
- .3 Watertight connectors and couplings for EMT.
 - .1 Set-screws are not acceptable.

2.5 EXPANSION FITTINGS FOR RIGID CONDUIT

- .1 Weatherproof expansion fittings with internal bonding assembly suitable for 100 mm linear expansion.
- .2 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection.
- .3 Weatherproof expansion fittings for linear expansion at entry to panel.

2.6 FISH CORD

- .1 Polypropylene.

Part 3 Execution**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
- .2 Conceal conduits except in mechanical and electrical service rooms, crawl space, and where indicated on drawings.
- .3 Use rigid aluminum threaded conduit except where specified otherwise.
- .4 Use electrical metallic tubing (EMT) above 2.4 m not subject to mechanical injury except in cast concrete.
- .5 Use rigid PVC conduit underground.
- .6 Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations.
- .7 Use explosion proof flexible connection for connection to explosion proof motors.
- .8 Install conduit sealing fittings in hazardous areas.

- .1 Fill with compound.
- .9 Minimum conduit size for lighting and power circuits: 19 mm.
- .10 Bend conduit cold:
 - .1 Replace conduit if kinked or flattened more than 1/10th of its original diameter.
- .11 Mechanically bend steel conduit over 19 mm diameter.
- .12 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
- .13 Install fish cord in empty conduits.
- .14 Run 2 - 27 mm spare conduits up to ceiling space and 2-27 mm spare conduits down to ceiling space from each flush panel.
 - .1 Terminate these conduits in 152 x 152 x 102 mm junction boxes in ceiling space or in case of an exposed concrete slab, terminate each conduit in surface concrete type box.
- .15 Remove and replace blocked conduit sections.
 - .1 Do not use liquids to clean out conduits.
- .16 Dry conduits out before installing wire.

3.3 SURFACE CONDUITS

- .1 Run parallel or perpendicular to building lines.
- .2 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.
- .3 Run conduits in flanged portion of structural steel.
- .4 Group conduits wherever possible on surface channels.
- .5 Do not pass conduits through structural members except as indicated.
- .6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

3.4 CONCEALED CONDUITS

- .1 Run parallel or perpendicular to building lines.
- .2 Do not install horizontal runs in masonry walls.
- .3 Do not install conduits in terrazzo or concrete toppings.

3.5 CONDUITS IN CAST-IN-PLACE CONCRETE

- .1 Locate to suit reinforcing steel.
 - .1 Install in centre one third of slab.
- .2 Protect conduits from damage where they stub out of concrete.
- .3 Install sleeves where conduits pass through slab or wall.
- .4 Provide oversized sleeve for conduits passing through waterproof membrane, before membrane is installed.

- .1 Use cold mastic between sleeve and conduit.
- .5 Conduits in slabs: minimum slab thickness 4 times conduit diameter.
- .6 Encase conduits completely in concrete with minimum 25 mm concrete cover.
- .7 Organize conduits in slab to minimize cross-overs.

3.6 CONDUITS IN CAST-IN-PLACE SLABS ON GRADE

- .1 Run conduits 25 mm and larger below slab and encase in 75 mm concrete envelope.
 - .1 Provide 50 mm of sand over concrete envelope below floor slab.

3.7 CONDUITS UNDERGROUND

- .1 Slope conduits to provide drainage.
- .2 Waterproof joints (PVC excepted) with heavy coat of bituminous paint.

3.8 CLEANING

- .1 Proceed in accordance with Section 01 74 11- Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common work results for electrical

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CAN/CSA-C22.2 No.47 M90(R2007) , Air-Cooled Transformers (Dry Type).
 - .2 CSA C9-02(R2007), Dry-Type Transformers.
 - .3 CAN/CSA-C802.2-06, Minimum Efficiency Values for Dry Type Transformers.
- .2 National Electrical Manufacturers Association (NEMA)

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for dry type transformers and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for dry type transformers for incorporation into manual.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section with manufacturer's written instructions and 01 61 00- Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location, indoors, off the ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect dry type transformers from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products**2.1 DESIGN DESCRIPTION**

- .1 Model
 - .1 Type: ANN.
 - .2 3 phase,
 - .3 Voltage taps: equipped with four (4) 2,5% voltage taps: 2 FCAN and 2 FCBX
 - .4 Insulation: Class H
 - .5 Basic Impulse Level (BIL): standard.
 - .6 Hipot: 1.2 kV.
 - .7 Average sound level: standard
 - .8 Impedance at 17 degrees C: standard
 - .9 Enclosure: NEMA 3R , removable metal front panel.
 - .10 Mounting: floor .
 - .11 Finish: in accordance with Section 26 05 00- Common Work Results for Electrical .
 - .12 Aluminum windings.
 - .13 Winding configuration to be as noted on drawings.
 - .14 Harmonic Mitigating Phase Shifting transformers as indicated on drawings.
 - .15 Voltage Regulation to be 4% or better.
 - .16 Transformer compliant with NRCan 2019 standard.

2.2 EQUIPMENT IDENTIFICATION

- .1 Provide equipment identification in accordance with Section 26 05 00- Common Work Results for Electrical.
- .2 Label size: 7.
- .3 Nameplate wording: [_____]

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for dry type transformers installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied - Consultant.

3.2 INSTALLATION

- .1 Mount dry type transformers up to 75 kVA as indicated.
- .2 Mount dry type transformers above 75 kVA on floor.
- .3 Ensure adequate clearance around transformer for ventilation.
- .4 Install transformers in level upright position.
- .5 Remove shipping supports only after transformer is installed and just before putting into service.
- .6 Loosen isolation pad bolts until no compression is visible.
- .7 Make primary and secondary connections in accordance with wiring diagram.
- .8 Energize transformers after installation is complete.
- .9 Make conduit entry into bottom 1/3 of transformer enclosure.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by dry type transformers installation.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA C22.2 No.29-11, Panelboards and Enclosed Panelboards.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for panelboards and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.
 - .2 Include on drawings:
 - .1 Electrical detail of panel, branch breaker type, quantity, ampacity and enclosure dimension.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for panelboards for incorporation into O&M manual.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements, with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect panelboard from [nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse of packaging materials.

Part 2 Products**2.1 PANELBOARDS**

- .1 Panelboards: to CSA C22.2 No.29 and product of one manufacturer.
 - .1 Install circuit breakers in panelboards before shipment.
 - .2 In addition to CSA requirements manufacturer's nameplate must show fault current that panel including breakers has been built to withstand.
- .2 250 V panelboards: bus and breakers rated for 10 kA.
- .3 600 V panelboards: bus and breakers rated for 25 kA
- .4 Sequence phase bussing with odd numbered breakers on left and even on right, with each breaker identified by permanent number identification as to circuit number and phase.
- .5 Panelboards: mains, number of circuits, and number and size of branch circuit breakers as indicated.
- .6 Minimum of 2 flush locks for each panel board.
- .7 Two keys for each panelboard and key panelboards alike.
- .8 Copper bus with neutral of same ampere rating of mains.
- .9 Mains: suitable for bolt-on breakers.
- .10 Trim with concealed front bolts and hinges (door in door option).
- .11 Trim and door finish: as per colour schedule, baked enamel, air dried enamel.

2.2 BREAKERS

- .1 Breakers: to Section 26 28 16.02- Moulded Case Circuit Breakers.
- .2 Breakers with thermal and magnetic tripping in panelboards except as indicated otherwise.
- .3 Main breaker: separately mounted on top or bottom of panel to suit cable entry. When mounted vertically, down position should open breaker.
- .4 Lock-on devices for receptacles, clock outlet, fire alarm, emergency, door supervisory, intercom, stairway, exit and night light circuits.

2.3 EQUIPMENT IDENTIFICATION

- .1 Provide equipment identification in accordance with Section 26 05 00- Common Work Results for Electrical.
- .2 Nameplate for each panelboard size 4 engraved as indicated .
- .3 Nameplate for each circuit in distribution panelboards size 2 engraved as indicated .
- .4 Complete circuit directory with typewritten legend showing location and load of each circuit, mounted in plastic envelope at inside of panel door.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for panelboards installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Locate panelboards as indicated and mount securely, plumb, true and square, to adjoining surfaces.
- .2 Install surface mounted panelboards on plywood backboards in accordance with Section 06 10 00- Rough Carpentry. Where practical, group panelboards on common backboard.
- .3 Mount panelboards to height specified in Section 26 05 00- Common Work Results for Electrical or as indicated.
- .4 Connect loads to circuits.
- .5 Connect neutral conductors to common neutral bus with respective neutral identified.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.
- .3 Waste Management: separate waste materials for recycling.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by panelboards installation.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 common work results for electrical

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA C22.2 No.42-10 , General Use Receptacles, Attachment Plugs and Similar Devices.
 - .2 CSA C22.2 No.55-FM1986(R2008) , Special Use Switches.
 - .3 CSA C22.2 No.111-10 , General-Use Snap Switches (Bi-national standard, with UL 20).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures .
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for wiring devices and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals .
- .2 Operation and Maintenance Data: submit operation and maintenance data for wiring devices for incorporation into manual.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements .
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location, indoors, off the ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect wiring devices from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2**Products****2.1 SWITCHES**

- .1 15 A, 120 V, single pole, three-way switches to: CSA C22.2 No.111 and CSA C22.2 No.55 .
- .2 Manually-operated general-purpose AC switches with following features:
 - .1 Terminal holes approved for No. 10 AWG wire.
 - .2 Silver alloy contacts.
 - .3 Urea or melamine moulding for parts subject to carbon tracking.
 - .4 Suitable for back and side wiring.
 - .5 Ivory toggle.
- .3 Toggle operated fully rated for tungsten filament and fluorescent lamps, and up to 80% of rated capacity in the case of heating loads.
- .4 Switches of one manufacturer throughout project.

2.2 RECEPTACLES

- .1 Duplex receptacles, CSA type 5-15 R, 125 V, 15 A, U ground, to: CSA C22.2 No.42 with following features:
 - .1 Ivory urea moulded housing.
 - .2 Suitable for No. 10 AWG for back and side wiring.
 - .3 Break-off links for use as split receptacles.
 - .4 Eight (8) back wired entrances, four side wiring screws.
 - .5 Triple wipe contacts and rivetted grounding contacts.
- .2 Single receptacles CSA type 5-15 R, 125 V, 15 A, U ground with following features:
 - .1 Ivory urea moulded housing.
 - .2 Suitable for No. 10 AWG for back and side wiring.
 - .3 Four back wired entrances, 2 side wiring screws.
- .3 Other receptacles with ampacity and voltage as indicated.
- .4 Receptacles of one manufacturer throughout project.

2.3 COVER PLATES

- .1 Cover plates for wiring devices to: CSA C22.2 No.42.1
- .2 Sheet steel utility box cover for wiring devices installed in surface-mounted utility boxes.
- .3 ivory cover plates, thickness 2.5 mm Stainless steel, vertically brushed, 1 mm thick cover plates for wiring devices mounted in flush-mounted outlet box.
- .4 Cast cover plates for wiring devices mounted in surface-mounted FS or FD type conduit boxes.
- .5 Weatherproof double lift spring-loaded cast aluminum cover plates, complete with gaskets for duplex receptacles as indicated.

- .6 Weatherproof spring-loaded cast aluminum cover plates complete with gaskets for single receptacles or switches.

2.4 SOURCE QUALITY CONTROL

- .1 Cover plates from one manufacturer throughout project.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for wiring devices installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Switches:
 - .1 Install single throw switches with handle in "UP" position when switch closed.
 - .2 Install switches in gang type outlet box when more than one switch is required in one location.
 - .3 Mount toggle switches at height as indicated.
- .2 Receptacles:
 - .1 Install receptacles in gang type outlet box when more than one receptacle is required in one location.
 - .2 Mount receptacles at height as indicated.
 - .3 Where split receptacle has one portion switched, mount vertically and switch upper portion.
 - .4 Install GFI type receptacles as indicated.
- .3 Cover plates:
 - .1 Install suitable common cover plates where wiring devices are grouped.
 - .2 Do not use cover plates meant for flush outlet boxes on surface-mounted boxes.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.
- .3 Repair damage to adjacent materials caused by wiring device installation.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 common work results for electrical

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA C22.2 No. 5-[09] , Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures (Tri-national standard with UL 489, and NMX-J-266-ANCE-2010).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for circuit breakers and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Certificates:
 - .1 Prior to installation of circuit breakers in either new or existing installation, Contractor must submit three 3 copies of a production certificate of origin from the manufacturer. Production certificate of origin must be duly signed by factory and local manufacturer's representative certifying that circuit breakers come from this manufacturer and are new and meet standards and regulations.
 - .1 Production certificate of origin must be submitted Departmental Representative for approval.
 - .2 Delay in submitting production of certificate of origin will not justify any extension of contract and additional compensation.
 - .3 Any work of manufacturing, assembly or installation to begin only after acceptance of production certificate of origin by Departmental Representative. Unless complying with this requirement, Departmental Representative reserves the right to mandate manufacturer listed on circuit breakers to authenticate new circuit breakers under the contract, and to Contractor's expense.
 - .4 Production certificate of origin must contain:
 - .1 Manufacturer's name and address and person responsible for authentication. Person responsible must sign and date certificate.
 - .2 Licensed dealer's name and address and person of distributor responsible for Contractor's account.
 - .3 Contractor's name and address and person responsible for project.
 - .4 Local manufacturer's representative name and address. Local manufacturer's representative must sign and date certificate.
 - .5 Name and address of building where circuit breakers will be installed:

- .1 Project title: [_____]
- .2 End user's reference number: [_____]
- .3 List of circuit breakers: [_____]

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store circuit breakers in dry location indoors off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect circuit breakers from nicks, scratches, and blemishes .
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove packaging materials for recycling.

Part 2 Products**2.1 BREAKERS GENERAL**

- .1 Circuit breakers, ground-fault circuit-interrupters, : to CSA C22.2 No. 5
- .2 Bolt-on moulded case circuit breaker: quick- make, quick-break type, for manual and automatic operation [with temperature compensation for 40 degrees C ambient .
- .3 Plug-in moulded case circuit breakers: quick- make, quick-break type, for manual and automatic operation [with temperature compensation for 40 degrees C ambient .
- .4 Magnetic instantaneous trip elements in circuit breakers to operate only when value of current reaches setting.
 - .1 Trip settings on breakers with adjustable trips to range from 3-8 times current rating.
- .5 Circuit breakers with must have a breaking capacity of at least 10 kA sym at 240V and 25 kA sym. at 600V.

2.2 THERMAL MAGNETIC BREAKERS

- .1 Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

- .1 Install circuit breakers as indicated.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.
- .3 Waste Management: separate waste materials for recycling.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common work results for electrical

1.2 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CAN/CSA-C22.2 No.4-04(R2009) , Enclosed and Dead-Front Switches (Tri-National Standard, with ANCE NMX-J-162-2004 and UL 98).
 - .2 CSA C22.2 No.39-13 , Fuseholder Assemblies.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for disconnect switches - fused and non-fused and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors, off the ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect disconnect switches - fused and non-fused from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products**2.1 DISCONNECT SWITCHES**

- .1 Fusible or non-fusible switches, industrial grade "ultra-rugged", in CSA 3 enclosure, rated to CAN / CSA-C22.2 number 4.
- .2 Provision for padlocking in On or Off switch position by 3 locks.
- .3 Mechanically interlocked door to prevent opening when handle in ON position.
- .4 Fuses: size as indicated.

- .5 Fuseholders: to CSA C22.2 No.39 relocatable and suitable without adaptors, for type and size of fuse indicated.
- .6 Quick-make, quick-break action.
- .7 ON-OFF switch position indication on switch enclosure cover.

2.2 EQUIPMENT IDENTIFICATION

- .1 Provide equipment identification in accordance with Section 26 05 00- Common Work Results for Electrical.
- .2 Indicate name of load controlled on size 4 nameplate.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for disconnect switches - fused and non-fused installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied - Consultant.

3.2 INSTALLATION

- .1 Install disconnect switches complete with fuses if applicable.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI)
- .2 American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE)
 - .1 ANSI/IEEE C62.41-1991, Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits.
- .3 CSA Group (CSA)
- .4 ICES-005-07, Radio Frequency Lighting Devices.
- .5 Underwriters' Laboratories of Canada (ULC)

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedure.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Provide complete photometric data prepared by independent testing laboratory for luminaires where specified, for review & approval by Consultant & Departmental Representative.
 - .3 Photometric data to include: VCP Table where applicable, spacing criterion.
- .3 Samples:
 - .1 Provide samples as indicated. Install a complete track light and 3 projectors and include the cost in the overall cost of onsite work. The sample will have to be installed and approved before starting the installation of the wiring and conduits. The model will determine the optimal location of the rail in a typical alcove.
- .4 Quality assurance submittals: provide following in accordance with Section 01 45 00- Quality Control.
 - .1 Manufacturer's instructions: provide manufacturer's written installation instructions and special handling criteria, installation sequence, and cleaning procedures.

1.4 QUALITY ASSURANCE

- .1 Provide samples in accordance with Section 01 45 00 - Quality Control.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Packaging Waste Management: remove for reuse of packaging materials.
- .4 Divert unused metal materials from landfill to metal recycling facility.
- .5 Disposal and recycling of fluorescent lamps as per local regulations.
- .6 Disposal of old PCB filled ballasts.

Part 2 Products**2.1 LAMPS**

LED lamp: Color 4000 K, CRI ≥ 90%, 20 000 hours.

2.2 LED DRIVER

- .1 Fluorescent ballast: CBM and CSA certified, energy efficient type, [IC electronic] [IC electronic dimmable] .
 - .1 Rating: 120 V, 60 Hz.
 - .2 Totally encased and designed for 40 degrees Celsius ambient temperature.
 - .3 Power factor greater than 90 %.
 - .4 Harmonics: THD less than 20 %.
 - .5 Efficiency greater than 88 %.
 - .6 Total circuit power as per indication, Lighting Table.
 - .7 Dimming range (0-10V) : 1 – 100 %.
 - .8 Current Crest Factor : maximum 1.7
 - .9 Sound rated: Class A.
 - .10 Operating Temperature Range : -40°C - +60°C
 - .11 Rating : cUL, CSA
 - .12 FCC Rating : Part 15B
 - .13 Manufacturer Warranty : 5 years

2.3 FINISHES

- .1 Light fixture finish and construction to meet ULC listings and CSA certifications related to intended installation.

2.4 OPTICAL CONTROL DEVICES

- .1 As indicated in luminaire schedule.

2.5 LUMINAIRES

- .1 As indicated in luminaire schedule.

Part 3 Execution**3.1 INSTALLATION**

- .1 Locate and install luminaires as indicated.
- .2 Provide adequate support to suit ceiling system.

3.2 WIRING

- .1 Connect luminaires to lighting circuits:
 - .1 Install flexible or rigid conduit for luminaires as indicated.

3.3 LUMINAIRE SUPPORTS

- .1 For suspended ceiling installations support luminaires independently of ceiling.

3.4 LUMINAIRE ALIGNMENT

- .1 Align luminaires mounted in continuous rows to form straight uninterrupted line.
- .2 Align luminaires mounted individually parallel or perpendicular to building grid lines.

3.5 CLEANING

- .1 Clean in accordance with Section 01 74 11- Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for recycling.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 National Research Council Canada (NRC)
 - .1 National Building Code of Canada 2015 (NBC).
- .2 Treasury Board of Canada (TBS), Occupational Safety and Health (OSH)
 - .1 Fire Protection Standard-10.
- .3 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S524-06, Standard for the Installation of Fire Alarm Systems.
 - .2 CAN/ULC-S526-07, Visual Signal Devices for Fire Alarm Systems.
 - .3 CAN/ULC-S527-99, Standard for Control Units for Fire Alarm Systems.
 - .4 CAN/ULC-S528-05, Manual Pull Stations for Fire Alarm Systems.
 - .5 CAN/ULC-S529-09, Smoke Detectors for Fire Alarm Systems.
 - .6 CAN/ULC-S530-91(R1999), Heat Actuated Fire Detectors.
 - .7 CAN/ULC-S531-02, Standard for Smoke Alarms.
 - .8 CAN/ULC-S537-04, Verification of Fire Alarm Systems.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for multiplex fire alarm system and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Quebec, Canada.
 - .2 Indicate on shop drawings:
 - .1 Detail assembly and internal wiring diagrams for control units.
 - .2 Overall system riser wiring diagram identifying control equipment, initiating zones, signaling circuits ; identifying terminations, terminal numbers, conductors and raceways.
 - .3 Details for devices.
 - .4 Details and performance specifications for control, annunciation and peripherals with item by item cross reference to specification for compliance.

- .5 Step-by-step operating sequence, cross referenced to logic flow diagram.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00- Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for fire alarm and voice communication systems for incorporation into manual.
- .3 Include:
 - .1 Instructions for complete fire alarm system to permit effective operation and maintenance.
 - .2 Technical data - illustrated parts lists with parts catalogue numbers.
 - .3 Copy of approved shop drawings with corrections completed and marks removed except review stamps.
 - .4 List of recommended spare parts for system.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- .1 Submit maintenance materials in accordance with Section 01 78 00- Closeout Submittals

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section with manufacturer's written instructions and 01 61 00- Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for recycling.

Part 2 Products

2.1 DESCRIPTION

- .1 Fully supervised, microprocessor-based, fire alarm system, utilizing digital techniques for data control and digital, and multiplexing techniques for data transmission.
- .2 System to carry out fire alarm and protection functions; including receiving alarm signals; initiating general alarm; supervising components and wiring; actuating annunciators and auxiliary functions; initiating trouble signals and signalling to monitoring agency.
- .3 Zoned, single channel system.
- .4 Modular in design to allow for future expansion.
- .5 Operation of system shall not require personnel with special computer skills.

- .6 System to include:
 - .1 Central Control Unit in separate enclosure with power supply, stand-by batteries, central processor with microprocessor and logic interface, main system memory, input-output interfaces for alarm receiving, annunciation/display, and program control/signalling.
 - .2 Data Gathering Panels/Transponders with stand-alone capabilities.
 - .3 Power supplies.
 - .4 Initiating/input circuits.
 - .5 Output circuits.
 - .6 Auxiliary circuits.
 - .7 Wiring.
 - .8 Manual and automatic initiating devices.
 - .9 Audible and visual signalling devices.
 - .10 End-of-line resistors.
 - .11 Remote annunciators.
 - .12 Event log memory chip.
 - .13 Historic event recorder.
 - .14 Year 2000 compliance.
- .7 Equipment and devices: ULC listed and labelled and supplied by single manufacturer.
- .8 Existing system from Simplex, panel 4020 to be replaced by 4100ES panel.
- .9 Power supply: to CAN/ULC-S524.
- .10 Audible signal devices: to CAN/ULC-S525.
- .11 Visual signal devices: to CAN/ULC-S526.
- .12 Control unit: to CAN/ULC-S527.
- .13 Manual pull stations: to CAN/ULC-S528.
- .14 Thermal detectors: to CAN/ULC-S530.
- .15 Smoke detectors: to CAN/ULC-S529.
- .16 Smoke alarms: to CAN/ULC-S531.
- .17 Regulatory requirements:
 - .1 System:
 - .1 To TBS Fire Protection Standard.
 - .2 Subject to Fire Commissioner of Canada (FC) approval.
 - .3 Subject to FC inspection for final acceptance.
 - .4 To Canadian Forces Fire Marshal approval.
 - .5 System components: listed by ULC and comply with applicable provisions of NBC, and meet requirements of local authority having jurisdiction.

2.2 SYSTEM OPERATION: SINGLE STAGE - SIGNALS ONLY

- .1 Actuation of alarm initiating device to:
 - .1 Cause electronic latch to lock-in alarm state at central control unit and data gathering panel/transponder.
 - .2 Indicate zone of alarm at central control unit display and remote annunciator.
 - .3 Cause audible signalling devices to sound continuously throughout building and at central control unit.
 - .4 Transmit signal to fire department via central station.
- .2 Acknowledging alarm: indicated at central control unit.
- .3 Ensure that it is possible to silence signals by "alarm silence" switch at control unit, after silencing inhibit timer has timed out.
- .4 Subsequent alarm, received after previous alarm has been silenced, to re-activate signals.
- .5 Actuation of supervisory devices to:
 - .1 Cause electronic latch to lock-in supervisory state at central control unit and data gathering panel/transponder.
 - .2 Indicate respective supervisory zone at central control unit and at remote display.
 - .3 Cause audible signal at central control unit to sound.
 - .4 Activate common supervisory sequence.
- .6 Resetting alarm device not to return system indications/functions back to normal until control unit has been reset.
- .7 Trouble on system to:
 - .1 Indicate circuit in trouble at central control unit.
 - .2 Activate "system trouble" indication, buzzer and common trouble sequence. Acknowledging trouble condition to silence audible indication; whereas visual indication to remain until trouble is cleared and system is back to normal.
- .8 Trouble on system to be suppressed during course of alarm.
- .9 Trouble condition on any circuit in system not to initiate any alarm conditions.

2.3 CONTROL PANEL

- .1 Central control unit (CCU):
 - .1 CAN/ULC-S524.
 - .2 Features specified are minimum requirements for microprocessor-based system.
 - .3 System to provide for priority reporting levels, with fire alarm points assigned highest priority, supervisory and monitoring lower priority, and third priority for troubles. Possible to assign control priorities to control points in system to guarantee operation or allow emergency override as required.
 - .4 Integral power supply, battery charger and standby batteries.
 - .5 Basic life safety software: retained in non volatile Erasable Programmable Read-Only-Memory (EPROM). Extra memory chips: easily field-installed.

- .6 Circuitry to continuously monitor communications and data processing cycles of microprocessor. Upon failure, audible and visual trouble indication to activate.
- .7 Software and hardware to maintain time of day, day of week, day of month, month and year.
- .8 Software to operate variable-sensitivity addressable smoke detectors and annunciate their status and sensitivity settings at control panel.
- .9 Existing panel Simplex 4020 to be replaced with Simplex 4100ES panel, c/w cabinet, window door, compatible Ethernet network, 2 new batteries 25 AH.

2.4 POWER SUPPLIES

- .1 120 V, 60 Hz as primary source of power for system.
- .2 Voltage regulated, current limited distributed system power.
- .3 Primary power failure or power loss (less than 102 V) will activate common trouble sequence.
- .4 Interface with battery charger and battery to provide uninterruptible transfer of power to standby source during primary power failure or loss.
- .5 During normal operating conditions fault in battery charging circuit, short or open in battery leads to activate common trouble sequence and standby power trouble indicator.
- .6 Standby batteries: sealed, maintenance free.
- .7 Continuous supervision of wiring for external initiating and alarm circuits to be maintained during power failure.

2.5 INITIATING/ INPUT CIRCUITS

- .1 Receiving circuits for alarm initiating devices such as manual pull stations, smoke detectors, heat detectors and water flow switches, wired to central control unit.
- .2 Alarm receiving circuits (active and spare): compatible with smoke detectors and open contact devices.
- .3 Actuation of alarm initiating device: cause system to operate as specified in "System Operation".
- .4 Receiving circuits for supervisory, N/O devices. Devices: wired to central control unit.
- .5 Actuation of supervisory initiating device: cause system to operate as specified in "System Operation".

2.6 ALARM OUTPUT CIRCUITS

- .1 Alarm output circuit: connected to signals, to central control unit.
 - .1 Signal circuits' operation to follow system programming; capable of sounding bells, chimes, horns. Each signal circuit: rated at 24 V DC; fuse-protected from overloading/overcurrent.
 - .2 Manual alarm silence, automatic alarm silence and alarm silence inhibit to be provided by system's common control.

2.7 AUXILIARY CIRCUITS

- .1 Auxiliary contacts for control functions.
- .2 Actual status indication (positive feedback) from controlled device.
- .3 Alarm supervisory trouble on system to cause operation of programmed auxiliary output circuits.
- .4 Two sets of separate contacts for elevator capture (to main floor of egress and to alternate floor of egress).
- .5 Upon resetting system, auxiliary contacts to return to normal or to operate as pre-programmed.
- .6 Fans: stagger-started upon system reset; timing circuit to separate starting of each fan or set of fans connected to auxiliary contact on system.
 - .1 Timing circuit: controlled by CCU.
- .7 Auxiliary circuits: rated at 2 A, 24 V dc or 120 V ac, fuse-protected.

2.8 WIRING

- .1 Copper conductors.
- .2 To initiating circuits: 18 AWG minimum, and in accordance with manufacturer's requirements.
- .3 To signal circuits: 16 AWG minimum, and in accordance with manufacturer's requirements.
- .4 To control circuits: 14 AWG minimum, and in accordance with manufacturer's requirements.

2.9 MANUAL ALARM STATIONS#

- .1 Manual alarm stations: pull lever, wall mounted semi-flush, non-coded single pole normally open contact for single stage bilingual signage.

2.10 AUTOMATIC ALARM INITIATING DEVICES

- .1 Thermal fire detectors, combination fixed temperature and rate of rise, non-restorable fixed temperature element, self-restoring rate of rise, fixed temperature 57 degrees C, rate of rise 8.3 degrees C per minute.
- .2 Addressable thermal fire detectors, combination fixed temperature and rate of rise, non-restorable fixed temperature element, self-restoring rate of rise, fixed temperature 57 degrees C, rate of rise 8.3 degrees C per minute.
 - .1 Electronics to communicate detector's status to addressable module/transponder.
- .3 Addressable smoke detector:
 - .1 Photo-electric type.
 - .2 Electronics to communicate detector's status to addressable module/transponder.
- .4 Addressable variable-sensitivity smoke detectors.

- .1 Photo-electric type.
- .2 Electronics to communicate detector's status to addressable module/transponder.
- .3 Detector address to be set on detector in field.
- .4 Sensitivity settings: determined and operated by control panel. No shifting in detector sensitivity due to atmospheric conditions (dust, dirt) within certain parameters.
- .5 Ability to annunciate minimum of 2 levels of detector contamination automatically with trouble condition at control panel.

2.11 AUDIBLE SIGNAL DEVICES

- .1 Horns with strobe: model 4906-9143 weatherproof, mounting box weatherproof 4905-9829, white.

2.12 END-OF-LINE DEVICES

- .1 End-of-line devices to control supervisory current sized to ensure correct supervisory current for each circuit. Open, short or ground fault in any circuit will alter supervisory current in that circuit, producing audible and visible alarm at main control panel and remotely as indicated.

2.13 REMOTE ANNUNCIATORS

- .1 Annunciator with designation cards to indicate 8 zones, remote control.
- .2 Display:
 - .1 Alarms and troubles for alarm initiating circuits.
 - .2 Supervisory alarms and troubles for supervisory initiating circuits.
 - .3 Common system trouble.
- .3 Trouble buzzer:
 - .1 Acknowledging trouble at main panel to silence trouble buzzers in system.
- .4 Supervised, with LED test button and alarm trouble acknowledge button.
- .5 Minimum wiring configuration with main panel and remote annunciators.
- .6 Annunciator Simplex, model 4602-9102 – RCU.
- .7 Weatherproof protection cabinet, Nema 3R, clear Lexan window, heater & thermostat: Simplex LCD Display.

2.14 REMOTE PRINTER

- .1 System printer: to give hard copy record of system events

2.15 ANCILLARY DEVICES

- .1 Remote relay unit to initiate fan shutdown.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for fire alarm and communication systems installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Consultant.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed Consultant.

3.2 INSTALLATION

- .1 Install systems to CAN/ULC-S524 and TBS OSH Fire Protection Standard.
- .2 Install central control unit and connect to ac power supply, ac dc standby power.
- .3 Install manual alarm stations and connect to alarm circuit wiring.
- .4 Locate and install detectors and connect to alarm circuit wiring. Mount detectors more than 1 m from air outlets. Maintain at least 600 mm radius clear space on ceiling, below and around detectors. Locate duct type detectors in straight portions of ducts.
- .5 Connect alarm circuits to main control panel.
- .6 Install horns as indicated and connect to signalling circuits.
- .7 Connect signalling circuits to main control panel.
- .8 Install end-of-line devices [at end of alarm and signalling circuits.
- .9 Install remote annunciator panels and connect to annunciator circuit wiring.
- .10 Install door releasing devices.
- .11 Install remote relay units to control fan shut down.
- .12 Sprinkler system: wire alarm and supervisory switches and connect to control panel.
- .13 Room detection system.
 - .1 Install detectors. Make necessary connections between room detection panel and main fire alarm panel.
 - .2 Locate and install visual alarms and audible signals as indicated.
 - .3 Locate and install detectors under raised floor. Fasten to steel brackets approximately 300 mm above sub-floor level to clear cables and conduits.
- .14 Connect fire suppression systems to control panel.
- .15 Splices are not permitted.
- .16 Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, annunciator equipment and CCU, as required by equipment manufacturer.
- .17 Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.

- .18 Identify circuits and other related wiring at central control unit, annunciators, and terminal boxes.

3.3 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00- Common Work Results for Electrical and to CAN/ULC-S537.
- .2 Fire alarm system:
 - .1 Test device and alarm circuit to ensure manual stations, smoke detectors thermal sprinkler system transmit alarm to control panel and actuate general alarm ancillary devices first stage alarm.
 - .2 Check annunciator panels to ensure zones are shown correctly.
 - .3 Simulate grounds and breaks on alarm and signalling circuits to ensure proper operation of system.
 - .4 Addressable circuits system:
 - .1 Test each conductor on addressable links for capability of providing 3 or more subsequent alarm signals on each side of single open-circuit fault condition imposed near midmost point of each link. Operate Acknowledge/Silence switch after reception of each of 3 signals. Correct imposed fault after completion of each series of tests.
 - .2 Test each conductor on addressable links for capability of providing 3 or more subsequent alarm signals during ground-fault condition imposed near midmost point of each link. Operate Acknowledge/Silence switch after reception of each of the signals. Correct imposed fault after completion of each series of tests.
- .3 Provide final PROM program re-burn for system Consultant incorporating program changes made during construction.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

3.5 PROTECTION

- .1 Protect all materials and installed elements against damage during the construction works.
- .2 Repair damages caused to adjacent materials and equipment.

3.6 MAINTENANCE

- .1 Provide one year's free maintenance with two inspections by manufacturer during warranty period.
- .2 Provide individual price on tender form for temporary program changes during construction period, to include zone labels, control functions, system operation.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 Common Work Results for Electrical.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 QUALITY ASSURANCE

- .1 Quality assurance submittals: submit following in accordance with Section 01 45 00- Quality Control.
 - .1 Certificates: signed by manufacturer certifying materials comply with specified performance characteristics and physical properties.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements.

Part 2 Products**2.1 PVC DUCTS AND FITTINGS**

- .1 Rigid PVC duct: Type DB2/ES2, with fabricated fittings, for direct burial.
 - .1 Nominal length: 3 m plus or minus 12 mm.
 - .2 Wall thickness: 2.8 mm (1/8 in)
- .2 Rigid PVC bends, couplings, reducers, bell end fittings, plugs, caps, adaptors same product material as duct, to make a complete installation.
- .3 Rigid PVC 90 degrees, 45 degrees bends [and 5 degrees angle couplings] as required.

2.2 SOLVENT WELD COMPOUND

- .1 Solvent cement for PVC duct joints.

2.3 CABLE PULLING EQUIPMENT

- .1 6 mm stranded nylon pull rope tensile strength 5 kN.

2.4 WARNING TAPE

- .1 Standard 4-mil polyethylene 76 mm wide tape, yellow with black letters, imprinted with "CAUTION BURIED ELECTRIC CABLE BELOW ".

Part 3 Execution**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install ducts or pipes in accordance with manufacturer's instructions and at elevations as indicated.
- .2 Clean inside of ducts before laying.
- .3 Install plastic duct spacers and ensure full, even support every 1.5 m and smooth transition throughout duct length.
- .4 Slope ducts with 1 to 400 minimum slope.
- .5 Install plugs and cap both ends of ducts to prevent entrance of foreign materials during and after construction.
- .6 Pull through each duct wooden mandrel not less than 300 mm long and of diameter 6 mm less than internal diameter of duct, followed by stiff bristle brush to remove sand, earth and other foreign material.
 - .1 Pull stiff bristle brush through each duct immediately before pulling-in cables.
- .7 Install a pull rope continuous throughout each duct run with 3 m spare rope at each end.
- .8 Place continuous strip of warning tape 300 mm above duct before backfilling trenches.
- .9 Install markers as required.
- .10 Notify the Consultant for field review upon completion of direct buried ducts and obtain acceptance prior to backfill.

3.3 CLEANING

- .1 Clean in accordance with Section 01 74 11- Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION



Englobe

Sols Matériaux Environnement

**Travaux publics et Services gouvernementaux Canada
(TPSGC) - Région du Québec**

**Lieu historique national du Fort-Lennox, St-Paul-de
l'Île-aux-Noix (Québec)**

**Caractérisation des matériaux susceptibles de
contenir de l'amiante et des peintures susceptibles de
contenir du plomb**

Rapport préliminaire

Date : 5 novembre 2015
N/Réf. : 045-P-0009275-0-01-260-01-HI-R-0100-0A



Travaux publics et Services gouvernementaux Canada (TPSGC) - Région du Québec

Lieu historique national Du Fort-Lennox, St-Paul-de-l'Île-aux-Noix (Québec)

Caractérisation des matériaux susceptibles de contenir de l'amiante et des peintures susceptibles de contenir du plomb

Rapport préliminaire | 045-P-0009275-0-01-260-HI-R-0100-00-0A

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TABLE DES MATIÈRES

1	INTRODUCTION	1
2	DESCRIPTION GÉNÉRALE DU SITE	2
3	MÉTHODOLOGIE	4
3.1	Échantillonnage de matériaux susceptibles de contenir de l'amiante	4
3.2	Observations générales et description des «ZPSO»	6
3.2.1	<i>Les casemates Nord</i>	6
3.2.2	<i>Les casemates Ouest</i>	6
3.2.3	<i>Le logis des officiers</i>	6
3.2.4	<i>Le magasin Sud</i>	7
3.2.5	<i>Le magasin Nord</i>	7
3.2.6	<i>La caserne</i>	8
3.2.7	<i>Le corps de garde</i>	9
3.2.8	<i>La poudrière</i>	10
3.2.9	<i>Le passage et la porte Nord</i>	10
3.2.10	<i>Le passage Sud</i>	10
3.2.11	<i>Le passage Redan</i>	10
3.2.12	<i>Les latrines</i>	10
3.2.13	<i>Le bâtiment des toilettes</i>	10
3.2.14	<i>Le garage/atelier</i>	11
3.2.15	<i>Le centre d'accueil</i>	11
3.3	Évaluation de l'état des matériaux contenant de l'amiante	12
3.3.1	<i>Matériaux ignifugeants, isolants et finis texturés pulvérisés</i>	12
3.3.2	<i>Isolants mécaniques</i>	12
3.3.3	<i>Matériaux non friables se comportant comme des matériaux friables</i>	13
3.4	Évaluation de l'accessibilité des matériaux contenant de l'amiante	13
3.5	Débris de matériaux contenant de l'amiante	14
3.5.1	<i>Débris de MCA friables</i>	14
3.5.2	<i>Débris de MCA non friables endommagés</i>	14
3.6	Liste et description des méthodes d'intervention	14
4	RÉSULTATS ET DISCUSSION	18
4.1	Matériaux susceptibles de contenir de l'amiante	18
4.1.1	<i>Casemates Nord</i>	18
4.1.2	<i>Casemates Ouest</i>	20
4.1.3	<i>Logis des officiers</i>	22
4.1.4	<i>Magasin Sud</i>	25
4.1.5	<i>Magasin Nord</i>	27
4.1.6	<i>Caserne</i>	30
4.1.7	<i>Corps de garde</i>	34
4.1.8	<i>Poudrière</i>	37

TABLE DES MATIÈRES

4.1.9	Passage et porte Nord	39
4.1.10	Passage Sud.....	40
4.1.11	Passage Redan.....	41
4.1.12	Latrines	42
4.1.13	Bâtiment des toilettes.....	43
4.1.14	Garage/atelier	44
4.1.15	Centre d'accueil	45
4.2	Peintures susceptibles de contenir du plomb	46
5	MESURES D'INTERVENTION	48
6	CONCLUSION ET RECOMMANDATIONS.....	49
6.1	Matériaux contenant de l'amiante	49
6.2	Peintures contenant du plomb	50

Tableaux

Tableau 1.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés aux casemates Nord et résultats analytiques	18
Tableau 2.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés aux casemates Ouest et résultats analytiques	20
Tableau 3.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au logis des officiers et résultats analytiques	22
Tableau 4.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au magasin Sud et résultats analytiques	25
Tableau 5.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au magasin Nord et résultats analytiques	27
Tableau 6.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés à la caserne et résultats analytiques	30
Tableau 7.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au corps de garde et résultats analytiques	34
Tableau 8.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés à la poudrière et résultats analytiques	37
Tableau 9.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au passage et à la porte Nord et résultats analytiques	39
Tableau 10.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au passage Sud et résultats analytiques	40
Tableau 11.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés au passage Redan et résultats analytiques	41
Tableau 12.	Description des matériaux susceptibles de contenir de l'amiante échantillonnés aux latrines et résultats analytiques.....	42

TABLE DES MATIÈRES

Tableau 13. Description des matériaux susceptibles de contenir de l'amiante échantillonnés dans le bâtiment des toilettes et résultats analytiques	43
Tableau 14. Description des matériaux susceptibles de contenir de l'amiante échantillonnés au bâtiment du garage/atelier et résultats analytiques.....	44
Tableau 15. Description des matériaux susceptibles de contenir de l'amiante échantillonnés au centre d'accueil et résultats analytiques	45
Tableau 16. Résultats analytiques des peintures susceptibles de contenir du plomb échantillonnées au Fort-Lennox	46

Annexes

Annexe 1	Relevé photographique
Annexe 2	Plan de localisation des échantillons
Annexe 3	Formulaires d'envoi des échantillons au laboratoire
Annexe 4	Certificats d'analyses - amiante
Annexe 5	Certificats d'analyses - peinture
Annexe 6	Clauses limitatives

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Si des essais ont été effectués, les résultats de ces essais ne sont valides que pour l'échantillon décrit dans le présent rapport.

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REGISTRE DES RÉVISIONS ET ÉMISSIONS		
N° de révision	Date	Description de la modification et/ou de l'émission
0A	2015-11-05	Rapport préliminaire

1 INTRODUCTION

La firme EnGlobe Corp. (ci-après « Englobe ») a été mandatée par Travaux publics et Services gouvernementaux Canada (ci-après « TPSGC ») afin de réaliser une caractérisation des matériaux susceptibles de contenir de l'amiante au lieu historique national du Canada du Fort-Lennox, situé à St-Paul-de-l'Île-aux-Noix au Québec. Quinze (15) bâtiments sur le site étaient touchés par ce mandat, soit :

- ▶ La casemate Nord;
- ▶ La casemate Ouest;
- ▶ Le logis d'officiers;
- ▶ Le magasin Sud;
- ▶ Le magasin Nord;
- ▶ La caserne;
- ▶ Le corps de garde;
- ▶ La poudrière;
- ▶ Le passage et la porte Nord;
- ▶ Le passage Sud;
- ▶ Le passage Redan;
- ▶ Les latrines;
- ▶ Le bâtiment des toilettes sur l'île;
- ▶ Le garage/atelier situé sur la rive;
- ▶ Le centre d'accueil situé sur la rive.

Les travaux de terrain ont été réalisés du 29 septembre au 1^{er} octobre 2015 par Mme Marie-Ève Bélanger et Mme Eugenia Manzon, techniciennes en hygiène industrielle d'Englobe. Le mandat consistait à identifier des matériaux pouvant contenir de l'amiante dans les 15 bâtiments présents sur le site à l'étude et, le cas échéant, procéder à un échantillonnage de ces matériaux selon les recommandations de la Commission sur la Santé et la Sécurité au Travail (ci-après « CSST »).

Ce rapport présente un résumé des observations faites lors de l'inspection des bâtiments ainsi que la méthodologie d'échantillonnage des matériaux susceptibles de contenir de l'amiante, les résultats analytiques des échantillons prélevés, la conclusion et les recommandations applicables. Un relevé photographique, le plan de localisation des échantillons, les demandes d'analyses ainsi que les certificats d'analyses de laboratoire sont également insérés dans ce rapport.

2 DESCRIPTION GÉNÉRALE DU SITE

Les textes descriptifs des bâtiments à l'étude ci-dessous ont été tirés du site internet de *Lieux patrimoniaux du Canada* (<http://www.historicplaces.ca/fr/>).

Les **casemates Nord** forment une enfilade de six espaces voûtés aménagés dans le remblai des forts et complétées par des façades semblables en pierre de taille. La casemate est formée de deux paires identiques sises de part et d'autre du passage qui mène à l'entrée du fort, et d'une paire de casemates servant de cuisine qui a été ajoutée par la suite à l'ouest de cette série. La casemate du front nord se trouve derrière les logis des officiers et le corps de garde, auxquels elle est étroitement associée.

Les **casemates Ouest** forment une enfilade de 11 espaces voûtés aménagés dans le remblai des forts et complétés par des façades semblables en pierre de taille. La casemate est formée de sept unités identiques, chacune pourvue d'une seule porte, et de quatre casemates ajoutées par la suite au sud de cette série, chacune avec une porte centrale flanquée par deux fenêtres. L'alignement est dominé à chaque extrémité par un escalier en pierre qui mène au terre-plein du rempart. La casemate du front ouest se trouve derrière le casernement, auquel elle est étroitement associée.

Le **logis des officiers** est une construction de maçonnerie de deux étages, suivant un plan rectangulaire, qui mesure 27 sur 13 mètres et qui est couverte par un toit en croupe métallique. La composition classique sévère de l'édifice combine des bandeaux en pierre calcaire lisses et une maçonnerie de pierre contrastante à la base, aux angles et aux arcades. Un portique à arcades domine la façade principale, qui donne sur le terrain de parade du fort, dont le logis des officiers délimite le pourtour à l'instar des autres grands bâtiments du fort.

Le **magasin Sud** est un solide bâtiment en pierre de deux étages situé à l'est du terrain de parade au lieu historique national du Canada du Fort-Lennox. Ce bâtiment rectangulaire austère est caractérisé par son toit en croupe bas et par l'ornementation minimale. Des petites fenêtres à carreaux multiples percent les murs de l'étage à intervalles réguliers tandis que le rez-de-chaussée est pourvu de meurtrières.

Le **magasin Nord** est un solide bâtiment en pierre de deux étages située à l'est du terrain de parade au lieu historique national du Canada du Fort-Lennox. Ce bâtiment rectangulaire austère est caractérisé par son toit en croupe bas et par son ornementation minimale. Des petites fenêtres à carreaux multiples percent les murs de l'étage à intervalles réguliers tandis que le rez-de-chaussée est pourvu de meurtrières.

La **caserne** est le plus grand bâtiment du côté ouest du terrain de parade qu'il domine. Le bâtiment se distingue par l'échelle imposante de sa façade en pierre qui est accentuée par un avant-corps couronné d'un fronton. La symétrie de la composition, l'espacement régulier des

ouvertures, le toit en croupe percé de cinq cheminées, les meurtrières et l'imposant escalier extérieur sur le mur arrière comptent parmi les autres caractéristiques qui distinguent ce bâtiment.

Le **corps de garde** est situé au pied des remparts, à côté du logis des officiers. La beauté architecturale classique de ce long bâtiment coiffé d'un toit en croupe est caractérisée par le portique du rez-de-chaussée qui est délimité par un jeu d'arcades en pierre taillée. Les murs sont en pierres de taille disposées selon un agencement judicieusement conçu. Les fenêtres sont placées de façon symétrique au-dessus des arcades.

La **poudrière** est située au nord-ouest du champ de parade, dans le bastion du lieu historique national du Canada du Fort-Lennox. Construit en 1820, il s'agit d'un bâtiment robuste d'un étage en maçonnerie de pierre calcaire de Chazy comportant peu d'ornementation. Un toit en croupe à faible pente coiffe la volumétrie rectangulaire, laquelle est percée de trois petites fenêtres, de prises d'air de ventilation à fente et d'une entrée au sud-est.

Le **passage et la porte Nord** constituent la voie d'entrée principale à la fortification du Fort-Lennox. Elle comporte notamment un passage en pierre taillée ainsi qu'une porte d'entrée en bois.

Le **passage Sud** constitue la deuxième voie d'entrée à la fortification du Fort-Lennox et est construit en pierres taillées. Il est situé à l'extrémité Sud du site.

Le **passage Redan** est une construction en pierres taillées situé à proximité du passage et de la porte Nord.

Les **latrines** sont situées à l'intérieur de la fortification et constituent une construction simple en pierres taillées formant deux arches.

Le **bâtiment des toilettes** est situé dans un sentier au centre de l'île, à l'extérieur de la fortification. Ce bâtiment a été construit à une époque moderne (1976). L'extérieur est composé principalement de blocs de béton nervurés et briques. Le bâtiment est divisé en trois (3) sections, soit la toilette des femmes, la toilette des hommes ainsi qu'une salle de mécanique.

Le **garage/atelier** est situé sur la rive, près de l'entrée au site historique. Ce bâtiment a été construit à une époque moderne (1975). L'extérieur est composé principalement de blocs de béton nervurés et d'un revêtement en aluminium. Ce bâtiment est utilisé notamment comme atelier d'entretien par les employés de Parcs Canada.

Le **centre d'accueil** est situé sur la rive et a été construit à une époque moderne (1975). L'extérieur est composé principalement de bois. Ce bâtiment a comme fonction d'accueillir les visiteurs et comporte également une boutique.

3 MÉTHODOLOGIE

3.1 ÉCHANTILLONNAGE DE MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE

La méthode d'échantillonnage des MSCA consiste à prélever un morceau pour ensuite le placer dans un sac de type « Ziploc », identifié selon la localisation du point de prélèvement, la nature du matériau et un numéro séquentiel.

Matériaux non homogènes

Lors de l'échantillonnage, des matériaux mélangés sur place, par exemple, un plâtre et ciment couvrant les murs, le nombre d'échantillons nécessaires pour déterminer avec assurance qu'ils ne contiennent pas d'amiante est estimé selon les probabilités de révéler la présence d'amiante dans ces matériaux. Il est parfois difficile de déceler la présence d'amiante dans ces matériaux, car l'amiante était ajouté manuellement au mélange en petite quantité afin d'obtenir une certaine cohésion du matériau lors de l'application. Cela rend la distribution de l'amiante relativement aléatoire dans ce type de matériau.

Pour la caractérisation exhaustive des matériaux mélangés sur place, l'échantillonnage doit être effectué selon les exigences américaines décrites dans le rapport « *Statistical support document for Asbestos in Buildings : Simplified Sampling Scheme for Friable Surfacing Materials* » (EPA 560/5-85-030b, Washington, 1985) produit par la United States Environmental Protection Agency (USEPA). Cette méthode d'échantillonnage est exigée par la Commission sur la santé et la sécurité au travail (CSST) depuis l'adoption du Règlement modifiant le Règlement sur la santé et la sécurité du travail et le Code de sécurité pour les travaux de construction en date du 6 juin 2013. De ce fait, chaque zone présentant des similitudes d'ouvrage (ZPSO) doit être divisée en neuf sous-zones de même superficie et un échantillon du MSCA doit être prélevé dans chacune de ces sous-zones.

Ainsi, un total de neuf échantillons doit être prélevé pour chaque matériau susceptible de contenir de l'amiante et mélangé sur place par ZPSO. Notez que la CSST fait des flocages (ou isolant giclé) une exception à cette règle : pour ce type de matériau, un total de deux échantillons prélevés à chaque extrémité de la surface couverte est suffisant pour déterminer l'absence ou la présence d'amiante dans ce matériau si celui-ci apparaît uniforme et homogène.

Une ZPSO est un secteur dont les limites physiques sont définies par les matériaux identiques qui le composent et construit à une même époque.

Si un échantillon d'un type de matériau mélangé sur place s'avère contenir de l'amiante dans une ZPSO, alors tous les matériaux de nature similaire présents dans cette ZPSO doivent aussi être considérés comme contenant de l'amiante. À l'inverse, si aucun des échantillons analysés

dans une ZPSO ne s'avère contenir de l'amiante, il est alors jugé que le matériau visé est exempt d'amiante dans cette ZPSO.

Dans le cadre de cette étude, un total de 333 échantillons de matériaux non homogènes (joints de mortier, plâtre-ciment) a été prélevé sur le site et envoyé pour analyse au laboratoire.

En raison de l'arrêt au premier positif demandé au laboratoire, 313 échantillons ont été analysés,

Matériaux homogènes

En ce qui a trait aux matériaux manufacturés (ex. : les tuiles de plancher en vinyle, gypse et composés à joint, joint d'étanchéité, matériaux goudronnés), la méthode d'échantillonnage requiert le prélèvement d'un échantillon seulement par type de matériau pour confirmer ou infirmer la présence d'amiante dans ces matériaux. Une identification positive en laboratoire fait en sorte que tous les matériaux de même nature seront déclarés comme contenant de l'amiante.

Dans la mesure où les échantillons prélevés s'avèrent tous ne pas contenir d'amiante, il est permis d'affirmer que tous les matériaux similaires trouvés dans cette même aire homogène sont aussi exempts de fibres d'amiante. Par contre, si l'un des échantillons provenant d'une aire d'échantillonnage est identifié comme contenant de l'amiante, tous les matériaux similaires présents dans cette aire d'échantillonnage seront considérés comme contenant de l'amiante.

Les échantillons des matériaux susceptibles de contenir de l'amiante ont été analysés au laboratoire Exova à Pointe-Claire, qui est dûment accrédité par l'Institut de recherche en santé et sécurité au travail (IRSST), selon les méthodes combinées de dispersion et de microscopie à lumière polarisante (méthode 244-3 de l'IRSST). L'analyse de l'échantillon de tuile de plancher de vinyle a été faite chez EMSL Canada inc. à Mississauga en Ontario qui est dûment accrédité pour réaliser l'identification des matériaux d'amiante en microscopie électronique à transmission (MET) selon la méthode ELAP (198.4).

Dans ce projet, 14 échantillons de matériaux homogènes ont été prélevés et analysés (composé à joints et gypse, joints d'étanchéité, panneaux Préfab, tuiles acoustiques au plafond et tuiles de vinyle au plancher)

Les formulaires de demande d'analyse des MSCA sont présentés à l'annexe 3 et les certificats d'analyse à l'annexe 4 du présent rapport.

3.2 OBSERVATIONS GÉNÉRALES ET DESCRIPTION DES «ZPSO»

3.2.1 Les casemates Nord

Les casemates Nord sont en continuité avec le passage et la porte Nord et s'étendent à l'Ouest et à l'Est de ceux-ci. Les murs extérieurs des casemates Nord sont constitués de pierres taillées et de mortier. Les portes extérieures sont en bois peint vert et les fenêtres de la cuisine sont en bois peint blanc.

Les murs intérieurs sont en briques et mortier (secteur des cuisines), ainsi qu'en pierres et mortier. Les murs sont en continuité avec le plafond et forment une arche. Le plancher est en pierre concassée.

Puisqu'il possède un seul étage, le bâtiment a été considéré comme une seule ZPSO. Également, les matériaux observés étaient similaires dans tout le bâtiment.

3.2.2 Les casemates Ouest

Les casemates Ouest sont situées derrière la caserne. Les murs extérieurs sont constitués de pierre taillée et mortier. Les portes extérieures sont en bois peint vert.

Les murs intérieurs sont en pierres et mortier. Les murs sont en continuité avec le plafond et forment une arche. Le plancher est en pierre concassée.

On retrouve à l'extrémité Nord un local de mécanique. Le plancher, le plafond et les murs du local sont en béton. Les conduits de ventilation présents dans ce local sont isolés en laine de verre. La tuyauterie observée était non isolée ou isolée avec de la laine de verre. On retrouve également une génératrice dans ce local. Le conduit d'évacuation des gaz et le réservoir sont isolés avec un matériau fabriqué. Ce matériau est récent et n'a pas été échantillonné.

Puisqu'il possède un seul étage, le bâtiment a été considéré comme une seule ZPSO. Également, les matériaux observés étaient similaires dans tout le bâtiment.

3.2.3 Le logis des officiers

Les murs extérieurs du bâtiment du logis des officiers sont constitués de pierres taillées et mortier. Les portes extérieures sont en bois peint vert. La toiture est composée de panneaux métalliques.

Au rez-de-chaussée, tous les plafonds sont constitués de panneaux de gypse jointés. Les murs sont majoritairement constitués de plâtre et ciment sur lattes de bois (murs de division) ou sur pierres (murs périphériques). On observe des dommages au niveau des murs en plâtre ciment dans la conciergerie. On retrouve également certaines sections de plafond en panneaux de gypse dans le secteur de la salle de bains, de la salle électrique, du local du chauffe-eau et de la conciergerie. Les planchers du rez-de-chaussée sont en bois. Les murs et plafonds sont recouverts d'une peinture blanche.

À l'étage, les murs et les plafonds sont majoritairement constitués de plâtre et ciment sur lattes de bois (murs de division) ou sur pierres (murs périphériques). On observe quelques dommages au niveau du mur et du plafond en plâtre ciment de la chaufferie. On retrouve également des murs en panneaux de gypse dans le secteur de la salle de bains. Au niveau des cheminées à l'étage et au rez-de-chaussée, on observe la présence de briques et mortier. Ce matériau est également visible à l'intérieur de certaines armoires. Les murs et plafonds sont recouverts d'une peinture blanche sur tout l'étage. Les planchers sont en bois peint gris.

Le bâtiment possède un grenier, qui est accessible par une trappe dans le corridor à l'étage. La structure de l'entre-toit est composée de bois. Un isolant jaune est présent au plancher, entre les montants de bois. On peut observer la cheminée de briques principale à l'intérieur du grenier. Les conduits de ventilation et la tuyauterie présents dans l'entre-toit sont isolés avec de la laine de verre.

Puisqu'il possède deux étages et que ceux-ci sont susceptibles d'avoir été construits ou rénovés à des années différentes, le bâtiment a été considéré comme deux (2) ZPSO distinctes, soit le rez-de-chaussée et l'étage.

3.2.4 Le magasin Sud

Les murs extérieurs du bâtiment du magasin sud sont constitués de pierres taillées et de mortier. Les portes extérieures et les volets des fenêtres sont en bois peint vert. La toiture est composée de panneaux métalliques.

Au rez-de-chaussée, les murs et plafonds (arche) ainsi que la cage d'escalier sont constitués de briques ou pierres, sur lequel un plâtre ciment est appliqué. Le plancher est en bois non peint. Les murs et plafonds sont peints en blanc.

À l'étage, les murs sont constitués de pierres, sur lequel un plâtre ciment est appliqué. Le plafond de l'étage est la charpente de bois du bâtiment. Le plancher est en bois non peint. Les murs de l'étage ainsi qu'une partie de la charpente de bois sont peints en blanc.

Puisqu'il possède deux étages et que ceux-ci sont susceptibles d'avoir été construits ou rénovés à des années différentes, le bâtiment a été considéré comme deux (2) ZPSO distinctes, soit le rez-de-chaussée et l'étage.

3.2.5 Le magasin Nord

Les murs extérieurs du bâtiment du magasin nord sont constitués de pierres taillées et mortier. Les portes extérieures et les volets des fenêtres sont en bois peint vert. La toiture est composée de panneaux métalliques.

Au rez-de-chaussée, les murs et plafonds (arche) ainsi que la cage d'escalier sont constitués de briques ou pierres et mortier, sur lequel un plâtre ciment est appliqué. Le plancher est en bois non peint. Les murs et plafonds sont peints en blanc.

À l'étage, les murs sont constitués de pierres et mortier, sur lesquels un plâtre ciment est appliqué par endroits. Il est également possible d'apercevoir à une extrémité du bâtiment l'arche de brique et mortier constituant le plafond du rez-de-chaussée. Le plafond est la charpente de bois du bâtiment. Le plancher de l'étage est en bois non peint. Aux endroits où un plâtre ciment est appliqué sur les murs, on observe également la présence d'une peinture blanche.

Puisqu'il possède deux étages et que ceux-ci sont susceptibles d'avoir été construits ou rénovés à des années différentes, le bâtiment a été considéré comme deux (2) ZPSO distinctes, soit le rez-de-chaussée et l'étage.

3.2.6 La caserne

Les murs extérieurs du bâtiment de la caserne sont constitués de pierres taillées et mortier. On peut observer également les pierres et le mortier dans le vide sanitaire du bâtiment, accessible par des trappes au plancher dans certains locaux. Les portes extérieures sont en bois peint vert. La toiture est composée de panneaux métalliques.

Au rez-de-chaussée, la plupart des murs et plafonds sont en continu, formant des arches de briques, recouvertes d'une mince couche de plâtre et ciment. Dans le secteur de l'entrepôt (local 115), plusieurs dommages ont été constatés au niveau du plâtre ciment et des débris ont été observés sur certains équipements. Également, quelques dommages ont été notés au niveau des murs par endroits, notamment dans la cage d'escalier et dans plusieurs vestibules, soit la section située à l'avant du bâtiment, principalement près des portes et fenêtres. Certains murs du rez-de-chaussée, principalement des divisions, sont en panneaux de gypse jointés en bon état. Les planchers sont en céramique dans le secteur des toilettes, en tuiles de vinyle bleu dans la toilette familiale et en bois dans le reste des locaux.

À l'étage, les murs sont en briques recouverts d'une mince couche de plâtre ciment. Dans la partie sud du bâtiment, les murs sont recouverts d'une couche de plâtre ciment plus épaisse. Des dommages ont été constatés à plusieurs endroits.

Le plafond de l'étage est constitué de plâtre ciment sur lattes de bois. Quelques dommages ont été notés, principalement dans le local 201 et dans le secteur des locaux 203 à 207, au centre de l'étage.

Il est également possible de voir le plâtre ciment sur lattes de bois à partir du grenier, dans le local 205. La structure du bâtiment visible à partir du grenier est en bois. Il est possible d'y

apercevoir certaines colonnes et cheminées de briques. De la laine de verre est présente au plancher par endroits. Ce matériau n'est pas susceptible de contenir de l'amiante.

La tuyauterie observée dans le bâtiment, notamment dans le vide sanitaire, était non isolée ou isolée avec de la laine de verre.

Puisqu'il possède deux étages et que ceux-ci sont susceptibles d'avoir été construits ou rénovés à des années différentes, le bâtiment a été considéré comme deux (2) ZPSO distinctes, soit le rez-de-chaussée et l'étage.

3.2.7 Le corps de garde

Les murs extérieurs du bâtiment du corps de garde sont constitués de pierres taillées et mortier. Les portes extérieures sont en bois peint vert. La toiture est composée de panneaux métalliques.

Au rez-de-chaussée, dans les locaux 102 et 103, les murs et plafonds forment une arche en briques et mortier, sur lesquels un plâtre ciment peint en blanc est appliqué. Les briques et le mortier sont également présents à l'intérieur des foyers. Les planchers sont en bois. Nous avons relevé la présence de plusieurs dommages au niveau des murs en plâtre ciment dans ce secteur.

Dans le local 103, une partie des murs est en briques et mortier recouverts de plâtre ciment peint en blanc. Des dommages ont été relevés également au niveau des murs de ce local.

Dans le local 104, les murs sont en briques, pierres et mortier, sur lesquels un plâtre ciment a été appliqué. Le plafond est en plâtre ciment sur lattes de bois. Nous avons observé la présence de dommages au niveau des murs et du plafond en plâtre ciment dans ce local.

Les locaux 105, 106, 107, 108 et 109 représentent l'ancienne prison. Les murs et plafonds sont en briques, pierres et mortier et forment une arche. Quelques murs sont recouverts d'un plâtre ciment peint blanc dans ce secteur.

À l'étage, les murs sont en pierres et mortier recouverts avec du plâtre ciment par endroits. Plusieurs dommages ont été notés au niveau du plâtre ciment des murs à l'étage et des débris sont présents sur le plancher. Une couche de finition en plâtre est également appliquée sur les colonnes de briques. Ce matériau a été considéré indépendamment des murs puisqu'il était visuellement différent. Le plancher et le plafond de l'étage est en bois non peint.

Puisqu'il possède deux étages et que ceux-ci sont susceptibles d'avoir été construits ou rénovés à des années différentes, le bâtiment a été considéré comme deux (2) ZPSO distinctes, soit le rez-de-chaussée et l'étage.

3.2.8 La poudrière

Les murs extérieurs de la poudrière sont constitués de pierres taillées et de mortier. La toiture du bâtiment est composée de panneaux métalliques. La porte d'entrée du bâtiment est en bois peint vert.

Les murs intérieurs du bâtiment sont en pierre taillée (vestibule d'entrée au bâtiment) ainsi qu'en briques et mortier. Les murs sont en continuité avec le plafond et forment une arche constituée de briques. Le plancher est en bois.

Puisqu'il possède un seul étage, le bâtiment a été considéré comme une seule ZPSO. Également, les matériaux observés étaient similaires dans tout le bâtiment.

3.2.9 Le passage et la porte Nord

Les murs du passage et de la porte Nord sont en pierres et mortier. Puisque des travaux avaient lieu sur le passage, nous avons pu observer deux types de mortier, soit un situé entre les pierres taillées (extérieur et gris) et un entre les pierres naturelles (intérieur et beige). L'ensemble de la structure est considérée comme une seule ZPSO.

3.2.10 Le passage Sud

Les murs du passage Sud sont en pierres et mortier. L'ensemble de la structure est considérée comme une seule ZPSO.

3.2.11 Le passage Redan

Les murs du passage de Redan sont en pierres et mortier. L'ensemble de la structure est considérée comme une seule ZPSO.

3.2.12 Les latrines

Les murs extérieurs du bâtiment des latrines sont en pierres et mortier. Certains murs intérieurs sont en ciment. L'ensemble de la structure est considérée comme une seule ZPSO.

3.2.13 Le bâtiment des toilettes

Les murs extérieurs du bâtiment des toilettes sont constitués de blocs de béton nervurés, de briques et de mortier. Le bâtiment comporte trois (3) pièces, soit la toilette des femmes, la toilette des hommes et une salle de mécanique. Cette salle de mécanique était inaccessible lors de notre visite.

Les murs intérieurs du bâtiment sont en blocs de béton. Le plancher du bâtiment est en béton. Le plafond est composé de lattes de bois. Les murs et le plafond sont peints en blanc, alors que le plancher est peint en gris.

Puisqu'il possède un seul étage, le bâtiment a été considéré comme une (1) seule ZPSO. Également, les matériaux de construction observés étaient similaires dans tout le bâtiment.

3.2.14 Le garage/atelier

Les murs extérieurs du bâtiment du garage sont constitués de blocs de béton nervurés et de mortier. La partie supérieure des murs (retombée de plafond) est en panneaux métalliques.

Le bâtiment comporte quatre (4) pièces principales, soit l'aire d'entreposage, le bureau/salle de repos, la toilette et la conciergerie. Les murs intérieurs de l'aire d'entreposage sont en blocs de béton et le plancher est en béton ou bois. Le plafond est composé de panneaux métalliques. Près de l'entrée de la salle de repos, on retrouve des tuiles de vinyle blanc au plancher. La partie inférieure des murs est peintes en gris et la partie supérieure en blanc. Le plancher est peint en gris par endroits. Également, certaines armoires de rangement en bois sont peintes en gris dans ce secteur.

Les murs de la salle de repos sont en blocs de béton. Le plancher est en bois flottant, sous lequel des tuiles de vinyle blanc sont susceptibles d'être présentes (visibles à l'entrée du local). Le plafond est en tuiles acoustiques perforées. Les portes, cadres de portes et armoires du local sont peints en beige, alors que les murs sont peints en blanc.

Les murs de la toilette sont en blocs de béton. Le plancher est en linoléum marbré. Le plafond est en tuiles acoustiques carrées lisses. Les murs du local sont peints en blanc.

Les murs de la conciergerie sont en blocs de béton non peints. Le plancher est en béton.

Puisqu'il possède un seul étage, le bâtiment a été considéré comme une seule ZPSO. Également, les matériaux de construction observés étaient similaires dans tout le bâtiment.

3.2.15 Le centre d'accueil

Les murs extérieurs du bâtiment du centre d'accueil sont en bois. Un joint d'étanchéité est appliqué au pourtour des portes et fenêtres extérieures. Les murs intérieurs et les plafonds du bâtiment sont en lattes de bois ou bois. Le plancher du bâtiment est en céramique ou en béton. Le plafond est composé de lattes de bois. Une partie des murs de l'aire générale du centre d'accueil ainsi que les portes intérieures sont recouverts de peinture bleue.

Puisqu'il possède un seul étage, le bâtiment a été considéré comme une seule ZPSO. Également, les matériaux de construction observés étaient similaires dans tout le bâtiment.

3.3 ÉVALUATION DE L'ÉTAT DES MATÉRIAUX CONTENANT DE L'AMIANTE

Selon la Politique ministérielle 057 (PM 057) de TPSGC, Annexe C, Appendice 1 - *Évaluation des matériaux contenant de l'amiante (MCA) et recommandations sur leur gestion*, l'évaluation de l'état des matériaux contenant de l'amiante se fait comme décrit dans les sous-sections suivantes.

3.3.1 Matériaux ignifugeants, isolants et finis texturés pulvérisés

BON : La surface des matériaux ne montre pas de signes importants de dommages, de détérioration ou de décollement. Dans cette cote, la proportion maximale admissible de la surface endommagée est de 1%. Pour évaluer l'état des matériaux ignifugeants pulvérisés, l'enquêteur doit savoir que les produits d'amiante pulvérisés présentent une surface très irrégulière. L'état des matériaux ignifugeants ou des finis texturés non encapsulés ou non peints est considéré si ces derniers ne présentent pas de signe de décollement ou de dommages et sont encapsulés, même endommagés ou décollés, lorsque l'encapsulage a été réalisé après coup.

MAUVAIS : Les matériaux pulvérisés montrent des signes de dommages, de décollement de détérioration. Plus de 1% de la surface des MCA pulvérisés est endommagé.

Les dommages observés dans des endroits isolés peuvent entrer dans les deux catégories, soit BON et MAUVAIS. L'importance des dommages ou la proportion de la surface atteinte est enregistrée sur le formulaire d'enquête ou de réévaluation.

NOTE : La cote PASSABLE n'est pas utilisée ni considérée comme un critère valable dans l'évaluation des matériaux ignifugeants, des isolants ou des finis texturés.

L'évaluation des MCA appliqués par pulvérisation à des fins d'ignifugation et d'isolation thermique, ou les finis texturés, décoratifs ou insonorisants qui se trouvent dans les vides de plafond est parfois limitée par le nombre d'observations possibles ou par la présence d'éléments du bâtiment comme des conduits ou des murs à pleine hauteur d'étage. Les personnes qui ont à pénétrer dans ces endroits doivent prendre soin de vérifier au préalable s'il n'y a pas de DÉBRIS de MCA avant de s'y engager ou de travailler dans les vides de plafond où des MCA se trouvent, quel que soit leur état.

3.3.2 Isolants mécaniques

BON : Les isolants sont entièrement entourés d'une gaine et ne montrent aucun signe apparent de dommages ou de détérioration. Aucun isolant n'est apparent. Cette cote est attribuée même si les gaines présentent des dommages superficiels mineurs (p.ex., éraflures ou taches), sans perforation.

PASSABLE : Petites perforations de la gaine des isolants (coupures, déchirures, entailles, détérioration ou décollement) ou isolants sans gaine non endommagés. L'isolant est apparent

mais ne montre pas de détérioration de sa surface. La quantité d'isolants manquants va de minime à nulle.

MAUVAIS : La gaine d'origine de l'isolant est manquante, endommagée, détériorée ou décollée. L'isolant est apparent et de grandes parties ont été déplacées. Les dommages ne peuvent être facilement réparés.

L'évaluation des isolants mécaniques est parfois limitée par le nombre d'observations possibles ou par la présence d'éléments du bâtiment comme des conduits ou des murs à pleine hauteur d'étage, auquel cas, il n'est pas possible d'examiner sous tous les angles la surface entière de l'isolant.

3.3.3 Matériaux non friables se comportant comme des matériaux friables

En général, les matériaux non friables ont peu tendance à laisser échapper des fibres dans l'air, même s'ils subissent une rupture mécanique. Par contre, certains d'entre eux, par exemple les produits extérieurs d'amiante-ciment, peuvent être dans un état de détérioration tel que le liant se désagrège et libère des fibres d'amiante. Dans ce cas, les matériaux non friables très détériorés doivent être traités comme des produits friables.

3.4 ÉVALUATION DE L'ACCESSIBILITÉ DES MATÉRIAUX CONTENANT DE L'AMIANTE

Selon la Politique ministérielle 057 (PM 057) de TPSGC, Annexe C, Appendice 1 - *Évaluation des matériaux contenant de l'amiante (MCA) et recommandations sur leur gestion*, l'évaluation de l'accessibilité des matériaux contenant de l'amiante se fait comme suit :

ACCESSIBILITÉ (A) : Parties du bâtiment à la portée de tous les occupants (depuis le plancher). Comprend aussi les locaux comme les gymnases, les ateliers et les aires de stockage, dans lesquels les utilisateurs peuvent déranger les MCA qui sont normalement hors de portée depuis le plancher.

ACCESSIBILITÉ (B) : Aires réservés au personnel d'entretien et auxquelles il peut accéder sans l'aide d'une échelle, ce qui comprend les saignées, les tunnels et les aires de service ou les aires accessibles à l'aide d'une échelle fixe ou d'une passerelle, par exemple, le dessus des équipements, les mezzanines.

ACCESSIBILITÉ AUX MATÉRIAUX APPARENTS (C) : Aires du bâtiment se trouvant au-dessus de huit pieds de hauteur accessibles à l'aide d'une échelle. Se rapporte uniquement aux MCA exposés à la vue depuis le plancher ou une échelle, sans avoir à enlever des éléments comme les carreaux de plafond ou les trappes ou portes d'accès. Ne comprend pas les aires de service peu visitées.

ACCESSIBILITÉ AUX MATÉRIAUX DISSIMULÉS (C) : Aires du bâtiment auxquelles on a accès en enlevant des éléments, comme, entre autres, les plafonds suspendus et les panneaux

d'accès des plafonds rigides. Comprend les vides sanitaires, les combles, etc., peu visités. Les observations se limitent aux matériaux visibles depuis les points d'accès.

ACCESSIBILITÉ (D) : Aires du bâtiment se trouvant derrière les plafonds rigides, les murs ou l'équipement mécanique, etc., et nécessitant la démolition de ces derniers pour atteindre les MCA. L'évaluation de l'état et de la quantité des matériaux contenant de l'amiante est limitée, voire impossible à effectuer, selon que le vérificateur peut voir ou non les matériaux.

3.5 DÉBRIS DE MATÉRIAUX CONTENANT DE L'AMIANTE

Selon la Politique ministérielle 057 (PM 057) de TPSGC, Annexe C, Appendice 1 - *Évaluation des matériaux contenant de l'amiante (MCA) et recommandations sur leur gestion*, l'évaluation des débris de matériaux contenant de l'amiante se fait tel que décrit dans les sous-sections suivantes.

3.5.1 Débris de MCA friables

Les MCA détachés sont enregistrés séparément de la source présumée de matériaux friables matériaux ignifugeants, calorifuges, finis texturés, décoratifs ou insonorisants pulvérisés ou isolants (mécaniques) et classés sous la désignation DÉBRIS.

3.5.2 Débris de MCA non friables endommagés

Les MCA détachés provenant de matériaux non friables endommagés sont enregistrés séparément de la source des MCA non friables. Seuls les MCA non friables détachés, qui sont devenus friables, sont désignés DÉBRIS. La détermination de l'emplacement exact ou de la présence de DÉBRIS sur les carreaux de plafonds est limitée par le nombre d'observations possibles et la présence d'éléments du bâtiment comme les conduits ou des murs pleine hauteur d'étage. Les ouvriers doivent vérifier s'il y a des DÉBRIS avant de pénétrer dans les vides de plafond ou de travailler à proximité d'isolants mécaniques dans les aires du bâtiment où se trouvent des MCA, que des DÉBRIS aient été signalés ou non.

3.6 LISTE ET DESCRIPTION DES MÉTHODES D'INTERVENTION

Voici les mesures d'intervention exigées en vertu du Programme de gestion de l'amiante de TPSGC :

- ✓ Enlèvement immédiat des DÉBRIS susceptibles d'être dérangés;
- ✓ Enlèvement, réparation ou encapsulation des MCA friables dont l'état est classé BON ou PASSABLE si leur détérioration continue peut générer des DÉBRIS susceptibles d'être dérangés.

Voici les facteurs à prendre en compte lorsqu'il s'agit de recommander des mesures visant à assurer la conformité aux règlements et de mettre en œuvre le programme de gestion de l'amiante de TPSGC :

1. 3. Les MCA en MAUVAIS état ne sont pas facilement réparables sur place. S'il est nécessaire de neutraliser les effets nocifs de l'amiante, la mesure recommandée est l'enlèvement (l'encapsulage des matériaux est une autre solution possible dans des circonstances inhabituelles).
2. 4. Les isolants mécaniques dont l'état est jugé PASSABLE seront réparés ou enlevés selon les recommandations générales suivantes qui s'appliquent au cas par cas.
 - ✓ Réparer les isolants mécaniques contenant de l'amiante dont l'état est PASSABLE et qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (B) ou (C) (matériaux apparents).
 - ✓ Enlever les isolants mécaniques contenant de l'amiante dont l'état est PASSABLE et qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (B) et (C) (matériaux apparents), si ces matériaux sont exposés à des dommages subséquents.
 - ✓ Enlever les isolants mécaniques contenant de l'amiante dont l'état est PASSABLE et qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (A) afin d'éliminer les risques des dommages subséquents dus aux activités des utilisateurs du bâtiment.
3. 5. La gestion des MCA jugés en BON état qui se trouvent dans des endroits dont la cote d'ACCESSIBILITÉ est (A) peut prendre la forme d'une surveillance, aussi longtemps que ces matériaux ne seront pas dérangés par des travaux de rénovation, d'entretien ou de démolition. L'enlèvement proactif des MCA se trouvant dans des endroits à cote d'ACCESSIBILITÉ (A) sera envisagé s'ils sont exposés à des dommages dus aux activités (accidentelles ou délibérées) des occupants.
4. 6. Les produits non friables ou les produits fabriqués sont assujettis aux mesures d'intervention suivantes :
 - ✓ Les produits non friables et les produits fabriqués jugés en MAUVAIS état ou les DÉBRIS friables provenant de la détérioration de MCA non friables sont traités comme des matériaux friables. La mesure d'intervention appropriée, compte tenu de leur accessibilité, est choisie dans la liste des mesures d'intervention visant les MCA friables.
 - ✓ Pour les produits non friables ou les produits fabriqués jugés en BON état, on recommande la mesure n° 7 (surveillance), quelle qu'en soit l'accessibilité.
5. 7. Enlever tous les MCA des endroits où de petites quantités d'amiante sont présentes. Cette intervention aura pour conséquence de soustraire les endroits visés par le Programme de gestion de l'amiante. Le tableau des mesures d'intervention reproduit plus bas énumère les mesures de contrôle recommandées. Une description complète des MESURES D'INTERVENTION suit dans le tableau ici-bas.

Mesures d'intervention du Programme de gestion de l'amiante de TPSGC

MESURES D'INTERVENTION				
MCA friables				
Accessibilité	Condition			Débris
	Bon	Passable	Mauvais	
(A)	Mesure 5/7 ¹	Mesure 5/6 ²	Mesure 3	Mesure 1
(B)	Mesure 7	Mesure 6/5 ³	Mesure 3	Mesure 1
(C) Apparent	Mesure 7	Mesure 6	Mesure 4	Mesure 2
(C) Dissimulé	Mesure 7	Mesure 7	Mesure 4	Mesure 2
(D)	Mesure 7	Mesure 7	Mesure 7	Mesure 7

¹ **MESURE 7** exigée si les matériaux à cote d'**ACCESSIBILITÉ (A) BON ÉTAT** ne sont pas enlevés.

² **MESURE 6** exigée si les matériaux à cote d'**ACCESSIBILITÉ (A) ÉTAT PASSABLE** ne sont pas enlevés.

³ Enlever les MCA à cote d'**ACCESSIBILITÉ (B) ÉTAT PASSABLE** qui risquent d'être dérangés.

MESURE 1 - Nettoyage immédiat des débris risquant fortement d'être dérangés

Restreindre les accès au cours desquels les DÉBRIS de MCA ont de fortes chances d'être dérangés et nettoyer immédiatement ceux-ci. Utiliser les méthodes de gestion de l'amiante adéquates. Cette mesure est prescrite dans le but d'assurer la conformité aux exigences réglementaires. L'inspecteur devrait informer immédiatement le coordonnateur régional chargé des questions d'amiante lorsque cette mesure est appliquée.

MESURE 2 - Accès dans des aires souillées par des débris de MCA - Mesures de précaution de type 2

Aux endroits où il est possible d'isoler les DÉBRIS de MCA au lieu de les enlever ou de les nettoyer, employer des moyens appropriés pour en restreindre l'accès. Restreindre aussi l'accès de ces aires aux personnes qui appliquent les mesures de précaution de type 2 et appliquer ces mesures jusqu'à ce que les DÉBRIS aient été nettoyés et leur source neutralisée ou éliminée.

MESURE 3 - Enlèvement des MCA aux fins de la conformité aux règlements

Enlever les MCA afin d'assurer la conformité aux exigences des règlements qui s'appliquent. Utiliser les méthodes qui conviennent à la portée des travaux d'enlèvement de l'amiante.

MESURE 4 - Accès aux aires où se trouvent des MCA qui risquent d'être dérangés - Mesures de précaution de type 2

Employer les mesures de précaution de type 2 lorsque l'entrée ou l'accès dans une aire risque de déranger les MCA qui s'y trouvent. Appliquer la MESURE 4 jusqu'à ce que les MCA aient été enlevés (appliquer les mesures 1 ou 2 si des DÉBRIS sont présents).

MESURE 5 - Enlèvement proactif des MCA

Enlever les MCA au lieu de les réparer, ou aux endroits où la présence d'amiante même en BON état n'est pas acceptable.

MESURE 6 - Réparation des MCA

Réparer les MCA dont l'état est jugé PASSABLE et qui ne risquent pas d'être endommagés davantage ou déplacés du simple fait que l'aire ou la pièce est occupée. Une fois les réparations terminées, traiter les MCA comme des matériaux en BON état et appliquer la MESURE 7. Si des MCA sont susceptibles d'être endommagés ou dérangés du fait de l'utilisation normale de l'aire ou de la pièce, appliquer la MESURE 5.

MESURE 7 –Surveillance régulière

Établir une surveillance régulière des MCA. Les ouvriers ou les entrepreneurs dûment formés doivent utiliser les mesures de précaution appropriées (types 1, 2 ou 3) s'ils entrent en contact avec des MCA.

4 RÉSULTATS ET DISCUSSION

4.1 MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE

4.1.1 Casemates Nord

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante aux casemates Nord sont présentés dans le tableau 1 ci-dessous.

Tableau 1 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés aux casemates Nord et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1A	Ciment gris	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1B	Ciment gris et brun et plâtre blanc et gris	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1C	Ciment gris et brun	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1D	Ciment gris et brun	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1E	Ciment gris et brun	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1F	Ciment gris et brun	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1G	Ciment gris et brun	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1H	Ciment gris et brun	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1I	Ciment gris et brun et plâtre blanc et gris	Murs/plafond de pierres – intérieur Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2A	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2B	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2C	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2D	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2E	Ciment gris	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2F	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2G	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2H	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2I	Ciment gris et brun	Murs extérieurs en pierres Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3A	Ciment gris et brun	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3B	Ciment gris et brun et plâtre blanc, beige et brun	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3C	Ciments gris et brun et plâtre blanc, beige et brun, présence de terre cuite	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3D	Ciment gris et brun et plâtre blanc et brun	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3E	Terre cuite rouge et grise, ciment gris et plâtre blanc et beige	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3F	Ciment gris et brun et plâtre blanc, présence de terre cuite	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3G	Ciment gris et brun et plâtre blanc, présence de terre cuite	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3H	Terre cuite rouge et grise, ciment gris et brun	Murs intérieurs en briques Secteur des cuisines	Non détectée	Non

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
	et plâtre blanc et beige	Mortier		
TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3I	Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	Murs intérieurs en briques Secteur des cuisines Mortier	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier des murs et plafonds de pierres intérieurs ne contient pas d'amiante;
- ▶ Le mortier des murs de pierres extérieurs ne contient pas d'amiante;
- ▶ Le mortier de brique des murs et plafonds du secteur de la cuisine ne contient pas d'amiante.

4.1.2 Casemates Ouest

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au musée familial sont présentés dans le tableau 2 ci-dessous.

Tableau 2 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés aux casemates Ouest et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1A	Ciment gris et brun et matériau beige	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1B	Ciment gris et brun	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1C	Ciment gris et matériau blanc, beige et gris	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1D	Ciment gris et matériau blanc et beige	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1 ^E	Ciment gris et brun	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1F	Ciment gris et matériau beige	Murs intérieurs en pierre	Non détectée	Non

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
		Mortier		
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1G	Ciment gris et brun et matériau blanc et beige	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1H	Ciment gris et matériau beige et blanc	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER INT-1I	Ciment gris et brun et matériau beige	Murs intérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2A	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2B	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2C	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2D	Ciments gris et matériau beige	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2E	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2F	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2G	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2H	Ciment gris et brun et matériau beige et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2I	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier des murs et plafonds de pierres intérieurs ne contient pas d'amiante;
- ▶ Le mortier des murs de pierres extérieurs ne contient pas d'amiante;

4.1.3 Logis des officiers

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au logis des officiers sont présentés dans le tableau 3 ci-dessous.

Tableau 3: Description des matériaux susceptibles de contenir de l'amiante échantillonnés au logis des officiers et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A	Ciment gris, plâtres blanc et gris et composés à joints beiges	Étage Mur en plâtre ciment	Non détectée	Oui, en raison de l'échantillon 1C
TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1B	Ciment gris et brun, plâtre gris et composé à joints beige	Étage Mur en plâtre ciment	Non détectée	Oui, en raison de l'échantillon 1C
TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1C	Ciments gris et brun, plâtre blanc et composés à joints beiges	Étage Mur en plâtre ciment	<i>Phase ciment : 0,1-1% chrysotile</i>	Oui
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2A	Ciment gris et brun	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2B	Laine isolante jaune, terre cuite rouge et ciment gris et brun	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2C	Ciment gris et brun et plâtre blanc	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2D	Ciment gris et brun	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2E	Terre cuite rouge et ciments gris et brun	Étage Brique des cheminées Mortier	Non détectée	Non

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2F	Ciment gris et brun	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2G	Terre cuite rouge, ciments gris et brun et plâtre blanc et beige	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2H	Terre cuite rouge, ciment gris et brun et plâtre blanc	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2I	Terre cuite rouge, ciment gris et brun et plâtre blanc et beige	Étage Brique des cheminées Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3A	Ciment gris et brun et plâtre blanc et gris	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3B	Ciment gris, plâtre blanc et gris, ciment beige, blanc et brun et composé à joints beige, présence de bois	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3C	Ciment gris, plâtre blanc et gris et composés à joints beiges	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3D	Ciment gris et brun, plâtre blanc et gris et composé à joints beige	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3E	Ciment beige, blanc et brun et composés à joints beiges	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3F	Ciment gris et brun et composé à joints beige	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3G	Ciment beige, blanc et brun et composés à joints beiges	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3H	Ciment gris et brun et composé à joints beige	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3I	Ciment gris et brun et composé à joints beige	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4A	Ciments gris	Murs extérieurs en pierre Mortier	Non détectée	Non

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4B	Ciment gris	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4C	Ciments gris et brun et matériau beige	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4D	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4E	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4F	Ciment gris et brun	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4G	Ciment gris	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4H	Ciment gris	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4I	Matériau brun et beige	Murs extérieurs en pierre Mortier	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-GRENIER-LAINE-5	Laine isolante jaune, présence de bois et de mousse isolante	Grenier Matériau isolant	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6A	Ciment beige, blanc et brun	Rez-de-chaussée Murs	Non détectée	Oui, en raison de l'échantillon 6B
TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6B	Ciment beige, blanc et brun, ciment gris et brun et composé à joints beige	Rez-de-chaussée Murs	Phase ciment gris et brun : Chrysotile 0,1-1%	Oui
TPSGC-LENNOX-OFFICIERS-RDC-MUR-CJ+G-7	Gypse beige et composés à joints beiges, présence de cartons	Rez-de-chaussée Murs	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-CAJ-8	Gypse beige et composés à joints beiges, présence de cartons	Étage Murs	Non détectée	Non
TPSGC-LENNOX-OFFICIERS-RDC-PF-CAJ-9	Gypse beige, composés à joints beiges et joint d'étanchéité beige, présence de cartons	Rez-de-chaussée Plafond	Non détectée	Non

TPSGC-LENNOX-OFFICIERS-EXT-PANNEAU PREFAB-10	Ciments gris et brun, présence de bois	Extérieur Panneaux au plafond, devant du bâtiment	Non détectée	Non
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Selon ces résultats :

- ▶ **Les murs en plâtre et ciment de l'étage contiennent de l'amiante de type chrysotile dans la phase ciment (0,1-1%);**
- ▶ Le mortier des cheminées en brique du bâtiment ne contient pas d'amiante;
- ▶ Les plafonds en plâtre et ciment de l'étage ne contiennent pas d'amiante;
- ▶ Le mortier des murs en pierres du bâtiment ne contient pas d'amiante;
- ▶ L'isolant jaune présent dans le grenier (entre-toit) du bâtiment ne contient pas d'amiante;
- ▶ **Les murs en plâtre et ciment du rez-de-chaussée contiennent de l'amiante de type chrysotile dans la phase ciment (0,1-1%);**
- ▶ Le composé à joints et le gypse des murs et plafonds au rez-de-chaussée ne contiennent pas d'amiante;
- ▶ Le composé à joints et le gypse des murs à l'étage ne contiennent pas d'amiante;
- ▶ Les panneaux préfabriqués présents à l'extérieur du bâtiment (plafond de l'entrée) ne contiennent pas d'amiante.

4.1.4 Magasin Sud

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au magasin Sud sont présentés dans le tableau 4 ci-dessous.

Tableau 4 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au magasin Sud et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-MAG SUD-RDC-P/C-1A	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1B	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1C	Ciments gris et brun et plâtre blanc et beige	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non

TPSGC-LENNOX-MAG SUD-RDC-P/C-1D	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1E	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1F	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1G	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1H	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-RDC-P/C-1I	Ciments gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafonds (arche)	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2A	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2B	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2C	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2D	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2E	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2F	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2G	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2H	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2I	Ciment gris et brun	Murs extérieurs Mortier	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3A	Ciment gris et brun et plâtre blanc	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3B	Ciment gris et brun et plâtre blanc, beige et brun	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3C	Ciment gris et brun et plâtre blanc	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3D	Ciment gris et brun et plâtre blanc	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3E	Ciments gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3F	Ciments gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non

TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3G	Ciments gris et brun et plâtre blanc, beige et brun	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3H	Ciments gris et brun et plâtre blanc, beige et brun	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3I	Ciments gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non

Selon ces résultats :

- ▶ Le plâtre et ciment présent au niveau des murs et du plafond (arche) au rez-de-chaussée ne contient pas d'amiante;
- ▶ Le mortier des murs de pierre du bâtiment ne contient pas d'amiante;
- ▶ Le plâtre et ciment présent au niveau des murs à l'étage ne contient pas d'amiante.

4.1.5 Magasin Nord

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au magasin Nord sont présentés dans le tableau 4 ci-dessous.

Tableau 5 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au magasin Nord et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1A	Ciment gris	Étage Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1B	Ciment gris	Étage Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1C	Ciment gris et plâtre blanc	Étage Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D	Ciment gris et plâtre blanc	Rez-de-chaussée Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1E	Terre cuite rouge, ciment gris et plâtres blanc, beige et gris	Rez-de-chaussée Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1F	Ciment gris et plâtre blanc	Rez-de-chaussée Murs Mortier de pierre	Non détectée	Non

TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1G	Ciment gris et brun et plâtre blanc et beige	Étage Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1H	Ciment gris	Rez-de-chaussée Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1I	Ciment gris	Étage Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A	Terre cuite rouge et ciments gris	Rez-de-chaussée Murs/plafond (arche) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2B	Terre cuite rouge et ciment gris	Rez-de-chaussée Murs/plafond (arche) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2C	Terre cuite rouge, ciment gris et plâtre blanc	Rez-de-chaussée Murs/plafond (arche) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2D	Ciment gris	Rez-de-chaussée Murs/plafond (arche) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2E	Ciment gris et brun, présence de terre cuite	Étage Arche (plancher) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2F	Ciment gris et brun	Étage Arche (plancher) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2G	Ciment gris et brun	Étage Arche (plancher) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2H	Ciment gris et brun	Étage Arche (plancher) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2I	Ciment gris et brun	Étage Arche (plancher) Mortier de brique	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3A	Terre cuite rouge, ciment gris et plâtre blanc	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3B	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3C	Terre cuite rouge, ciment gris et plâtre blanc	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3D	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non

TPSGC-LENNOX-MAG NORD-RDC-P/C-3E	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3F	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3G	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3H	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-RDC-P/C-3I	Terre cuite rouge, ciment gris et plâtres blanc et gris	Rez-de-chaussée Murs/plafond	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5B	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5C	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5D	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5E	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5F	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5G	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5H	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5I	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6A	Ciment gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6B	Ciment gris et plâtre blanc, beige et brun	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6C	Ciment gris et brun et plâtre blanc, beige et brun	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6D	Ciment gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6E	Terre cuite rouge, ciment gris et plâtre blanc et beige	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6F	Terre cuite rouge, ciment gris et plâtre blanc et beige	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6G	Ciment gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non

TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6H	Ciment gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non
TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6AI	Ciment gris et brun et plâtre blanc et beige	Étage Murs	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier de pierre des murs intérieurs (rez-de-chaussée et étage) du bâtiment ne contient pas d'amiante;
- ▶ Le mortier de brique des murs intérieurs ne contient pas d'amiante;
- ▶ Le plâtre et ciment présent sur les murs et le plafond du rez-de-chaussée (arche) ne contient pas d'amiante;
- ▶ Le plâtre et ciment présent sur les murs de l'étage ne contient pas d'amiante;
- ▶ Le mortier des murs extérieurs en pierres ne contient pas d'amiante.

4.1.6 Caserne

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante à la caserne sont présentés dans le tableau 6 ci-dessous.

Tableau 6 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés à la caserne et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A	Ciment gris et brun	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1B	Ciment gris et brun	Vide sanitaire Murs de fondation Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1C	Ciment gris et brun	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1D	Ciment gris et brun	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1E	Ciment gris et brun	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1F	Ciments gris et brun et plâtre blanc et beige	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1G	Ciments gris et brun et plâtre blanc et beige	Mortier de pierre	Non détecté	Non

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1H	Ciments gris et brun et plâtre blanc et beige	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1I	Ciment gris et brun	Mortier de pierre	Non détecté	Non
TPSGC-LENNOX-CASERNE-TV-PL-2	Tuiles de vinyle vert	Plancher Tuiles de vinyle vert	Non détecté	Non
TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A	Ciments gris et brun et composé à joints beige	Rez-de-chaussée Mur Mortier de brique	Phase composé à joints : 0,1-1% chrysotile	Oui
TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4B	Ciments gris et brun et composé à joints beige	Rez-de-chaussée Mur Mortier de brique	Phase composé à joints : 0,1-1% chrysotile	Oui
TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4C	Ciment gris et brun, présence de terre cuite	Rez-de-chaussée Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4D	Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	Rez-de-chaussée Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4E	Ciment gris et brun, présence de terre cuite	Étage Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4F	Ciment gris et brun, présence de terre cuite	Étage Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4G	Ciment gris et brun et plâtre blanc et beige	Étage Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4H	Ciment gris et brun et plâtre blanc	Étage Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4I	Ciment gris et brun	Étage Mur Mortier de brique	Non détectée	Oui, en raison des échantillons 4A; 4B
TPSGC-LENNOX-CASERNE-RDC-MUR-CJ+G-5	Gypse beige et composé à joints beige, présence de carton et d'un treillis de filaments de verre	Rez-de-chaussée Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A	Ciment gris et brun	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6B	Ciment gris et brun	Étage Plafond	Non détectée	Non

TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6C	Ciment gris et brun	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6D	Ciment gris et brun	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6E	Ciment gris et brun	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6F	Ciments gris et brun et plâtre blanc et beige	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6G	Ciment gris et brun et plâtre blanc et beige	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6H	Ciments gris et brun et plâtre blanc	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6I	Ciment gris et brun	Étage Plafond	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7A	Plâtres blanc, beige et gris	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7B	Ciment gris et brun et plâtre blanc et beige	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7C	Ciments gris et brun et plâtre blanc et beige	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7D	Plâtre blanc et beige, présence de terre cuite	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7E	Plâtre blanc et beige, présence de terre cuite	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7F	Ciment gris et plâtre blanc et beige, présence de terre cuite	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7G	Plâtre blanc et beige, présence de bois	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7H	Plâtre blanc et beige, présence de terre cuite	Étage Mur	Non détectée	Non
TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7I	Plâtres blanc, beige et gris	Étage Mur	Non détectée	Non

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A	Ciment gris et plâtres blanc, beige et gris, présence de bois	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8B	Ciment gris et brun et plâtres blanc, beige et gris	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8C	Ciment gris et plâtre blanc	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8D	Ciments gris, plâtres blanc et beige et composés à joints beiges, présence de terre cuite	Rez-de-chaussée Mur	<i>Phase composé à joints : 0,1-1% chrysotile</i>	Oui
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8E	Ciment gris et plâtre blanc, beige et brun	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8F	Ciment gris et brun et plâtre blanc et beige	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8G	Ciment gris et brun et plâtre blanc, beige et brun	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8H	Ciments gris et brun et plâtre blanc, beige et brun	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D
TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8I	Ciment gris et brun et plâtres blanc, beige et gris	Rez-de-chaussée Mur	Non détectée	Oui, en raison de l'échantillon 8D

Selon ces résultats :

- ▶ Le mortier de pierre du bâtiment (vide sanitaire et murs extérieurs) ne contient pas d'amiante;
- ▶ Les tuiles de vinyle bleues au plancher de la salle de bain familiale au rez-de-chaussée ne contiennent pas d'amiante;
- ▶ **Le mortier de brique des murs et du plafond du bâtiment (arches) contient de l'amiante de type chrysotile (0,1-1%) dans la phase composé à joints;**
- ▶ Le composé à joints et les panneaux de gypse des murs du rez-de-chaussée ne contiennent pas d'amiante;
- ▶ Le plâtre et ciment sur lattes de bois des plafonds de l'étage ne contient pas d'amiante;
- ▶ Le plâtre et ciment appliqué sur les murs de l'étage ne contient pas d'amiante;

- **Le plâtre et ciment appliqué sur les murs et le plafond du rez-de-chaussée (arches) contient de l'amiante de type chrysotile (0,1-1%) dans la phase composé à joints;**

4.1.7 Corps de garde

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au corps de garde sont présentés dans le tableau 7 ci-dessous.

Tableau 7 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au Corps de garde et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A	Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1B	Ciment gris et brun et plâtre blanc, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1C	Ciment gris et brun et plâtre blanc, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1D	Ciment gris et brun, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1E	Ciment gris et brun et plâtre blanc, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1F	Ciment gris et brun, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1G	Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1H	Terre cuite rouge, ciment gris et brun et plâtre blanc et beige	Rez-de-chaussée Mortier de brique	Non détectée	Non

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1I	Terre cuite rouge, ciment gris et plâtre blanc et beige	Rez-de-chaussée Mortier de brique	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2A	Terre cuite rouge, ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2B	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2C	Terre cuite rouge, ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2D	Ciments gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2E	Ciments gris et brun et plâtre blanc et beige, présence de terre cuite	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2F	Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G	Ciment gris et brun et plâtres blancs et beiges, présence de terre cuite	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2H	Ciment gris et brun et plâtre blanc et beige	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2I	Ciment gris et brun et plâtre blanc	Rez-de-chaussée Murs/plafond (arche)	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3A	Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3B	Ciment gris et brun et plâtre blanc, gris et brun, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3C	Ciment gris et brun et plâtre blanc et gris, présence de terre cuite	Étage Colonnes	Non détectée	Non

TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3D	Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3E	Ciment gris et brun et plâtre blanc, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3F	Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3G	Ciment gris et brun et plâtres blanc et gris	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3H	Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3I	Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	Étage Colonnes	Non détectée	Non
TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4A	Ciment gris et brun et plâtre blanc et gris	Étage Murs	Non détectée	Oui, en raison de l'échantillon 4B
TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4B	Ciment gris et brun, plâtre blanc et gris et composé à joints beige	Étage Murs	Phase ciment : 0,1-1% chrysotile	Oui
TPSGC-LENNOX-CORPS-EXT-MORTIER-5A	Ciment gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5B	Ciments gris	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5C	Ciment gris et brun, plâtre blanc et beige et matériau beige et gris	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5D	Ciment gris, plâtre blanc et beige et matériau beige et gris	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5E	Ciments gris et brun	Extérieur Mortier de pierre	Non détectée	Non

TPSGC-LENNOX-CORPS-EXT-MORTIER-5F	Ciments gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5G	Ciments gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5H	Ciments gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-MORTIER-5I	Ciments gris et brun	Extérieur Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-CORPS-EXT-PANNEAU PREFAB-6	Ciment gris et brun	Extérieur Panneaux préfabriqués au plafond à l'entrée du bâtiment	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier de briques des murs du bâtiment ne contient pas d'amiante;
- ▶ Le plâtre et ciment des murs et plafonds (arche) du rez-de-chaussée ne contient pas d'amiante;
- ▶ Le plâtre et ciment présent au niveau des colonnes de l'étage ne contient pas d'amiante;
- ▶ **Le plâtre et ciment présent au niveau des murs de l'étage du bâtiment contient de l'amiante de type chrysotile (0,1-1%);**
- ▶ Le mortier des murs de pierre extérieurs du bâtiment ne contient pas d'amiante;
- ▶ Les panneaux préfabriqués présents à l'extérieur du bâtiment (plafond de l'entrée) ne contiennent pas d'amiante.

4.1.8 Poudrière

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante dans le bâtiment de la Poudrière sont présentés dans le tableau 8 ci-dessous.

Tableau 8 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés à la poudrière et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1A	Ciment gris et brun, présence de terre cuite	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1B	Ciment gris et brun, présence de terre cuite	Murs/plafond intérieurs Mortier de brique	Non détectée	Non

TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1C	Terre cuite rouge et ciment gris et brun	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1D	Terre cuite rouge, ciment gris et brun et plâtre blanc	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1E	Terre cuite rouge et ciment gris et brun	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1F	Terre cuite rouge, ciment gris et brun et plâtre blanc	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1G	Terre cuite rouge et ciment gris et brun	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1H	Terre cuite rouge et ciment gris et brun	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1I	Terre cuite rouge et ciments gris et bruns	Murs/plafond intérieurs Mortier de brique	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2A	Ciments gris et brun et plâtre blanc	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2B	Ciment gris et brun	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2C	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2D	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2E	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2F	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2G	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2H	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2I	Ciments gris et bruns	Murs extérieurs Mortier de pierre	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier des murs de pierre du bâtiment ne contient pas d'amiante;
- ▶ Le mortier des murs et plafonds de brique (arche) du bâtiment ne contient pas d'amiante.

4.1.9 Passage et porte Nord

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au passage et à la porte Nord sont présentés dans le tableau 9 ci-dessous.

Tableau 9 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au passage et à la porte Nord et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1A	Ciments gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1B	Ciments gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1C	Ciments gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1D	Ciments gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1E	Ciments gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1F	Ciments gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1G	Ciment gris et brun et plâtre blanc et beige	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1H	Ciments gris et brun et plâtre blanc et beige	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-1I	Ciments gris et brun et plâtre beige	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2A	Ciment gris	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2B	Ciment gris	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2C	Ciment gris	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2D	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2E	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2F	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2G	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2H	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE N-MUR-MORTIER-2I	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non

Selon ces résultats :

- ▶ Les deux (2) types de mortier de pierre prélevés (couches supérieure et inférieure) au niveau des murs du passage ne contiennent pas d'amiante.

4.1.10 Passage Sud

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au passage Sud sont présentés dans le tableau 10 ci-dessous.

Tableau 10 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au passage Sud et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-PORTE SUD-MORTIER-1A	Ciment gris et brun, présence de plâtre	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1B	Ciment gris et brun et plâtre blanc	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1C	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1D	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1E	Ciment gris et brun et plâtre blanc	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1F	Ciment gris et brun, présence de plâtre	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1G	Ciment gris et brun et plâtre blanc et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1H	Ciment gris et brun et plâtre blanc et beige	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PORTE SUD-MORTIER-1I	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non

Selon ces résultats :

- Le mortier de pierre des murs du passage sud ne contient pas d'amiante.

4.1.11 Passage Redan

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au passage Redan sont présentés dans le tableau 11 ci-dessous.

Tableau 11 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au passage Redan et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1A	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1B	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1C	Ciment gris	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1D	Ciment gris	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1E	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1F	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1G	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1H	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1I	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non

Selon ces résultats :

- Le mortier de pierre des murs du passage Redan ne contient pas d'amiante.

4.1.12 Latrines

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante dans les latrines sont présentés dans le tableau 12 ci-dessous.

Tableau 12 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés dans les latrines et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-LATRINES-MORTIER EXT-1A	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1B	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1C	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1D	Ciment gris et brun, présence de plâtre	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1E	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1F	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1G	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1H	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-MORTIER EXT-1I	Ciment gris et brun	Murs Mortier de pierre	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2A	Ciments gris	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2B	Ciment gris et brun	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2C	Ciments gris et brun	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2D	Ciments gris et brun	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2E	Ciments gris et brun	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2F	Ciments gris et bruns	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2G	Ciments gris et brun et plâtre beige	Murs intérieurs	Non détectée	Non

TPSGC-LENNOX-LATRINES-CIMENT INT-2H	Ciments gris et brun	Murs intérieurs	Non détectée	Non
TPSGC-LENNOX-LATRINES-CIMENT INT-2I	Ciments gris et brun et plâtre beige	Murs intérieurs	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier de pierre des latrines ne contient pas d'amiante;
- ▶ Le matériau cimentaire présent au niveau de certains murs intérieurs ne contient pas d'amiante.

4.1.13 Bâtiment des toilettes

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante dans le bâtiment des toilettes sont présentés dans le tableau 13 ci-dessous.

Tableau 13 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés dans le bâtiment des toilettes et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1A	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1B	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1C	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1D	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1E	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1F	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1G	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1H	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non
TPSGC-LENNOX-TOILETTES-MORTIER EXT-1I	Ciment gris et brun	Extérieur Murs Mortier blocs	Non détectée	Non

Selon ces résultats :

- ▶ Le mortier présent au niveau des murs extérieurs ne contient pas d'amiante.

4.1.14 Garage/atelier

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante au garage/atelier sont présentés dans le tableau 14 ci-dessous.

Tableau 14 : Description des matériaux susceptibles de contenir de l'amiante échantillonnés au garage/atelier et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-GARAGE AT-EXT-JOINT-1	Joint d'étanchéité gris, présence de mousse isolante	Extérieur Fenêtres	Non détectée	Non
TPSGC-LENNOX-GARAGE AT-SDB-PF-TA-2	Tuile acoustique brune et blanche	Salle de bain Plafond	Non détectée	Non
TPSGC-LENNOX-GARAGE AT-BUREAU-PF-TA-3	Tuile acoustique beige et blanche	Bureau Plafond	Non détectée	Non
TPSGC-LENNOX-GARAGE-AT-PL-TV-4	Tuiles de vinyle blanc	Entrée de la salle de repos Plancher	< 0,1% chrysotile	Non
TPSGC-LENNOX-GARAGE-AT-SDB-PL-LINOLEUM-5	Linoléum marbré	Toilette Plancher	Non détectée	Non

Selon ces résultats :

- ▶ Le joint d'étanchéité appliqué au pourtour des fenêtres extérieures ne contient pas d'amiante;
- ▶ Les tuiles acoustiques de deux (2) types échantillonnées dans le bâtiment ne contiennent pas d'amiante;
- ▶ Les tuiles de vinyle blanc au plancher du bâtiment ne contiennent pas d'amiante;
- ▶ Le linoléum marbré au plancher de la toilette ne contient pas d'amiante.

4.1.15 Centre d'accueil

Les résultats analytiques de l'échantillonnage des matériaux susceptibles de contenir de l'amiante dans le bâtiment du Centre d'accueil sont présentés dans le tableau 15 ci-dessous.

Tableau 15 : Description des matériaux échantillonnés susceptibles de contenir de l'amiante au centre d'accueil et résultats analytiques

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DU MATÉRIAU	LIEU DE PRÉLÈVEMENT	TYPE DE FIBRE D'AMIANTE	MATÉRIAU CONTENANT DE L'AMIANTE (OUI/NON)
TPSGC-LENNOX-ACCUEIL-EXT-JOINT-1	Joint d'étanchéité brun, présence de bois	Extérieur Fenêtres	Non détectée	Non

Selon ces résultats :

- ▶ Le joint d'étanchéité appliqué au pourtour des fenêtres extérieures ne contient pas d'amiante;

4.2 PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB

Les résultats analytiques de l'échantillonnage des peintures susceptibles de contenir du plomb au Fort-Lennox sont présentés dans le tableau 16 ci-dessous.

Tableau 16 : Résultats analytiques des peintures susceptibles de contenir du plomb échantillonnées au Fort-Lennox

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DE LA PEINTURE ÉCHANTILLONNÉE	CONCENTRATION TOTALE DE PLOMB (mg/kg)
Casemates Nord		
TPSGC-Lennox-Casemates N-Peint-BI-1	Peinture blanche	41
TPSGC-Lennox-Casemates N-Peint-Vert-2	Peinture verte	30
Casemates Ouest		
TPSGC-Lennox-Casemates O-Peint-vert-1	Peinture verte	7
Logis des officiers		
TPSGC-Lennox-Officier-Peint-BI-1	Peinture blanche	106 000
TPSGC-Lennox-Officier-Peint-verte-2	Peinture verte	3 360
TPSGC-Lennox-Officier-Peint-BI-3	Peinture blanche	10 500
TPSGC-Lennox-Officier-Peint-gris-4	Peinture grise	737
Magasin Sud		
TPSGC-Lennox-MAG Sud-Peint-BI-1	Peinture blanche	3
TPSGC-Lennox-MAG Sud-Peint-vert-2	Peinture verte	1 780
Magasin Nord		
TPSGC-Lennox-MAG Nord-Peint-vert-1	Peinture verte	563
TPSGC-Lennox-MAG Nord-Peint-BI-2	Peinture blanche	7
Caserne		
TPSGC-Lennox-Caserne-Peint-BI-1	Peinture blanche	143
TPSGC-Lennox-Caserne-Peint-verte-2	Peinture verte	835
TPSGC-Lennox-Caserne-Peint-gris-3	Peinture grise	530
Corps de garde		
TPSGC-Lennox-Corps-Peint-BI-1	Peinture blanche	7
TPSGC-Lennox-Corps-Peint-vert-2	Peinture verte	8 070
Poudrière		
TPSGC-Lennox-Poudrière-Peint-vert-1	Peinture verte	821
Passage et porte Nord		
TPSGC-Lennox-Porte N-Peint-vert-1	Peinture verte	228
Bâtiment des toilettes		
TPSGC-Lennox-Toilettes-Peint-BI-1	Peinture blanche	5

NUMÉRO D'ÉCHANTILLON	DESCRIPTION DE LA PEINTURE ÉCHANTILLONNÉE	CONCENTRATION TOTALE DE PLOMB (mg/kg)
TPSGC-Lennox-Toilettes-Peint-gris-2	Peinture grise	335
Garage/atelier		
TPSGC-Lennox-Garage AT-Peint-gris-1	Peinture grise	2 420
TPSGC-Lennox-Garage AT-Peint-vert-2	Peinture verte	5
TPSGC-Lennox-Garage AT-Peint-beige+tur-3	Peinture beige et turquoise	36
Accueil		
TPSGC-Lennox-Accueil-Peint-Bleue-1	Peinture bleue	<1

5 MESURES D'INTERVENTION

Les mesures d'intervention à appliquer au niveau des MCA en vertu du Programme de gestion de l'amiante de TPSGC sont présentées dans le Tableau 17 ci-dessous.

Tableau 16 : Mesures d'intervention selon la PM 057 de TPSGC

MATÉRIAU CONTENANT DE L'AMIANTE (MCA)	ÉTAT	DÉBRIS	QUANTITÉ DE MCA ENDOMMAGÉS	MESURE D'INTERVENTION
Logis des officiers				
Rez-de-chaussée – Murs en plâtre ciment (général)	Bon	S.O.	S.O.	7
Rez-de-chaussée – Murs en plâtre ciment (conciergerie)	Mauvais	Oui	+/- 100 pi ²	1
Étage – Murs en plâtre ciment (général)	Bon	S.O.	S.O.	7
Étage – Murs en plâtre ciment (chaufferie, ancienne section de mur sur pierres)	Mauvais	Non	+/- 10 pi ²	3
Étage – Murs en plâtre ciment (chaufferie, fissures)	Passable	Non	+/- 5 pi ²	6
Caserne				
Rez-de-chaussée – Mortier de briques des murs	Bon	Non	S.O.	7
Rez-de-chaussée- Plâtre ciment sur murs/plafonds de briques (général)	Bon	Non	S.O.	7
Rez-de-chaussée- Plâtre ciment sur murs/plafonds de briques (endommagé par endroits seulement)	Passable	Non	+/- 250 pi ²	6
Rez-de-chaussée- Plâtre ciment sur murs/plafonds de briques (entrepôt)	Mauvais	Oui	+/- 1 200 pi ²	1
Étage – Mortier de brique des murs	Bon	Non	S.O.	7
Corps de garde				
Étage – Plâtre ciment sur les murs	Mauvais	Oui	+/- 750 pi ²	1

6 CONCLUSION ET RECOMMANDATIONS

6.1 MATÉRIAUX CONTENANT DE L'AMIANTE

Les travaux de caractérisation des matériaux susceptibles de contenir de l'amiante dans les bâtiments du lieu historique national du Canada du Fort-Lennox situé à St-Paul-de-l'Île-aux-Noix ont permis de détecter la présence d'amiante dans certains matériaux dans le logis des officiers, la caserne et le corps de garde.

La majorité des matériaux contenant de l'amiante identifiés étaient en bon état au moment de notre inspection. Pour ces matériaux, une surveillance périodique et l'élaboration d'un programme de gestion des MCA sont recommandées, conformément à la mesure d'intervention 7 de la PM 057 de TPSGC.

Cependant, dans certains cas, nous avons observé des dommages sur des matériaux contenant de l'amiante, notamment :

► Logis des officiers

- Les murs en plâtre ciment dans la conciergerie au rez-de-chaussée, sur environ 100 pi² de superficie;
- Les murs en plâtre ciment dans la chaufferie à l'étage;

► Caserne

- Le plâtre ciment sur les murs et le plafond de briques (arche) dans l'entrepôt au rez-de-chaussée (phase composé à joints), sur environ 1200 pi² de superficie;
- Le plâtre ciment sur les murs et le plafond (arches) dans les autres locaux au rez-de-chaussée (phase composé à joints), sur environ 250 pi² de superficie;

► Corps de garde

- Le plâtre ciment sur les murs à l'étage du bâtiment, sur environ 750 pi² de superficie.

Pour ces matériaux en mauvais état, nous recommandons que les débris soient nettoyés et que ces parties soient enlevées, selon les mesures 1 et 3 de la PM 057 de TPSGC. Les matériaux en état passable doivent être réparés ou stabilisés selon la mesure 6 de la PM057 de TPSGC.

Si des travaux de rénovation impliquant des MCA sont prévus dans le futur, ceux-ci devront être exécutés selon les procédures de travail édictées au *Code de sécurité pour les travaux de construction* (article 3.23).

De plus, lors de tels travaux, un devis spécifique aux travaux en condition d'amiante devrait être rédigé afin de se conformer aux procédures énoncées dans le *Code de sécurité pour les travaux de construction*.

6.2 PEINTURES CONTENANT DU PLOMB

Les travaux de caractérisation des peintures susceptibles de contenir du plomb dans les bâtiments du lieu historique national du Canada du Fort-Lennox ont permis de déceler la présence de plomb dans plusieurs des peintures échantillonnées.

Si des travaux de rénovation prévus impliquent des peintures contenant du plomb, un devis spécifique aux travaux en présence de plomb devrait être rédigé afin de se conformer aux procédures énoncées dans le *Code de sécurité pour les travaux de construction du Québec*. Le risque d'exposition au plomb durant ces éventuels travaux sera alors géré en fonction des méthodes et procédures de travaux appliqués et selon la réglementation en vigueur au niveau municipal, provincial ou fédéral.

PRÉLIMINAIRE

PRÉLIMINAIRE

Annexe 1

Relevé photographique

Casemates Nord



Photo 1: Vue générale de l'extérieur des casemates Nord
L'emplacement des fenêtres représente la cuisine
Murs extérieurs en pierre carrée et mortier (TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2A-I) – ne contiennent pas d'amiante
Peinture blanche sur les fenêtres de la cuisine
Peinture verte sur les portes



Photo 2: Murs et plafonds (arche) en briques et mortier dans le secteur des cuisines
Mortier de brique (TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3A-I) – ne contient pas d'amiante



Photo 3: Murs et plafonds (arche) en briques et mortier dans le secteur des cuisines
Mortier de brique (TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3A-I) – ne contient pas d’amiante



Photo 4: Murs et plafond (arche) des casemates (sauf cuisines) en pierre et mortier
Mortier de pierre intérieur (TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1A-I) – ne contient pas d’amiante

Casemates Ouest



Photo 5: Vue extérieure des casemates Ouest
Peinture verte sur les portes
Murs extérieurs en pierres carrées et mortier (TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2A-I) – ne contient pas d'amiante



Photo 6: Murs et plafond (arche) des casemates en pierre et mortier
Mortier de pierre intérieur (TPSGC-LENNOX-CASEMATES O-MORTIER INT-1A-I) – ne contient pas d'amiante



Photo 7: Vue extérieure des casemates Ouest
Murs extérieurs en pierres carrées et mortier (TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2A-I) – ne contient pas d'amiante



Photo 8: Entrée à la salle électrique



Photo 9: Salle électrique, vue générale de l'intérieur
Plafond et murs en béton
Tuyauterie non isolée ou isolée avec de la laine de verre/armaflex



Photo 10: Salle électrique
Plancher de béton



Photo 11: Salle électrique
Plafond et murs en béton
Conduits de ventilation isolés en laine de verre
Conduit d'évacuation de la génératrice et réservoir – impossible de vérifier les matériaux (semble récent)

Logis des officiers



Photo 12: Étage
Plâtre ciment au niveau des murs (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) - contient 0,1-1% d'amiante de type chrysotile



Photo 13: Étage
Plâtre ciment au niveau des murs (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) - contient 0,1-1% d'amiante de type chrysotile

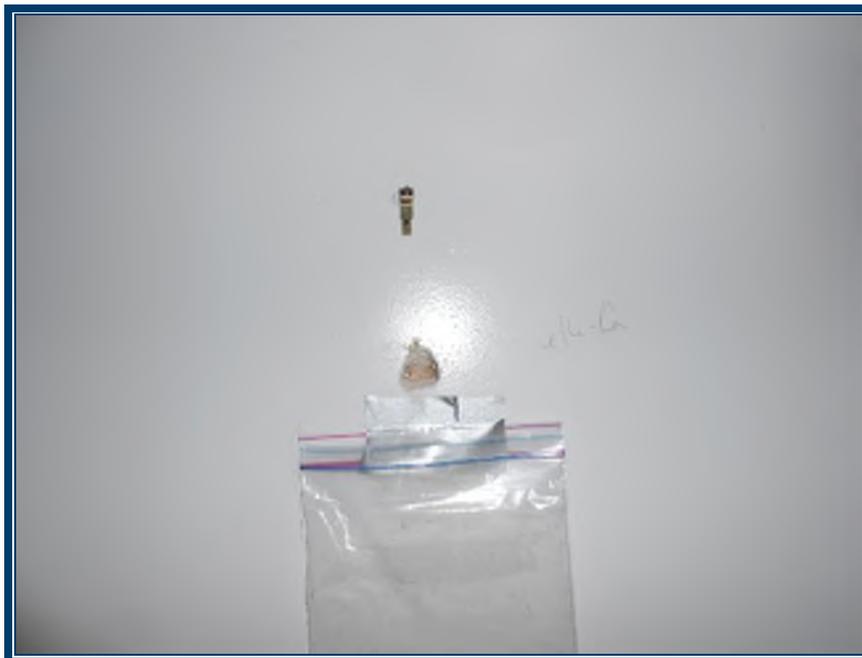


Photo 14: Étage
Plâtre ciment au niveau des murs (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) - contient 0,1-1% d'amiante de type chrysotile



Photo 15: Étage, armoire près de la cheminée
Plâtre ciment au niveau des murs (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) - contient 0,1-1% d'amiante de type chrysotile
Mortier de brique (TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2A-I) – ne contient pas d'amiante



Photo 16: Étage, armoire près de la cheminée
Plâtre ciment sur lattes de bois, vue de l'intérieur des murs du corridor principal (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) - contient 0,1-1% d'amiante de type chrysotile



Photo 17: Étage, armoire près de la cheminée
Mortier de brique (TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2A-I) – ne contient pas d’amiante



Photo 18: Étage, chaufferie
Plâtre ciment au mur (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) - contient 0,1-1% d’amiante de type chrysotile
Plâtre ciment au plafond (TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3A-I) – ne contient pas d’amiante
Mur en pierre et mortier (TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4A-I) – ne contient pas d’amiante



Photo 19: Grenier du bâtiment
Laine isolante jaune au plancher



Photo 20: Grenier du bâtiment
Structure et plafond en bois
Tuyauterie non isolée
Conduits de ventilation isolés en laine de verre
Cheminée en brique et mortier (TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2A-I) – ne contient pas d'amiante



Photo 21: Étage
Plafond en plâtre ciment dans le corridor (TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3A-I) – ne contient pas d’amiante



Photo 22: Étage
Plafond en plâtre ciment dans la salle de bain (TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3A-I) – ne contient pas d’amiante



Photo 23: Étage
Mur en plâtre ciment dans l'armoire du salon (TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A-I) -
contient 0,1-1% d'amiante de type chrysotile



Photo 24: Étage
Plafond en plâtre ciment endommagé dans la chaufferie (TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-
3A-I) – ne contient pas d'amiante

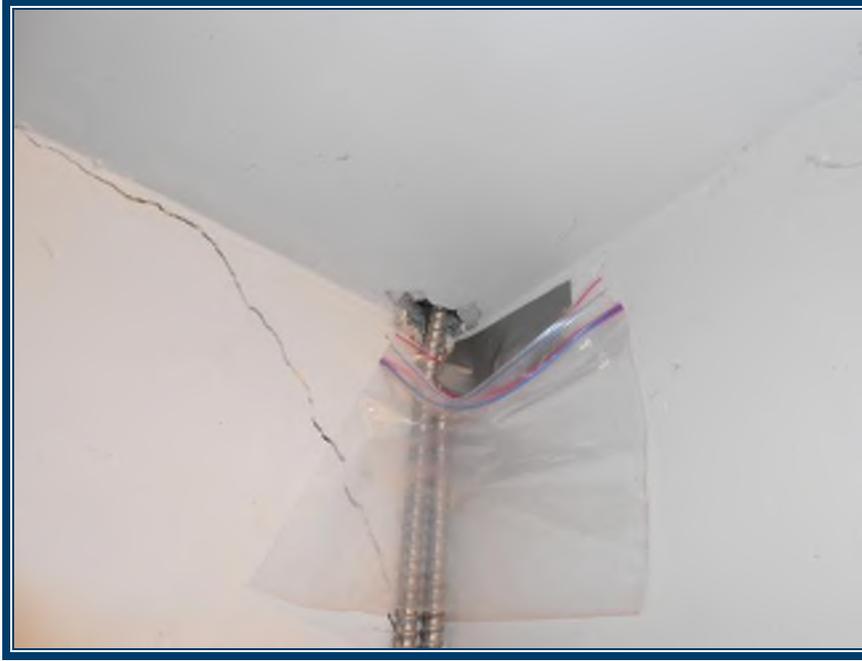


Photo 25: Étage
Murs et plafond en plâtre ciment dans la chaufferie (TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3A-I) – ne contient pas d'amiante



Photo 26: Rez-de-chaussée
Mur en plâtre ciment en mauvais état et débris dans la conciergerie (TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6A-I) – contient 0,1-1% d'amiante de type chrysotile dans la phase ciment



Photo 27: Rez-de-chaussée
Mur en plâtre ciment en-dessous de l'escalier (TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6A-I) – contient 0,1-1% d'amiante de type chrysotile dans la phase ciment



Photo 28: Vide sanitaire du bâtiment
Tuyauterie isolée avec de la laine de verre ou avec un isolant de type armaflex



Photo 29: Rez-de-chaussée, vue générale
Murs en plâtre ciment (TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6A-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase ciment
Plafond en gypse



Photo 30: Vue de la façade avant du logis des officiers
Mur en pierre et mortier (TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4A-I) – ne contient pas d’amiante



Photo 31: Extérieur
Plafond en panneaux préfabriqués (TPSGC-LENNOX-OFFICIERS-EXT-PANNEAU PREFAB-10) – ne contient pas d’amiante

Magasin Sud



Photo 32: Vue générale de l’extérieur du bâtiment
Mortier entre les pierres carrées (TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2A-I) – ne contient pas d’amiante
Peinture verte sur les portes du bâtiment et volets



Photo 33: Rez-de-chaussée
Murs et plafond (arche) au rez-de-chaussée en pierre recouvertes de plâtre ciment
Plâtre ciment (TPSGC-LENNOX-MAG SUD-RDC-P/C-1A-I) – ne contient pas d’amiante
Plancher de bois



Photo 34: Rez-de-chaussée
Murs au rez-de-chaussée en pierre recouvertes de plâtre ciment
Plâtre ciment (TPSGC-LENNOX-MAG SUD-RDC-P/C-1A-I) – ne contient pas d’amiante
Mortier de pierre (TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A-I) – ne contient pas d’amiante



Photo 35: Rez-de-chaussée
Murs au rez-de-chaussée en pierre recouvertes de plâtre ciment
Plâtre ciment (TPSGC-LENNOX-MAG SUD-RDC-P/C-1A-I) – ne contient pas d’amiante
Peinture verte sur la porte d’entrée du bâtiment



Photo 36: Rez-de-chaussée
Plâtre ciment sur pierres au niveau de la tour composant la cage d’escalier (TPSGC-LENNOX-MAG SUD-RDC-P/C-1A-I) – ne contient pas d’amiante



Photo 37: Étage
Plâtre ciment appliqué sur pierre au niveau des murs
Plâtre ciment (TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3A-I) – ne contient pas d’amiante
Mortier de pierre (réf. TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A-I) – ne contient pas d’amiante
Plancher de bois
Structure du plafond en bois



Photo 38: Étage
Plâtre ciment appliqué sur pierre au niveau des murs
Plâtre ciment (TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3A-I) – ne contient pas d’amiante
Mortier de pierre (réf. TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A-I) – ne contient pas d’amiante
Plancher de bois
Structure du plafond en bois

Magasin Nord

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CARACTÉRISATION DES MATÉRIEAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB – LIEU HISTORIQUE NATIONAL DU FORT-LENNOX À ST-PAUL-DE-L'ÎLE-AUX-NOIX



Photo 39: Rez-de-chaussée
Murs et plafond (arche) en brique et plâtre ciment
Mortier de brique (TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A, B, C, D) – ne contient pas d’amiante
Peinture blanche au niveau des murs et du plafond



Photo 40: Rez-de-chaussée
Mortier de brique (TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A, B, C, D) – ne contient pas d’amiante
Mortier de pierre (TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D, E, F, H) – ne contient pas d’amiante
Plâtre ciment (TPSGC-LENNOX-MAG NORD-RDC-P/C-3A-I) – ne contient pas d’amiante



Photo 41: Rez-de-chaussée
Plancher de bois



Photo 42: Rez-de-chaussée
Mortier de brique (TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A, B, C, D) – ne contient pas d’amiante
Mortier de pierre (TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D, E, F, H) – ne contient pas d’amiante
Plâtre ciment (TPSGC-LENNOX-MAG NORD-RDC-P/C-3A-I) – ne contient pas d’amiante



Photo 43: Rez-de-chaussée, vestibule d'entrée
Mortier de brique (TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A, B, C, D) – ne contient pas d'amiante
Mortier de pierre (TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D, E, F, H) – ne contient pas d'amiante
Plâtre ciment (TPSGC-LENNOX-MAG NORD-RDC-P/C-3A-I) – ne contient pas d'amiante
Peinture verte sur la porte d'entrée du bâtiment

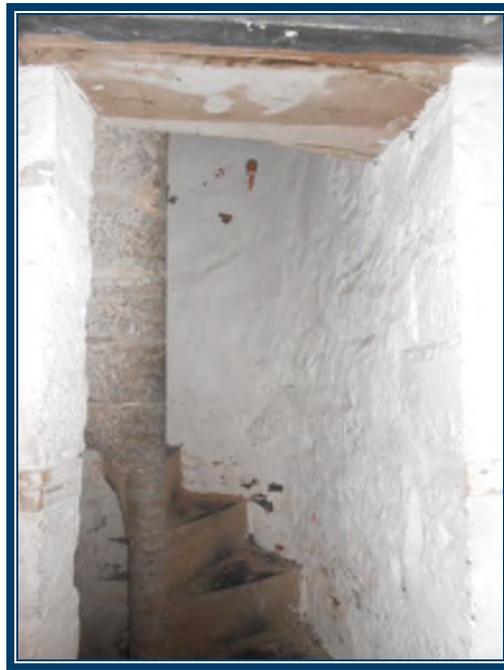


Photo 44: Cage d'escalier vers le 2^e étage
Mortier de brique (TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A, B, C, D) – ne contient pas d'amiante
Mortier de pierre (TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D, E, F, H) – ne contient pas d'amiante



Photo 45: 2^e étage
Plafond et structure de l'étage en bois
Mortier de brique correspondant aux arches du rez-de-chaussée (TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2E, F, G, H, I) – ne contient pas d'amiante
Mortier de pierre au niveau des murs (TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1A, B, C, G, I) – ne contient pas d'amiante



Photo 46: 2^e étage
Plafond et structure de l'étage en bois
Mortier de pierre au niveau des murs (TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1A, B, C, G, I) – ne contient pas d'amiante



Photo 47: 2^e étage
Plancher de bois
Mortier de brique correspondant aux arches du rez-de-chaussée (TPSGC-LENNOX-MAG NORD-RDC-
MORTIER BRIQUE-2E, F, G, H, I) – ne contient pas d’amiante



Photo 48: 2^e étage
Plâtre ciment appliqué à certains endroits sur les murs de pierre (TPSGC-LENNOX-MAG NORD-ETAGE-
P/C-6A-I) – ne contient pas d’amiante



Photo 49: Vue générale de l'extérieur du bâtiment
Mortier entre les pierres carrées (TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A-I) – ne contient pas d'amiante
Peinture verte sur les portes du bâtiment et volets

Caserne



Photo 50: Vide sanitaire de la caserne
Mortier de pierre (TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A-I) – ne contient pas d'amiante



Photo 51: Vide sanitaire de la caserne
Mortier de pierre (TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A-I) – ne contient pas d’amiante
Tuyauterie non isolée



Photo 52: Rez-de-chaussée, toilette familiale
Tuiles de vinyle bleu au plancher (TPSGC-LENNOX-CASERNE-TV-PL-2) – ne contiennent pas d’amiante



Photo 53: Vide sanitaire de la caserne
Mortier de pierre (TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A-I) – ne contient pas d’amiante



Photo 54: Rez-de-chaussée, entrepôt (local 115)
Plâtre ciment des murs/plafonds en mauvais état (TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A-D) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints



Photo 55: Rez-de-chaussée, entrepôt (local 115)
Plâtre ciment des murs/plafonds en mauvais état (TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A-D) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints



Photo 56: Rez-de-chaussée, entrepôt (local 115)
Plâtre ciment des murs/plafonds en mauvais état (TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A-D) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints



Photo 57: Portes extérieures du bâtiment peint en vert
Mortier de pierre des murs (TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A-I) – ne contient pas d’amiante

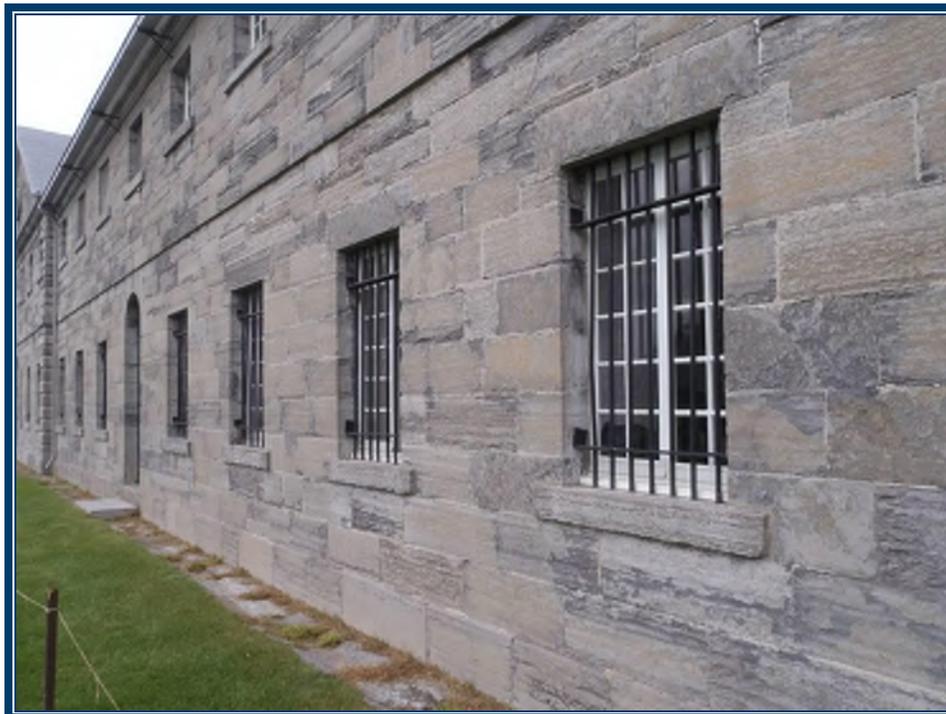


Photo 58: Vue de la façade avant de la caserne
Mortier de pierre des murs (TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A-I) – ne contient pas d’amiante



Photo 59: Rez-de-chaussée
 Vue générale des murs/plafonds formant des arches
Plâtre ciment des murs/plafonds (TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A-D) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints



Photo 60: Rez-de-chaussée, toilette des femmes
 Plancher de céramique
Plâtre ciment des murs/plafonds (TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A-D) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints



Photo 61: Rez-de-chaussée, toilette familiale
Murs de division en panneaux de gypse (TPSGC-LENNOX-CASERNE-RDC-MUR-CJ+G-5) - ne contiennent pas d'amiante



Photo 62: Grenier, vue du plafond de l'étage en plâtre ciment sur lattes de bois (TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A) – ne contient pas d'amiante
Laine de verre au plancher du grenier – n'est pas susceptible de contenir de l'amiante



Photo 63: Grenier, vue de la structure en bois du bâtiment et des murs en pierre et mortier
Mortier de pierre des murs (TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A-I) – ne contient pas d’amiante



Photo 64: Étage, plafond en plâtre ciment sur lattes de bois (TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A-I) – ne contient pas d’amiante



Photo 65: Étage, vue générale au centre de l'étage
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4E-I) – contient 0,1-1% d'amiante de type chrysotile dans la phase composé à joints

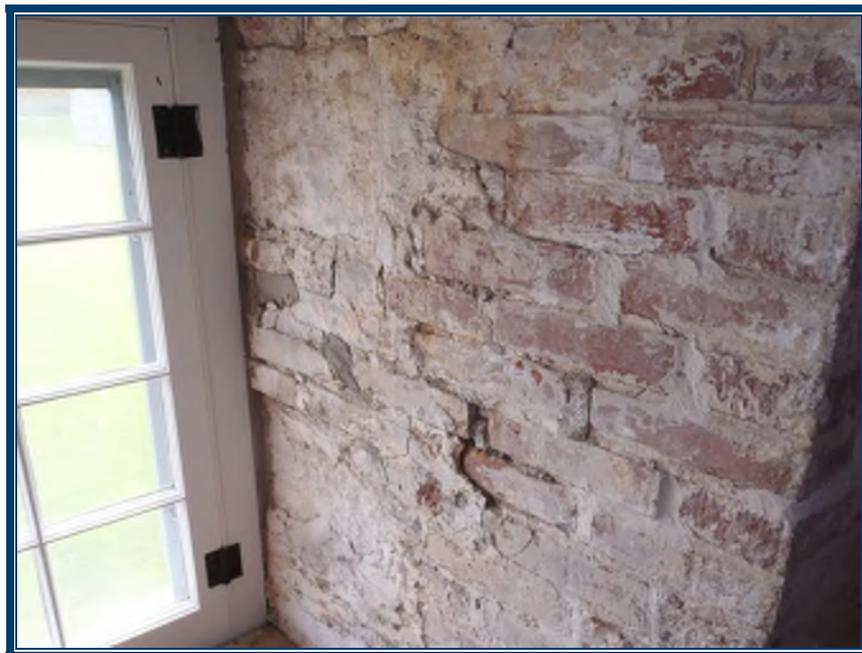


Photo 66: Étage, Mortier de brique des murs
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4E-I) – contient 0,1-1% d'amiante de type chrysotile dans la phase composé à joints



Photo 67: Étage, plafond en plâtre ciment sur lattes de bois dans le local 204 (TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A-I) – ne contient pas d’amiante
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4E-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints



Photo 68: Étage, mur périphérique
Mortier de brique (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4E-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Plâtre ciment sur les murs (TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7A-I) – ne contient pas d’amiante



Photo 69: Étage, plafond en plâtre ciment sur lattes de bois (TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A-I) – ne contient pas d’amiante
Mortier de brique des murs (TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4E-I) – contient 0,1-1% d’amiante de type chrysotile dans la phase composé à joints
Plâtre ciment sur les murs (TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7A-I) – ne contient pas d’amiante



Photo 70: Étage, plafond en plâtre ciment sur lattes de bois endommagé (TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A-I) – ne contient pas d’amiante
Plâtre ciment sur la colonne (TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7A-I) – ne contient pas d’amiante

Corps de garde



Photo 71: Murs en plâtre ciment sur briques au rez-de-chaussée
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 72: Murs en plâtre ciment sur briques au rez-de-chaussée
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 73: Murs en plâtre ciment sur briques au rez-de-chaussée et cheminée
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 74: Murs en plâtre ciment sur briques dans le local 103
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 75: Murs en plâtre ciment sur briques dans le local 103
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 76: Plafond du local 103 en bois



Photo 77: Murs en briques au rez-de-chaussée, secteur prison
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 78 : Murs en briques et pierres au rez-de-chaussée, secteur prison
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante
Mortier de pierre (TPSGC-LENNOX-CORPS-EXT-MORTIER-5A-I) - ne contient pas d’amiante



Photo 79: Murs et plafond en briques au rez-de-chaussée (arche), secteur prison
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 80: Murs en plâtre ciment sur briques au rez-de-chaussée, secteur prison
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 81: Murs en plâtre ciment sur briques au rez-de-chaussée, secteur prison
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 82: Murs en plâtre ciment au rez-de-chaussée, local 104
Murs en plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contiennent pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 83: Murs et plafond en plâtre ciment au rez-de-chaussée, local 104
Plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contient pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 84: Murs en plâtre ciment au rez-de-chaussée, local 104
Plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contient pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 85: Murs en plâtre ciment au rez-de-chaussée, local 104
Plâtre ciment (TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G) – ne contient pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante

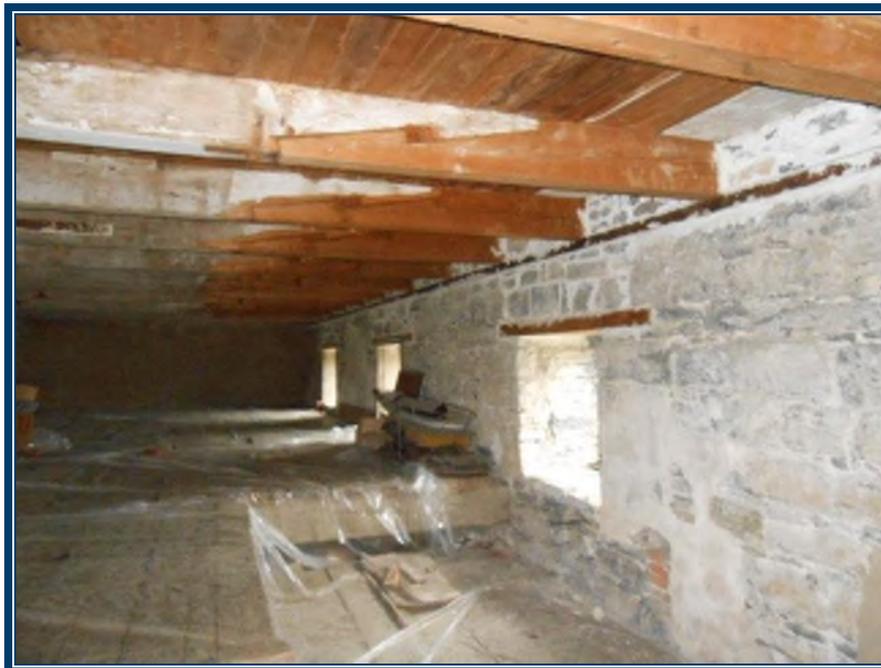


Photo 86: Étage
Mortier de pierre (TPSGC-LENNOX-CORPS-EXT-MORTIER-5A-I) - ne contient pas d’amiante
Plancher de bois, structure du plafond en bois



Photo 87: Étage, plâtre ciment présent sur les colonnes en brique au 2^e étage
Plâtre ciment (TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3I) – ne contient pas d’amiante
Mortier de brique (TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A-I) – ne contient pas d’amiante



Photo 88: 2^e étage
Mortier de pierre (TPSGC-LENNOX-CORPS-EXT-MORTIER-5A-I) - ne contient pas d’amiante
Plâtre ciment (TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4A) – contient 0,1-1% d’amiante de type chrysotile



Photo 89: 2^e étage
Plâtre ciment au niveau des murs en mauvais état (TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4A) – contient 0,1-1% d'amiante de type chrysotile



Photo 90: 2^e étage
Plâtre ciment au niveau des murs en mauvais état et présence de débris (TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4A) – contient 0,1-1% d'amiante de type chrysotile



Photo 91: Extérieur
Plafond en panneaux de ciment préfabriqués (TPSGC-LENNOX-CORPS-EXT-PANNEAU PREFAB-6) – ne contient pas d’amiante

Poudrière



Photo 92: Vue générale extérieure de la poudrière
Murs en pierre et mortier (TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2A-I) – ne contient pas d’amiante



Photo 93: Entrée de la poudrière
Murs en pierre et mortier (TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2A-I) – ne contient pas d’amiante
Murs en briques et mortier (TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1A-I) – ne contient pas d’amiante



Photo 94: Murs/plafond en briques et mortier- arche (TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1A-I) – ne contient pas d’amiante



Photo 95: Porte d'entrée de la poudrière (peinture verte)



Photo 96: Joints de mortier des murs extérieurs en pierre (TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2A-1) – ne contient pas d'amiante



Photo 97: Vue de l'arrière du bâtiment
Joints de mortier des murs extérieurs en pierre (TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2A-I) – ne contient pas d'amiante

Porte et passage Nord



Photo 98: Vue des pierres naturelles carrées et du mortier extérieur gris présent au niveau des murs du passage et de la porte Nord
Mortier extérieur gris (TPSGC-LENNOX-PORTE N-MUR-MORTIER-2A-I) – ne contient pas d'amiante



Photo 99: Mortier intérieur beige présent au niveau des murs du passage et de la porte Nord
Mortier intérieur beige (TPSGC-LENNOX-PORTE N-MUR-MORTIER-1A-I) – ne contient pas d’amiante



Photo 100: Vue générale de la porte et du passage Nord
Peinture verte appliquée sur certains éléments de la porte



Photo 101: Vue des deux (2) types de mortier présents au niveau de la porte et du passage Nord
Mortier extérieur gris sur pierres carrées (TPSGC-LENNOX-PORTE N-MUR-MORTIER-2A-I) – ne contient pas d’amiante
Mortier intérieur beige sur pierres naturelles (TPSGC-LENNOX-PORTE N-MUR-MORTIER-1A-I) – ne contient pas d’amiante

Passage Sud



Photo 102: Vue générale du passage Sud

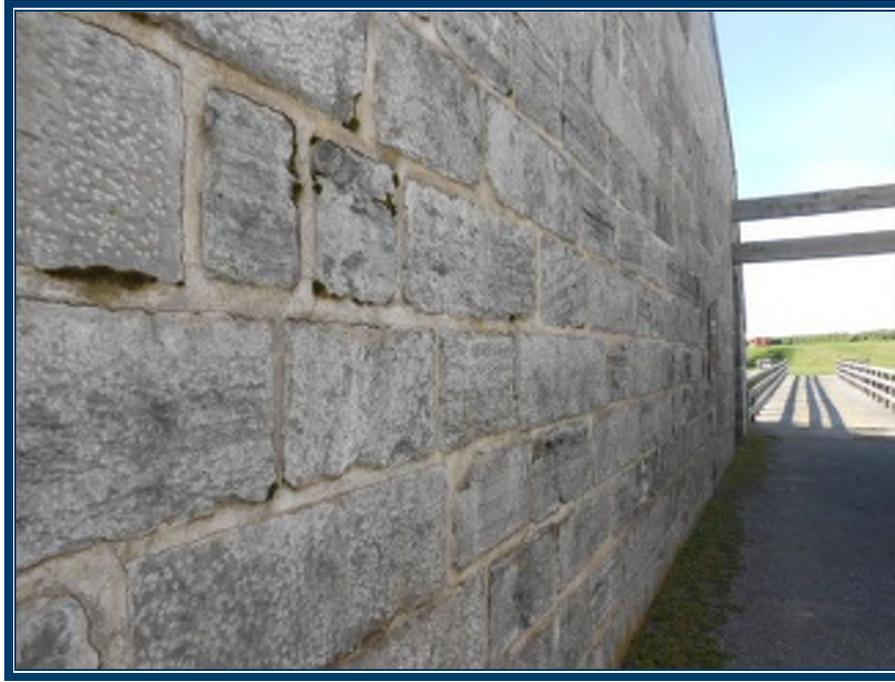


Photo 103: Vue des murs en pierre du passage Sud
Mortier gris entre les pierres carrées (TPSGC-LENNOX-PORTE S-MUR-MORTIER-1A-I) – ne contient pas d’amiante

Passage Redan



Photo 104: Vue générale du passage Redan
Murs en pierres et mortier (TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1A-I) – ne contient pas d’amiante

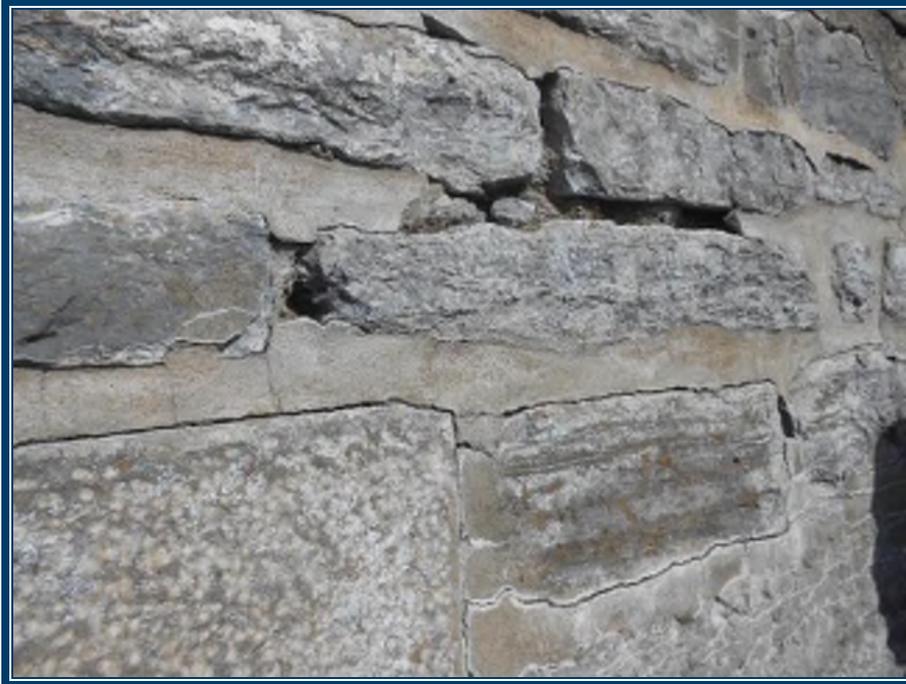


Photo 105: Mur en pierres et mortier (TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1A-I) – ne contient pas d’amiante

Latrines



Photo 106: Vue extérieure des latrines
Murs en pierres carrées et mortier (TPSGC-LENNOX-LATRINES-MORTIER EXT-1A) – ne contient pas d’amiante



Photo 107: Murs en ciment dans les latrines (TPSGC-LENNOX-LATRINES-CIMENT INT-2A) – ne contient pas d’amiante

Bâtiment des toilettes

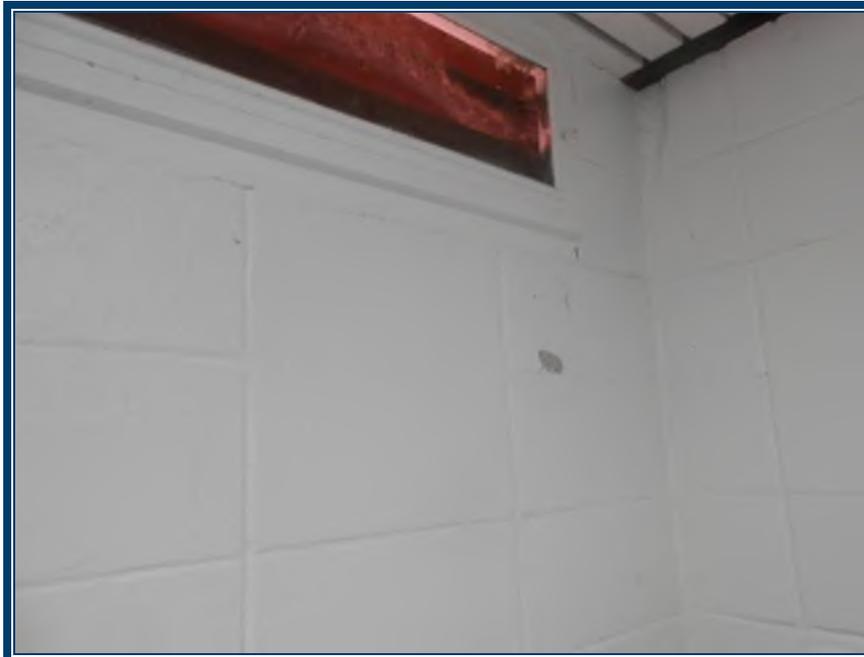


Photo 108: Murs de la toilette des femmes en blocs de béton et plafond en lattes métalliques
Murs peints en blanc



Photo 109: Plancher en béton dans la salle de bain des femmes
Peinture grise au plancher



Photo 110: Vue de l'extérieur du bâtiment
Murs en blocs de béton nervurés et mortier (TPSGC-LENNOX-TOILETTES-MORTIER EXT-1A) – ne contient pas d'amiante

Garage/atelier

045-P-0009275-0-01-260-01-HI-R-0100-0A

CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB – LIEU HISTORIQUE NATIONAL DU FORT-LENNOX À ST-PAUL-DE-L'ÎLE-AUX-NOIX



Photo 111: Vue de l'extérieur du bâtiment
Murs en blocs nervurés
Revêtement en aluminium au niveau de la retombée

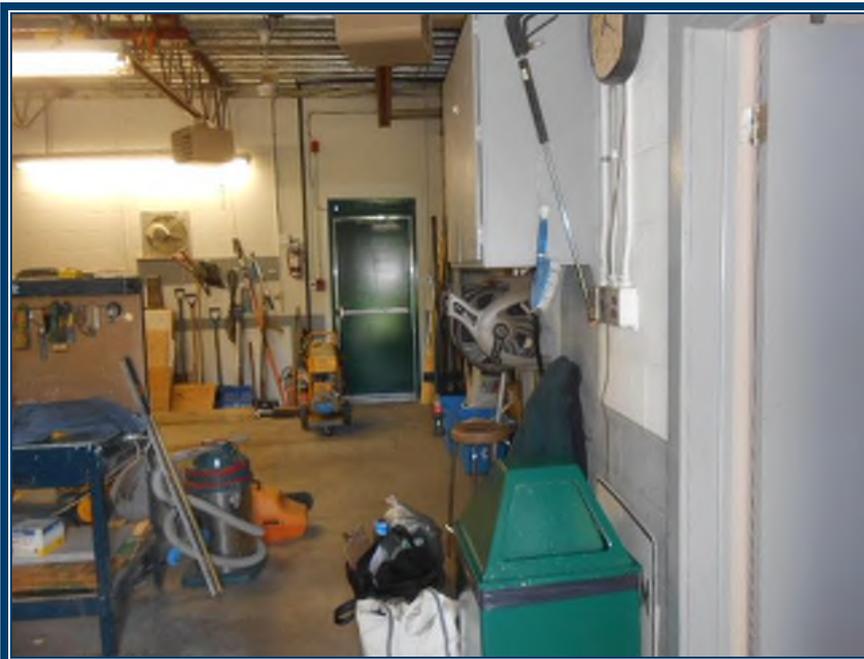


Photo 112: Vue de l'entrepôt
Plancher de béton
Murs en blocs de béton peints blanc et gris
Plafond en panneaux métalliques
Porte menant vers l'extérieur peint en vert

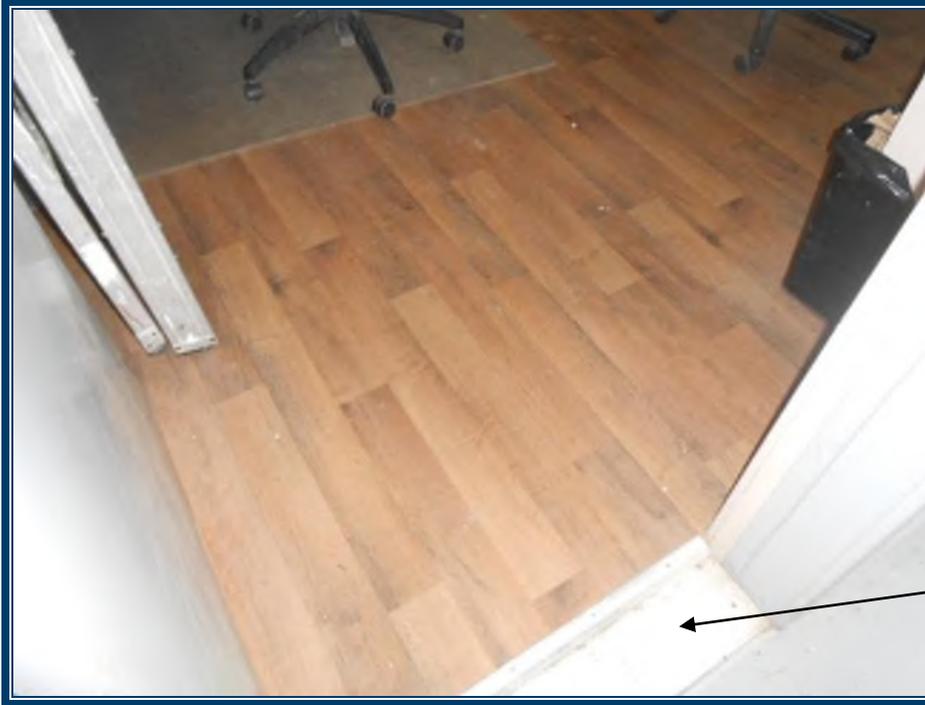


Photo 113: Plancher flottant de la salle de repos/bureau
Tuiles de vinyle blanc au plancher à l'entrée du local et possiblement sous le plancher flottant (TPSGC-LENNOX-GARAGE-AT-PL-TV-4) – ne contiennent pas d'amiante



Photo 114: Salle de repos/bureau
Murs en blocs de béton peints blancs et armoires peintes beige
Tuiles acoustiques perforées collées au plafond (TPSGC-LENNOX-GARAGE AT-BUREAU-PF-TA-3) – ne contiennent pas d'amiante

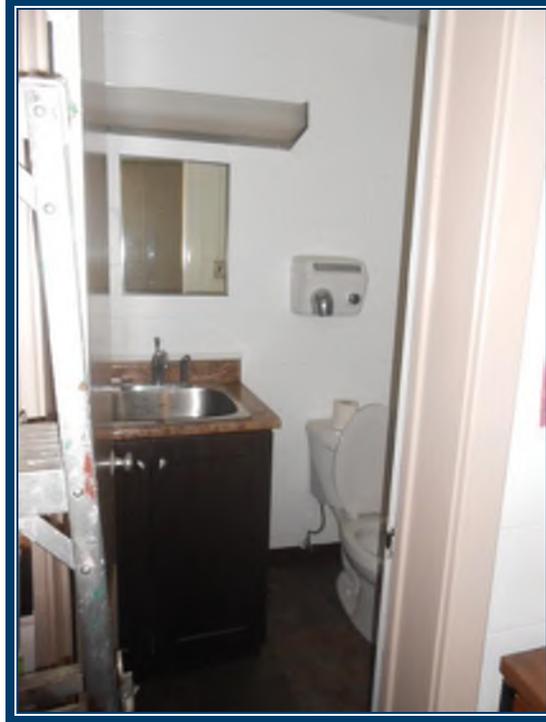


Photo 115: Toilette
Murs en blocs de béton peints blanc
Cadre de porte peint beige
Plancher en linoléum marbré (TPSGC-LENNOX-GARAGE AT-SDB-PL-LINOLEUM-5) – ne contient pas d’amiante



Photo 116: Toilette
Tuiles acoustiques lisses collées au plafond (TPSGC-LENNOX-GARAGE AT-SDB-PF-TA-2) – ne contiennent pas d’amiante



Photo 117: Conciergerie
Tuyauterie non isolée
Murs en blocs de béton non peints

Centre d'accueil



Photo 118: Vue générale de l'extérieur du bâtiment
Les murs extérieurs sont tous composés de bois



Photo 119: Joint d'étanchéité gris appliqué au pourtour extérieur des fenêtres (TPSGC-LENNOX-ACCUEIL-EXT-JOINT-1) – ne contient pas d'amiante



Photo 120: Vue de l'aire générale du centre d'accueil
Plancher en céramique
Murs en lattes de bois et peinture bleue appliquée sur certains murs
Plafond en lattes de bois



Photo 121: Vue de la salle mécanique
Tuyauterie non isolée ou isolée avec un isolant de type *armaflex*
Murs en panneaux de bois
Plancher de béton

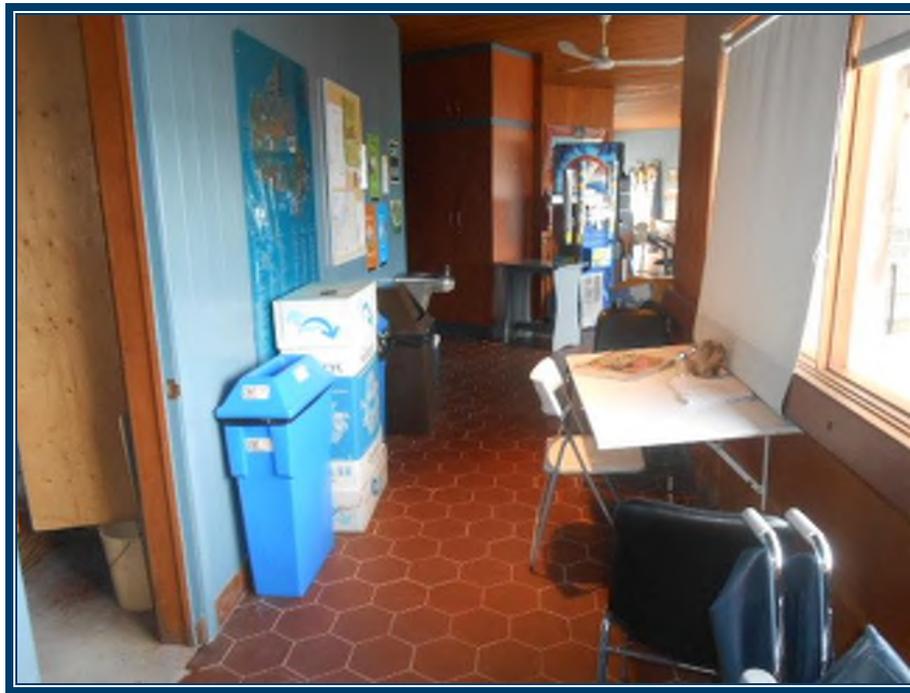


Photo 122: Vue de l'aire générale
Murs en lattes de bois, dont certains sont peints bleu
Plancher de céramique
Plafond en lattes de bois



Photo 123: Salle de bain
Murs et plafond en lattes de bois
Plancher en céramique



Photo 124. Vue générale du rangement
Murs en panneaux de bois
Plancher en béton



Photo 125: Plafond du rangement en lattes de bois
Tuyauterie non isolée

Annexe 2

Plan de localisation des échantillons

PRÉLIMINAIRE

10 cm

5

4

3

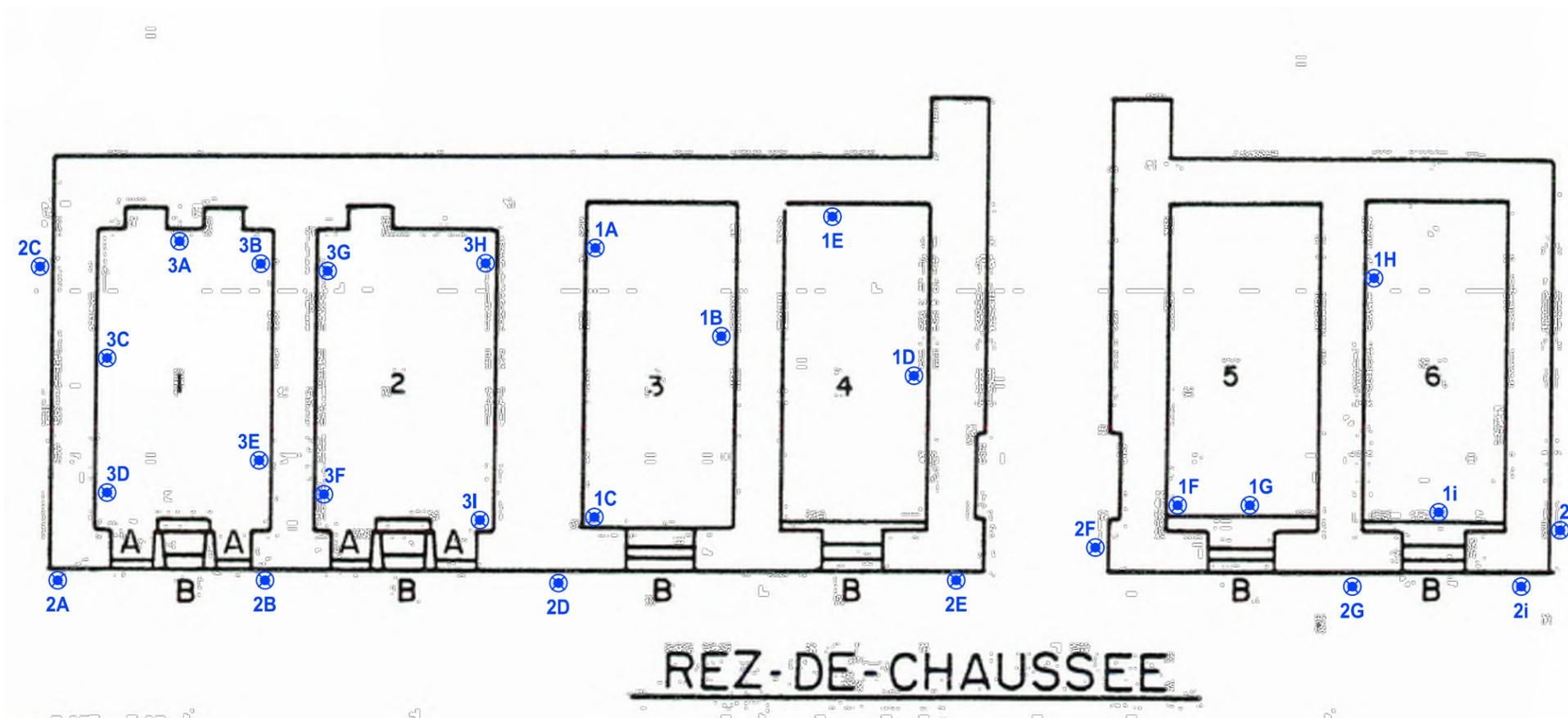
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LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



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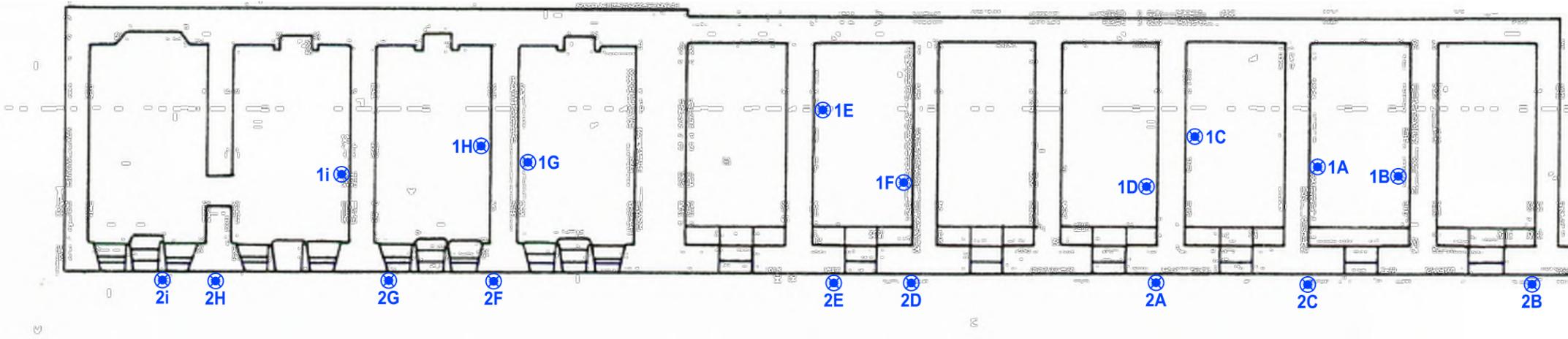
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Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 1 LOCALISATION DES ÉCHANTILLONS (LA CASEMATE NORD)

		Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120				
Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau				
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence				
Vérifié J. K. Michel	Date 2015-11-04	de				
045	P-0009275	001260	HI	D	0101	0A

CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

Références

10 cm
5
4
3
2
1
0



REZ-DE-CHAUSSÉE

LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE

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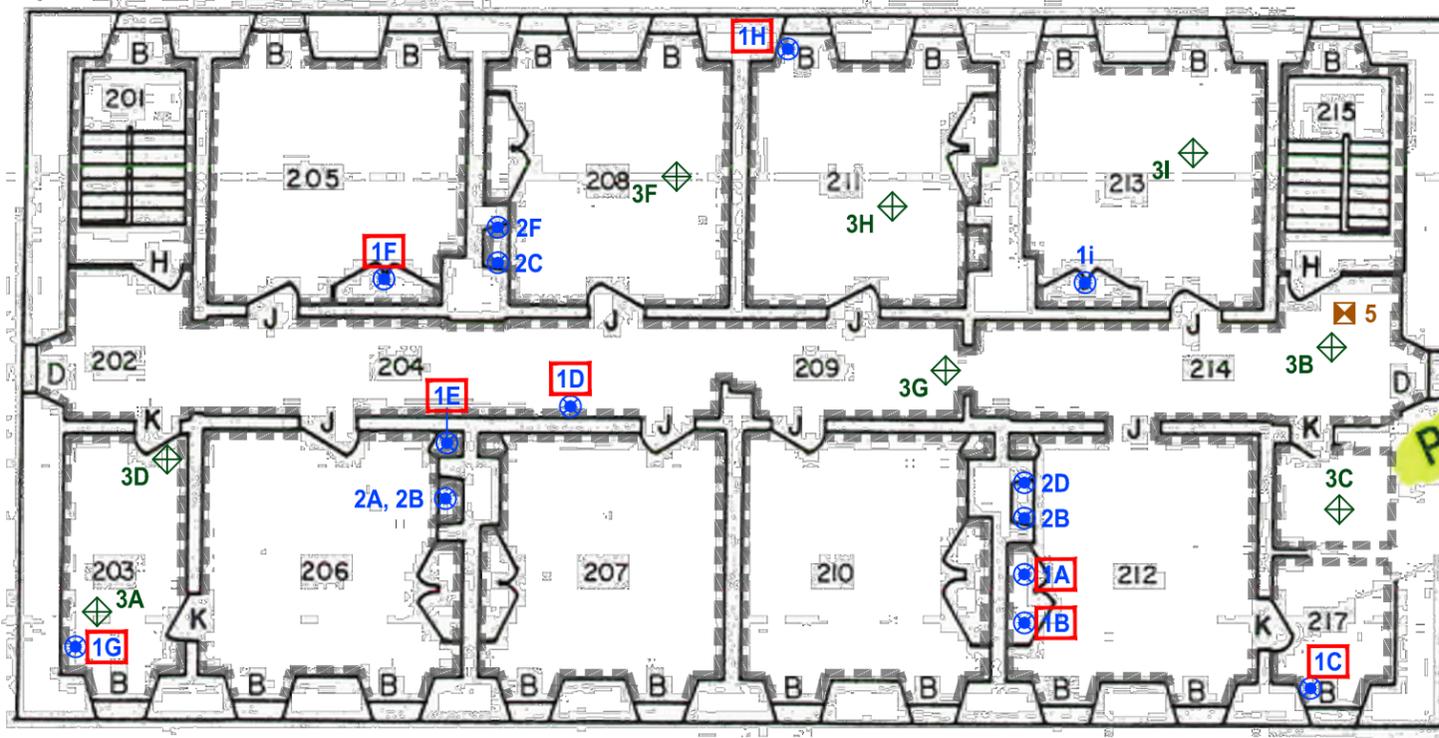
Client	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 2 LOCALISATION DES ÉCHANTILLONS (LA CASEMATE OUEST)

		Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120							
Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau							
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence							
Vérifié J. K. Michel	Date 2015-11-04	de							
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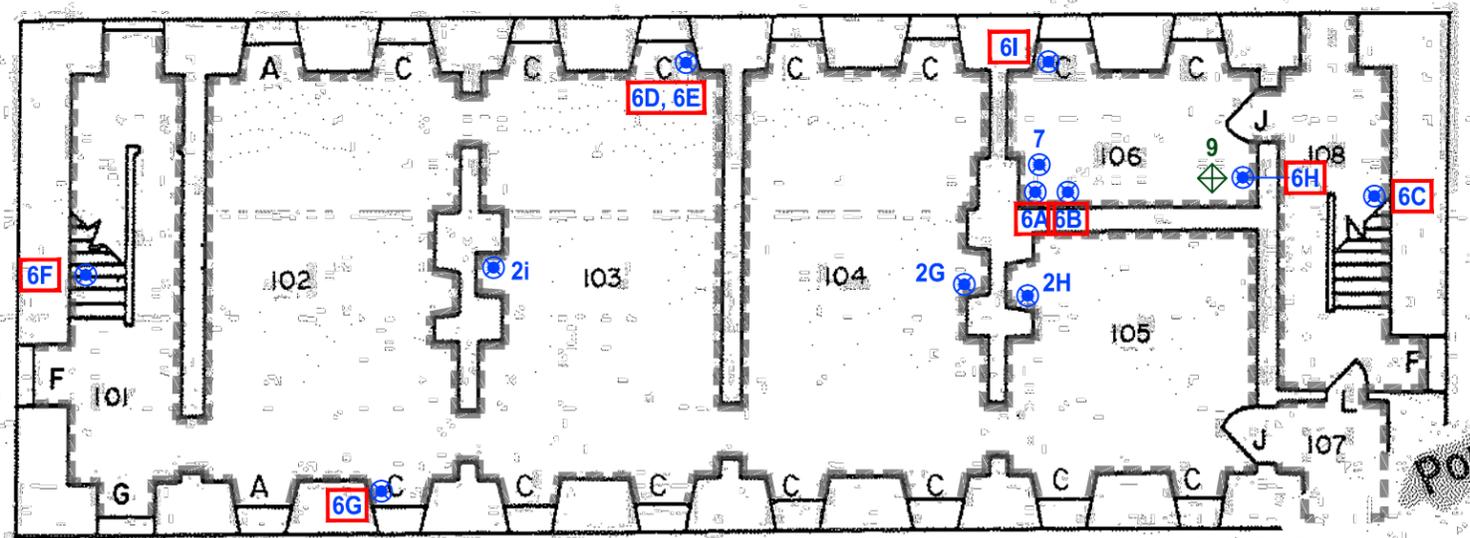
CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

Références

10 cm
5
4
3
2
1
0



ÉTAGE



REZ-DE-CHAUSSÉE

LÉGENDE :

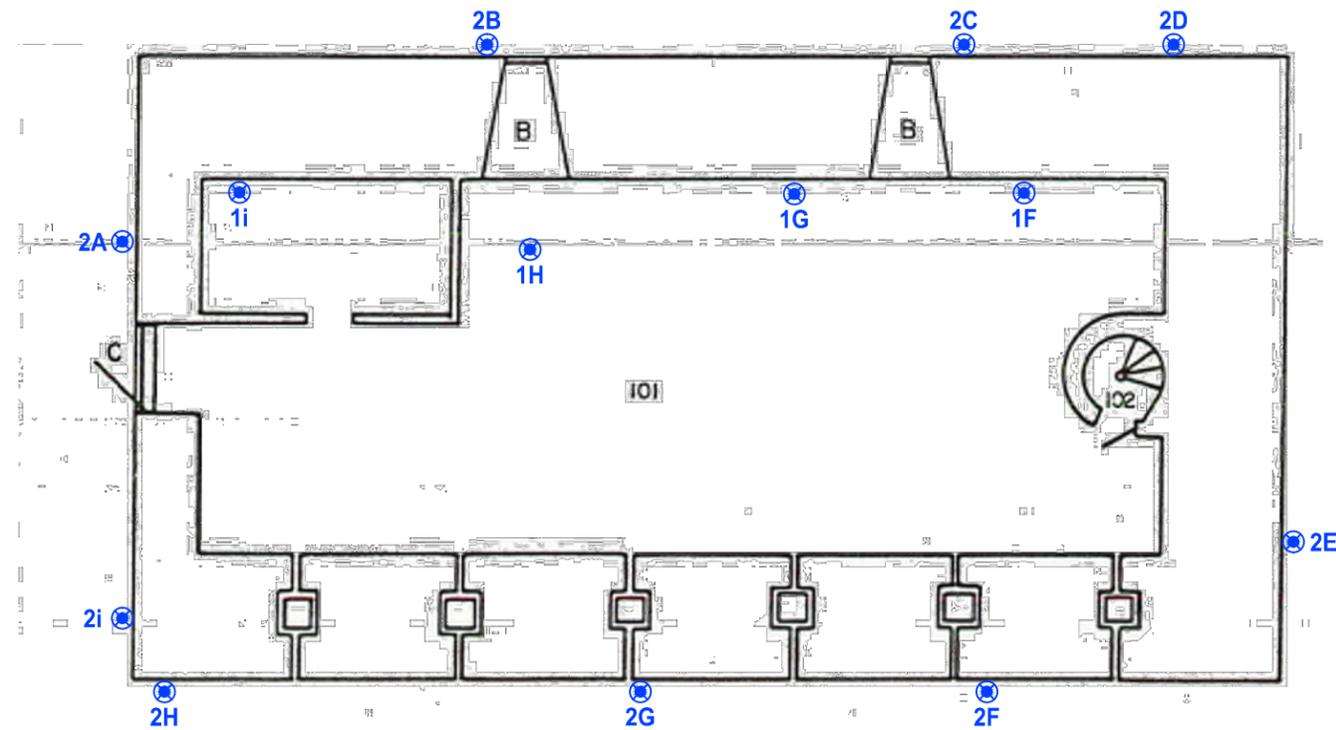
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- POINT D'ÉCHANTILLONNAGE SUR PLAFOND
- POINT D'ÉCHANTILLONNAGE SUR PLANCHER
- POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
- ÉCHANTILLON CONTENANT DE L'AMIANTE
- PLÂTRE CIMENT CONTENANT DE L'AMIANTE

Fichier: C:\045\IP-0009275_TPSGC & sites PC\vs5_CAD\HI\OTTP_0-01-260-01\045-P-0009275-0-01-260-01-HI-D-0101-0A.dwg

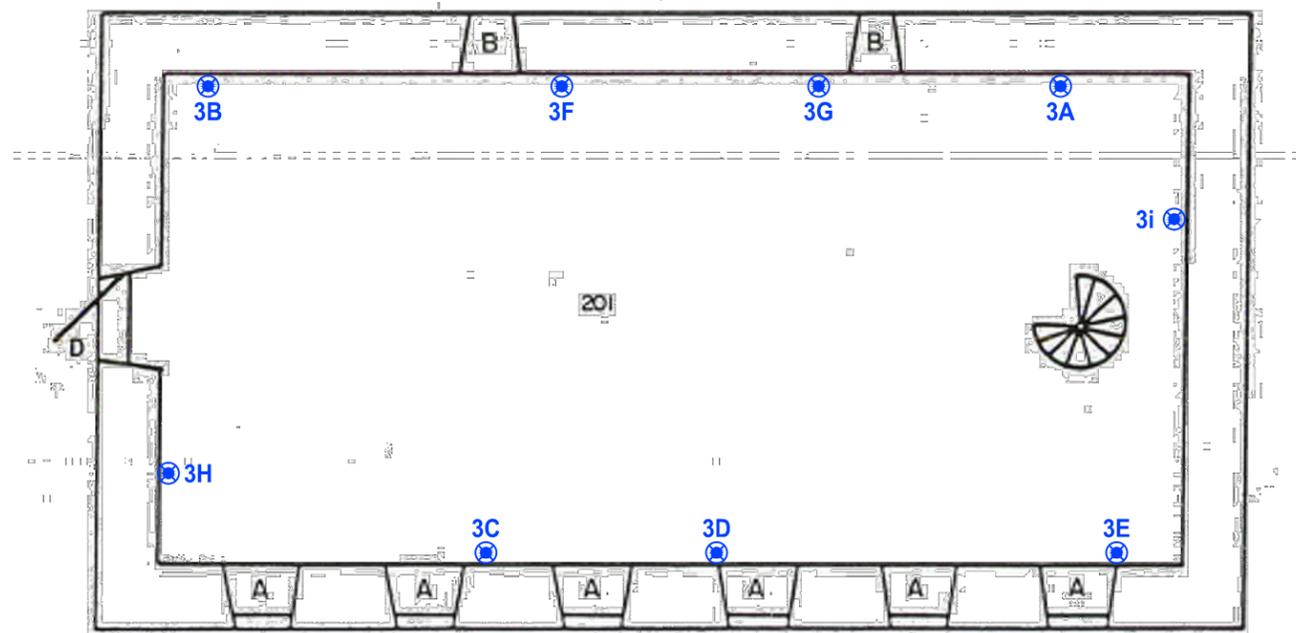
Client	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 3 LOCALISATION DES ÉCHANTILLONS (LOGIS D'OFFICIERS)

Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120		Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau																
		Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence de																
Vérifié J. K. Michel	Date 2015-11-04																			
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Serv. resp.	Projet	Otp	Disc.	Type	N° Dessin	Rév.														
045	P-0009275	0 01 260	HI	D	0103	0A														

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REZ-DE-CHAUSSÉE



ÉTAGE

LÉGENDE :

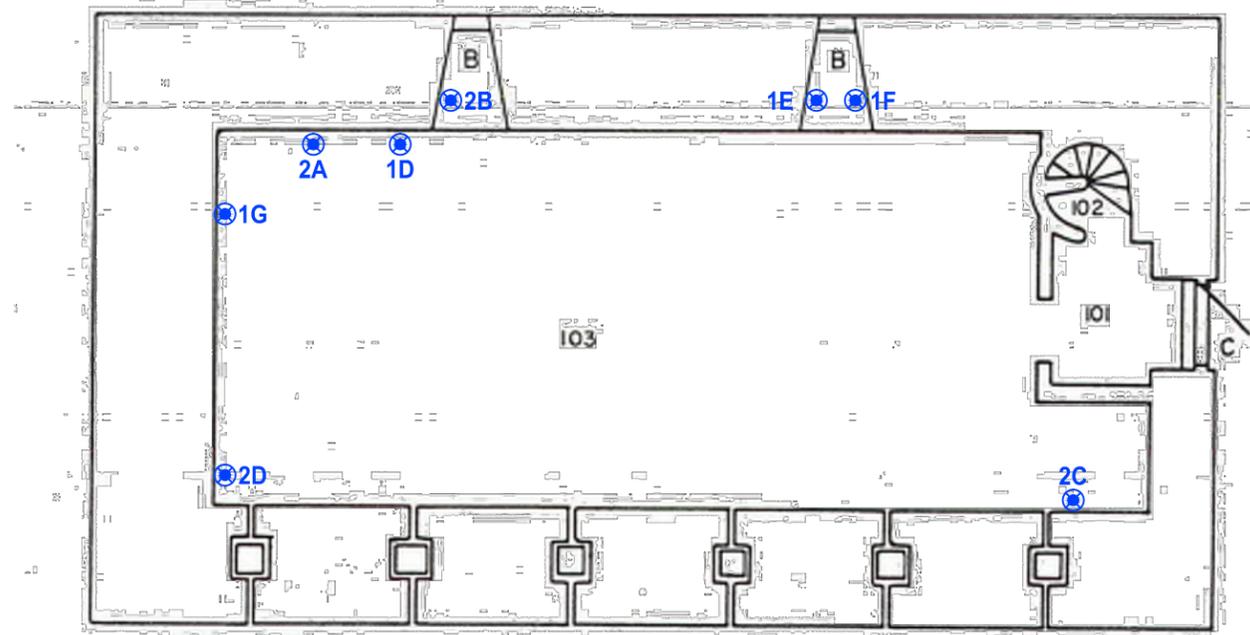
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- POINT D'ÉCHANTILLONNAGE SUR PLAFOND
- POINT D'ÉCHANTILLONNAGE SUR PLANCHER
- POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
- ÉCHANTILLON CONTENANT DE L'AMIANTE
- PLÂTRE CIMENT CONTENANT DE L'AMIANTE

Fichier: G:\045\IP-0009275_TPSGC & sites PC\5_CAD\HI\OTP_0-01-260-01\045-IP-0009275-0-01-260-01-HI-D-0101-0A.dwg

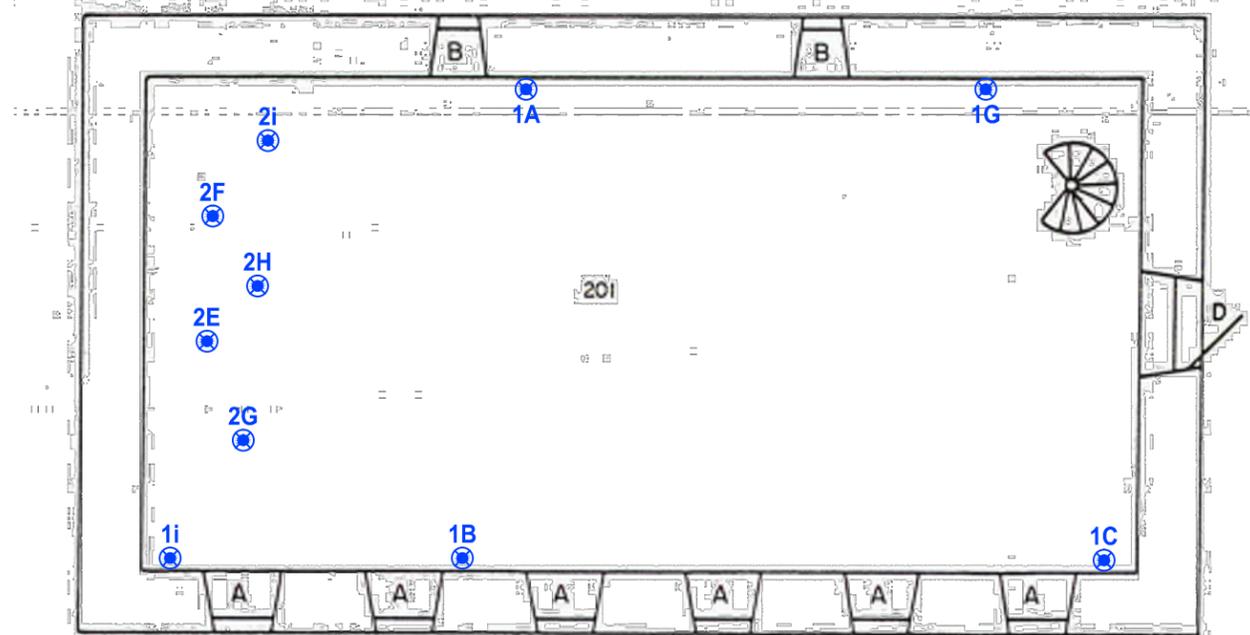
Client	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 4 LOCALISATION DES ÉCHANTILLONS (LE MAGASIN SUD)

Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120		
Préparé M.-E. Bélanger Dessiné F. Boudreau Vérifié J. K. Michel	Discipline ENVIRONNEMENT Échelle AUCUNE Date 2015-11-04	Chargé de projet M. Péladeau No. de séquence de
Serv. resp. 045 Projet P-0009275 Otp 001260 Disc. HI Type D	N° Dessin 0104 Rév. 0A	Références

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REZ-DE-CHAUSSÉE



ÉTAGE

LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE

Fichier: C:\045\IP-0009275_TPSGC & sites PC\5 CAD\HI\OTF_0-01-260-01\045-P-0009275-0-01-260-01-HI-D-0101-0A.dwg

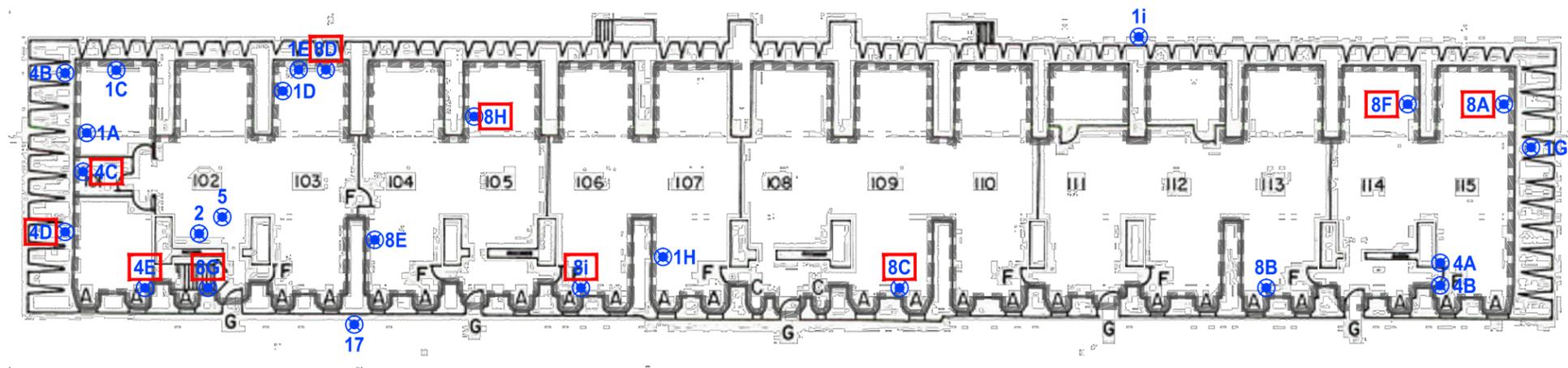
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Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 5 LOCALISATION DES ÉCHANTILLONS (LE MAGASIN NORD)

		Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120														
Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau														
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence														
Vérifié J. K. Michel	Date 2015-11-04	de														
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Serv. resp.	Projet	Otp	Disc.	Type	N° Dessin	Rév.										
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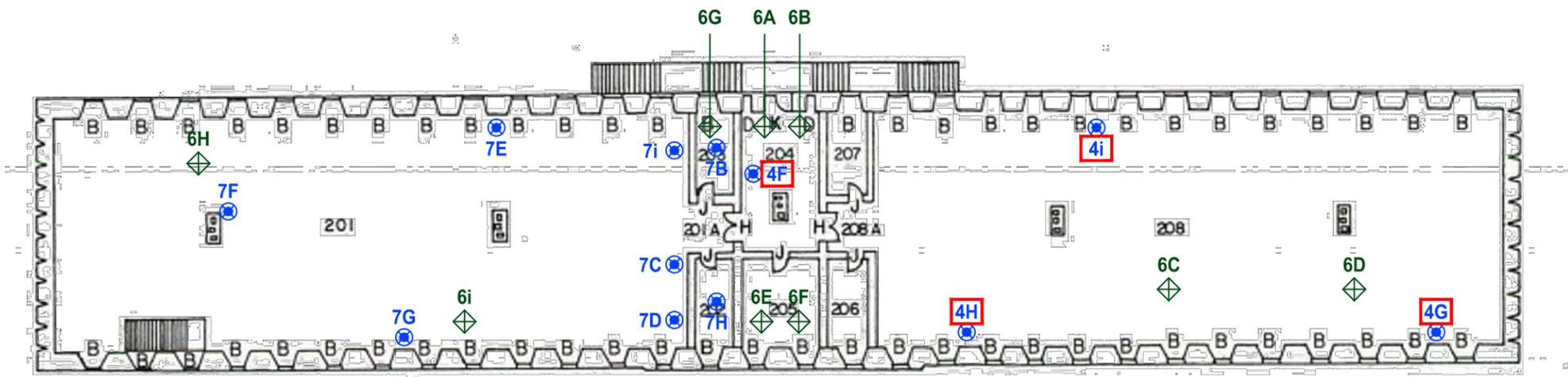
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-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



REZ-DE-CHAUSSÉE

NOTES:

1. REZ-DE-CHAUSSÉE: PLÂTRE CIMENT CONTENANT DE L'AMIANTE ET MORTIER DE BRIQUE CONTENANT DE L'AMIANTE (MUR ET PLANCHER).
2. ÉTAGE: MORTIER DE BRIQUE CONTENANT DE L'AMIANTE (MUR ET PLANCHER).



ÉTAGE

Client **TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)**

Projet **CARACTÉRISATION DES MATÉRIEAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB**
LIEU HISTORIQUE NATIONAL DU FORT-LENNOX

Titre **FIGURE 6 LOCALISATION DES ÉCHANTILLONS (LA CASERNE)**

 Englobe Corp.
1080, côte du Beaver Hall, bureau 200
Montréal (Québec) H2Z 1S8
Téléphone : 514.281.5151
Télécopieur : 514.657.8120

Préparé **M.-E. Bélanger** Discipline **ENVIRONNEMENT** Chargé de projet **M. Péladeau**
Dessiné **F. Boudreau** Échelle **AUCUNE** No. de séquence de
Vérifié **J. K. Michel** Date **2015-11-04**

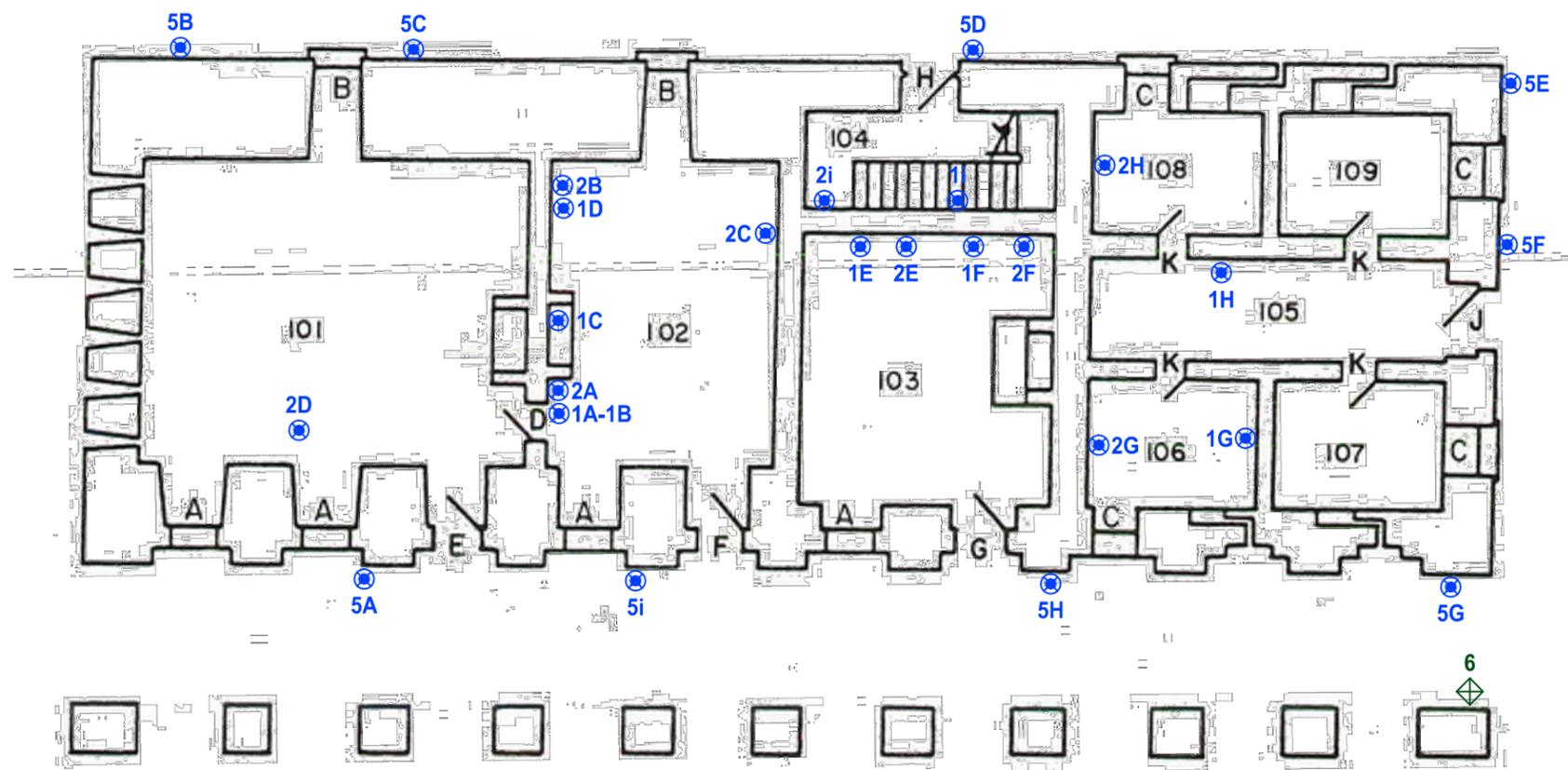
CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP.

Références

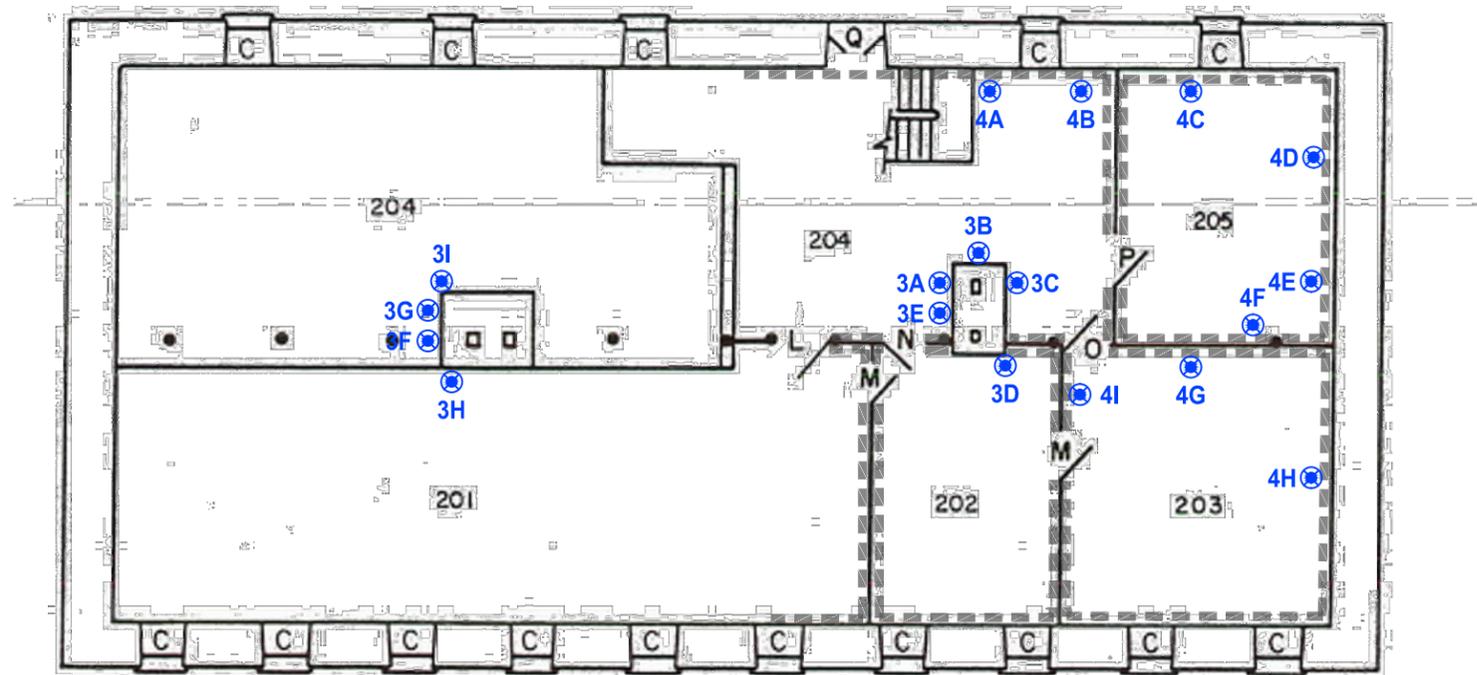
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REZ-DE-CHAUSSÉE



ÉTAGE

LÉGENDE :

- POINT D'ÉCHANTILLONNAGE SUR MUR
- POINT D'ÉCHANTILLONNAGE SUR PLAFOND
- POINT D'ÉCHANTILLONNAGE SUR PLANCHER
- POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
- ÉCHANTILLON CONTENANT DE L'AMIANTE
- PLÂTRE CIMENT CONTENANT DE L'AMIANTE

Fichier: C:\045\IP-0009275_TPSGC & sites PC\vs5_CAD\HI\OTTP_0-01-260-01\045-P-0009275-0-01-260-01-HI-D-0101-0A.dwg

Client	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 7 LOCALISATION DES ÉCHANTILLONS (LE CORPS DE GARDE)

Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120		
Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence
Vérifié J. K. Michel	Date 2015-11-04	de

CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP.

Références

045	P-0009275	001260	HI	D	0107	0A
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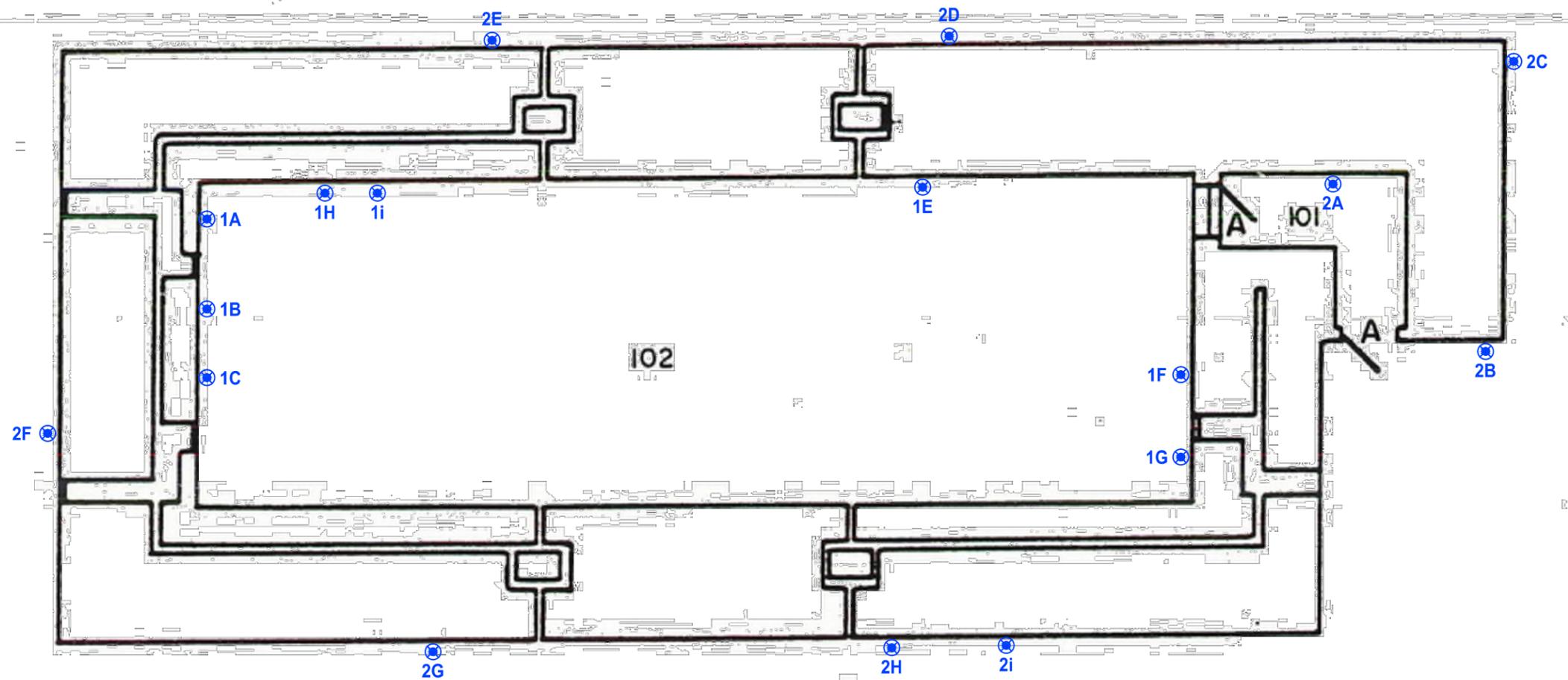
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-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



REZ-DE-CHAUSSÉE

Client **TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)**

Projet **CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB**
LIEU HISTORIQUE NATIONAL DU FORT-LENNOX

Titre **FIGURE 8**
LOCALISATION DES ÉCHANTILLONS (LA POUDRIÈRE)

 Englobe Corp.
1080, côte du Beaver Hall, bureau 200
Montréal (Québec) H2Z 1S8
Téléphone : 514.281.5151
Télécopieur : 514.657.8120

Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence de
Vérifié J. K. Michel	Date 2015-11-04	

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CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

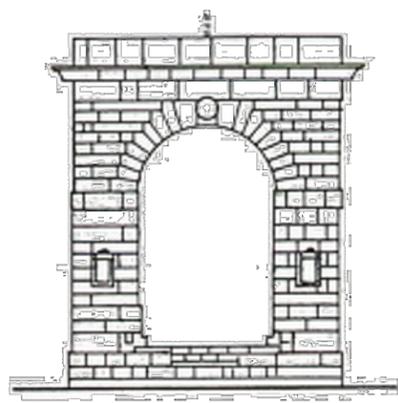
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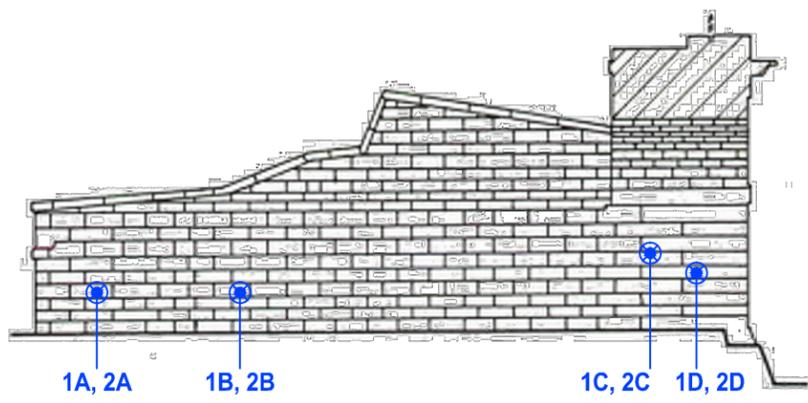
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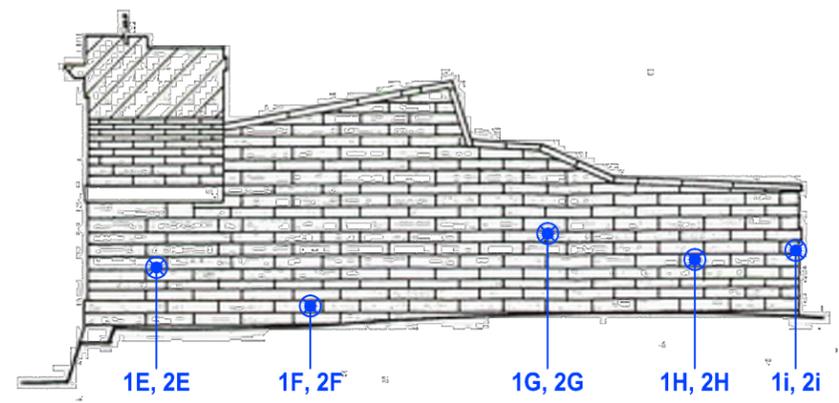
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-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



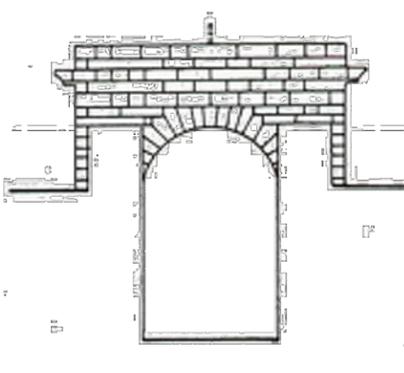
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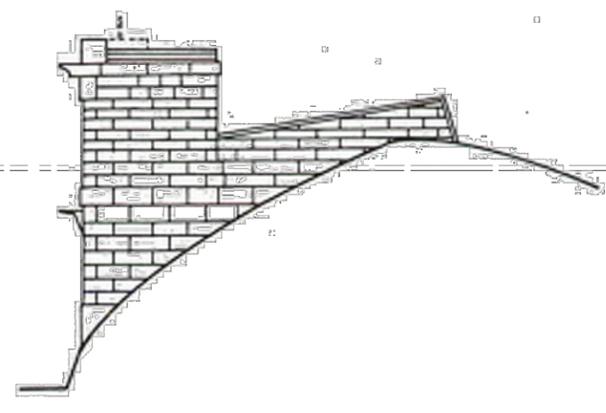
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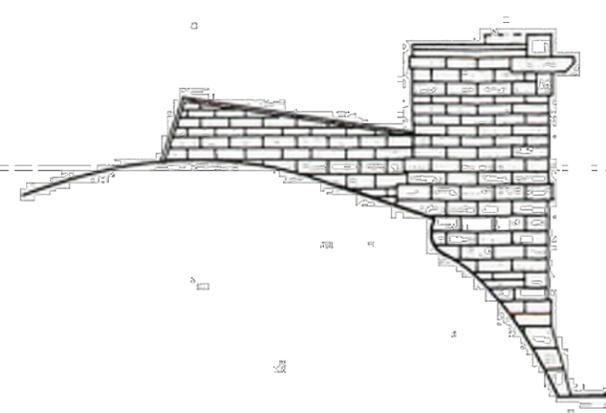
ÉLÉVATION INTÉRIEURE



ÉLÉVATION SUD



ÉLÉVATION EXTÉRIEURE



ÉLÉVATION EXTÉRIEURE

Cliant **TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)**

Projet **CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB**
LIEU HISTORIQUE NATIONAL DU FORT-LENNOX

Titre **FIGURE 9**
LOCALISATION DES ÉCHANTILLONS (LE PASSAGE ET LA PORTE NORD)

 Englobe Corp.
1080, côte du Beaver Hall, bureau 200
Montréal (Québec) H2Z 1S8
Téléphone : 514.281.5151
Télécopieur : 514.657.8120

Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence de
Vérifié J. K. Michel	Date 2015-11-04	

045	P-0009275	001260	HI	D	0109	0A
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CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

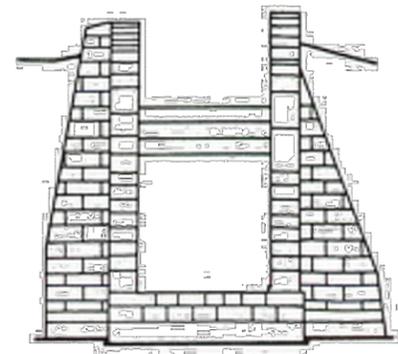
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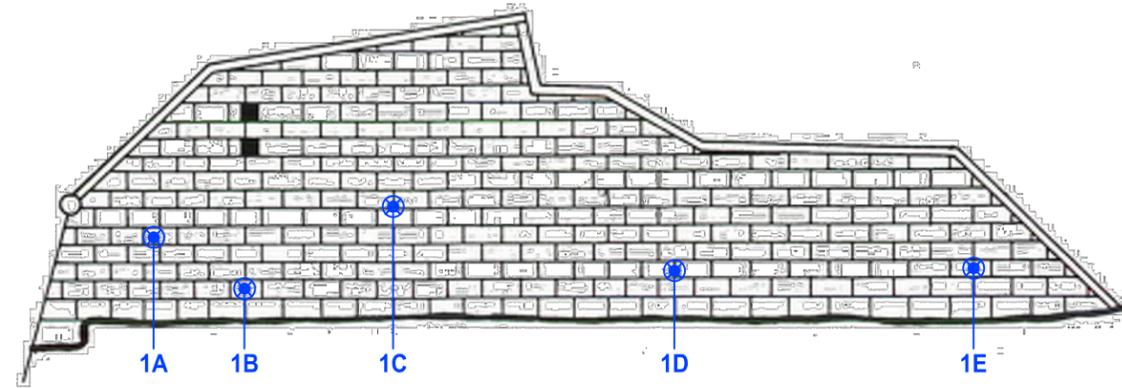
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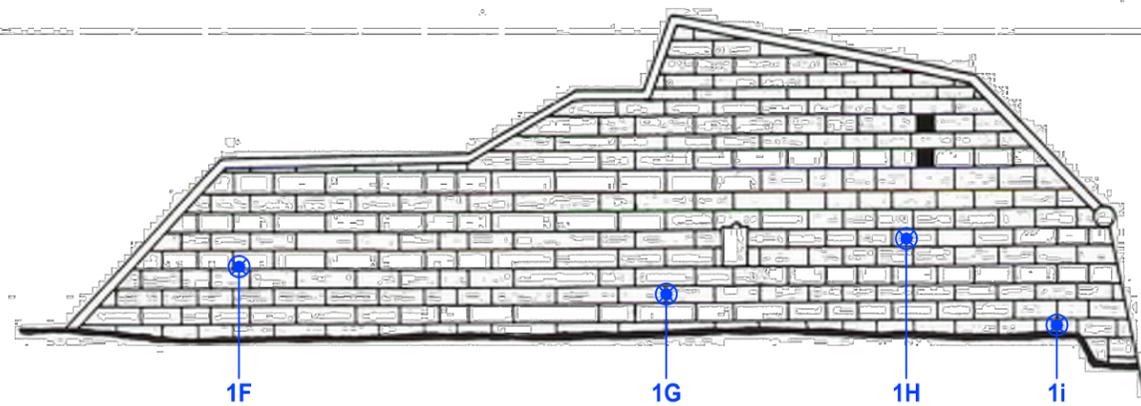
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-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



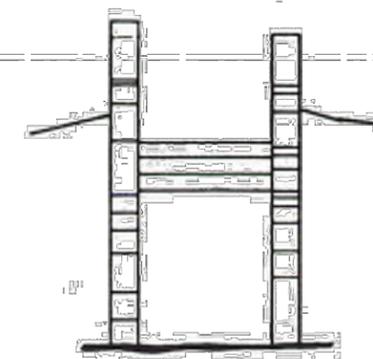
ÉLÉVATION SUD



ÉLÉVATION INTÉRIEURE



ÉLÉVATION EXTÉRIEURE



ÉLÉVATION NORD

Cliant **TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)**

Projet **CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB
LIEU HISTORIQUE NATIONAL DU FORT-LENNOX**

Titre **FIGURE 10
LOCALISATION DES ÉCHANTILLONS (LE PASSAGE SUD)**



Englobe Corp.
1080, côte du Beaver Hall, bureau 200
Montréal (Québec) H2Z 1S8
Téléphone : 514.281.5151
Télécopieur : 514.657.8120

Préparé **M.-E. Bélanger**
Dessiné **F. Boudreau**
Vérifié **J. K. Michel**

Discipline **ENVIRONNEMENT**
Échelle **AUCUNE**
Date **2015-11-04**

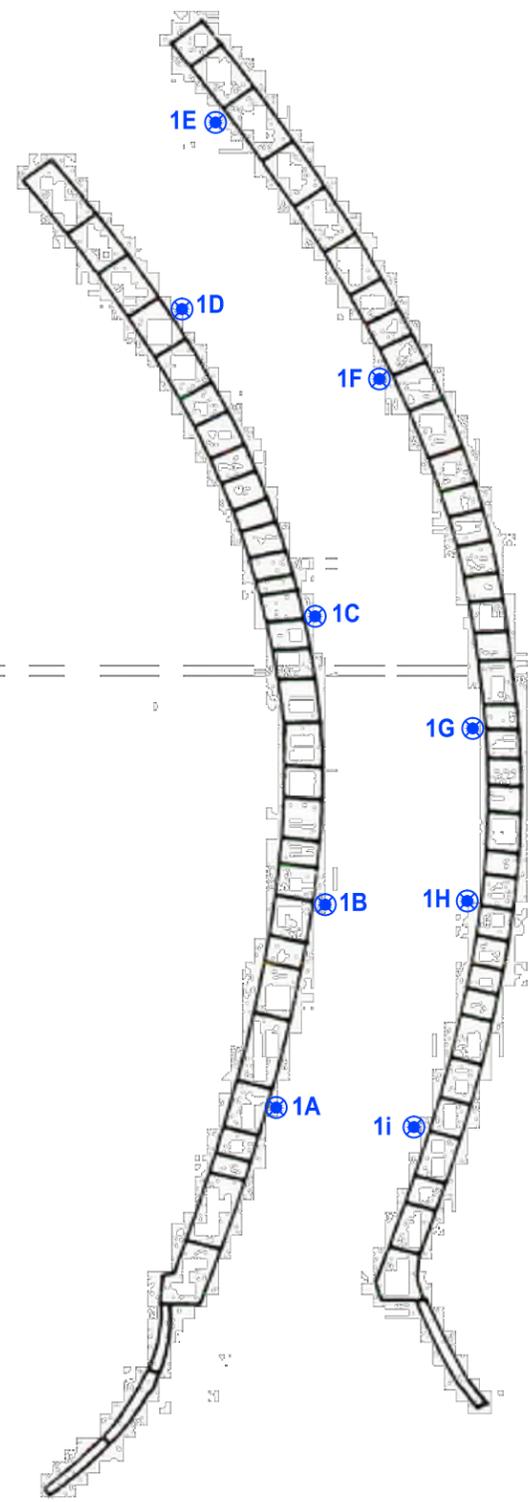
Chargé de projet
M. Péladeau
No. de séquence
de

Serv. resp.	Projet	Otp	Disc.	Type	N° Dessin	Rév.
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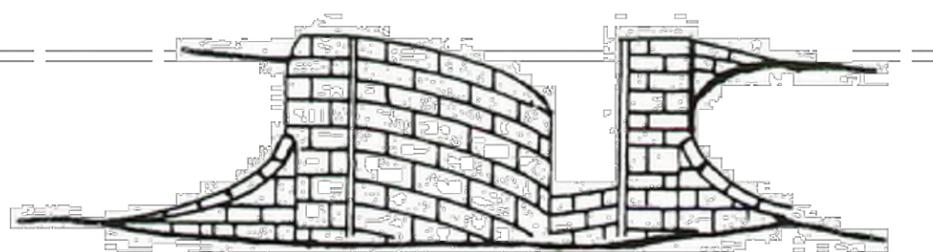
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LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
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-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



PLAN



ÉLÉVATION

Fichier: C:\045\IP-0009275_TPSGC & sites PC\5 CAD\HI\OTP_0-01-260-01\045-P-0009275-0-01-260-01-HI-D-0101-0A.dwg

Client	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 11 LOCALISATION DES ÉCHANTILLONS (LE PASSAGE REDAN)

		Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120				
Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau				
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence				
Vérifié J. K. Michel	Date 2015-11-04	de				
045	P-0009275	001260	HI	D	0111	0A

CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

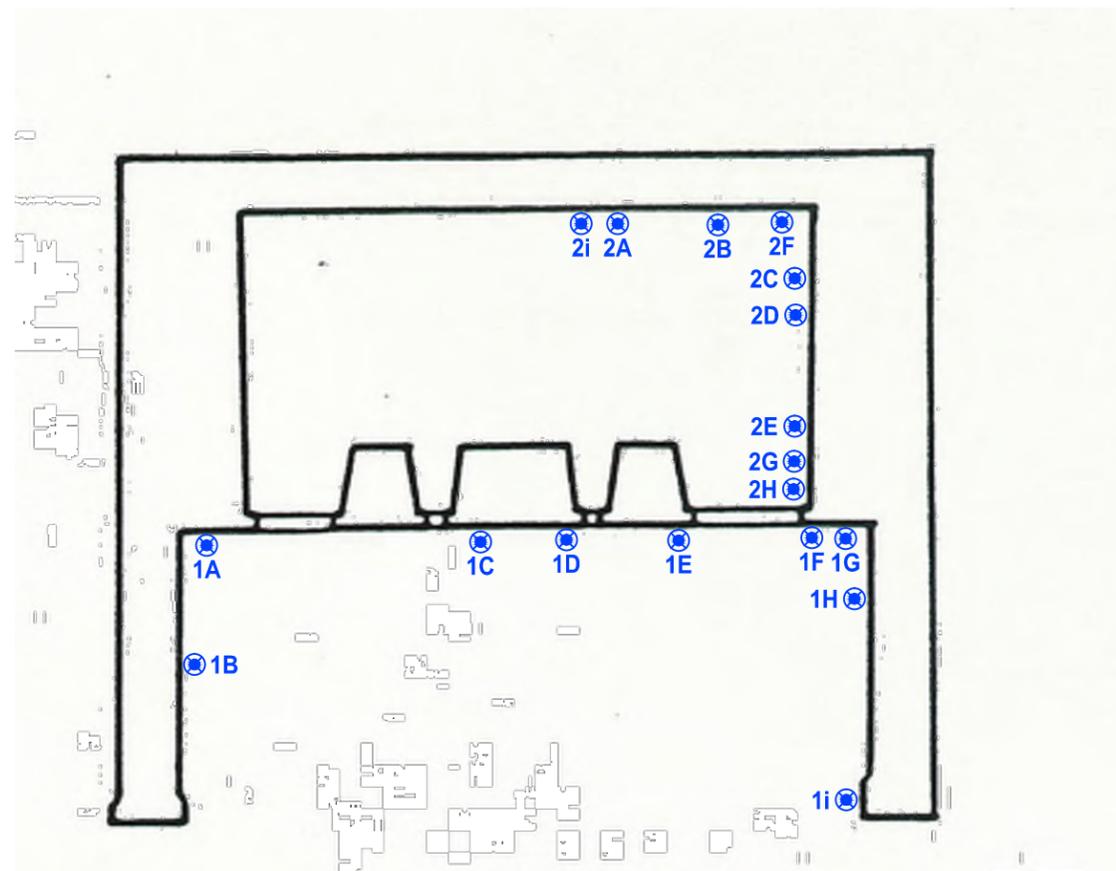
Références

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Fichier: C:\045\IP-0009275_TPSGC & sites PC\5 CAD\HI\OTP_0-01-260-01\045-P-0009275-0-01-260-01-HI-D-0101-0A.dwg

LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



REZ-DE-CHAUSSÉE

Cliant	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 12 LOCALISATION DES ÉCHANTILLONS (LES LATRINES)

		Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120			
Préparé	M.-E. Bélanger	Discipline	ENVIRONNEMENT	Chargé de projet	M. Péladeau
Dessiné	F. Boudreau	Échelle	AUCUNE	No. de séquence	
Vérifié	J. K. Michel	Date	2015-11-04	de	
045	P-0009275	001260	HI	D	0112 0A

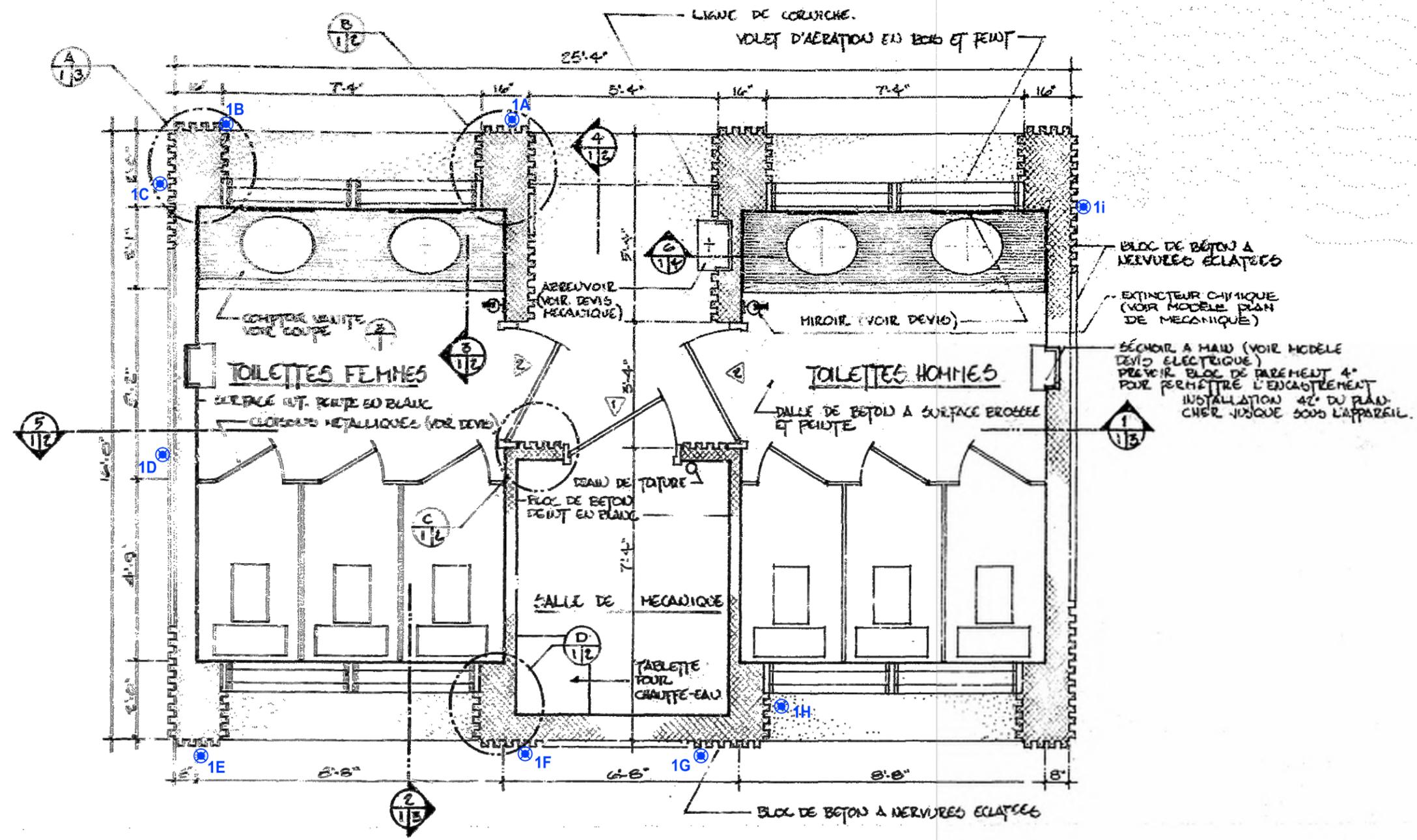
CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

Références

10 cm

5
4
3
2
1
0

Fichier: G:\0451P-0009275_TPSGC & sites PC\vs5_CAD\H10TP_0-01-260-01\045-P-0009275-0-01-260-01-H1-D-0101-0A.dwg



PLAN
Echelle 3/8" = 1'-0"

- LÉGENDE :
- POINT D'ÉCHANTILLONNAGE SUR MUR
 - POINT D'ÉCHANTILLONNAGE SUR PLAFOND
 - POINT D'ÉCHANTILLONNAGE SUR PLANCHER
 - POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
 - ÉCHANTILLON CONTENANT DE L'AMIANTE
 - PLÂTRE CIMENT CONTENANT DE L'AMIANTE

Client **TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)**

Projet **CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB
LIEU HISTORIQUE NATIONAL DU FORT-LENNOX**

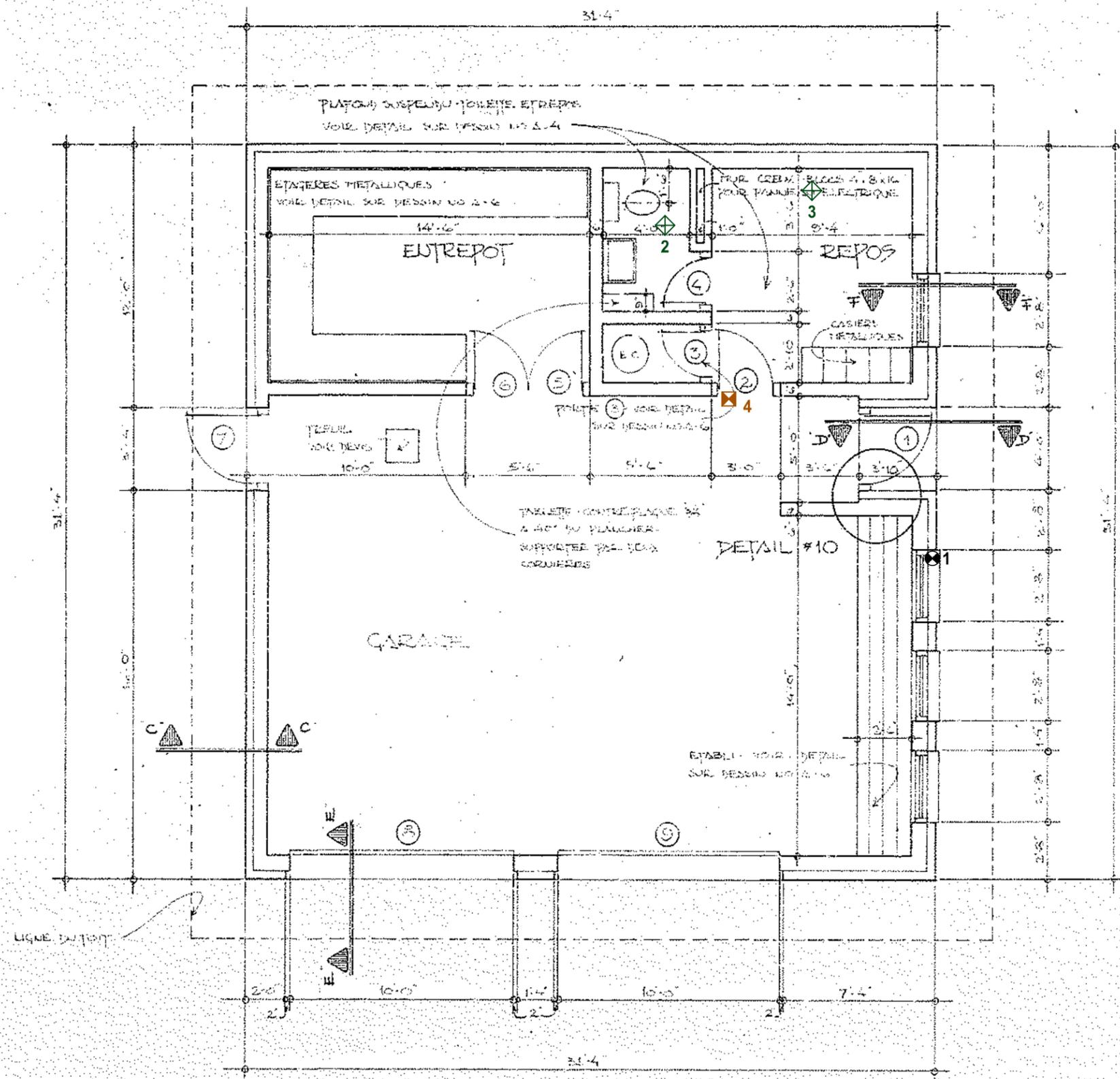
Titre **FIGURE 13
LOCALISATION DES ÉCHANTILLONS
(LE BÂTIMENT DES TOILETTES SUR L'ÎLE)**

Englobe Corp.
1080, côte du Beaver Hall, bureau 200
Montréal (Québec) H2Z 1S8
Téléphone : 514.281.5151
Télécopieur : 514.657.8120

Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence
Vérifié J. K. Michel	Date 2015-11-04	de

045	P-0009275	001260	HI	D	0113	0A
-----	-----------	--------	----	---	------	----

10 cm
5
4
3
2
1
0



LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE

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Client	TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)
Projet	CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB LIEU HISTORIQUE NATIONAL DU FORT-LENNOX
Titre	FIGURE 14 LOCALISATION DES ÉCHANTILLONS (LE GARAGE/ATELIER SITUÉ SUR LA RIVE)

		Englobe Corp. 1080, côte du Beaver Hall, bureau 200 Montréal (Québec) H2Z 1S8 Téléphone : 514.281.5151 Télécopieur : 514.657.8120				
Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau				
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence				
Vérifié J. K. Michel	Date 2015-11-04	de				
045	P-0009275	01 260	HI	D	0114	0A

Références

10 cm

5

4

3

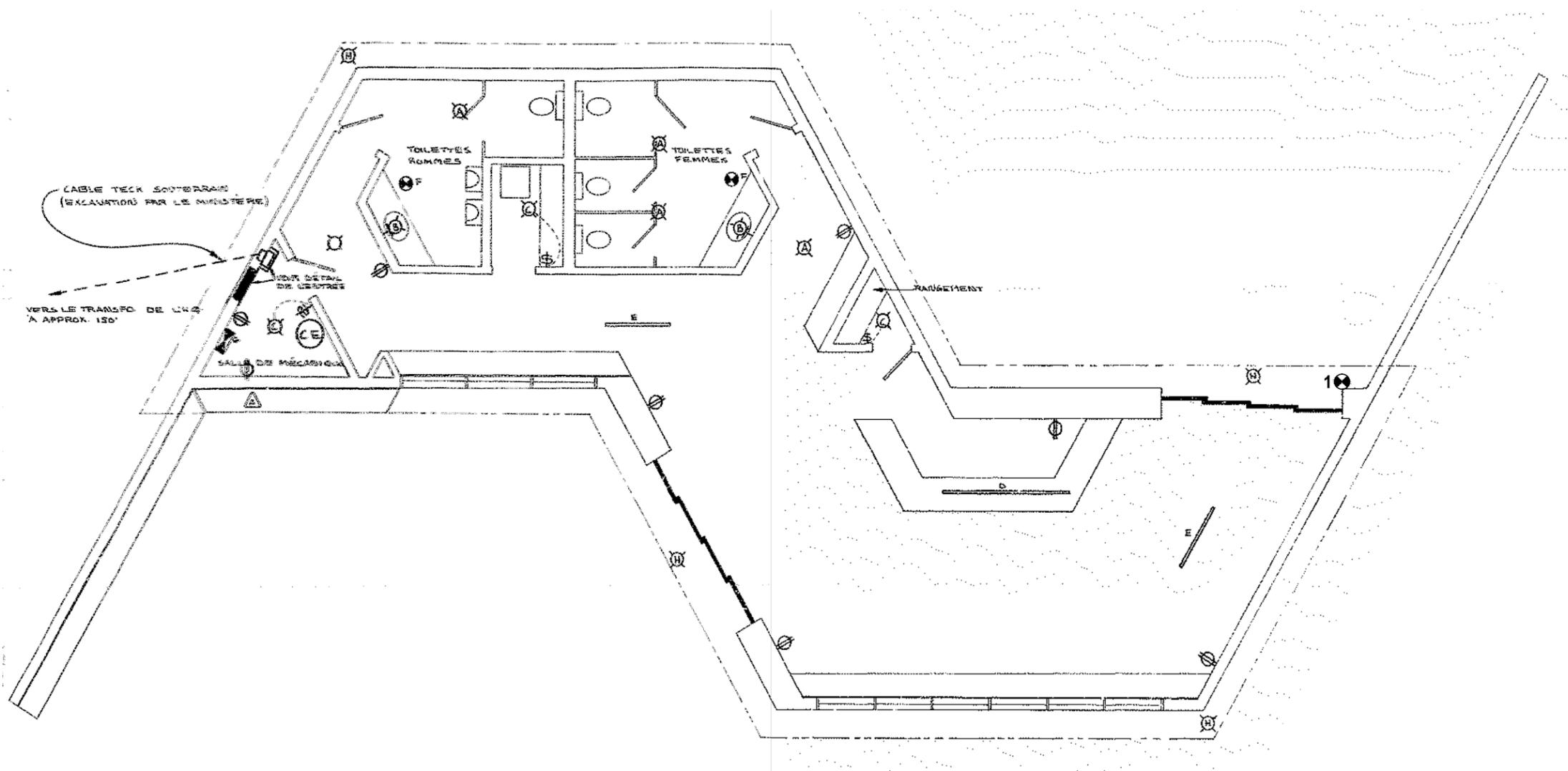
2

1

0

LÉGENDE :

-  POINT D'ÉCHANTILLONNAGE SUR MUR
-  POINT D'ÉCHANTILLONNAGE SUR PLAFOND
-  POINT D'ÉCHANTILLONNAGE SUR PLANCHER
-  POINT D'ÉCHANTILLONNAGE DE JOINT D'ÉTANCHÉITÉ DE FENÊTRE
-  ÉCHANTILLON CONTENANT DE L'AMIANTE
-  PLÂTRE CIMENT CONTENANT DE L'AMIANTE



Fichier: G:\045\IP-0009275_TPSGC & sites PC\25_CAD\HI\OTF_0-01-260-01\045-P-0009275-0-01-260-01-HI-D-0101-0A.dwg

Client **TPSGC (TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA)**

Projet **CARACTÉRISATION DES MATÉRIAUX SUSCEPTIBLES DE CONTENIR DE L'AMIANTE ET DES PEINTURES SUSCEPTIBLES DE CONTENIR DU PLOMB
LIEU HISTORIQUE NATIONAL DU FORT-LENNOX**

Titre **FIGURE 15
LOCALISATION DES ÉCHANTILLONS
(LE CENTRE D'ACCUEIL SITUÉ SUR LA RIVE)**

 Englobe Corp.
1080, côte du Beaver Hall, bureau 200
Montréal (Québec) H2Z 1S8
Téléphone : 514.281.5151
Télécopieur : 514.657.8120

Préparé M.-E. Bélanger	Discipline ENVIRONNEMENT	Chargé de projet M. Péladeau
Dessiné F. Boudreau	Échelle AUCUNE	No. de séquence
Vérifié J. K. Michel	Date 2015-11-04	de

045	P-0009275	001260	HI	D	0115	0A
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CE DOCUMENT EST LA PROPRIÉTÉ DE ENGLOBE CORP. ET EST PROTÉGÉ PAR LA LOI. IL EST DESTINÉ EXCLUSIVEMENT AUX FINS QUI Y SONT MENTIONNÉES. TOUTE REPRODUCTION OU ADAPTATION, PARTIELLE OU TOTALE, EN EST STRICTEMENT PROHIBÉE SANS AVOIR PRÉALABLEMENT OBTENU L'AUTORISATION ÉCRITE DE ENGLOBE CORP..

Références

Annexe 3

**Formulaires d'envoi des échantillons
au laboratoire**

PRÉLIMINAIRE



Demande d'Analyse Microscopie / Microscopy Request for Analysis

Date : 02/10/2015		NFO CLIENT / CLIENT INFO	
Nom Complet / Complete Name		Rapport en : / Report in :	
Marie-Ève Bélanger		<input checked="" type="checkbox"/> Français <input type="checkbox"/> Les deux / Both <input type="checkbox"/> English (+25\$)	
Compagnie / Company		Résultats par : / Result by :	
Englobe		<input type="checkbox"/> Appel / Call <input checked="" type="checkbox"/> E-Mail (PDF) <input type="checkbox"/> Télécopie / Fax <input type="checkbox"/> Poste / Mail	
Adresse / Address	Ville / Town	Province	Code Postal Code
1080 Beaver Hall	Montréal	Qc	H2Z 1S8
Votre Projet / Your Project / Site Prélèvement / Sampling Site		Tél. ou Cellulaire / Tel. or Cellular	
TPSGC – FORT LENNOX		514-281-5151 poste 121715	
Courriel / E-Mail		Télécopieur / Fax	
marie-eve.belanger@englobecorp.com		514-657-8120	

ANALYSES / ANALYSIS

Type d'analyse / Type of analysis		
MLP (244-3) Identification Amiante dans Solide <input checked="" type="checkbox"/> PLM (244-3) Asbestos Identification in Solid	MCP (243-1) Décompte fibres dans l'air <input type="checkbox"/> PCM (243-1) Fibre Count in Air	MET <input type="checkbox"/> TEM
Délai d'analyse / Turnaround time		
<input type="checkbox"/> 24 heures / 24 hours	<input type="checkbox"/> 48 heures / 48 hours	<input checked="" type="checkbox"/> Normal 5+ jours/Normal 5+ days

ÉCHANTILLONS / SAMPLES

#	Nom d'échantillon (client) / Sample ID (client)	Volume (L) (si/if applicable)
1	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4A	
2	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4B	
3	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4C	
4	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4D	
5	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4E	
6	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4F	
7	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4G	
8	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4H	
9	TPSGC-LENNOX-CORPS-ETAGE-MUR-P/C-4I	
10	TPSGC-LENNOX-CORPS-EXT-MORTIER-5A	
11	TPSGC-LENNOX-CORPS-EXT-MORTIER-5B	
12	TPSGC-LENNOX-CORPS-EXT-MORTIER-5C	
13	TPSGC-LENNOX-CORPS-EXT-MORTIER-5D	
14	TPSGC-LENNOX-CORPS-EXT-MORTIER-5E	
15	TPSGC-LENNOX-CORPS-EXT-MORTIER-5F	
16	TPSGC-LENNOX-CORPS-EXT-MORTIER-5G	
17	TPSGC-LENNOX-CORPS-EXT-MORTIER-5H	
18	TPSGC-LENNOX-CORPS-EXT-MORTIER-5I	
19	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1A	
20	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1B	
21	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1C	
22	TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D	
23	TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1E	
24	TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1F	
25	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1G	
26	TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1H	
27	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER PIERRE-1I	
28	TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A	
29	TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2B	
30	TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2C	

31	TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2D	
32	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2E	
33	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2F	
34	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2G	
35	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2H	
36	TPSGC-LENNOX-MAG NORD-ETAGE-MORTIER BRIQUE-2I	
37	TPSGC-LENNOX-MAG NORD-RDC-P/C-3A	
38	TPSGC-LENNOX-MAG NORD-RDC-P/C-3B	
39	TPSGC-LENNOX-MAG NORD-RDC-P/C-3C	
40	TPSGC-LENNOX-MAG NORD-RDC-P/C-3D	
41	TPSGC-LENNOX-MAG NORD-RDC-P/C-3E	
42	TPSGC-LENNOX-MAG NORD-RDC-P/C-3F	
43	TPSGC-LENNOX-MAG NORD-RDC-P/C-3G	
44	TPSGC-LENNOX-MAG NORD-RDC-P/C-3H	
45	TPSGC-LENNOX-MAG NORD-RDC-P/C-3I	
46	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A	
47	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5B	
48	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5C	
49	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5D	
50	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5E	
51	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5F	
52	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5G	
53	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5H	
54	TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5I	
55	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6A	
56	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6B	
57	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6C	
58	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6D	
59	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6E	
60	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6F	
61	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6G	
62	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6H	
63	TPSGC-LENNOX-MAG NORD-ETAGE-P/C-6I	
64	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1A	
65	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1B	
66	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1C	
67	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1D	
68	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1E	
69	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1F	
70	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1G	
71	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1H	
72	TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1I	
73	TPSGC-LENNOX-GARAGE AT-EXT-JOINT-1	
74	TPSGC-LENNOX-GARAGE AT-SDB-PF-TA-2	
75	TPSGC-LENNOX-GARAGE AT-BUREAU-PF-TA-3	
76	TPSGC-LENNOX-CORPS-EXT-PANNEAU PREFAB-6	
77	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1A	
78	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1B	
79	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1C	
80	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1D	

81	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1E	
82	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1F	
83	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1G	
84	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1H	
85	TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1I	
86	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2A	
87	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2B	
88	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2C	
89	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2D	
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92	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2G	
93	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2H	
94	TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2I	
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97	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1C	
98	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1D	
99	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1E	
100	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1F	
101	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1G	
102	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1H	
103	TPSGC-LENNOX-TOILETTES-MORTIER EXT-1I	
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111	TPSGC-LENNOX-CASEMATES O-MORTIER INT-1H	
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113	TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2A	
114	TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2B	
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120	TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2H	
121	TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2I	
122	TPSGC-LENNOX-MAG SUD-RDC-P/C-1A	
123	TPSGC-LENNOX-MAG SUD-RDC-P/C-1B	
124	TPSGC-LENNOX-MAG SUD-RDC-P/C-1C	
125	TPSGC-LENNOX-MAG SUD-RDC-P/C-1D	
126	TPSGC-LENNOX-MAG SUD-RDC-P/C-1E	
127	TPSGC-LENNOX-MAG SUD-RDC-P/C-1F	
128	TPSGC-LENNOX-MAG SUD-RDC-P/C-1G	
129	TPSGC-LENNOX-MAG SUD-RDC-P/C-1H	
130	TPSGC-LENNOX-MAG SUD-RDC-P/C-1I	



131	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2A	
132	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2B	
133	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2C	
134	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2D	
135	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2E	
136	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2F	
137	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2G	
138	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2H	
139	TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2I	
140	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3A	
141	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3B	
142	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3C	
143	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3D	
144	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3E	
145	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3F	
146	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3G	
147	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3H	
148	TPSGC-LENNOX-MAG SUD-ETAGE-P/C-3I	
149	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3A	
150	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3B	
151	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3C	
152	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3D	
153	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3E	
154	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3F	
155	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3G	
156	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3H	
157	TPSGC-LENNOX-CASEMATES N-MORTIER CUISINE-3I	
158	TPSGC-LENNOX-PORTE SUD-MORTIER-1A	
159	TPSGC-LENNOX-PORTE SUD-MORTIER-1B	
160	TPSGC-LENNOX-PORTE SUD-MORTIER-1C	
161	TPSGC-LENNOX-PORTE SUD-MORTIER-1D	
162	TPSGC-LENNOX-PORTE SUD-MORTIER-1E	
163	TPSGC-LENNOX-PORTE SUD-MORTIER-1F	
164	TPSGC-LENNOX-PORTE SUD-MORTIER-1G	
165	TPSGC-LENNOX-PORTE SUD-MORTIER-1H	
166	TPSGC-LENNOX-PORTE SUD-MORTIER-1I	
167	TPSGC-LENNOX-LATRINES-MORTIER EXT-1A	
168	TPSGC-LENNOX-LATRINES-MORTIER EXT-1B	
169	TPSGC-LENNOX-LATRINES-MORTIER EXT-1C	
170	TPSGC-LENNOX-LATRINES-MORTIER EXT-1D	
171	TPSGC-LENNOX-LATRINES-MORTIER EXT-1E	
172	TPSGC-LENNOX-LATRINES-MORTIER EXT-1F	
173	TPSGC-LENNOX-LATRINES-MORTIER EXT-1G	
174	TPSGC-LENNOX-LATRINES-MORTIER EXT-1H	
175	TPSGC-LENNOX-LATRINES-MORTIER EXT-1I	
176	TPSGC-LENNOX-LATRINES-CIMENT INT-2A	
177	TPSGC-LENNOX-LATRINES-CIMENT INT-2B	
178	TPSGC-LENNOX-LATRINES-CIMENT INT-2C	
179	TPSGC-LENNOX-LATRINES-CIMENT INT-2D	
180	TPSGC-LENNOX-LATRINES-CIMENT INT-2E	



181	TPSGC-LENNOX-LATRINES-CIMENT INT-2F	
182	TPSGC-LENNOX-LATRINES-CIMENT INT-2G	
183	TPSGC-LENNOX-LATRINES-CIMENT INT-2H	
184	TPSGC-LENNOX-LATRINES-CIMENT INT-2I	
185	TPSGC-LENNOX-ACCUEIL-EXT-JOINT-1	
186	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1A	
187	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1B	
188	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1C	
189	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1D	
190	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1E	
191	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1F	
192	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1G	
193	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1H	
194	TPSGC-LENNOX-PORTE N-MUR-MORTIER-1I	
195	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2A	
196	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2B	
197	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2C	
198	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2D	
199	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2E	
200	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2F	
201	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2G	
202	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2H	
203	TPSGC-LENNOX-PORTE N-MUR-MORTIER-2I	
204	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3A	
205	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3B	
206	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3C	
207	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3D	
208	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3E	
209	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3F	
210	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3G	
211	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3H	
212	TPSGC-LENNOX-CORPS-ETAGE-COLONNE-P/C-3I	
213	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2A	
214	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2B	
215	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2C	
216	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2D	
217	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2E	
218	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2F	
219	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G	
220	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2H	
221	TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2I	
222	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A	
223	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1B	
224	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1C	
225	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1D	
226	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1E	
227	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1F	
228	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1G	
229	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1H	
230	TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1I	



231	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2A	
232	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2B	
233	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2C	
234	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2D	
235	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2E	
236	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2F	
237	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2G	
238	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2H	
239	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER PIERRE-2I	
240	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1A	
241	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1B	
242	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1C	
243	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1D	
244	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1E	
245	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1F	
246	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1G	
247	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1H	
248	TPSGC-LENNOX-POUDRIERE-MUR-MORTIER BRIQUE-1I	
249	TPSGC-LENNOX-OFFICIERS-GRENIER-LAINE-5	
250	TPSGC-LENNOX-OFFICIERS-EXT-PANNEAU PREFAB-10	
251	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-CAJ-8	
252	TPSGC-LENNOX-OFFICIERS-RDC-MUR-CJ+G-7	
253	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4A	
254	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4B	
255	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4C	
256	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4D	
257	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4E	
258	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4F	
259	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4G	
260	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4H	
261	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4I	
262	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2A	
263	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2B	
264	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2C	
265	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2D	
266	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2E	
267	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2F	
268	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2G	
269	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2H	
270	TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2I	
271	T PSGC-LENNOX-OFFICIERS-RDC-PF-CAJ-9	
272	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1A	
273	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1B	
274	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1C	
275	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1D	
276	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1E	
277	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1F	
278	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1G	
279	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1H	
280	TPSGC-LENNOX-OFFICIERS-ETAGE-MUR-P/C-1I	



281	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-3A	
282	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3B	
283	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3C	
284	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3D	
285	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3E	
286	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3F	
287	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3G	
288	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3H	
289	TPSGC-LENNOX-OFFICIERS-ETAGE-PF-P/C-3I	
290	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6A	
291	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6B	
292	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6C	
293	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6D	
294	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6 ^E	
295	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6F	
296	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6G	
297	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6H	
298	TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6I	
299	TPSGC-LENNOX-CASERNE-RDC-MUR-CJ+G-5	
300	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A	
301	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1B	
302	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1C	
303	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1D	
304	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1E	
305	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1F	
306	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1G	
307	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1H	
308	TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1I	
309	TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A	
310	TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4B	
311	TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4C	
312	TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4D	
313	TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4E	
314	TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4F	
315	TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4G	
316	TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4H	
317	TPSGC-LENNOX-CASERNE-ETAGE-MORTIER-MUR-4I	
318	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6A	
319	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6B	
320	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6C	
321	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6D	
322	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6E	
323	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6F	
324	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6G	
325	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6H	
326	TPSGC-LENNOX-CASERNE-ETAGE-PF-P/C-6I	
327	TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7A	
328	TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7B	
329	TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7C	
330	TPSGC-LENNOX-CASERNE-ETAGE-MUR-P/C-7D	

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Demande d'Analyse Microscopie / Microscopy Request for Analysis

Date : 02/10/2015

NFO CLIENT / CLIENT INFO

Nom Complet / Complete Name		Rapport en : / Report in :	
Marie-Ève Bélanger		<input checked="" type="checkbox"/> Français <input type="checkbox"/> Les deux / Both <input type="checkbox"/> English (+25\$)	
Compagnie / Company		Résultats par : / Result by :	
ENGLOBE		<input type="checkbox"/> Appel / Call <input checked="" type="checkbox"/> E-Mail (PDF) <input type="checkbox"/> Télécopie / Fax <input type="checkbox"/> Poste / Mail	
Adresse / Address	Ville / Town	Province	Code Postal Code
1080 côte du Beaver Hall	Montréal	Qc	H2Z 1S8
Votre Projet / Your Project / Site Prélèvement / Sampling Site		Tél. ou Cellulaire / Tel. or Cellular	
TPSGC – FORT LENNOX		514-281-1010 p.121715	
Courriel / E-Mail		Télécopieur / Fax	
marie-eve.belanger@englobecorp.com		514-657-8120	

ANALYSES / ANALYSIS

Type d'analyse / Type of analysis		
<input type="checkbox"/> MLP (244-3) Identification Amiante dans Solide <input type="checkbox"/> PLM (244-3) Asbestos Identification in Solid	<input type="checkbox"/> MCP (243-1) Décompte fibres dans l'air <input type="checkbox"/> PCM (243-1) Fibre Count in Air	<input type="checkbox"/> MET <input checked="" type="checkbox"/> TEM
Délai d'analyse / Turnaround time		
<input type="checkbox"/> 24 heures / 24 hours	<input type="checkbox"/> 48 heures / 48 hours	<input checked="" type="checkbox"/> Normal 5+ jours/Normal 5+ days

ÉCHANTILLONS / SAMPLES

#	Nom d'échantillon (client) / Sample ID (client)	Volume (L) (si/if applicable)
1	TPSGC-LENNOX-CASERNE-RDC-PL-TV-2	
2	TPSGC-LENNOX-GARAGE AT-SDB-PL-LINOLEUM-5	
3	TPSGC-LENNOX-GARAGE AT-PL-TV-4	
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Commentaires / Comments

Arrêt au 1^{er} Positif / Stop at 1st Positive

PAIEMENT ET SIGNATURE / PAYMENT AND SIGNATURE

Méthode de paiement / Method of Payment			
<input type="checkbox"/> Carte de crédit Credit Card	<input type="checkbox"/> Chèque Certifié Certified Check	<input type="checkbox"/> Argent / Interac Cash / Interac	<input checked="" type="checkbox"/> Bon de commande Purchase Order #
Numéro Carte de crédit / Credit Card #			004717
		Exp. Code	
J'autorise tout travail tel qu'indiqué ci-haut : I authorize all work as indicated above :		Marie-Ève Bélanger	

PRÉLIMINAIRE

Annexe 4

**Certificats d'analyses -
amiante**



Monsieur Mathieu Péladeau
EnGlobe Corp.
1080, Beaver Hall, Bureau 300
Montréal (Québec)
H2Z 1S8

CERTIFICAT D'ANALYSE

CERTIFICAT # 15-2572 VERSION 1.0

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

CARACTÉRISATION MINÉRALOGIQUE EN MICROSCOPIE POLARISANTE ET DISPERSION DE COULEURS MÉTHODE IRSST 244-3

Trois-cent-quarante-quatre (344) échantillons ont été soumis pour fins d'analyse par microscopie polarisante et dispersion de couleurs, mais à la demande du client, seulement que trois-cent-vingt-quatre (324) ont été analysés. Les échantillons ont été préparés et observés en respectant la méthode suivante :

Un fragment de chaque échantillon a été isolé. Selon le cas et afin d'extraire les fibres, les échantillons ont subi un léger broyage mécanique. Les particules et les fibres produites ont été transférées sur lames, recouvertes d'une lamelle et baignées dans des liquides d'indice de réfraction appropriés afin d'observer la dispersion de couleurs. Les propriétés optiques orthoscopiques et conoscopiques des échantillons sont également utilisées si elles permettent de compléter la caractérisation. Les résultats se résument comme suit :

TPSGC-LENNOX-CORPS-ÉTAGE-MUR-P/C-4A *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-ÉTAGE-MUR-P/C-4B *	
Ciment gris et brun, plâtre blanc et gris et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Poils (généralement poils de cheval)	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée être supérieure à 0,1%.

TPSGC-LENNOX-CORPS-EXT-MORTIER-5A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CORPS-EXT-MORTIER-5B	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CORPS-EXT-MORTIER-5C *	
Ciment gris et brun, plâtre blanc et beige et matériau beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-EXT-MORTIER-5D *	
Ciment gris, plâtre blanc et beige et matériau beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-CORPS-EXT-MORTIER-5E	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CORPS-EXT-MORTIER-5F	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CORPS-EXT-MORTIER-5G	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CORPS-EXT-MORTIER-5H	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CORPS-EXT-MORTIER-5I	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER PIERRE-1A	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER PIERRE-1B	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER PIERRE-1C *	
Ciment gris et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D *	
Ciment gris et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1E *	
Terre cuite rouge, ciment gris et plâtres blanc, beige et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1F *	
Ciment gris et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER PIERRE-1G *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1H	
Ciment gris	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER PIERRE-1I	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2A *	
Terre cuite rouge et ciments gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2B *	
Terre cuite rouge et ciment gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2C *	
Terre cuite rouge, ciment gris et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client :	EnGlobe Corp.	Numéro B.C. :	004714
Notre Projet :	15-691064	Votre Projet :	P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception :	Le 5 octobre 2015	Date analyse :	Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-RDC-MORTIER BRIQUE-2D	
Ciment gris	
Fibres d'amiante	Non détectées
Autres fibres minérales	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER BRIQUE-2E	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER BRIQUE-2F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER BRIQUE-2G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER BRIQUE-2H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER BRIQUE-2I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-RDC-P/C-3A *	
Terre cuite rouge, ciment gris et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-P/C-3B *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-P/C-3C *	
Terre cuite rouge, ciment gris et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-RDC-P/C-3D *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-P/C-3E *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-P/C-3F *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-RDC-P/C-3G *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-P/C-3H *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-RDC-P/C-3I *	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5E	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5F	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6A *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6B *	
Ciment gris et plâtre blanc, beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6C *	
Ciment gris et brun et plâtre blanc, beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6D *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6E *	
Terre cuite rouge, ciment gris et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6F *	
Terre cuite rouge, ciment gris et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6G *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6H *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6I *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1C	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1D	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client :	EnGlobe Corp.	Numéro B.C. :	004714
Notre Projet :	15-691064	Votre Projet :	P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception :	Le 5 octobre 2015	Date analyse :	Du 7 au 16 octobre 2015

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-GARAGE AT-EXT-JOINT-1	
Joint d'étanchéité gris, présence de mousse isolante	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-GARAGE AT-SDB-PF-TA-2	
Tuile acoustique brune et blanche	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	> 95 %
Particules anguleuses, fragments et autres	1 – 5 %

TPSGC-LENNOX-GARAGE AT-BUREAU-PF-TA-3	
Tuile acoustique beige et blanche	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	35 – 40 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	30 – 35 %
Particules anguleuses, fragments et autres	25 – 35 %

TPSGC-LENNOX-CORPS-EXT-PANNEAU PRÉFAB-6	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1A	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1B *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER PIERRE INT-1I *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

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Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2E	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1A *	
Ciment gris et brun et matériau beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1C *	
Ciment gris et matériau blanc, beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1D *	
Ciment gris et matériau blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1F *	
Ciment gris et matériau beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1G *	
Ciment gris et brun et matériau blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1H *	
Ciment gris et matériau beige et blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

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Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1I *	
Ciment gris et brun et matériau beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2D *	
Ciments gris et matériau beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

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Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2H *	
Ciment gris et brun et matériau beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES O-MORTIER EXT-2I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-RDC-P/C-1A *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-RDC-P/C-1B *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-RDC-P/C-1C *	
Ciments gris et brun et plâtre blanc et bige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-RDC-P/C-1D *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-RDC-P/C-1E *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-RDC-P/C-1F *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-RDC-P/C-1G *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-RDC-P/C-1H *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-RDC-P/C-1I *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

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Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3A *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3B *	
Ciment gris et brun et plâtre blanc, beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3C *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3D *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3E *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3F *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3G *	
Ciments gris et brun et plâtre blanc, beige et brun	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3H *	
Ciments gris et brun et plâtre blanc, beige et brun	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3I *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3B *	
Ciment gris et brun et plâtre blanc, beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3C *	
Ciments gris et brun et plâtre blanc, beige et brun, présence de terre cuite	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3D *	
Ciment gris et brun et plâtre blanc et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3E *	
Terre cuite rouge et grise, ciment gris et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3F *	
Ciment gris et brun et plâtre blanc, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3G *	
Ciment gris et brun et plâtre blanc, beige et brun, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3H *	
Terre cuite rouge et grise, ciment gris et brun et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3I *	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PORTE SUD-MORTIER-1A	
Ciment gris et brun, présence de plâtre	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE SUD-MORTIER-1B *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-PORTE SUD-MORTIER-1C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE SUD-MORTIER-1D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE SUD-MORTIER-1E *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PORTE SUD-MORTIER-1F	
Ciment gris et brun, présence de plâtre	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE SUD-MORTIER-1G *	
Ciment gris et brun et plâtre blanc et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-PORTE SUD-MORTIER-1H *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PORTE SUD-MORTIER-1I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1D	
Ciment gris et brun, présence de plâtre	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-LATRINES-MORTIER EXT-1F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-MORTIER EXT-1I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2A	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2C	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-LATRINES-CIMENT INT-2D	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2E	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2F	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2G *	
Ciments gris et brun et plâtre beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-LATRINES-CIMENT INT-2H	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-LATRINES-CIMENT INT-2I *	
Ciments gris et brun et plâtre beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-ACCUEIL-EXT-JOINT-1	
Joint d'étanchéité brun, présence de bois	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1A	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1B	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1C	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1D	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1E	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1G *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1H *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1I *	
Ciments gris et brun et plâtre beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2A	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2B	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2C	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2G	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2H	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3A *	
Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3B *	
Ciment gris et brun et plâtre blanc, gris et brun, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3C *	
Ciment gris et brun et plâtre blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client :	EnGlobe Corp.	Numéro B.C. :	004714
Notre Projet :	15-691064	Votre Projet :	P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception :	Le 5 octobre 2015	Date analyse :	Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3D *	
Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3E *	
Ciment gris et brun et plâtre blanc, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3F *	
Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3G *	
Ciment gris et brun et plâtres blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3H *	
Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3I *	
Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2A *	
Terre cuite rouge, ciment gris et brun et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2B *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2C *	
Terre cuite rouge, ciment gris et brun et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2D *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2E *	
Ciments gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2F *	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	90 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client :	EnGlobe Corp.	Numéro B.C. :	004714
Notre Projet :	15-691064	Votre Projet :	P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception :	Le 5 octobre 2015	Date analyse :	Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2G *	
Ciment gris et brun et plâtres blancs et beiges, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2H *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MUR-P/C-2I *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres de laine de verre	< 1 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A *	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1B *	
Ciment gris et brun et plâtre blanc, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1C *	
Ciment gris et brun et plâtre blanc, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1D	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1E *	
Ciment gris et brun et plâtre blanc, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1F	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1G *	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1H *	
Terre cuite rouge, ciment gris et brun et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1I *	
Terre cuite rouge, ciment gris et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2A *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2B	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2C	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2D	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2E	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2F	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2G	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2H	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2I	
Ciments gris et bruns	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1A	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1B	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1C *	
Terre cuite rouge et ciment gris et brun	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1D *	
Terre cuite rouge, ciment gris et brun et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1E *	
Terre cuite rouge et ciment gris et brun	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1F *	
Terre cuite rouge, ciment gris et brun et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1G *	
Terre cuite rouge et ciment gris et brun	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1H *	
Terre cuite rouge et ciment gris et brun	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-11 *	
Terre cuite rouge et ciments gris et bruns	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-GRENIER-LAINE-5	
Laine isolante jaune, présence de bois et de mousse isolante	
Fibres d'amiante	Non détectées
Fibres de laine de verre	> 95 %
Fibres synthétiques	< 1 %
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	1 – 5 %

TPSGC-LENNOX-OFFICIERS-EXT-PANNEAU PRÉFAB-10	
Ciments gris et brun, présence de bois	
Fibres d'amiante	Non détectées
Fibres de laine de verre	Traces
Fibres de laine de roche / laine de laitier	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-ÉTAGE-MUR-CÂJ-8 *	
Gypse beige et composés à joints beiges, présence de cartons	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Filaments continus de fibres de verre	5 – 10 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	90 – 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-RDC-MUR-CJ+G-7 *	
Gypse beige et composés à joints beiges, présence de cartons	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Filaments continus de fibres de verre	5 – 10 %
Fibres synthétiques	< 1 %
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	90 – 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4A	
Ciments gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4B	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4C *	
Ciments gris et brun et matériau beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase matériau</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client :	EnGlobe Corp.	Numéro B.C. :	004714
Notre Projet :	15-691064	Votre Projet :	P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception :	Le 5 octobre 2015	Date analyse :	Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4E	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4G	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4H	
Ciment gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4I	
Matériau brun et beige	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2B *	
Laine isolante jaune, terre cuite rouge et ciment gris et brun	
<i>Phase laine isolante</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	> 95 %
Particules anguleuses, fragments et autres	1 – 5 %
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2C *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres de laine de roche / laine de laitier	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2E *	
Terre cuite rouge et ciments gris et brun	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2F	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2G *	
Terre cuite rouge, ciments gris et brun et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2H *	
Terre cuite rouge, ciment gris et brun et plâtre blanc	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER BRIQUE-2I *	
Terre cuite rouge, ciment gris et brun et plâtre blanc et beige	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-RDC-PF-CÀJ-9 *	
Gypse beige, composés à joints beiges et joint d'étanchéité beige, présence de cartons	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase joint d'étanchéité</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-ÉTAGE-MUR-P/C-1A *	
Ciment gris, plâtres blanc et gris et composés à joints beiges	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-ÉTAGE-MUR-P/C-1B *	
Ciment gris et brun, plâtre gris et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-ÉTAGE-MUR-P/C-1C *	
Ciments gris et brun, plâtre blanc et composés à joints beiges	
<i>Phase ciments</i>	
Fibres d’amiante CHRYSOTILE	< 1 % **
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d’amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d’amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** **La concentration de fibres d’amiante est évaluée être supérieure à 0,1%.**

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-3A *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d’amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d’amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3B *	
Ciment gris, plâtre blanc et gris, ciment beige, blanc et brun et composé à joints beige, présence de bois	
<i>Phase ciment gris</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment beige, blanc et brun</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient quatre (4) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3C *	
Ciment gris, plâtre blanc et gris et composés à joints beiges	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3D *	
Ciment gris et brun, plâtre blanc et gris et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	< 1 %
Fibres de laine de roche / laine de laitier	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3E *	
Ciment beige, blanc et brun et composés à joints beiges	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3F *	
Ciment gris et brun et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3G *	
Ciment beige, blanc et brun et composés à joints beiges	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3H *	
Ciment gris et brun et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3I *	
Ciment gris et brun et composé à joints beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6A	
Ciment beige, blanc et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-OFFICIERS-RDC-MUR-P/C-6B *	
Ciment beige, blanc et brun, ciment gris et brun et composé à joints beige	
<i>Phase ciment beige, blanc et brun</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment gris et brun</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée à être supérieure à 0,1%.

TPSGC-LENNOX-CASERNE-RDC-MUR-CJ+G-5 *	
Gypse beige et composé à joints beige, présence de carton et d'un treillis de filaments de verre	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1A	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1B	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1C	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1D	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1E	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1F *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1G *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1H *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4A *	
Ciments gris et brun et composé à joints beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée à être supérieure à 0,1%.

TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4B *	
Ciments gris et brun et composé à joints beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée à être supérieure à 0,1%.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4C	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4D *	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-MORTIER-BRIQUE-MUR-4E	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-MORTIER-BRIQUE-MUR-4F	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-MORTIER-MUR-4G *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	90 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-ÉTAGE-MORTIER-MUR-4H *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-MORTIER-MUR-4I	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6A *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6B *	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6C *	
Ciment gris et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	90 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6D *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6E *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6F *	
Ciment gris et brun et plâtre blanc et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	5 – 10 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	85 – 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6G *	
Ciments gris et bruns et plâtre blanc et gris	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 90 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6H *	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6I *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7A	
Plâtres blanc, beige et gris	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7B *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7C *	
Ciments gris et brun et plâtre blanc et beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres de laine de verre	Traces
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7D	
Plâtre blanc et beige, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7E	
Plâtre blanc et beige, présence de terre cuite	
Fibres d'amiante	Non détectées
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7F *	
Ciment gris et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7G	
Plâtre blanc et beige, présence de bois	
Fibres d'amiante	Non détectées
Poils	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7H	
Plâtre blanc et beige, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7I	
Plâtres blanc, beige et gris	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8A *	
Ciment gris et plâtres blanc, beige et gris, présence de bois	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8B *	
Ciment gris et brun et plâtres blanc, beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8C *	
Ciment gris et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8D *	
Ciments gris, plâtres blanc et beige et composés à joints beiges, présence de terre cuite	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante CHRYSOTILE	< 1 % **
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** La concentration de fibres d'amiante est évaluée être supérieure à 0,1%.

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8E *	
Ciment gris et plâtre blanc, beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8F *	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8G *	
Ciment gris et brun et plâtre blanc, beige et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8H *	
Ciments gris et brun et plâtre blanc, beige et brun	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8I *	
Ciment gris et brun et plâtres blanc, beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

Résultats du contrôle de qualité

Le contrôle de qualité consiste à la reprise de 10% des échantillons analysés. Une différence en terme des pourcentages est normale puisqu'il s'agit d'une analyse visuelle semi-quantitative.

TPSGC-LENNOX-CORPS-EXT-MORTIER-5C * – CQ **	
Ciment gris et brun, plâtre blanc et beige et matériau beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composé à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-MAG NORD-RDC-MORTIER PIERRE-1D * – CQ **	
Ciment gris et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-MAG NORD-ÉTAGE-MORTIER BRIQUE-2E – CQ *	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-MAG NORD-RDC-P/C-3F * – CQ **	
Terre cuite rouge, ciment gris et plâtres blanc et gris	
<i>Phase terre cuite</i>	
Fibres d'amiante	Non détectées
Particules anguleuses, fragments et autres	> 95 %
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-MAG NORD-EXT-MORTIER-5G – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-MAG NORD-ÉTAGE-P/C-6H * – CQ **	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-PASSAGE REDAN-MORTIER-1I – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-CASEMATES N-MORTIER INT-1F – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-CASEMATES N-MORTIER EXT-2G – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-TOILETTES-MORTIER EXT-1H – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-CASEMATES O-MORTIER INT-1I * – CQ **	
Ciment gris et brun et matériau beige	
Phase ciment	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
Phase matériau	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-MAG SUD-RDC-P/C-1A * – CQ **	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-MAG SUD-EXT-MORTIER-2B * – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-MAG SUD-ÉTAGE-P/C-3C * – CQ **	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-CASEMATES N-MORTIER-CUISINE-3D * – CQ **	
Ciment gris et brun et plâtre blanc et brun	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-PORTE SUD-MORTIER-1E * – CQ **	
Ciment gris et brun et plâtre blanc	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-LATRINES-MORTIER EXT-1F – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-LATRINES-CIMENT INT-2G * – CQ **	
Ciments gris et brun et plâtre beige	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (bois)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-PORTE N-MUR-MORTIER-1G * – CQ **	
Ciment gris et brun et plâtre blanc et beige	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Autres fibres minérales	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-PORTE N-MUR-MORTIER-2H – CQ *	
Ciment gris et brun	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-CORPS-ÉTAGE-COLONNE-P/C-3I * – CQ **	
Ciment gris et brun et plâtres blanc et gris, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	1 – 5 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-CORPS-RDC-MORTIER-BRIQUE-1A * – CQ **	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER PIERRE-2A * – CQ **	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-POUDRIÈRE-MUR-MORTIER BRIQUE-1B – CQ *	
Ciment gris et brun, présence de terre cuite	
Fibres d'amiante	Non détectées
Autres fibres minérales	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-OFFICIERS-ÉTAGE-MUR-CÀJ-8 * – CQ **	
Gypse beige et composés à joints beiges, présence de cartons	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Filaments continus de fibres de verre	5 – 10 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	90 – 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-OFFICIERS-MUR-MORTIER-4I – CQ *	
Matériau brun et beige	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-OFFICIERS-RDC-PF-CÀJ-9 * – CQ **	
Gypse beige, composés à joints beiges et joint d'étanchéité beige, présence de cartons	
<i>Phase gypse</i>	
Fibres d'amiante	Non détectées
Fibres de laine de verre	< 1 %
Fibres de laine de roche / laine de laitier	< 1 %
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase joint d'étanchéité</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient trois (3) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-OFFICIERS-ÉTAGE-PF-P/C-3G * – CQ **	
Ciment beige, blanc et brun et composés à joints beiges	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	Traces
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase composés à joints</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-CASERNE-MUR-MORTIER INT-1E – CQ *	
Ciments gris et brun	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	1 – 5 %
Particules anguleuses, fragments et autres	> 95 %

* Résultats acceptables : oui non

TPSGC-LENNOX-CASERNE-RDC-MORTIER-BRIQUE-MUR-4D * – CQ **	
Ciment gris et brun et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	Traces
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-CASERNE-ÉTAGE-PF-P/C-6E * – CQ **	
Ciments gris et brun et plâtre blanc	
<i>Phase ciments</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

TPSGC-LENNOX-CASERNE-ÉTAGE-MUR-P/C-7F * – CQ **	
Ciment gris et plâtre blanc et beige, présence de terre cuite	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Poils (généralement poils de cheval)	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtre</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Client : EnGlobe Corp.	Numéro B.C. : 004714
Notre Projet : 15-691064	Votre Projet : P-0009275-0-01-260-01 – TPSGC – Fort Lennox
Date réception : Le 5 octobre 2015	Date analyse : Du 7 au 16 octobre 2015

Résultats du contrôle de qualité (suite)

TPSGC-LENNOX-CASERNE-RDC-MUR-P/C-8I * – CQ **	
Ciment gris et brun et plâtres blanc, beige et gris	
<i>Phase ciment</i>	
Fibres d'amiante	Non détectées
Fibres synthétiques	< 1 %
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %
<i>Phase plâtres</i>	
Fibres d'amiante	Non détectées
Fibres organiques naturelles (cellulose)	< 1 %
Particules anguleuses, fragments et autres	> 95 %

* Cet échantillon contient deux (2) phases analysées séparément.

** Résultats acceptables : oui non

Analysé par : 
Annie Garand, Technicienne

Vérifié par :  
Martin Gravelle, B.Sc. Chimiste

Notes : Il est reconnu que l'analyse par MLP ne peut détecter l'amiante dans un faible pourcentage d'échantillons contenant de l'amiante. Donc, un résultat négatif par MLP ne peut pas être garanti. Cette méthode analytique est semi-quantitative. Le domaine d'applicabilité de la méthode varie de <1 % à 100 % (v/v). Exova suggère que certains échantillons reportés comme « non détectées », « traces » ou « <1% » soient analysés par MET. Le présent certificat se rapporte seulement aux échantillons analysés. Ce certificat ne peut être reproduit, sauf en totalité, sans la permission écrite d'Exova. Le laboratoire n'est pas responsable de la précision des résultats lorsqu'une séparation physique des phases est requise. Le laboratoire n'est pas responsable de la représentativité de l'échantillon fourni. Les échantillons seront conservés pour une période de 60 jours ou selon les instructions écrites du client. Modalités & conditions : www.exova.ca/modalites

EXOVA POINTE-CLAIRE PARTICIPE AU PROGRAMME AIHA PAT POUR L'IDENTIFICATION DE L'AMIANTE



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Tél/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

Réf. Commande: 551510665
N° Client: 55BODY50
Bon de Commande: 15-691064
N° Projet:

Attn: Martin Gravelle
Exova Canada Inc.
121 Hymus Boulevard
Pointe-Claire, QC H9R 1E6
Proj: 15-691064

Téléphone: (514) 697-3273
Date du Prélèvement:
Date de Réception: 06/10/2015

Résumé du rapport d'analyse de l'amiante en utilisant la méthode analytique 244 de l'IRSST

Nom d'échantillon	Description d'échantillon	Couleur	ESSAI / Date d'analyse	Partie non-amiante		Amiante
				Fibreux	Non Fibreux	
EMSL 551510665-0001	TPSGC-LENNOX-CASERNE-RDC-PL-TV-2	Vert	MET 13/10/2015	0.0%	100.0	non détecté None Detected
EMSL 551510665-0002	TPSGC-LENNOX-GARAGE-AT-PL-TV-4	Blanc	MET 13/10/2015	0.0%	100.0	<0.1% Chrysotile
EMSL 551510665-0003	TPSGC-LENNOX-GARAGE-AT-SDB-PL-LINOL EUM-5	Gris Blanc	MET 13/10/2015	0.0%	100.0	non détecté None Detected

Analyste(s):

Arabee Sathiasaelan TEM IRSST (3)

Examiné et approuvé par:
Matthew Davis
ou autre signataire autorisé

Les gammes de concentration applicable à la méthode d'analyse de l'IRSST 244 sont les suivantes: ND (non détecté), Trace (4 fibres ou moins, contamination possible), <1, (1 à 5%), (entre 5 à 10%), (entre 10 à 25%), (entre 25 à 50%), (entre 50 à 75 %), (entre 75 à 90%), (> 90%). Les Tuiles de plancher signalés comme "Non détecté" ou "Trace" par l'analyse de MLP doivent être analysés par MET (Méthode ELAP 198.4). La limite de détection pour les échantillons "Non détecté" est <0,1%. En raison des limites inhérentes à la méthode MLP, les fibres d'amiante de dimensions inférieures à la limite de la résolution ne seront pas détectées. Ce rapport d'essai ne concerne que les échantillons testés, et ne peut être reproduit sous aucune forme sans l'accord écrite de EMSL. La responsabilité de EMSL est limitée au coût de l'analyse. EMSL ne porte aucune responsabilité pour les activités de collecte de l'échantillon ou les limites des méthodes analytiques. L'interprétation et l'utilisation des résultats des tests sont à la charge du client. Les échantillons ont été reçus en bon état, sauf indication contraire.

IRSST Analytical Method 244 applicable asbestos concentration ranges are as follows: ND (none detected), Trace (4 or less fibers, possible contamination), <1%, 1 to 5%, from 5 to 10%, from 10 to 25%, from 25-50%, from 50 to 75%, from 75% to 90%, >90%. Floor tiles reported as ND or Trace by PLM are required to be analyzed by TEM (method ELAP 198.4). The estimated limit of detection for non-detect samples is <0.1%. Due to limitations inherent in PLM, asbestos fibers with dimensions below the limit of resolution will not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples were received in good condition unless otherwise noted.

Analyses effectués par (Samples analyzed by) EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0, NYS ELAP 12027

Le rapport initial de: 13/10/2015 17:15:13
Initial report from: 10/13/2015 17:15:13

PRÉLIMINAIRE

**Annexe 5 Certificats d'analyses -
peinture**



Certificat d'analyses

Numéro de demande d'analyse: 15-691573



Demande d'analyse reçue le: 2015-10-05

Date d'émission du certificat: 2015-10-13

Numéro de version du certificat: 1

- Certificat d'analyse officiel
 Certificat d'analyse préliminaire

Requérant

Englobe Corp.

1080, Côte du Beaver Hall, Suite 300
Montréal, Québec, Canada
H2Z 1S8
Téléphone : (514) 281-5173
Télécopieur : (514) 798-8790

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Commentaires

Les critères de la "Politique de protection des sols et de réhabilitation des terrains contaminés" inclus dans ce certificat sont à titre indicatif seulement. Les critères A pour les métaux correspondent à ceux de la région des Basses-Terres du St-Laurent. Les critères D correspondant au "Règlement sur l'enfouissement des sols contaminés" sont inclus dans ce certificat à titre indicatif seulement.

Cette version remplace et annule toute version antérieure, le cas échéant.

NA : Information non-fournie et/ou non-applicable

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Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande: **15-691573**

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Échantillon(s)

No Labo.	2963817	2963818	2963819	2963820
Votre Référence	TPSGC-Lennox-Caserne-Peint-Bl-01	TPSGC-Lennox-Caserne-Peint-verte-2	TPSGC-Lennox-Caserne-Peint-gris-3	TPSGC-Lennox-Officier-Peint-Bl-1
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	EM/MEB	EM/MEB	EM/MEB	EM/MEB
Lieu de prélèvement	Lieu Historique nationnel du Fort Lennox, St-Paul			
Prélevé le	NA	NA	NA	NA
Reçu Labo	2015-10-05	2015-10-05	2015-10-05	2015-10-05

Paramètre(s)

Méthode

Référence

Plomb (Pb)

Métaux par ICP. Résultats sur base sèche. (Accrédité)

E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Plomb

Préparation	2015-10-09	2015-10-09	2015-10-09	2015-10-09
Analyse	2015-10-09	2015-10-09	2015-10-09	2015-10-09
No. séquence	522766	522766	522766	522766
mg/kg	143 (A-B)	835 (B-C)	530 (B-C)	106000 (>D)



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Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande: **15-691573**

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Échantillon(s)

No Labo.	2963821	2963822	2963823	2963824
Votre Référence	TPSGC-Lennox-Officier-Peint-verte-2	TPSGC-Lennox-Officier-Peint-BI-3	TPSGC-Lennox-Officier-Peint-gris-4	TPSGC-Lennox-Corps-Peint-BI-1
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	EM/MEB	EM/MEB	EM/MEB	EM/MEB
Lieu de prélèvement	Lieu Historique nationnel du Fort Lennox, St-Paul			
Prélevé le	NA	NA	NA	NA
Reçu Labo	2015-10-05	2015-10-05	2015-10-05	2015-10-05

Paramètre(s)

Méthode

Référence

Plomb (Pb)

Métaux par ICP. Résultats sur base sèche. (Accrédité)

E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Plomb

Préparation	2015-10-09	2015-10-09	2015-10-09	2015-10-09
Analyse	2015-10-09	2015-10-09	2015-10-09	2015-10-09
No. séquence	522766	522766	522766	522766
mg/kg	3360 (C-D)	10500 (>D)	737 (B-C)	7 (<A)





Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande:

15-691573

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Échantillon(s)

No Labo.	2963825	2963826	2963827	2963828
Votre Référence	TPSGC-Lennox-Corps-Peint-vert-2	TPSGC-Lennox-MAG Sud-Peint-BI-1	TPSGC-Lennox-MAG Sud-Peint-vert-2	TPSGC-Lennox-MAG Nord-Peint-vert-1
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	EM/MEB	EM/MEB	EM/MEB	EM/MEB
Lieu de prélèvement	Lieu Historique nationnel du Fort Lennox, St-Paul			
Prélevé le	NA	NA	NA	NA
Reçu Labo	2015-10-05	2015-10-05	2015-10-05	2015-10-05

Paramètre(s)

Méthode
Référence

Plomb (Pb)

Métaux par ICP. Résultats sur base sèche. (Accrédité)
E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Préparation	2015-10-09	2015-10-09	2015-10-09	2015-10-09
Analyse	2015-10-09	2015-10-09	2015-10-09	2015-10-09
No. séquence	522766	522766	522766	522766
Plomb mg/kg	8070 (>D)	3 (<A)	1780 (C-D)	563 (B-C)



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W : www.exova.com



Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande: **15-691573**

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Échantillon(s)

No Labo.	2963829	2963830	2963831	2963832
Votre Référence	TPSGC-Lennox-MAG Nord-Peint-BI-2	TPSGC-Lennox-Porte N-Peint-vert-1	TPSGC-Lennox-Casemates N-Peint-BI-1	TPSGC-Lennox-Casemates N-Peint-vert-2
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	EM/MEB	EM/MEB	EM/MEB	EM/MEB
Lieu de prélèvement	Lieu Historique nationnel du Fort Lennox, St-Paul			
Prélevé le	NA	NA	NA	NA
Reçu Labo	2015-10-05	2015-10-05	2015-10-05	2015-10-05

Paramètre(s)

Méthode

Référence

Plomb (Pb)

Métaux par ICP. Résultats sur base sèche. (Accrédité)

E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Plomb

	2963829	2963830	2963831	2963832
Préparation	2015-10-09	2015-10-09	2015-10-09	2015-10-09
Analyse	2015-10-09	2015-10-09	2015-10-09	2015-10-09
No. séquence	522766	522766	522766	522766
mg/kg	7 (<A)	228 (A-B)	41 (<A)	30 (<A)





Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande: **15-691573**

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Échantillon(s)

No Labo.	2963833	2963834	2963835	2963836
Votre Référence	TPSGC-Lennox-Casemates O- Peint-vert-1	TPSGC-Lennox-Toilettes-Peint-BI-1	TPSGC-Lennox-Toilettes-Peint-gris-2	TPSGC-Lennox-Acceuil-Peint-Bleue-1
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	EM/MEB	EM/MEB	EM/MEB	EM/MEB
Lieu de prélèvement	Lieu Historique nationnel du Fort Lennox, St-Paul			
Prélevé le	NA	NA	NA	NA
Reçu Labo	2015-10-05	2015-10-05	2015-10-05	2015-10-05

Paramètre(s)

Méthode

Référence

Plomb (Pb)

Métaux par ICP. Résultats sur base sèche. (Accrédité)

E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Plomb

Préparation	2015-10-09	2015-10-09	2015-10-09	2015-10-09
Analyse	2015-10-09	2015-10-09	2015-10-09	2015-10-09
No. séquence	522766	522766	522775	522775
mg/kg	7 (<A)	5 (<A)	335 (A-B)	< 1 (<A)





Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande: **15-691573**

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Échantillon(s)

No Labo.	2963837	2963838	2963839	2963840
Votre Référence	TPSGC-Lennox-Garage AT-Peint-gris-1	TPSGC-Lennox-Garage AT-Peint-vert-2	TPSGC-Lennox-Garage AT-Peint-beige+tur-3	TPSGC-Lennox-Poudrerie-Peint-vert-1
Matrice	Peinture sèche	Peinture sèche	Peinture sèche	Peinture sèche
Prélevé par	EM/MEB	EM/MEB	EM/MEB	EM/MEB
Lieu de prélèvement	Lieu Historique nationale du Fort Lennox, St-Paul			
Prélevé le	NA	NA	NA	NA
Reçu Labo	2015-10-05	2015-10-05	2015-10-05	2015-10-05

Paramètre(s)

Méthode

Référence

Plomb (Pb)

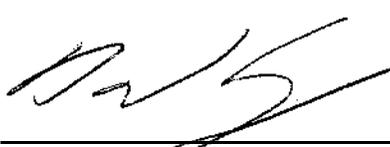
Métaux par ICP. Résultats sur base sèche. (Accrédité)

E-A-EN-EN-CHI-PC-MD017 (REF: MA. 200 - Mét 1.2)

Plomb

Préparation	2015-10-09	2015-10-09	2015-10-09	2015-10-09
Analyse	2015-10-09	2015-10-09	2015-10-09	2015-10-09
No. séquence	522775	522775	522775	522775
mg/kg	2420 (C-D)	5 (<A)	36 (<A)	821 (B-C)

Note 1 : Ces résultats et commentaires, le cas échéant, ne se rapportent qu'aux échantillons soumis pour les analyses réalisées au site de Pointe-Claire (#307).


David Cajolet, chimiste





Certificat d'analyses

Client: **Englobe Corp.**

Numéro de demande:

15-691573

Bon de commande	Votre Projet	Chargé de Projet
004714	P-0009275-0-01-260-01 F.Lennox	Mme Marie-Ève Bélanger

Résultats du Contrôle de Qualité (CQ)

Paramètres (No.Séquence)	Unité	LDR	Blanc	Contrôle certifié	
				Obtenu	Attendu (Intervalle)
Plomb (Pb)					
No Séquence: 522766					
Plomb	mg/kg	< 1	< 1	47	36.6 - 54.8
Plomb (Pb)					
No Séquence: 522775					
Plomb	mg/kg	< 1	< 1	48	36.6 - 54.8

Commentaires CQ

PRÉLIMINAIRE

Annexe 6

Clauses limitatives



CLAUSES LIMITATIVES

Englobe Corp. (ci-après « Englobe ») a mené une recherche diligente et raisonnable pour assurer la réalisation de la présente évaluation, selon les règles de l'art applicables.

Les constatations présentées dans ce rapport sont strictement limitées au moment de l'étude. Les conclusions présentées sont basées sur les informations et documents disponibles, les observations lors de la visite du site, de même que sur les renseignements fournis par les intervenants rencontrés. L'interprétation fournie dans ce rapport se limite à ces données.

Englobe ne se tient pas responsable des conclusions erronées dues à la dissimulation volontaire ou à la non-disponibilité d'une information pertinente. Toute opinion concernant la conformité aux lois et règlements qui serait exprimée dans le texte est technique; elle n'est pas et ne doit, en aucun temps, être considérée comme un avis juridique.

Englobe a préparé ce rapport uniquement pour l'utilisation par le client et ses mandataires pour les fins auxquelles il est destiné. Toute utilisation de ce rapport par un tiers, de même que toute décision basée sur ce rapport, est l'unique responsabilité de celui-ci. Englobe ne saurait être tenue responsable pour d'éventuels dommages subis par un tiers résultant d'une décision prise ou basée sur ce rapport.

**RELEVÉ
PHOTOGRAPHIQUE
- SEPTEMBRE 2018**



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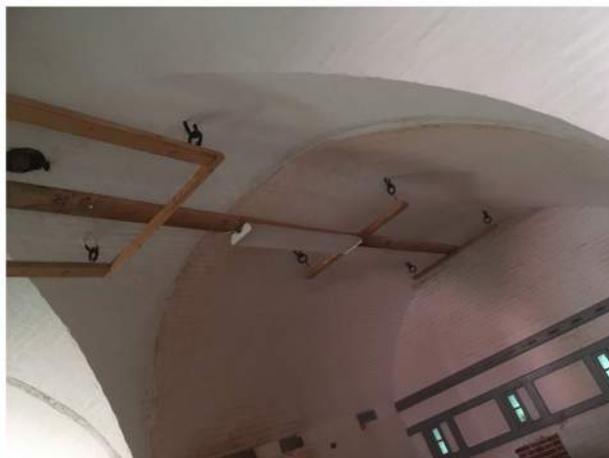
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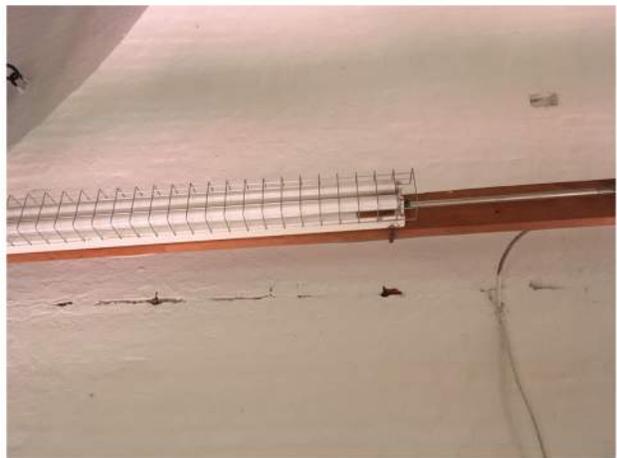
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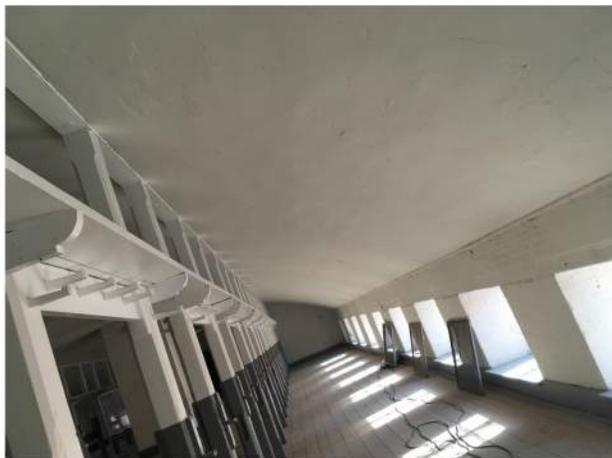
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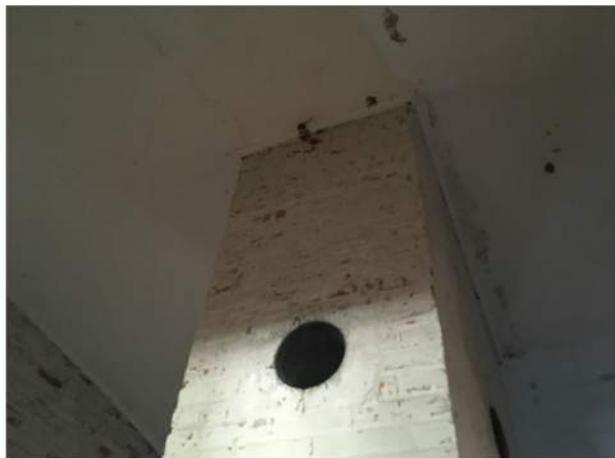
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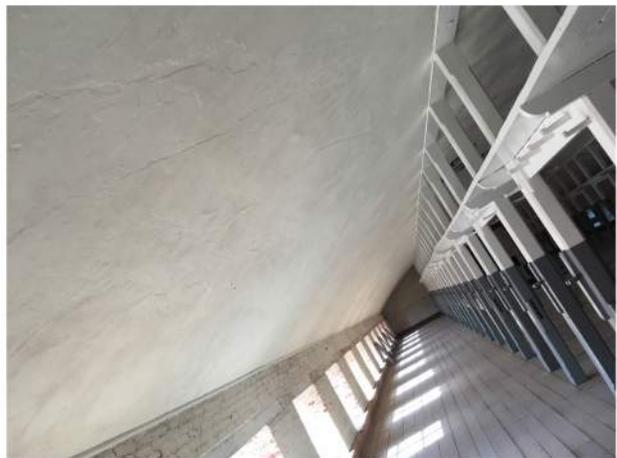
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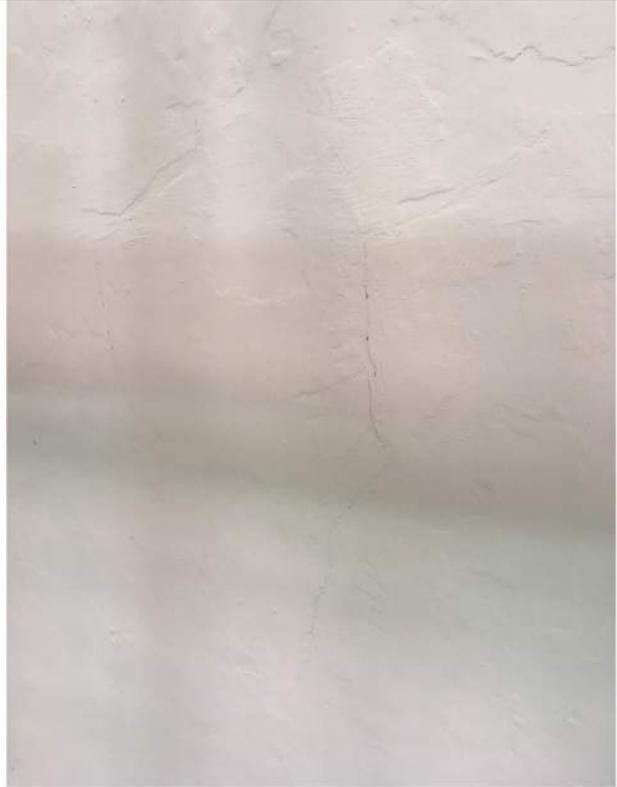
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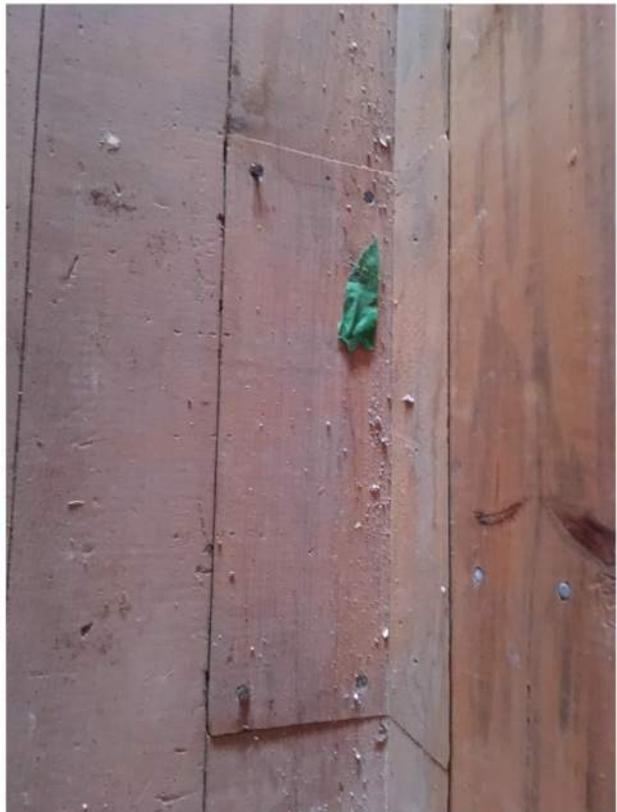
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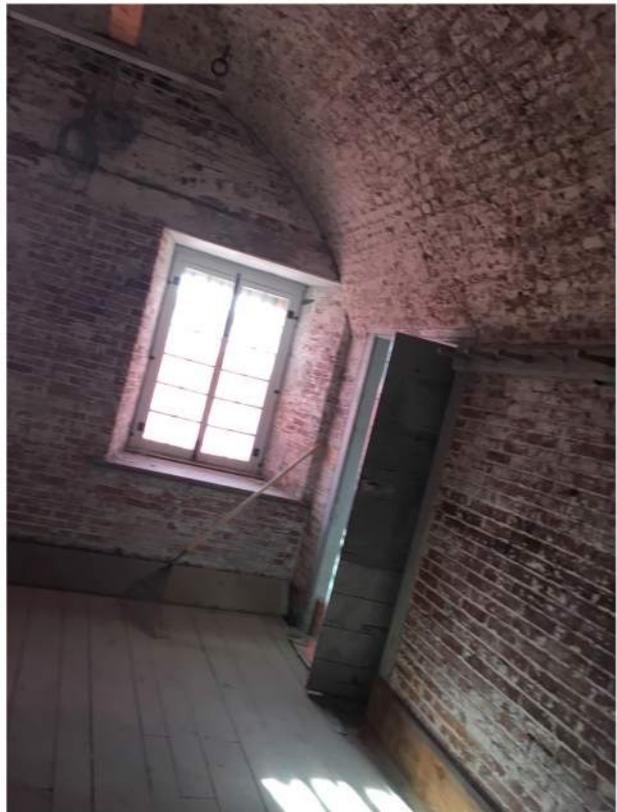
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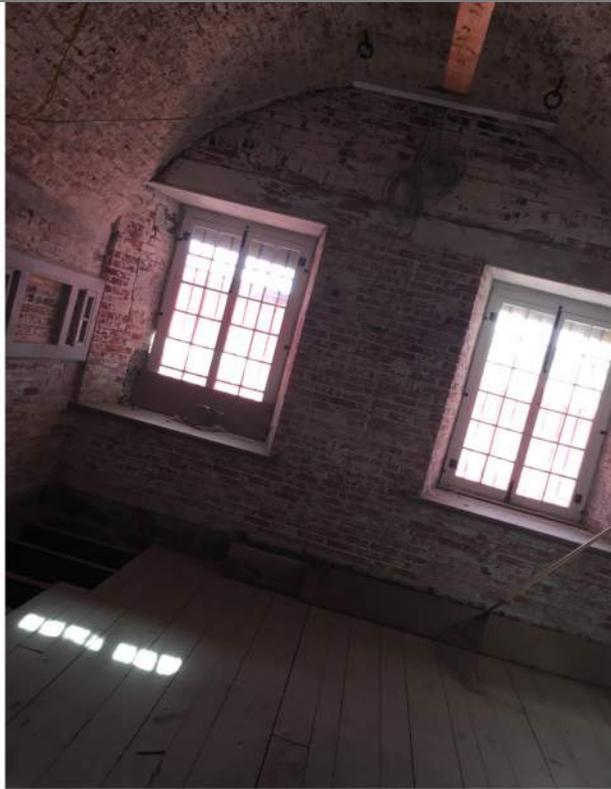
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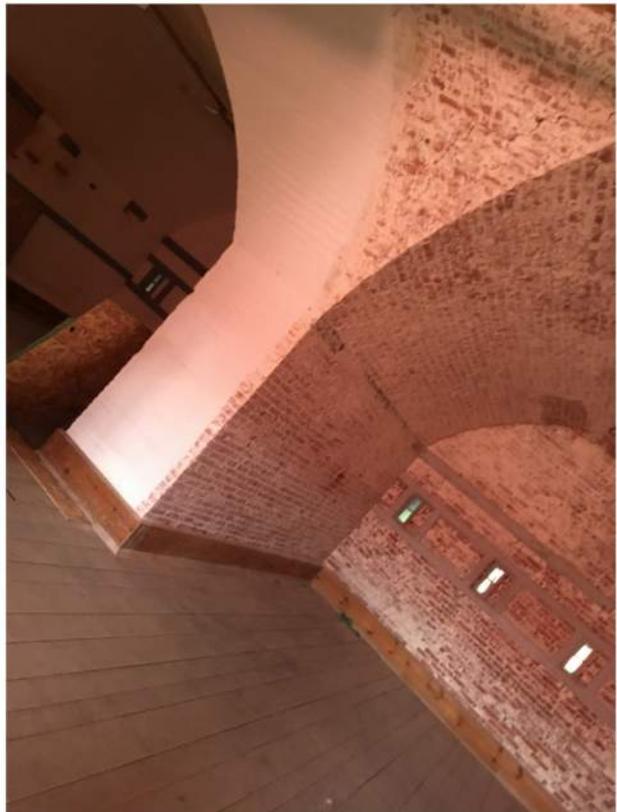
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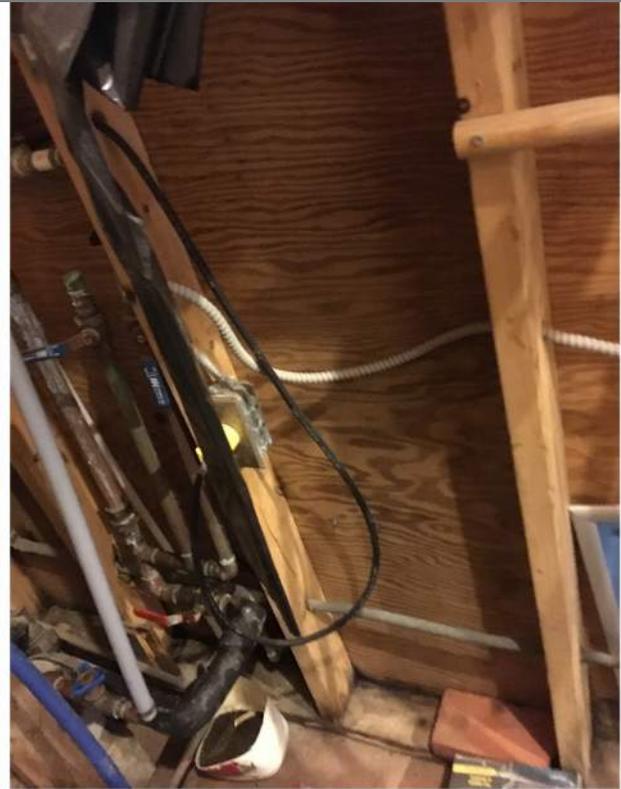
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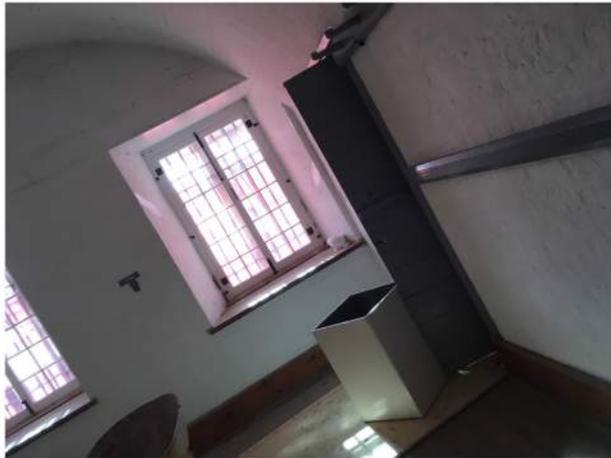
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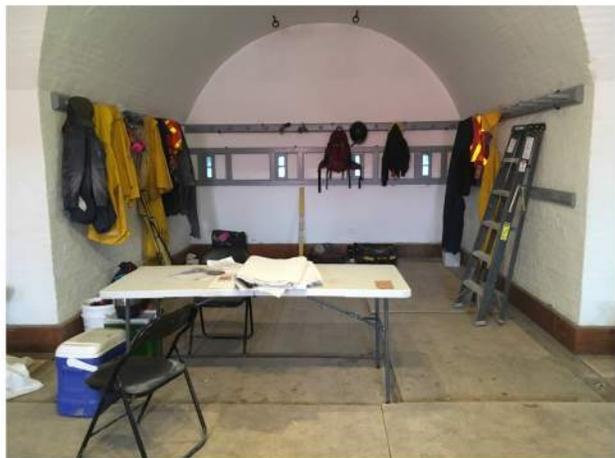
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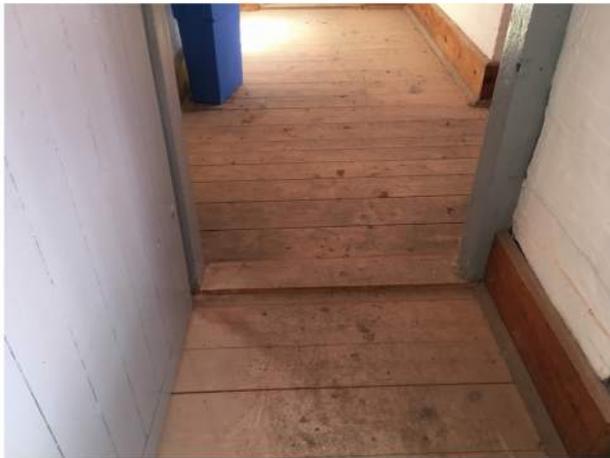
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RÉFECTION DE LA CASERNE DE FORT LENNOX

ÉTUDE GÉOTECHNIQUE

ÎLE-AUX-NOIX, SAINT-PAUL-DE-L'ÎLE-AUX-NOIX (QUÉBEC)

PARCS CANADA

REF. WSP : 161-14903-01

DATE : 12 OCTOBRE 2017

CONFIDENTIEL





RÉFECTION DE LA CASERNE DE FORT LENNOX

ÉTUDE GÉOTECHNIQUE

ÎLE-AUX-NOIX, SAINT-PAUL-DE-L'ÎLE-AUX-NOIX
(QUÉBEC)

PARCS CANADA

CONFIDENTIEL

REF. WSP : 161-14903-01
DATE : 12 OCTOBRE 2017

RAPPORT FINAL (RÉVISION 2)

WSP CANADA INC.
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WSP.COM

GESTION DE LA QUALITE

VERSION	DATE	DESCRIPTION
1	2017-08-25	Rapport final
2	2017-09-20	Rapport final (révision 1)
3	2017-10-12	Rapport final (révision 2)

SIGNATURES

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Paul Dombrowski, ing. (OIQ #146307)
Chargé de projet - Géotechnique

12 octobre 2017

RÉVISÉ PAR



Luc Paquette, ing. (OIQ #110523)
Chef d'équipe - Géotechnique

12 octobre 2017

Le présent rapport a été préparé par WSP Canada inc. pour le compte de Parcs Canada conformément à l'entente de services professionnels. La divulgation de tout renseignement faisant partie du présent rapport incombe uniquement au destinataire prévu. Son contenu reflète le meilleur jugement de WSP Canada inc. à la lumière des informations disponibles au moment de la préparation du rapport. Toute utilisation que pourrait en faire une tierce partie ou toute référence ou toutes décisions en découlant sont l'entière responsabilité de ladite tierce partie. WSP Canada inc. n'accepte aucune responsabilité quant aux dommages, s'il en était, que pourrait subir une tierce partie à la suite d'une décision ou d'un geste basé sur le présent rapport. Cet énoncé de limitation fait partie du présent rapport.

L'original du document technologique que nous vous transmettons a été authentifié et sera conservé par WSP pour une période minimale de dix ans. Étant donné que le fichier transmis n'est plus sous le contrôle de WSP et que son intégrité n'est pas assurée, aucune garantie n'est donnée sur les modifications ultérieures qui peuvent y être apportées.

Référence à citer :

WSP. 2017. *Réfection de la caserne de Fort Lennox, Étude Géotechnique*. Rapport produit pour Parcs Canada. Réf. WSP : 161-14903-01. 21 pages et figure, tableaux et annexes.

ÉQUIPE DE RÉALISATION

PARCS CANADA

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TABLE DES MATIÈRES

1	INTRODUCTION	1
1.1	Objectifs de l'étude	1
1.2	Contenu du rapport.....	1
2	DESCRIPTION DU SITE.....	3
3	MÉTHODE DE RECONNAISSANCE	5
3.1	Travaux de chantier	5
3.2	Échantillonnage des sols	5
3.3	Installations des tubes ouverts et du piézomètre Casagrande.....	6
3.4	Essais de laboratoire	6
3.5	Relevé topographique.....	7
4	DESCRIPTION DES SOLS.....	9
4.1	Matériaux superficiels (fondation granulaire, terre végétale et remblai).....	9
4.2	Dépôt d'argile silteuse	10
5	EAU SOUTERRAINE.....	13
6	COMMENTAIRES ET RECOMMANDATIONS GÉOTECHNIQUES	15
6.1	Fondations	15
6.1.1	Fondations conventionnelles	15
6.2	Excavations.....	18
6.3	Recommandations générales de construction	19
6.3.1	Profondeur de gel.....	19
6.3.2	Sensibilité du sol	19
6.3.3	Surveillance et inspection des travaux.....	20
6.3.4	Révision des plans	20

7 RÉFÉRENCES BIBLIOGRAPHIQUES..... 21

TABLEAUX

TABLEAU 4.1	RÉSUMÉ DE LA STRATIGRAPHIE.....	9
TABLEAU 4.2	RÉSULTATS DES ANALYSES GRANULOMÉTRIQUES – ARGILE SILTEUSE.....	10
TABLEAU 4.3	RÉSULTATS DES LIMITES D'ATTERBERG – ARGILE SILTEUSE	11
TABLEAU 4.4	RÉSULTATS DE LA RÉSISTANCE AU CISAILLEMENT NON DRAINÉ SUR DES ÉCHANTILLONS INTACTS – ARGILE SILTEUSE.....	11
TABLEAU 4.5	RÉSULTATS DES ESSAIS OEDOMÉTRIQUES – ARGILE SILTEUSE	12
TABLEAU 5.1	PROFONDEUR ET ÉLÉVATION DE L'EAU SOUTERRAINE.....	13
TABLEAU 6.1	PARAMÈTRES GÉOTECHNIQUES PROPOSÉS POUR LE CALCUL DE LA RÉSISTANCE GÉOTECHNIQUE À L'ÉLU DES SEMELLES CONVENTIONNELLES	16
TABLEAU 6.2	RÉSISTANCE GÉOTECHNIQUE À L'ÉLU POUR DES FONDATIONS SUPERFICIELLES, PLACÉES À 1,4 M DE PROFONDEUR (SITUATION ACTUELLE).....	17
TABLEAU 6.3	RÉSISTANCE GÉOTECHNIQUE À L'ÉLTS POUR DES SEMELLES CONVENTIONNELLES, POUR UN TASSEMENT DE 25 MM.....	17
TABLEAU 6.4	PARAMÈTRES GÉOTECHNIQUES POUR LA CONCEPTION DU SOUTÈNEMENT TEMPORAIRE	19

FIGURE

FIGURE 2.1 : TRAVAUX DE FORAGE À L'EMPLACEMENT DU FORAGE N° F-02, LE 18 MAI 2017.....	3
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ANNEXES

A PLAN DE LOCALISATION

**B RAPPORTS DE FORAGE ET RÉSULTATS
DES ESSAIS DE LABORATOIRE**

C PORTÉE ET LIMITATIONS DE L'ÉTUDE

1 INTRODUCTION

Les services professionnels de WSP Canada inc. (WSP) ont été retenus par Parcs Canada, afin de réaliser une étude géotechnique dans le cadre du projet de conservation et de réaménagement de la caserne de Fort Lennox située sur l'Île-aux-Noix, à Saint-Paul-de-l'Île-aux-Noix, Québec.

L'étude géotechnique a été réalisée selon les termes généraux du contrat octroyé à WSP par Parcs Canada, relativement à notre offre de services professionnels n° P16-11138-75 émise le 17 février 2017.

Les sections suivantes présentent les objectifs de l'étude et le contenu du rapport.

1.1 OBJECTIFS DE L'ÉTUDE

L'étude géotechnique avait pour but de déterminer la nature et les caractéristiques des sols sur l'ensemble du site à l'étude de façon à permettre de formuler des recommandations et des commentaires relativement aux conditions géotechniques en place.

Sans s'y limiter, les recommandations géotechniques traiteront :

- De la capacité portante des sols;
 - Des excavations temporaires;
 - De la gestion de l'eau souterraine;
 - De tous autres commentaires pertinents au projet.
-

1.2 CONTENU DU RAPPORT

Afin de répondre aux différents objectifs et tel que mentionné dans notre offre de services professionnels, les travaux réalisés dans le cadre du présent mandat ont été les suivants :

- Réalisation de quatre (4) forages stratigraphiques, dont un (1) s'est poursuivi par un essai de pénétration dynamique au cône jusqu'au refus;
- Installation d'un (1) tube ouvert et d'un (1) piézomètre Casagrande pour la mesure du niveau de l'eau souterraine;
- Réalisation de quatre (4) profils de résistances au cisaillement non drainé au moyen d'un scissomètre de chantier de type « Nilcon »;
- Réalisation d'analyses granulométriques, de limites de consistance, de déterminations de la teneur en eau, de résistances au cisaillement, d'essais de consolidation et d'essais de résistance en compression (UC) sur des échantillons de sols en laboratoire;
- Émission des recommandations et commentaires d'ordre géotechnique.

Le rapport présente une description sommaire du site, les méthodes de reconnaissance, un résumé des travaux de chantier, une description des sols, le niveau de l'eau souterraine, les résultats d'essais de laboratoire, et, les recommandations et commentaires d'ordre géotechniques pour le site à l'étude.

Le rapport inclut également trois (3) annexes qui présentent :

- Un (1) plan du site illustrant l'emplacement des forages (annexe A);
- Les rapports individuels de forage ainsi que les résultats d'essais (annexe B);
- La portée et les limitations de l'étude (annexe C).

Ce rapport est assujéti à certaines conditions limitatives liées aux profils géologique, géotechnique et hydrogéologique de tout site faisant l'objet d'investigation par forage.

Il est important de faire ressortir que ces conditions et limitations font partie intégrante du présent rapport et permettent une meilleure compréhension de celui-ci. Ces dernières sont présentées à l'annexe C.

2 DESCRIPTION DU SITE

Le site à l'étude est localisé sur le lieu historique national du Fort-Lennox à Saint-Paul-de-l'Île-aux-Noix, Québec. Le site est délimité par la rivière Richelieu sur un terrain plat avec six bâtiments en périphérie, dont la caserne qui se trouve au nord-ouest du site.

La caserne a une superficie approximative de 1 000 m². Le bâtiment est de forme rectangulaire et l'élévation de la surface du sol environnant est relativement du même niveau. Derrière la caserne, à environ 6 m, un bâtiment de forme rectangulaire (casemates) est présent sur environ 75 % de la longueur du bâtiment qui doit être restauré. Une zone vacante gazonnée est présente sur les trois (3) autres côtés de la caserne.



Figure 2.1 : Travaux de forage à l'emplacement du forage n° F-02, le 18 mai 2017

Les principales caractéristiques du site sont illustrées sur le plan de localisation des forages (figure n° 1), joint à l'annexe A.

3 MÉTHODE DE RECONNAISSANCE

3.1 TRAVAUX DE CHANTIER

Les travaux de chantier ont été réalisés entre le 18 mai 2017 et le 23 mai 2017, sous la supervision constante d'un technicien de chantier de WSP. Ces travaux comprenaient l'exécution de quatre (4) forages stratigraphiques identifiés F-01 à F-04, l'échantillonnage des sols en continu dans le remblai et à intervalles réguliers par la suite, la réalisation de quatre (4) profils scissométriques, l'installation d'un (1) tube ouvert et d'un (1) piézomètre Casagrande et la réalisation d'un relevé d'arpentage.

Il est à noter que le programme de forage (nombre, emplacement et profondeur) a été établi par WSP, en collaboration avec le Client, tout en tenant compte de la localisation des services souterrains et des limites physiques du site.

Une vue générale du site avec la localisation des forages est illustrée à la figure n° 1 de l'annexe A.

3.2 ÉCHANTILLONNAGE DES SOLS

Les forages stratigraphiques ont été réalisés à l'aide d'une foreuse de type Geoprobe. Les forages ont été avancés au moyen de tarières évidées (200 mm) ou par percussion (89 mm) selon l'endroit.

Dans les forages n^{os} F-02 et F-03, réalisés à la tarière, les échantillons de sols ont été récupérés en utilisant des cuillères fendues standards de calibre « B ». Lors des prélèvements, les indices « N » de l'essai de pénétration standard ont été mesurés pour chaque enfoncement de cuillère fendue conformément à la norme ASTM D1586. Cet indice correspond au nombre de coups requis pour faire pénétrer le carottier standard de calibre « B » de 300 mm lorsqu'il est battu à l'aide d'un marteau pesant 63,5 kg et tombant en chute libre d'une hauteur de 760 mm.

Dans les forages n^{os} F-01 et F-04, réalisés avec du tubage foncé par percussion, les échantillons de sols ont été récupérés au moyen de tubes transparents (« liners ») foncés successivement et permettant d'identifier la nature des sols.

Les forages dans le mort terrain ont atteints des profondeurs variant de 4,88 m à 14,42 m, selon les endroits.

Quelques échantillons de sols non remaniés ont aussi été récupérés au sein du dépôt d'argile silteuse, au moyen de tubes à paroi mince de type Shelby, aux fins d'analyses plus approfondies en laboratoire.

En plus des forages, quatre (4) profils scissométriques ont été réalisés à proximité des forages n^{os} F01 à F04 à l'aide d'un scissomètre de chantier de type Nilcon. Le scissomètre sert à mesurer la résistance au cisaillement non drainé des sols cohérents en place.

Chacun des forages a fait l'objet d'une description stratigraphique complète incluant, en termes géologiques, la nature et la composition des différentes formations rencontrées, la nature de débris présents, le cas échéant, et de toute information supplémentaire jugée pertinente. Les données recueillies sur le terrain ont été compilées sur les rapports de forage présentés à l'annexe B.

Tous les échantillons de sols recueillis lors des travaux de forage ont été acheminés à notre laboratoire, afin d'être soumis à un examen visuel plus approfondi ainsi qu'à des essais de laboratoire afin de préciser les propriétés des sols en place. Ces derniers seront conservés pour une période de six (6) mois à partir de la date d'émission de ce rapport, après quoi nous en disposerons à moins d'avis contraire de la part du client.

Des notes explicatives relativement aux rapports de forages, à la description des unités stratigraphiques et à la méthodologie des essais *in situ* sont présentées à l'annexe B de ce rapport.

3.3 INSTALLATIONS DES TUBES OUVERTS ET DU PIÉZOMÈTRE CASAGRANDE

Un (1) tube ouvert a été laissé dans le trou du forage n° F-03, à la fin des travaux, afin de pouvoir mesurer le niveau de l'eau souterraine. Un tube ouvert est composé d'un tube de polychlorure de vinyle (PVC) de 19 mm de diamètre dont une section de 1,52 m à la base est constituée d'une crépine. Le trou de forage est par la suite comblé de sable de silice, et un bouchon de bentonite est placé en surface afin de prévenir les infiltrations des eaux de ruissellement.

Un (1) piézomètre Casagrande a été installé dans le trou du forage n° F-02, à la fin des travaux, afin de pouvoir mesurer le niveau piézométrique de l'eau au niveau de la couche sols sous-jacente au dépôt cohésif. Cet instrument est constitué d'un tube de PVC de 19 mm de diamètre dont l'extrémité est constituée d'un élément filtrant (pierre poreuse) de 300 mm de longueur. L'élément filtrant est installé entre deux (2) bouchons de bentonite d'environ 300 mm d'épaisseur de manière à être confiné dans une lanterne de sable d'environ 910 mm de longueur situé dans la couche de sols où le niveau piézométrique de l'eau doit être mesuré.

Chaque installation a été protégée par une boîte de service en aluminium verrouillable pour limiter les risques d'endommagement. Les schémas types des installations réalisées dans chaque forage sont présentés sur les rapports de forage correspondants, lesquels sont joints à l'annexe B.

3.4 ESSAIS DE LABORATOIRE

Les essais de laboratoire suivants ont été réalisés au laboratoire de WSP de façon à évaluer certaines propriétés géotechniques des sols rencontrés dans les forages :

- Quatre (4) analyses granulométriques par tamisage et lavage au tamis passant 80 µm et par sédimentométrie (norme BNQ 2501-025);
- Onze (11) déterminations de la teneur en eau (norme CAN/BNQ 2501-170);
- Six (6) déterminations des limites de consistance (norme CAN/BNQ 2501-092);
- Deux (2) évaluations de la résistance au cisaillement non drainé en laboratoire (norme CAN/BNQ 2501-110);
- Deux (2) évaluations de la résistance au cisaillement non drainé avec un scissomètre de laboratoire;
- Quatre (4) extractions d'échantillons non remaniés (norme ASTM D 2488);
- Deux (2) essais de consolidation (normes ASTM D 2435);
- Deux (2) essais de résistance à la compression uniaxiale du sol cohésif (UC) (norme ASTM D 2166).

Les résultats de ces essais ont permis de compléter l'information technique recueillie au chantier. Ils sont présentés et discutés à la section 4.0 du présent rapport. Les rapports des essais de laboratoire sont joints à l'annexe C à la suite des rapports individuels de forage.

3.5 RELEVÉ TOPOGRAPHIQUE

Le positionnement des forages a été effectué sur le site par le personnel de WSP de façon approximative à l'aide d'un plan de localisation, de repères physiques ainsi que d'une chaîne à mesurer.

À la fin des travaux, les forages ont été relevés au moyen d'un appareil de positionnement satellitaire (GPS) de type « Trimble » selon des coordonnées MTM dans le système NAD83. La localisation des repères géodésiques utilisés ainsi que les résultats du relevé d'arpentage sont indiqués sur la figure n° 1 jointe à l'annexe A.

4 DESCRIPTION DES SOLS

Selon les données obtenues lors des forages, la stratigraphie du site est généralement constituée d'une fondation granulaire ou d'un couvert végétal, suivi d'une couche de matériau de remblai reposant sur un dépôt cohésif ferme à raide. Un résumé de la stratigraphie de chacun des forages est présenté au tableau 4.1, alors que les unités stratigraphiques sont décrites dans les paragraphes suivants.

Tableau 4.1 Résumé de la stratigraphie

Forage N° (élévation), m	Fondation granulaire Épaisseur, mm	Terre végétale Épaisseur, mm	Remblai Épaisseur, mm	Argile silteuse Profondeur (élévation), m	Fin du forage Profondeur (élévation), m
F-01 (31,12)	-	150	1 570	1,72 (29,40)	4,88 (26,24)
F-02 (31,17)	100	-	510	0,61 (30,56)	14,32 (16,85)
F-03 (31,24)	-	290	-	0,29 (30,95)	14,42 (16,82)
F-04 (31,30)	-	150	250	0,40 (30,90)	4,88 (26,42)

Les rapports de forage sont joints à l'annexe B du rapport.

4.1 MATÉRIAUX SUPERFICIELS (FONDATION GRANULAIRE, TERRE VÉGÉTALE ET REMBLAI)

Le forage n° F-02 a d'abord révélé la présence en surface d'une fondation granulaire de 100 mm d'épaisseur.

Au droit des forages n°s F-01, F-03 et F-04, une couche de terre végétale a été rencontrée en surface. L'épaisseur de la terre végétale rencontrée dans ces forages varie entre 150 mm et 290 mm.

Sous la terre végétale au droit des forages n°s F-01 et F-04, ou sous la fondation granulaire au droit du forage n° F-02, des matériaux de remblai se prolongeant jusqu'à une profondeur (élévation) variant entre 0,40 m (30,90 m) et 1,72 m (29,40 m) sous le niveau actuel du terrain ont été rencontrés. Le remblai est généralement constitué de silt argileux et sableux, brun à gris-verdâtre avec diverses proportions de sable et de gravier. Des copeaux de bois ont été observés dans les échantillons de remblai prélevés au droit du forage n° F-01. Localement au droit du forage n° F04, des débris comprenant des morceaux de briques ont été rencontrés. L'épaisseur totale des matériaux de remblai varie entre 250 mm et 1 570 mm.

L'épaisseur totale de la couche superficielle varie de 290 mm à 1 720 mm.

4.2 DÉPÔT D'ARGILE SILTEUSE

Sous les matériaux superficiels, un dépôt d'argile silteuse a été observé dans tous les forages aux profondeurs et élévations indiquées au tableau 4.1.

Le dépôt d'argile silteuse présente une croûte argileuse, observée dans la partie supérieure du dépôt jusqu'à des profondeurs (élévations) oscillant entre 2,75 m (28,49 m) et 3,50 m (27,67 m). Un horizon de lits de sable et de coquillage ont été observés au droit des forages n^{os} F-02 et F-03. La croûte argileuse est de couleur gris-verdâtre à brune et se trouve dans un état humide à saturé.

Sous la croûte, le dépôt d'argile silteuse est saturé et gris. L'ensemble des forages ont été interrompus dans ce dépôt aux profondeurs et élévations présentées au tableau 4.1. L'essai de pénétration dynamique réalisé à partir de 9,75 m (21,49 m) dans le forage n^o F-03 a atteint un refus sur le roc probable à une profondeur (élévation) de 14,42 m (16,82 m), alors que la dernière cuillère fendue prélevée dans le forage n^o F-02 présentait des éclats de shale entre 13,87 m (17,30 m) et 14,32 m (16,85 m) de profondeur (élévation).

Les tableaux suivants résument les caractéristiques physiques du dépôt obtenues des essais de laboratoire énumérés précédemment à la section 3.4.

Tableau 4.2 Résultats des analyses granulométriques – Argile silteuse

Forage N ^o	ÉCH. N ^o	PROF. (m)	Teneur en eau (%)	Gravier > 5 mm (%)	Sable < 5 mm et > 80 µm (%)	Silt < 80 µm et > 2 µm (%)	Argile > 2 µm (%)
F-01	TT-4	3,54 – 4,72	50,9	0	2	56	42
F-02	CF-3	1,22 – 1,83	30,2	0	12	58	29
	CF-12	12,19 – 12,80	40,2	0	2	47	51
F-03	CF-2	0,61 – 1,22	28,4	0	18	57	25

Note : ÉCH. = échantillon; PROF. = profondeur.

Tableau 4.3 Résultats des limites d'Atterberg – Argile silteuse

Forage N°	ÉCH. N°	PROF. (m)	Teneur en eau (%)	Limite de liquidité WL (%)	Limite de plasticité WP (%)	Indice de plasticité Ip (%)	CLASS. USCS
F-02	CF-11	10,67 – 11,28	37,4	41	20,7	20	CL
	CF-12	12,19 – 12,80	40,2	45	22,8	22	CL
F-03	CF-3	1,22 – 1,83	28,7	38	21,2	17	CL
	CF-7	3,81 – 4,42	40,5	48	21,4	27	CL
	CF-10	6,86 – 7,47	42,6	50	24	26	CH
	CF-12	9,14 – 9,75	37,6	46	22,5	24	CL

Note : ÉCH. = échantillon; PROF. = profondeur; CLASS. = classification; * = sur le passant 400 microns.

Tableau 4.4 Résultats de la résistance au cisaillement non drainé sur des échantillons intacts – Argile silteuse

Forage N°	ÉCH. N°	PROF. (m)	Teneur en eau (%)	Résistance au cisaillement c_u (kPa)	Résistance au cisaillement remanié c_{ur} (kPa)	Sensibilité S_t	Type d'essai
F-02	TM-8	6,10 – 6,71	46,9	23,7	3,4	7	Cône
	TM-9	7,62 – 8,23	44,4	29,2	-	-	Scissomètre
				31,5	-	-	UC
F-03	TM-8	4,57 – 5,18	50,7	27,3	-	-	Scissomètre
				26,5	-	-	UC
	TM-11	8,38 – 8,68	37,3	32,6	6,5	5	Cône

Note : ÉCH. = échantillon; PROF. = profondeur; UC = résistance en compression uniaxiale des sols cohésifs.

Il ressort du tableau 4.2 que la composition du dépôt consiste en un silt et argile avec des traces de sable, alors que la partie supérieure du dépôt consiste plutôt en un silt argileux avec un peu de sable.

L'ensemble des résultats du tableau 4.3 permet de constater que les caractéristiques de l'argile sont relativement uniformes. L'échantillon prélevé avant 2 m de profondeur présente une limite de liquidité de 38 %, une limite de plasticité de 21 %, ainsi qu'un indice de plasticité de 17 %. Les autres échantillons (5) prélevés sous 2 m de profondeur présentent une limite de liquidité variant entre 41 % et 50 %, une limite de plasticité variant entre 21 % et 24 %, ainsi qu'un indice de plasticité de 20 % à 27 %. Basé sur ces résultats, le dépôt d'argile silteuse dénote généralement une faible plasticité (CL) et parfois de plasticité élevée (CH) selon le système unifié de classification des sols (USCS).

Les résultats présentés au tableau 4.4 indiquent une résistance au cisaillement non drainé en laboratoire selon trois (3) différentes méthodes variant entre 23,7 kPa à 32,6 kPa. L'essai au cône suédois a également permis d'obtenir une résistance au cisaillement non drainé remanié variant entre 3,4 kPa et 6,5 kPa, correspondant à une sensibilité variant de 5 à 7.

Sur le terrain, la résistance au cisaillement du dépôt d'argile silteuse a été mesurée à l'aide d'un scissomètre Nilcon à proximité de chacun des forages. Les profils de résistance au cisaillement obtenus sont présentés sur la colonne appropriée des rapports individuels de forage à l'annexe B. Des valeurs de résistance au cisaillement non remanié ont été mesurées dans la croûte d'argile entre 64 kPa et 93 kPa. Pour le dépôt d'argile silteuse, les valeurs mesurées de résistance au cisaillement non remanié varient entre 29 kPa et 44 kPa. Pour le dépôt d'argile silteuse, et les valeurs mesurées de résistance au cisaillement remanié varient entre 4 kPa et 5 kPa, correspondant à une sensibilité variant de 6 à 8.

Deux (2) essais de consolidation oedométriques ont été réalisés sur des échantillons intacts du dépôt d'argile prélevés entre les profondeurs de 7,62 m et 8,30 m dans le forage n° F-02 et de 4,57 m et 5,18 m dans le forage n° F-03. Le tableau suivant présente les résultats des essais, et leurs fiches détaillées sont présentées à l'annexe B.

Tableau 4.5 Résultats des essais oedométriques – Argile silteuse

Forage No	ÉCH. No	PROF. (m)	Teneur en eau (%)	Volume de vide initial e_0	Indice de recompression C_r	Indice de compression C_c	Contrainte de préconsolidation σ'_p (kPa)
F-02	TM-9	7,62 – 8,30	44,3	1,16	0,07	0,46	100
F-03	TM-8	4,57 – 5,18	50,7	1,30	0,06	0,56	90

Note : ÉCH. = échantillon; PROF. = profondeur.

Les résultats indiquent que l'argile est dans un état normalement consolidé ou très faiblement surconsolidé; il n'y aurait pas eu de poids de sols ou de pression plus grande que la pression actuelle agissant sur le dépôt, ou très peu. C'est-à-dire que les contraintes effectives du poids des terres (σ'_{vo}) à ces profondeurs sont presque équivalentes aux valeurs de contraintes de préconsolidation (σ'_p) mesurées, soit un écart d'environ 20 kPa à 30 kPa.

De plus, en se basant sur une relation proposée par Leroueil *et al.*, l'écart de préconsolidation ($\sigma'_p - \sigma'_{vo}$) pour le dépôt d'argile silteuse peut être estimé en fonction de la résistance au cisaillement (c_u) et de l'indice de plasticité (I_p) de l'argile. En posant l'hypothèse que le niveau de l'eau souterraine peut se situer à 2,0 m de profondeur, on peut déduire avec cette relation que l'écart minimal de préconsolidation du dépôt d'argile silteuse est d'environ 70 kPa à l'élévation 27 m (± 4 m de profondeur), de 40 kPa à l'élévation 25 m (± 6 m de profondeur), de 20 kPa à l'élévation 23 m (± 8 m de profondeur), puis deviendrait pratiquement nul à la base du dépôt.

5 EAU SOUTERRAINE

À la suite de la réalisation des forages, un (1) tube ouvert et un (1) piézomètre Casagrande ont respectivement été installés dans les forages nos F-03 et F-02 afin de pouvoir mesurer le niveau de l'eau souterraine.

Une lecture du niveau d'eau a été prise le 23 mai 2017 dans le piézomètre Casagrande et dans le tube ouvert.

La profondeur et l'élévation du niveau de l'eau souterraine sont présentées au tableau 5.1.

Tableau 5.1 Profondeur et élévation de l'eau souterraine

Forage No	Type d'installation	Niveau de l'installation Profondeur (élévation), m	Niveau de l'eau souterraine Profondeur (élévation), m	Date de la mesure
F-02	Piézomètre Casagrande	13,56 (17,61)	2,80 (28,37)	23 mai 2017
F-03	Tube ouvert	12,80 (18,44)	0,74 (30,50)	23 mai 2017

Il est important de mentionner que le niveau de l'eau est susceptible de fluctuer à la hausse ou à la baisse, selon les saisons et/ou les conditions climatiques et peut donc se retrouver à des profondeurs différentes à d'autres périodes de l'année.

6 COMMENTAIRES ET RECOMMANDATIONS GÉOTECHNIQUES

Selon les informations transmises, le projet prévoit la réfection de plusieurs éléments de la caserne dont principalement ceux de maçonnerie, de revêtement intérieur, de drainage, de fenêtres et de portes, et de ferronnerie.

L'étude a permis de mettre en évidence la présence d'un dépôt cohésif d'argile silteuse d'environ 14 m d'épaisseur. Ce dépôt apparaît normalement consolidé, de sorte que toute augmentation de contrainte sur ces sols, en plus du poids actuel des terres, pourra se traduire par des tassements importants.

Dans ces conditions, les commentaires suivants seront très importants :

- Les travaux ne devront en aucun cas ajouter de nouvelles contraintes sur les sols, c'est-à-dire que les nouveaux matériaux utilisés devraient être du même poids ou idéalement plus légers que ceux du bâtiment existant;
- Aucun remblai additionnel ne devra être mis en place à proximité du bâtiment;
- Le remblayage des excavations devra être réalisé avec des matériaux de même poids ou plus légers
- Le niveau de l'eau souterraine devrait être conservé au même niveau et ne devrait pas être intentionnellement abaissé ce qui entraînerait une augmentation des contraintes sur les sols.

Basé sur notre connaissance du projet et sur les résultats obtenus aux emplacements des forages, et en considérant que ces résultats sont représentatifs de l'ensemble de la stratigraphie du site, les recommandations et commentaires géotechniques suivants sont présentés.

Nous devons être avisés de toute information additionnelle ou modification dans la localisation, la nature ou la conception du projet afin d'en évaluer l'impact, et au besoin, de modifier les recommandations formulées dans le présent rapport.

Il est à noter que la section 6.3 contient des recommandations géotechniques de nature plus générale de même que des mises en garde applicables à l'ensemble des travaux de restauration des fondations qui pourraient être requis dans le cadre du projet de réfection du bâtiment existant.

6.1 FONDATIONS

6.1.1 FONDATIONS CONVENTIONNELLES

Compte tenu des conditions géotechniques du site, des fondations conventionnelles, de type semelles filantes ou isolées, pour reprendre les charges qui seront transmises au sol peuvent être utilisées, mais l'amplitude des charges et la dimension des fondations seront très limitées.

6.1.1.1 RÉSISTANCE GÉOTECHNIQUE À L'ÉTAT LIMITE ULTIME (ÉLU)

La résistance géotechnique à l'état limite ultime (ÉLU) pour le calcul de fondations superficielles peut être obtenue au moyen de l'équation suivante donnée à la section 10.2 du *Manuel canadien d'ingénierie des fondations*, 4^e édition, 2013 (CFEM) :

$$q_u = c N_c S_c + q_s N_q S_q + \frac{1}{2} \gamma B N_\gamma S_\gamma$$

La signification de chacun des termes de l'équation susmentionnée ainsi que les modalités de leur application sont données dans le **CFEM, 2013**.

Les paramètres géotechniques présentés au tableau 6.1 peuvent être utilisés aux fins de calcul de la résistance géotechnique à l'ÉLU pour des fondations mises en place sur un sol d'infrastructure (fond d'excavation) non remanié ou encore sur un coussin granulaire de pierre concassée de calibre 20-0 mm de 300 mm d'épaisseur et densifié à 95 % de la masse volumique sèche maximale obtenue par l'essai avec énergie de compactage modifié (2 700 kJ/m³, BNQ 2501-255). La mise en place d'un géotextile de séparation entre le coussin granulaire et le fond d'excavation est recommandée le cas échéant.

Tableau 6.1 Paramètres géotechniques proposés pour le calcul de la résistance géotechnique à l'ÉLU des semelles conventionnelles

Paramètres	Dépôt d'argile silteuse
Résistance au cisaillement non drainé, s_u	30 kPa
Angle de frottement interne effectif, ϕ'	0°
Poids volumique total du sol, γ	16,5 kN/m ³
Poids effectif du sol, γ'	6,7 kN/m ³
Profondeur d'encastrement minimale, D_f	1,5 m (actuelle 1,4)
Coefficients de capacité portante : $N_c - N_q - N_\gamma$	5,14 – 1 – 0

Un coefficient de tenue de 0,5 devra être utilisé pour obtenir la résistance géotechnique pondérée à l'ÉLU.

Étant que l'ensemble des intrants dans le calcul de la résistance à l'ÉLU n'est présentement pas connu de manière précise, les valeurs ci-dessous sont données à titre indicatif seulement et correspondent à des semelles soumises à des charges centrées verticales et placées à environ 1,4 m de profondeur (situation actuelle).

Il faut mentionner que cette profondeur ne correspond pas tout à fait à la profondeur minimale recommandée pour des fondations de bâtiment chauffées pour assurer une protection adéquate contre les effets de la pénétration du gel dans le sol.

Tableau 6.2 Résistance géotechnique à l'ÉLU pour des fondations superficielles, placées à 1,4 m de profondeur (situation actuelle)

Type de Semelle	Largeur de la semelle, m	Résistance géotechnique à l'ÉLU, kPa	Résistance géotechnique à l'ÉLU pondérée, kPa
Filante	0,76	170	85
	1,00	170	85
	2,00	210	105
	3,50	190	95
Isolée	0,76	200	100
	1,00	200	100
	2,00	250	125
	3,50	230	115

Note :

- La dimension du radier des fondations de la caserne possède vraisemblablement une largeur qui serait comprise entre 1,83 m et 3,50 m selon les informations contenues dans le rapport « Étude sur la stabilisation des ouvrages du Fort Lennox. Ile aux Noix, Québec, 1978 » de SNC;
- Pour des semelles de dimensions intermédiaires, il est possible d'estimer la résistance correspondante par interpolation.

6.1.1.2 RÉSISTANCE GÉOTECHNIQUE À L'ÉTAT LIMITE EN TENUE SERVICE (ÉLTS)

En ce qui concerne la réaction ou capacité portante à l'état limite d'utilisation (ÉLTS) pour les fondations conventionnelles, en se référant à l'écart minimal de préconsolidation du dépôt de sols cohérents présenté à la section 4.2 du rapport, le tableau ci-dessous présente la valeur à l'ÉLTS qui pourra être utilisée pour le dimensionnement des fondations. Cette valeur s'applique pour des charges permanentes en sus du poids des terres (valeur nette) pour un tassement total de 25 mm.

Tableau 6.3 Résistance géotechnique à l'ÉLTS pour des semelles conventionnelles, pour un tassement de 25 mm

Type de semelle	Profondeur (élévation), m	Largeur maximale de la semelle (B), m	Résistance géotechnique à l'ÉLTS, kPa
Filante	1,4 (± 30,74)	0,76	75
		1,00	50
		2,00	30
		3,50	10 à 15
Isolée	1,4 (± 30,74)	0,76	75
		1,00	50
		2,00	30
		3,50	10 à 15

Note :

- La dimension du radier des fondations de la caserne possède vraisemblablement une largeur qui serait comprise entre 1,83 m et 3,50 m selon les informations contenues dans le rapport « Étude sur la stabilisation des ouvrages du Fort Lennox. Ile aux Noix, Québec, 1978 » de SNC;
- Pour des semelles de dimensions intermédiaires, il est possible d'estimer la résistance correspondante par interpolation.

Pour des semelles de petites dimensions, la résistance pondérée à l'ÉLU peut être inférieure à la réaction à l'ÉLTS et pourra être plus critique pour la conception. Une répartition linéaire des contraintes appliquées sous les semelles pourra être utilisée dans les analyses et la contrainte maximale ne devra pas dépasser la valeur la plus critique.

6.2 EXCAVATIONS

Basé sur la stratigraphie du site et notre compréhension du projet, les excavations qui pourraient être requises pour la réfection de la caserne seront réalisées à travers des sols de remblai et la croûte argileuse. Ces derniers ont été rencontrés sur le site jusqu'à des profondeurs variant entre 2,75 m et 3,50 m selon l'endroit.

À titre indicatif, des pentes de talus non supportées de l'ordre de 1,0 H : 1,0 V peuvent être envisagées pour assurer la stabilité de tranchées temporaires au sein de ces matériaux jusqu'à 2,0 m de profondeur. Sous cette profondeur, la pente des talus devra être adoucie à 1,5 H : 1,0 V ou encore l'excavation devra être retenue par un système de soutènement temporaire.

Les pentes d'excavation temporaires aux fins de construction sont de la responsabilité de l'entrepreneur. Les pentes maximales d'excavation devraient donc être conformes au « code de sécurité pour les travaux de construction » (S-2.1, r.4) de la CNESST afin de réaliser les travaux de façon sécuritaire. L'inclinaison des pentes d'excavation doit être adoucie s'il y a apparition de signe d'instabilité. Les parois des excavations devront être inspectées régulièrement afin de déceler tout élément susceptible de s'en détacher et de constituer un danger pour les travailleurs.

Tout dépendant de la durée d'exposition des parois de l'excavation ou des conditions climatiques qui prévaudront au moment des travaux, les parois au niveau du mort-terrain devront être recouvertes de membranes imperméables afin de prévenir l'érosion et le développement d'instabilités locales.

Les déblais d'excavation devront aussi être déposés à une distance minimale équivalente à la profondeur des excavations. Toute pente d'excavation non supportée devra être ajustée en fonction des conditions réelles du terrain (densité des sols, présence d'eau, de débris, évidence d'instabilités locales, etc.) rencontrées lors de l'excavation.

Dans le cas où les pentes susmentionnées pour les sols de remblai et le sol naturel ne peuvent être respectées en raison de la proximité de structures existantes, ou encore pour limiter l'excavation et la gestion des déblais, un soutènement temporaire des terres devrait être prévu conformément au « code de sécurité pour les travaux de construction » (S-2.1, r.4) de la CNESST.

Les paramètres présentés au tableau n° 6.4 suivant sont recommandés pour la conception des éléments de soutènement des parois.

Tableau 6.4 Paramètres géotechniques pour la conception du soutènement temporaire

Paramètres	Remblai	Sol naturel – Croûte d'argile silteuse	Sol naturel – Argile silteuse
Poids volumique (γ), kN/m^3	18,0	17,0	16,5
Poids volumique déjaugé (γ'), kN/m^3	8,2	7,2	6,7
Cohésion (c_u), kPa	0	50	30
Angle de frottement interne (ϕ), °	27	0	0
Coefficient de poussée active, K_a	0,37	-	-
Coefficient de butée, K_p	2,66	-	-
Coefficient de poussée au repos, K_o	0,54	1	1

Si la présence de structure existante nécessite de limiter les mouvements du sol en périphérie de l'excavation, il est recommandé d'utiliser les coefficients des terres au repos (K_o) au lieu des coefficients de poussée active (K_a) pour le calcul des poussées sur les parois du soutènement. Les surcharges créées par la présence des structures adjacentes au projet et par la circulation devront également être considérées dans le calcul des efforts latéraux.

6.3 RECOMMANDATIONS GÉNÉRALES DE CONSTRUCTION

6.3.1 PROFONDEUR DE GEL

À titre informatif, il est recommandé de placer les éléments superficiels des fondations de structures non chauffées à une profondeur d'au moins 1,7 m sous la surface du sol afin d'être à l'abri des effets du gel. Une profondeur d'au moins 1,5 m est recommandée pour les structures chauffées.

Alternativement, la pose d'isolant rigide sur les éléments superficiels des fondations peut aussi pallier la couverture insuffisante de sol.

6.3.2 SENSIBILITÉ DU SOL

Compte tenu de sa teneur élevée en argile et en silt, le dépôt sous-jacent au site sera extrêmement sensible au remaniement causé par les intempéries (pluie, gel, fonte des neiges) ou par la circulation des ouvriers et de la machinerie de chantier. Un remaniement excessif des surfaces d'assise pourrait entraîner une perte de résistance des sols en place.

6.3.3 SURVEILLANCE ET INSPECTION DES TRAVAUX

Durant les travaux de construction, il est recommandé d'effectuer un suivi géotechnique et qualitatif des différentes phases des travaux dont :

- L'inspection des travaux de fondation et d'excavation doit être effectuée par un personnel compétent en géotechnique, pour s'assurer que les surfaces d'assises et les structures seront placées sur un sol conforme, capable de supporter les pressions de la structure dans des conditions sécuritaires;
- La supervision des opérations de remblayage et de compactage, de façon à s'assurer que des matériaux conformes seront employés et que les degrés de compactage demandés au devis soient effectivement atteints.

6.3.4 RÉVISION DES PLANS

Afin de veiller au respect des recommandations techniques élaborées dans le cadre de ce rapport, nous recommandons une révision des plans de conception des ouvrages et structures projetées.

7 RÉFÉRENCES BIBLIOGRAPHIQUES

- BOWLES, J.E. 2000. *Foundation Analysis and Design* 5th edition. McGraw Hill, Canada, 1207 pages.
- SOCIÉTÉ CANADIENNE DE GÉOTECHNIQUE. 2013. *Manuel canadien d'ingénierie des fondations*. 4^e édition. BiTech Publishers, Richmond, B.C., 476 pages.

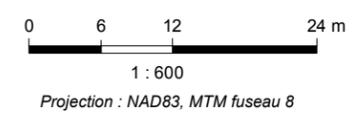
ANNEXE

A

PLAN DE
LOCALISATION



 Forage (WSP, 2017)
 (31,118 m) Élévation (m)



Sources :
 Photo satellite: Digital Globe (2013-09-17),
 extraite à partir de Google Earth Pro
 Cartes : MERN, AQRéseau+, réseau routier
 RNCan, BNDT 250K, feuillet 31H
 Limites de municipalités : SDA20K, 2010-01



 Parcs Canada Parks Canada
**ÉTUDE GÉOTECHNIQUE
 POUR LA RÉFECTION
 DU FORT LENNOX**
 Saint-Paul-de-l'Île-aux-Noix, Qc

Figure 1
Localisation des forages

X	Y	Z	Forage
323 038,160	4 997 969,234	31,118	F-01
323 011,543	4 997 968,063	31,166	F-02
322 994,859	4 997 919,075	31,243	F-03
322 976,870	4 997 930,599	31,295	F-04

Fichier : 161_14903_01_EGFI_locForages_170621.mxd

ANNEXE

B

RAPPORTS DE
FORAGE ET
RÉSULTATS DES
ESSAIS DE
LABORATOIRE



Nom du projet: **Étude géotechnique pour la réfection de la caserne de Fort Lennox**

Coordonnées géodésiques X: **4997969.234**

MTM (NAD-1983) Y: **323038.160**

Nom du requérant : **Parcs Canada**

Z: **31.120**

Localisation civile : **Ile-aux-Noix, Québec, Canada**

No. de projet : **161-14903-01**

Entrepreneur en forage: **Succession Forage Downing Ltée**

Plan de localisation No. : **FIGURE 1**

Type de forage : **Forage à percussion** Inclinaison : **90** Azimut :

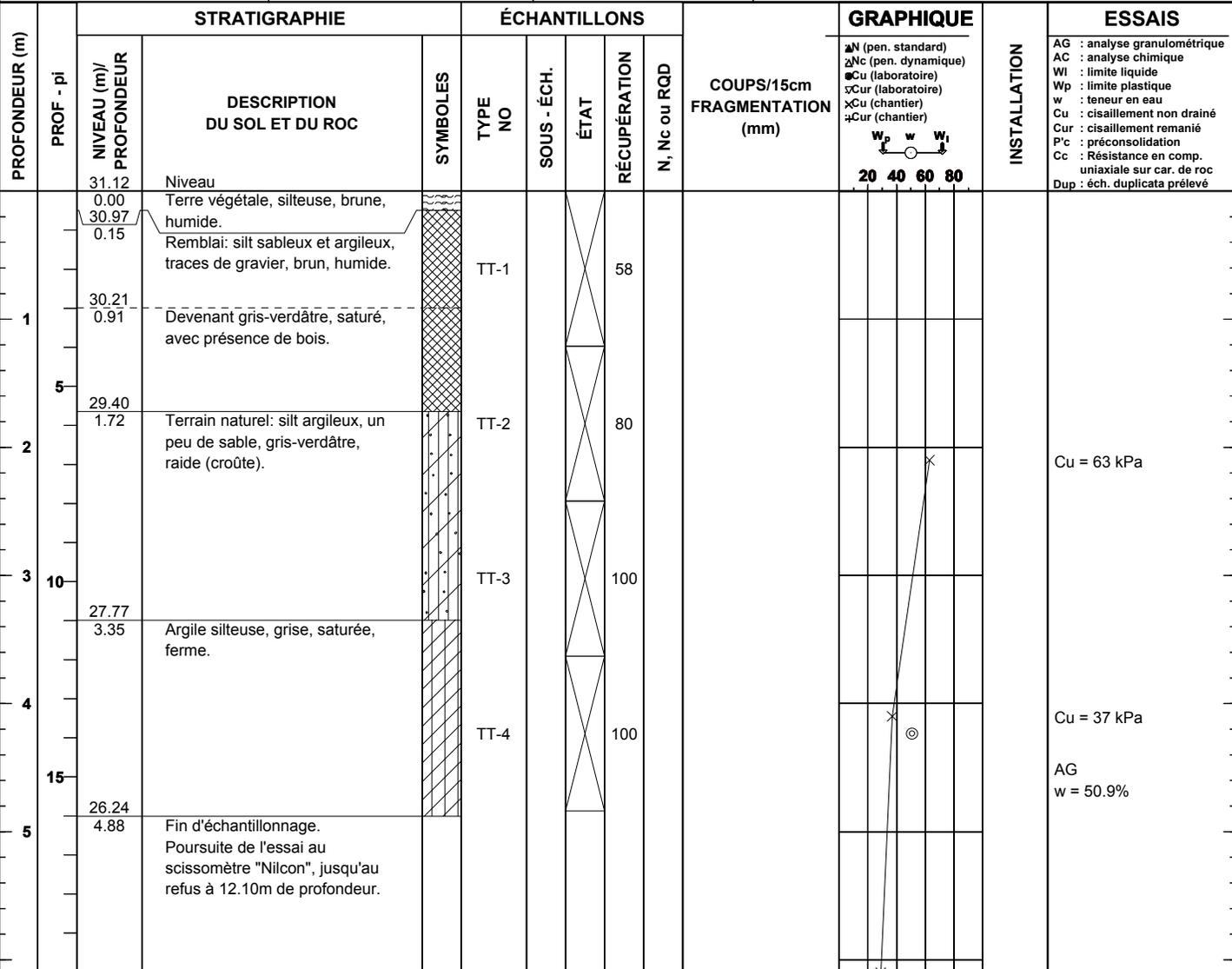
Date du début du sondage : **2017-05-23**

Diamètre du forage: **89 mm** Diamètre du carottier:

Profondeur du sondage : **12.10**

Préparé par : **Marcel Plourde, géo.** Vérifié par : **Paul Dombrowski, ing.**

TYPE D'ÉCHANTILLON CF Cuillère fendue CR Échantillon par forage au diamant EM Manuel TA Tarière TE Tube d'échantillonnage TM Tube à paroi mince	TERMINOLOGIE "traces" 1-10% "un peu" 10-20% adjectif (...eux) 20-35% "et" 35-50%	INDICE DE QUALITÉ DU ROC % RQD QUALIFICATIF <25 Très faible 25-50 Faible 50-75 Moyen 75-90 Bon 90-100 Excellent	COMPACTITÉ Très lâche Lâche Compact Dense Très dense	INDICE "N" 0-4 4-10 10-30 30-50 >50	NIVEAU D'EAU Date: Prof.:
ÉTAT DE L'ÉCHANTILLON Remanié Intact (tube à paroi mince) Perdu Forage au diamant	SYMBOLES N: Indice de pénétration standard R: Refus (N > 100) PM: Poids du marteau / 61 cm R.Q.D: Indice de qualité du roc % R.Q.D = Σ Carottes > 4 po. (10 cm) longueur forée	CLASSIFICATION (SYSTÈME UNIFIÉ) Argile < 0,002 mm Silt 0,002 à 0,075 mm Sable 0,075 à 4,75 mm Gravier 4,75 à 75 mm Cailloux 75 à 300 mm Blocs > 300mm	CONSISTANCE Très molle Molle Ferme Raide Très raide Dure	RÉSISTANCE AU CISAILLEMENT (Cu) <12 kPa 12-25 kPa 25-50 kPa 50-100 kPa 100-200 kPa >200 kPa	



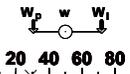
Remarque(s):

WSP_modèle de base.sty



PROFONDEUR (m)	STRATIGRAPHIE				ÉCHANTILLONS				COUPS/15cm FRAGMENTATION (mm)	GRAPHIQUE	INSTALLATION	ESSAIS
	PROF. - pi	NIVEAU (m)/ PROFONDEUR	DESCRIPTION DU SOL ET DU ROC	SYMBOLES	TYPE NO	SOUS - ÉCH.	ÉTAT	RÉCUPÉRATION				
7												
25												
8												Cu = 33 kPa
9												
30												
10												Cu = 38 kPa
35												
11												
12												Cu = 40 kPa
40												
13												
45												
14												
50												
15												
55												
16												

▲N (pen. standard)
 ▲Nc (pen. dynamique)
 ●Cu (laboratoire)
 ×Cu (laboratoire)
 ×Cu (chantier)
 ▲Cu (chantier)



AG : analyse granulométrique
 AC : analyse chimique
 WI : limite liquide
 Wp : limite plastique
 w : teneur en eau
 Cu : cisaillement non drainé
 Cur : cisaillement remanié
 P'c : préconsolidation
 Cc : Résistance en comp. uniaxiale sur car. de roc
 Dup : éch. duplicata prélevé

Cu = 29 kPa

WSP_modèle de base.sty



Nom du projet: **Étude géotechnique pour la réfection de la caserne de Fort Lennox**

Coordonnées géodésiques X: **323011.543**

MTM (NAD-1983) Y: **4997968.063**

Nom du requérant : **Parcs Canada**

Z: **31.170**

Localisation civile : **Ile-aux-Noix, Québec, Canada**

No. de projet : **161-14903-01**

Entrepreneur en forage: **Succession Forage George Downing Ltée**

Plan de localisation No. : **FIGURE 1**

Type de forage : **Tarière** Inclinaison : **90** Azimut :

Date du début du sondage : **2017-05-18**

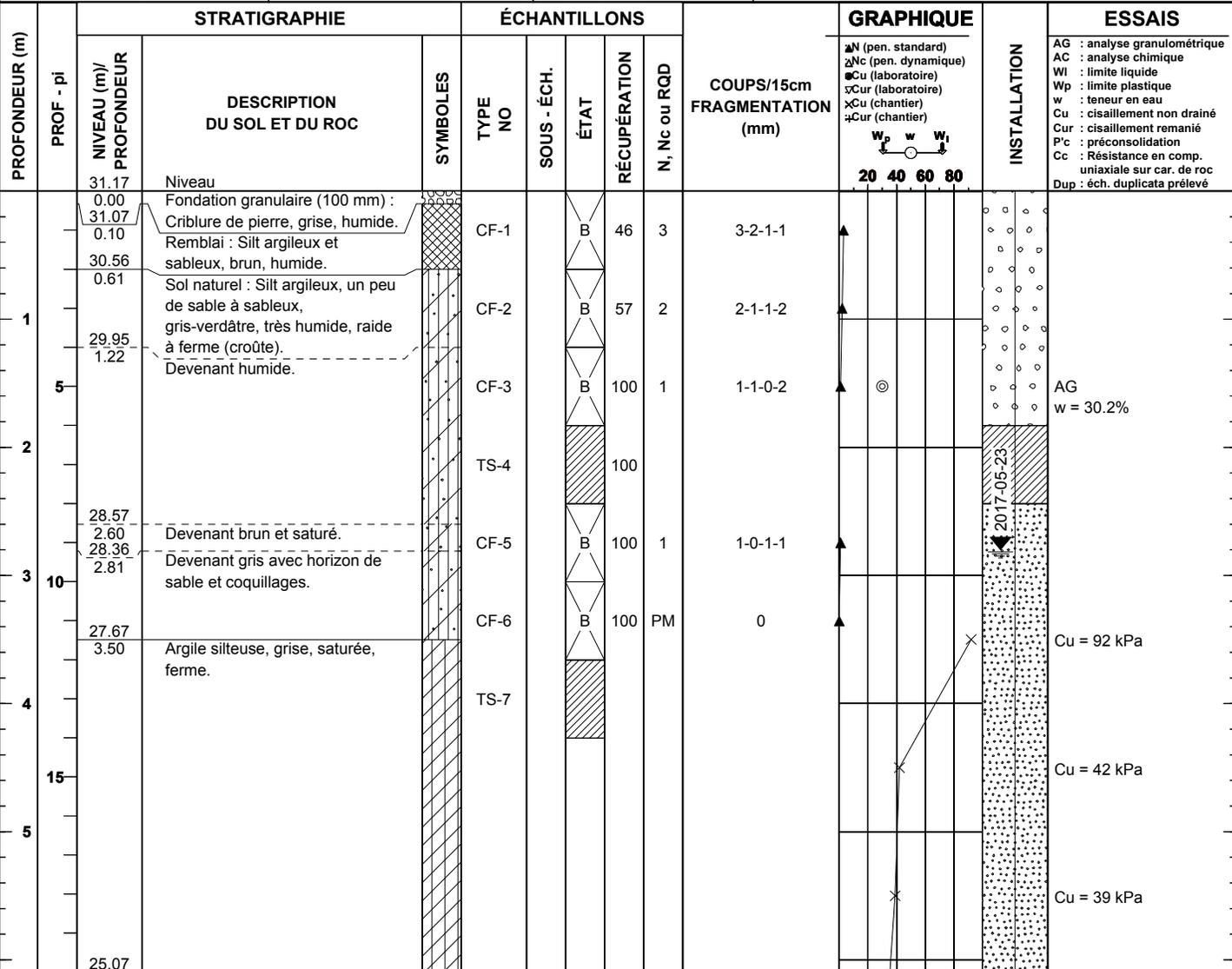
Diamètre du forage: **200 mm** Diamètre du carottier:

Profondeur du sondage : **14.32**

Préparé par : **Marcel Plourde, géo.**

Vérifié par : **Paul Dombrowski, ing.**

TYPE D'ÉCHANTILLON		TERMINOLOGIE		INDICE DE QUALITÉ DU ROC		COMPACTITÉ		INDICE "N"		NIVEAU D'EAU	
CF	Cuillère fendue	"traces"	1-10%	% RQD	QUALIFICATIF	Très lâche	0-4			Date: 2017-05-23 Date:	
CR	Échantillon par forage au diamant	"un peu"	10-20%	<25	Très mauvais	Lâche	4-10			Prof.: 2.8 Prof.:	
EM	Manuel	adjectif (...eux)	20-35%	25-50	Mauvais	Compact	10-30				
TA	Tarière	"et"	35-50%	50-75	Moyen	Dense	30-50				
TE	Tube d'échantillonnage			75-90	Bon	Très dense	>50				
TM	Tube à paroi mince			90-100	Excellent						
ÉTAT DE L'ÉCHANTILLON		SYMBOLES		CLASSIFICATION DES SOLS		CONSISTANCE		RÉSISTANCE AU CISAILLEMENT (Cu)			
	Remanié	N: Indice de pénétration standard		Argile	< 0,002 mm	Très molle	<12 kPa				
	Intact (tube à paroi mince)	R: Refus (N > 100)		Silt	0,002 à 0,080 mm	Molle	12-25 kPa				
	Perdu	PM: Poids du marteau / 61 cm		Sable	0,080 à 5 mm	Ferme	25-50 kPa				
	Forage au diamant	R.Q.D: Indice de qualité du roc		Gravier	5 à 80 mm	Raïde	50-100 kPa				
		% R.Q.D = Σ Carottes > 4 po. (10 cm) longueur forée		Cailloux	80 à 300 mm	Très raïde	100-200 kPa				
				Blocs	> 300mm	Dure	>200 kPa				



Remarque(s): Présence d'un géotextile entre la fondation granulaire et le remblai.
UC = résistance en compression de l'argile sans contrainte.

WSP_modèle de base.sty



PROFONDEUR (m)	STRATIGRAPHIE				ÉCHANTILLONS			COUPS/15cm FRAGMENTATION (mm)	GRAPHIQUE	INSTALLATION	ESSAIS
	PROF. - pi	NIVEAU (m)/ PROFONDEUR	DESCRIPTION DU SOL ET DU ROC	SYMBOLES	TYPE NO	SOUS - ÉCH.	ÉTAT				
6.10		Devenant brun rosâtre.		TS-8			100				
7											
25				TS-9			100				
8											
30				CF-10	B		100	PM	0-0-0-2		
9											
35				CF-11	B		100	PM	0		
10											
40				CF-12	B		100	PM	0		
11											
12											
13	18.22 12.95	Zone de transition argile roc ou argile till.									
14	17.30 13.87	Possibilité de roc (shale fissile).		CF-13	B		40	49	3-9-40-13		
15	16.85 14.32	Fin du forage.									
50											
16											
55											

WSP_modèle de base.sty

▲N (pen. standard)
 ▲Nc (pen. dynamique)
 ●Cu (laboratoire)
 ⊗Cur (laboratoire)
 ×Cu (chantier)
 ⊕Cur (chantier)

w_p w w_l

20 40 60 80

- ESSAIS**
- AG : analyse granulométrique
 - AC : analyse chimique
 - WI : limite liquide
 - Wp : limite plastique
 - w : teneur en eau
 - Cu : cisaillement non drainé
 - Cur : cisaillement remanié
 - P'c : préconsolidation
 - Cc : Résistance en comp. uniaxiale sur car. de roc
 - Dup : éch. duplicata prélevé

$w = 46.9\%$
 $Cu = 23.7 \text{ kPa (labo)}$
 $Cur = 3.4 \text{ kPa (labo)}$
 $Cu = 33 \text{ kPa}$

$P'c = 100 \text{ kPa}$
 $UC = 63 \text{ kPa}$
 $w = 44.3\%$
 $Cu = 29 \text{ kPa (labo)}$
 $Cu = 40 \text{ kPa}$

$Cu = 35 \text{ kPa}$

$WI = 41\%$
 $Wp = 20.7\%$
 $w = 37.4\%$

$Cu = 42 \text{ kPa}$

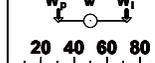
AG
 $WI = 45\%$
 $Wp = 22.8\%$
 $w = 40.2\%$



PROFONDEUR (m)	STRATIGRAPHIE				ÉCHANTILLONS				COUPS/15cm FRAGMENTATION (mm)	GRAPHIQUE	INSTALLATION	ESSAIS	
	PROF. - pi	NIVEAU (m)/ PROFONDEUR	DESCRIPTION DU SOL ET DU ROC	SYMBOLES	TYPE NO	SOUS - ÉCH.	ÉTAT	RÉCUPÉRATION					N, Nc ou RQD
7					CF-10	B		82	PM	0			
8		23.24 8.00	Devenant grise.										
9		22.48 8.76	Argile silteuse, un peu de sable et de gravier, grise, saturée, ferme.		TS-11			100					
10		21.49 9.75	Fin de l'échantillonnage. Poursuite de l'essai au scissomètre "Nilcon" jusqu'au refus à 10.50m de profondeur. Début de l'essai de pénétration dynamique jusqu'au refus à 14.42m de profondeur.		CF-12	B		2		0-1-1-1			
11								0					
12								0					
13								0					
14								46					
15								100					
16													
55													

WSP_modèle de base.sty

▲ N (pen. standard)
 ▲ Nc (pen. dynamique)
 ● Cu (laboratoire)
 x Cur (laboratoire)
 x Cu (chantier)
 ▲ Cur (chantier)



20 40 60 80

AG : analyse granulométrique
 AC : analyse chimique
 WI : limite liquide
 Wp : limite plastique
 w : teneur en eau
 Cu : cisaillement non drainé
 Cur : cisaillement remanié
 P'c : préconsolidation
 Cc : Résistance en comp.
 uniaxiale sur car. de roc
 Dup : éch. duplicata prélevé

Cu = 27 kPa (labo)

Cu = 31 kPa

WI = 50%
 Wp = 24%
 w = 42.6%

Cu = 32 kPa

Cur = 5 kPa

w = 37.3%

Cu = 32.6 kPa (labo)

Cur = 6.5 kPa (labo)

WI = 46%
 Wp = 22.5%
 w = 37.6%

Cu = 38 kPa

15 cm



RAPPORT DE FORAGE

Sondage N°

F-04

Nom du projet: **Étude géotechnique pour la réfection de la caserne de Fort Lennox**

Coordonnées géodésiques X: **4997930.599**

MTM (NAD-1983) Y: **322976.870**

Nom du requérant : **Parcs Canada**

Z: **31.300**

No. de projet : **161-14903-01**

Localisation civile : **Ile-aux-Noix, Québec, Canada**

Plan de localisation No. :

Entrepreneur en forage: **Succession Forage Downing Ltée**

Date du début du sondage : **2017-05-23**

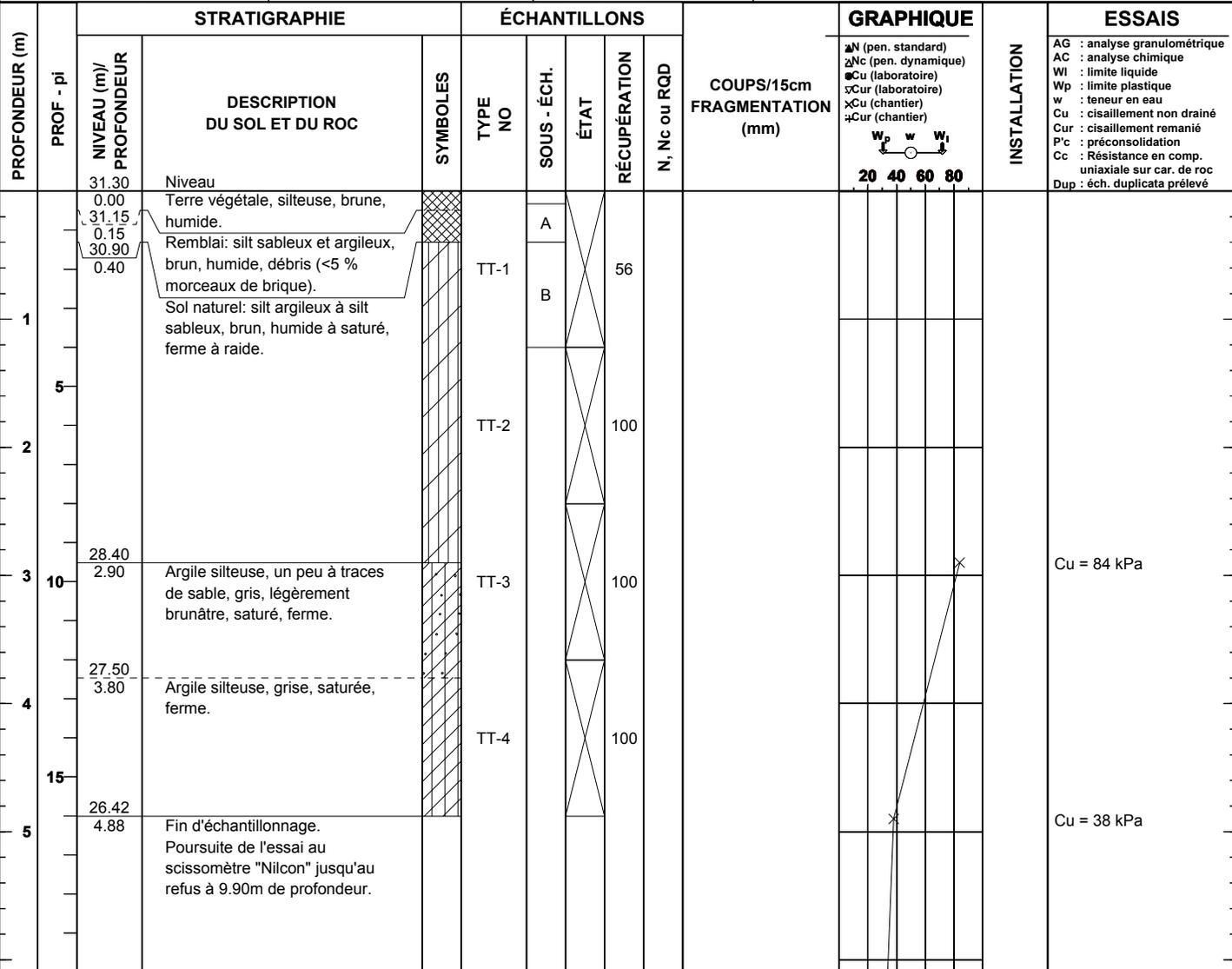
Type de forage : **Forage à percussion** Inclinaison : **90** Azimut :

Diamètre du forage: **89 mm** Diamètre du carottier:

Profondeur du sondage : **9.90**

Préparé par : **Marcel Plourde, géo.** Vérifié par : **Paul Dombrowski, ing.**

TYPE D'ÉCHANTILLON CF Cuillère fendue CR Échantillon par forage au diamant EM Manuel TA Tarière TE Tube d'échantillonnage TM Tube à paroi mince		TERMINOLOGIE "traces" 1-10% "un peu" 10-20% adjectif (...eux) 20-35% "et" 35-50%	INDICE DE QUALITÉ DU ROC % RQD QUALIFICATIF <25 Très faible 25-50 Faible 50-75 Moyen 75-90 Bon 90-100 Excellent	COMPACTITÉ Très lâche Lâche Compact Dense Très dense	INDICE "N" 0-4 4-10 10-30 30-50 >50	NIVEAU D'EAU Date: _____ Prof.: _____
ÉTAT DE L'ÉCHANTILLON Remanié Intact (tube à paroi mince) Perdu Forage au diamant		SYMBOLES N: Indice de pénétration standard R: Refus (N > 100) PM: Poids du marteau / 61 cm R.Q.D: Indice de qualité du roc % R.Q.D = Σ Carottes > 4 po. (10 cm) longueur forée	CLASSIFICATION (SYSTÈME UNIFIÉ) Argile < 0,002 mm Silt 0,002 à 0,075 mm Sable 0,075 à 4,75 mm Gravier 4,75 à 75 mm Cailloux 75 à 300 mm Blocs > 300mm	CONSISTANCE Très molle Molle Ferme Raide Très raide Dure	RÉSISTANCE AU CISAILLEMENT (Cu) <12 kPa 12-25 kPa 25-50 kPa 50-100 kPa 100-200 kPa >200 kPa	

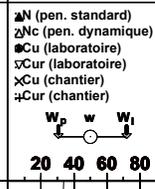


Remarque(s):

WSP_modèle de base.sty



PROFONDEUR (m)	STRATIGRAPHIE				ÉCHANTILLONS				COUPS/15cm FRAGMENTATION (mm)	GRAPHIQUE	INSTALLATION	ESSAIS
	PROF. - pi	NIVEAU (m)/ PROFONDEUR	DESCRIPTION DU SOL ET DU ROC	SYMBOLES	TYPE NO	SOUS - ÉCH.	ÉTAT	RÉCUPÉRATION				
7												
25												
8												
9												
30												
10												
35												
11												
12												
40												
13												
45												
14												
50												
15												
55												
16												



- ESSAIS**
- AG : analyse granulométrique
 - AC : analyse chimique
 - WI : limite liquide
 - Wp : limite plastique
 - w : teneur en eau
 - Cu : cisaillement non drainé
 - Cur : cisaillement remanié
 - P'c : préconsolidation
 - Cc : Résistance en comp. uniaxiale sur car. de roc
 - Dup : éch. duplicata prélevé

Cu = 31 kPa
Cur = 4 kPa

Cu = 44 kPa

Cu = 39 kPa

WSP_modèle de base.sty

Nom du consultant :



Nom du client :

Parcs Canada

ANALYSE GRANULOMÉTRIQUE

Sondage N° F-01, F-02, F-03

Nom du projet : **Étude géotechnique pour la réfection de la caserne de Fort Lennox**

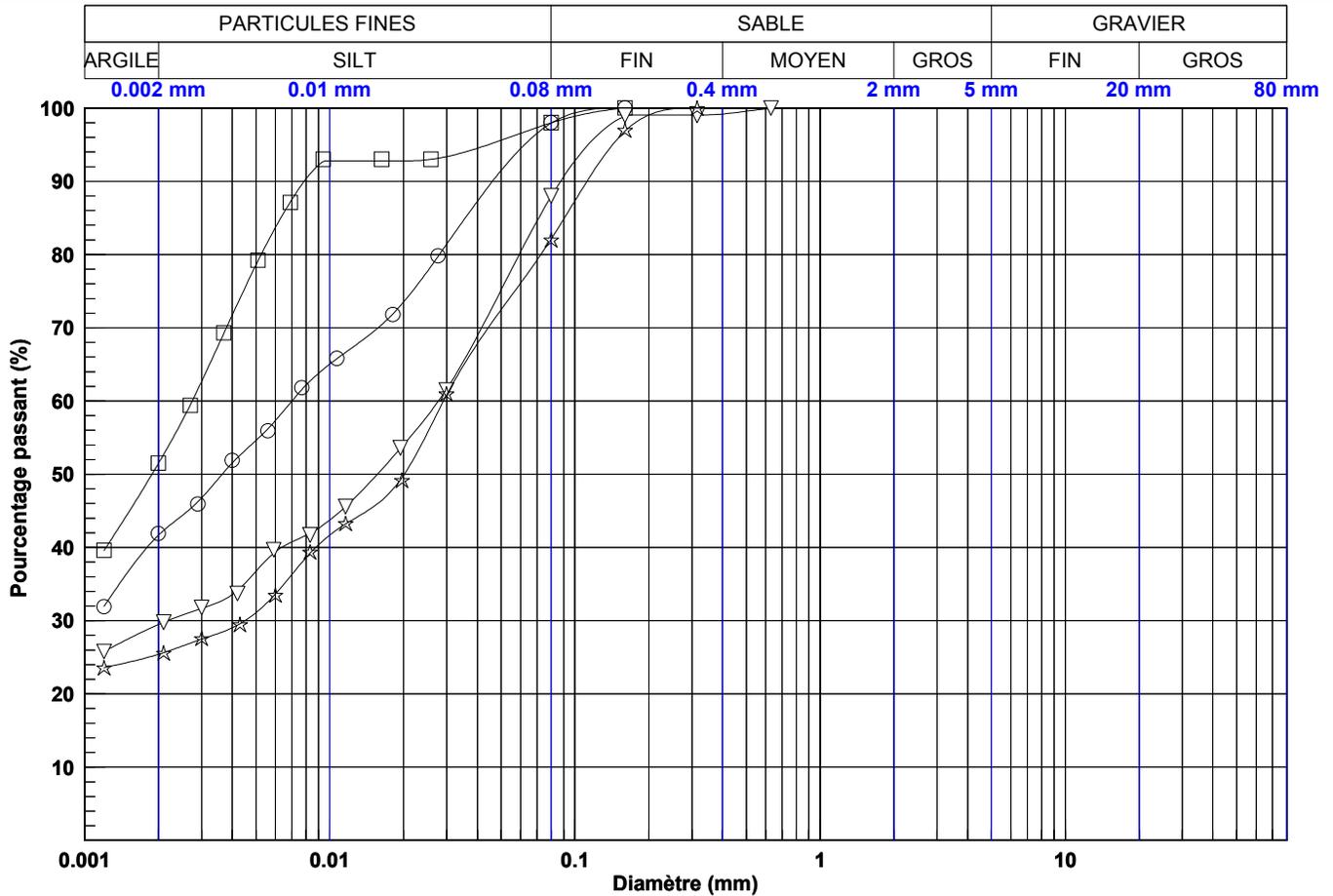
No. de projet : **161-14903-01**

Nom du requérant : **Parcs Canada**

Plan de localisation No. : **FIGURE 1**

Localisation civile : **Ile-aux-Noix, Québec, Canada**

Date du début du sondage : **2017-05-23**





Essai de compression uniaxiale (UC) ASTM D 2166-00

Date : 21/06/2017
Numéro de projet : 161-14903-01
Sondage No : F-03

Technicien : KLC/NLO
Numéro d'échantillon : TM-8
Profondeur de l'échantillon (m) : 4.57-5.18m

Taux de chargement (mm/min) 1.63
Taux de déformation axiale (%/min) 1.1

Type de sols : Argile silteuse (non remanié)
L/D : 2.13

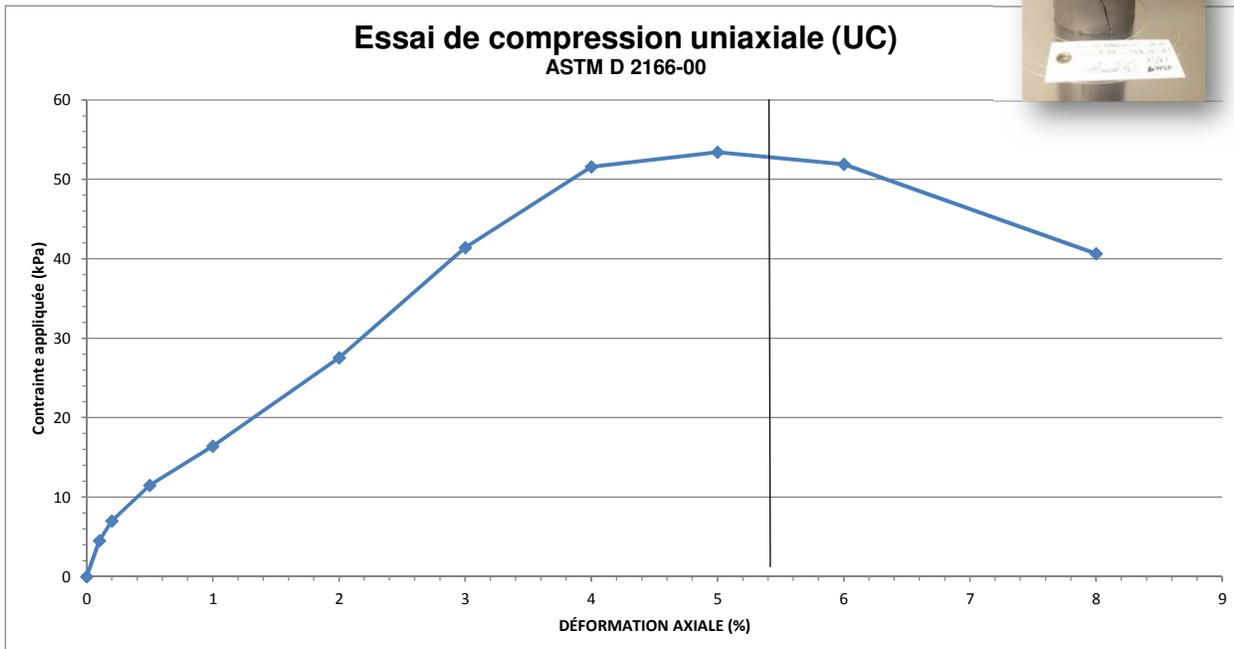
Hauteur de l'échantillon (cm) 14.8
Diamètre de l'échantillon (cm) 6.9
Surface de l'échantillon (cm²) 37.9
Volume de l'échantillon (cm³) 562.4
Masse humide (g) 951.0
Masse sèche (g) 610.4

Teneur en eau (échantillon entier) (%) 58.69
Masse volumique sèche (g/cm³) 1.066
Densité relative, théorique 2.7
Diamètre de la plus grande particule < 10mm

Résultats de l'essai

Déformation à la rupture (%) 5
Résistance en compression (kPa) 53
Résistance au cisaillement (kPa) 26.5

Croquis de la rupture :





Essai de compression uniaxiale (UC) ASTM D 2166-00

Date : 05/06/2017
Numéro de projet : 161-14903-01
Sondage no : F-06

Technicien : KLC/NLO
Numéro d'échantillon : TM-9
Profondeur de l'échantillon (m) : 7.62-8.23m

Taux de chargement (mm/min) 1.67
Taus de déformation axiale (%/min) 1.1

Type de sols : Argile silteuse (non remanié)
L/D: 2.19

Hauteur de l'échantillon (cm) 15.2
Diamètre de l'échantillon (cm) 6.9
Surface de l'échantillon (cm²) 37.7
Volume de l'échantillon (cm³) 571.5
Masse humide (g) 1031.7
Masse sèche (g) 723.5

Teneur en eau (échantillon entier) (%) 42.12
Masse volumique sèche (g/cm³) 1.270
Densité relative, théorique 2.7

Diamètre de la plus grande particule < 10mm

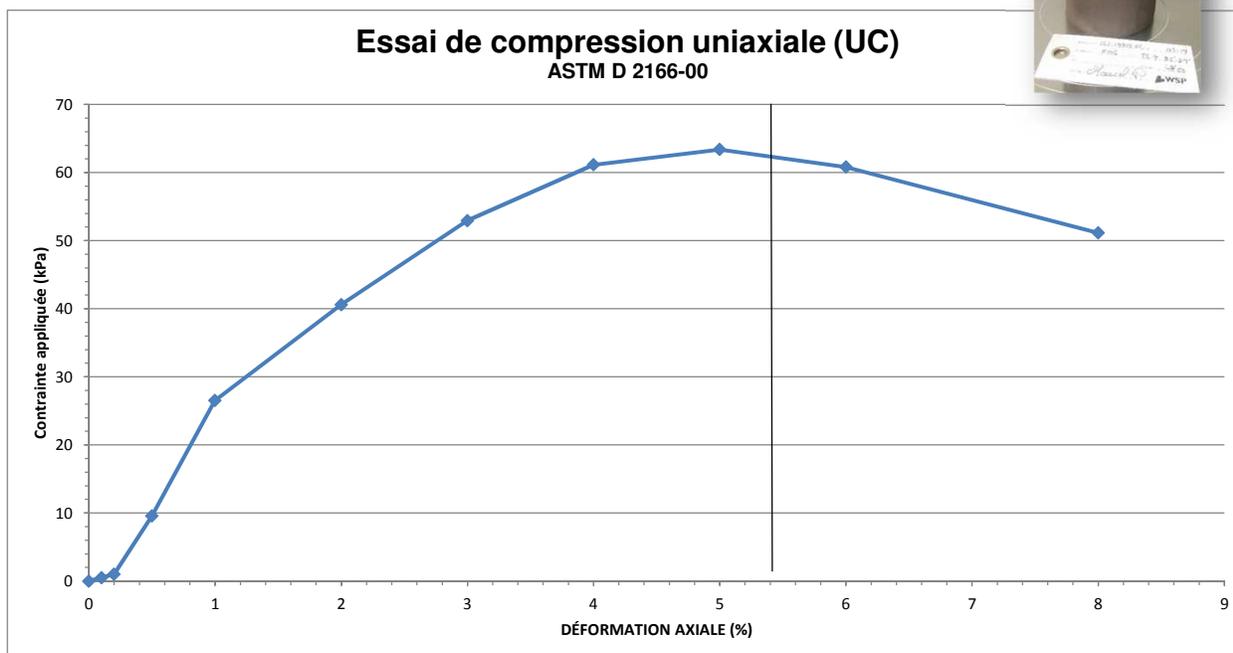
Résultats de l'essai

Déformation à la rupture (%) 5

Croquis de la rupture :

Résistance en compression (kPa) 63

Résistance au cisaillement (kPa) 31.5





RÉSUMÉ DE L'ESSAI DE CONSOLIDATION OEDOMÉTRIQUE

ESSAI DE CONSOLIDATION (ASTM D 2435)

Identification de l'échantillon

Nom du projet : Étude géotechnique pour la réfection de la caserne de Fort Lennox
 Numéro de projet : 161-14903-01 Date de l'essai : 5 juin 2017

Conditions de l'essai

Surface, cm ²	31.69	Masse volumique sèche, g/cm ³	1.17
Volume, cm ³	80.60	Poids volumique sec, kN/m ³	11.44
Teneur en eau initiale, %	50.72	Densité relative, théorique	2.7
Masse humide, g	Mtf 125.09	Hauteur de solides, cm	1.10
Masse sèche, g	Md 94.08	Volume de solides, cm ³	34.84
Teneur en eau finale, %	32.96	Volume des vides, cm ³	

Description du matériau : Argile silteuse grise (CH) Forage/Échantillon/Profondeur : F-03 TM-8 (4.57-5.18m)

Résumé

Diamètre de l'échantillon 6.352 cm Hauteur initiale de l'échantillon, (Ht) 2.54333 cm Hauteur des solides (Hs) 1.10 cm
 Teneur en eau : Début % 51 Fin % 33 Masse de l'échantillon de sols secs 94.08 g Gs 2.7

Effectué par : **KLC** Révisé par : **JSA**

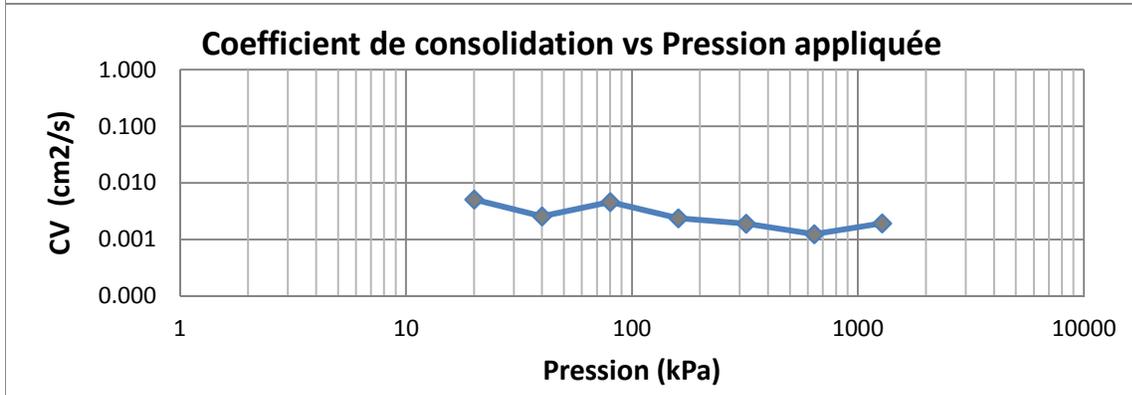
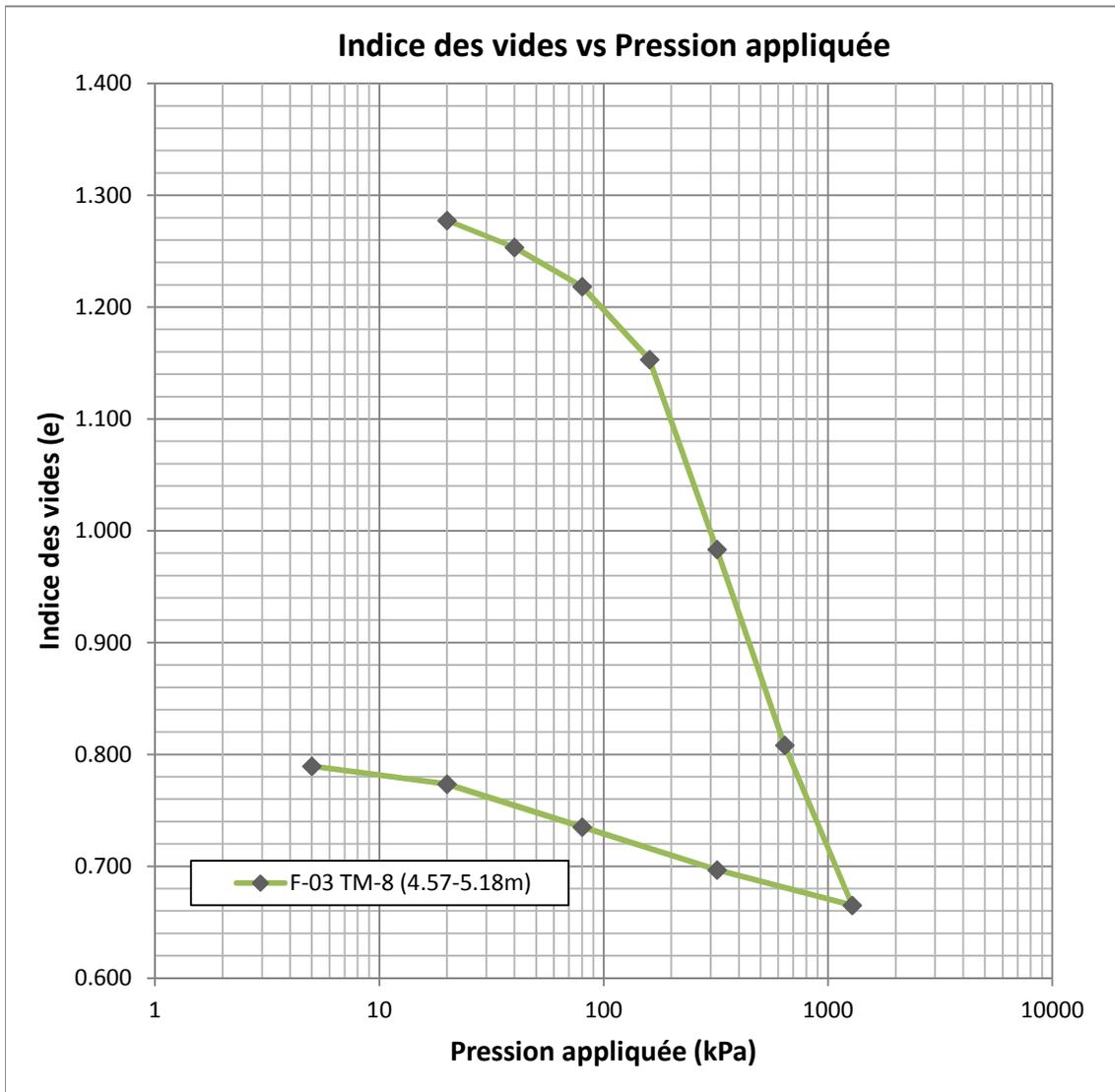
Pression kPa	Variation de hauteur	Variation de hauteur cumulative (ΔH)	Hauteur finale (Ht) (cm)	Hauteur des vides (Hv) (cm)	Indice des vides final (e)	Hauteur moy. pendant la consolidation (Ht(av))	T90 (sec)	T50 (sec)	Cv (cm ² /s)	Mv (m ² /kN)	k (cm/s)
10			2.5343	1.4342	1.304		0.00		0.000	0	0
20	0.0288	0.0288	2.5055	1.4054	1.278	2.5199	264.06		0.005	1.13E-03	5.67E-07
40	0.0263	0.0550	2.4793	1.3792	1.254	2.4924	517.02		0.003	1.10E-03	2.74E-07
80	0.0386	0.0936	2.4407	1.3406	1.219	2.4600	280.92		0.005	9.44E-04	4.22E-07
160	0.0720	0.1656	2.3687	1.2686	1.153	2.4047	518.58		0.002	8.48E-04	1.96E-07
320	0.1866	0.3521	2.1822	1.0820	0.984	2.2754	577.92		0.002	9.29E-04	1.73E-07
640	0.1926	0.5448	1.9895	0.8894	0.808	2.0858	738.96		0.001	7.80E-04	9.54E-08
1280	0.1577	0.7025	1.8318	0.7317	0.665	1.9107	399.48		0.002	5.52E-04	1.05E-07
320	-0.0349	0.6676	1.8667	0.7666	0.697	1.8493					
80	-0.0422	0.6254	1.9089	0.8088	0.735	1.8878					
20	-0.0422	0.5833	1.9510	0.8509	0.773	1.9300					
5	-0.0179	0.5654	1.9689	0.8688	0.790	1.9600					



RÉSUMÉ DE L'ESSAI DE CONSOLIDATION

(ASTM D 2435)

Projet : Étude géotechnique pour la réfection de la caserne de Fort Lennox
Numéro de projet : 161-14903-01 **Date de l'essai :** 5 juin 2017
Sondage no : F-03 **Échantillon no (profondeur) :** TM-8 (4.57-5.18m)





RÉSUMÉ DE L'ESSAI DE CONSOLIDATION OEDOMÉTRIQUE

ESSAI DE CONSOLIDATION (ASTM D 2435)

Identification de l'échantillon

Nom du projet : Étude géotechnique pour la réfection de la caserne de Fort Lennox
 Numéro de projet : 161-14903-01 Date de l'essai : 5 juin 2017

Conditions de l'essai

Surface, cm ²	31.69	Masse volumique sèche, g/cm ³	1.25
Volume, cm ³	80.59	Poids volumique sec, kN/m ³	12.23
Teneur en eau initiale, %	44.35	Densité relative, théorique	2.7
Masse humide, g	Mtf 133.52	Hauteur de solides, cm	1.18
Masse sèche, g	Md 100.59	Volume de solides, cm ³	37.26
Teneur en eau finale, %	32.74	Volume des vides, cm ³	

Description du matériau : Argile silteuse grise (CH) Forage/Échantillon/Profondeur : F-06 TM-9 (7.62-8.3m)

Résumé

Diamètre de l'échantillon 6.352 cm Hauteur initiale de l'échantillon, (Ht) 2.543 cm Hauteur des solides (Hs) 1.18 cm
 Teneur en eau : Début % 44 Fin % 33 Masse de l'échantillon de sols secs 100.59 g Gs 2.7

Effectué par : **KLC** Révisé par : **JSA**

Pression kPa	Variation de hauteur	Variation de hauteur cumulative (ΔH)	Hauteur finale (Ht) (cm)	Hauteur des vides (Hv) (cm)	Indice des vides final (e)	Hauteur moy. pendant la consolidation (Ht(av))	T90 (sec)	T50 (sec)	Cv (cm ² /s)	Mv (m ² /kN)	k (cm/s)
10			2.5343	1.3580	1.155		0.00		0.000	0	0
20	0.0280	0.0280	2.5064	1.3301	1.131	2.5203	225.66		0.006	1.10E-03	6.45E-07
40	0.0204	0.0483	2.4860	1.3097	1.113	2.4962	147.48		0.009	9.64E-04	8.46E-07
80	0.0306	0.0790	2.4554	1.2791	1.087	2.4707	541.98		0.002	7.94E-04	1.86E-07
160	0.0562	0.1351	2.3992	1.2229	1.040	2.4273	645.12		0.002	6.88E-04	1.31E-07
320	0.1473	0.2824	2.2519	1.0757	0.914	2.3255	1627.98		0.001	7.36E-04	5.08E-08
640	0.1789	0.4613	2.0730	0.8968	0.762	2.1625	2322.12		0.000	6.40E-04	2.68E-08
1280	0.1530	0.6143	1.9200	0.7438	0.632	1.9965	1594.32		0.001	4.63E-04	2.40E-08
320	-0.0446	0.5697	1.9646	0.7883	0.670	1.9423					
80	-0.0588	0.5109	2.0234	0.8471	0.720	1.9940					
20	-0.0546	0.4564	2.0779	0.9017	0.767	2.0507					
5	-0.0315	0.4248	2.1095	0.9332	0.793	2.0937					



RÉSUMÉ DE L'ESSAI DE CONSOLIDATION

(ASTM D 2435)

Projet : Étude géotechnique pour la réfection de la caserne de Fort Lennox

Numéro de projet : 161-14903-01

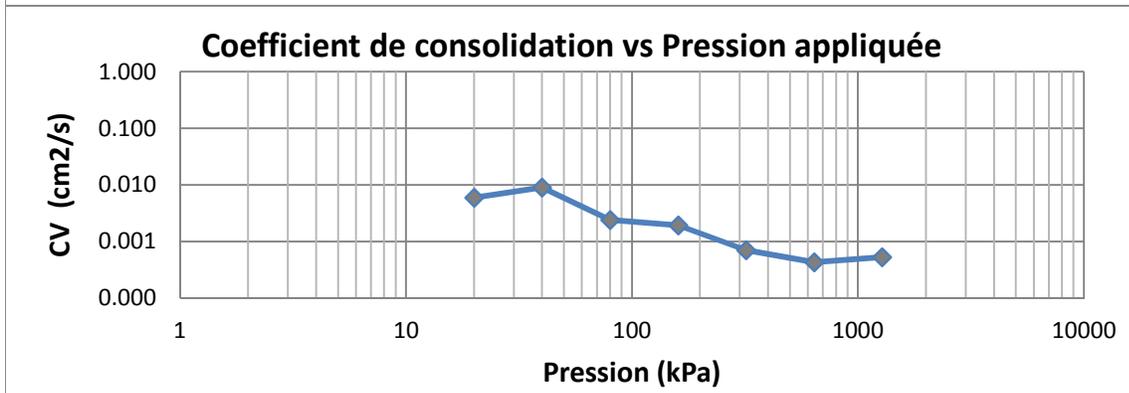
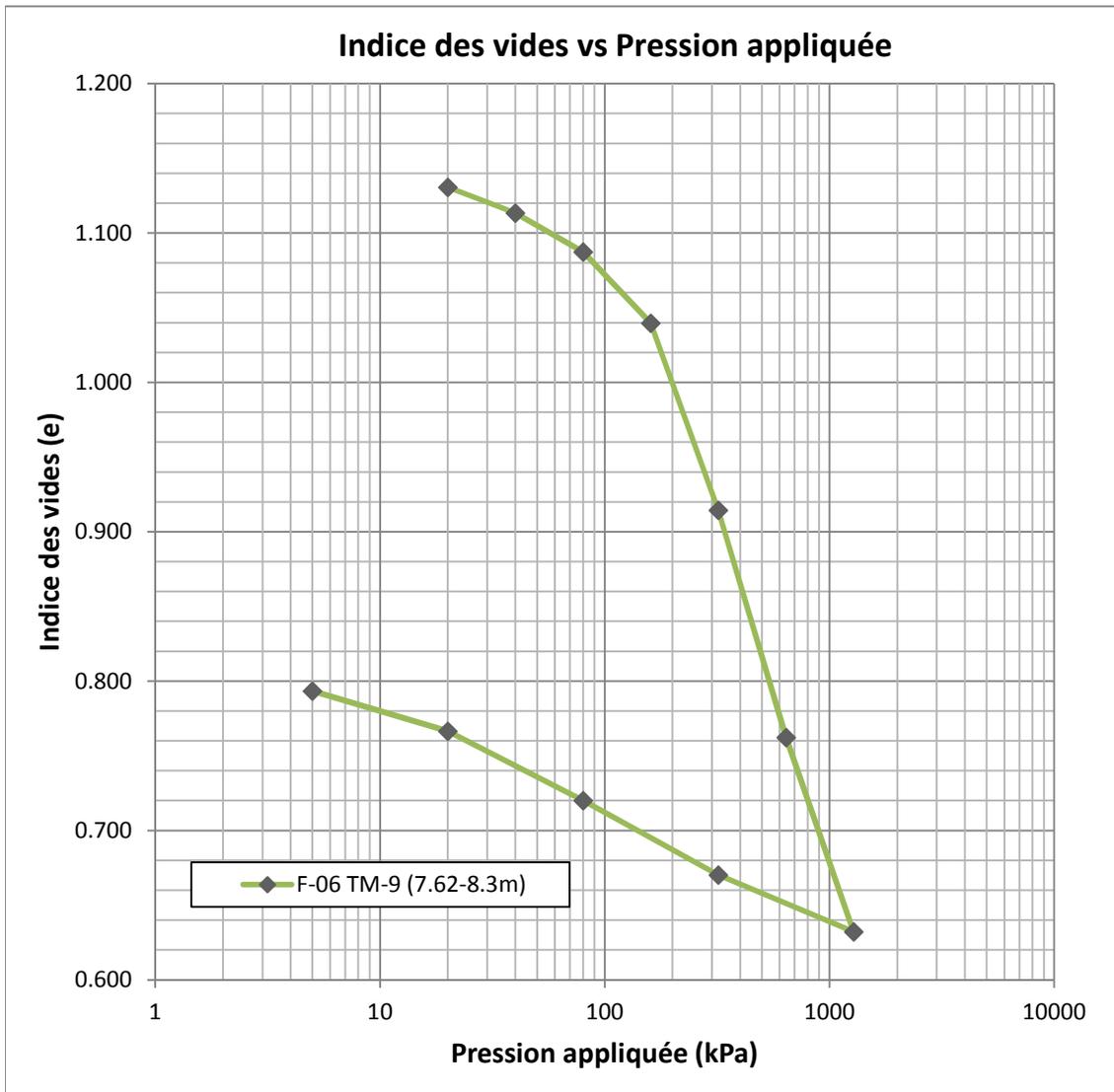
Date de l'essai :

5 juin 2017

Sondage no : F-06

Échantillon no (profondeur) :

TM-9 (7.62-8.3m)



ANNEXE

C

PORTÉE ET
LIMITATIONS DE
L'ÉTUDE

UTILISATION DU RAPPORT

Les données factuelles, les interprétations et les recommandations contenues dans ce rapport se rapportent à un projet spécifique tel que décrit dans ledit rapport et ne s'appliquent à aucun autre projet ni à aucun autre site. Si le projet est modifié du point de vue conception, de l'emplacement ou de l'élévation ou encore, si le projet n'est pas amorcé dans les dix-huit (18) mois suivant la date d'émission du rapport, WSP devra être consultée de façon à réviser la validité des recommandations données dans le présent rapport.

Les recommandations données dans ce rapport ne servent qu'à guider l'ingénieur concepteur. Les entrepreneurs soumissionnaires ou exécutant les travaux devront compter sur leurs propres interprétations des résultats factuels des forages pour déterminer de quelle manière les conditions géotechniques, hydrogéologiques et géologiques peuvent affecter leurs travaux.

Pour conserver l'intégrité de ce rapport et permettre son interprétation avec pertinence, aucune donnée, valeur ou résultat ne peut en être partiellement retiré. Le présent rapport ne doit être utilisé qu'aux fins pour lesquelles il a été préparé.

SUIVI DE L'ÉTUDE ET DES TRAVAUX

Certains ou tous les détails de conception et de construction peuvent ne pas être connus au moment de la parution du rapport de WSP. Il est donc essentiel que les services d'un professionnel en géotechnique soient retenus lors de l'étape finale de conception pour réviser les dessins de conception et les devis se rapportant aux fondations, aux terrassements, aux ouvrages de retenue des terres et au drainage. Cette révision sert à vérifier si la conception corrobore les données et les recommandations géotechniques du rapport de WSP.

Il est recommandé que les services d'un professionnel en géotechnique soient retenus pendant la construction, d'abord pour vérifier et confirmer que les conditions géotechniques, hydrogéologiques et géologiques présentes sur l'ensemble du chantier ne diffèrent pas de celles indiquées dans le rapport de WSP. Ensuite, il est essentiel de certifier que les travaux de construction n'ont pas d'effets défavorables sur les recommandations du rapport.

CONDITIONS DES SOLS ET DU ROC

Les descriptions des sols et du roc inscrites dans ce rapport proviennent de méthodes de classification et d'identification communément acceptées et utilisées en pratique géotechnique. La classification et l'identification des sols et du roc nécessitent un jugement d'un ingénieur de WSP en accord avec les bonnes pratiques en vigueur.

Cependant, WSP applique une description convenant à la nomenclature communément utilisée en pratique géotechnique.

Les conditions des sols et du roc décrites dans ce rapport sont celles observées au moment de l'étude. À moins d'indication contraire, ces conditions représentent les fondements qui ont amené à établir les recommandations du rapport. Les conditions des sols et du roc peuvent cependant être sensiblement modifiées par les travaux de construction (circulation d'équipements, excavations, fonçage de pieux, dynamitage, etc.) sur le site ou sur les sites voisins. Une excavation peut exposer les sols à des changements de propriétés provoqués par l'humidité, le séchage ou le gel. Sauf indication contraire, les sols et le roc doivent être protégés contre l'effet dommageable de ces changements ou du remaniement pendant la construction.

RAPPORT DE FORAGE ET INTERPRÉTATION DES CONDITIONS OBSERVÉES

Les dépôts meubles et le massif rocheux sont de nature et de propriété variables sur une plus ou moins grande superficie et aussi en profondeur. Les rapports de forages ne fournissent que des conditions approximatives et ponctuelles de ces informations géologiques à l'emplacement des forages et des forages. Les contacts entre les

différentes couches indiquées sur les rapports peuvent être difficiles à distinguer. En effet, la nature des sols peut changer progressivement avec la profondeur, de sorte que le contact entre deux (2) couches peut être imprécis et correspondre plutôt à une zone de transition. La précision de la stratigraphie rencontrée dépend de la méthode de forage, de la fréquence et de la méthode d'échantillonnage puis de l'homogénéité des sols rencontrés. L'espacement entre les forages, la fréquence d'échantillonnage et le type de forage dépendent des considérations budgétaires et des délais d'exécution, tous deux établis avant le début des travaux.

Les conditions géotechniques, hydrogéologiques et géologiques entre les emplacements des forages font l'objet d'une interprétation par interpolation ou encore, elles dépendent du jugement de l'ingénieur géotechnicien. En réalité, la stratigraphie peut varier sensiblement, de sorte que l'interprétation des résultats de l'étude doit être faite avec précaution par le lecteur du rapport.

Les niveaux de l'eau souterraine indiqués dans ce rapport sont uniquement ceux observés à l'endroit et à la date des relevés, tels que présentés dans le rapport. Ces conditions peuvent varier selon les saisons ou à la suite de travaux de construction sur le site ou sur les sites voisins.

CHANGEMENT DES CONDITIONS OBSERVÉES

Lorsque les conditions géotechniques, hydrogéologiques ou géologiques rencontrées sur le site diffèrent de celles indiquées au rapport, soit à cause de la nature hétérogène des sols et du roc ou encore, parce que des changements sont survenus à la suite de travaux de construction (ou pour toute autre raison), le client doit, comme condition d'utilisation du rapport, prévenir WSP du changement des conditions et fournir à WSP l'opportunité de réviser les recommandations émises dans ce rapport. Reconnaître un changement des conditions des sols et du roc requiert une certaine expérience; il est donc recommandé qu'un ingénieur géotechnicien expérimenté soit dépêché sur le site pour prendre position sur les changements des conditions rencontrées.

DRAINAGE

Le drainage de l'eau souterraine est souvent requis aussi bien pour des ouvrages temporaires que pour des ouvrages permanents. La conception ou l'exécution impropre d'un système de drainage peut entraîner de sérieuses conséquences. WSP ne peut en aucun cas endosser la responsabilité des dommages causés par un système inadéquat de drainage, à moins que WSP n'ait été spécifiquement impliquée à la fois dans la conception détaillée et le suivi continu au chantier, lors de la construction du système de drainage.



"AS FOUND" DRAWINGS • MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK

DESIGNED BY ÉTABLI PAR		CHECKED BY VÉRIFIÉ PAR		APP. REC. BY / APP. REC. PAR		APP. BY / APP. PAR <i>H.A. Valentine</i>		DRAWING TITLE / TITRE DU DESSIN		PROJECT TITLE / TITRE DU PROJET		DATE OCT 1988		SHEET NO. 114/03/RE.1-2	
DRAWN BY TRACÉ PAR H.A.V.		SCALE ÉCHILLE		DATE FEB 6 1975											

114/03/RE.1-2
 Fort Lennox/Men's barracks
 Page couverture



"AS FOUND" DRAWINGS

"AS FOUND" DRAWINGS

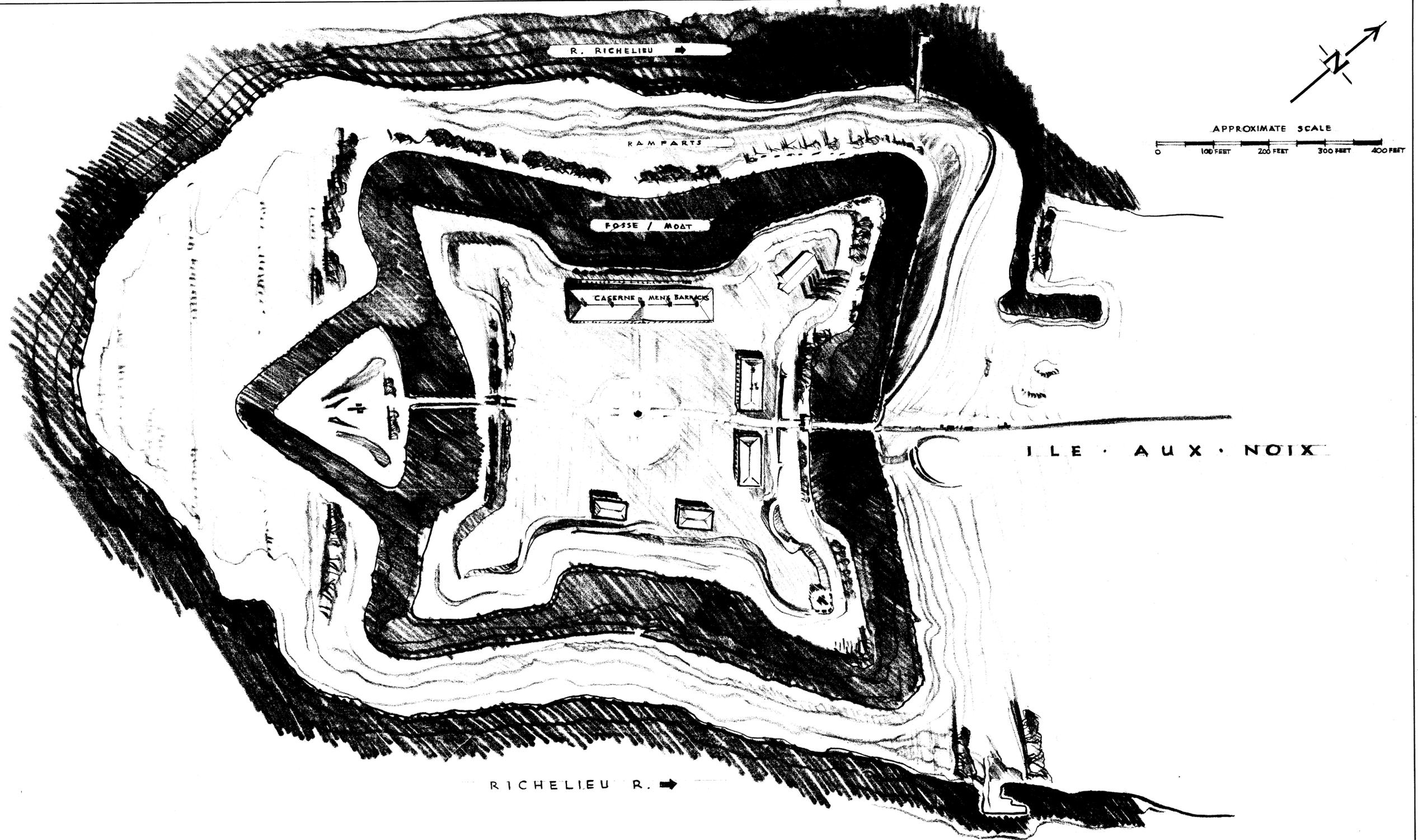
LIST OF ISSUE

DWG. NO.	DESCRIPTION	REVISIONS OR REMARKS	DWG. NO.	DESCRIPTION	REVISIONS OR REMARKS	NAME	AUTHORITY	DWGS. NO.	DATE	REMARKS
1.	INDEX SHEET		31.	TYPICAL ROOF TRUSS DETAILS						
2.	PLOT PLAN		32.	ROOF DETAILS, POST AND SHELVING DETAILS						
3.	PHOTO KEY PLAN - GROUND FLOOR		33.	INTERIOR ELEVATIONS GROUND FLOOR WALLS (BAYS 2-9)						
4.	PHOTO KEY PLAN - UPPER FLOOR AND ROOF		34.	INTERIOR ELEVATIONS GROUND FLOOR WALLS (BAYS 10-15)						
5.	GROUND FLOOR KEY PLAN AND ADJOINING SITE CONDITIONS		35.	MEASUREMENT TABLES SHOWING INCLINATIONS OF ENCLOSING WALLS						
6.	KEY PLANS OF UPPER FLOOR AND ROOF		36.	DETAILS OF GROUND FLOOR WINDOWS						
7.	KEY ELEVATIONS - FRONT AND REAR		37.	DETAILS OF UPPER FLOOR WINDOWS AND SLIDING SASH AT LOOPHOLES						
8.	GROUND FLOOR PLAN - SOUTH PART		38.	CIRCULAR WINDOW IN PEDIMENT DETAILS						
9.	GROUND FLOOR PLAN - CENTRE PART		39.	CENTRAL ENTRANCE AND TYPE "A" DOOR DETAILS						
10.	GROUND FLOOR PLAN - NORTH PART		40.	DETAILS INTERIOR DOORS AND PARTITIONS AT GROUND FLOOR						
11.	UPPER FLOOR PLAN - SOUTH PART		41.	DETAILS OF EXTERIOR DOOR TYPE "F" UPPER FLOOR						
12.	UPPER FLOOR PLAN - CENTRE PART		42.	DETAIL OF DOORS "D" AND "E" AT UPPER FLOOR AND INTERIOR WOOD BASE						
13.	UPPER FLOOR PLAN - NORTH PART		43.	DETAILS OF IRON RAILING, REAR STAIRWAY						
14.	ROOF PLAN AND DETAILS		44.	FULL SIZE DETAILS OF STONEMWORK, IRON BRACKETS AT EAVES						
15.	GROUND FLOOR REFLECTED PLAN, HEATING AND DRAINAGE PLANS		45.	CLEAN-OUT DOORS AT CHIMNEYS, CEILING RINGS AT GROUND FLOOR, IRON HOOKS AT CHIMNEYS						
16.	ROOF FRAMING PLAN - SOUTH PART		46.	PAINTED LETTERING ON DOORS						
17.	ROOF FRAMING PLAN - CENTRE PART		47.	HARDWARE FOR TYPES "A" AND "C" DOORS						
18.	ROOF FRAMING PLAN - NORTH PART		48.	HARDWARE FOR TYPES "C" AND "E" DOORS						
19.	FRONT ELEVATION (EAST) - SOUTH PART		49.	HARDWARE FOR TYPES "D" AND "E" DOORS/ HARDWARE FOR WINDOWS						
20.	FRONT ELEVATION (EAST) - CENTRE PART		2A	TRACING OF PART OF RESURVEY OF LOT 430, PARISH OF ST. VALENTIN, COUNTY OF ST. JEAN, P.Q. SHOWING FORT LENNOX NATIONAL HISTORIC PARK						
21.	FRONT ELEVATION (EAST) - NORTH PART - DETAILS OF QUOINS		24A	REAR STAIRWAY F' DETAILS						
22.	SOUTH AND NORTH ELEVATIONS									
23.	REAR (WEST) ELEVATION - SOUTH PART									
24.	REAR (WEST) ELEVATION - CENTRE PART									
25.	REAR (WEST) ELEVATION - NORTH PART									
26.	LONGITUDINAL SECTION 1-1, SECTION 2-2, - SOUTH PART									
27.	LONGITUDINAL SECTION 1-1, SECTION 2-2, - CENTRE PART									
28.	LONGITUDINAL SECTION 1-1, SECTION 2-2, NORTH PART									
29.	CROSS SECTION 3-3 ON GRID LINE 59 LOOKING TOWARDS GRID 60.									
30.	CROSS SECTION 4-4, ON GRID LINE 32 LOOKING TOWARDS GRID 33									

114/03/RS-1-2
Fort Lennox/Men's Barracks
Index sheet

DESIGNED BY ÉTABLI PAR		CHECKED BY VÉRIFIÉ PAR		APP. REC. BY / APP. REC. PAR		APP. BY / APP. PAR		DRAWING TITLE / TITRE DU DESSIN INDEX SHEET		PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS - MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK		DATE OCT. 1969		DWG. NO. DESSIN N° 1	
DRAWN BY TRACÉ PAR C-S-P.		SCALE ÉCHELLE		DATE		DATE									

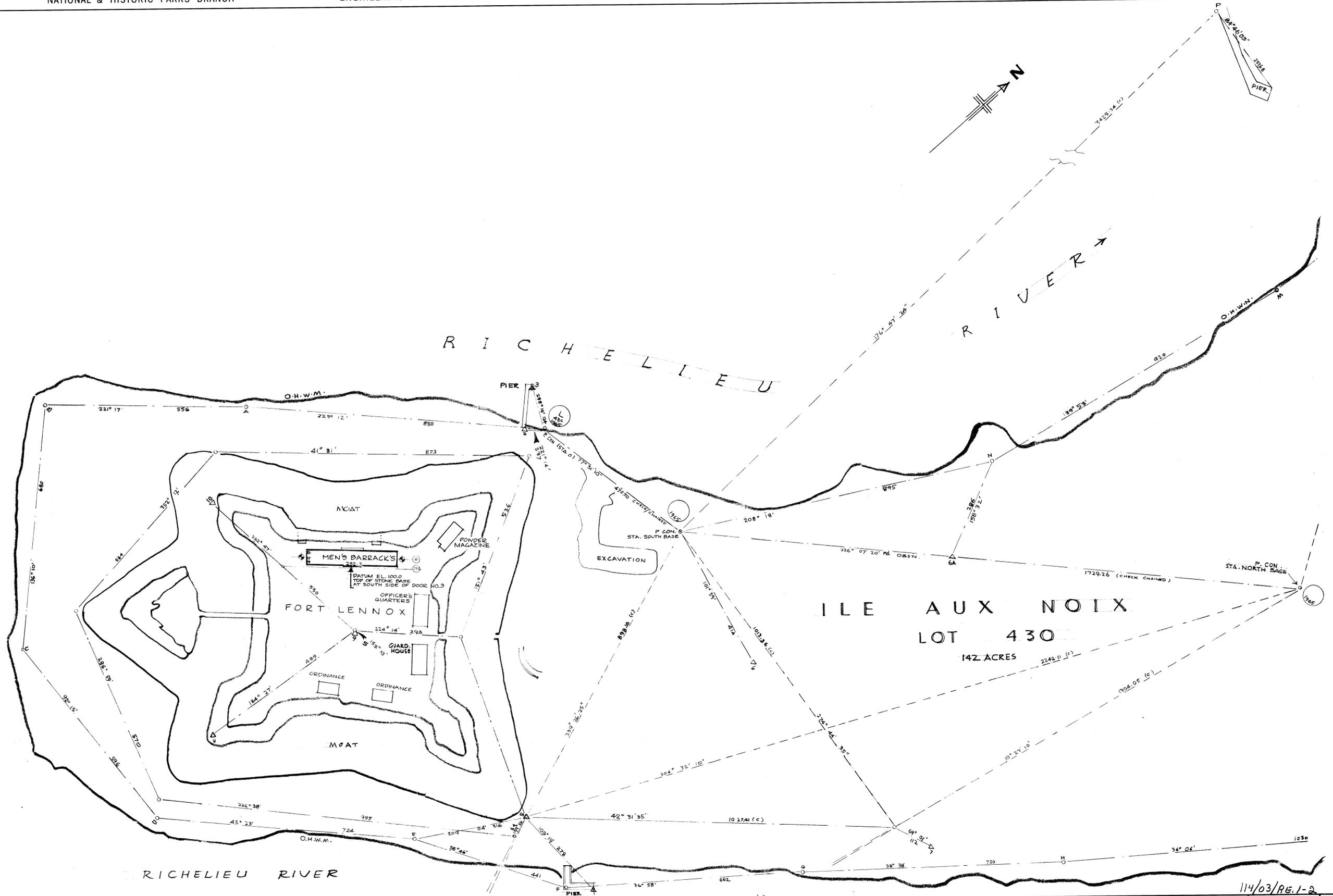
114/03/RS-1-2



"AS FOUND" DRAWINGS · MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK

NO. / N°	DESCRIPTION REVISIONS	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. DESIGN N°
			DRAWN BY TRACÉ PAR	SCALE AS SHOWN ÉCHELLE	DATE	DATE	"AS FOUND" DRAWINGS · MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	114/03/RE.1-2	OCT. 1963	2.

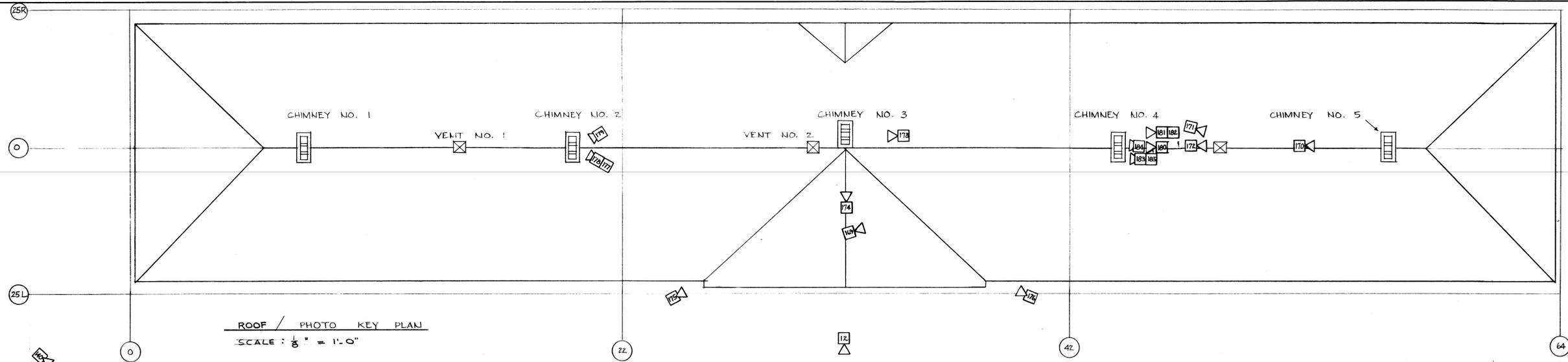
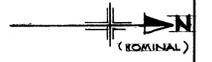
114/03/RE.1-2
Fort Lennox/Men's barracks
Plot plan



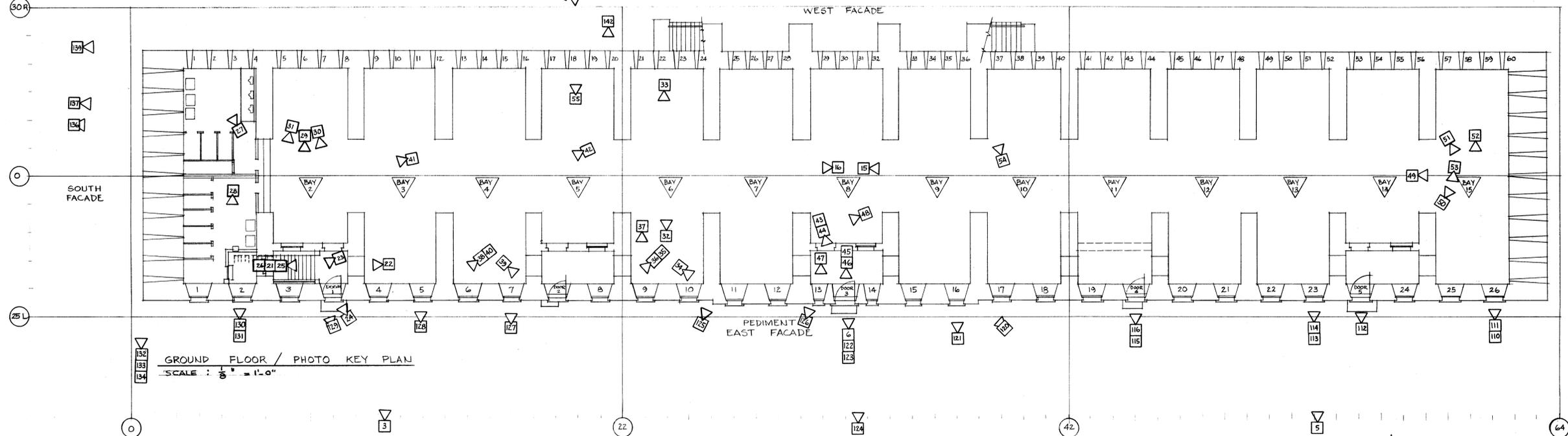
114/03/RE.1-2
Fort Lennox/Men's barracks
Part of plan of resurvey of lot 430

NO./N°		DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APP. REC. BY / APP. REC. PAR.	APP. BY / APP. PAR.	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO.
REVISIONS				ÉTABLI PAR	VÉRIFIÉ PAR			PART OF PLAN OF RESURVEY OF LOT 430 IN THE PARISH OF ST. VALENTIN, COUNTY OF ST. JEAN, P.Q. PREPARED IN 1915 BY D. ANDRÉ TETREALT, Q.L.S. AND TRACED BY J.H.M. (OTTAWA) SEPT. 1966.	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	2A
				DRAWN BY	SCALE 1 INCH = 100 FEET	DATE	DATE				
				TRACÉ PAR H.A.V.	ÉCHELLE 6 M.						

114/03/RE.1-2



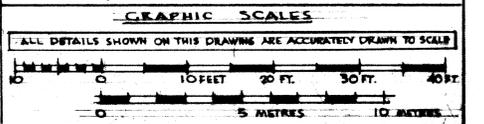
ROOF / PHOTO KEY PLAN
SCALE : $\frac{1}{8}'' = 1'-0''$



GROUND FLOOR / PHOTO KEY PLAN
SCALE : $\frac{1}{8}'' = 1'-0''$

NOTES:
1. REFER TO "AS FOUND" REPORT FOR ALL PHOTOGRAPHS LISTED ON THIS KEY PLAN.

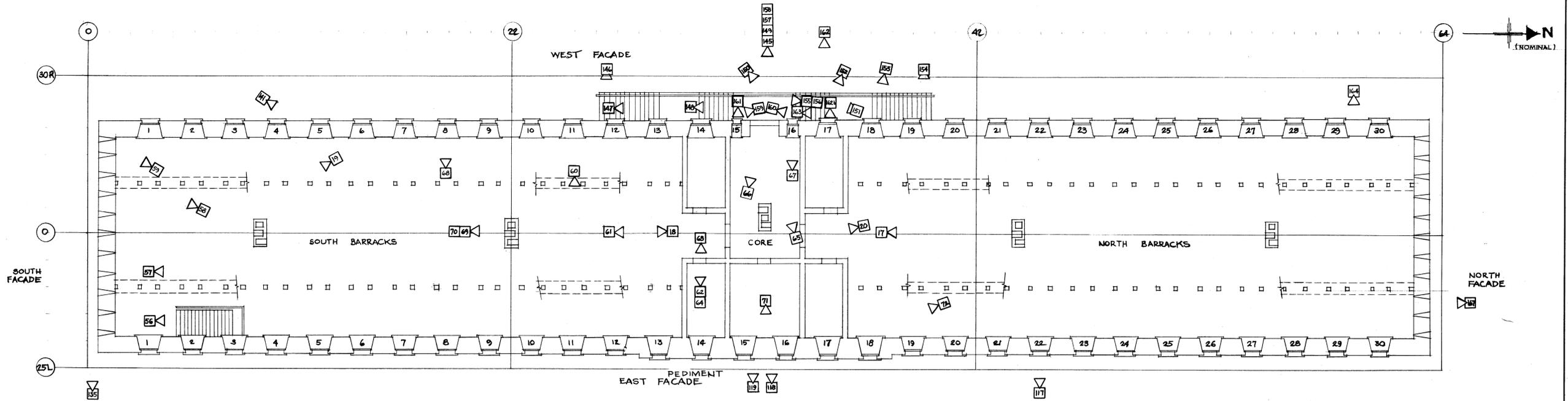
- LEGEND:
- CAMERA TILTED DOWN
 - CAMERA LEVEL
 - CAMERA TILTED UP
 - TWO PHOTOS FROM ONE POSITION



DESIGNED BY ÉTABLI PAR DRAWN BY H.S.S. TRACE PAR		CHECKED BY VÉRIFIÉ PAR		APP. REC. BY / APP. REC. PAR		APP. BY / APP. PAR		DRAWING TITLE / TITRE DU DESSIN PHOTO KEY PLAN / GROUND FLOOR		PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	
NO. / N°		DESCRIPTION		DATE		DATE		DATE		DATE	
REVISIONS										DATE OCT. 1969	
										DWG. NO. DESIGN N° 3	

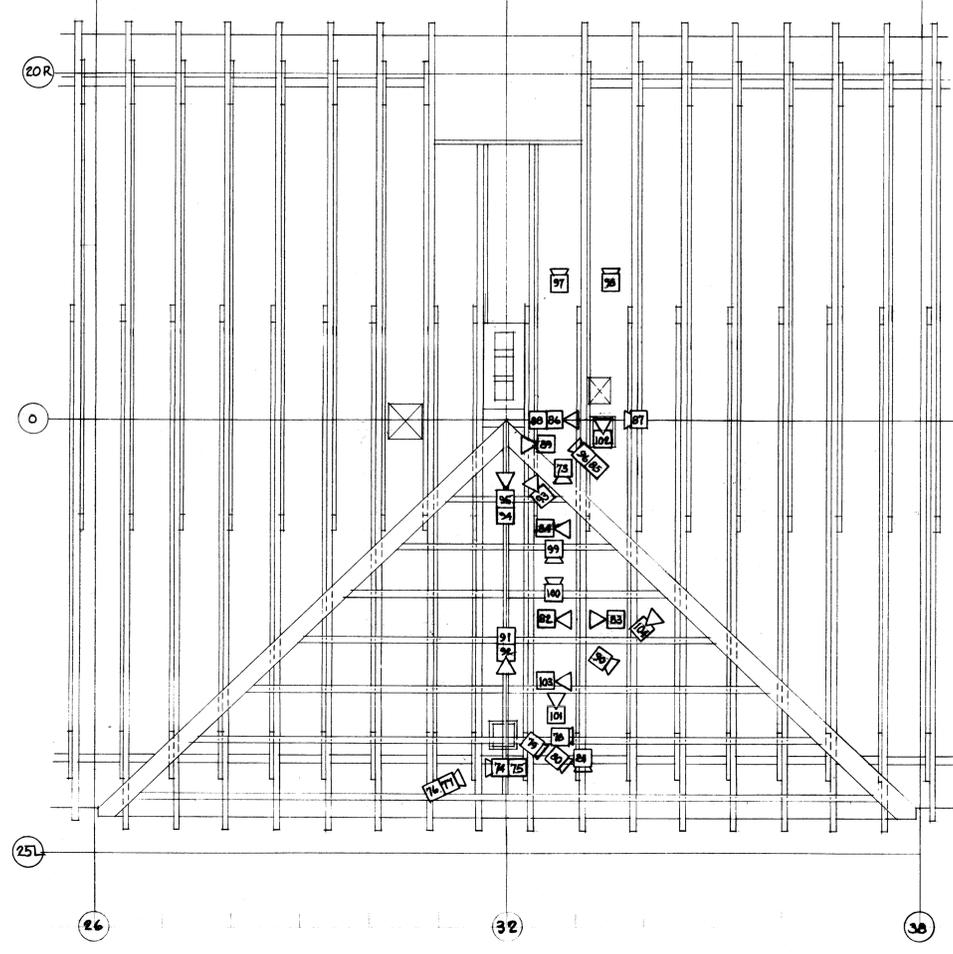
114/03/RE.1-2

114/03/RE.1-2
Fort Lennox/Men's barracks
Photo key plan/ground floor

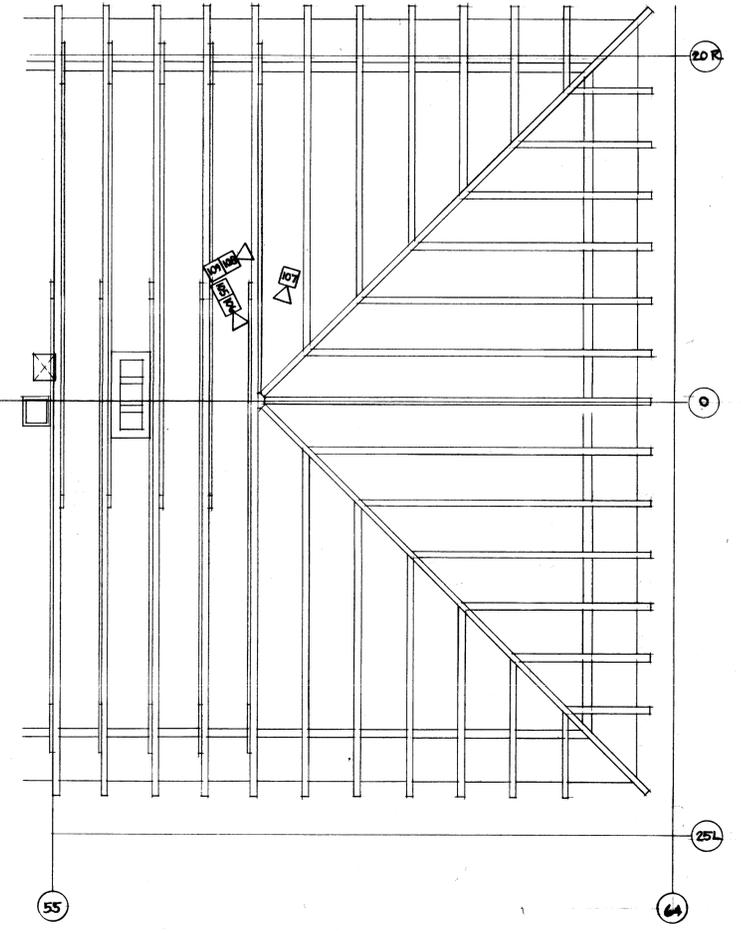


UPPER FLOOR / PHOTO KEY PLAN
SCALE : $\frac{1}{4}'' = 1'-0''$

- LEGEND
- CAMERA TILTED DOWN
 - CAMERA LEVEL
 - CAMERA TILTED UP
 - TWO PHOTOS FROM ONE POSITION



ATTIC PEDIMENT / PHOTO KEY PLAN
SCALE : $\frac{1}{4}'' = 1'-0''$



ATTIC NORTH / PHOTO KEY PLAN
SCALE : $\frac{1}{4}'' = 1'-0''$

ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE

PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO.
"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	4
REF. NO. / REF. N°		

114/03/RE.1-2
Men's Barracks
Photo key plan/upper floor and roof

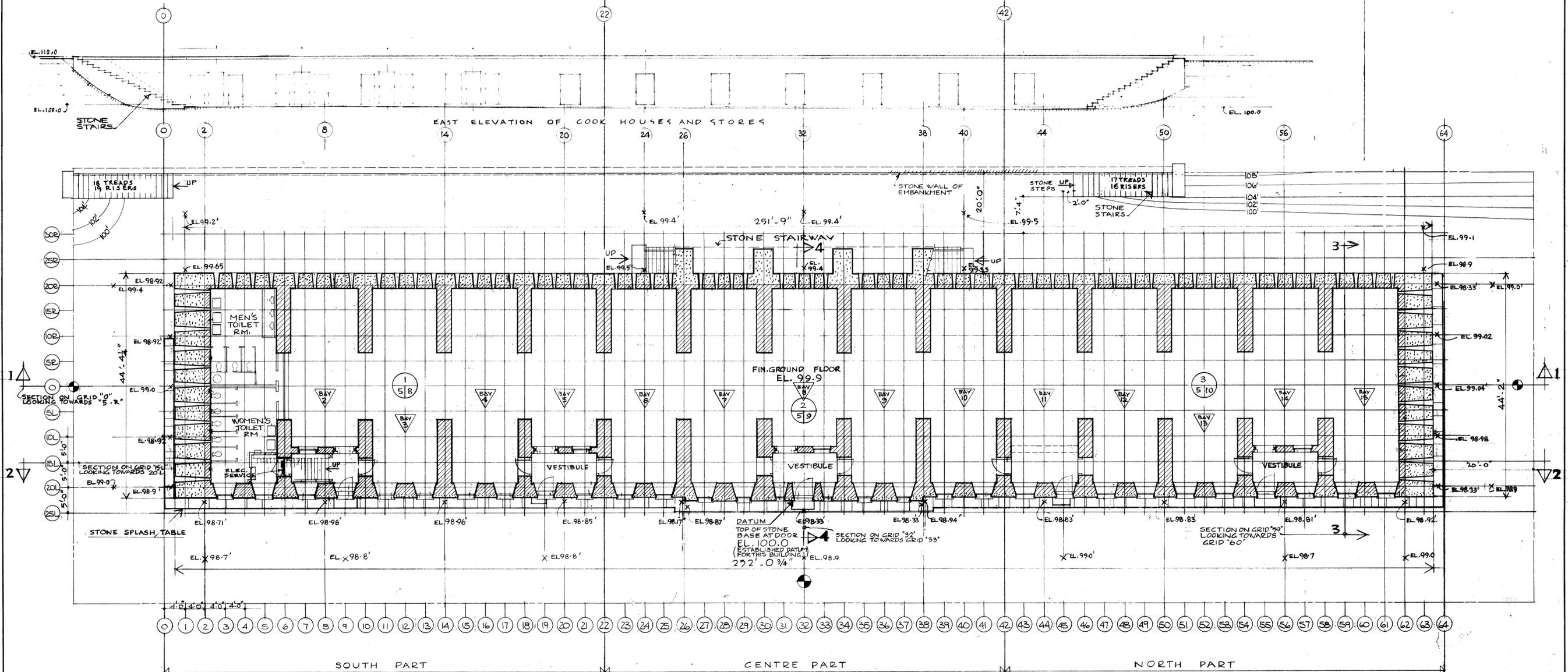
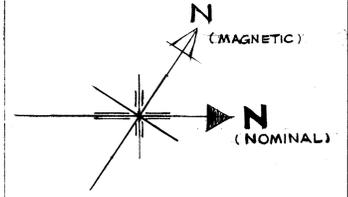
NO./N°	DESCRIPTION	DATE
	REVISIONS	

DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR
DRAWN BY TRACÉ PAR	SCALE ÉCHELLE

APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR
DATE	DATE

DRAWING TITLE / TITRE DU DESSIN
PHOTO KEY PLAN / UPPER FLOOR AND ROOF.

114/03/RE.1-2



GROUND FLOOR KEY PLAN & ADJOINING SITE CONDITIONS
SCALE: 1/8" = 1'-0"

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE SOUTH PART REFER TO THE FOLLOWING DRAWINGS:
FOR PLANS/ REFER TO DRAWING NO. 8, 11, 16
ELEVATIONS/ REFER TO DRAWING NO. 19, 22, 23
SECTIONS/ REFER TO DRAWING NO. 26,

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE CENTRE PART REFER TO THE FOLLOWING DRAWINGS:
PLANS REFER TO DWG. NO. 9, 12, 17
ELEVATIONS REFER TO DWG. NO. 20, 24
SECTIONS REFER TO DWG. NO. 27, 30

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE NORTH PART REFER TO FOLLOWING DRAWINGS:
PLANS REFER TO DWG. NO. 10, 13, 18
ELEVATIONS REFER TO DWG. NO. 21, 22, 25
SECTIONS REFER TO DWG. NO. 28, 29

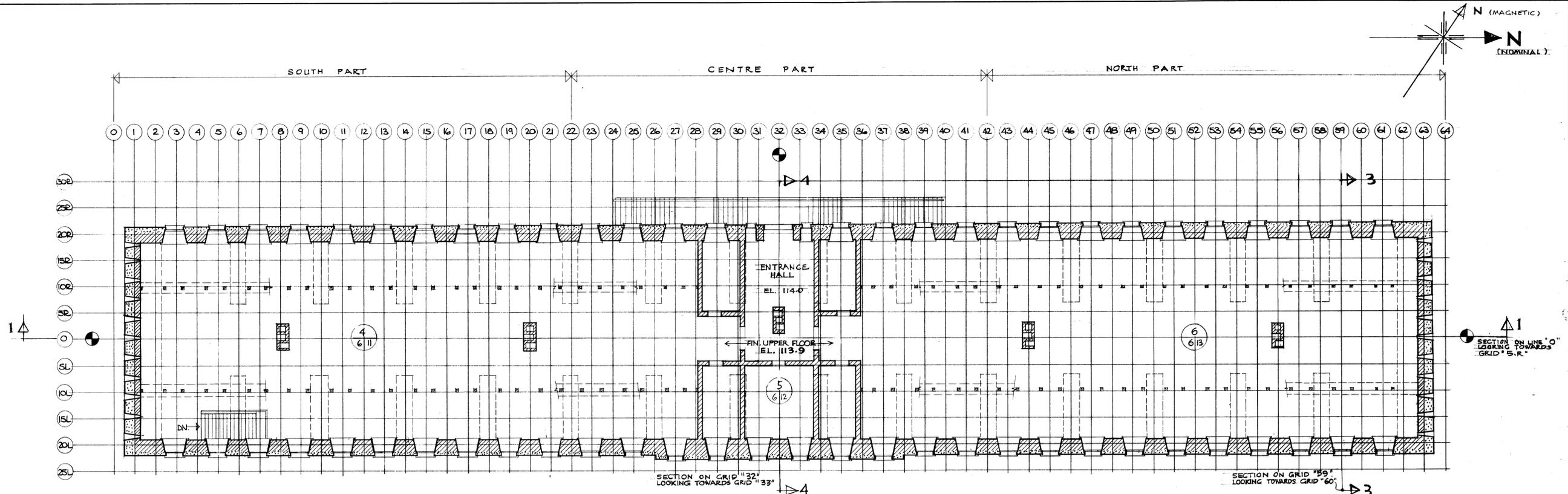
ROOM FINISHES
FLOOR & BASE / NEW PINE - UNFINISHED
WALLS & CEILING / BRICK - WATER-BASED PAINT
WINDOWS, DOORS, TRIM / PINE - OIL BASED PAINT

SYMBOL (DETAIL NUMBER) → (DETAIL SHEET)
REFERENCE SHEET

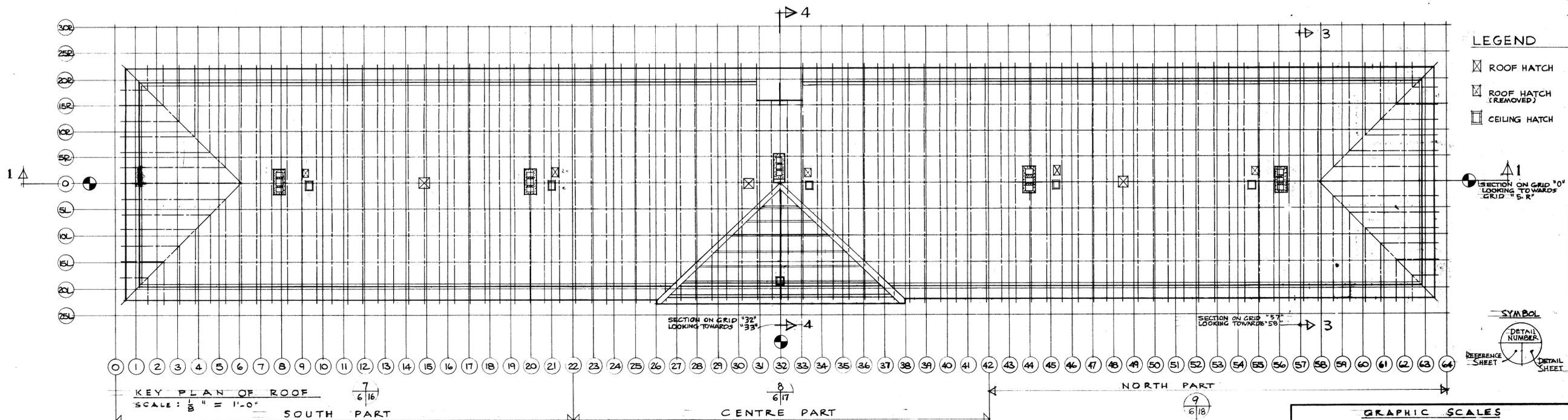
GRAPHIC SCALES
ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DIMENSIONED

DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN GROUND FLOOR KEY PLAN & ADJOINING SITE CONDITIONS	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1962	DWG. NO. 5
DRAWN BY TRACÉ PAR B.P.	SCALE ÉCHELLE 1/8" = 1'-0"						

114/03/RE-1-2
Fort Lennox/Men's Barracks
Ground Floor Key Plan & Adjoining Site Conditions



KEY PLAN OF UPPER FLOOR
SCALE: $\frac{1}{8}'' = 1'-0''$



KEY PLAN OF ROOF
SCALE: $\frac{1}{8}'' = 1'-0''$

NOTE:- FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THIS PART REFER TO THE FOLLOWING:

PLANS / 8, 11, 16
ELEVATIONS / 19, 22, 23
SECTIONS / 26

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THIS PART REFER TO THE FOLLOWING:

PLANS / 9, 12, 17
ELEVATIONS / 20, 24
SECTIONS / 27, 30

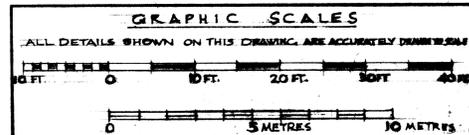
FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THIS PART REFER TO THE FOLLOWING:

PLANS / 10, 13, 18
ELEVATIONS / 21, 22, 25
SECTIONS / 28, 29

LEGEND

- ROOF HATCH
- ROOF HATCH (REMOVED)
- CEILING HATCH

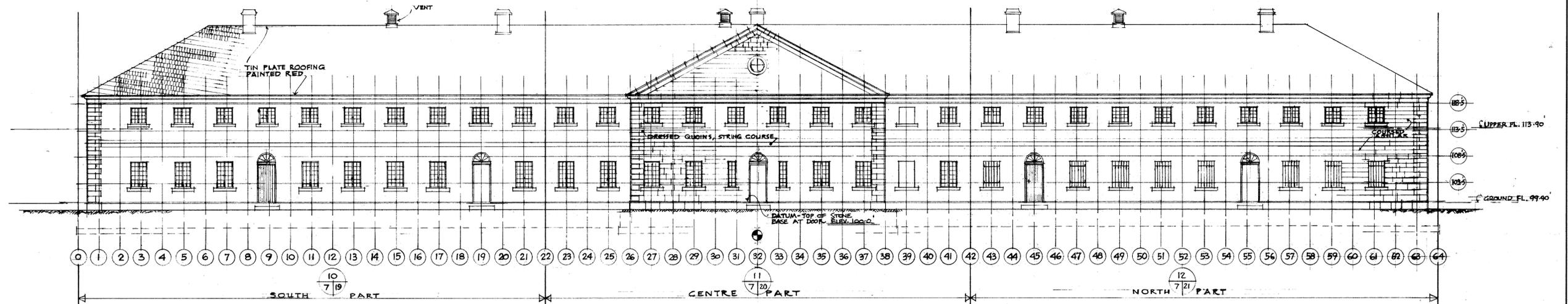
SYMBOL
DETAIL NUMBER
REFERENCE SHEET
DETAIL SHEET



NO./N°	DESCRIPTION REVISIONS	DATE	DESIGNED BY ÉTABLI PAR B.P.	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN KEY PLANS / UPPER FLOOR & ROOF	PROJECT TITLE / TITRE DU PROJET 'AS FOUND' DRAWINGS MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1968	PKG. NO. NUMBER N° 6
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114/03/RE.1-2
Men's Barracks
Key Plans/Upper Floor & Roof

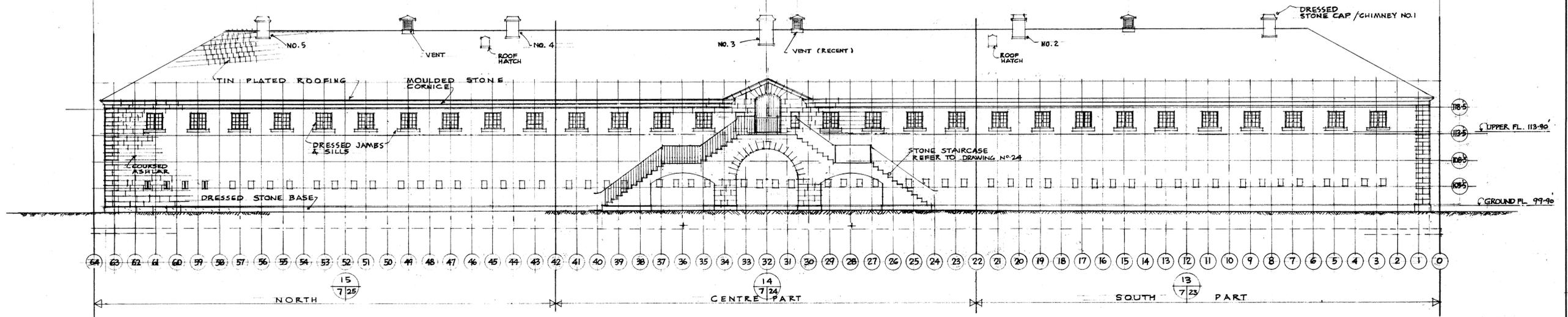
114/03/RE.1-2



FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE SOUTH PART
REFER TO DRAWING NOS.
PLANS 8, 11, 16
ELEVATIONS 19, 22, 23
SECTIONS 26

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE CENTRE PART
REFER TO DRAWING NOS.
PLANS 9, 12, 17
ELEVATIONS 20, 24
SECTIONS 27, 30

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE NORTH PART
REFER TO DRAWING NOS.
PLANS 10, 13, 18
ELEVATIONS 21, 22, 25
SECTIONS 28, 29

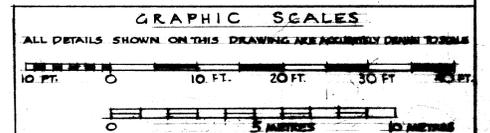


FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE NORTH PART
REFER TO DRAWING NOS.
PLANS 10, 13, 18
ELEVATIONS 21, 22, 25
SECTIONS 28, 29

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE CENTRE PART
REFER TO DRAWING NOS.
PLANS 9, 12, 17
ELEVATIONS 20, 24
SECTIONS 27, 30

FOR LARGER SCALE DRAWINGS ASSOCIATED WITH THE SOUTH PART
REFER TO DRAWING NOS.
PLANS 8, 11, 16
ELEVATIONS 19, 22, 23
SECTIONS 26

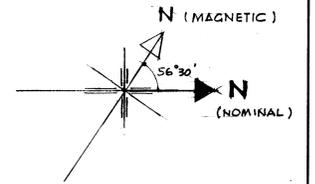
SYMBOL



NO./REV.	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DATE	DATE	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO.
			ÉTABLI PAR	VÉRIFIÉ PAR								
	REVISIONS		DRAWN BY	SCALE	DATE				KEY ELEVATIONS / FRONT & REAR	"AS FOUND" DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	11/4/03/RE.1-2	7

11/4/03/RE.1-2

11403 (RE)-002
FORT LENNOX: Men's Barracks
Key elevation
Front and Rear

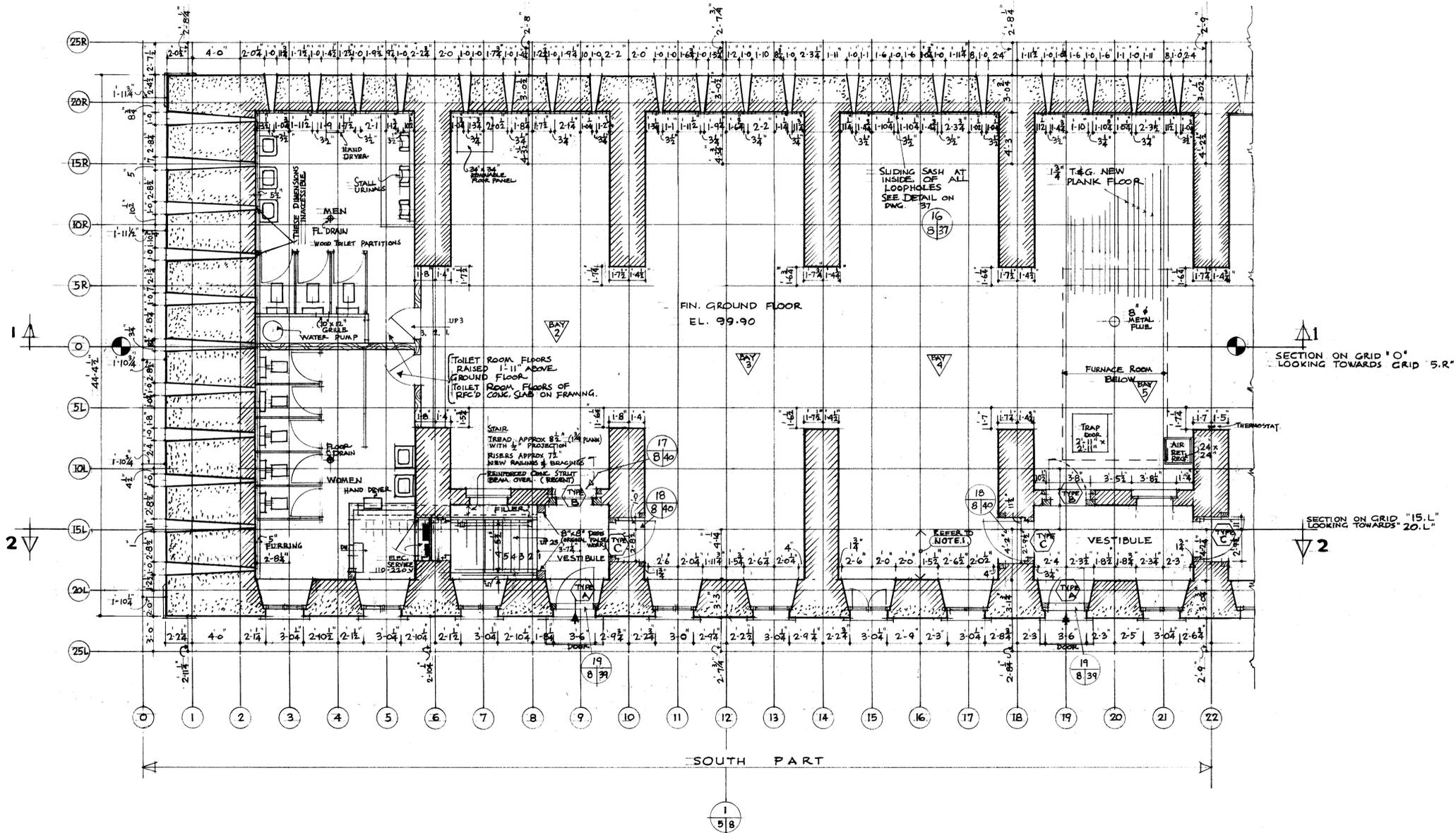


LEGEND

- CUT STONE MASONRY [Symbol]
- BRICK MASONRY [Symbol]
- RECENT WOOD PART'N. [Symbol]

NOTE:

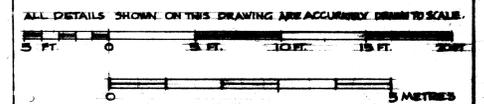
1 INCLINATIONS OF EXTERIOR WALLS.
FOR ADDITIONAL MEASUREMENTS REFER TO "AS FOUND" DRAWING NO. 35/
REFER TO PHOTOGRAPHS UNDER "AS FOUND" REPORT FOR VISUAL EVIDENCE.



SYMBOL



GRAPHIC SCALES



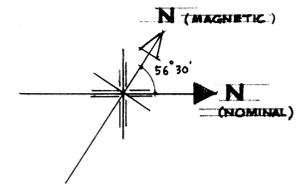
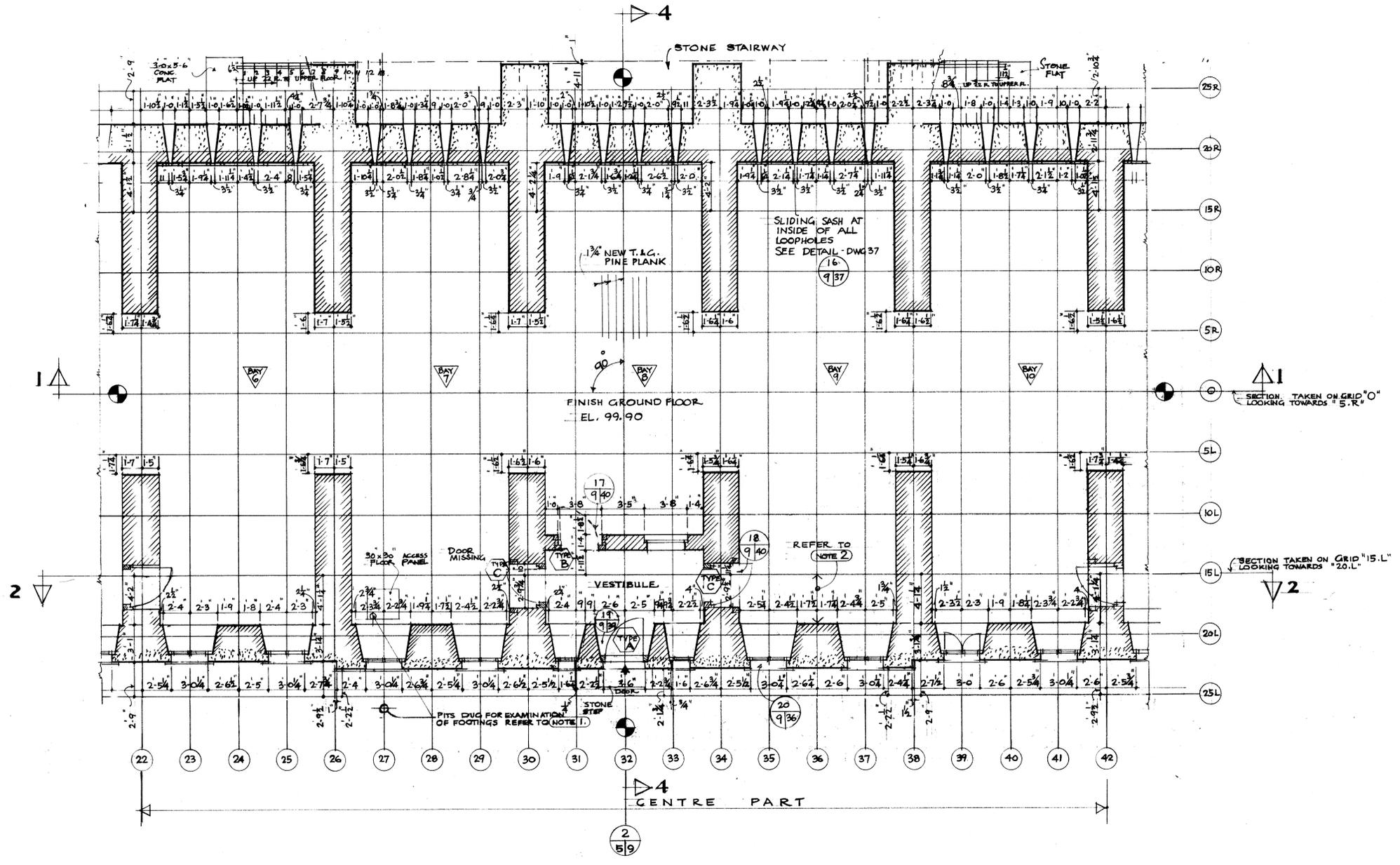
114/03/RE.1-2
Fort Lennox/Men's Barracks
Ground Floor Plan/South part

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN GROUND FLOOR PLAN / SOUTH PART	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1968	DWG. NO. DESIGN N° 8
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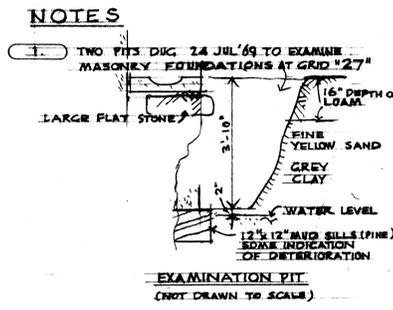
114/03/RE.1-2



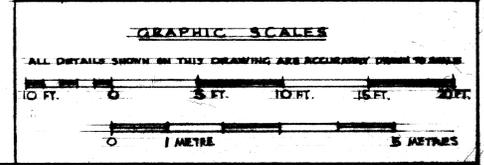
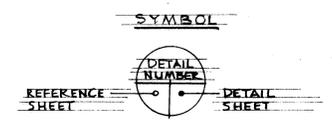
114/03/RE.1-2
Fort Lennox/Men's barracks
Ground Floor plan/Centre part



- LEGEND**
- CUT STONE MASONRY [Symbol]
 - BRICK MASONRY [Symbol]
 - RECENT WOOD PARTN. [Symbol]

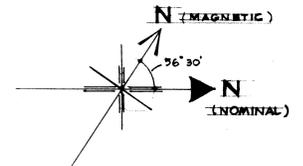


2. INCLINATIONS OF EXTERIOR WALLS
- FOR ADDITIONAL MEASUREMENTS REFER TO "AS FOUND" DRAWING NO. 85/
REFER TO PHOTOGRAPHS UNDER "AS FOUND" REPORT FOR VISUAL EVIDENCE.



NO./MP	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DRW. NO.
	REVISIONS		ÉTABLI PAR	VÉRIFIÉ PAR			GROUND FLOOR PLAN / CENTRE PART	"AS FOUND" DRAWINGS - MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT 1969	9
			DRAWN BY	SCALE	DATE	DATE				
			TRACÉ PAR	ÉCHELLE						

114/03/RE.1-2

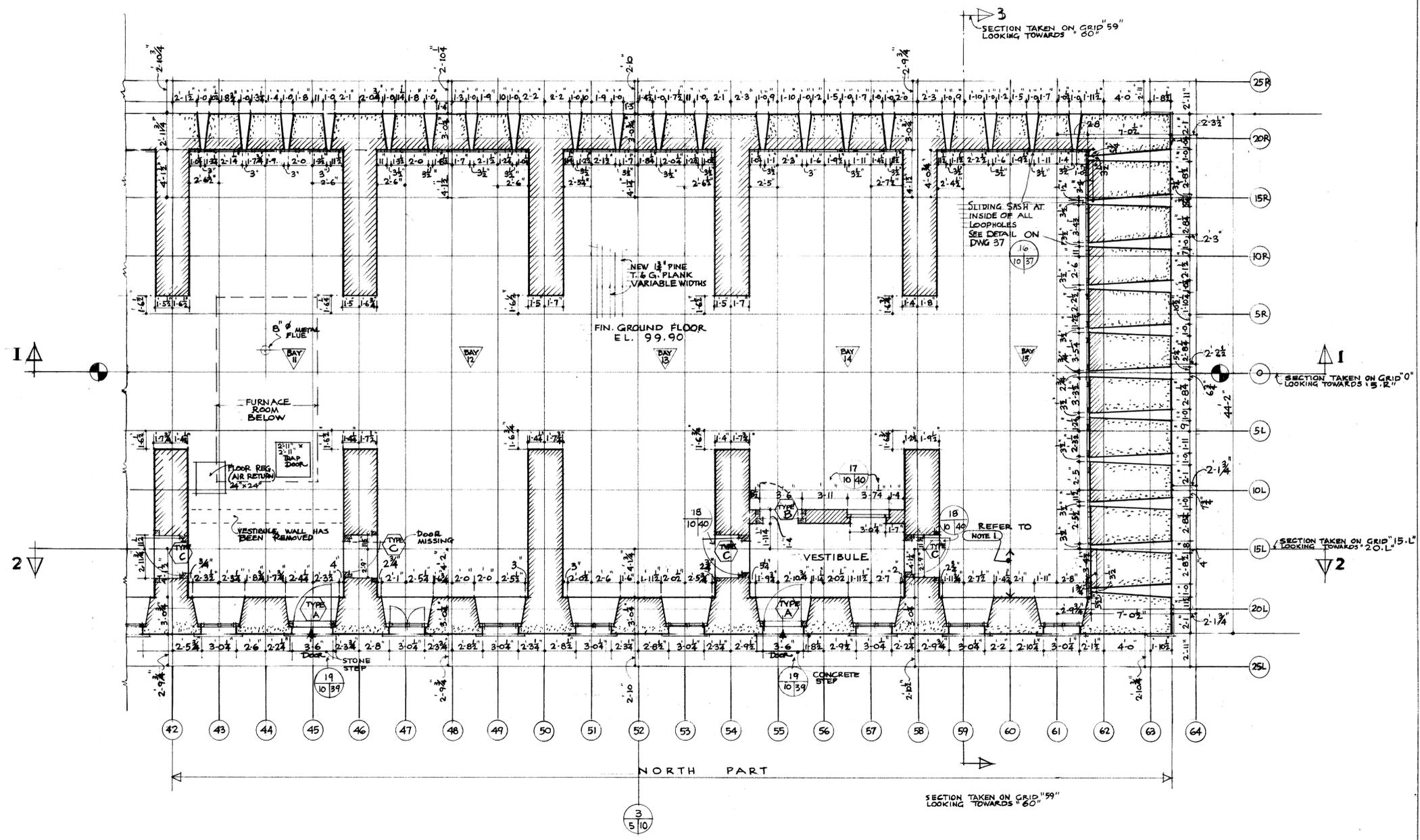


LEGEND

- CUT STONE MASONRY [Symbol]
- BRICK MASONRY [Symbol]
- RECENT WOOD PART'N [Symbol]

NOTE

INCLINATIONS OF EXTERIOR WALLS FOR ADDITIONAL MEASUREMENTS REFER TO 'AS FOUND' DRAWING NO. 35, REFER TO PHOTOGRAPHS UNDER 'AS FOUND' REPORT FOR VISUAL EVIDENCE.



SYMBOL

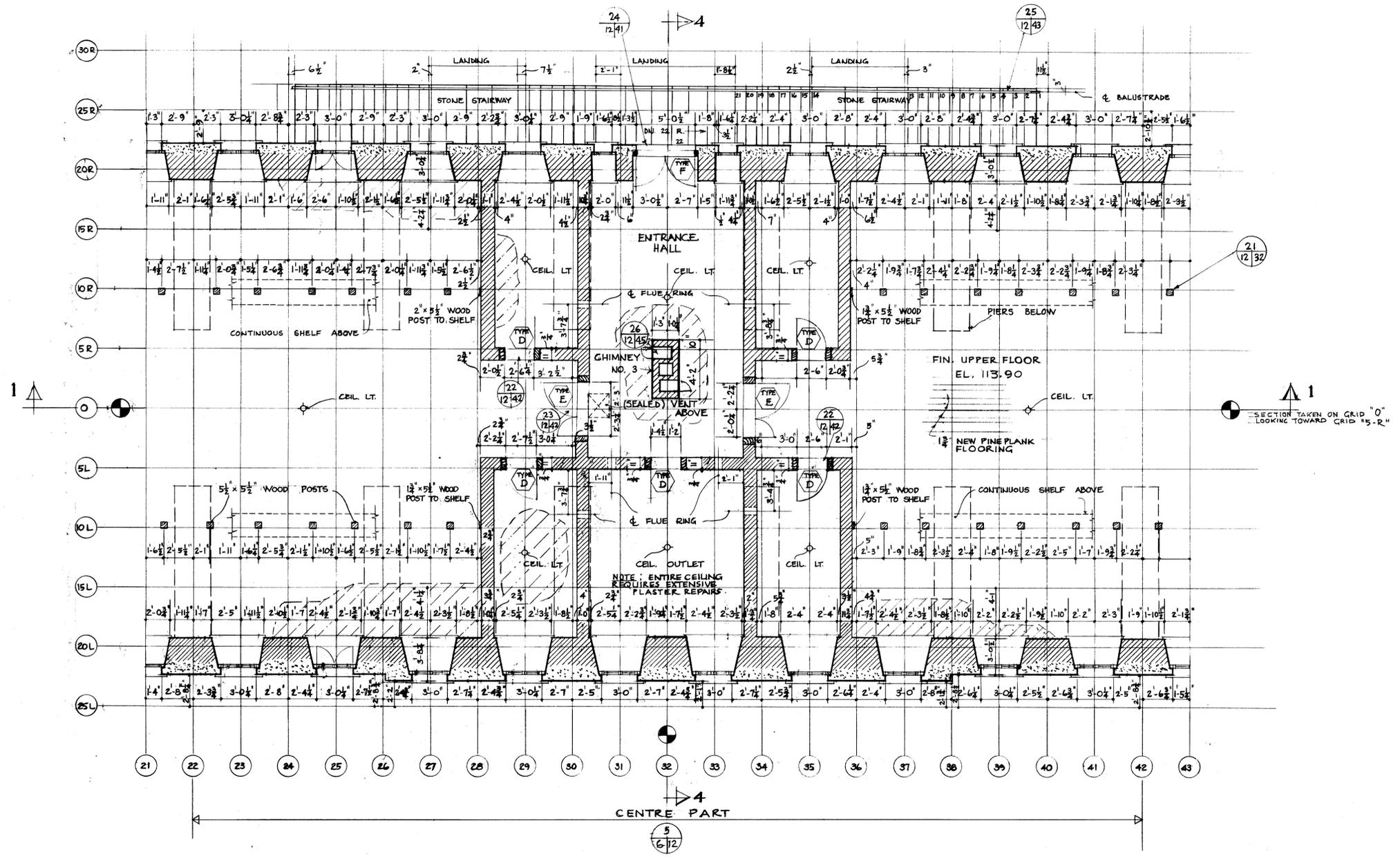
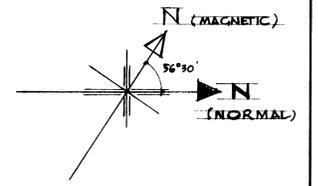


GRAPHIC SCALES



NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. DESIGN N°
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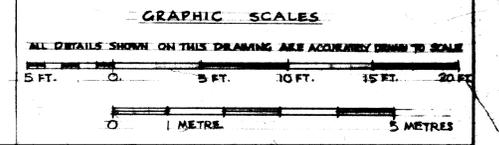
114/03/RE.1-A



- LEGEND**
- CUT STONE MASONRY
 - BRICK MASONRY
 - RECENT WOOD PART'N.
 - WOOD FRAMING
 - CEILING LTG. FIXTURE

- NOTES**
- 1. WATER PENETRATION
 - 2. DETERIORATED SURFACES CAUSED BY WATER PENETRATION SHOWN THUS:

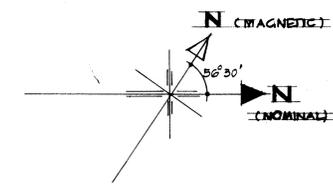
SECTION TAKEN ON GRID "0"
LOOKING TOWARD GRID "15-R"



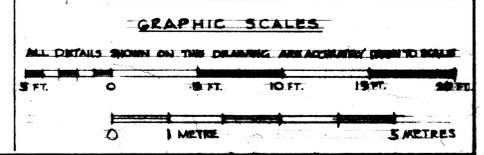
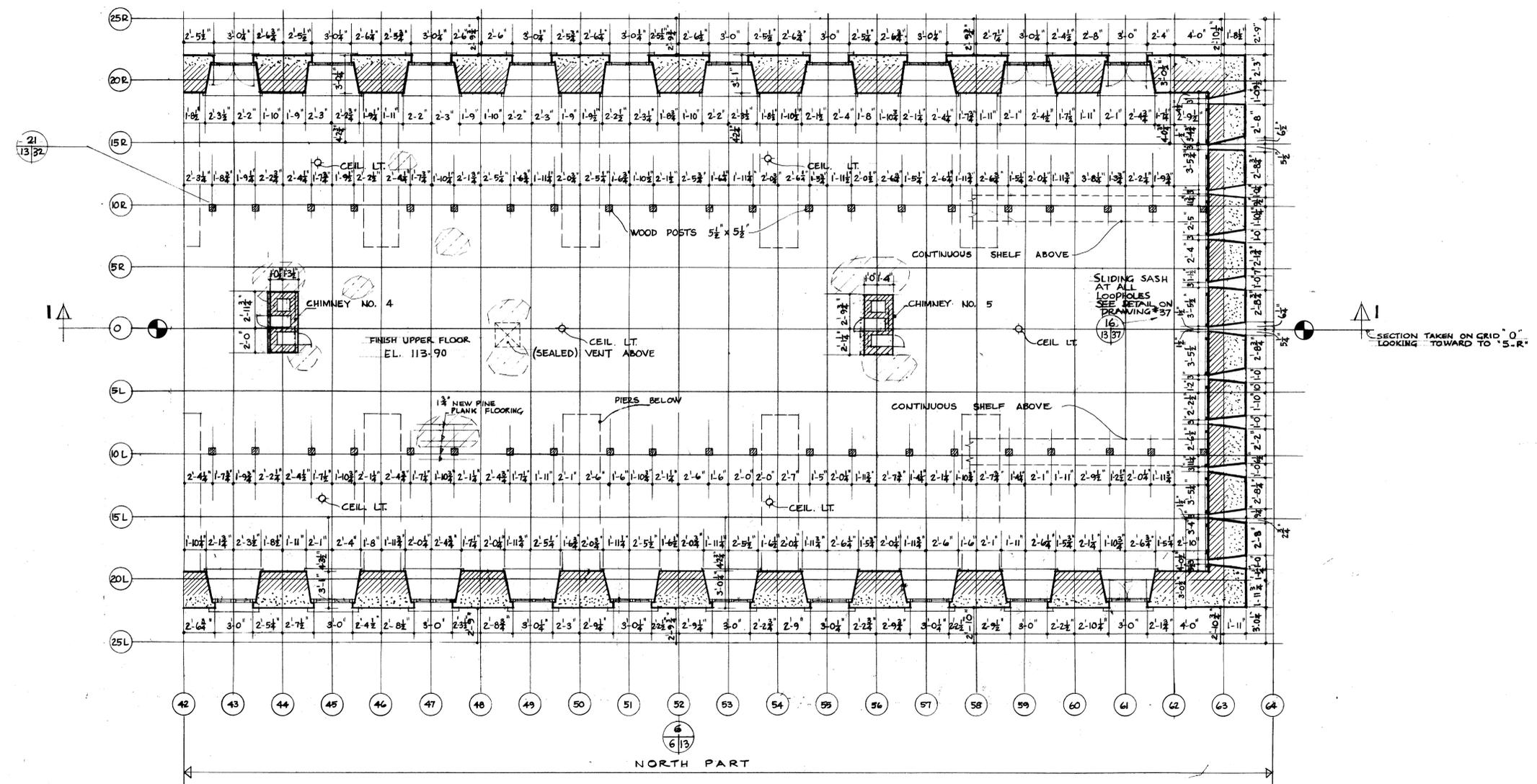
114/03/RE.1-2
Men's Barracks
Upper Floor Plan/centre part

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY/APP. REC. PAR	APP. BY/APP. PAR	DRAWING TITLE/TITRE DU DESSIN	PROJECT TITLE/TITRE DU PROJET	DATE	DWG. NO. DESIGN N°
	REVISIONS						UPPER FLOOR PLAN/ CENTRE PART	*AS FOUND DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	12

114/03/RE.1-2



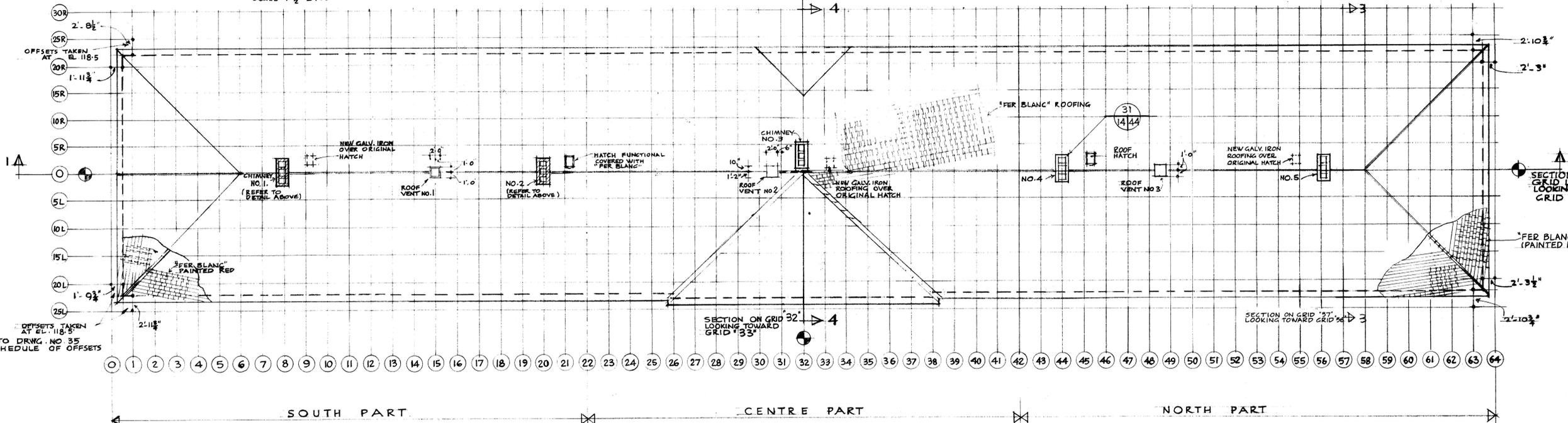
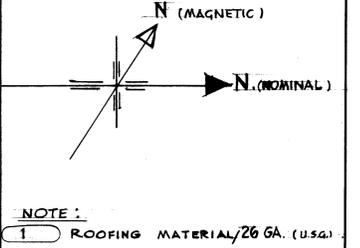
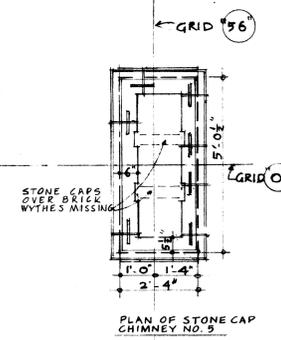
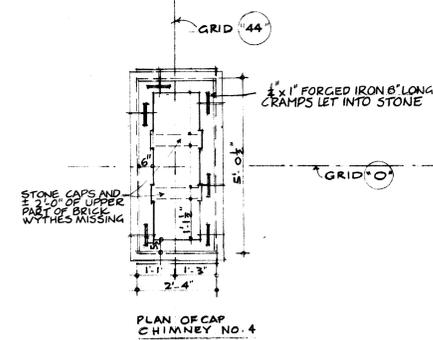
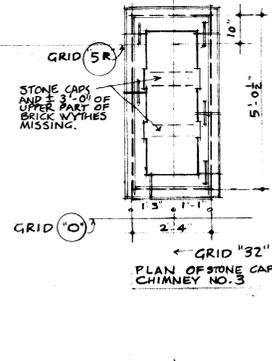
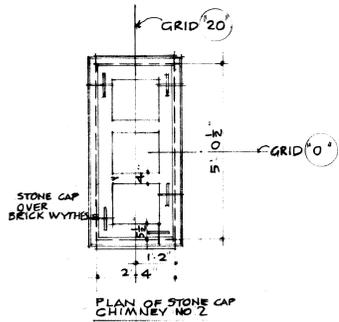
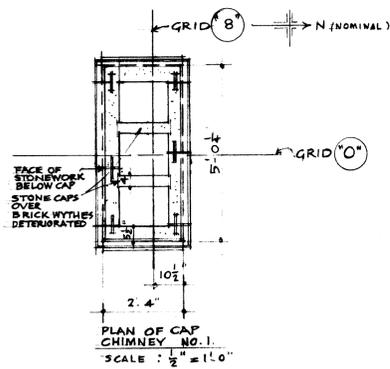
- LEGEND**
- CUT STONE MASONRY
 - BRICK MASONRY
 - RECENT WOOD PART'N
 - WOOD FRAMING
 - CEILING LIT. FIXTURE
- NOTE**
- 1. WATER PENETRATION
 - DETERIORATED SURFACES CAUSED BY WATER
 - PENETRATION SHOWN THUS:



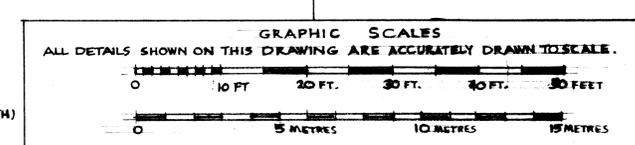
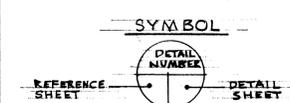
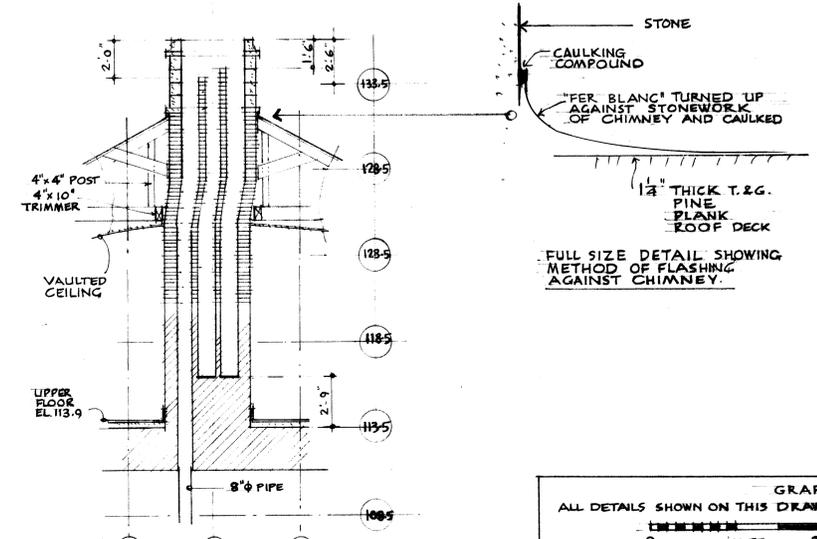
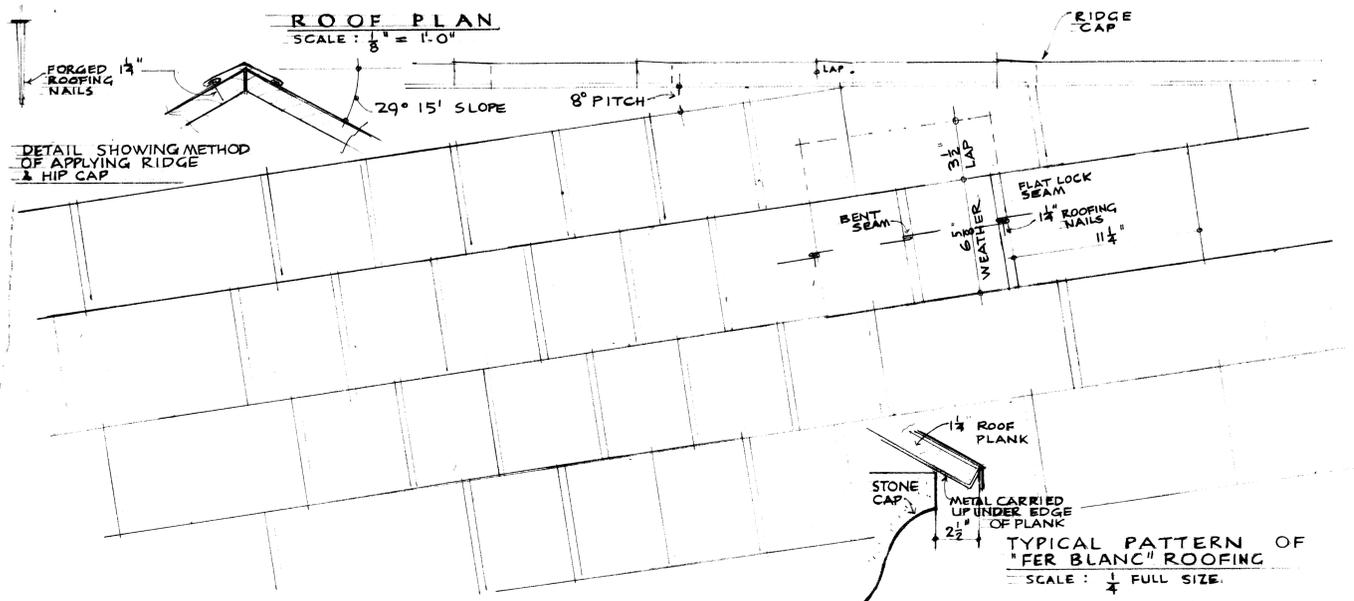
114/03/RE.1-2
Fort Lennox/Men's Barracks
Upper Floor Plan/Arch.

NO./REV. DESCRIPTION REVISIONS	DATE	DESIGNED BY ÉTABLI PAR H.S.S.	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR <i>Ther. des P.</i>	DRAWING TITLE / TITRE DU DESSIN UPPER FLOOR PLAN / NORTH	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1988	DWG. NO. DESIGN # 13
		SCALE ÉCHELLE 1" = 1'-0"		DATE	DATE				

114/03/RE.1-2



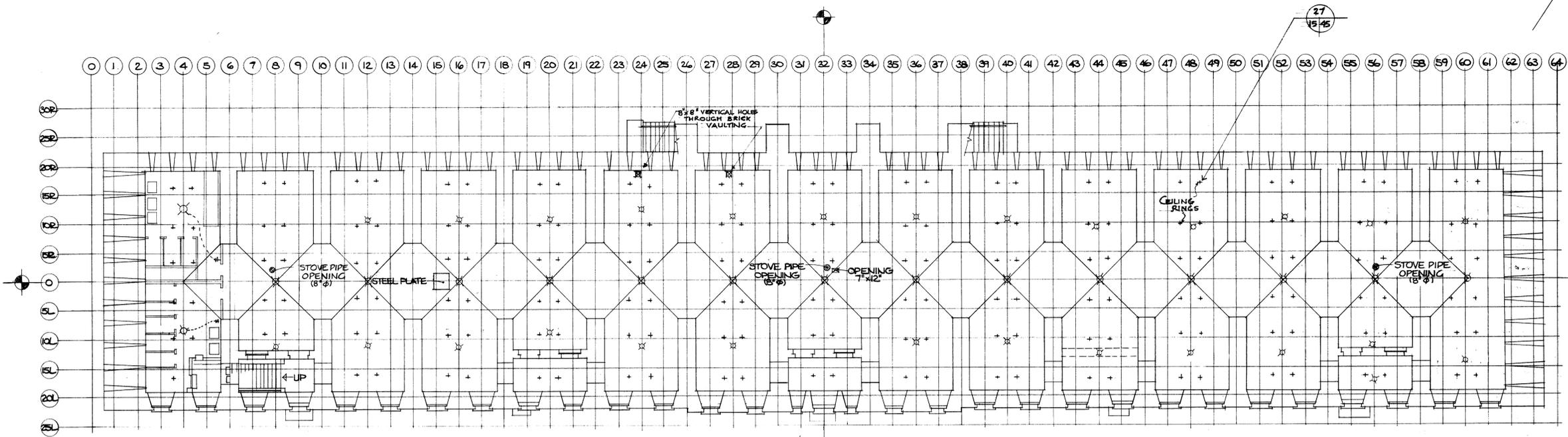
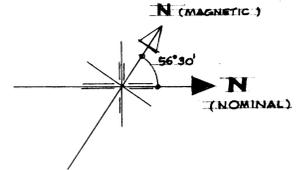
N.B. OFFSETS TAKEN AT EL. 118.5 REFER TO DRWG. NO. 35 FOR SCHEDULE OF OFFSETS



CROSS SECTION ON GRID LINE 44 (LOOKING NORTH) SIMILAR AT GRID LINES 8 / 20 / 56.

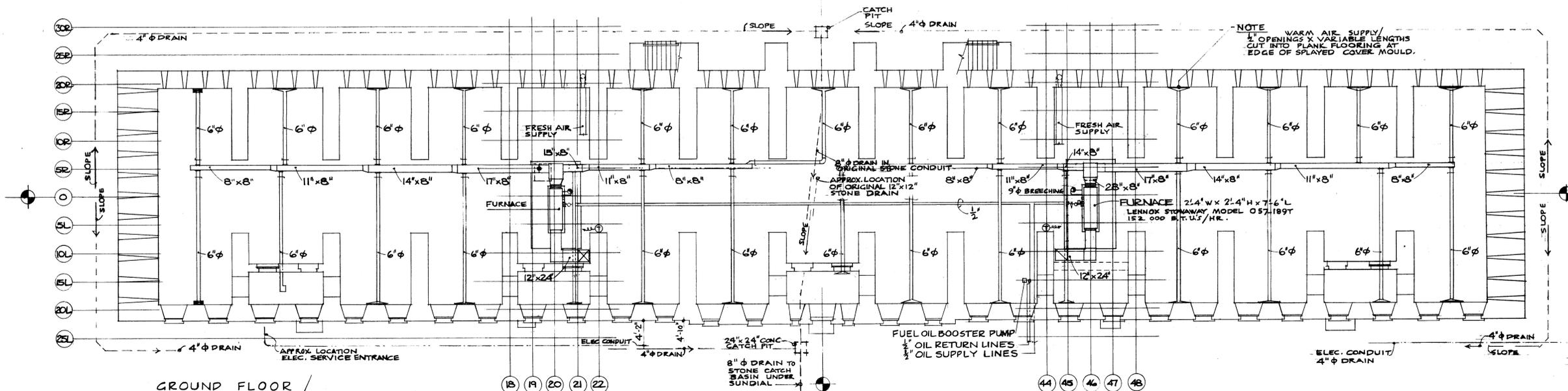
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	REVISIONS		DRAWN BY TRACÉ PAR	SCALE ÉCHELLE	SCALE ÉCHELLE					

114/03/RE.1-2



- LEGEND**
- ANCHORED CEILING RINGS
 - CEILING LIGHTING FIXTURE
 - CEILING OPENING
 - STOVE PIPE OPENING
 - U-BOLT
 - CEILING

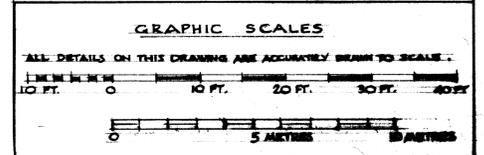
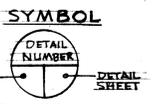
GROUND FLOOR / REFLECTED PLAN
SHOWING ANCHORED CEILING RINGS / ELECTRIC LIGHT FIXTURES / MISC. OPENINGS.



GROUND FLOOR / HEATING AND DRAINAGE LAYOUTS

HEATING LAYOUT ACCORDING TO 'ON-SITE' OBSERVATION WHERE ACCESSIBLE & ACCORDING TO DEPARTMENTAL DWG. NO. 8, REF. HCFL 67/H33, 8/11/67

NOTE
WARM AIR SUPPLY / 1" OPENINGS X VARIABLE LENGTHS CUT INTO PLANK FLOORING AT EDGE OF SPUNNY COVER MOULD.



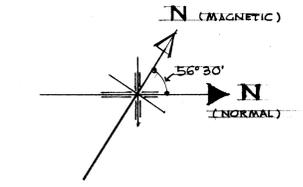
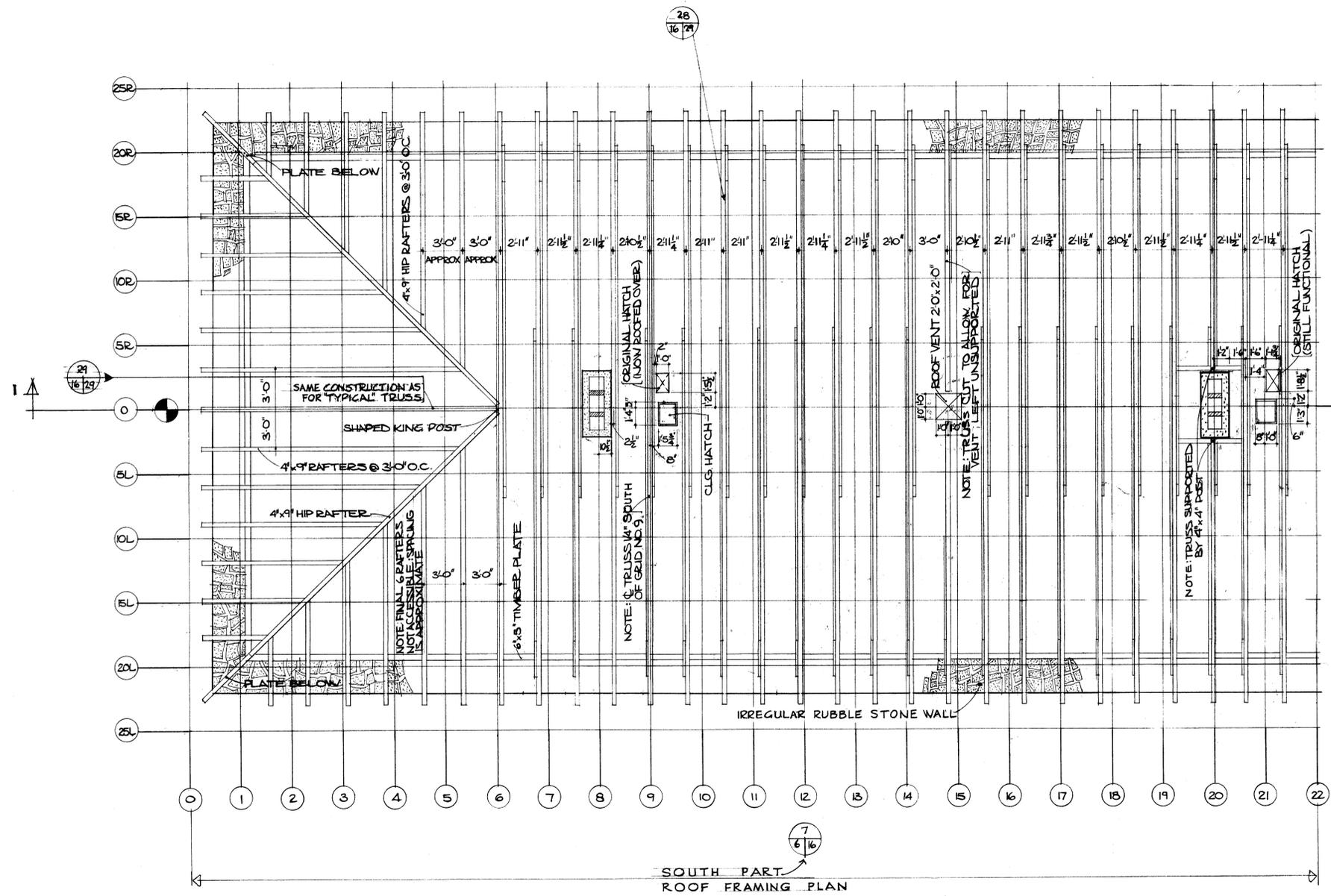
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	REVISIONS		DRAWN BY TRACÉ PAR	SCALE ÉCHELLE	DATE	DATE	GROUND FLOOR REFLECTED PLAN / HEATING AND DRAINAGE PLANS	'AS FOUND' DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1968	15

114/03/BE.1-2

114/03/BE.1-2
Fort Lennox Barracks
Ground floor reflected plan/heating...

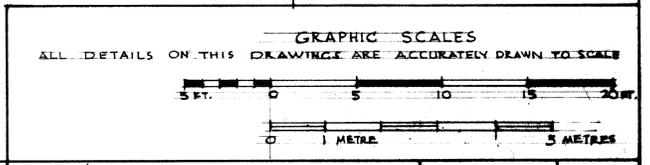
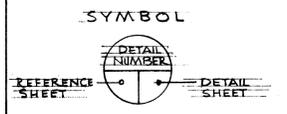


114/03/RE.1-2
Men's Barracks
Roof Framing Plan/South Part



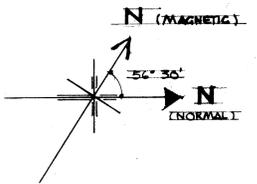
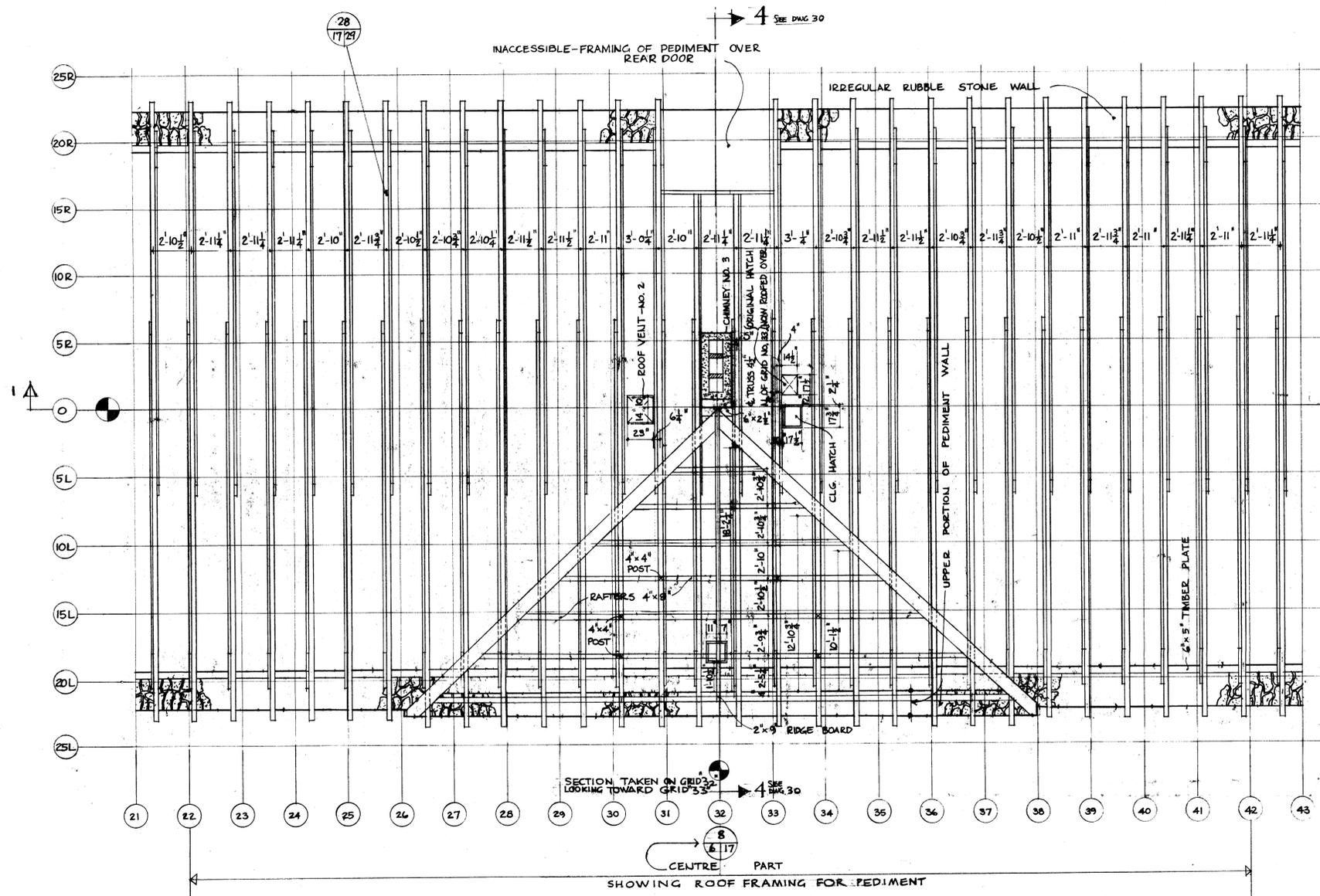
- LEGEND:
- ROOF VENT. [Symbol]
 - ROOF HATCH [Symbol]
 - ORIGINAL HATCH (NOW ROOFED OVER) [Symbol]
 - CEILING HATCH [Symbol]
 - RUBBLE STONE WALL [Symbol]
 - MASONRY (STONE) [Symbol]
 - MASONRY (BRICK) [Symbol]

SECTION TAKEN ON GRID 10'R
LOOKING TOWARD GRID 5'R



NO./REV.	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN ROOF FRAMING PLAN / SOUTH PART	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1969	DWG. NO. 16

114/03/RE.1-2



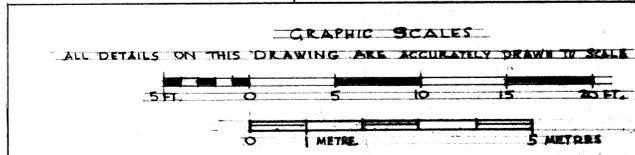
LEGEND:

- ROOF VENT: [Symbol]
- ROOF HATCH: [Symbol]
- ORIGINAL HATCH: [Symbol]
- CEILING HATCH: [Symbol]
- RUBBLE STONE WALL: [Symbol]
- MASONRY (STONE): [Symbol]
- MASONRY (BRICK): [Symbol]

SECTION TAKEN ON GRID "0"
 LOOKING TOWARD GRID "5-R"

SECTION TAKEN ON GRID 3
 LOOKING TOWARD GRID 33

SYMBOL



PROJECT TITLE/TITRE DU PROJET: "AS FOUND" DRAWINGS: MEN'S BARRACKS, FORT LENNOX NATIONAL HISTORIC PARK
 DATE: OCT. 1960
 SHEET NO.: 17

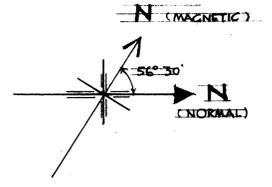
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H.S.S.	1"=1'-0"			

114/03/RE.1-2
 17
 Roof Framing Plan/Centre Part

draw sections 4-4 on plan
 1-1

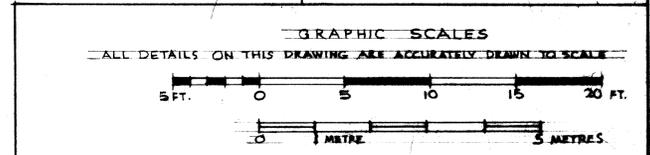
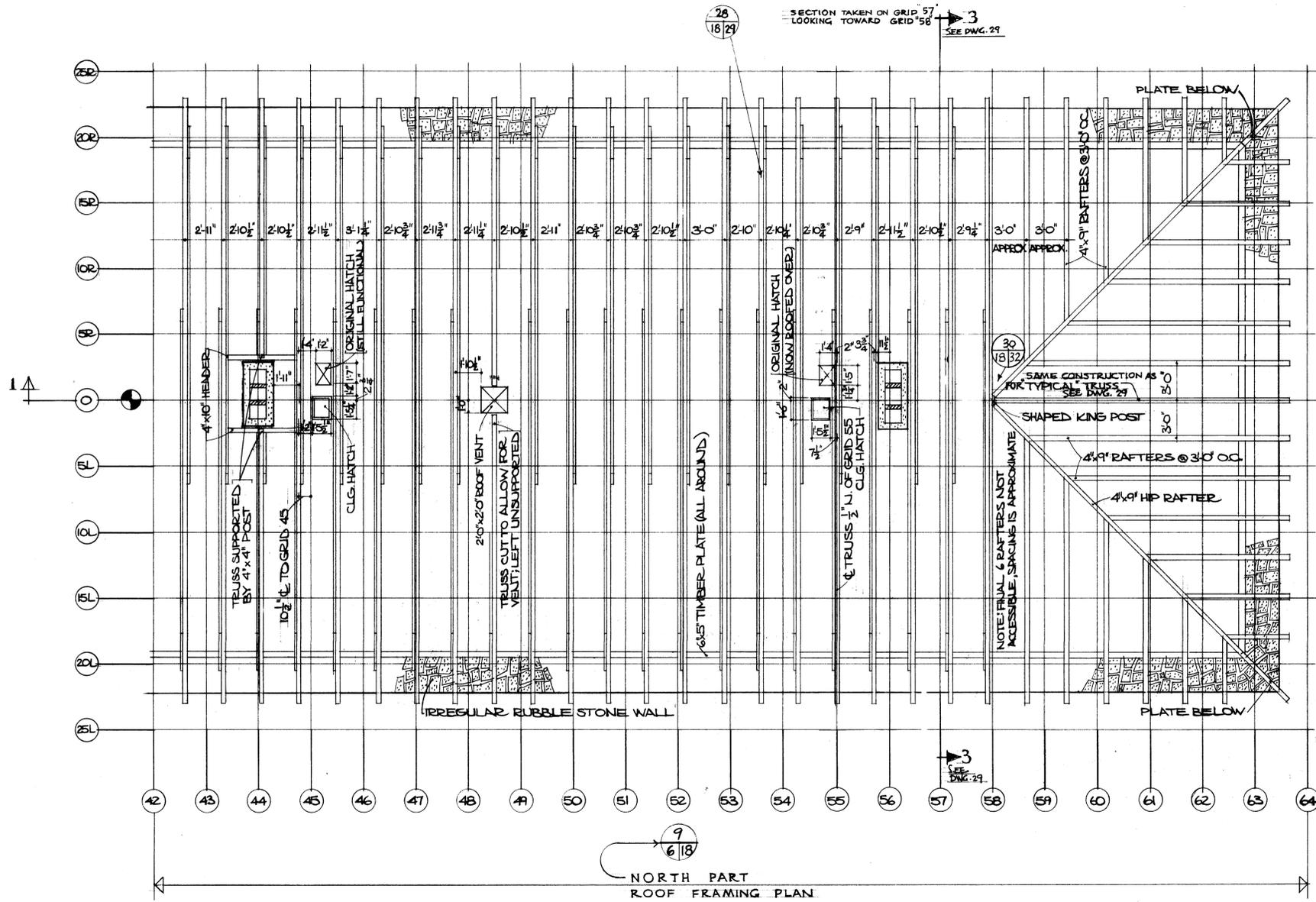
centre part designation

114/03/RE.1-2



- LEGEND:**
- ROOF VENT: [Symbol]
 - ROOF HATCH: [Symbol]
 - ORIGINAL ROOF HATCH: [Symbol] (NOW ROOFED OVER)
 - CEILING HATCH: [Symbol]
 - RUBBLE STONE WALL: [Symbol]
 - MASONRY (STONE): [Symbol]
 - MASONRY (BRICK): [Symbol]

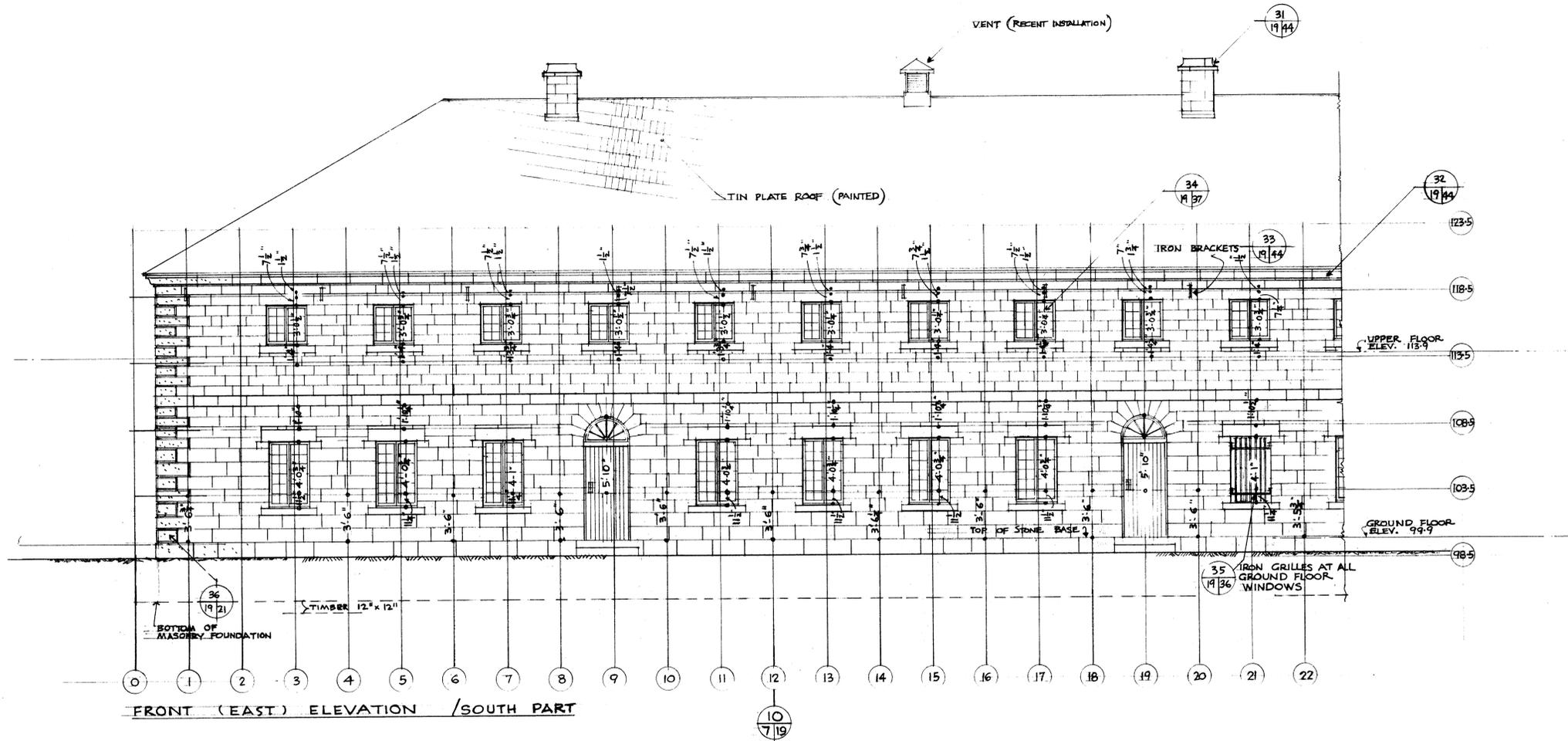
NOTE:
CONSIDERABLE DETRIORATION OF TIMBER HAS OCCURED AT INTERSECTION OF GRIDS "O" AND "58". REFER TO PHOTOGRAPHS 105/106/107.



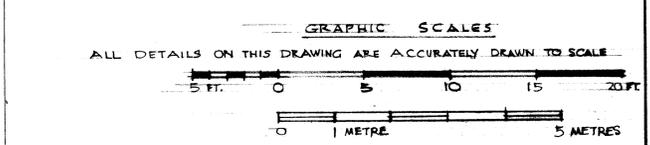
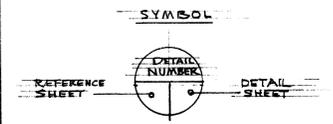
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DRAWN BY TRACÉ PAR		SCALE ÉCHELLE		DATE		DATE		ROOF FRAMING PLAN / NORTH PART		"AS FOUND" DRAWINGS: MEN'S BARACKS FORT LENNOX NATIONAL HISTORIC PARK	
NO. / N°		DESCRIPTION		DATE		DATE		DATE		DATE	
REVISIONS										OCT. 1969	
										18	

114/03/RE.1-2

114/03/RE.1-2
Men's Baracks
Roof Framing Plan (North Part)



FRONT (EAST) ELEVATION / SOUTH PART



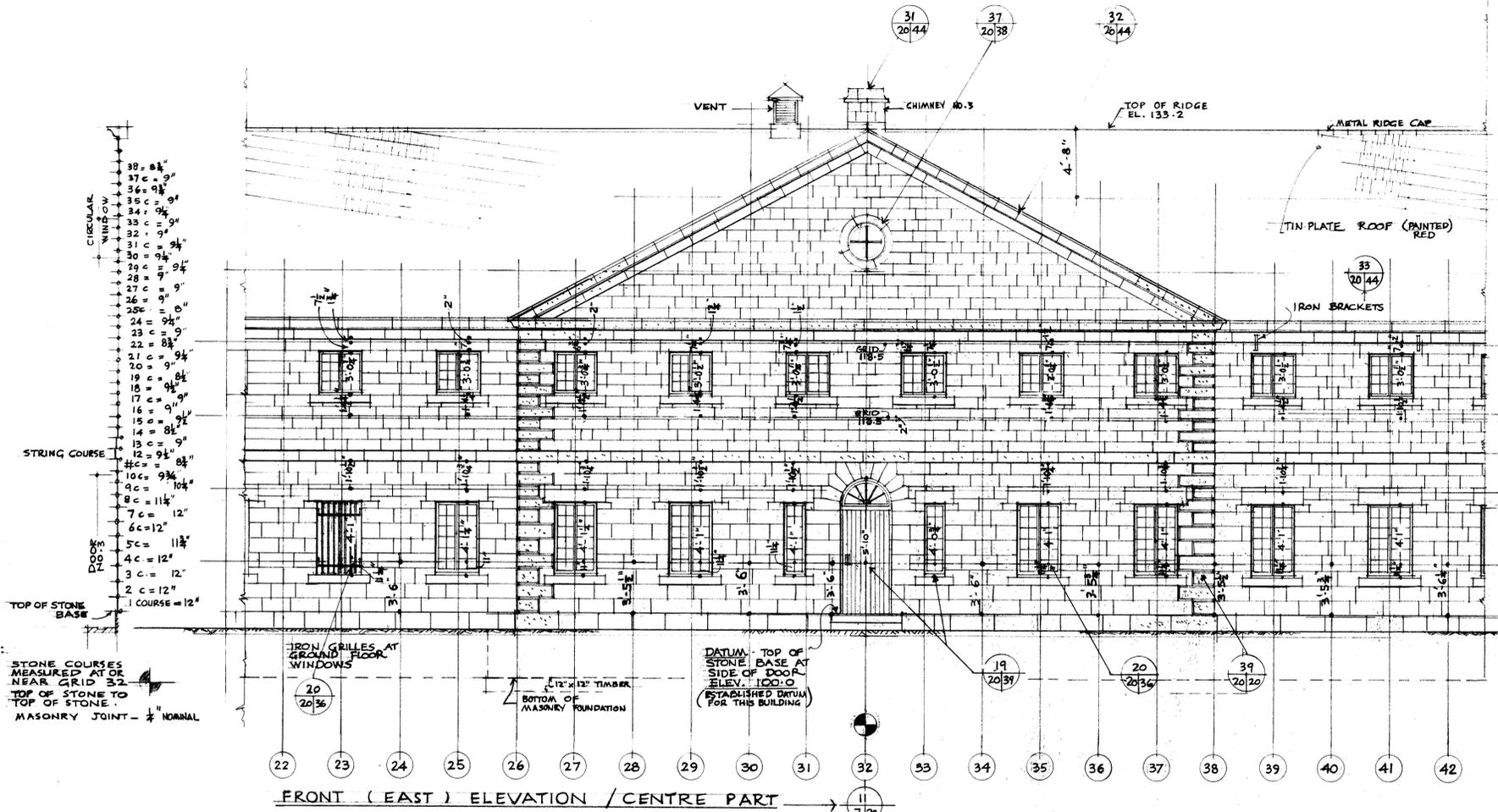
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	REVISIONS		DRAWN BY TRACÉ PAR	SCALE ÉCHELLE	DATE	DATE	FRONT ELEVATION (EAST) SOUTH PART	"AS FOUND" DRAWINGS, MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	SEP. 1969	19

114/03/RE.1-2

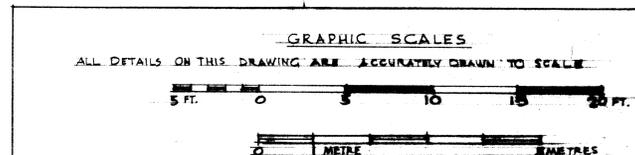
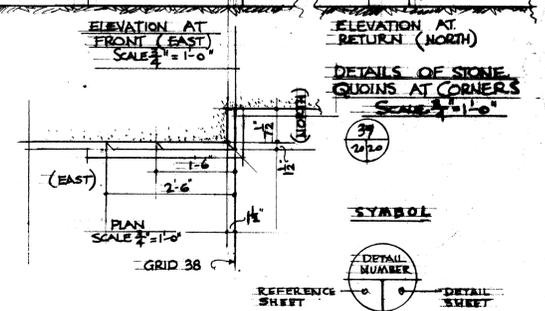
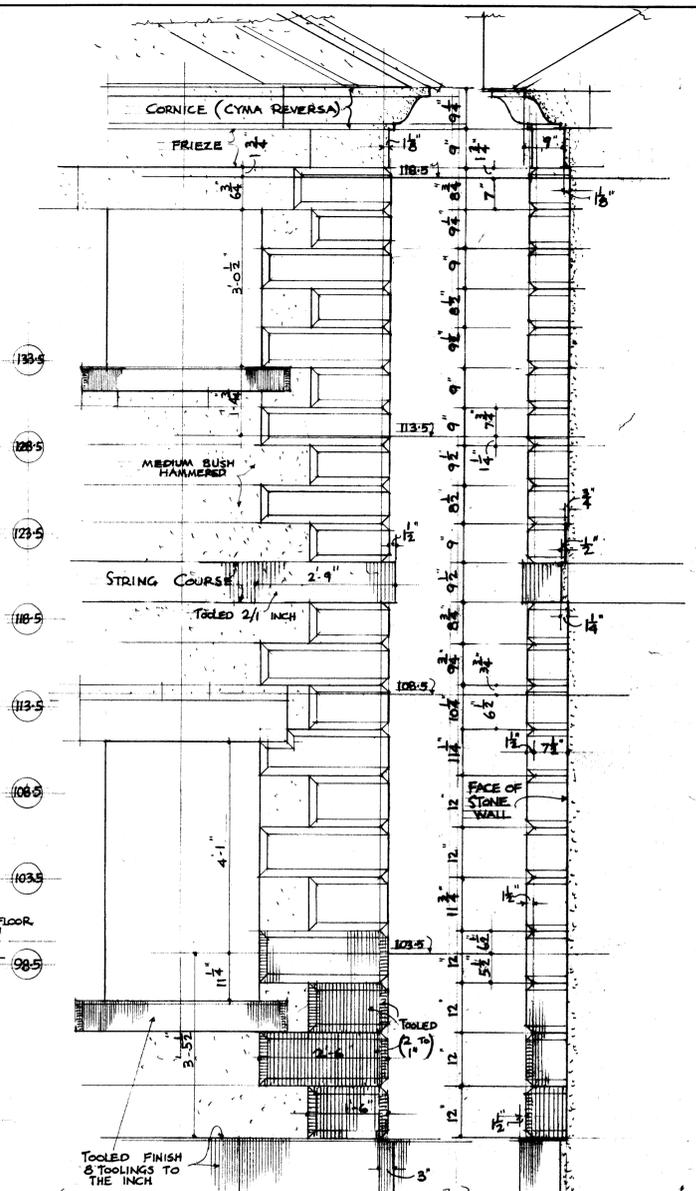
114/03/RE.1-2
 Fort Lennox/Men's barracks
 Front elevation (east), south part



114/03/RE.1-2
Front elevation (centre part)
11/20

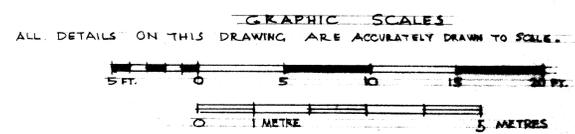
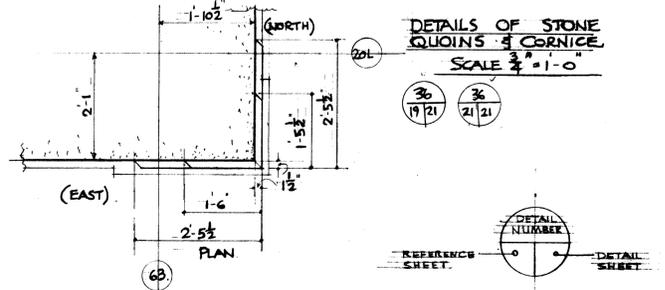
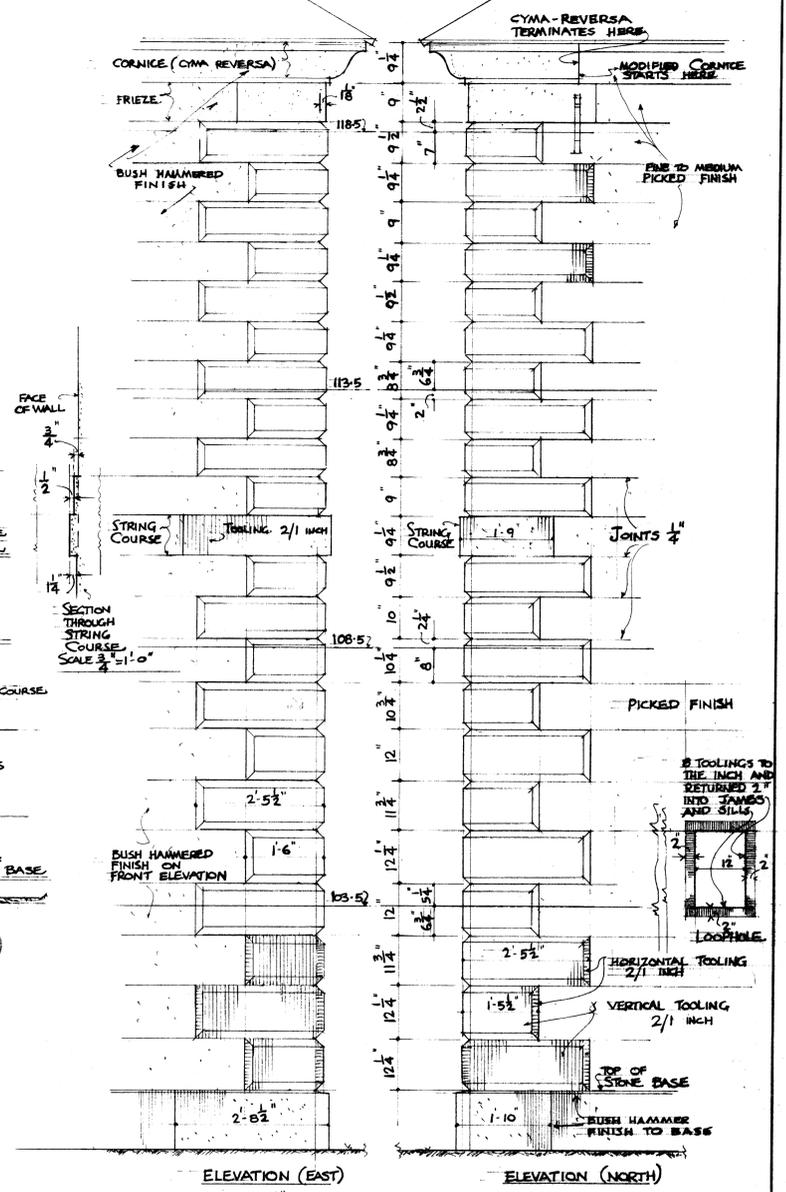
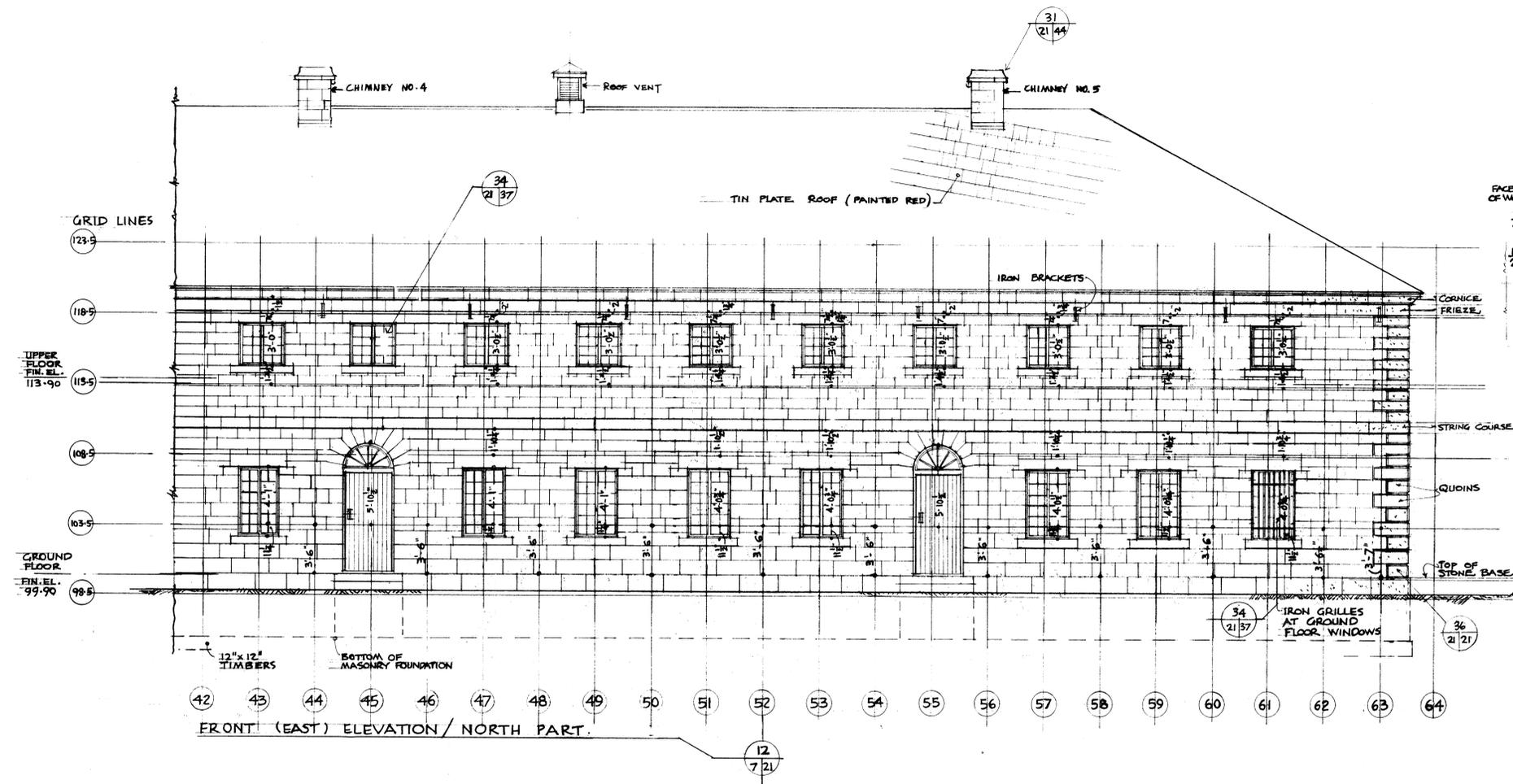


NOTE:
STONE COURSES MEASURED AT OR NEAR GRID 32
TOP OF STONE TO TOP OF STONE
MASONRY JOINT - 1/2" NOMINAL



NO./#	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APP. REC. BY / APP. REC. PAR.	APP. BY / APP. PAR.	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DATE
	REVISIONS		ÉTABLI PAR	VÉRIFIÉ PAR			FRONT ELEVATION / (EAST) (CENTRE PART)	'AS FOUND' DRAWINGS MEN'S BARRACKS/ FORT LENNOX NATIONAL HISTORIC PARK	OCT 1989	20

114/03/RE.1-2



114/03/RE.1-2 Men's barracks Front elevation(east)/north part/det...

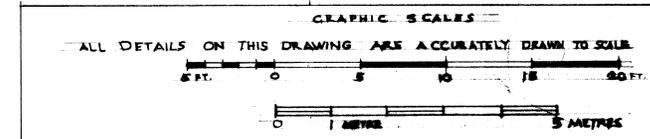
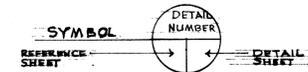
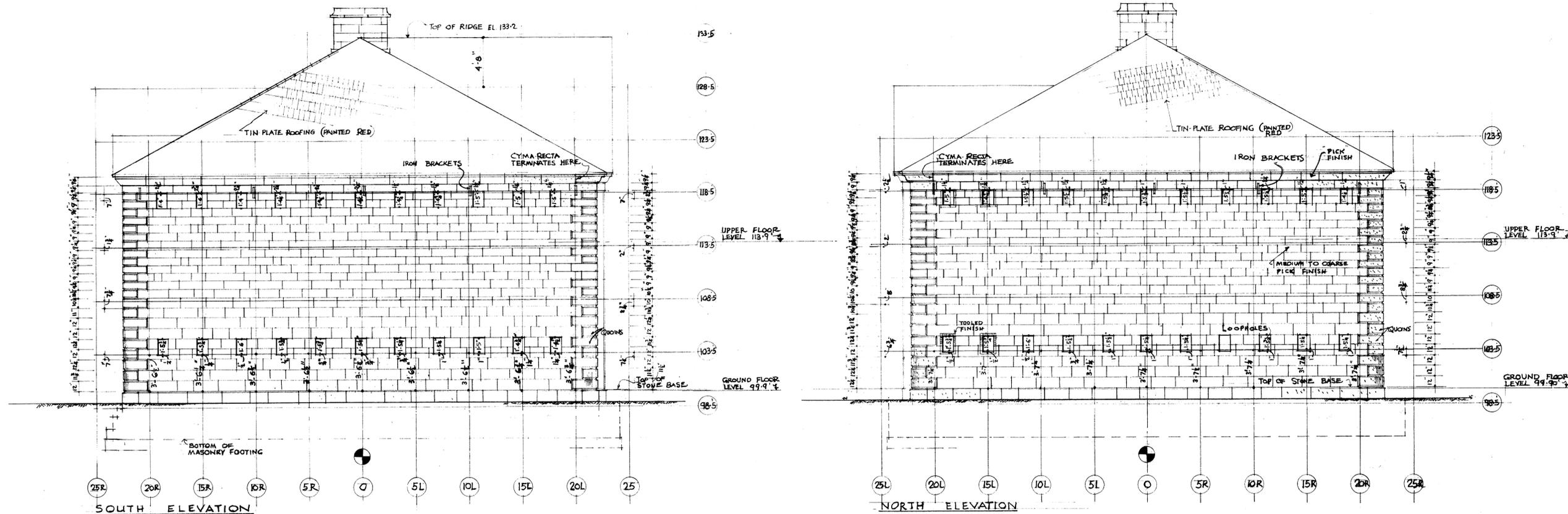
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	REVISIONS		DRAWN BY TRACÉ PAR	SCALE ÉCHELLE			FRONT ELEVATION (EAST) / NORTH PART / DETAILS OF QUOINS	'AS FOUND' DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	21

114/03/RE.1-2



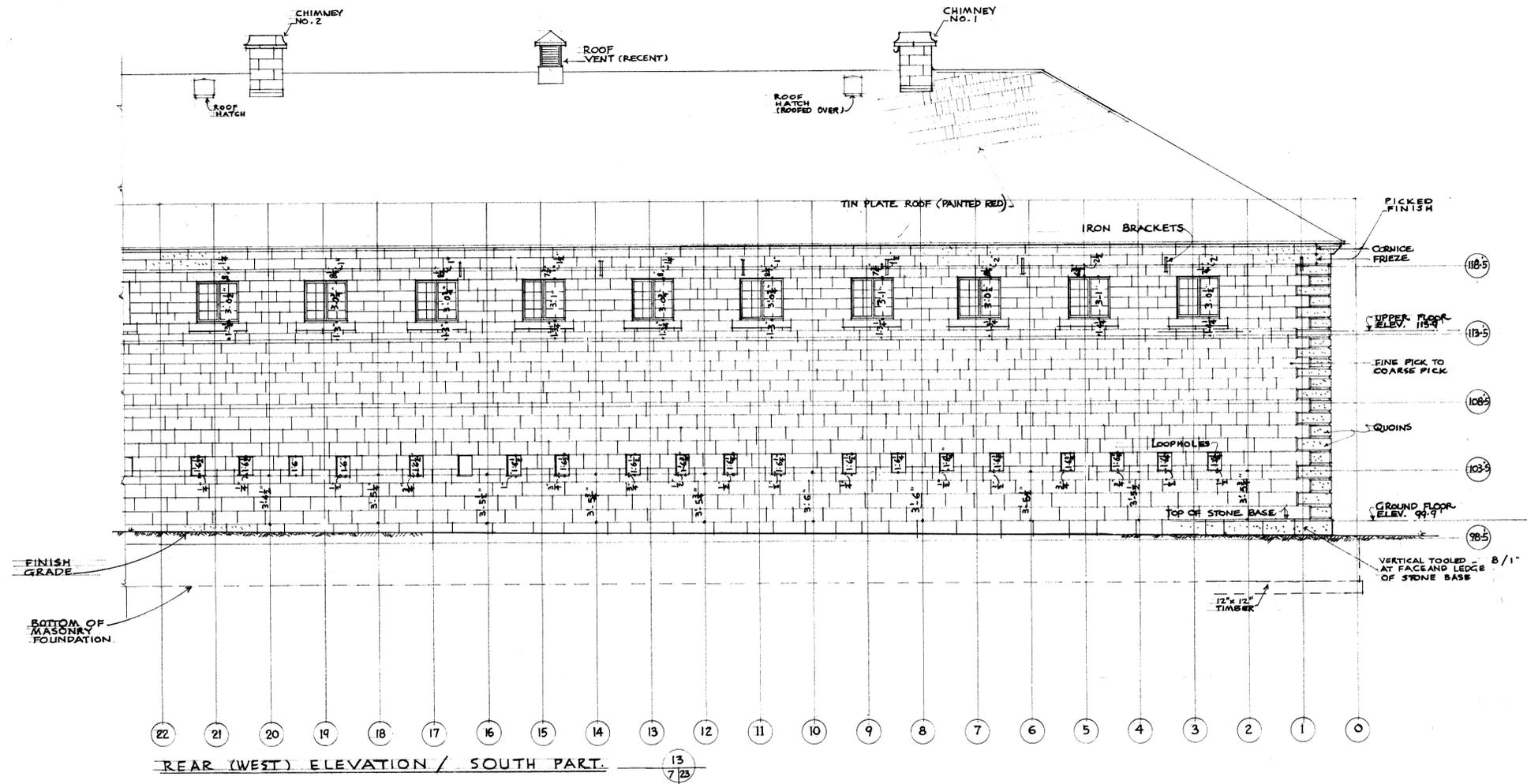
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114/03/RE 1-2
Fort Lennox/Men's barracks
South and north elevations

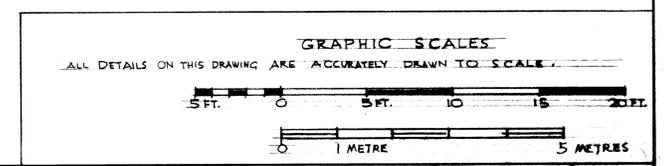
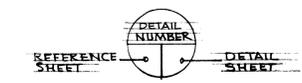


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			DRAWN BY TRACÉ PAR	SCALE ÉCHELLE						"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969

114/03/RE 1-2



REAR (WEST) ELEVATION / SOUTH PART. 13 / 7/23

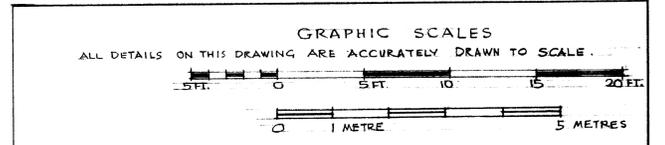
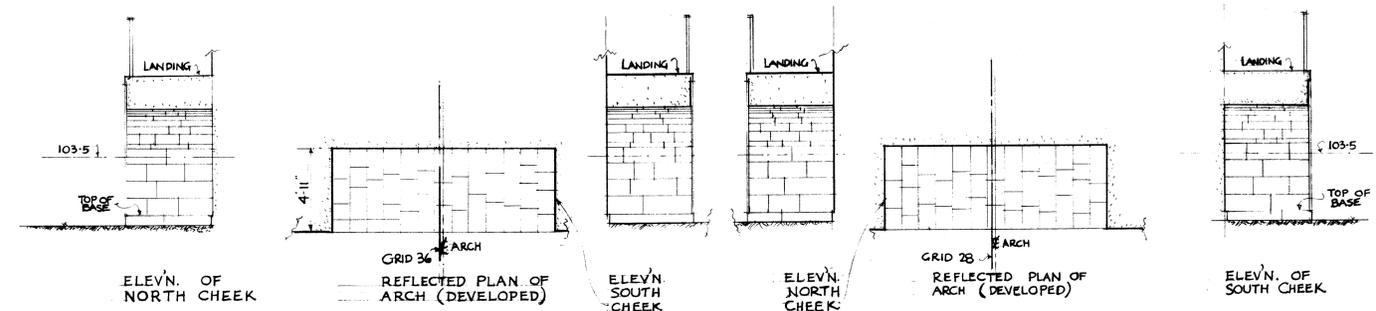
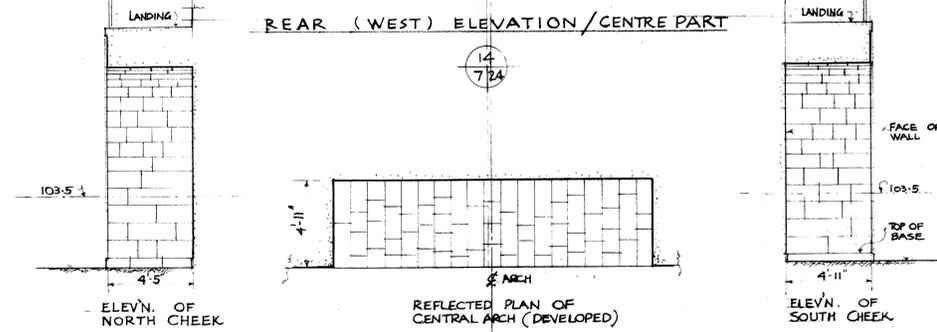
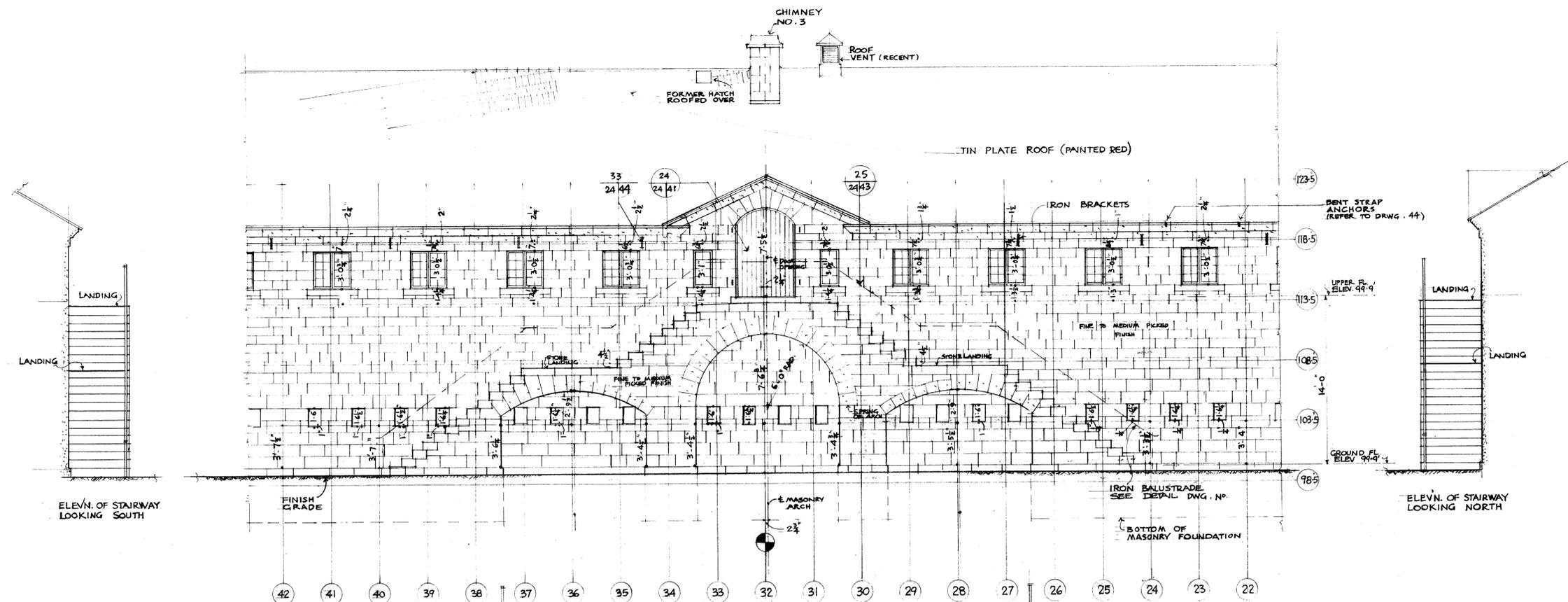


NO. / DATE / DESCRIPTION / REVISIONS			DESIGNED BY ÉTABLI PAR DRAWN BY TRACÉ PAR C.S.P.	CHECKED BY VÉRIFIÉ PAR SCALE ÉCHELLE 1/4" = 1'-0"	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN REAR (WEST) ELEVATION / SOUTH PART	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1969	DWG. NO. DESIGN # 23
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114/03/RE.1-2

STONE CHIMNEY JOINTING

114/03/RE.1-2
Fort Lennox/Men's barracks
Rear (west) elevation/south part



114/03/RE.1.2
Fort Lennox/Men's Barracks
Rear (West) Elevation/Centre Part

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. DESSIN N°
			DRAWN BY TRACÉ PAR	SCALE ÉCHELLE	DATE	DATE	REAR (WEST) ELEVATION/ CENTRE PART.	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	24

114/03/RE.1-2

revisions
 Stone in centre arch. 15/4/71

A detail no. detail no.
 B location dwg. no. / sur dessin no.
 C drawing no. dessin no.

drawn by / tracé par scale / échelle
 R. COUSINEAU SR. AS SHOWN
 designed by / établi par

checked by / vérifié par
Walter P. ...
 job captain / chef du projet date

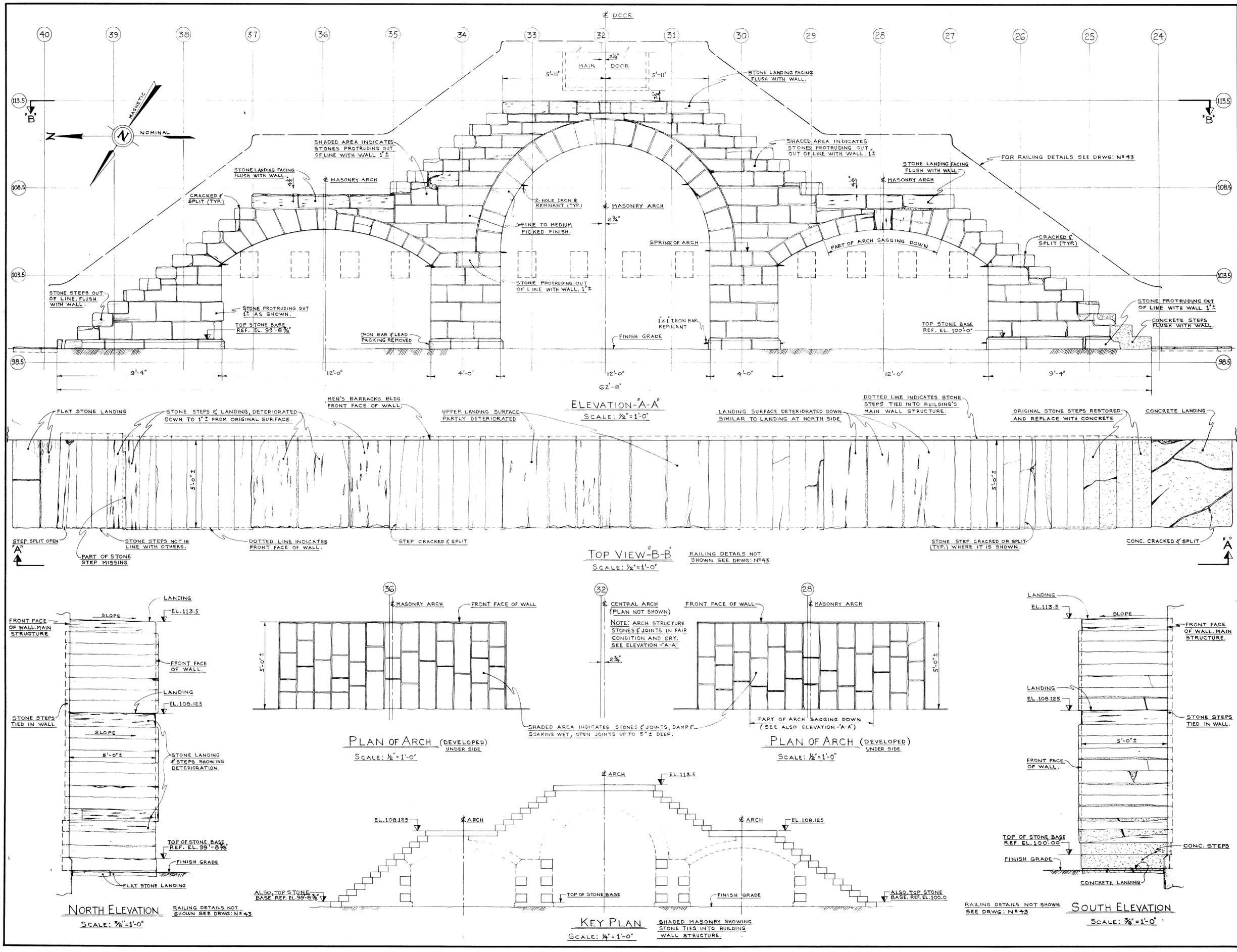
responsible officer / officier responsable date

project title titre du projet
 "AS FOUND"
 MEN'S BARRACKS
 FORT LENNOX
 NATIONAL HISTORIC PARK

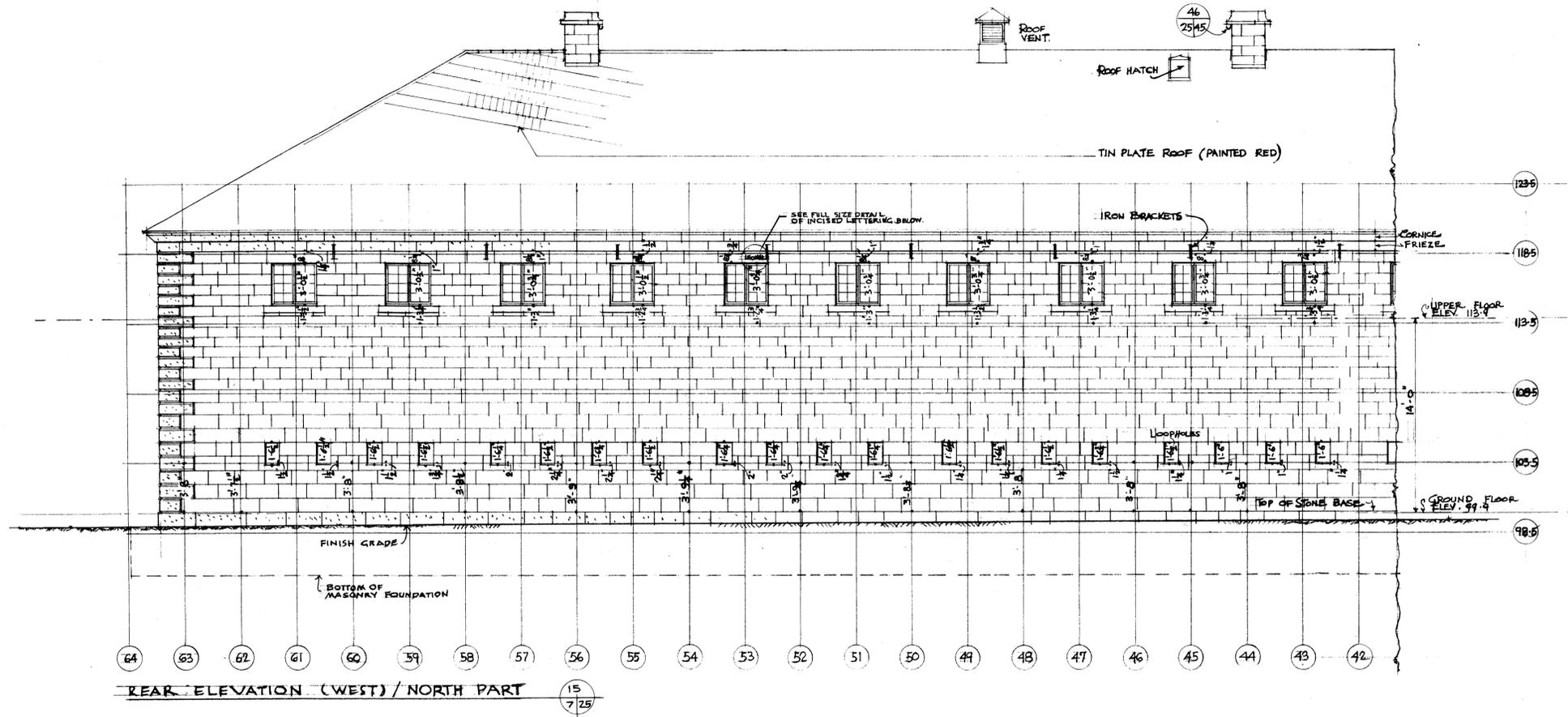
drawing title titre du dessin

REAR STAIRWAY
 & DETAILS

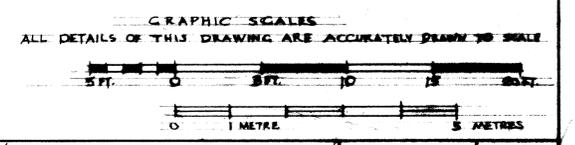
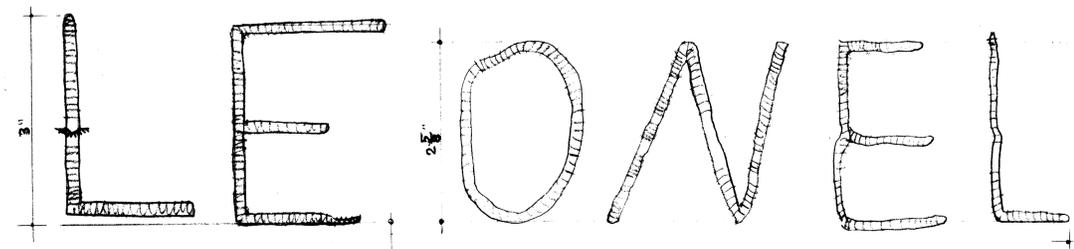
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114/03/AG.1-2
 Rear Stairway/ Men's Barracks
 Fort Lennox/ Détails



REAR ELEVATION (WEST) / NORTH PART
15
7/25

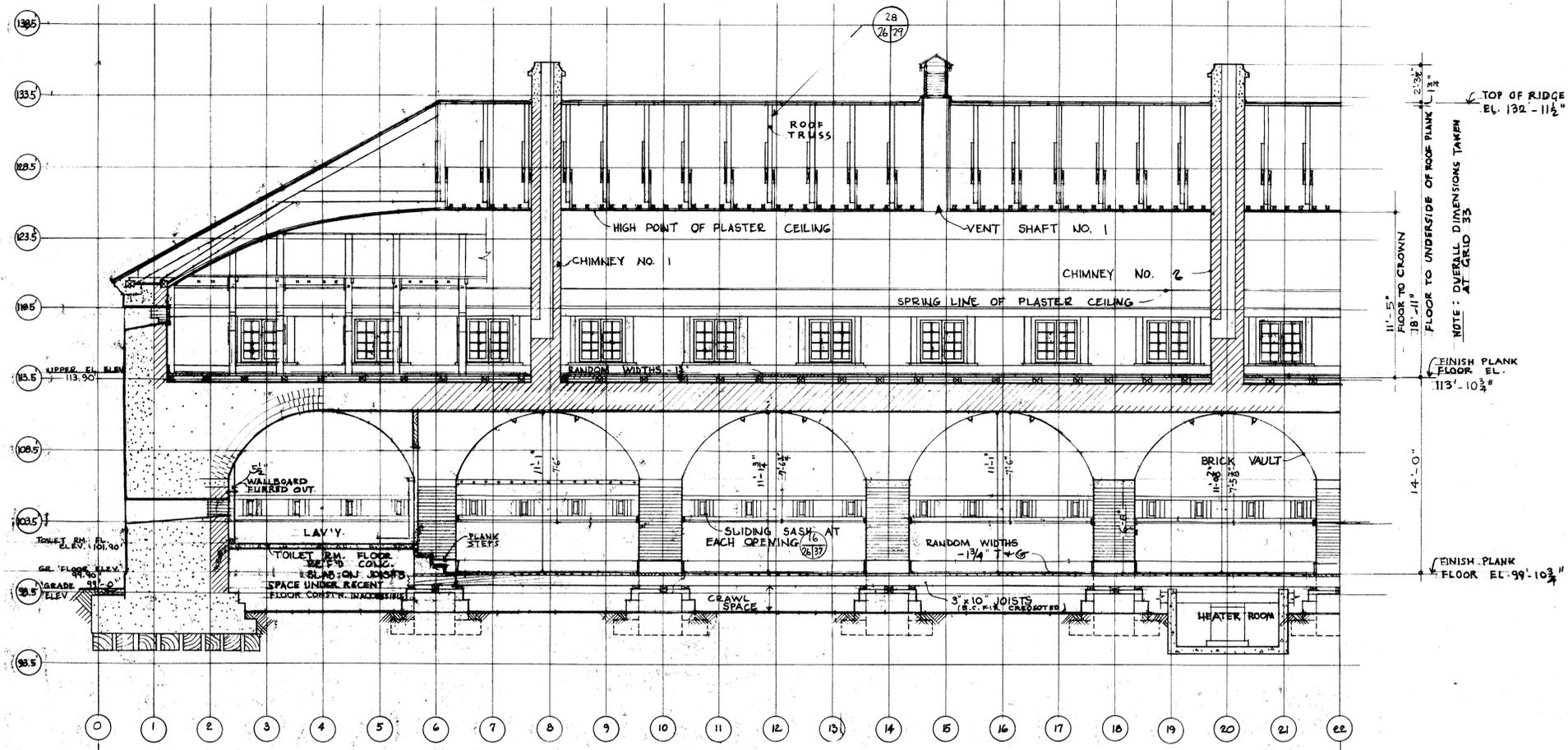


NO./REV.	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	NO. OF SHEETS
			DRAWN BY TRACÉ PAR	SCALE ÉCHELLE	DATE	DATE	REAR (WEST) ELEVATION / NORTH PART	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	15 / 25	25

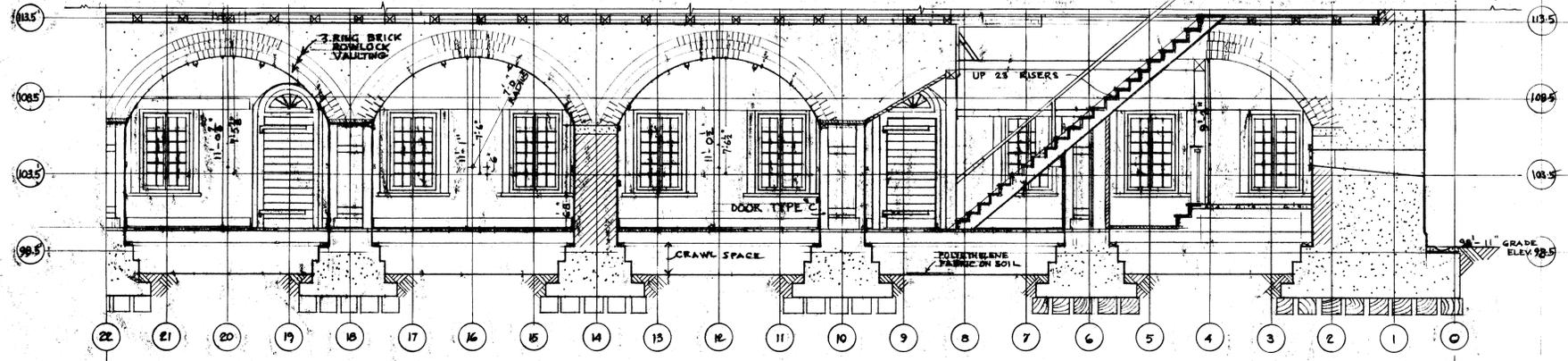
114/03/RE.1-2
Fort Lennox/Men's barracks
Rear (west) elevation/North part



114/03/RE.1-2
Fort Lennox/Men's barracks
Longitudinal section "1-1" section...



LONGITUDINAL "1-1"
SECTION
ON GRID LINE "0" LOOKING TOWARD
GRID LINE "5.R."

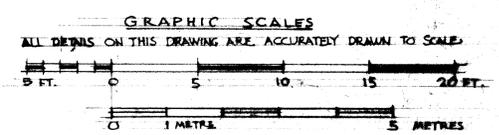


LONGITUDINAL "2-2"
SECTION
ON GRID LINE "20.L" LOOKING
TOWARD GRID LINE "25.L"

- LEGEND:**
- CUT STONE MASONRY :- [Symbol]
 - BRICK MASONRY :- [Symbol]
 - WALLBOARD PARTITION :- [Symbol]
 - EARTH :- [Symbol]
 - CONCRETE :- [Symbol]
 - TIMBER :- [Symbol]

- NOTE:**
1. REFER TO PHOTO KEY PLAN FOR RELATED PHOTOGRAPHS SHOWING GRAPHICALLY SIGNIFICANT IMPAIRMENTS TO INTERIOR FINISHES IN THIS PART OF THE STRUCTURE.
 2. ROOM FINISHES
FLOOR & BASE: UNFINISHED PINE.
WALLS: BRICK / WATER BASED PAINT.
VAULTED CEILINGS: PLASTER / WATER BASED PAINT.
WINDOWS, DOORS, FRAMES: PINE / OIL BASED PAINT.

REFERENCE SHEET	DETAIL NUMBER	DETAIL SHEET
-----------------	---------------	--------------



REVISIONS	DESIGNED BY	CHECKED BY	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DRAW. NO.
	DATE	ÉTABLI PAR	VÉRIFIÉ PAR		LONGITUDINAL SECTION "1-1" SECTION "2-2" (SOUTH PART)	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	26
		DRAWN BY H.S.S.	SCALE 1/4" = 1'-0"	DATE				
		TRACÉ PAR	ÉCHELLE 1/4" = 1'-0"	DATE				

114/03/RE.1-2



LEGEND:

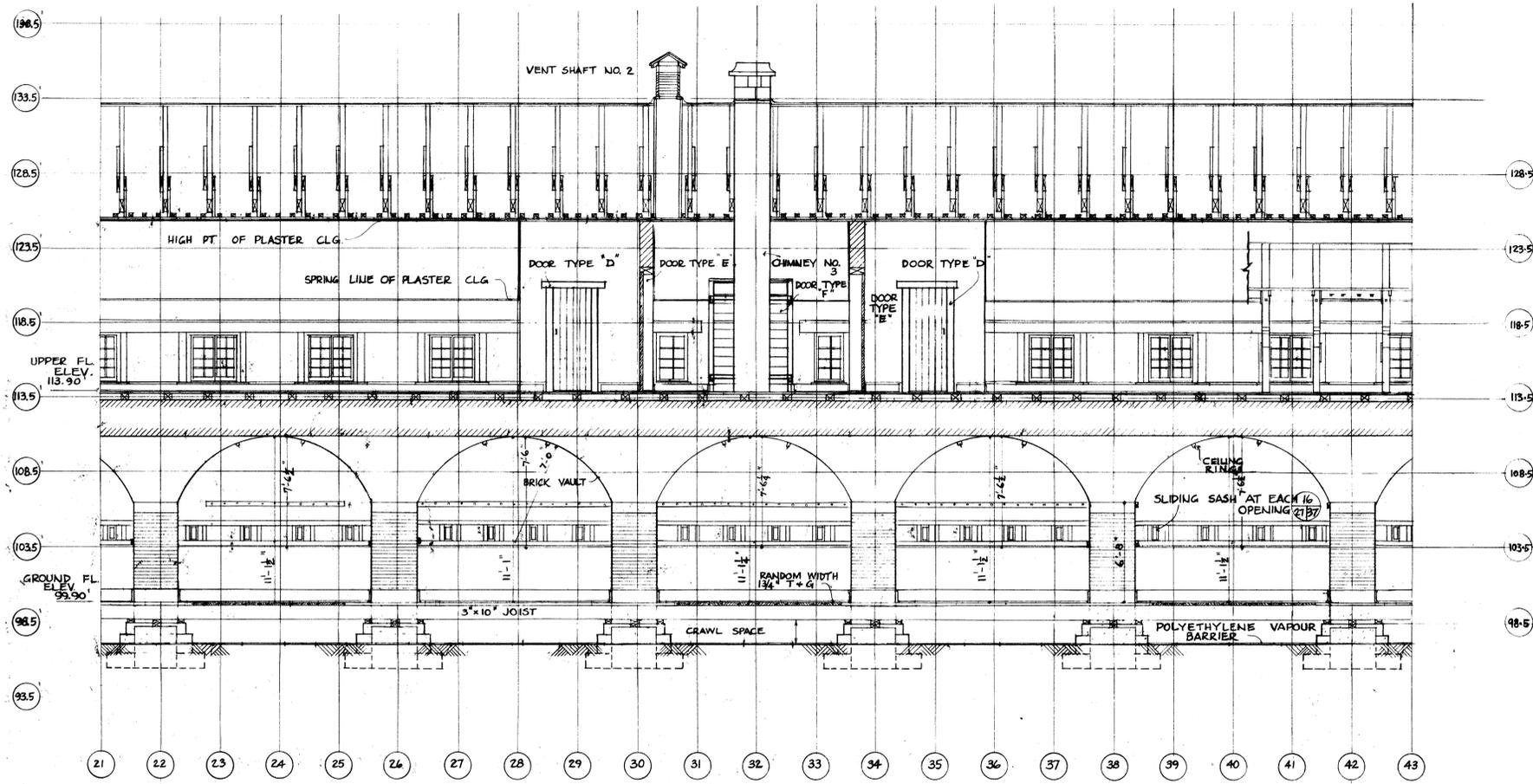
CUT STONE MASONRY :-	
BRICK MASONRY :-	
EARTH :-	
CONCRETE :-	
TIMBER :-	

NOTES:

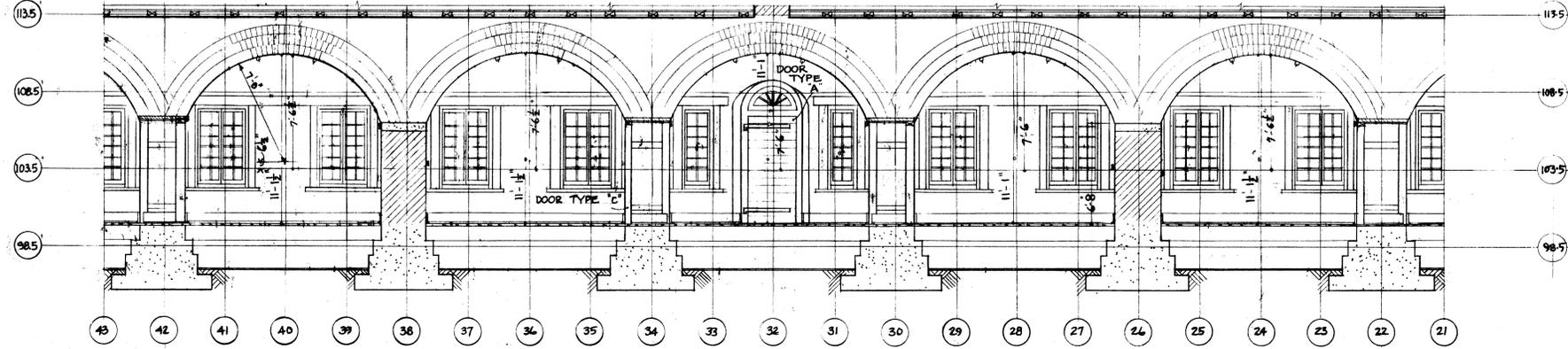
1 REFER TO PHOTO KEY PLAN FOR RELATED PHOTOGRAPHS SHOWING GRAPHICALLY SIGNIFICANT IMPAIRMENTS TO INTERIOR FINISHES IN THIS PART OF THE STRUCTURE.

2 ROOM FINISHES

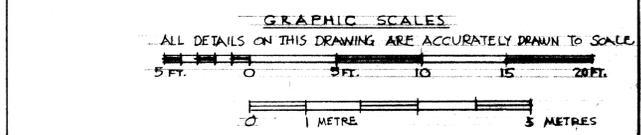
FLOOR & BASE: UNFINISHED PINE
 WALLS: BRICK / WATER BASED PAINT
 VAULTED CEILINGS: PLASTER / WATER BASED PAINT
 WINDOWS, DOORS, FRAMES: PINE OIL BASED PAINT



LONGITUDINAL SECTION 1-1
ON GRID "O" LOOKING TOWARD GRID LINE 5-R



LONGITUDINAL SECTION 2-2
ON GRID "20-L" LOOKING TOWARD GRID LINE "25-L"



114/03/RE.1-2
Fort Lennox/Men's Barracks
Longitudinal section "1-1" section...

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. DESIGN N°
	REVISIONS						LONGITUDINAL SECTION "1-1" SECTION "2-2" (CENTRE PART)	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	27

114/03/RE.1-2



LEGEND

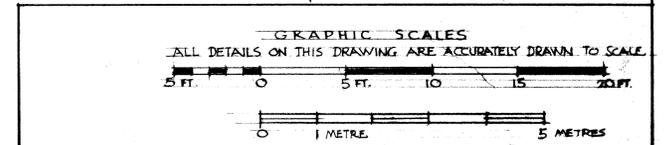
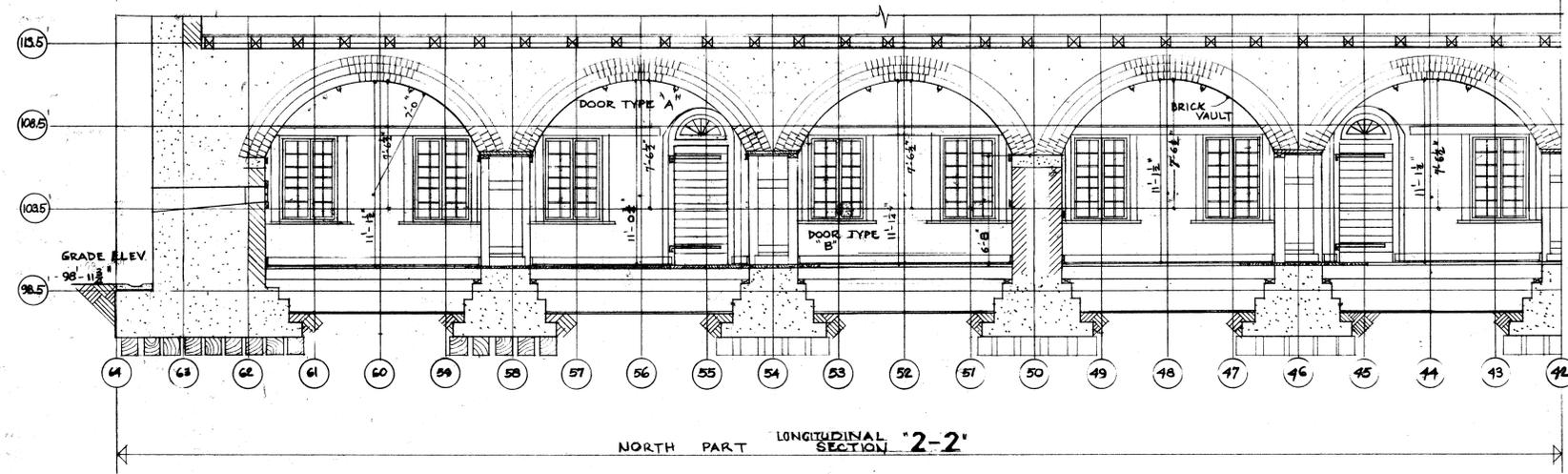
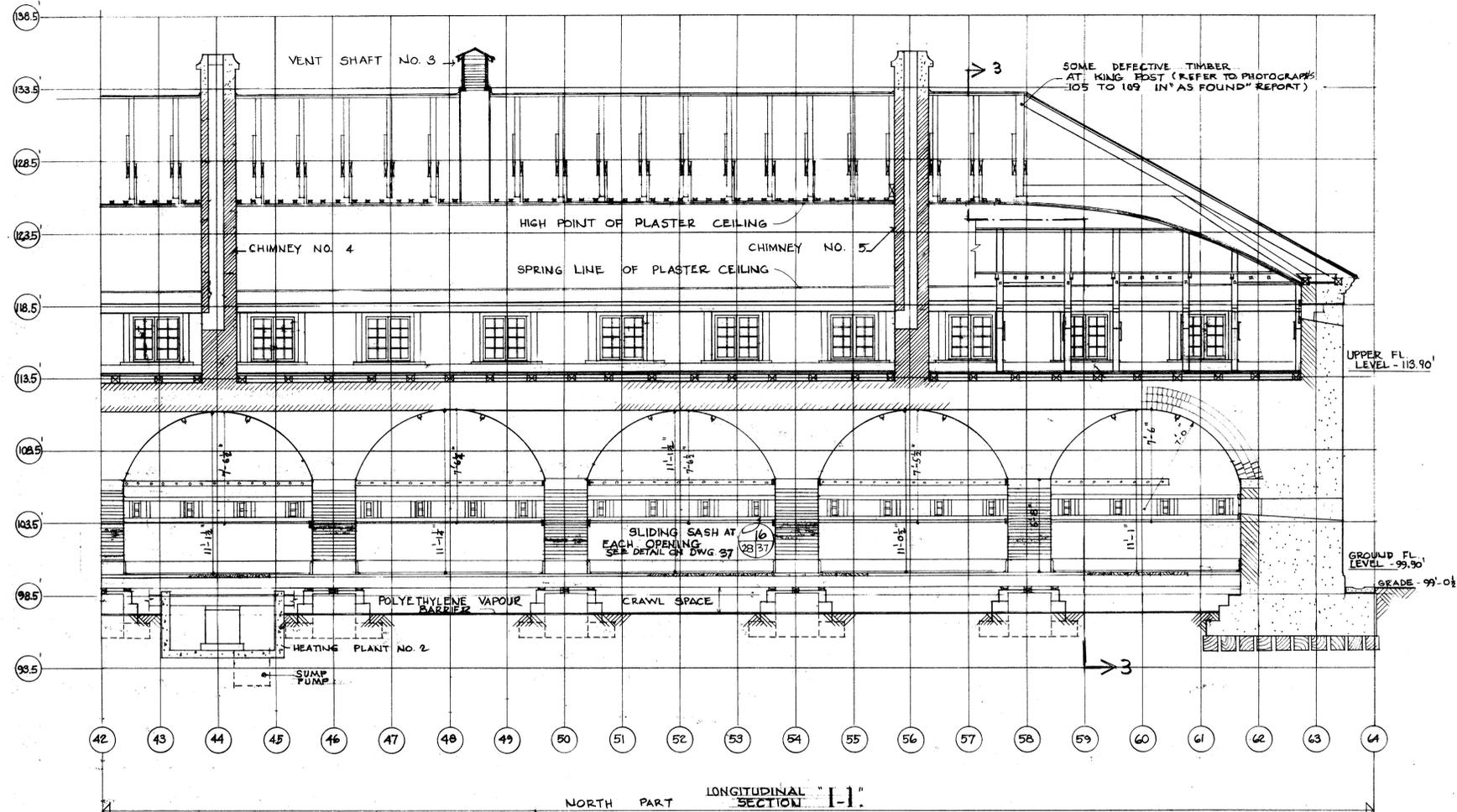
CUT STONE MASONRY	
BRICK MASONRY	
EARTH	
CONCRETE	
TIMBER	

NOTES:

1. REFER TO PHOTO KEY PLAN FOR RELATED PHOTOGRAPHS SHOWING GRAPHICALLY CERTAIN SIGNIFICANT IMPAIRMENTS TO INTERIOR FINISHES IN THIS PART OF THE STRUCTURE.

2. ROOM FINISHES

FLOORS & BASE: UNFINISHED PINE
 WALLS: BRICK / WATER BASED PAINT
 VAULTED CEILINGS: PLASTER / WATER BASED PAINT
 WINDOWS, DOORS, FRAMES: PINE OIL BASED PAINT.



NO. / DATE	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APP. REC. BY / APP. REC. PAR.	APP. BY / APP. PAR.	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO.
			ETANLI PAR	VÉRIFIÉ PAR			LONGITUDINAL SECTION "1-1" / SECTION "2-2" (NORTH PART)	"AS FOUND" DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	28
REVISIONS			DRAWN BY	SCALE	DATE	DATE				
			H.S.S. / TRACÉ PAR	ÉCHELLE						

114/03/RE.1-2

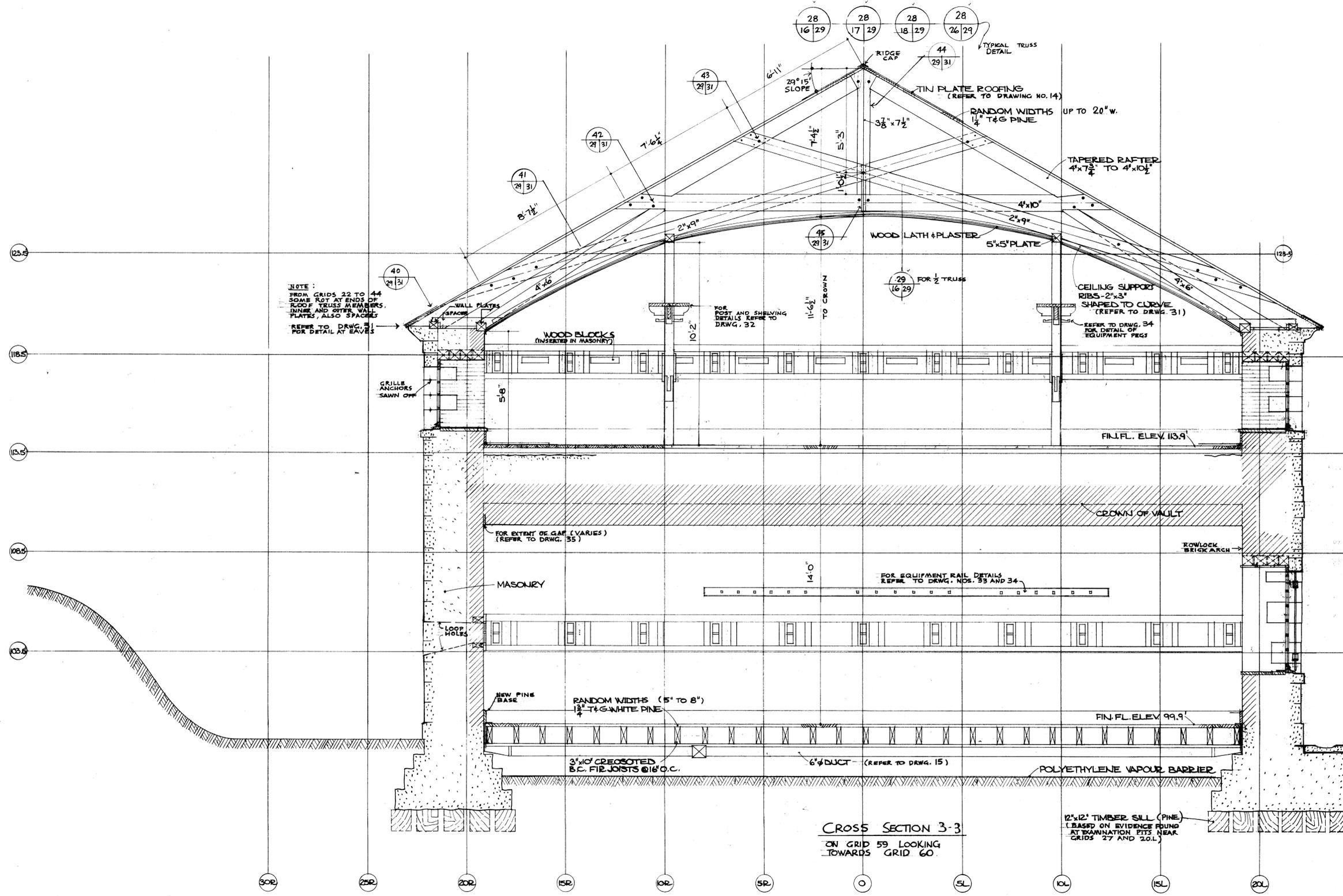


LEGEND

- CUT STONE MASONRY [Symbol]
- BRICK MASONRY [Symbol]
- EARTH [Symbol]
- CONCRETE [Symbol]
- TIMBER [Symbol]

NOTES:

1. DETAIL DIMENSIONS WILL VARY PROPORTIONALLY FROM TRUSS TO TRUSS DUE TO CONSTRUCTION TECHNIQUES IN YOGUM.
2. REFER TO PHOTOGRAPHS 58 AND 60 IN "AS FOUND" REPORT FOR ADDITIONAL DATA ON POST AND SHELVING DETAILS.



NOTE:
FROM GRIDS 22 TO 44
SOME ROY AT ENDS OF
ROOF TRUSS MEMBERS,
DIMS AND OFFER WALL
PLATES ALSO SPACES
REFER TO DRWG. 31
FOR DETAIL AT EAVES

CROSS SECTION 3-3
ON GRID 59 LOOKING
TOWARDS GRID 60.

GRAPHIC SCALES
ALL DETAILS ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.

0 1 2 3 4 5 FT 10 FT 15 FT

0 1 2 3 4 METRES

SYMBOL

DETAIL NUMBER

REFERENCE SHEET

DETAIL SHEET

11403 / RE1-002
Relève "as found"
FORT LENNOX: Men's barracks
Cross section "3-3" on grid 59 looking towards 60

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. NO. / NO. N°
	REVISIONS						CROSS SECTION 3-3 (ON GRID 59 LOOKING TOWARDS 60)	"AS FOUND" DRAWINGS: MEN'S BARRACKS/ FORT LENNOX NATIONAL HISTORIC PARK	20.1.1969	29.

114/03/RE1-02

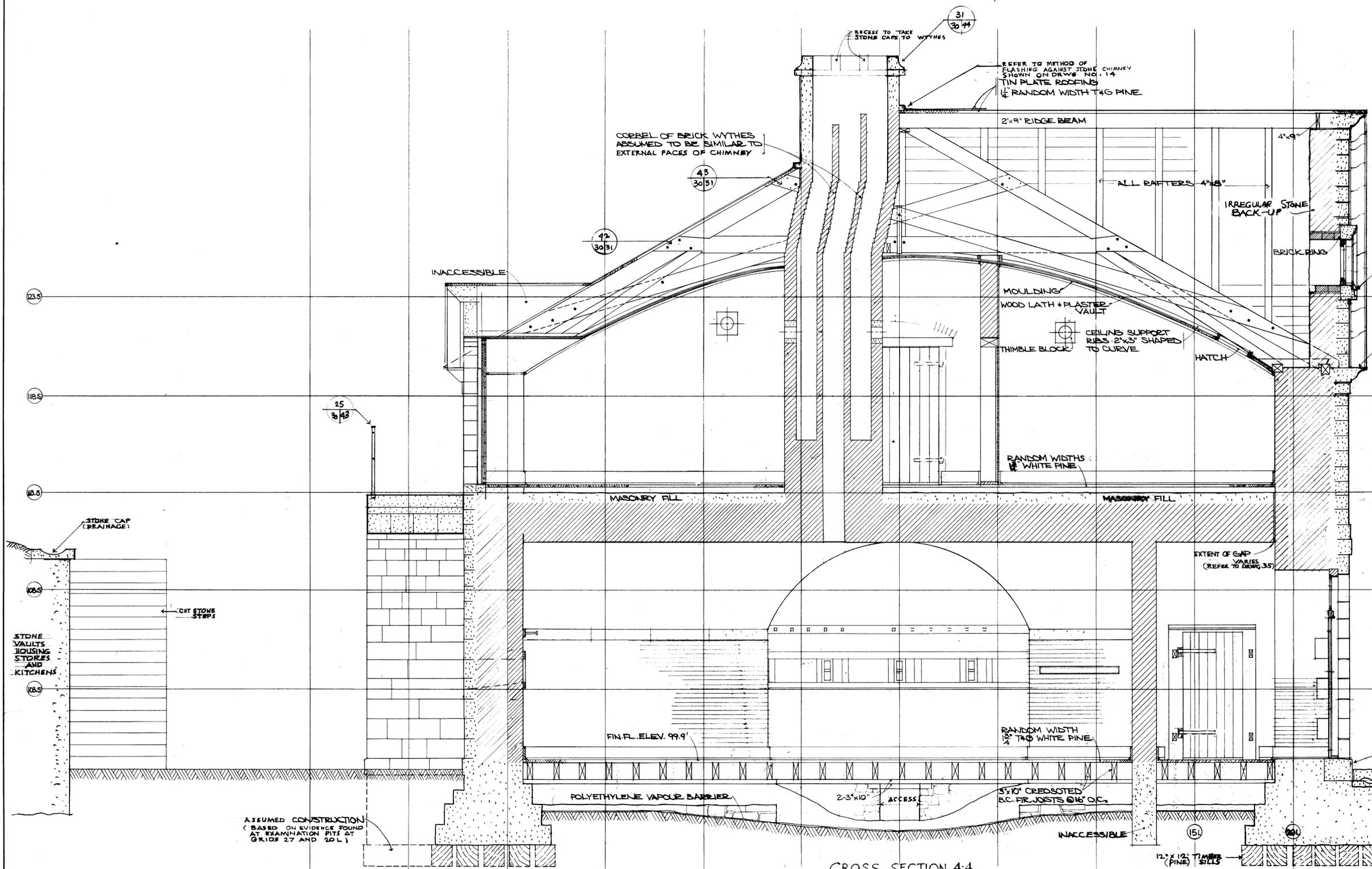


LEGEND

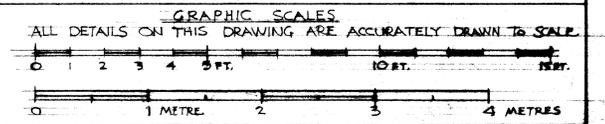
- CUT STONE MASONRY
- BRICK MASONRY
- EARTH
- CONCRETE
- TIMBER

NOTE:
1. REFER TO DRAWING NO. 31 FOR TYPICAL ROOF TRUSS DETAILS.

NOTE:
FROM GRID LINES 22 TO 42 SOME NOT EVIDENCED AT TOP OF TRUSS MEMBERS AT INNER AND OUTER WALL PLATES AND SPACERS (REFER TO DRAW. NO. 31)



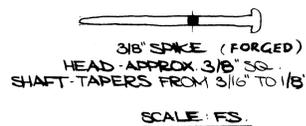
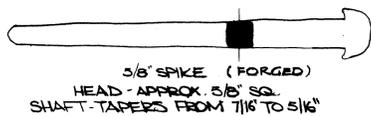
CROSS SECTION 4-4
ON GRID 32 LOOKING TO GRID 33



NO./#	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	NO. OF SHEETS
	REVISIONS						CROSS SECTION "4-4" (ON GRID 32 LOOKING TO GRID 33)	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	30

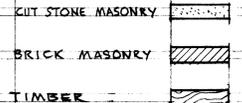
114/03/RE-1-2
Men's Barracks
Cross section 4-4 (on grid 32 looking)

114/03/RE-1-2

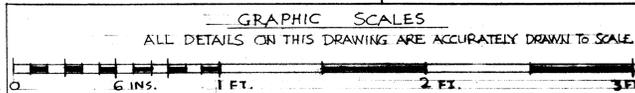
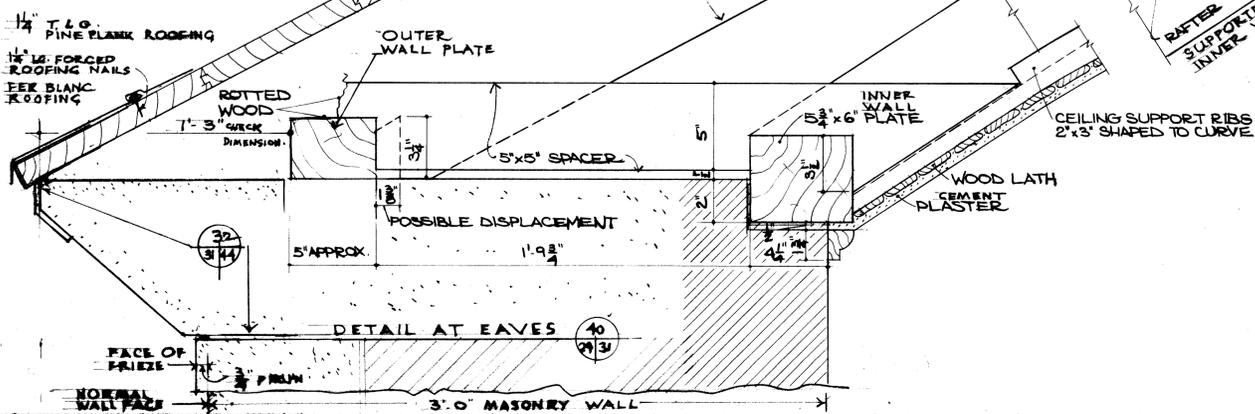
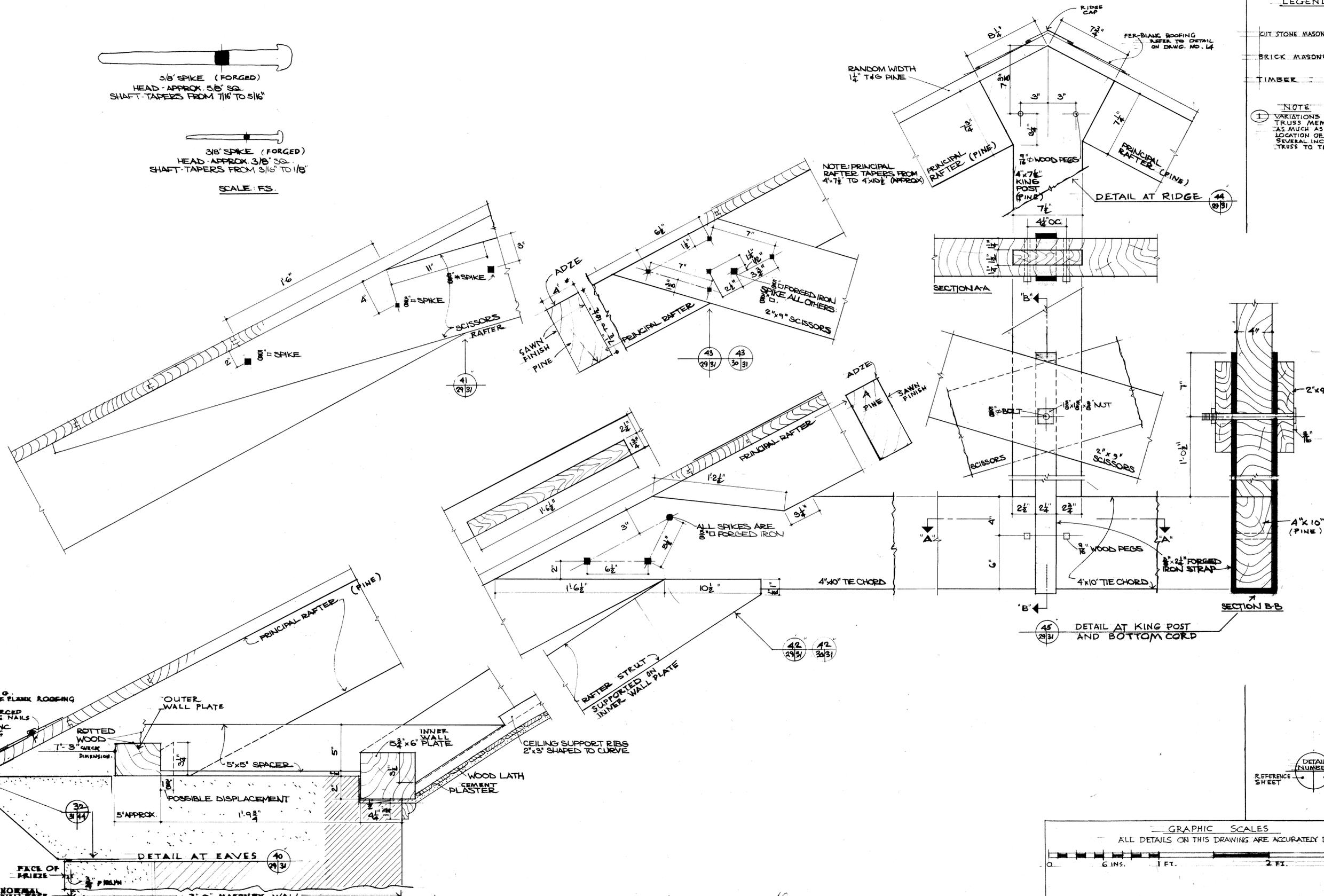


SCALE: FS.

LEGEND



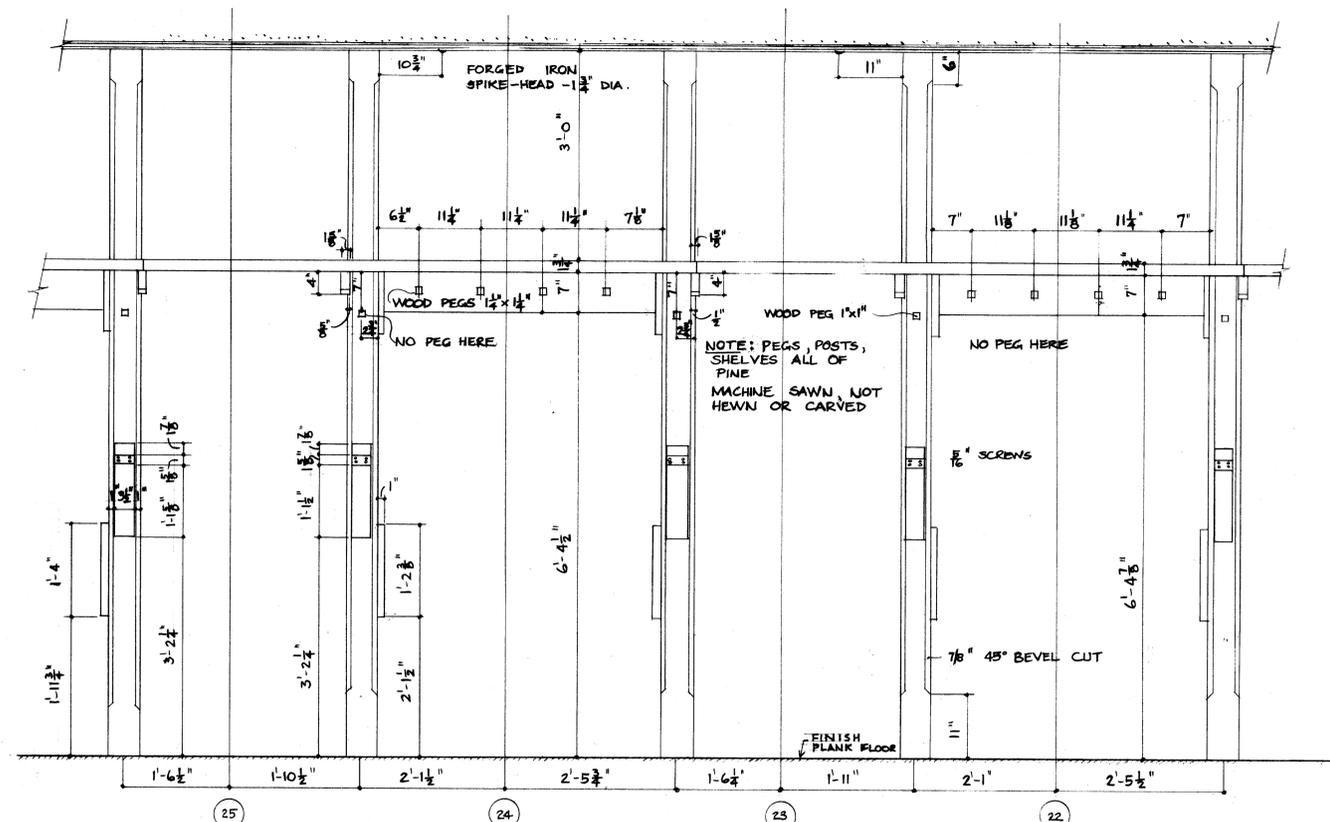
NOTE
1. VARIATIONS IN SIZES FOR TRUSS MEMBERS VARY AS MUCH AS 1/2" + OR - AND LOCATION OF SPIKES VARY SEVERAL INCHES FROM TRUSS TO TRUSS.



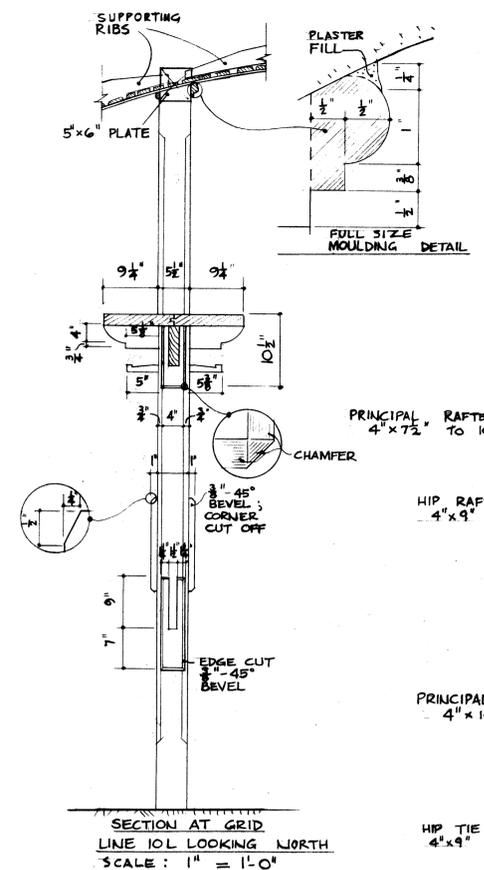
DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN TYPICAL ROOF TRUSS DETAILS	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1969	FILE NO. DRAWING NO. 31
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114/03/RE.1-2

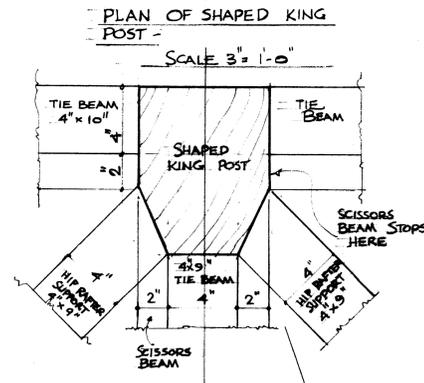
114/03/RE.1-2 Men's barracks Typical roof truss details



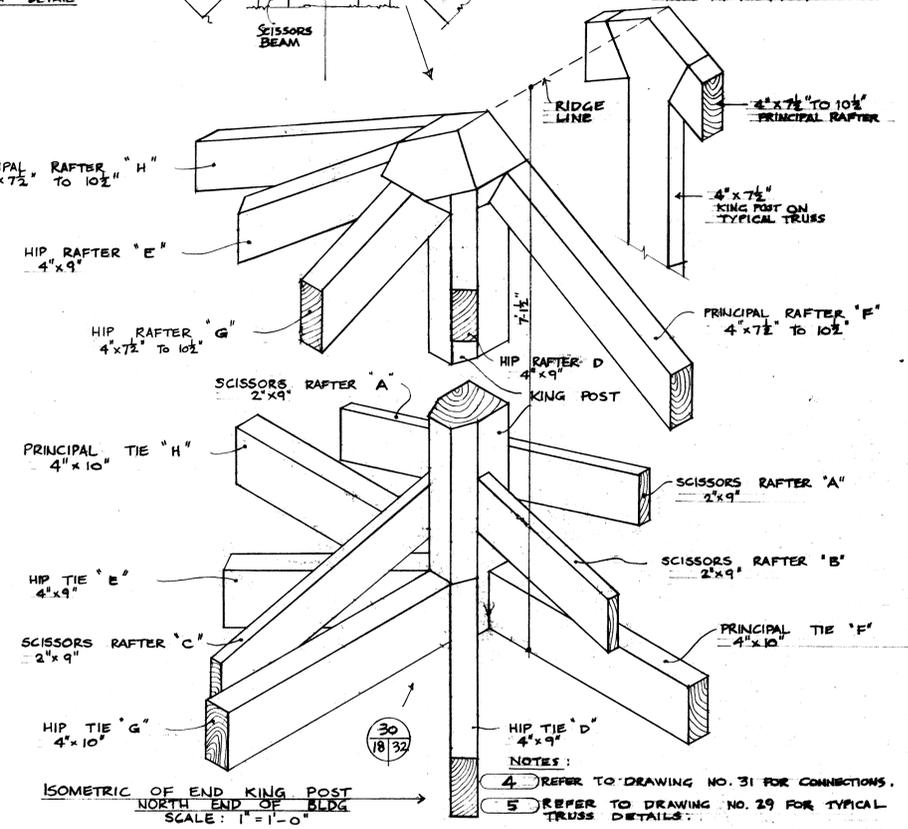
POST AND SHELVING DETAIL
SCALE: 1" = 1'-0"



SECTION AT GRID LINE 10L LOOKING NORTH
SCALE: 1" = 1'-0"



PLAN OF SHAPED KING POST
SCALE 3" = 1'-0"



ISOMETRIC OF END KING POST
NORTH END OF BLDG
SCALE: 1" = 1'-0"

LEGEND

WOOD FRAMING: [Symbol]

WOOD (FINISHED): [Symbol]

SYMBOL

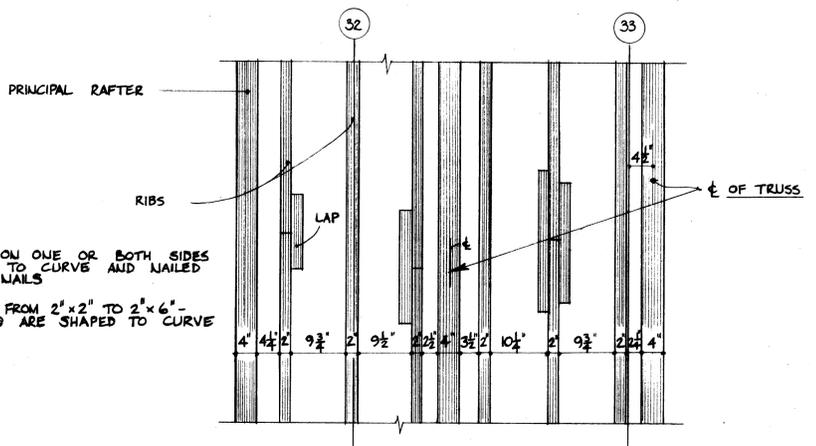
REFERENCE SHEET: [Symbol]

DETAIL NUMBER: [Symbol]

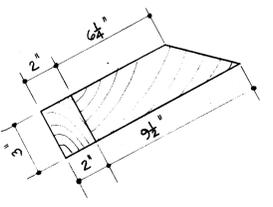
DETAIL SHEET: [Symbol]

NOTES:

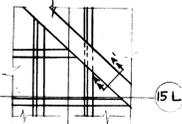
- 1 ALL DETAILS ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.
- 2 REFER TO PHOTOS 58 AND 60 FOR ADDITIONAL DATA ON POST AND SHELVING DETAILS.
- 3 REFER TO PHOTOS 105/109 FOR EXTENT OF DEGRADATION OF ROOF TRUSS AT KING POST.
- 4 REFER TO DRAWING NO. 31 FOR CONNECTIONS.
- 5 REFER TO DRAWING NO. 29 FOR TYPICAL TRUSS DETAILS.



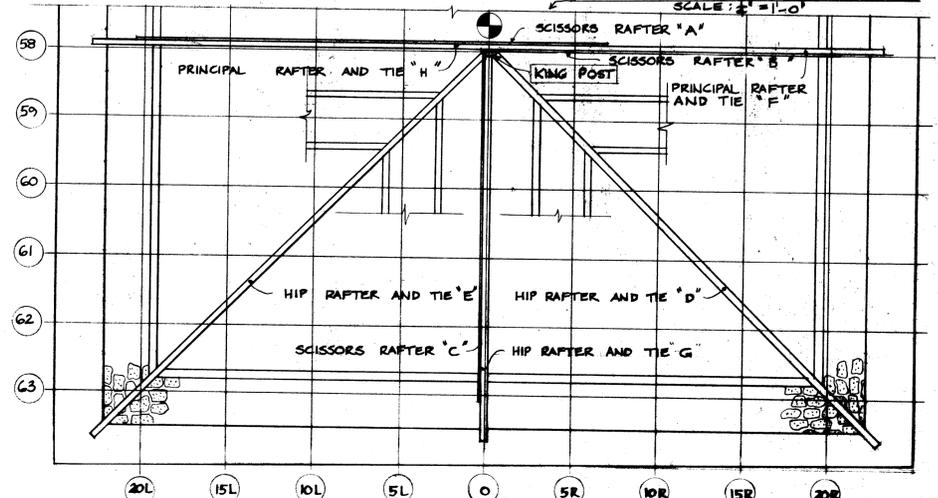
TYPICAL RIB SPACING PLAN
SCALE: 1" = 1'-0"



SECTION A-A
DETAIL OF VALLEY PLATE
SCALE: 1/4" = 1'-0"



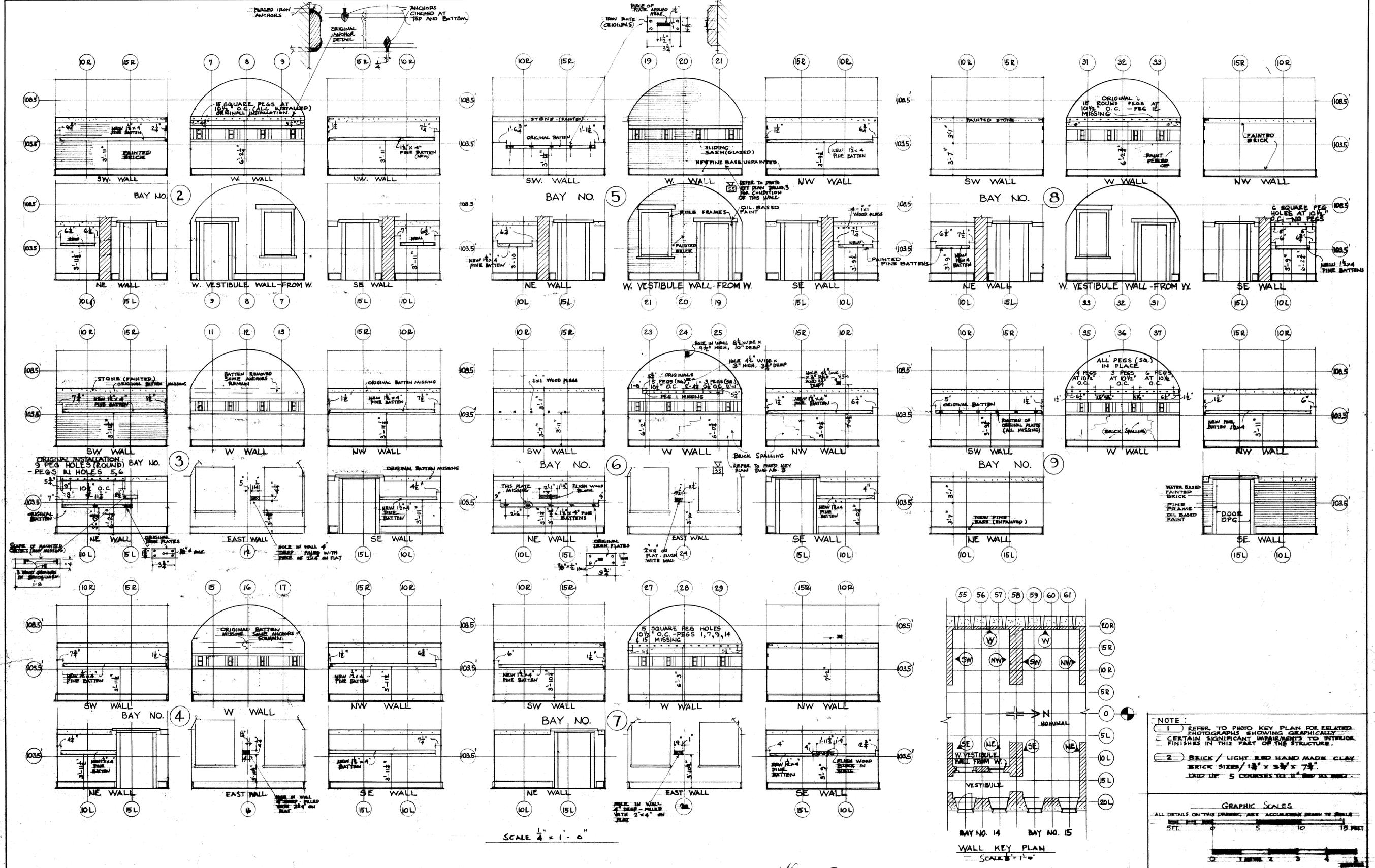
KEY ROOF PLAN

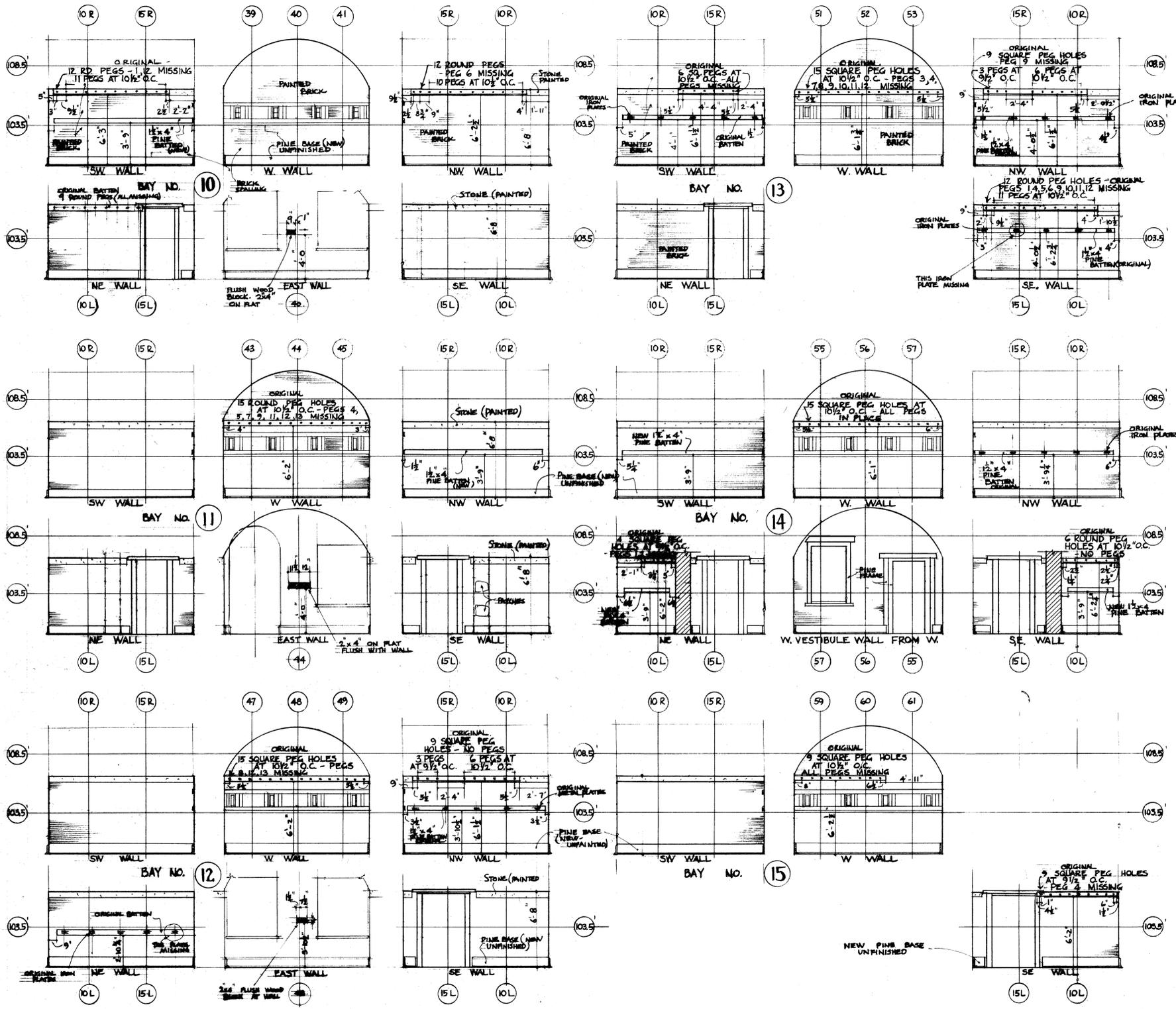


KEY ROOF FRAMING PLAN FOR ISOMETRIC
SCALE: 1/4" = 1'-0"

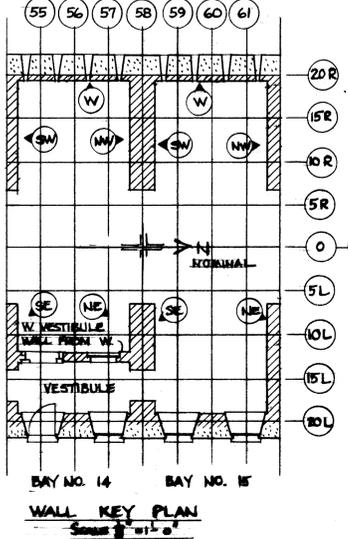
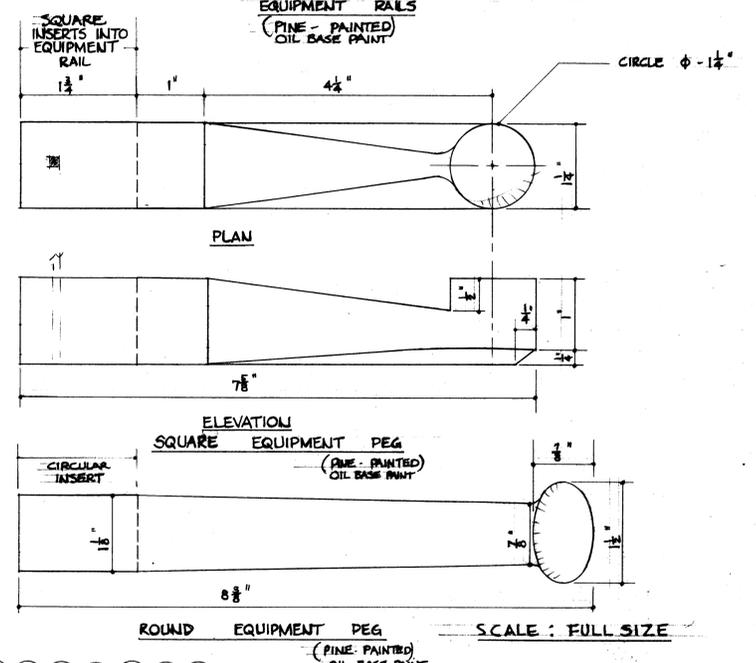
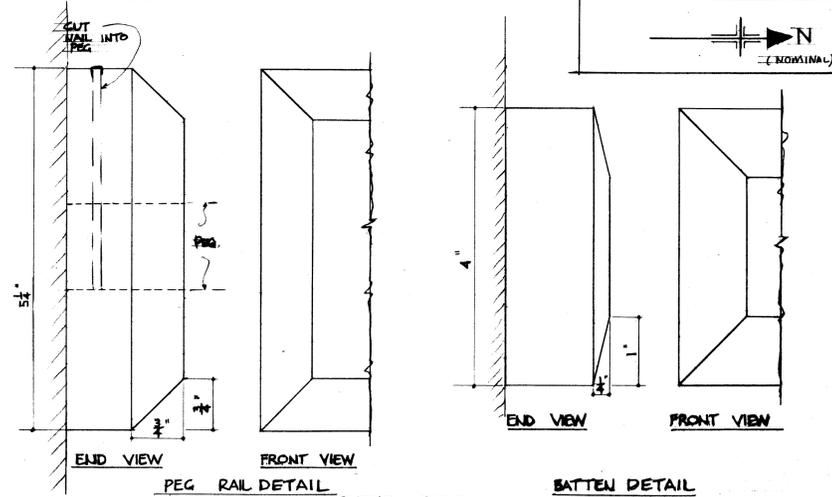
DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DATE
DRAWN BY TRACÉ PAR	SCALE ÉCHELLE AS NOTED	DATE	DATE	ROOF DETAILS / POST AND SHELVING DETAILS.	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK.	OCT 1969	32

114/03/RE.1-2

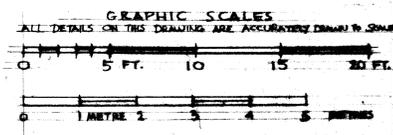




SCALE 1/4" = 1'-0"



NOTE:
1. REFER TO PHOTO KEY PLAN FOR RELATED PHOTOGRAPHS SHOWING GRAPHICALLY CERTAIN SIGNIFICANT IMPAIRMENTS TO INTERIOR FINISHES IN THIS PART OF THE STRUCTURE.
2. BRICK - LIGHT RED HAND MADE CLAY BRICK SIZES 1 3/4" x 3 3/4" x 7 3/4" LAID UP 5 COURSES TO 11" BED TO END.



114/03/RE.1-2
Fort Lennox/Men's barracks
Interior elevations of ground floor...

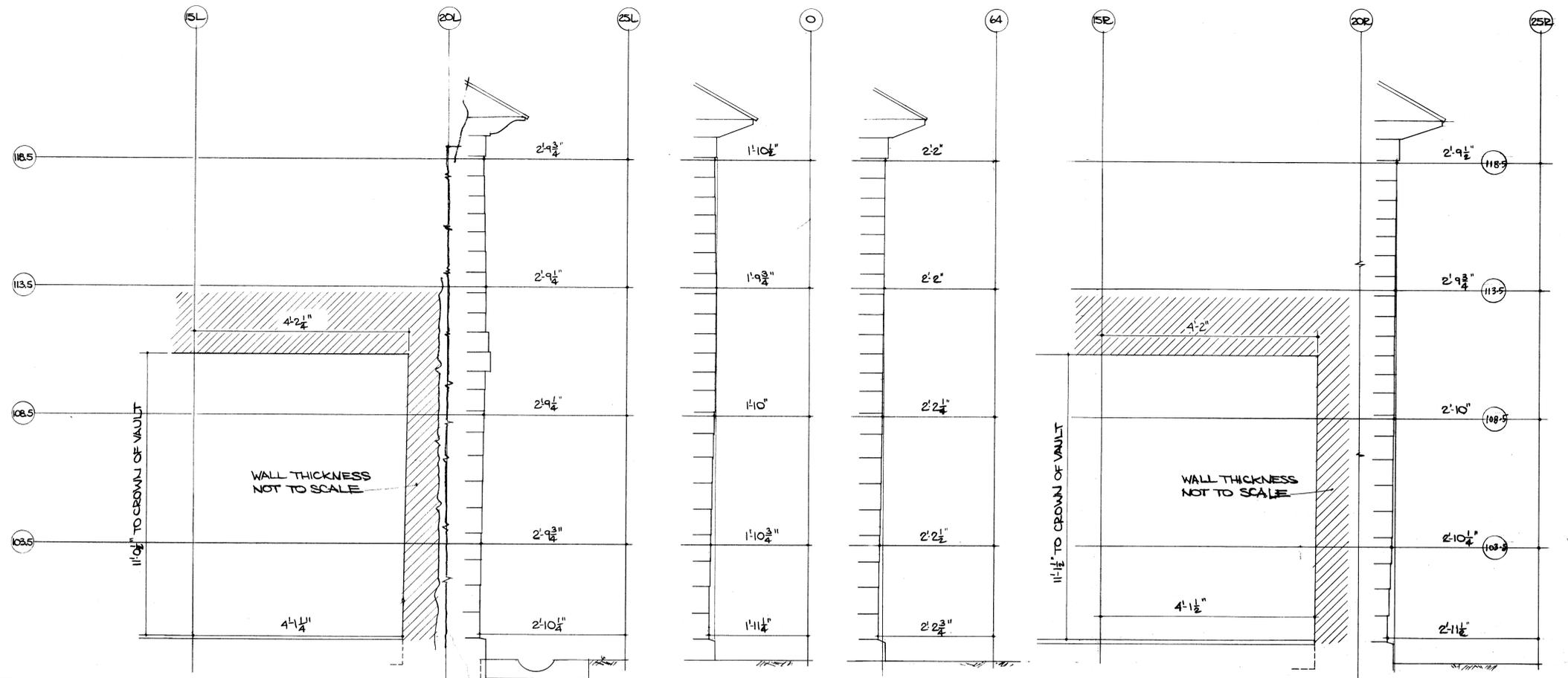
DESIGNED BY ÉTABLI PAR H.S.S.	CHECKED BY VÉRIFIÉ PAR ÉCHELLE AND EVAL 1/32"	APP. REC. BY / APP. REC. PAR DATE	APP. BY / APP. PAR DATE	DRAWING TITLE / TITRE DU DESSIN INTERIOR ELEVATIONS OF GROUND FLOOR WALLS (BAYS 10-15)	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS / FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1969	SCALE NO. / ÉCHELLE 34
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114/03/RE.1-2



INTERIOR PROFILES
MEASURED DEVIATIONS FROM GRID
NO. 15R (WEST) * GRID NO. 15L (EAST)

GRID LINE	WALL FACE	OFFSET AT FLOOR	OFFSET AT CEILING	HEIGHT TO CROWN
4	WEST	4'-4"	4'-3 3/4"	9'-2"
	EAST	4'-1"	4'-1 1/2"	
8	WEST	4'-3 1/2"	4'-4 1/2"	11'-1" STAIR
	EAST	4'-1"	4'-2"	
12	WEST	4'-3 3/4"	4'-4 1/2"	11'-0 1/2"
	EAST	4'-1 1/4"	4'-2 1/4"	
16	WEST	4'-3"	4'-3 3/4"	11'-1"
	EAST	4'-2"	4'-2 3/4"	
20	WEST	4'-2 1/4"	4'-2 3/4"	11'-0 3/4"
	EAST *	4'-2 1/2"	4'-3 1/4"	
* 1/2" GAP				
24	WEST	4'-2 1/4"	4'-2 1/4"	11'-1 1/2"
	EAST *	4'-1 3/4"	4'-3"	
* 1/2" GAP				
28	WEST	4'-2 1/4"	4'-1 1/2"	11'-1"
	EAST *	4'-1"	4'-2 1/2"	
* 1" GAP				
32	WEST	4'-2"	4'-1 1/2"	11'-1 1/2"
	EAST *	4'-0 1/2"	4'-2 1/2"	
* 3/4" GAP				
36	WEST	4'-1 1/2"	4'-1 1/2"	11'-1 1/2"
	EAST	4'-1 1/2"	4'-2"	
40	WEST	4'-1 3/4"	4'-1 3/4"	11'-1 1/2"
	EAST *	4'-1 1/2"	4'-2 1/4"	
* 3/4" GAP (REPAIRED)				
44	WEST	4'-1 1/2"	4'-1 1/2"	11'-1 1/2"
	EAST *	4'-1 1/2"	4'-2 1/4"	
* 3/4" GAP (PATCHED)				
48	WEST	4'-1 1/2"	4'-2"	11'-1 1/2"
	EAST	4'-2"	4'-2 1/4"	
52	WEST	4'-1 1/2"	4'-2"	11'-1"
	EAST	4'-1 3/4"	4'-1 3/4"	
56	WEST	4'-1 1/2"	4'-2"	11'-0 1/2"
	EAST	4'-1 1/4"	4'-2 1/4"	
60	WEST	4'-1 1/2"	4'-1 1/2"	11'-1"
	EAST	4'-1 1/2"	4'-0 3/4"	
- NO GAP AT NORTH WALL				



EAST FACADE PROFILES (RELATIVE TO GRID NO. 25L)

GRID NO.	1	6	12	18	22	26'-6"	26'-6"	33	38'-6"	38'-6"	42	48	52	58	63
EL 118.5'	2'-11 3/4"	2'-10 1/2"	2'-9 3/4"	2'-9 3/4"	2'-8 3/4"	2'-9"	2'-2"	2'-1 1/2"	2'-1 1/2"	2'-8 3/4"	2'-8"	2'-8 3/4"	2'-9 3/4"	2'-10"	2'-10 3/4"
113.5'	2'-11 1/4"	2'-9 3/4"	2'-9 3/4"	2'-9 3/4"	2'-8 3/4"	2'-8 3/4"	2'-2"	2'-1"	2'-1 1/2"	2'-8 3/4"	2'-8 3/4"	2'-9"	2'-9 3/4"	2'-10"	2'-10 3/4"
108.5'	3'-0 1/4"	2'-9 3/4"	2'-9 3/4"	2'-9"	2'-9 3/4"	2'-8 3/4"	2'-1 1/4"	2'-1 1/2"	2'-2 1/2"	2'-8 3/4"	2'-9"	2'-9 3/4"	2'-9 3/4"	2'-10"	2'-11"
103.5'	2'-11 1/4"	2'-10 1/4"	2'-9 3/4"	2'-10"	2'-9"	2'-9 1/2"	2'-2 1/2"	2'-1 1/2"	2'-2 1/2"	2'-9"	2'-9 1/2"	2'-9 3/4"	2'-10"	2'-10 3/4"	2'-10 3/4"
100'	2'-11 3/4"	2'-10 1/2"	2'-10 1/4"	2'-10 1/4"	2'-9 3/4"	2'-9 3/4"	2'-2"	2'-2 3/4"	2'-9 3/4"	2'-9 3/4"	2'-10"	2'-10"	2'-10 1/2"	2'-10 3/4"	2'-10 3/4"

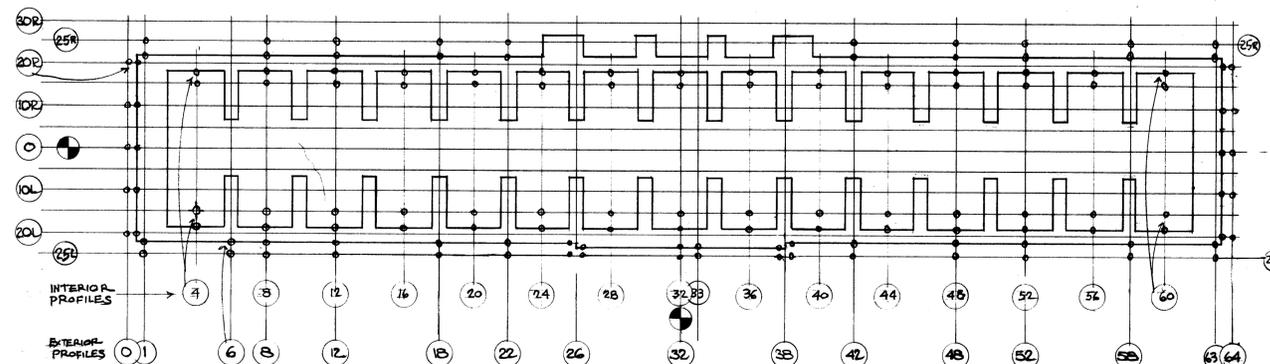
WEST FACADE PROFILES (RELATIVE TO GRID NO. 25R)

GRID NO.	1	8	12	18	22	42	48	52	58	63
EL 118.5'	2'-8 3/4"	2'-7 3/4"	2'-7 3/4"	2'-8"	2'-8 3/4"	2'-10"	2'-9 1/2"	2'-9 3/4"	2'-9 3/4"	2'-10 3/4"
113.5'	2'-7 3/4"	2'-7 3/4"	2'-7 3/4"	2'-8"	2'-9"	2'-10 3/4"	2'-9 3/4"	2'-9 3/4"	2'-9 3/4"	2'-10 3/4"
108.5'	2'-8"	2'-8"	2'-7 3/4"	2'-8"	2'-9"	2'-10 3/4"	2'-10"	2'-10"	2'-10"	2'-11"
103.5'	2'-8 3/4"	2'-8"	2'-7 3/4"	2'-8 3/4"	2'-9"	2'-10 3/4"	2'-10 3/4"	2'-10"	2'-9 3/4"	2'-11"
100'	2'-8 3/4"	2'-8"	2'-8 3/4"	2'-8 3/4"	2'-9 1/2"	2'-11"	2'-11 1/2"	2'-10 3/4"	2'-10 3/4"	2'-11"

NORTH FACADE PROFILES (RELATIVE TO GRID NO. 64)					SOUTH FACADE PROFILES (RELATIVE TO GRID NO. 0)					
20L	10L	0	10R	20R	GRID NO.	20L	10L	0	10R	20R
2'-1 1/2"	2'-1 3/4"	2'-2"	2'-2 1/2"	2'-3"	EL 118.5'	1'-9 3/4"	1'-10"	1'-10 1/2"	1'-11 1/4"	1'-11 3/4"
2'-1 1/2"	2'-1 3/4"	2'-2"	2'-2 1/2"	2'-3"	113.5'	1'-9 1/4"	1'-9 3/4"	1'-10 1/4"	1'-10 3/4"	1'-11 1/4"
2'-1 1/2"	2'-1 3/4"	2'-2 1/4"	2'-2 3/4"	2'-3 1/4"	108.5'	1'-9 1/4"	1'-10"	1'-10 3/4"	1'-11 1/4"	1'-11 3/4"
2'-1 1/2"	2'-1 3/4"	2'-2 1/2"	2'-3"	2'-3 1/2"	103.5'	1'-10"	1'-10 3/4"	1'-11 1/4"	1'-11 3/4"	1'-11 3/4"
2'-2"	2'-2 1/4"	2'-2 3/4"	2'-3 1/2"	2'-3 3/4"	100'	1'-10 1/2"	1'-10 3/4"	1'-11 1/4"	1'-11 3/4"	1'-11 3/4"

EAST FACADE GRID: 42-25L SOUTH FACADE GRID: 0-0 NORTH FACADE GRID: 0-64 WEST FACADE GRID: 48-25R

DIAGRAMS ILLUSTRATING WHERE MEASUREMENTS TAKEN



KEY PLAN SHOWING LOCATIONS FOR MEASURED DEVIATIONS SCALE: 1/8" = 1'-0"

NO./REV.	DESCRIPTION	DATE

DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. PAR	APP. BY / APP. PAR
DRAWN BY TRACÉ PAR	B. P.	SCALE ÉCHELLE	1/8" = 1'-0"

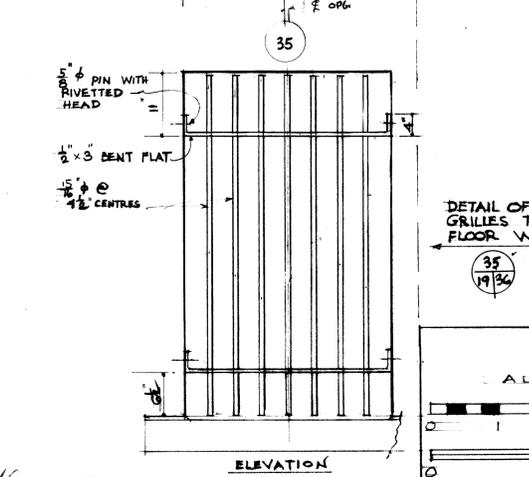
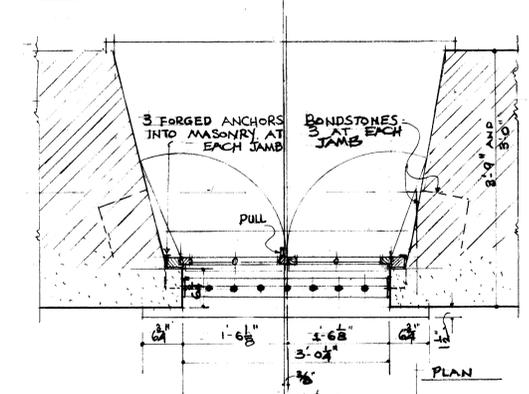
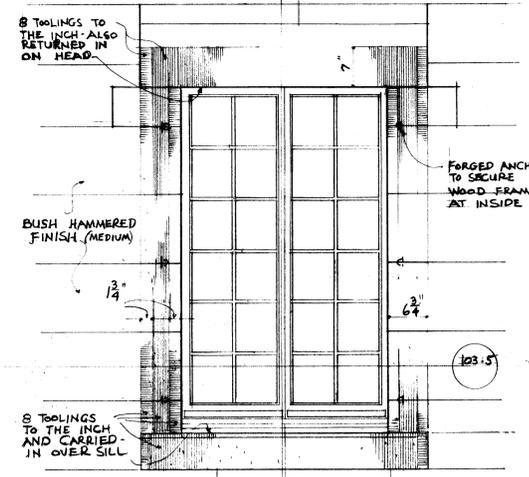
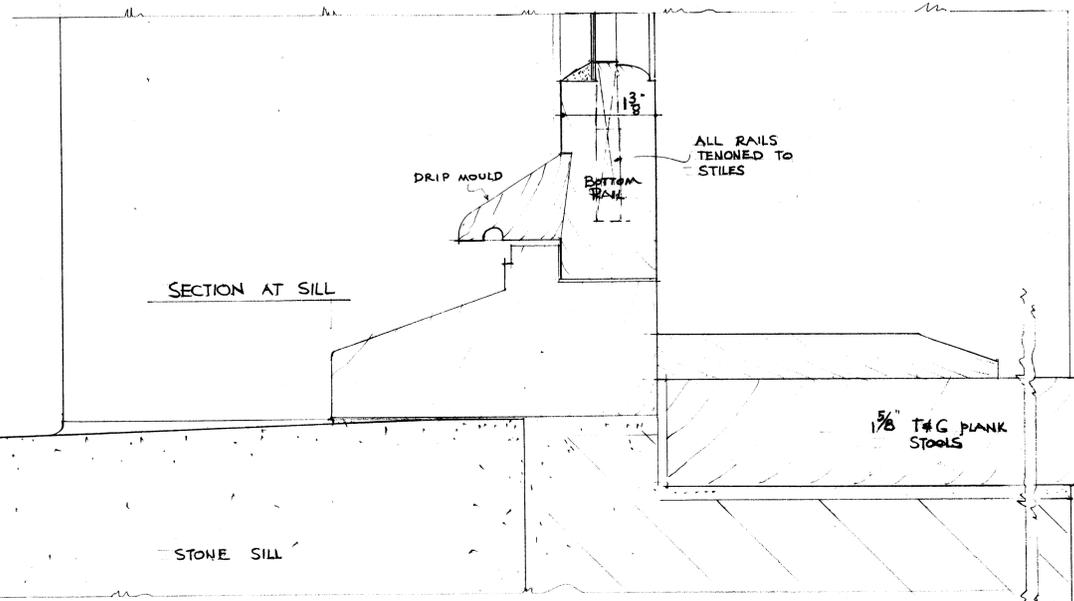
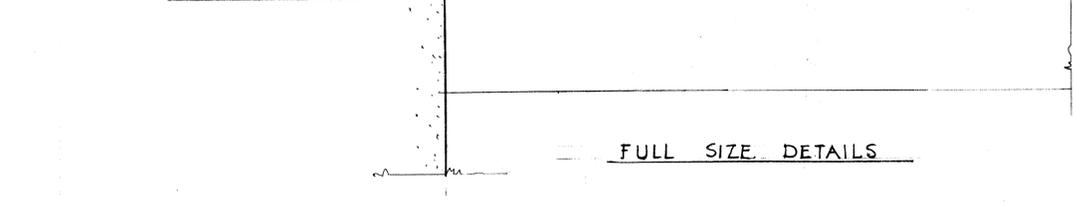
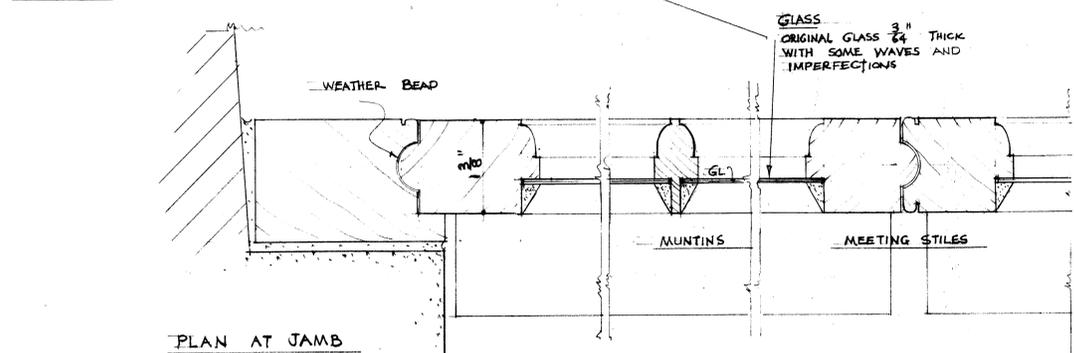
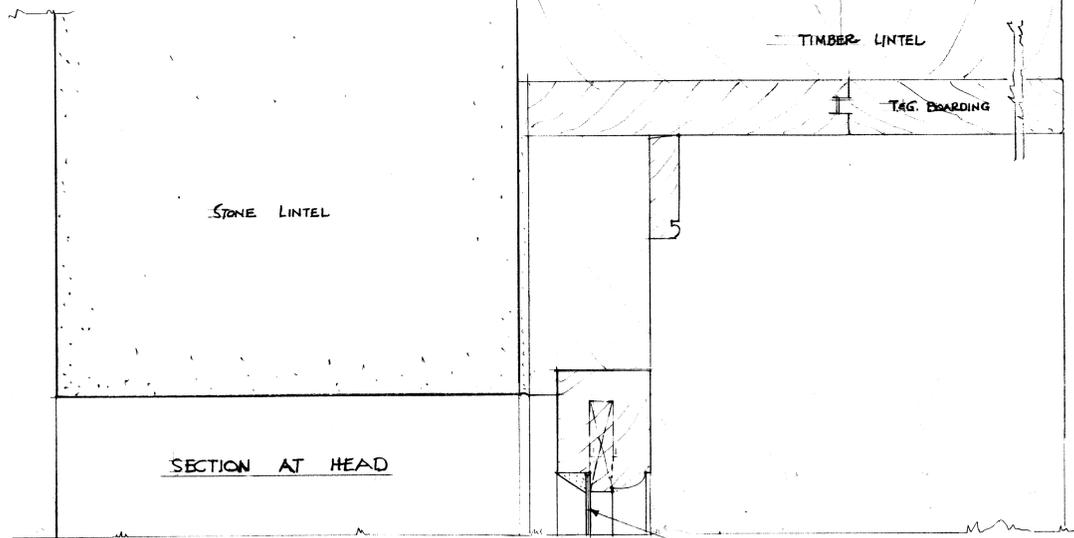
APP. REC. BY / APP. PAR	APP. BY / APP. PAR

DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET
MEASUREMENT TABLES SHOWING INCLINATIONS OF ENCLOSING WALLS	"AS FOUND" DRAWINGS - MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC SITE

DATE	NOV. 1969
REV. NO. / REV. N°	35

NO. / REV.	DESCRIPTION	DATE

- NOTES:
 1. FOR DETAILS OF FINISHING HARDWARE REFER TO DWG. NO. 49
 2. FOR FURTHER WINDOW DETAILS REFER TO PHOTOGRAPHIC INDEX IN "AS FOUND" REPORT.



SCALE DETAILS OF
 GROUND FLOOR WINDOWS
 SCALE 1" = 1'-0"

20
9/36

20
20/36

20
20/36

SYMBOL

35
19/36

REFERENCE SHEET

35
19/36

DETAIL SHEET

GRAPHIC SCALES

ALL DETAILS ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.

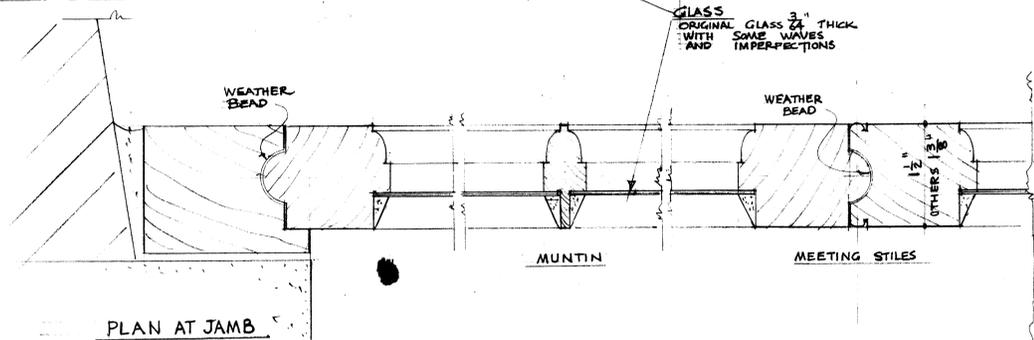
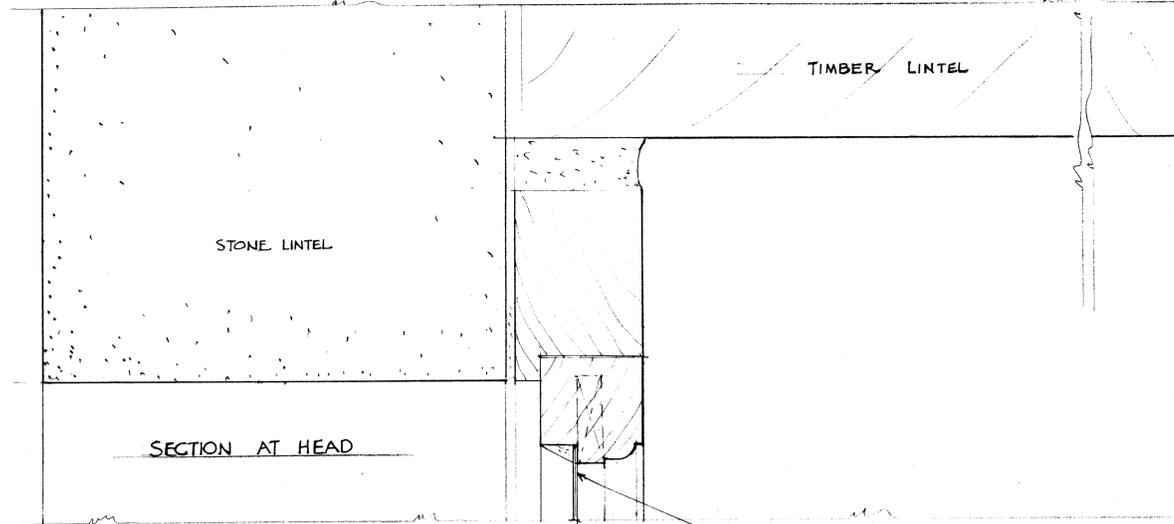
0 1 2 FEET 3 4 5 6 7 8 9 FEET

0 1 2 METRES

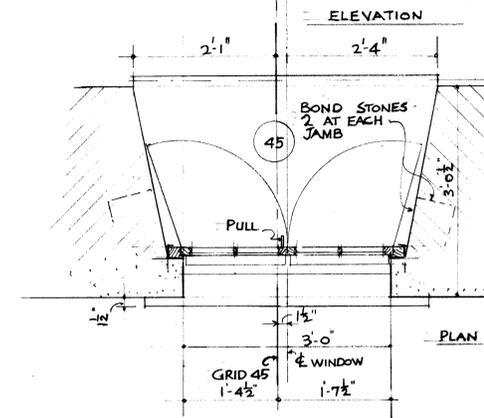
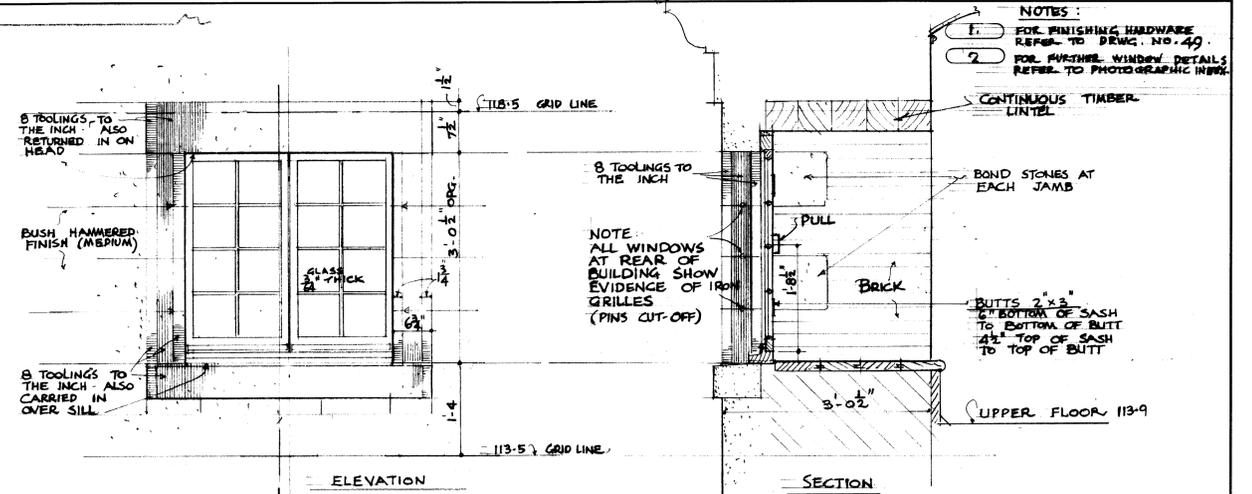
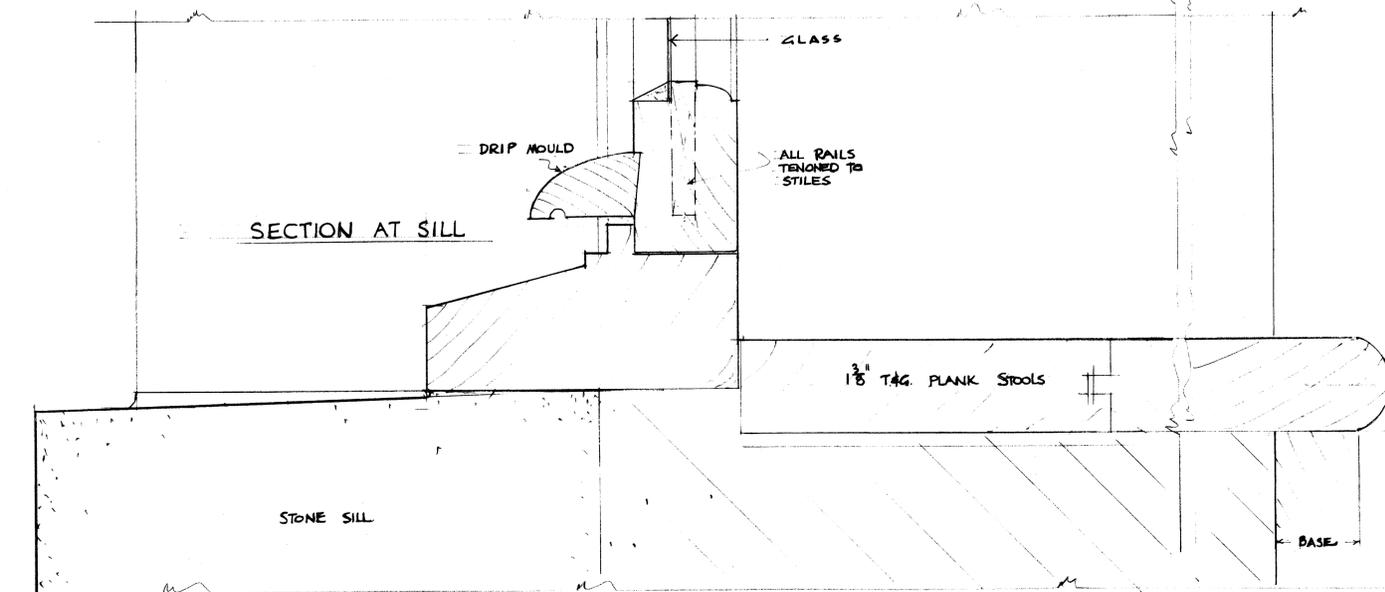
DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN DETAILS OF GROUND FLOOR WINDOWS	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1969	DWG. NO. 36
DRAWN BY TRACÉ PAR	SCALE ÉCHELLE	DATE	DATE				

114/03 REG-002 P.36

114/03/RE.1-2



FULL SIZE DETAILS OF UPPER FLOOR WINDOWS

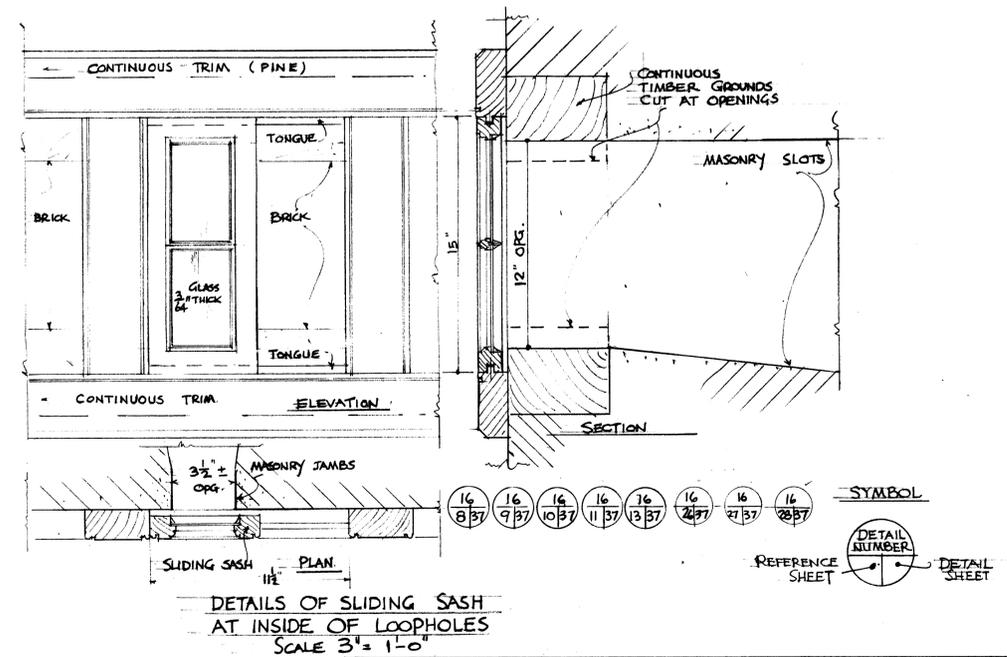


SCALE DETAILS OF UPPER FLOOR WINDOWS
SCALE 1" = 1'-0"

34
19/37

34
21/37

34
21/37



DETAILS OF SLIDING SASH AT INSIDE OF LOOPHOLES
SCALE 3" = 1'-0"

16
8/37

16
9/37

16
10/37

16
11/37

16
13/37

16
24/37

16
27/37

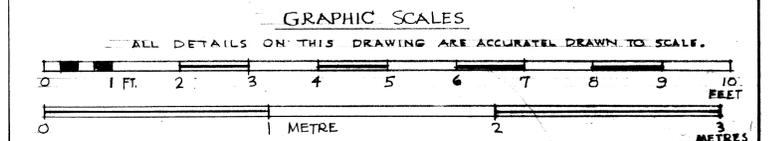
16
28/37

SYMBOL

DETAIL NUMBER

REFERENCE SHEET

DETAIL SHEET



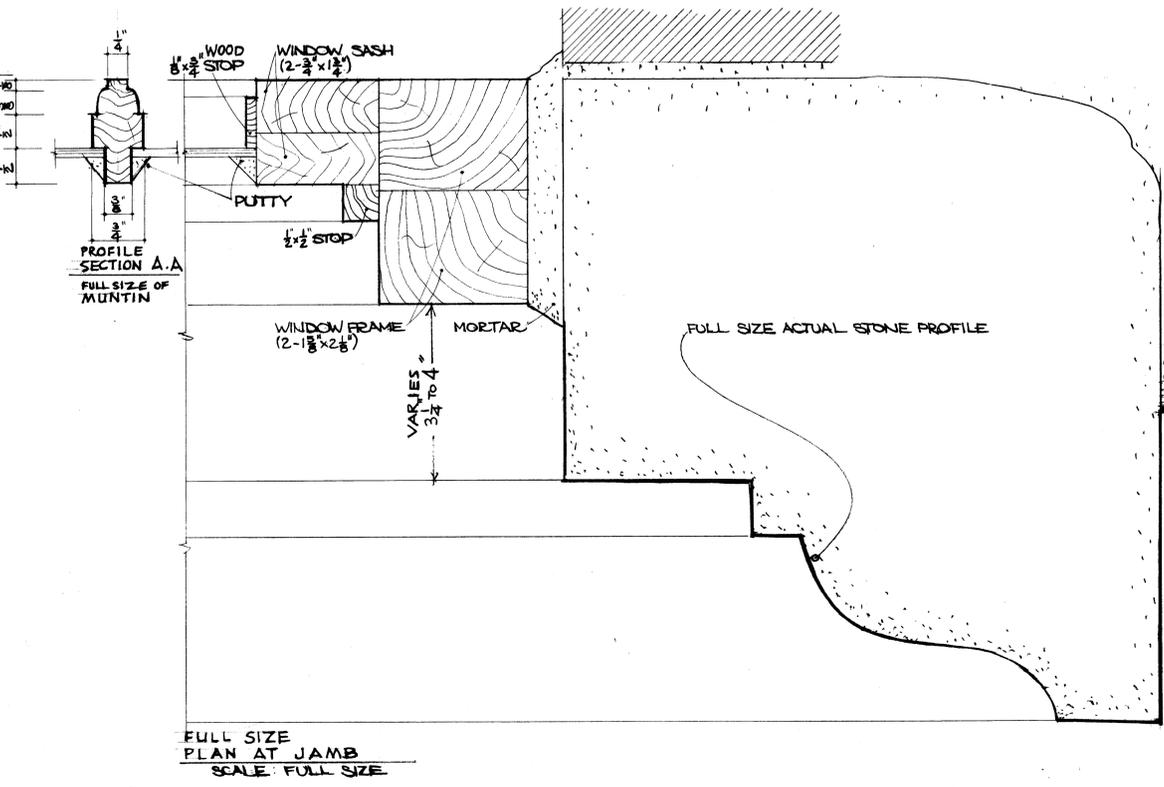
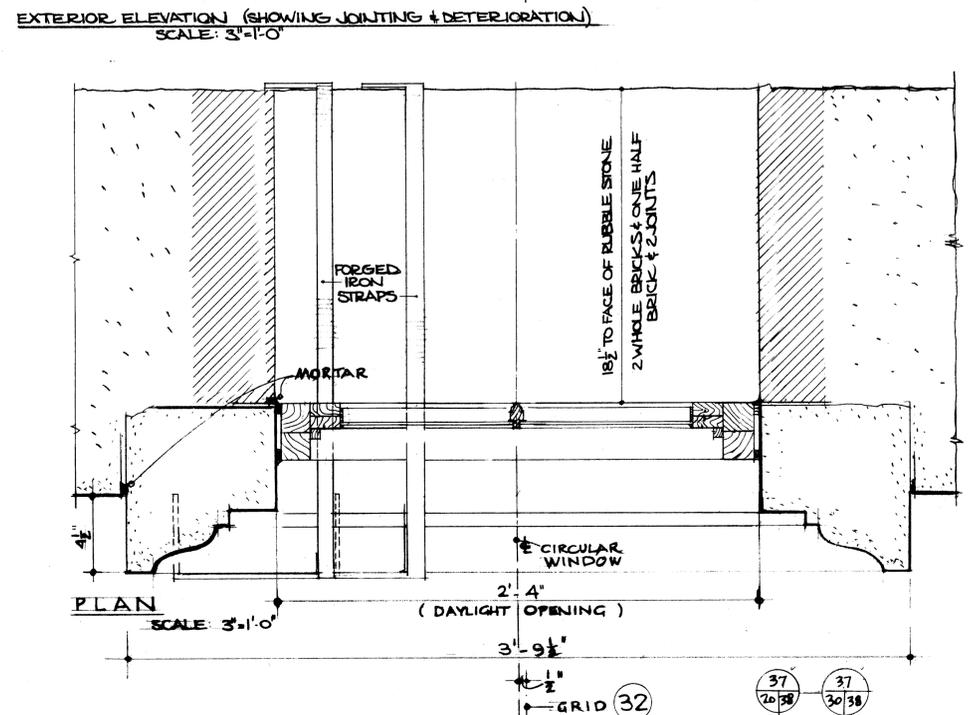
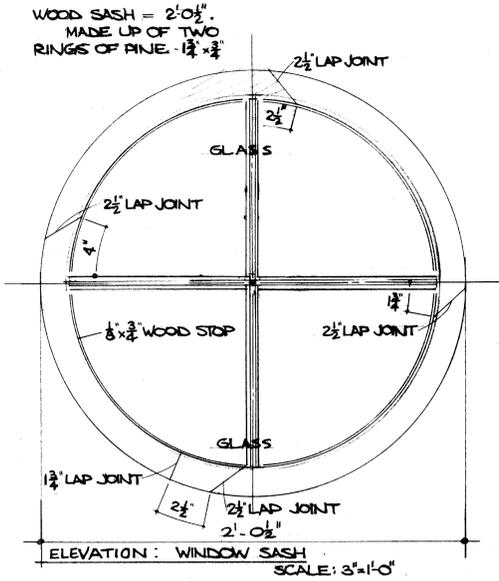
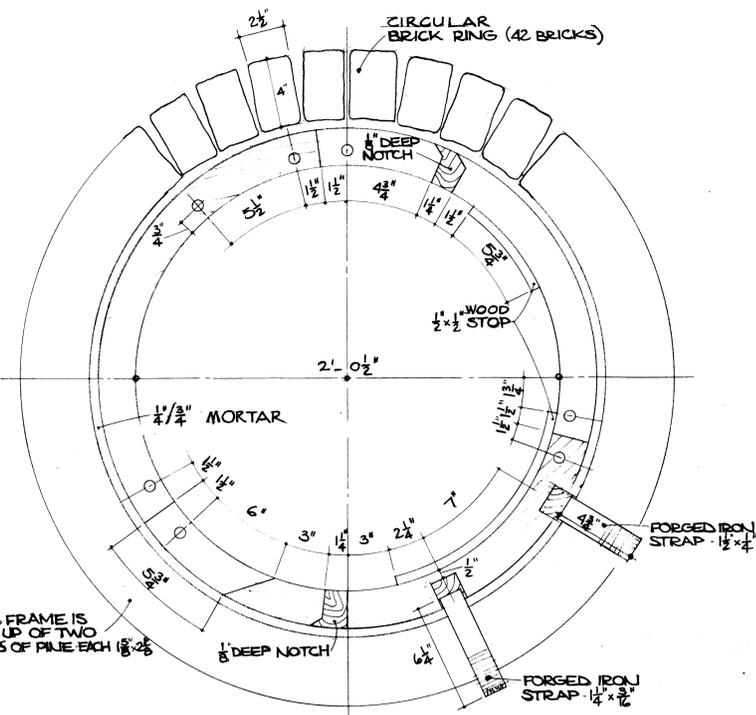
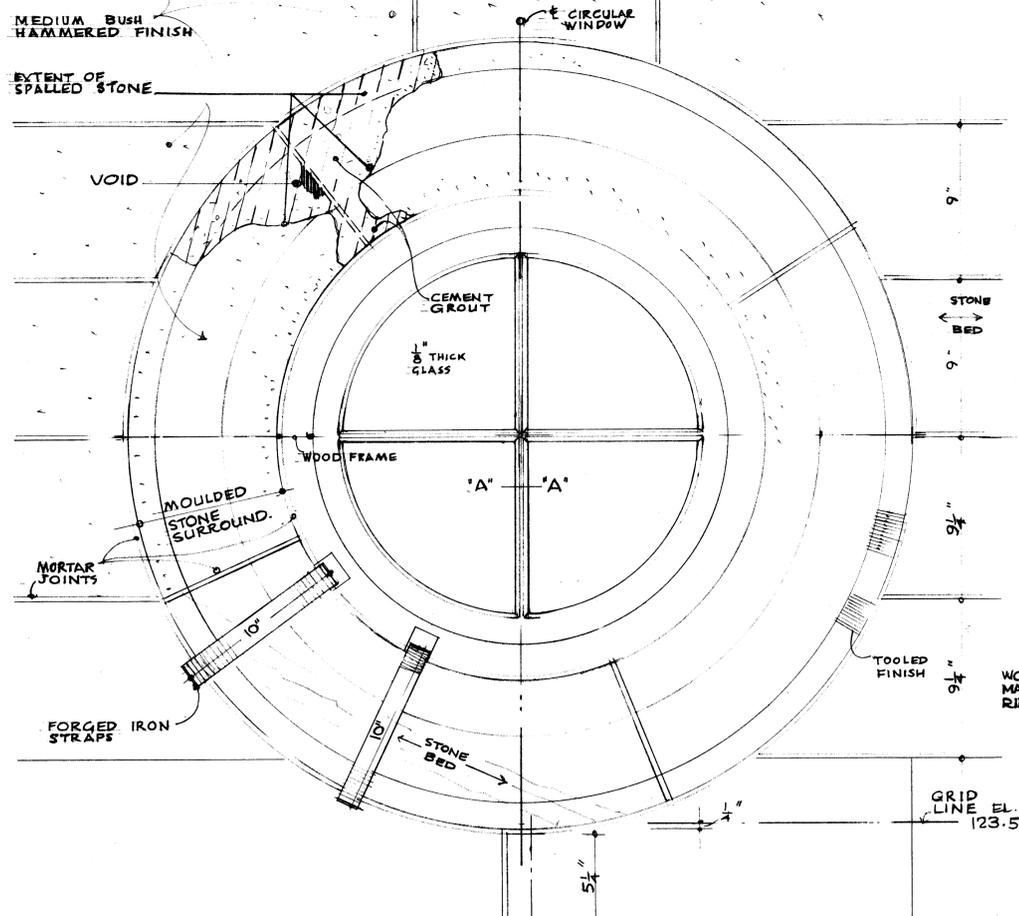
NO./N°	DESCRIPTION REVISIONS	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY/APP. REC. PAR	APP. BY/APP. PAR	DRAWING TITLE/TITRE DU DESSIN DETAILS-UPPER FLOOR WINDOWS SLIDING SASH AT LOOPHOLES	PROJECT TITLE/TITRE DU PROJET AS FOUND DRAWINGS: MENS BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1969	DWG. NO. DESIGN # 37
			DRAWN BY TRACÉ PAR	SCALE ÉCHELLE AS NOTED						

114/03/RE.1-2

114/03/RE.1-2
Fort Lennox Barracks
Details - upper floor windows &



NOTE:
1. REFER TO PHOTO 124 IN "AS FOUND" REPORT FOR IMPAIRMENT OF CIRCULAR WINDOW.

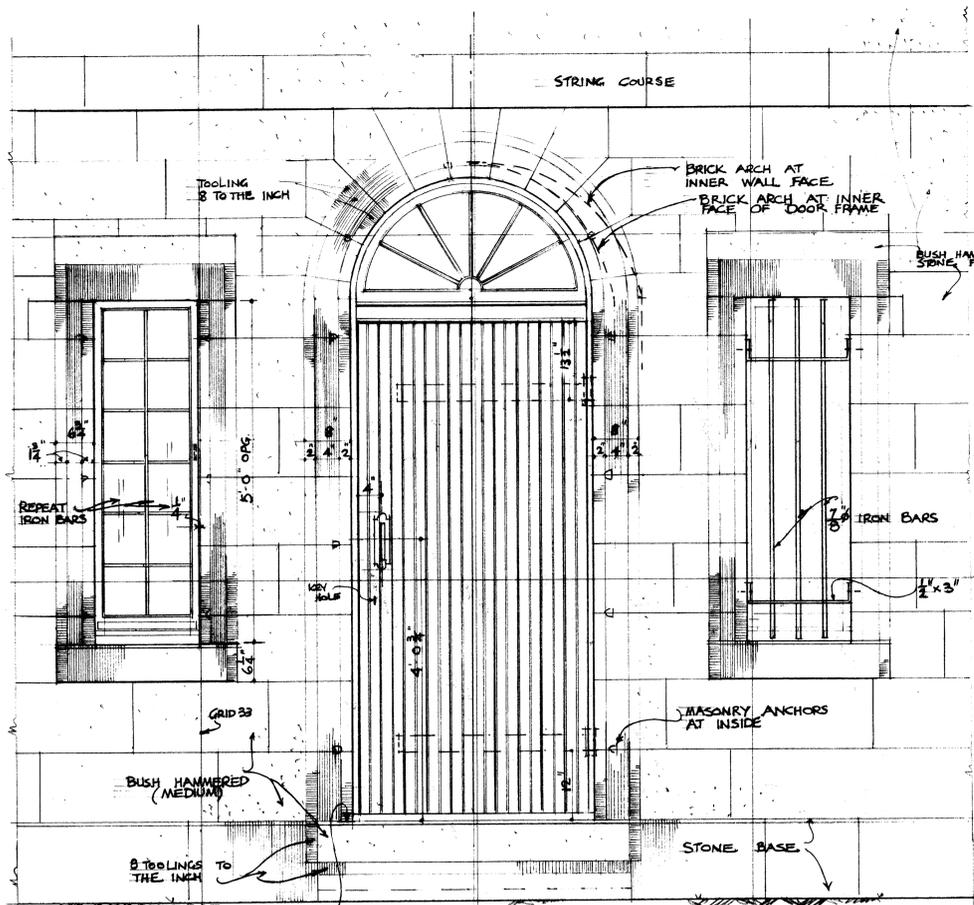


DETAIL NUMBER: 38
REFERENCE SHEET: []
DETAIL SHEET: []
GRAPHIC SCALE: ALL DETAILS ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.
0 3 IN. 6 IN. 9 IN. 1 FT. 2 FT.

114/03/RE-1-2
Fort. Lennox/Men's Barracks
Circular window in pediment-details

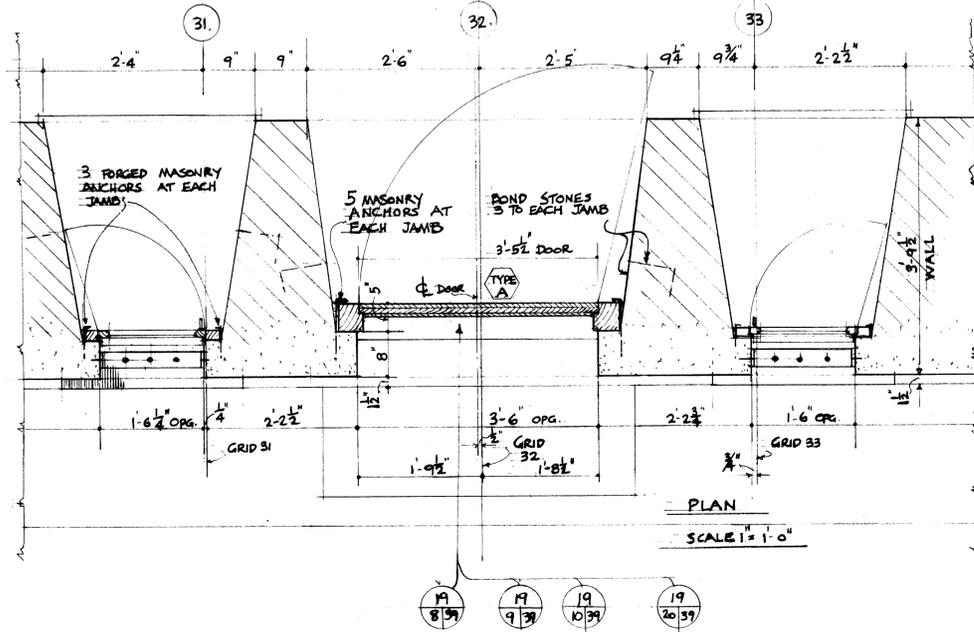
DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	FIG. NO.
DRAWN BY TRACÉ PAR	SCALE AS NOTED ÉCHELLE	DATE	DATE	CIRCULAR WINDOW IN PEDIMENT - DETAILS	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT 1969	38

114/03/RE-1-2

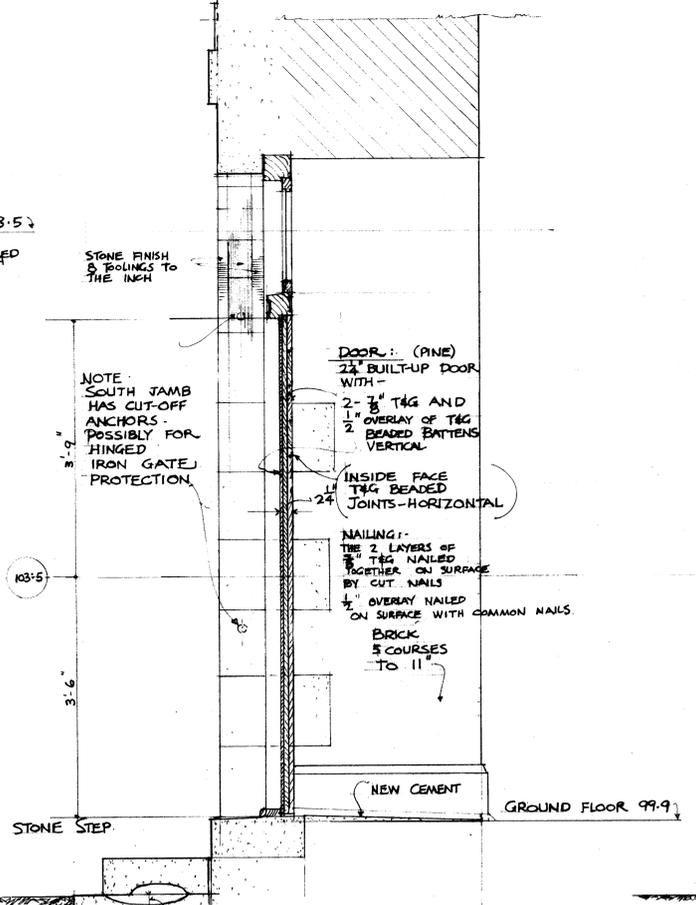


DATUM: ELEVATION 100.0
TOP OF STONE BASE AT
SOUTH SIDE OF DOORWAY
(ESTABLISHED DATUM FOR THIS BLOC.)

ELEVATION
SCALE 1"=1'-0"

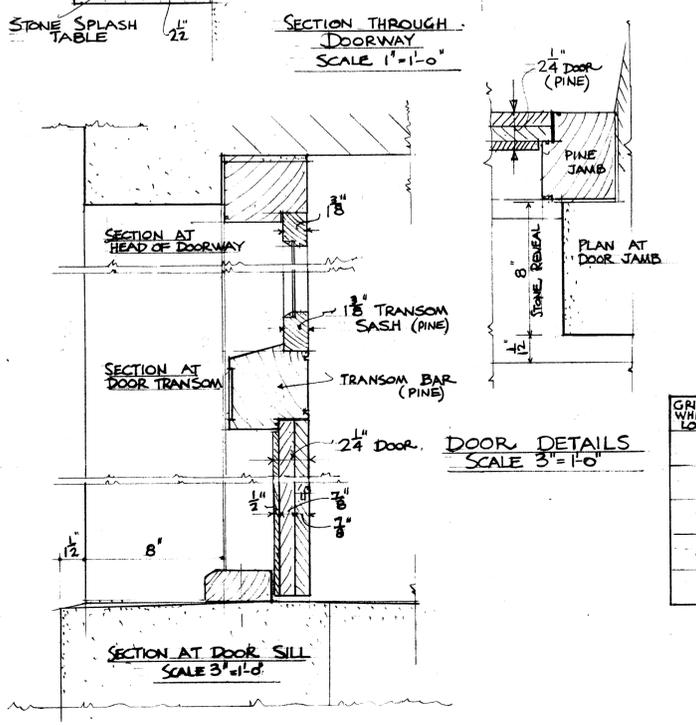


PLAN
SCALE 1"=1'-0"

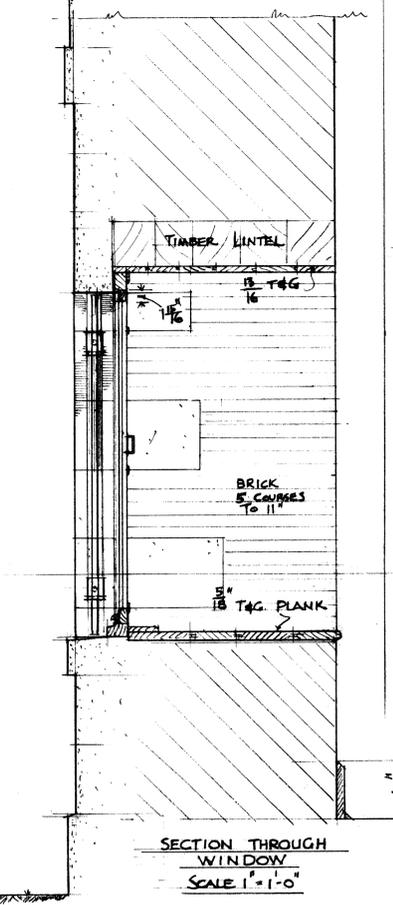


NOTE: SOUTH JAMB HAS CUT-OFF ANCHORS - POSSIBLY FOR HINGED IRON GATE/ PROTECTION.

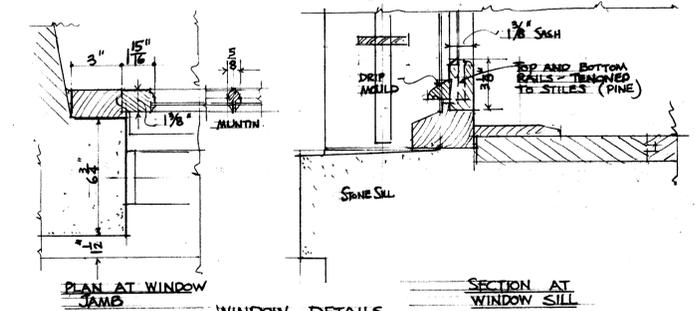
DOOR: (PINE)
2 1/2\"/>



SECTION THROUGH
DOORWAY
SCALE 1"=1'-0"



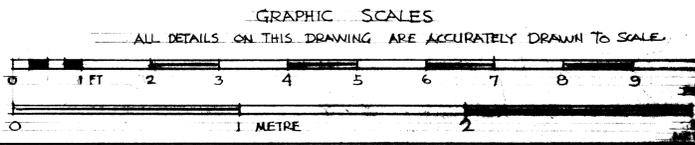
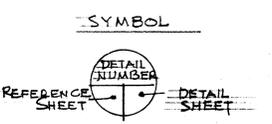
SECTION THROUGH
WINDOW
SCALE 1"=1'-0"



WINDOW DETAILS
SCALE 3"=1'-0"

TYPE A DOORS
GROUND FLOOR

GRID LINE WHERE LOCATED	WIDTH OF DOOR	HEIGHT OF DOOR	THICKNESS OF DOOR	WIND DOWN FROM SILL-CENTRE
9	3'-5 1/2"	7'-3"	2 1/4"	3/8"
19	3'-5 1/2"	7'-3"	2 1/4"	3/8"
32	3'-5 1/2"	7'-3"	2 1/4"	1/2"
45	3'-5 1/2"	7'-3 1/2"	2 1/4"	3/8"
55	3'-5 1/2"	7'-3"	2 1/4"	1/2"



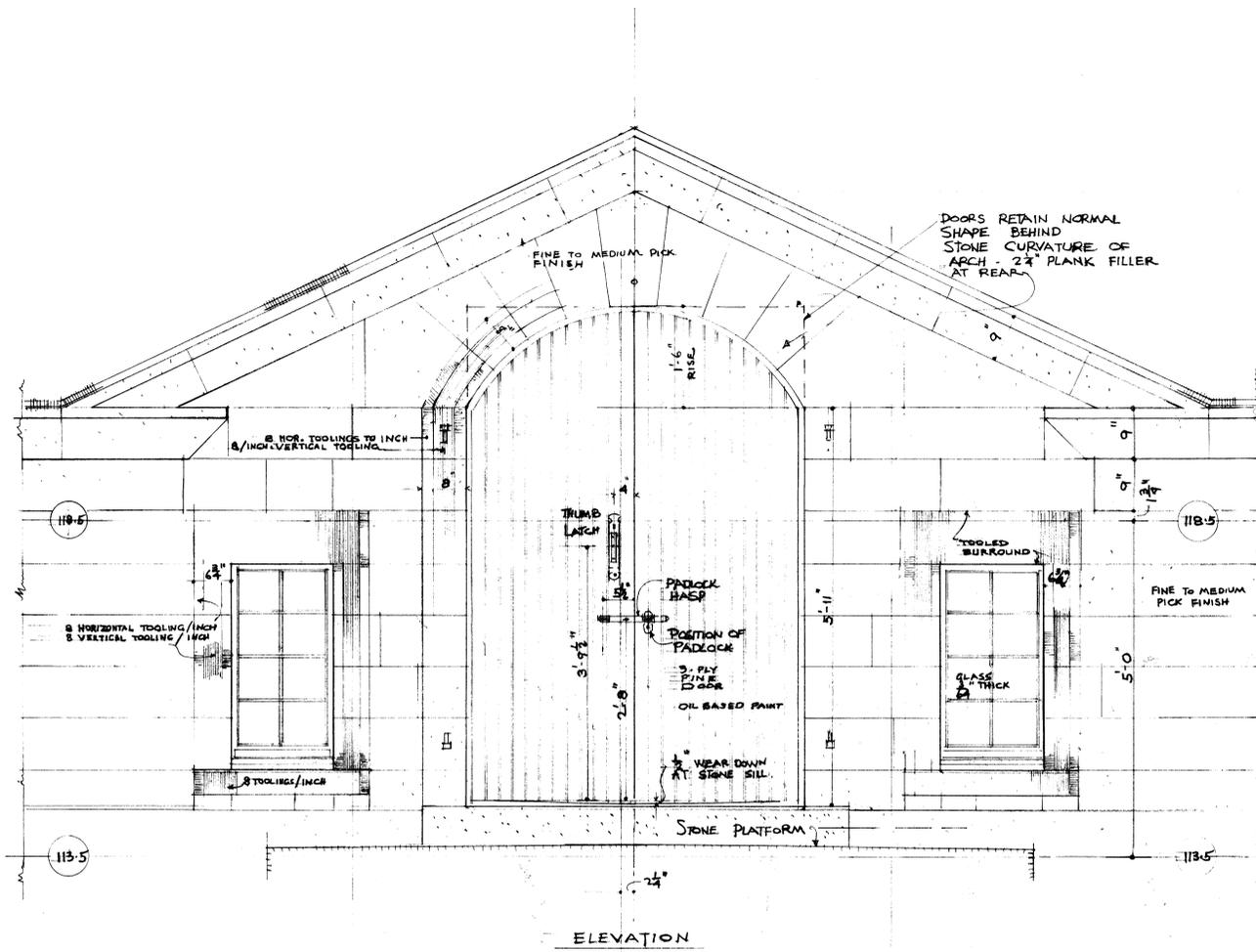
NOTES
1. FOR DETAILS OF FINISHING HARDWARE REFER TO DRAWING NO 47 AND 49

114/03/RE.1-2
Men's Barracks
Central entrance and type 'A' door...

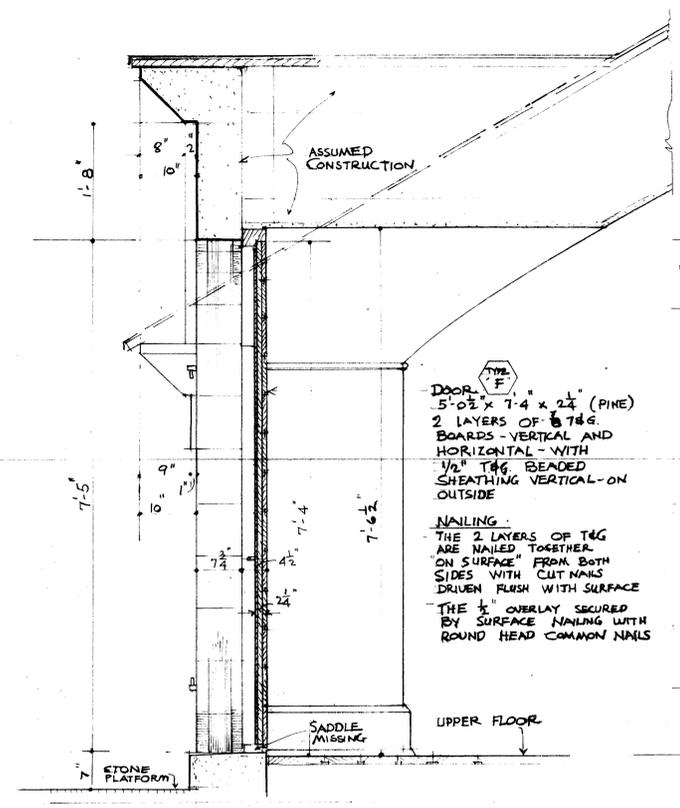
DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN CENTRAL ENTRANCE AND TYPE 'A' DOOR DETAILS	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1969	SHEET NO. 39
DRAWN BY TRACÉ PAR	SCALE ÉCHELLE AS NOTED	DATE	DATE				

114/03/RE.1-2

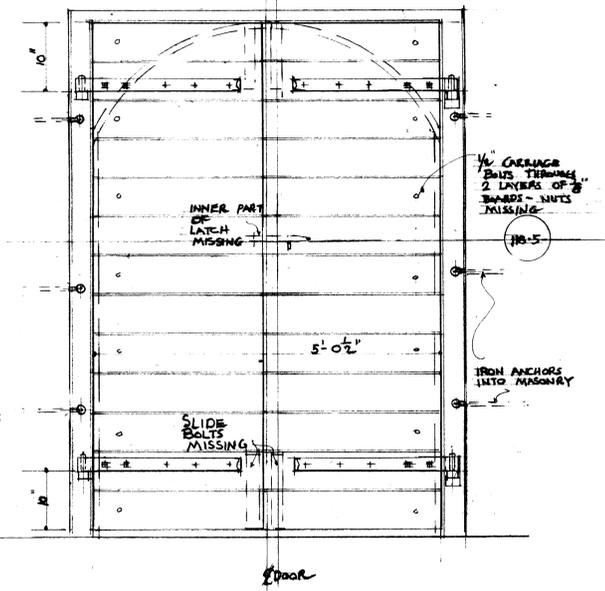
NOTES
1. FOR DETAILS OF FINISHING HARDWARE SEE DRAWING NO. 48.



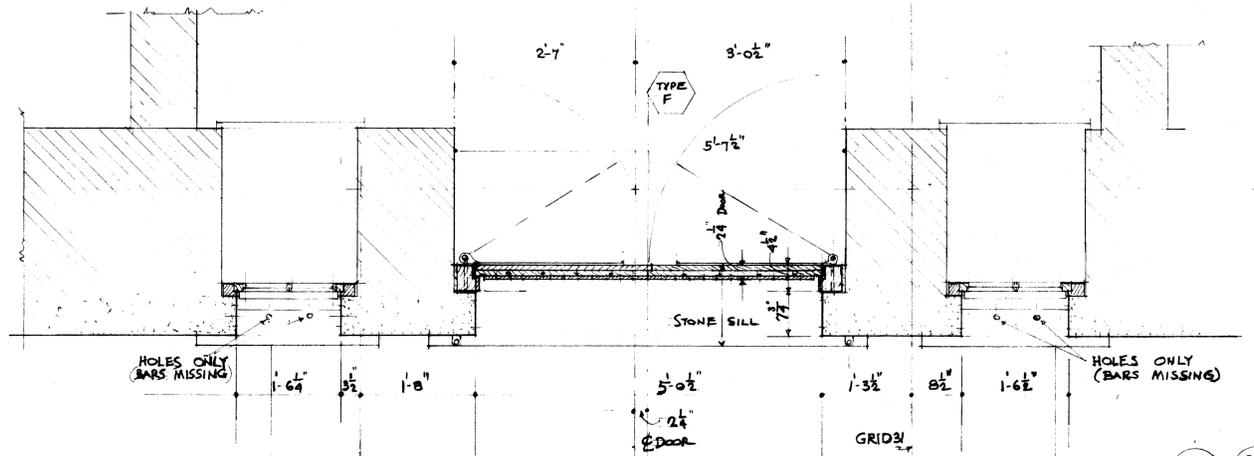
ELEVATION



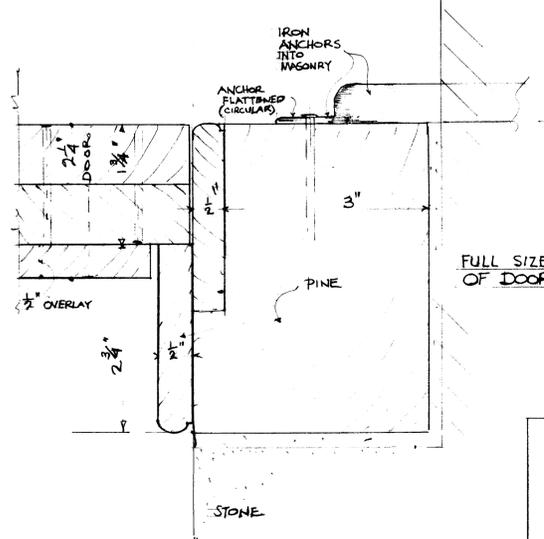
SECTION



INTERIOR ELEVATION
SCALE 1" = 1'-0"

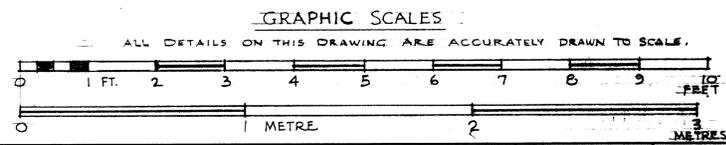


PLAN
SCALE 1" = 1'-0"



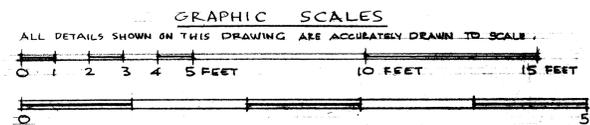
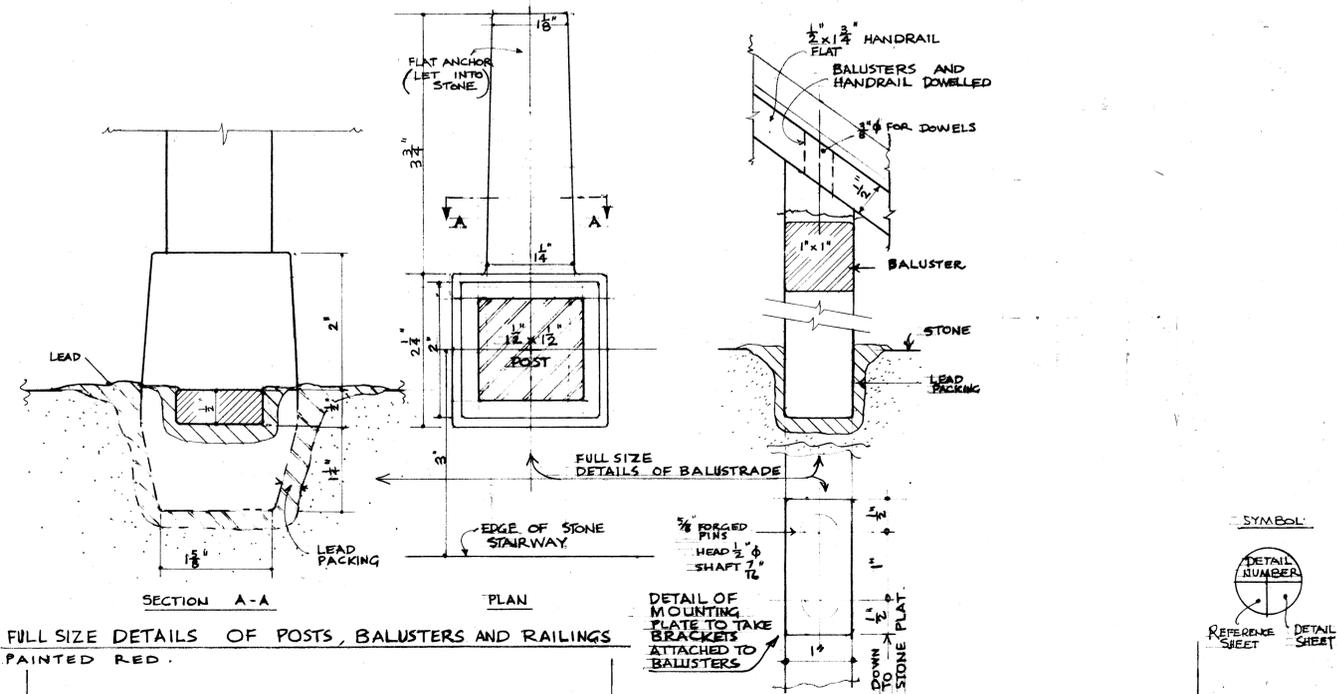
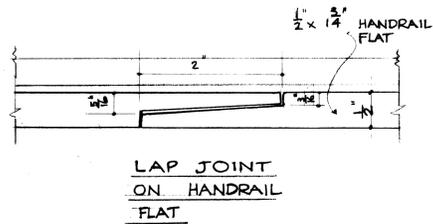
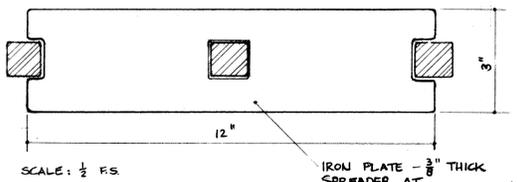
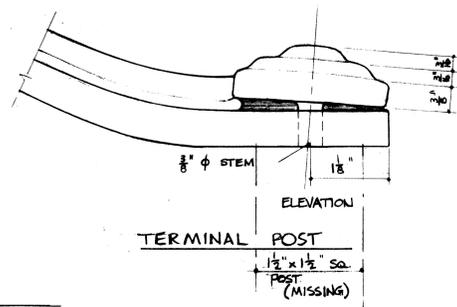
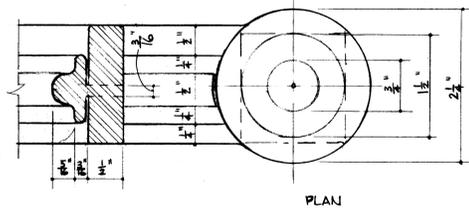
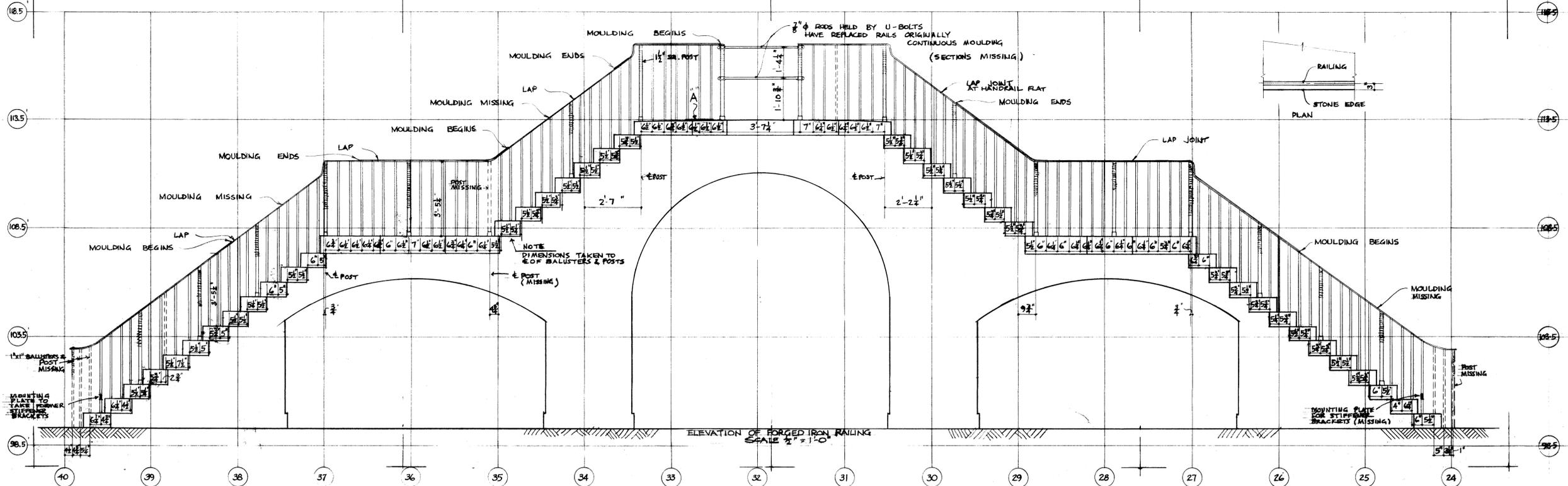
FULL SIZE DETAIL OF DOOR JAMB

SYMBOL
DETAIL NUMBER
REFERENCE SHEET
DETAIL SHEET



NO./N°	DESCRIPTION REVISIONS	DATE	DESIGNED BY ÉTABLI PAR C.S.P.	CHECKED BY VÉRIFIÉ PAR ÉCHELLE & FULL SIZES	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN DETAILS OF EXTERIOR DOOR TYPE "F" UPPER FLOOR	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MENS BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1969	DWG. NO. DESSIN N° 41
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114/03/RE.1-2

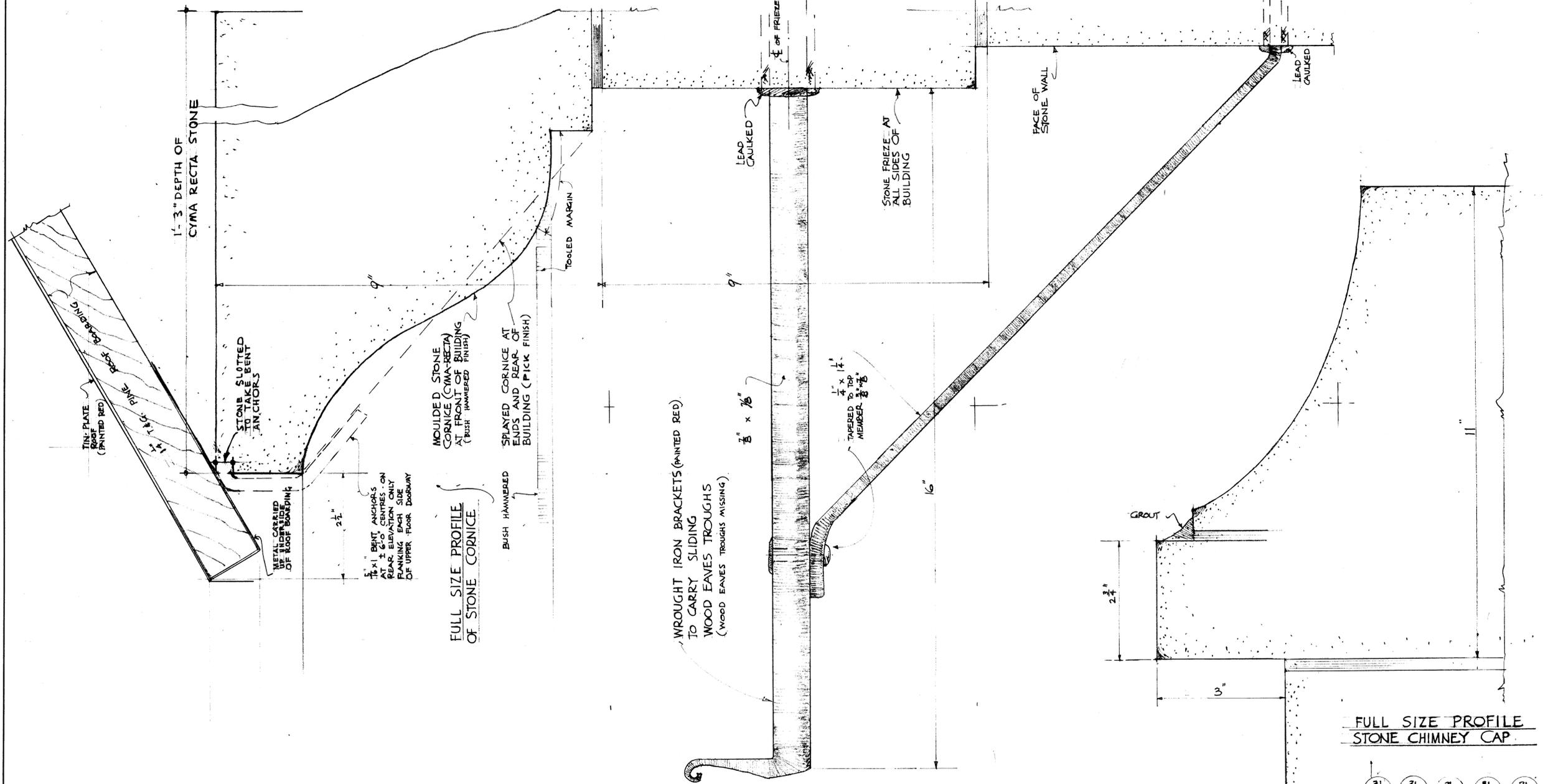


114/03/RE.1-2
Fort Lennox/Men's Barracks
Detail of iron railing, rear stairway

NO. / N°	DESCRIPTION / REVISIONS	DATE	DESIGNED BY / ÉTABLI PAR	CHECKED BY / VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. / DESSIN N°
			H.S.S.				DETAIL OF IRON RAILING / REAR STAIRWAY.	"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	43.

114/03/RE.1-2

114/03/RE.1-2
 44
 Full size details of stone work from...



FULL SIZE PROFILE OF STONE CORNICE

FULL SIZE PROFILE STONE CHIMNEY CAP

WROUGHT IRON BRACKETS (PAINTED RED) TO CARRY SLIDING WOOD EAVES TROUGHS (WOOD EAVES TROUGHS MISSING)

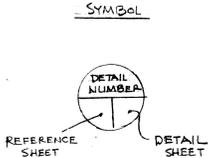
32 32 32
 19/44 20/44 21/44

31 31 31 31 31
 14/44 19/44 20/44 21/44 23/44

FULL SIZE DETAIL OF WROUGHT IRON BRACKETS TO SUPPORT EAVES TROUGHS

33 33 33
 19/44 20/44 24/44

NOTE 1
 ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.



NO./N°	DESCRIPTION	DATE
	REVISIONS	

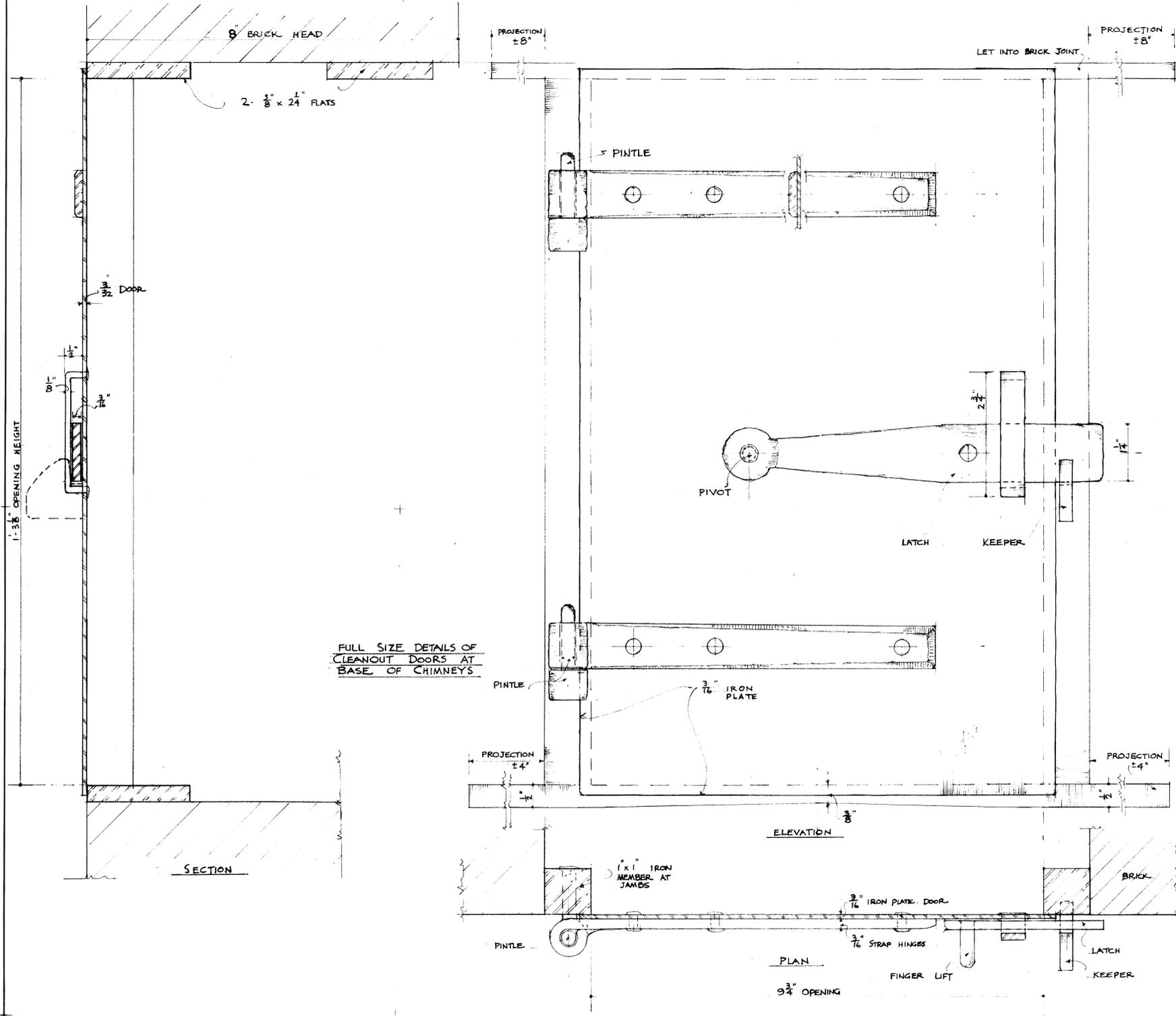
DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR
DRAWN BY C.S.P. TRACÉ PAR	SCALE FULL SIZE ÉCHELLE	DATE

APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN
<i>Handwritten Signature</i>	FULL SIZE DETAILS OF STONE WORK - IRON BRACKETS AT EAVES

PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO.
"AS FOUND" DRAWINGS: FORT LENNOX FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	44

REF. NO. / REF. N°	114/03/RE.1-2
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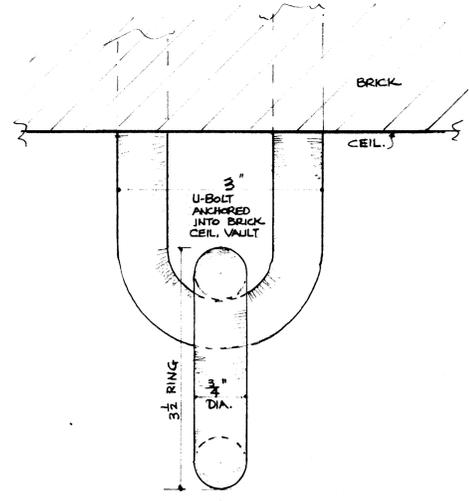
114/03/RE.1-2



FULL SIZE DETAILS OF CLEANOUT DOORS AT BASE OF CHIMNEYS

CLEANOUT DOORS AT BASE OF CHIMNEYS
10 DOORS SIMILAR
DISTANCE FROM FINISHED FLOOR TO BOTTOM OF DOOR OPENING, 2'-4"

26
12 45

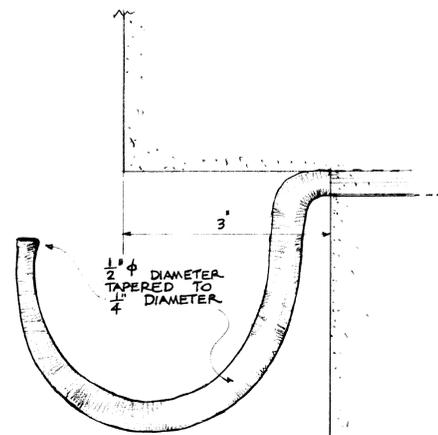


FULL SIZE DETAIL OF ANCHORED CEILING RING

ANCHORED RINGS AT VAULTED CEILING OF GROUND FLOOR

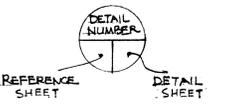
27
15 45

46
25 45
IRON HOOK AT CHIMNEYS
TOTAL 3:
1 AT NORTH SIDE CHIMNEY #1
1 " " " " #4
1 " SOUTH " " #5



FULL SIZE DETAIL OF IRON HOOK

SYMBOL



ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN CLEANOUT DOORS AT CHIMNEYS, CEILING RINGS AT GROUND FLOOR, IRON HOOKS AT CHIMNEYS.	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MENS BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT 1969	DWG. NO. DESSIN N° 45
	REVISIONS		DRAWN BY TRACÉ PAR	SCALE FULL SIZE ÉCHELLE	DATE	DATE				

114/03/RE.1-2
Fort Lennox/Men's barracks
Cleanout doors at chimneys ceiling...

114/03/RE.1-2

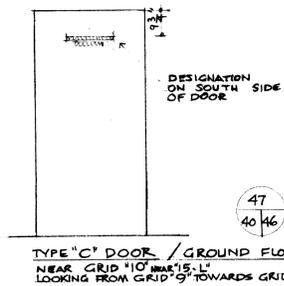


OVERPAINTED LETTER

← DOOR

Married. Qrs N^o 1.
2 Families.

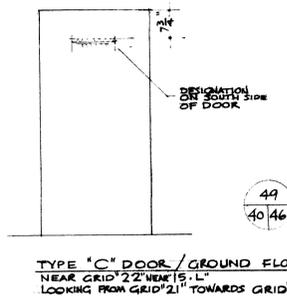
OFF WHITE COLOUR ORIGINAL PAINT SURFACES
RECENT BLUE GREY PAINT SURFACES



← DOOR

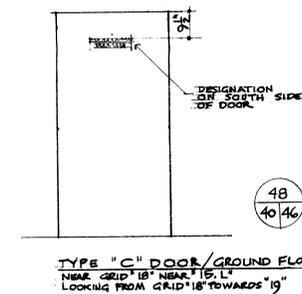
Married. Qrs N^o 4
2 Families.

OFF WHITE



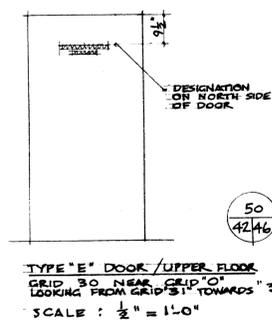
Married. Qrs N^o 2
2 Families

ANTIQUE BLACK LETTERS



Soldrs Qrs N^o 2
78 Men.

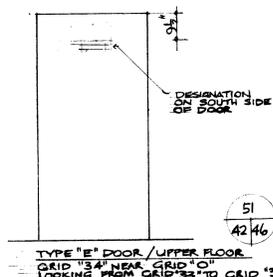
YELLOW BACKGROUND



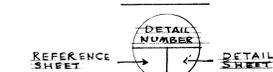
OVERPAINTED LETTER

Soldrs Qrs N^o 1
78 Men.

OVERPAINTED LETTER



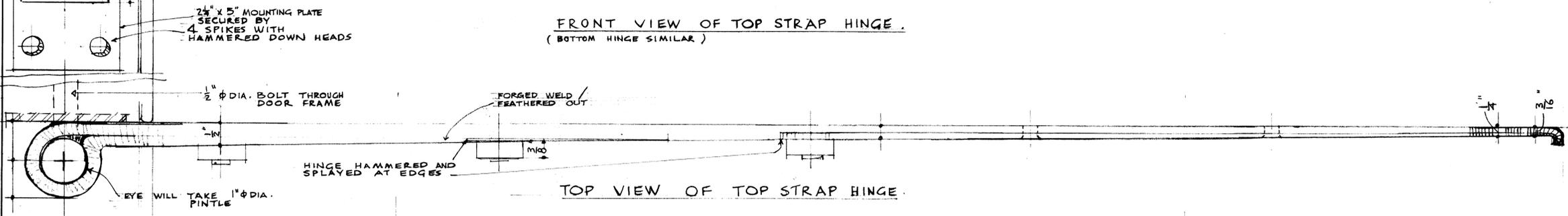
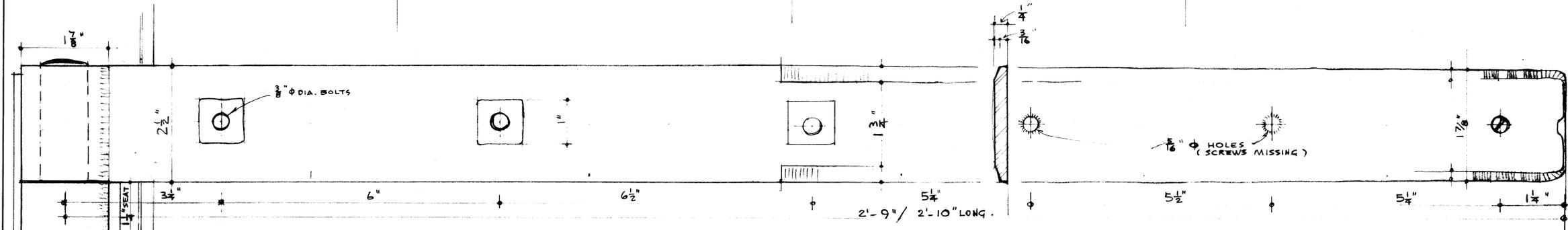
SYMBOL



ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.

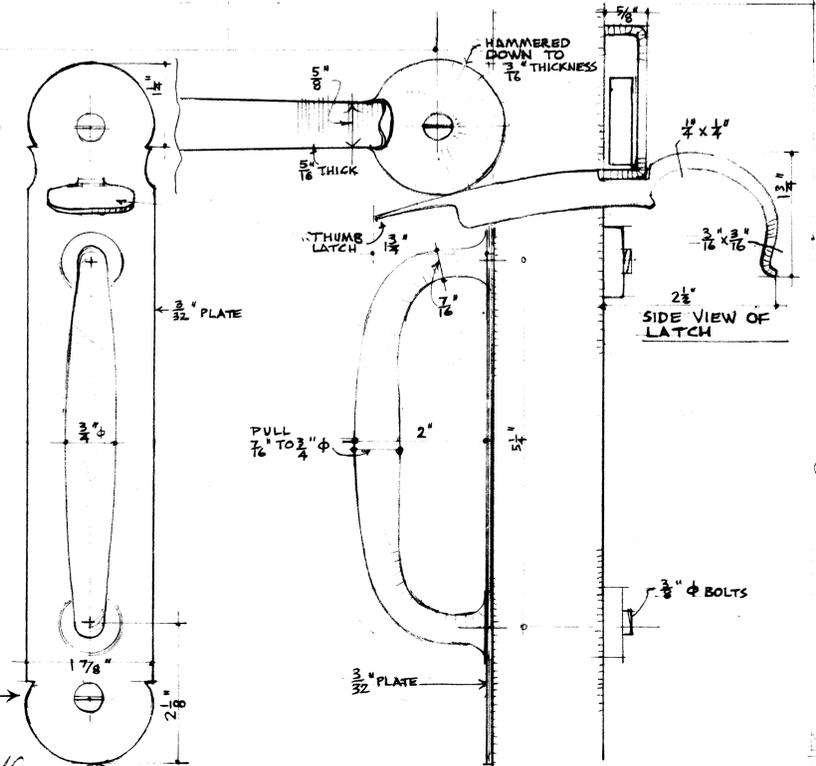
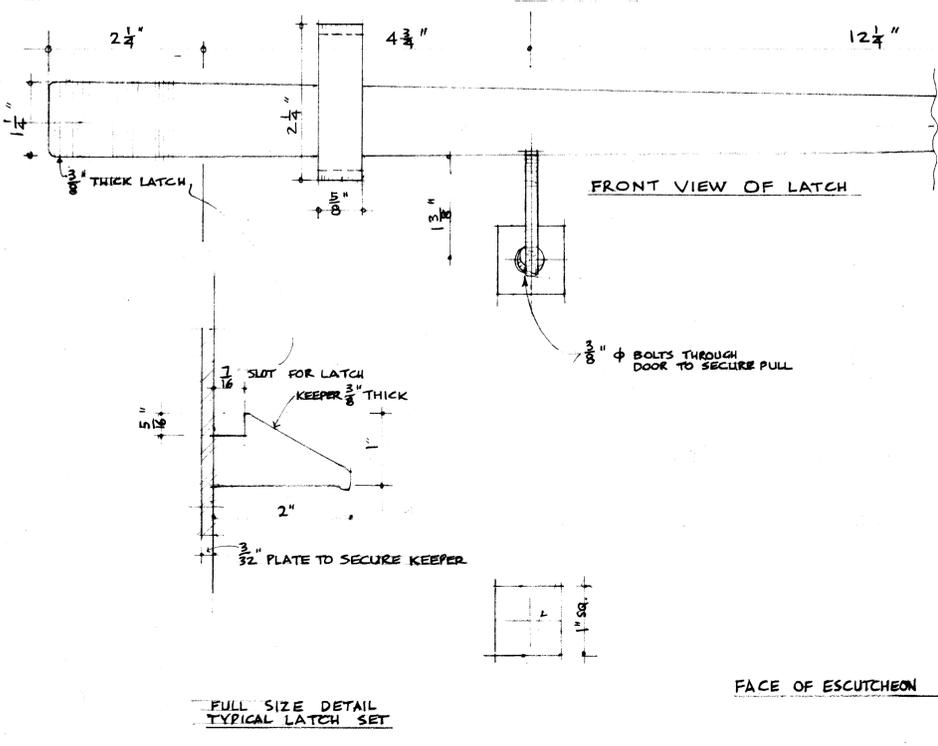
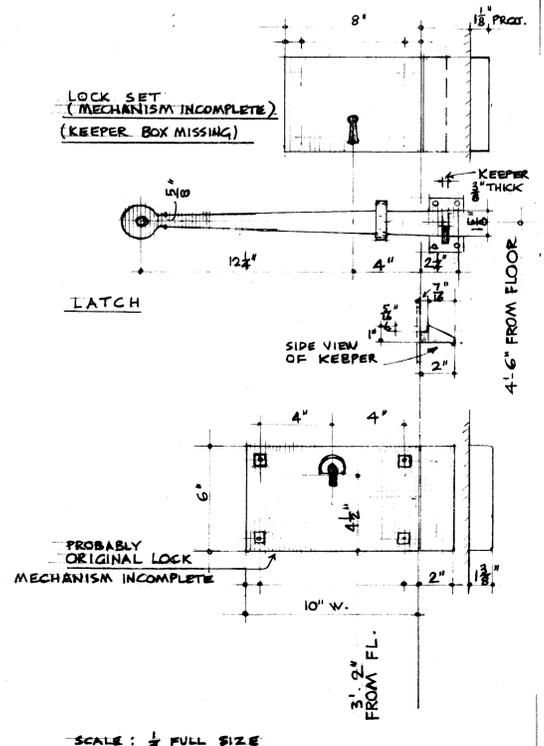
DESIGNED BY / ÉTABLI PAR			CHECKED BY / VÉRIFIÉ PAR			APP. REC. BY / APP. REC. PAR			APP. BY / APP. PAR			DRAWING TITLE / TITRE DU DESSIN			PROJECT TITLE / TITRE DU PROJET			DATE			DWG. NO. / DESSIN N ^o		
DRAWN BY / TRACÉ PAR			SCALE FULL SIZE & ÉCHELLE 1/2" = 1'-0"			DATE			DATE			PAINTED LETTERING ON DOORS			"AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENOX NATIONAL HISTORIC PARK			OCT. 1969			46.		
NO. / N ^o			DESCRIPTION / REVISIONS			DATE																	

46
114/03/RE.1-2
Fort Lennox/Men's barracks
Painted lettering on doors



52 FORGED IRON STRAP HINGE LOCK SET FOR DOORS TYPE "A" GROUND FLOOR (NEAR GRID 9) (NEAR GRID 9 / PROBABLY ORIGINAL SET / MECHANISM INCOMPLETE) SCALE: 1/2" FULL SIZE

53 FULL SIZE DETAIL OF TYPICAL LATCH SET FOR TYPE "C" DOORS AT GROUND FLOOR (HARDWARE FOR TYPE "B" SIMILAR / MOST OF HARDWARE MISSING / ALL TYPE "B" DOORS MISSING)



NOTE:
1. SPACING OF BOLTS AND WOOD SCREWS VARY SLIGHTLY FROM HINGE TO HINGE.

SYMBOL

REFERENCE SHEET

DETAIL NUMBER

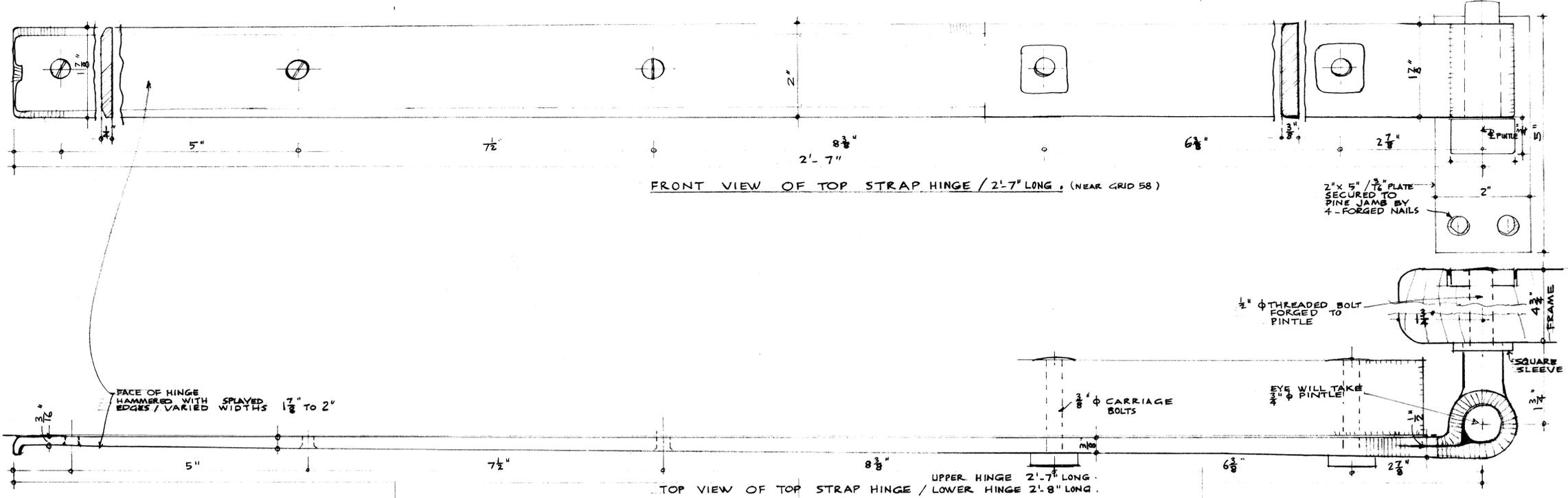
DETAIL SHEET

ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.

NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN HARDWARE FOR DOORS TYPES "A" AND "C"	PROJECT TITLE / TITRE DU PROJET "AS FOUND" DRAWINGS: MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	DATE OCT. 1969	DWG. NO. DESSIN N° 47.
REVISIONS			DRAWN BY TRACÉ PAR	SCALE: FULL SIZE & ÉCHELLE: FULL SIZE	DATE	DATE				

114/03/RE.1-2
Fort Lennox/Men's barracks
Hardware for doors types "A" and "C"

114/03/RE.1-2



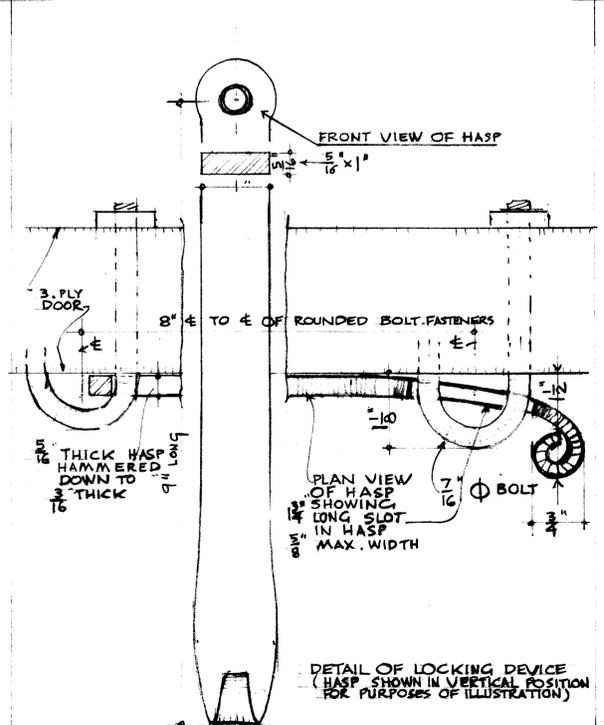
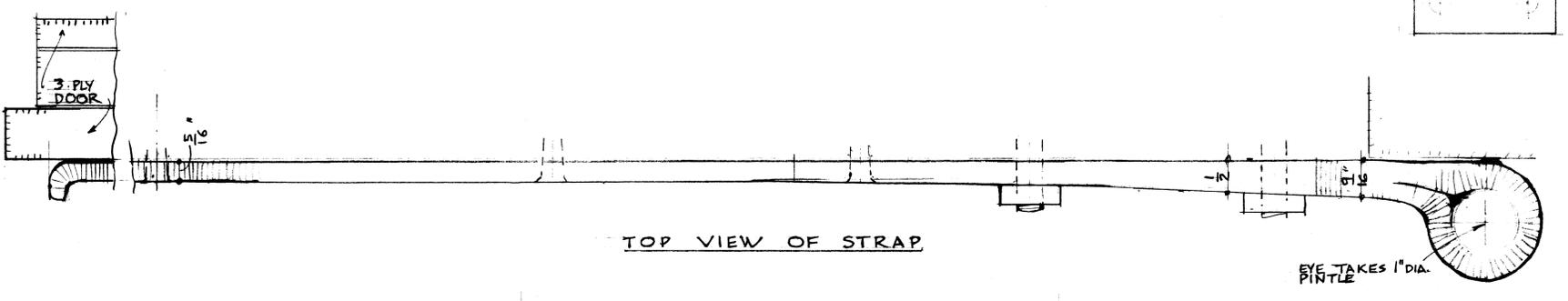
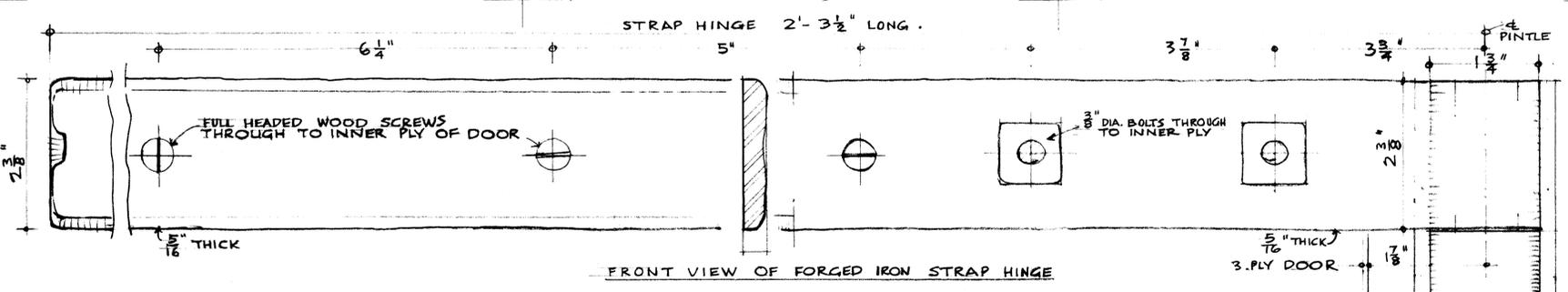
53
40 47

53
40 48

FULL SIZE DETAIL OF STRAP HINGES / TYPE "C" DOORS / GROUND FLOOR (REFER TO DRWG. NO. 47 FOR OTHER HARDWARE FOR THESE DOORS)

56
41 48

FULL SIZE DETAIL OF FORGED IRON STRAP HINGES AND LOCKING BOLT TYPE "F" DOOR / UPPER FLOOR AT GRID 32



SYMBOL

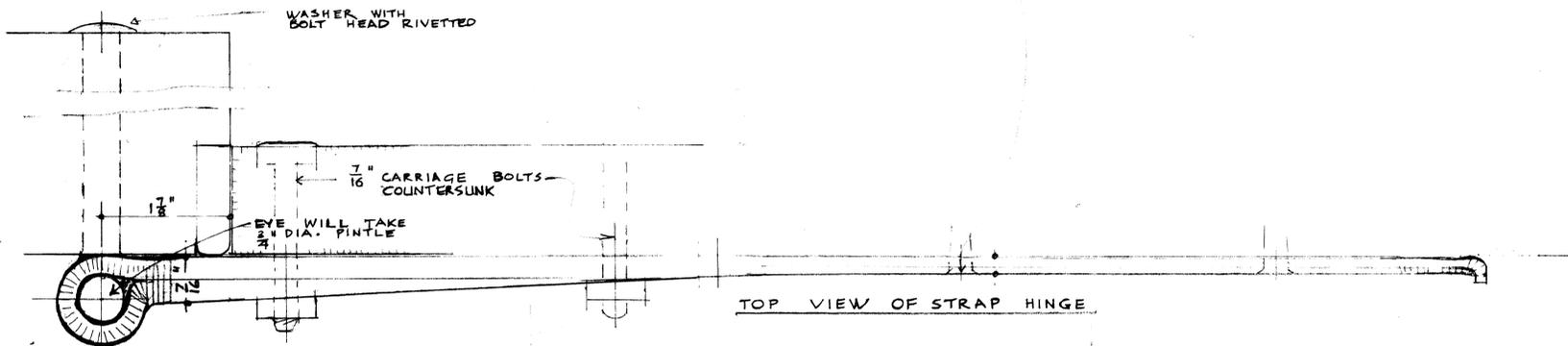
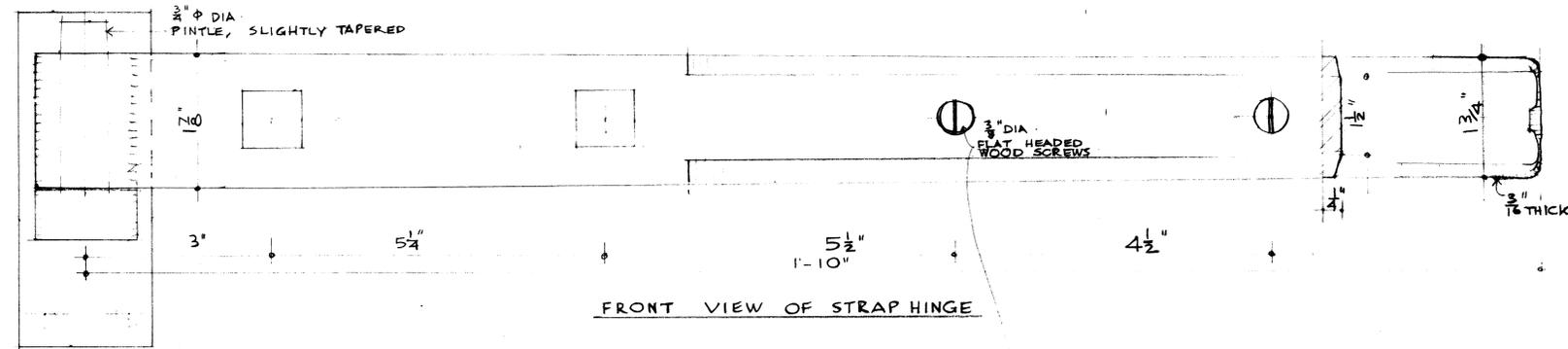
DETAIL NUMBER

REFERENCE SHEET

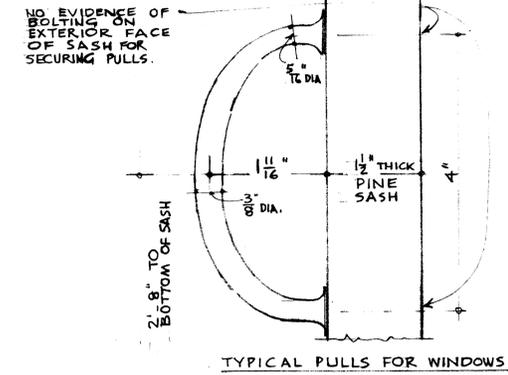
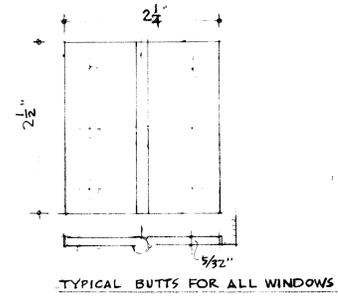
DETAIL SHEET

ALL DETAILS SHOWN ON THIS DRAWING ARE ACCURATELY DRAWN TO SCALE.

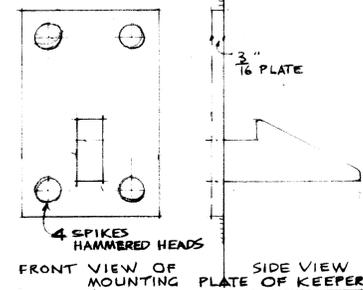
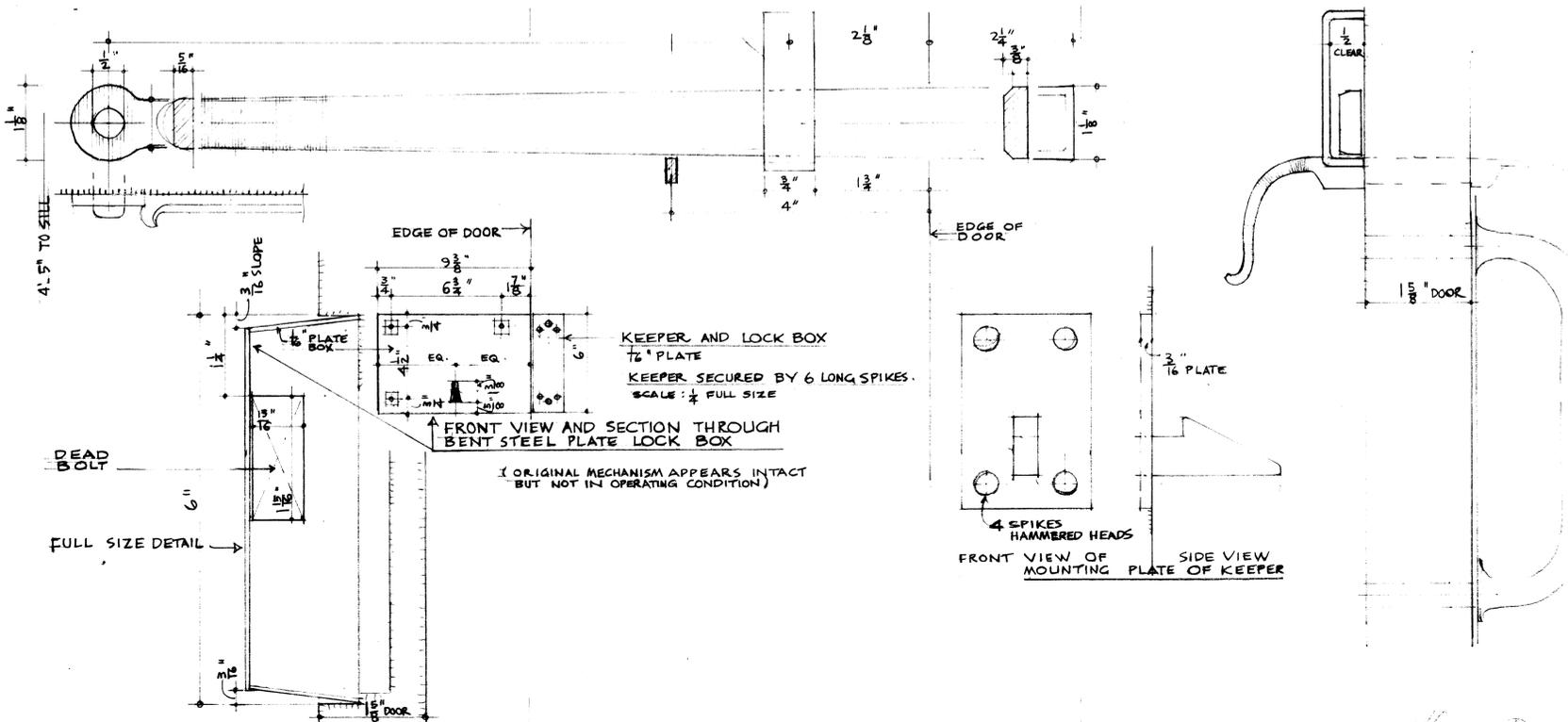
NO./N°	DESCRIPTION	DATE	DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. DESSIN N°
	REVISIONS		HAIN.				DETAIL OF HARDWARE FOR DOOR TYPES "C" AND "F"	"AS FOUND" DRAWINGS : MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK	OCT. 1969	48



FULL SIZE DETAILS OF HARDWARE
DOOR TYPES "D" AND "E" / UPPER FLOOR. 54
42 49

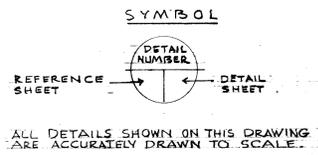


55 HARDWARE FOR WINDOWS /
GROUND AND UPPER FLOORS. 55 55
36 49 37 49 39 49



NO./N°	DESCRIPTION	DATE
	REVISIONS	

DESIGNED BY ÉTABLI PAR	CHECKED BY VÉRIFIÉ PAR	APP. REC. BY / APP. REC. PAR	APP. BY / APP. PAR	DRAWING TITLE / TITRE DU DESSIN	PROJECT TITLE / TITRE DU PROJET	DATE	DWG. NO. DESSIN N°
DRAWN BY HAI	SCALE 7/8 F.S. & ÉCHELLE 3/4 FULL SIZE	DATE	DATE	HARDWARE FOR DOOR TYPES "D" AND "E" / UPPER FLOOR / HARDWARE FOR WINDOWS	"AS FOUND" DRAWINGS : MEN'S BARRACKS FORT LENNOX NATIONAL HISTORIC PARK.	OCT. 1969	49



114/03/RE.1-2
Fort Lennox/Men's barracks
hardware for door types "D" and "E"...

114/03/RE.1-2

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project

Projet / Project no. PRO-1396

Notes importantes pour la lecture du tableau

- Lorsqu'une vitre est à remplacer, prévoir aussi l'enlèvement et la réinstallation des petits bois ainsi que le mastic à refaire sur les 4 côtés de la vitre.
- Lorsque la mastic d'un petit bois est à refaire, prévoir l'enlèvement et la réinstallation du petits bois.
- Les notes sur les élévations de chacune des fenêtres sont complémentaire au tableau. En cas de non concordance avertir immédiatement l'Architecte.
- Pour les besoins de la soumissions, prévoir le remplacement complet des éléments de quincaillerie Indiqué R (à réparer et/ou à remplacer). Le remplacement ou la réparation des éléments sera coordonnés en chantier, selon les conditions existantes.
- Les vitres seront fournis par Parcs Canada, l'installation sera faites par l'entrepreneur.
- Si les fenêtres sont complètement retirées pour procéder aux travaux de restauration (à la discrétion de l'entrepreneur et avec l'approbation de Parcs Canada), prévoir des installations temporaires pour condamner l'ouverture. Prévoir aussi le ragréage des pierres et leurs joints de mortier adjacents à l'ouverture et ayant pu être abîmés par les travaux de restauration.

LÉGENDE

D : À DÉCAPER

H : À HUILER

M : MASTIC À REFAIRE

P : RÉPARATION AU PUTTY

R : À RÉPARER ET/OU À REMPLACER

V : VIS MANQUANTE(S)

* : OUVERTURE NON-OPÉRATIONNELLE À MOINS D'OUVRIR LE LOQUET À COUP DE MARTEAU

? : À VALIDER EN CHANTIER

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- LÉGENDE**
 D : À DÉCAPER
 H : À HUILER
 M : MASTIC À REFAIRE
 P : RÉPARATION AU PUTTY
 R : À RÉPARER ET/OU À REMPLACER
 V : VIS MANQUANTE(S)
 * : OUVERTURE NON-OPÉRATIONNELLE À MOINS D'OUVRIR LE LOQUET À COUP DE MARTEAU
 ? : À VALIDER EN CHANTIER

FENÊTRE / WINDOW

TYPE

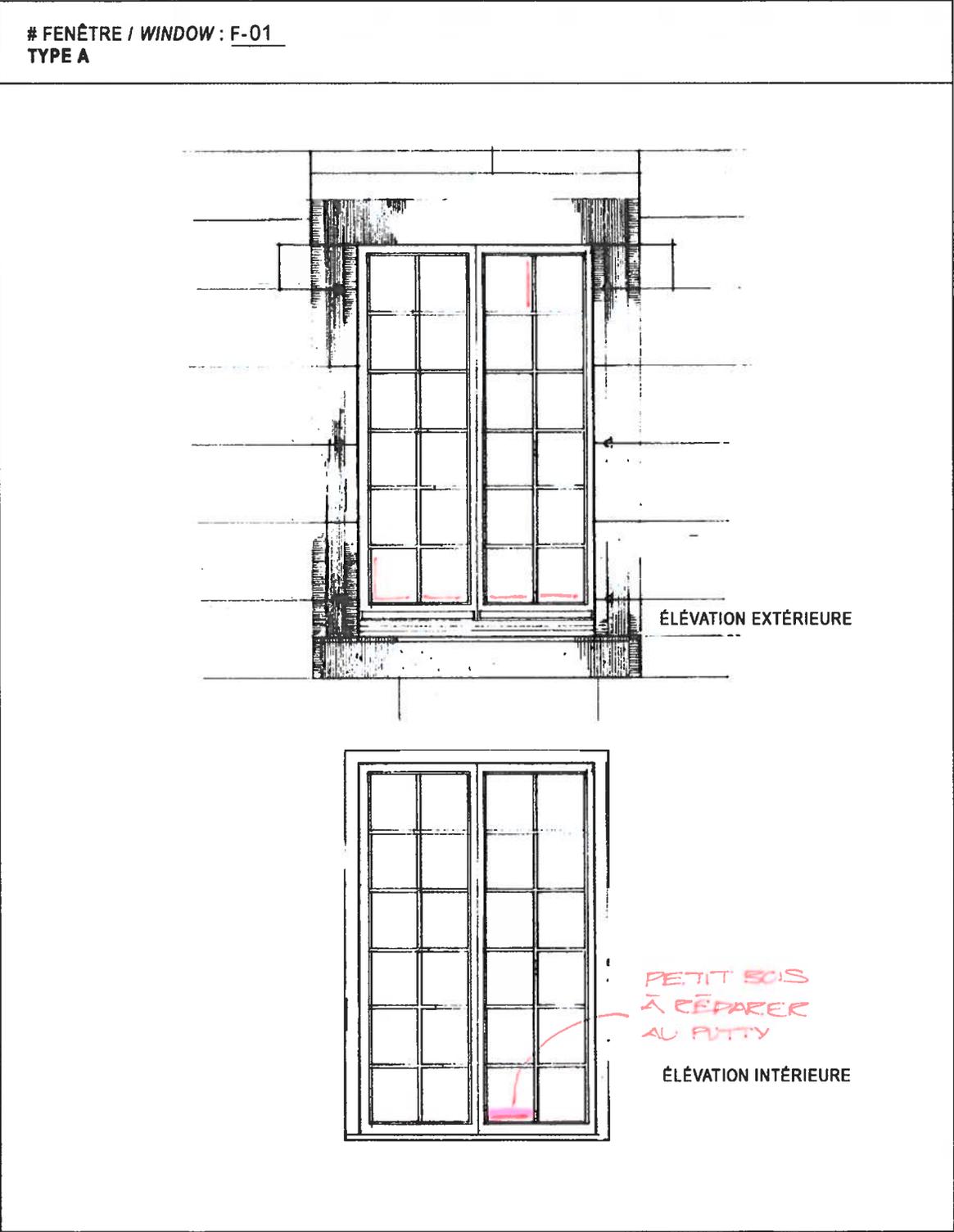
BOIS POURRI / DECAYED WOOD	QUINCAILLERIE À REMPLACER / HARDWARE TO REPLACE		POIGNÉE / HANDLE	PATTES DE SCELLEMENT / MASONRY TIES	VITRE À REMPLACER / GLAZING TO REPLACE	MASTIC / PUTTY VOIR REMARQUES / SEE NOTES	ÉCAILLEMENT / FLAKING	FISSURATION / CRACKING	BOIS NU / BARE SPOT	DESSIN EN ANNEXE / DRAWING APPENDIX	REMARQUES / NOTES
	CHARNIÈRES / HINGES	BAS / BOTTOM									
CADRE / FRAME	PETITS BOIS / MUNTIN BARS VOIR DESSIN EN ANNEXE / SEE DRAWING APPENDIX										
APPUI / SILL											
	EXT.	INT.									

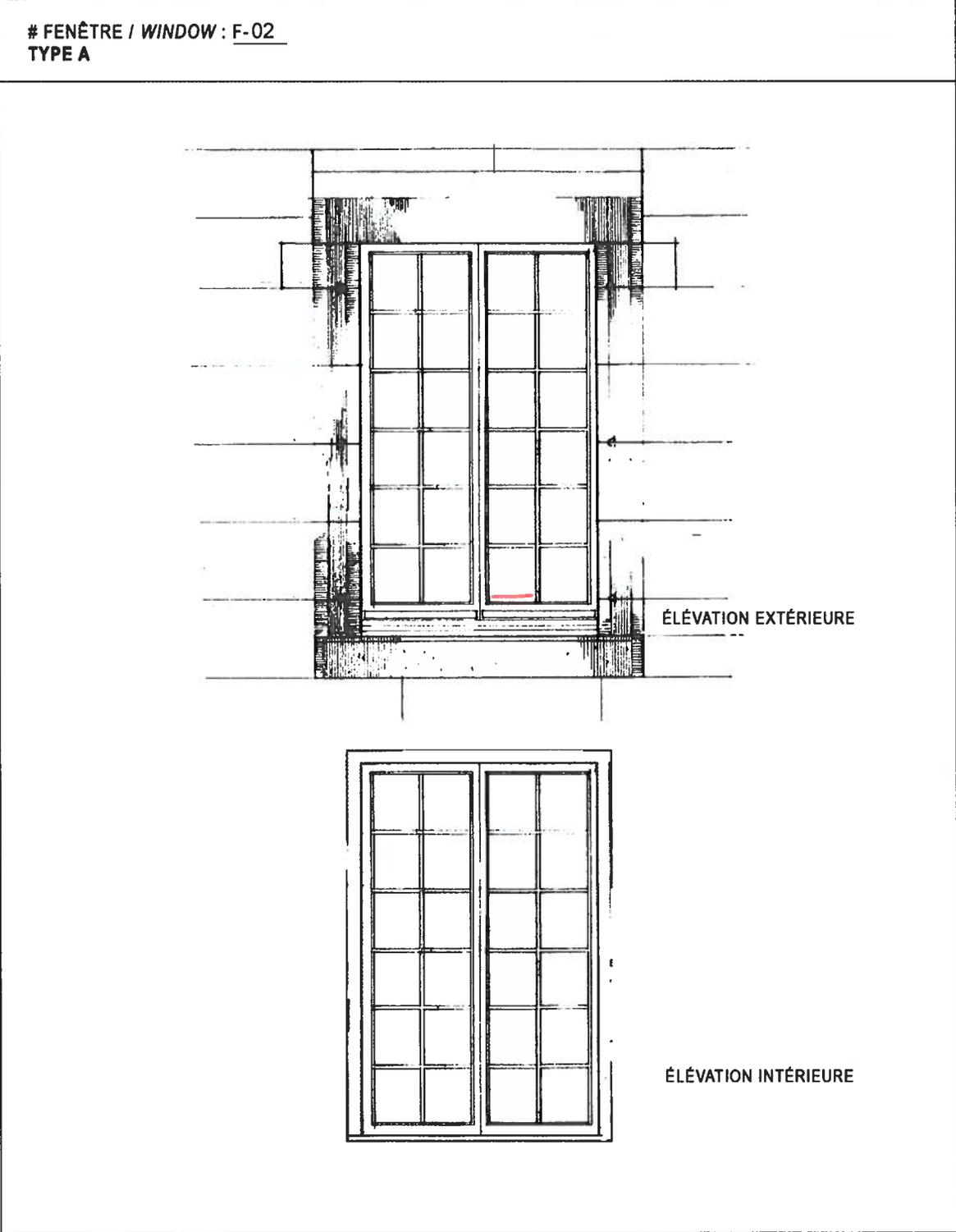
F-01	A			M	P		H	H													
F-02	A			M			H	H													
F-03	A			M			H	H													
F-04	A			M	P		H	H													
F-05	A			M	P		H, V	H													
F-06	A			M	P		H	H, R													
F-07	A			M			H	H, R													
F-08	A			M	P		H	H													
F-09	A			M	P		H, V	H*													
F-10	A			M	P		H	H													
F-11	A			M	P		H	H													

* * *

LHN DU FORT LENNOX / FORT LENNOX NHS

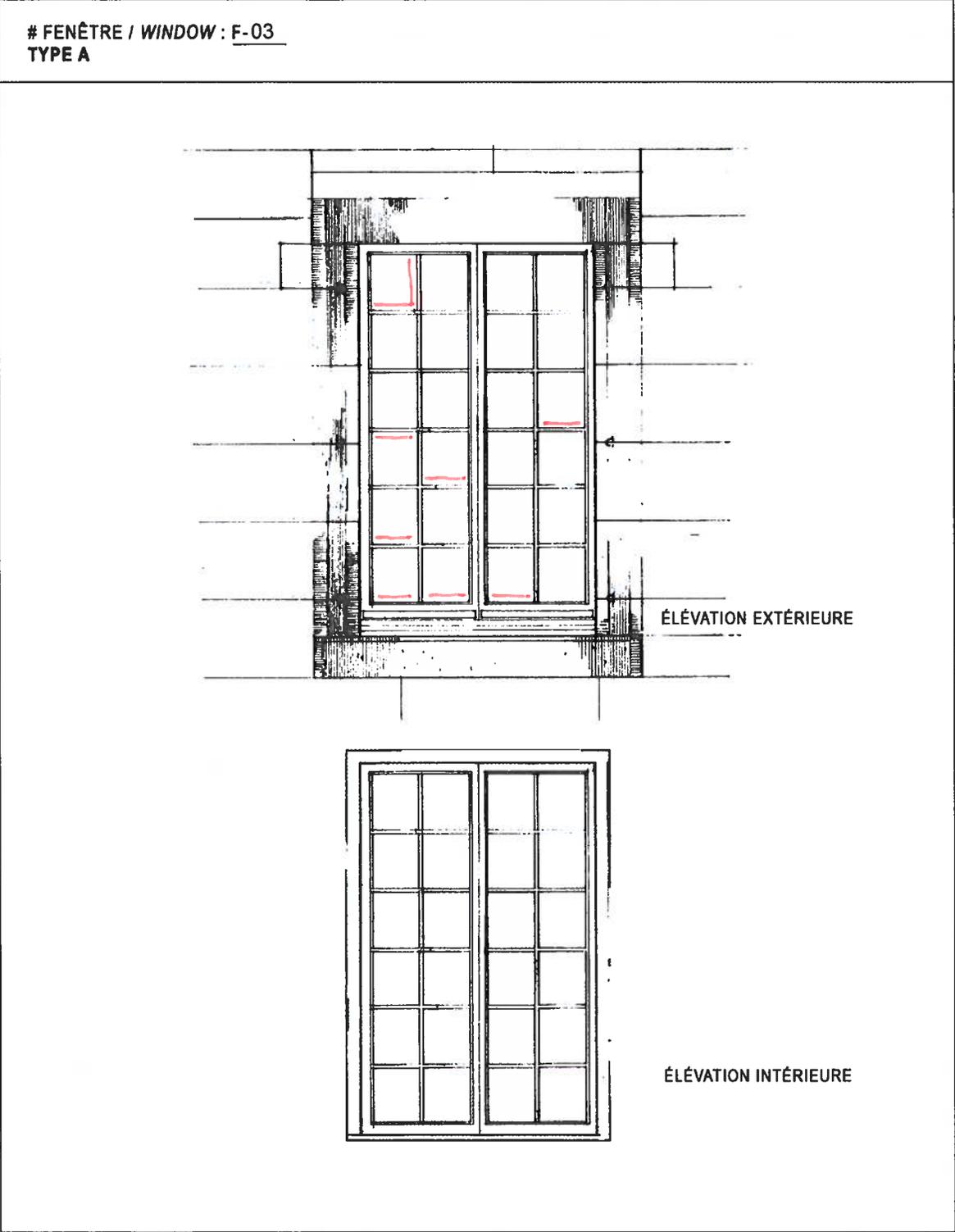
Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



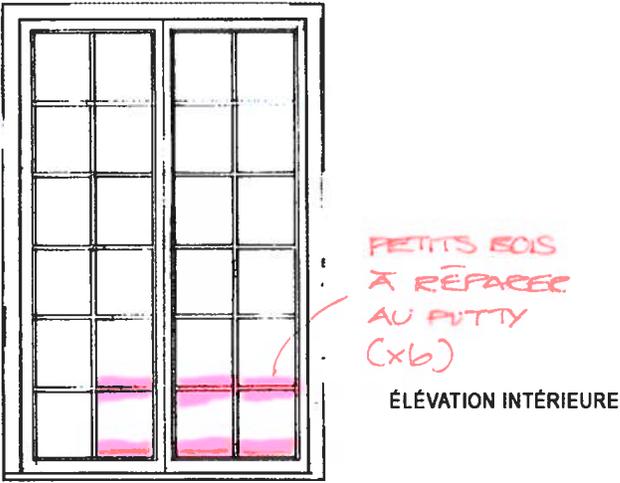
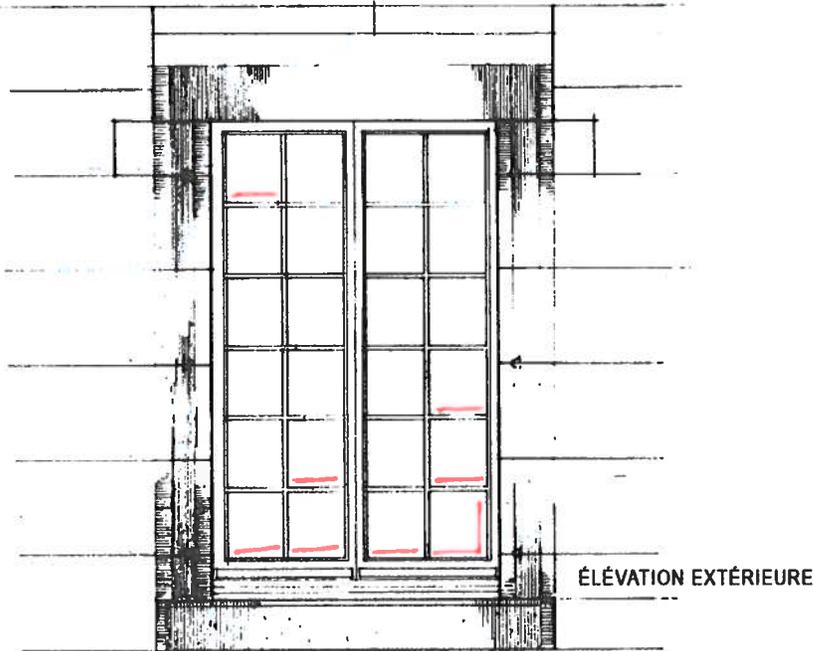


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / Project no. PRO-1396

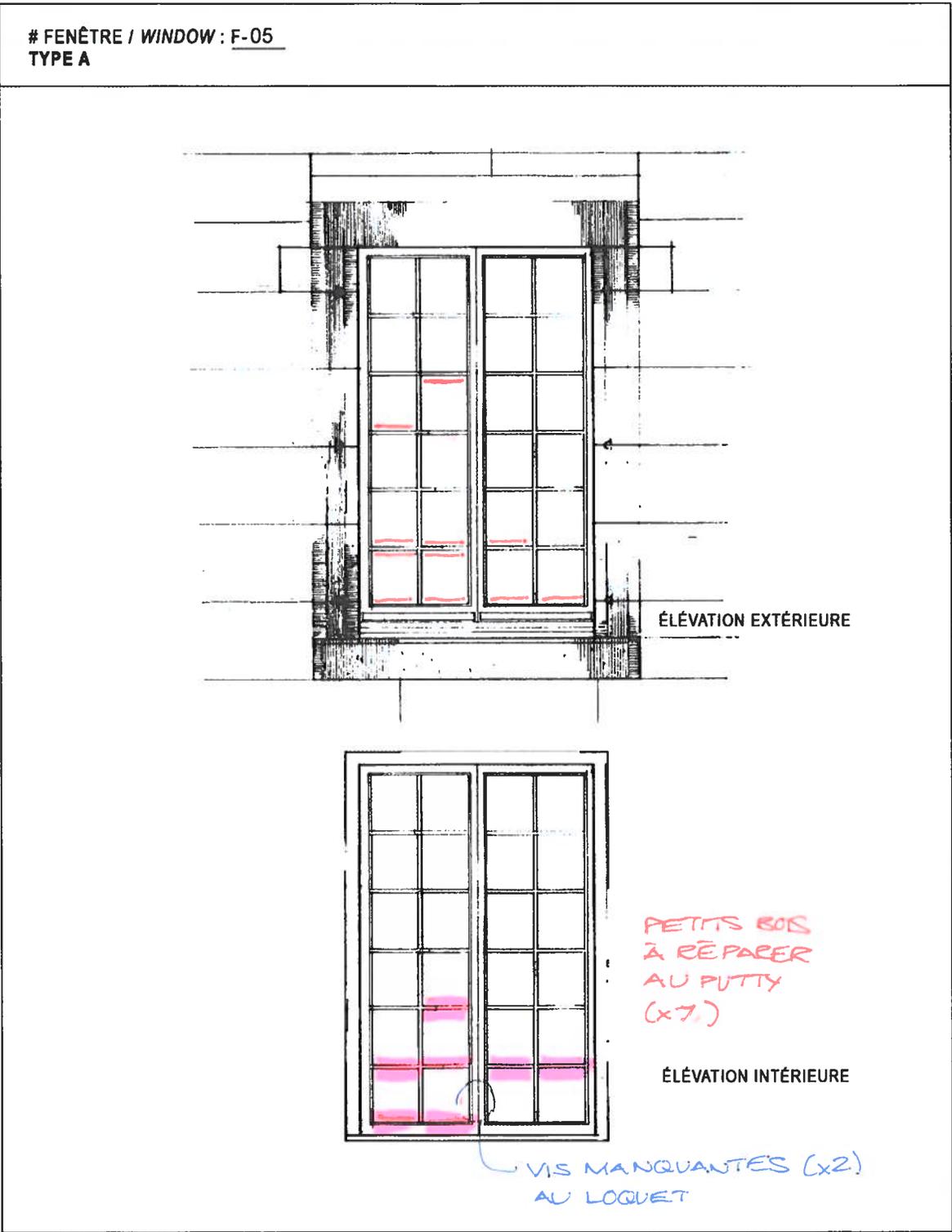


FENÊTRE / WINDOW : F-04
TYPE A



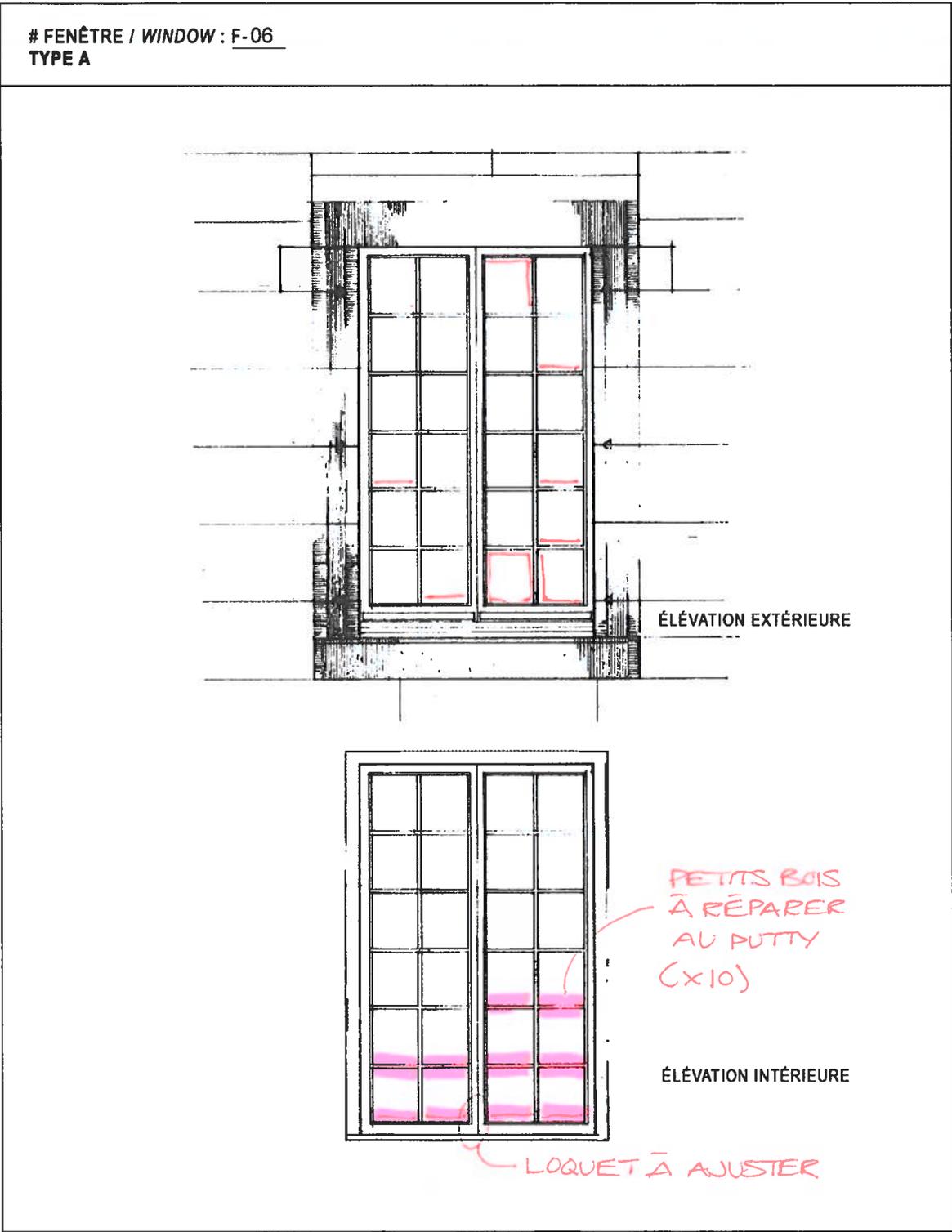
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



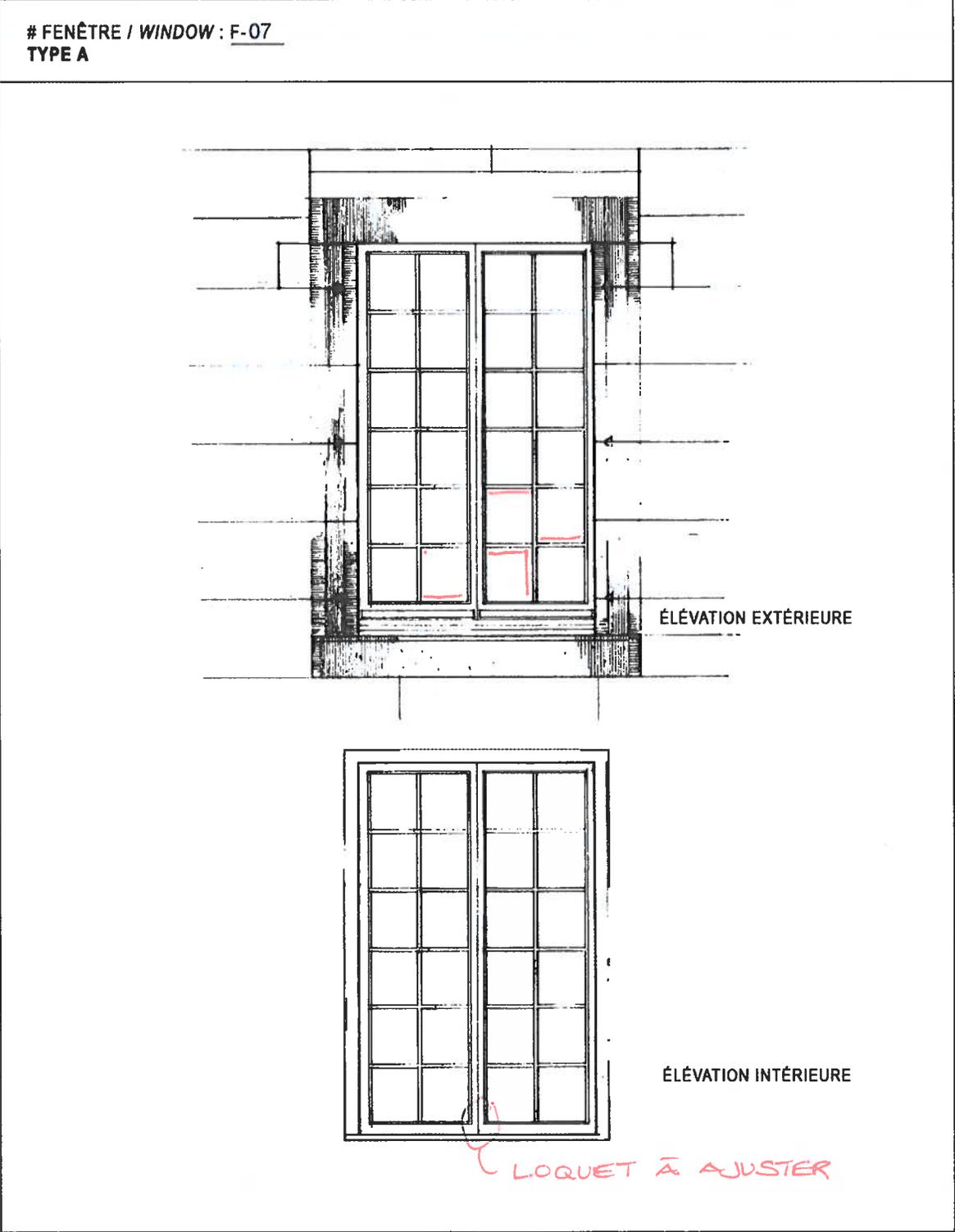
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Projet / Project no. PRO-1396



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Projet / Project no. PRO-1396



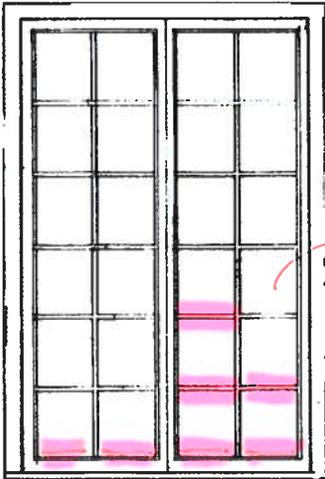
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-08
TYPE A



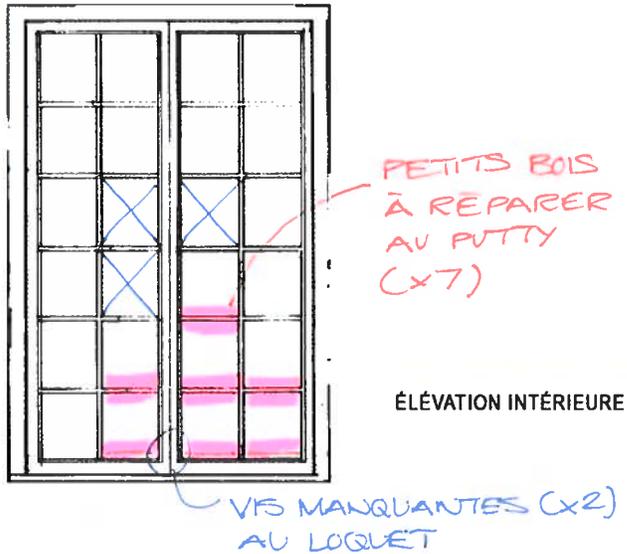
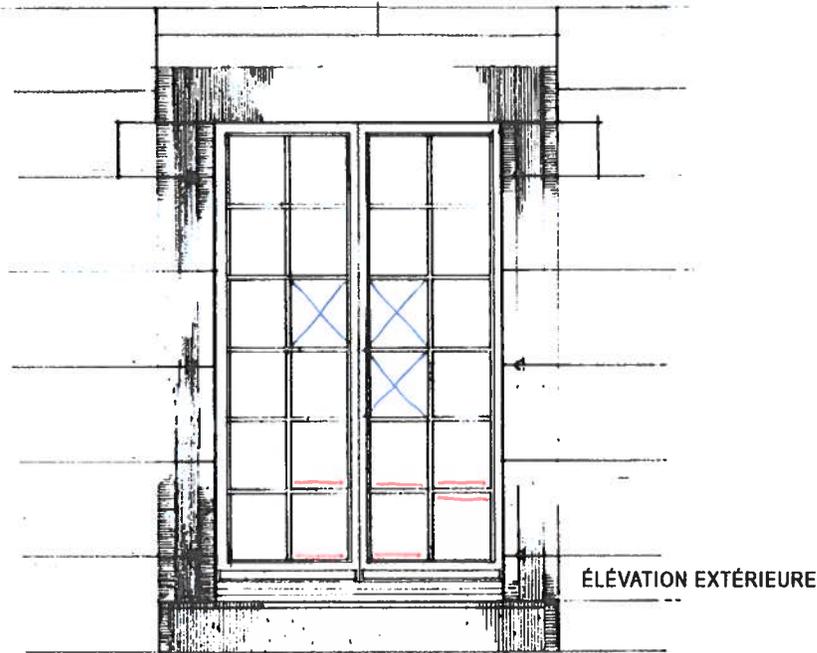
ÉLEVATION EXTÉRIEURE



PETITS BOIS
À RÉPARER
(x7)

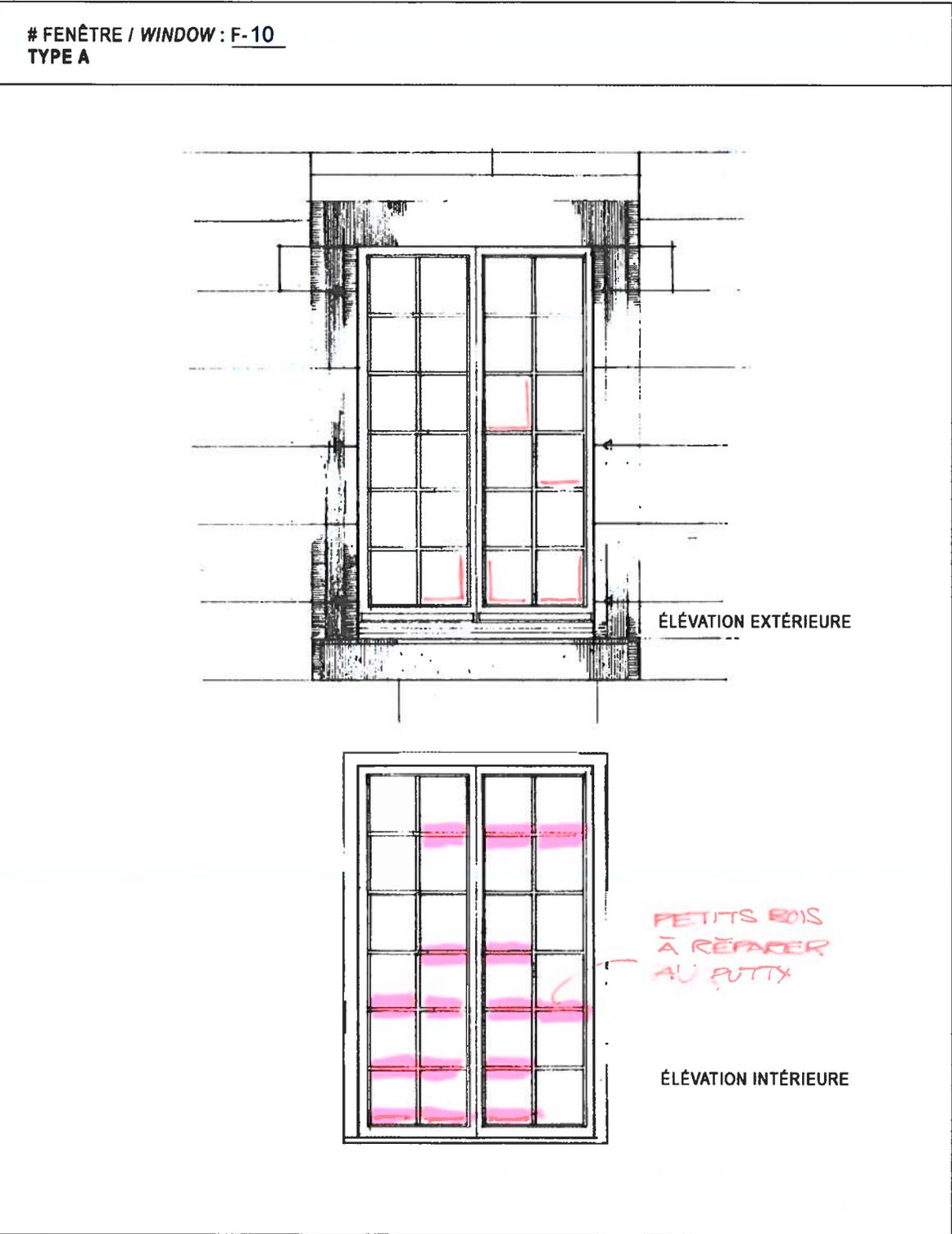
ÉLEVATION INTÉRIEURE

FENÊTRE / WINDOW : F-09
TYPE A



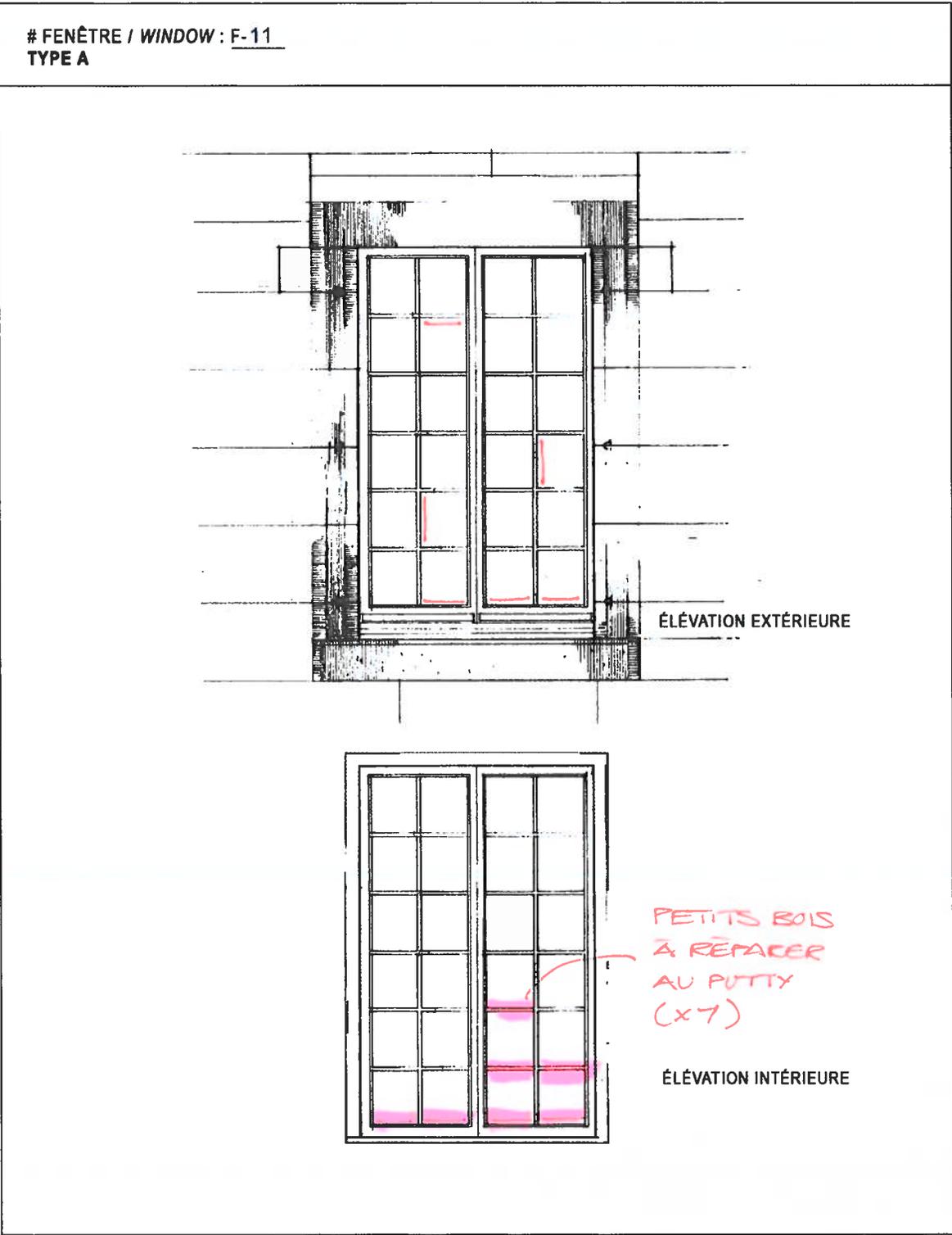
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

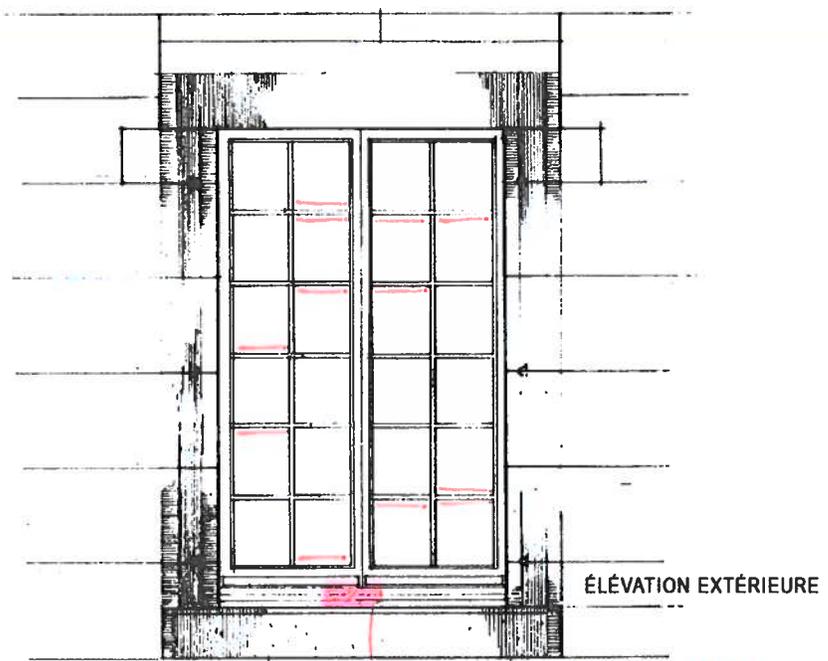


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / Project no. PRO-1396



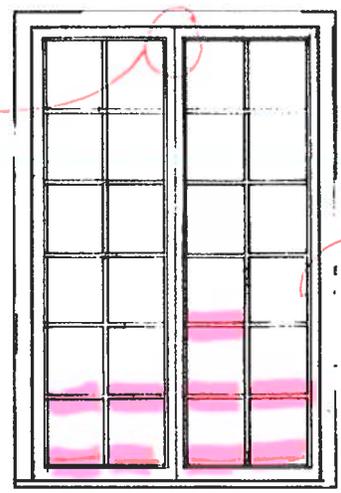
FENÊTRE / WINDOW : F-12
TYPE A



ÉLEVATION EXTÉRIEURE

LOQUET DU
HAUT
À AJUSTER

BUTOIR APPUI
À RÉPARER
AU PUTTY
(CÔTÉ INT.)



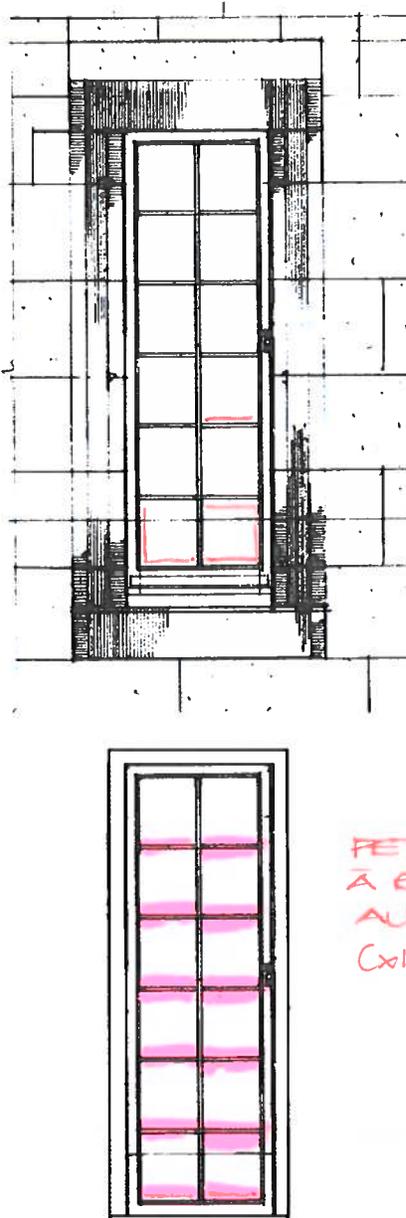
PETITS BOIS
À RÉPARER
AU PUTTY
(x9)

ÉLEVATION INTÉRIEURE

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

FENÊTRE / WINDOW : F-13
TYPE A2



The drawing shows two elevations of a window. The top elevation, labeled 'ÉLEVATION EXTÉRIEURE', shows a window with a wooden frame and a grid of panes. The bottom elevation, labeled 'ÉLEVATION INTÉRIEURE', shows the same window from the inside, with pink shading highlighting the wooden muntins and sashes. The window is set within a wall with a grid pattern.

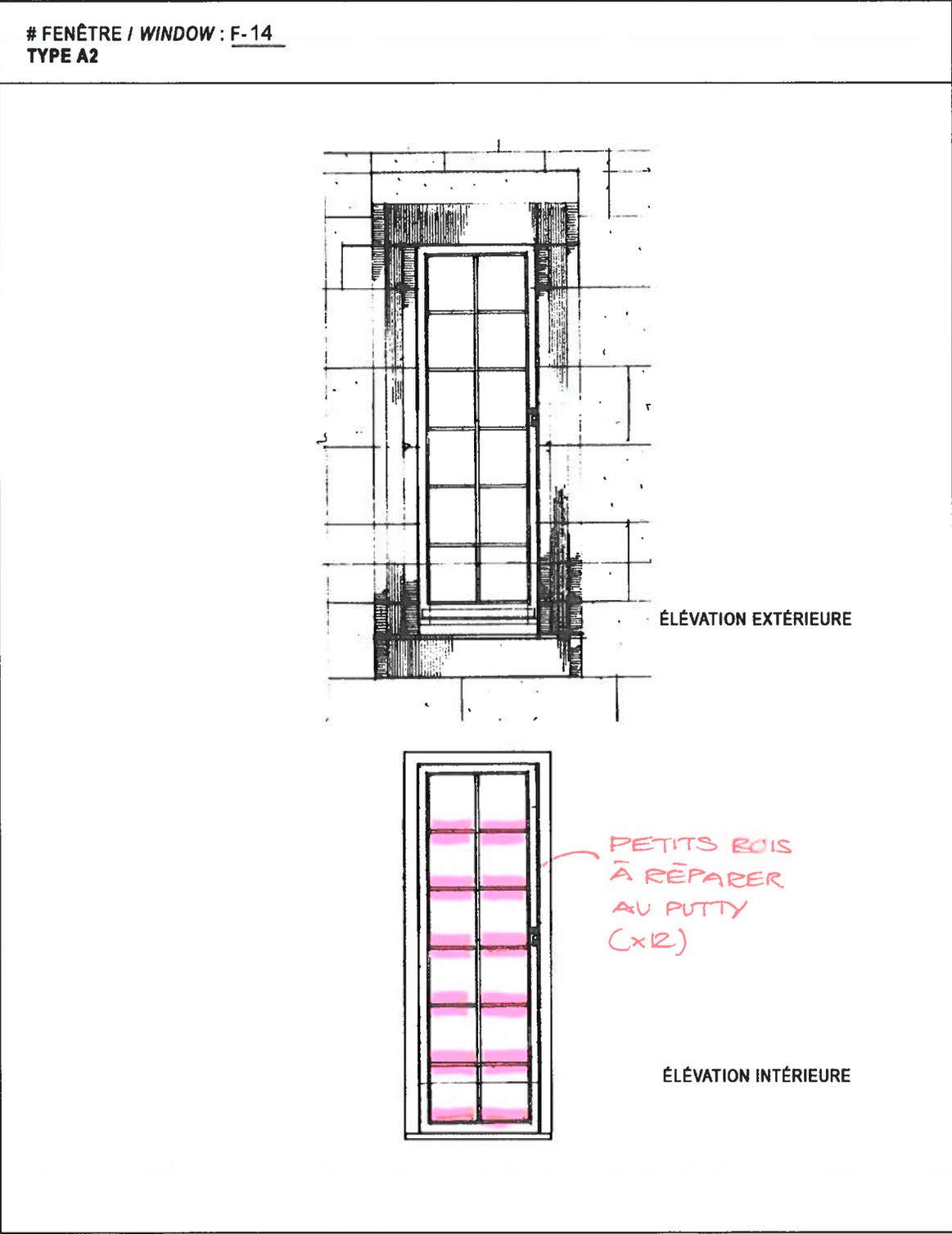
ÉLEVATION EXTÉRIEURE

ÉLEVATION INTÉRIEURE

PETITS BOIS
À RÉPARER
AU PUTTY
(x12.)

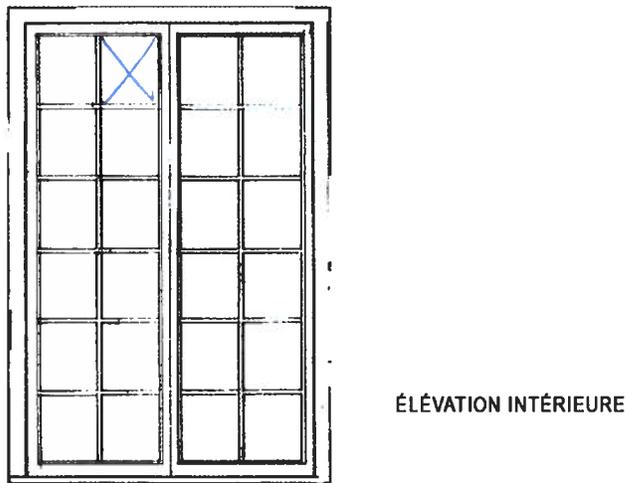
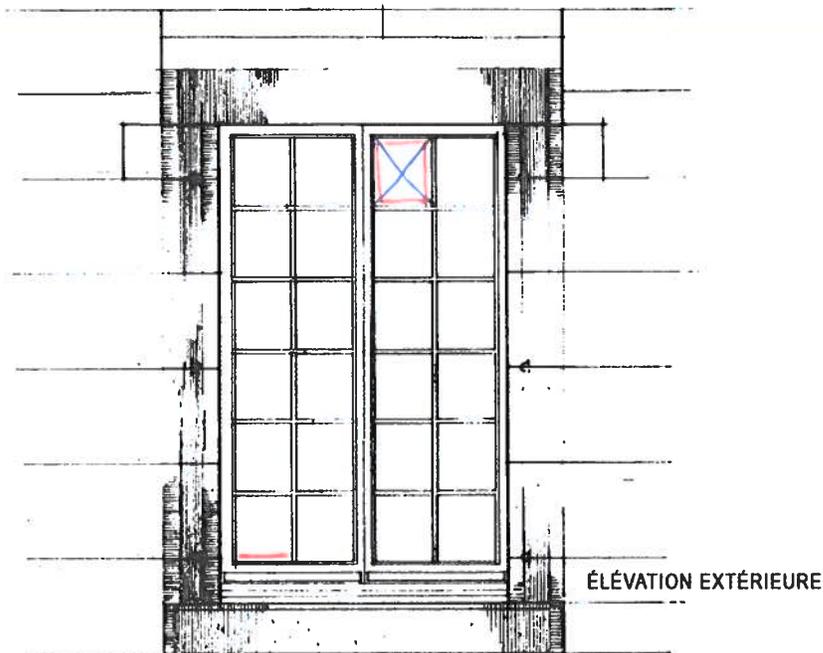
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



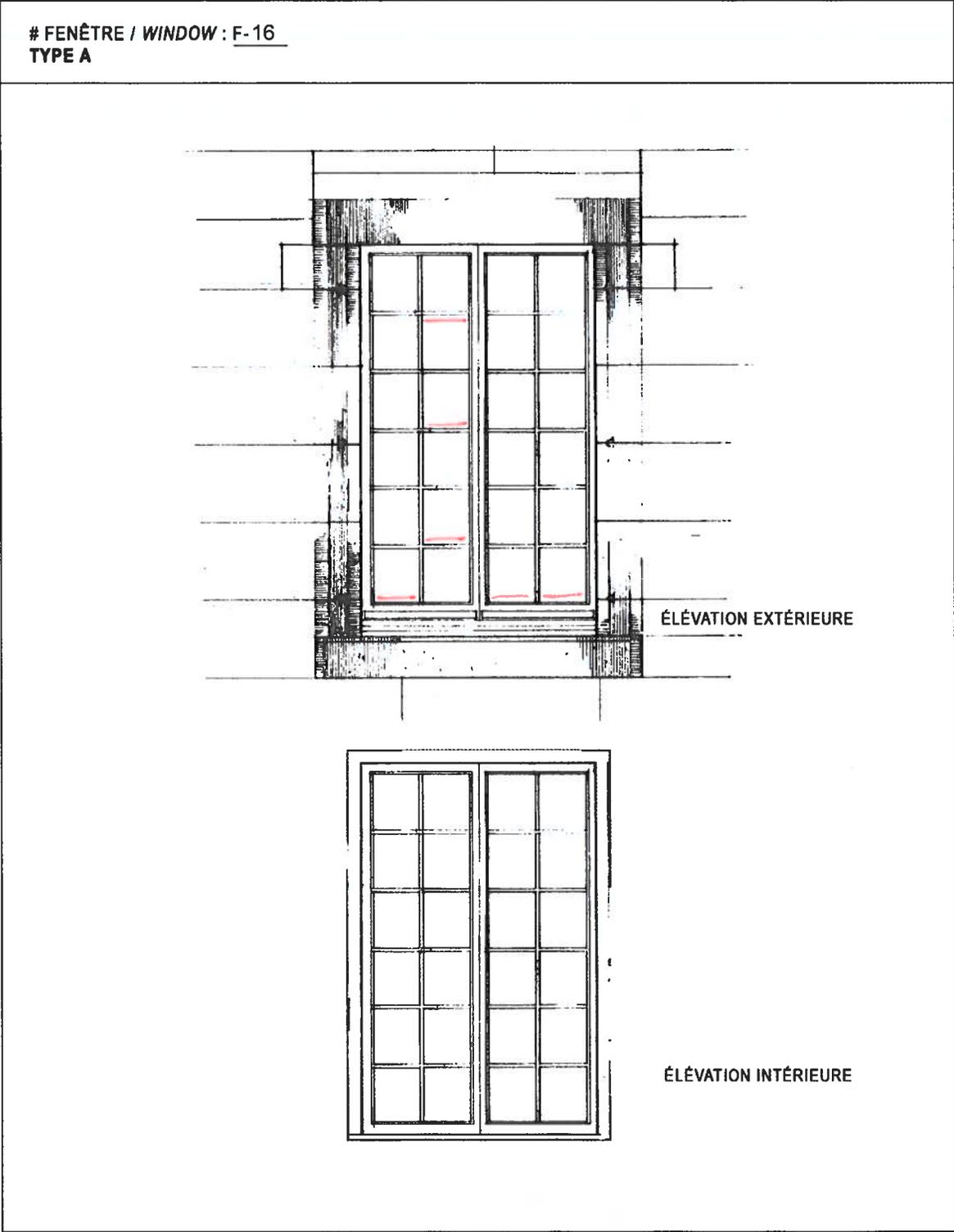
LHN DU FORT LENNOX / FORT LENNOX NHS
Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

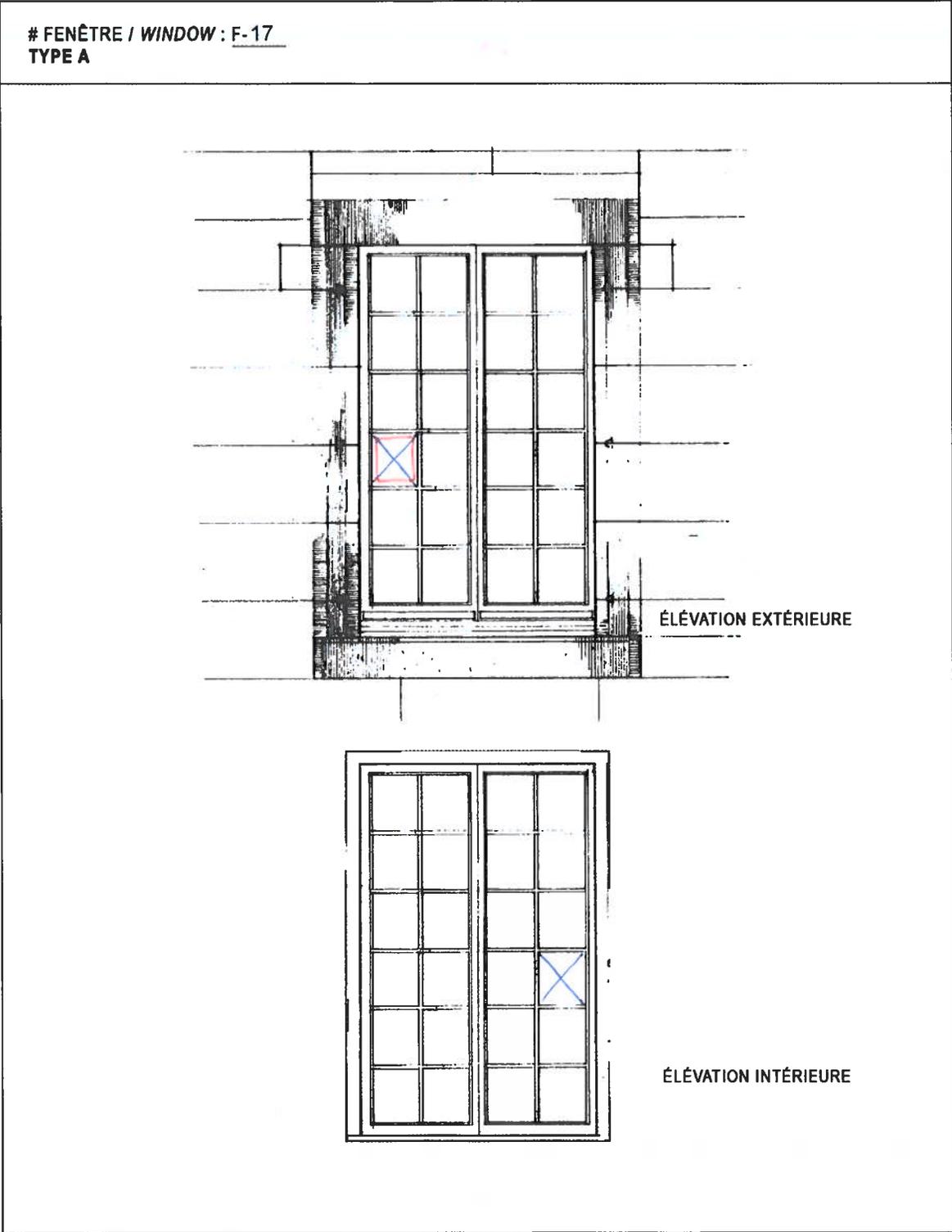
FENÊTRE / *WINDOW* : F-15
TYPE A



LHN DU FORT LENNOX / FORT LENNOX NHS

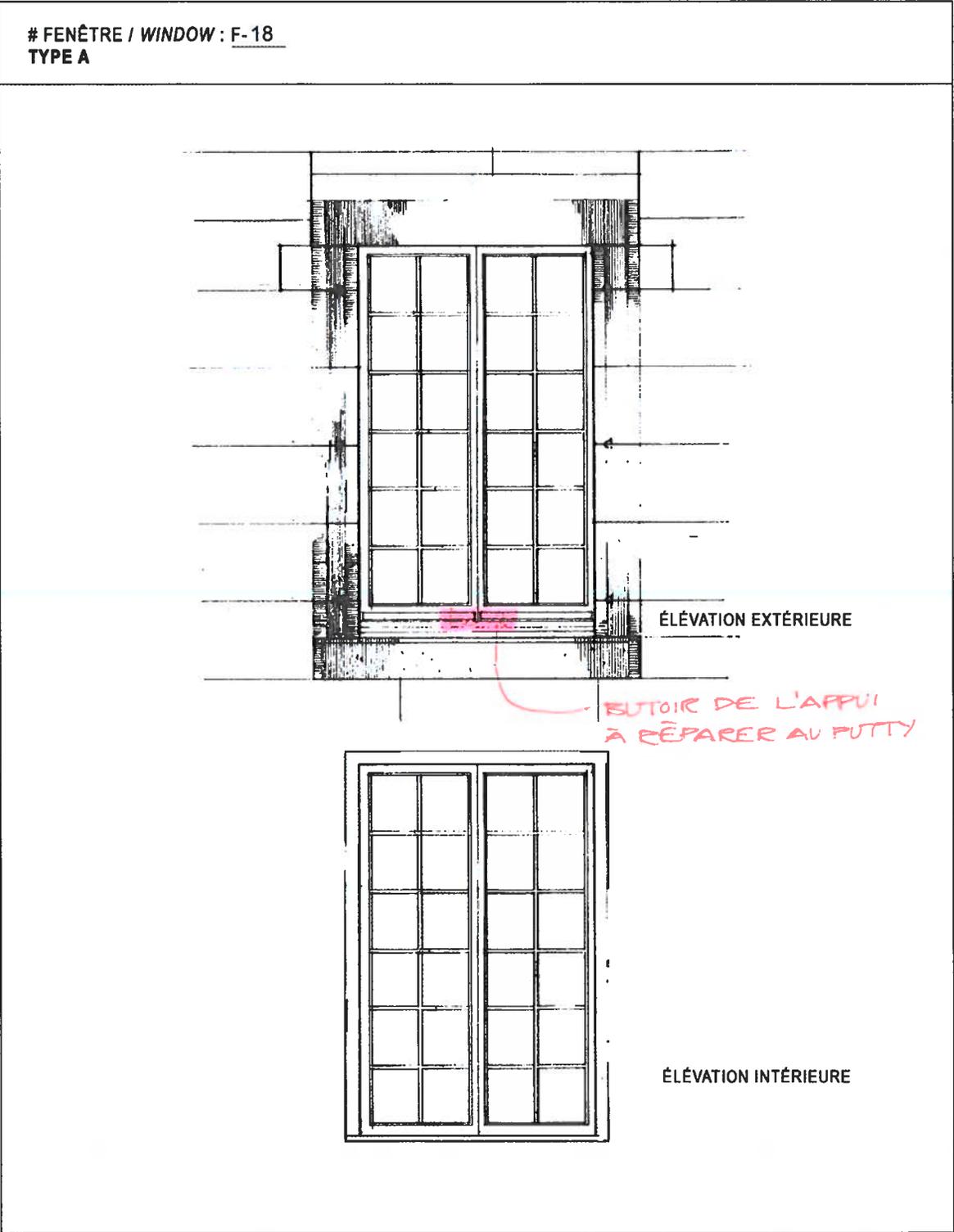
Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396



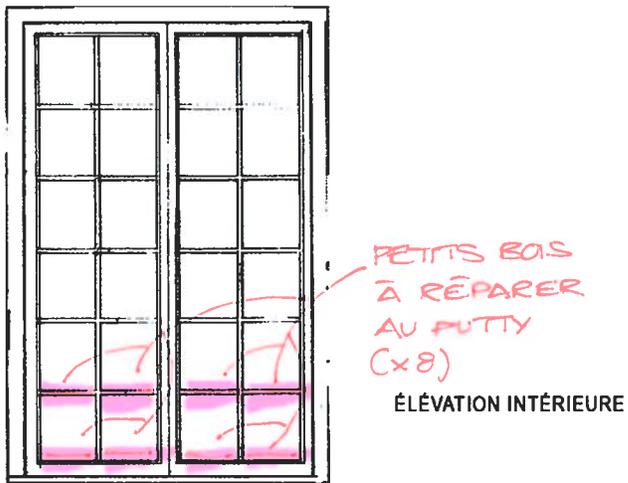
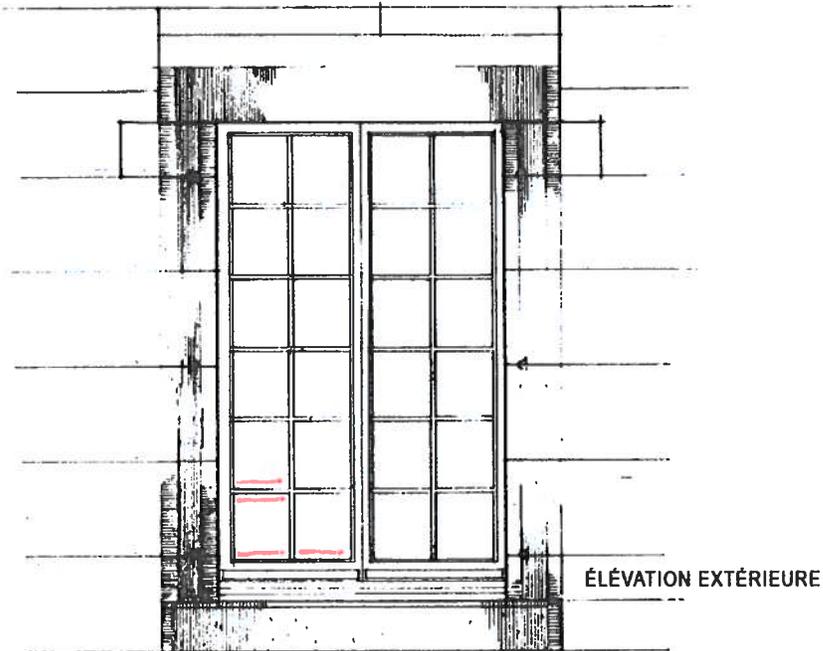


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

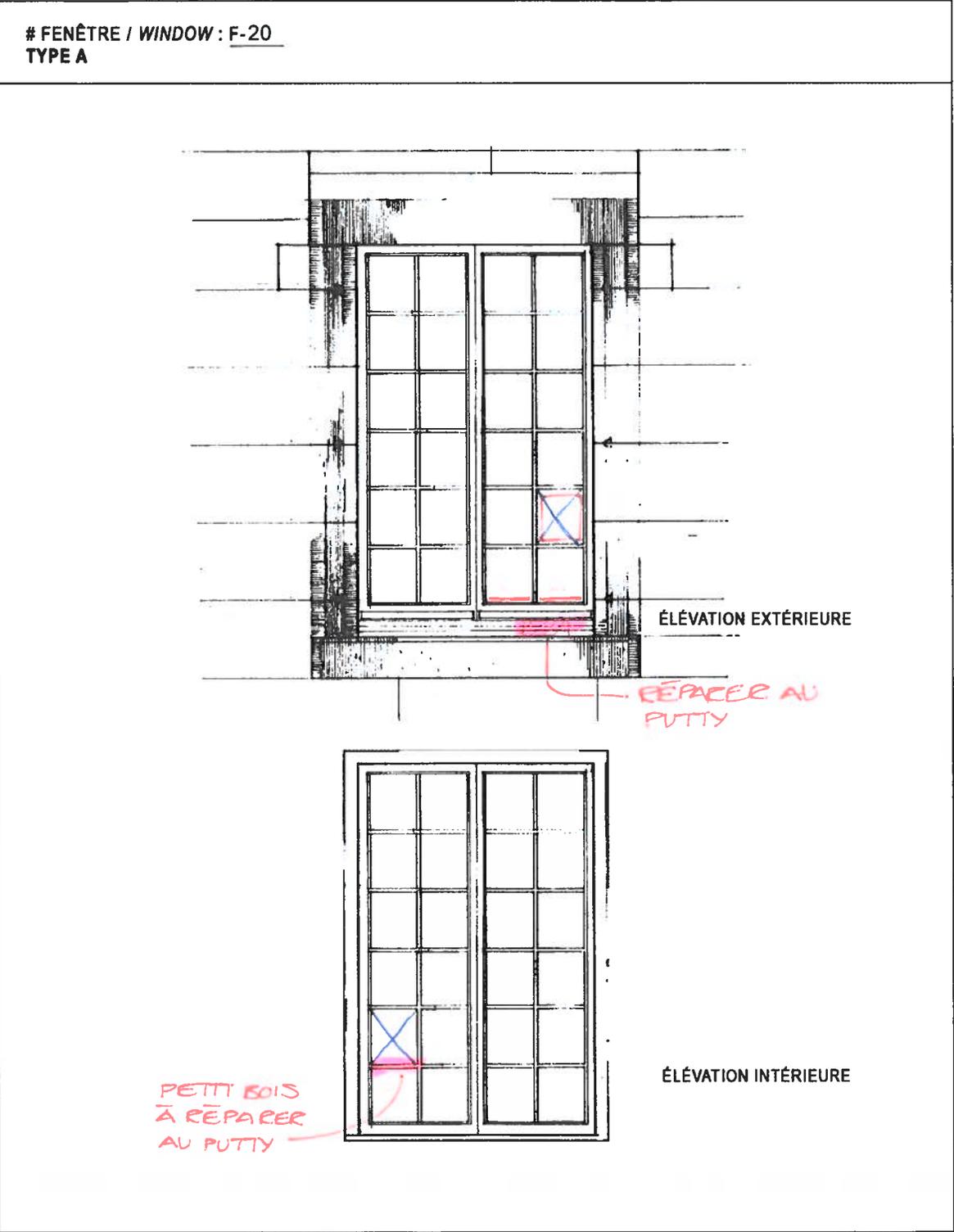


FENÊTRE / WINDOW : F-19
TYPE A

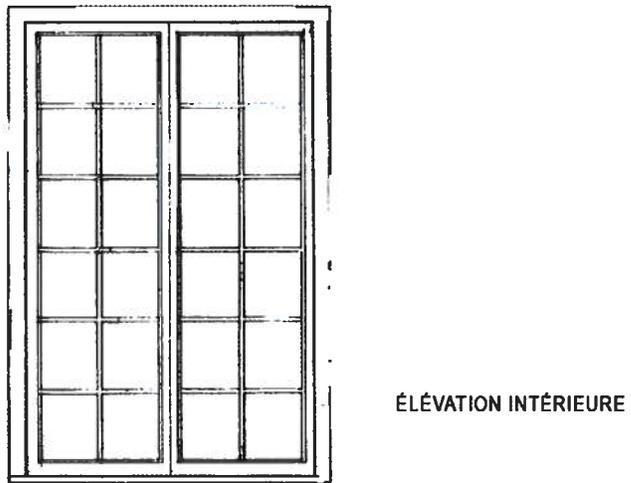
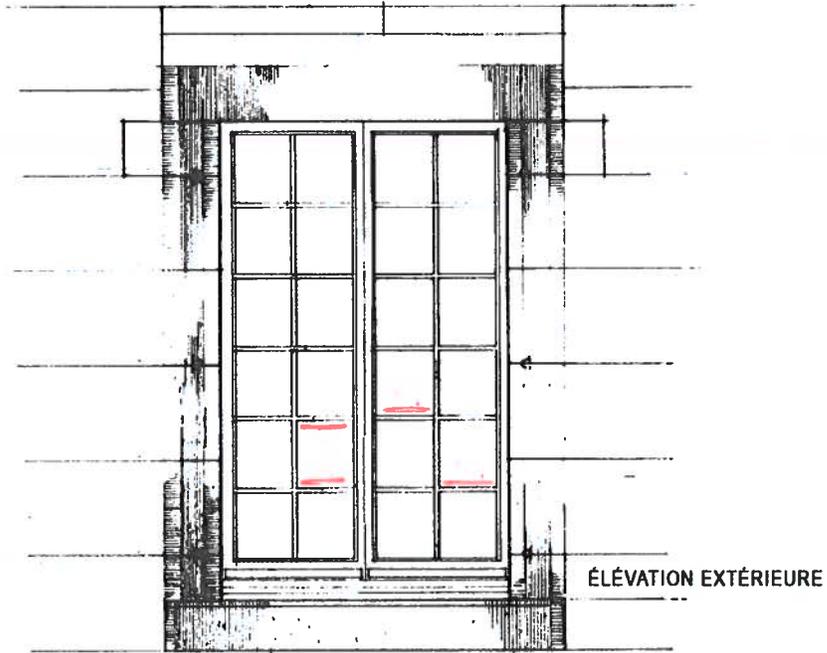


LHN DU FORT LENNOX / FORT LENNOX NHS

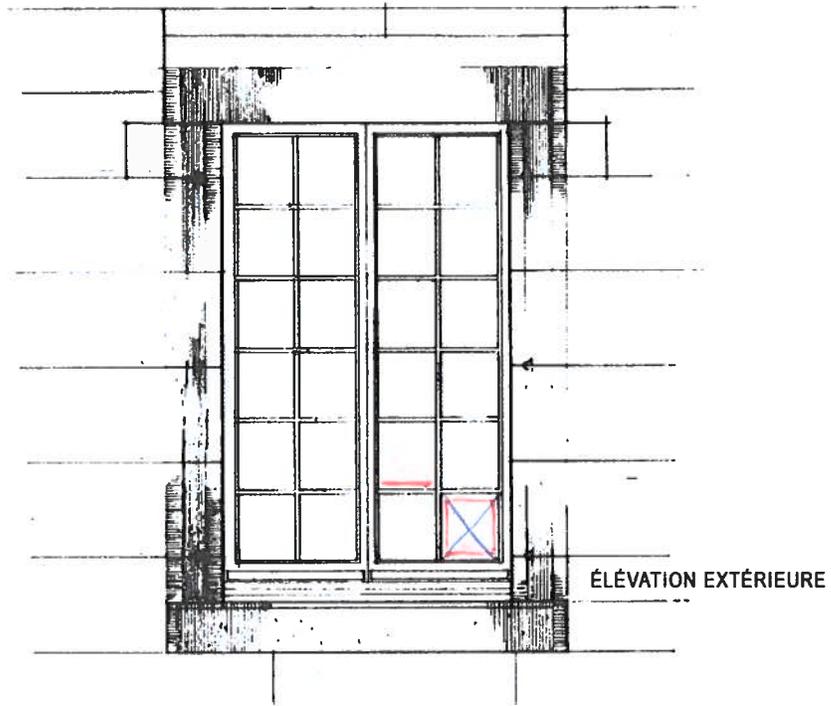
Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



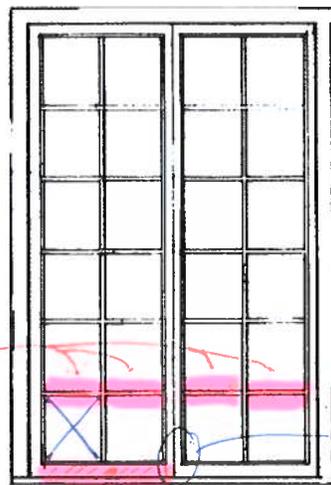
FENÊTRE / WINDOW : F-21
TYPE A



FENÊTRE / WINDOW : F-22
TYPE A



PETITS BOIS
À RÉPARER
AU PUTTY
(x4)

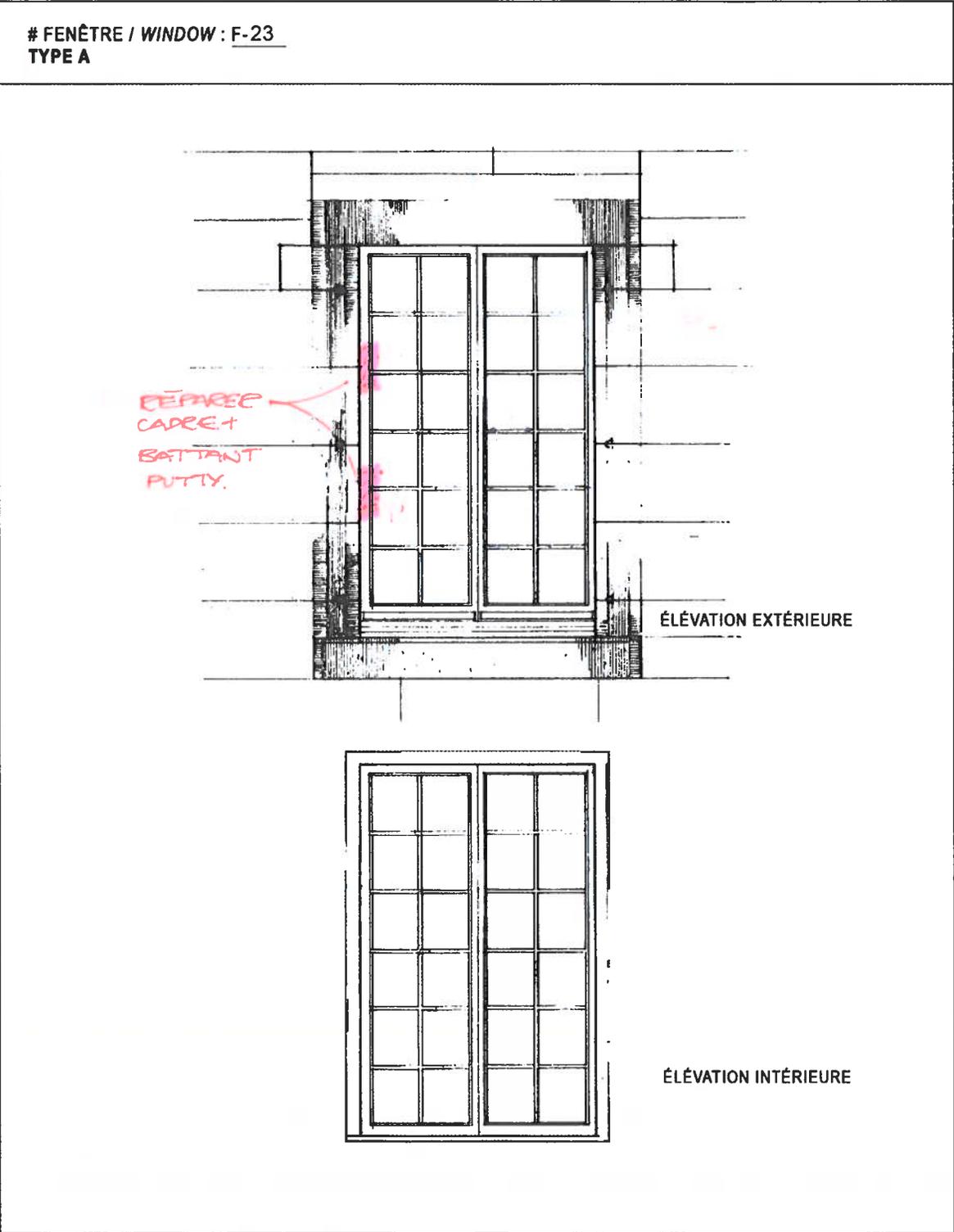


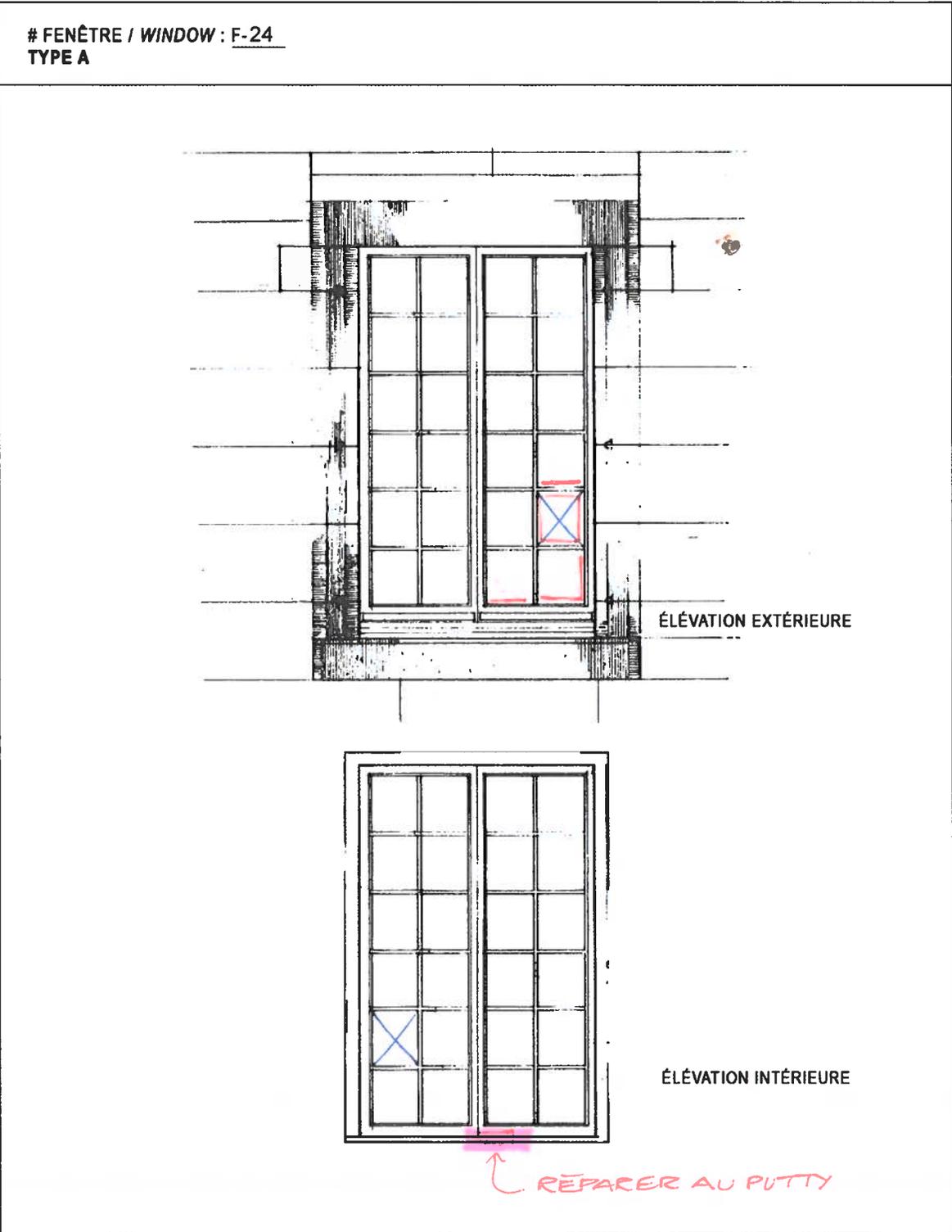
VIS MANQUANTES
DANS LE BAS

RÉPARER / REMPLACER
CADRE DU BAS

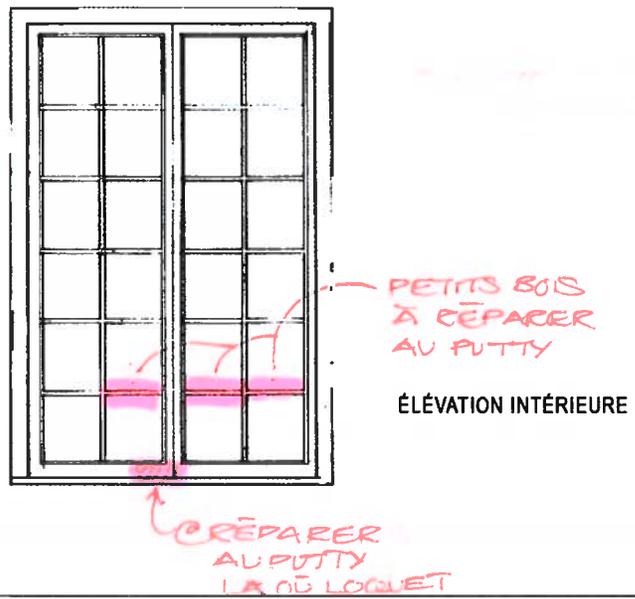
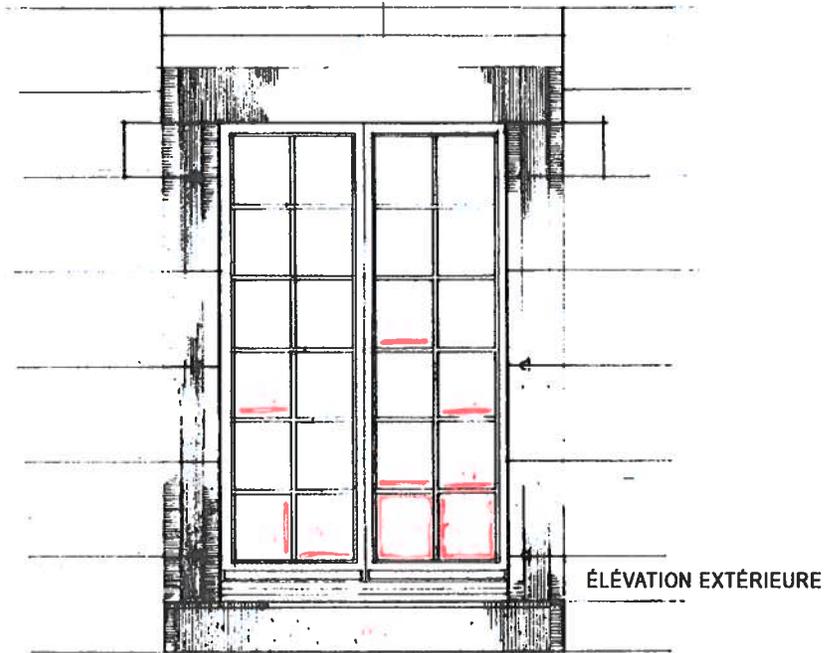
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



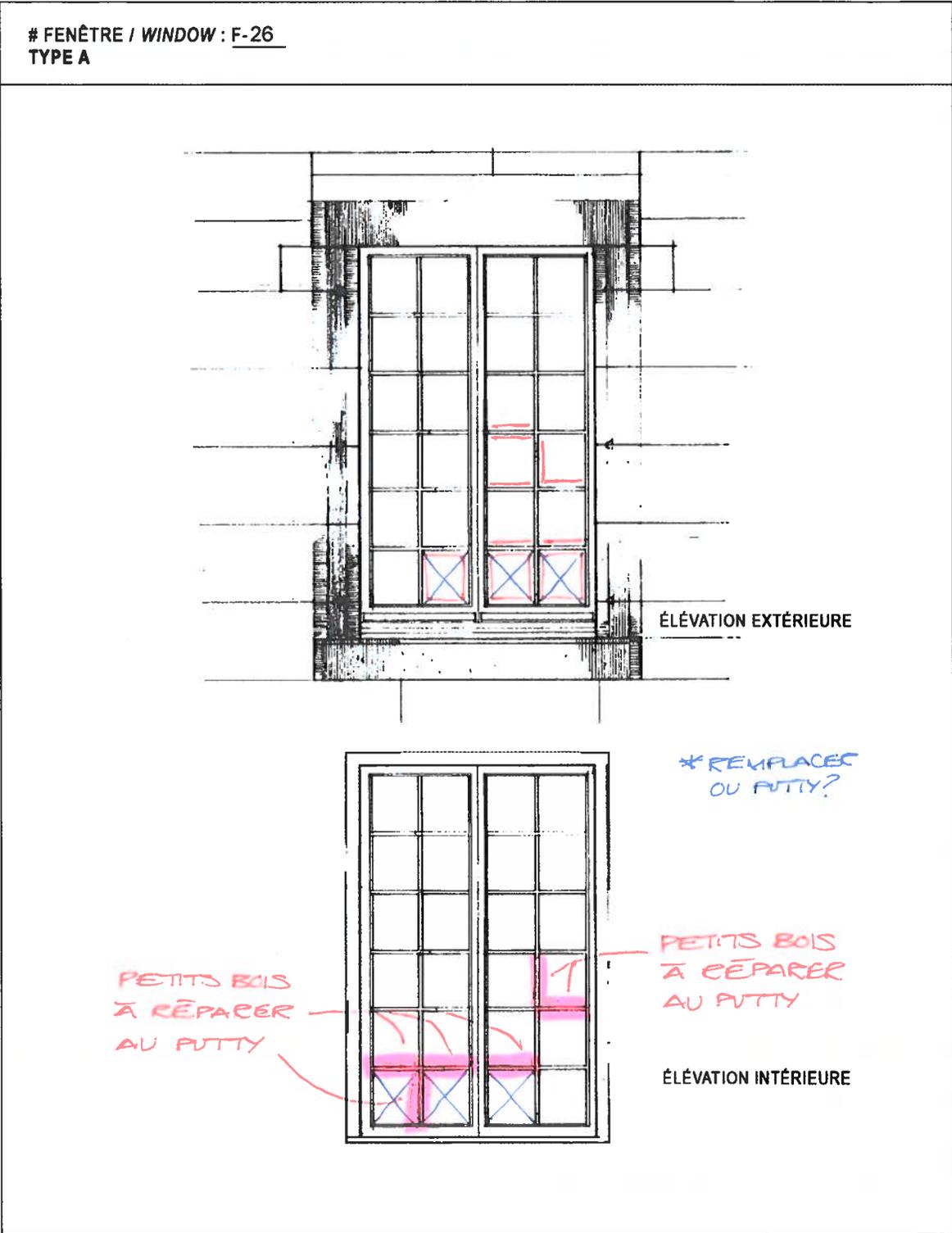


FENÊTRE / WINDOW : F-25
TYPE A



LHN DU FORT LENNOX / FORT LENNOX NHS

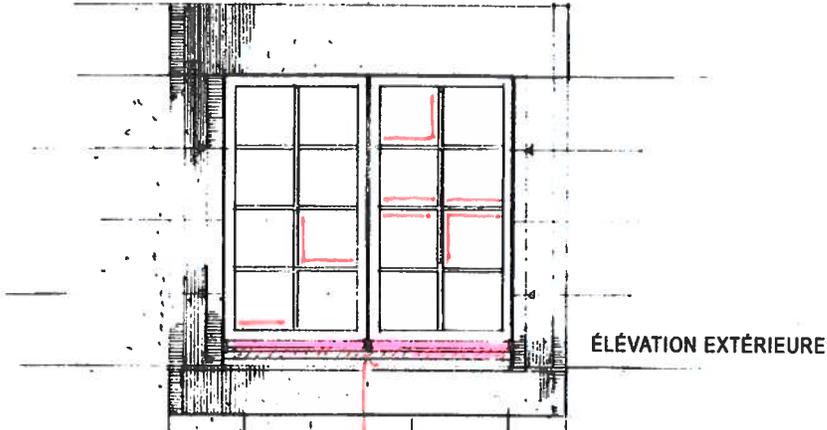
Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



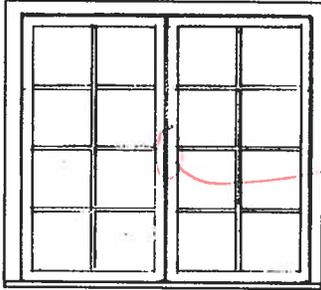
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

**# FENÊTRE / WINDOW : F-27
TYPE B**



BOITIER DE L'APPUI À RÉPARER
AU PUTTY

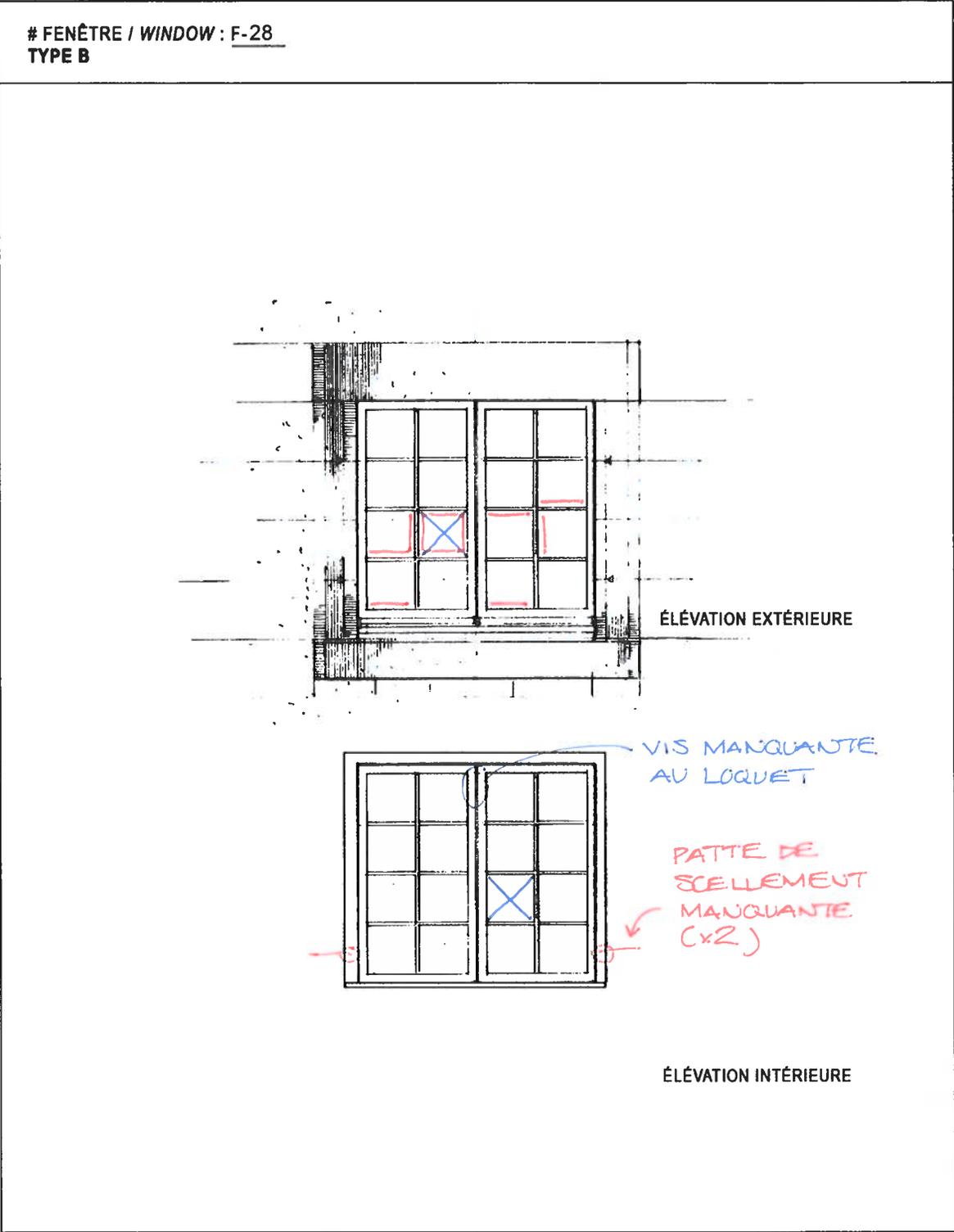


POIGNÉE
MANQUANTE

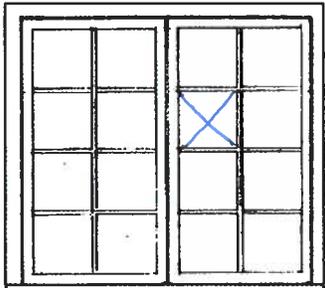
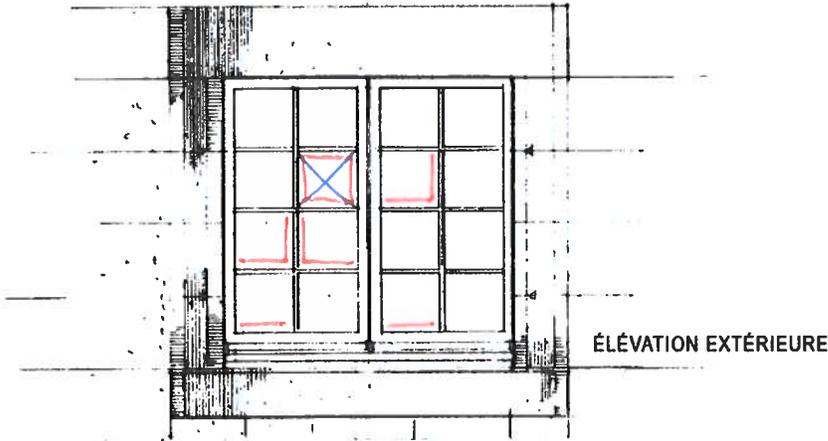
ÉLEVATION INTÉRIEURE

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



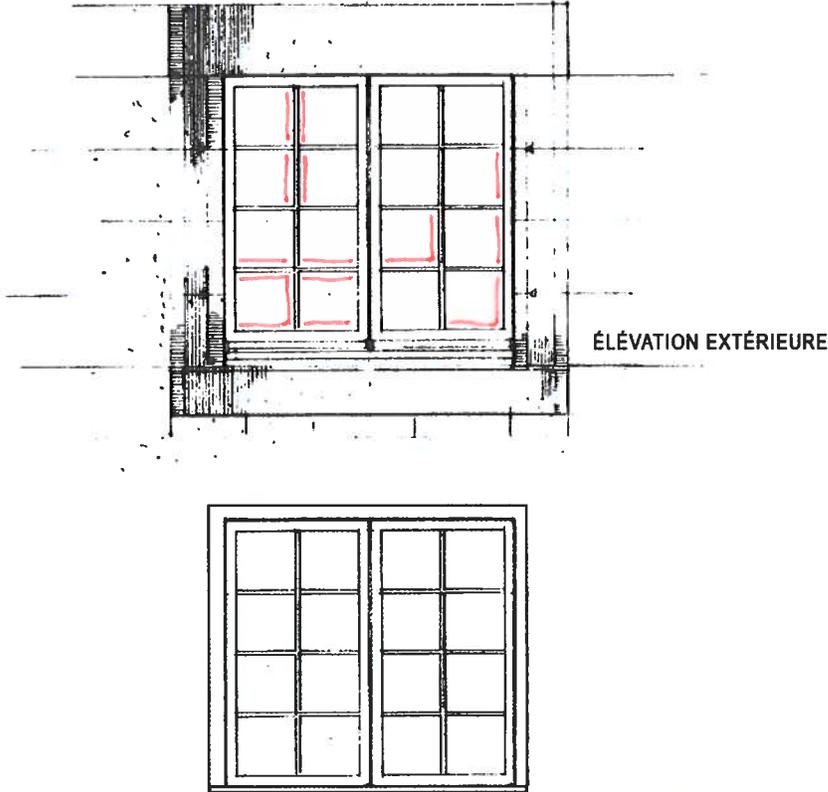
FENÊTRE / WINDOW : F-29
TYPE B



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

FENÊTRE / WINDOW : F-30
TYPE B

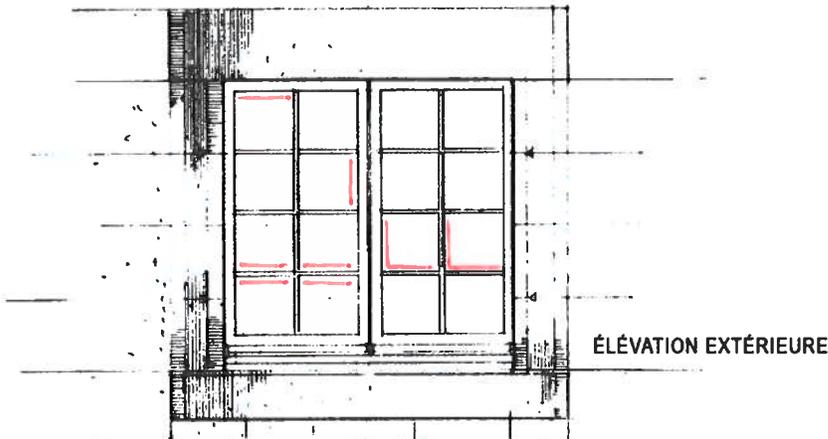


ÉLEVATION EXTÉRIEURE

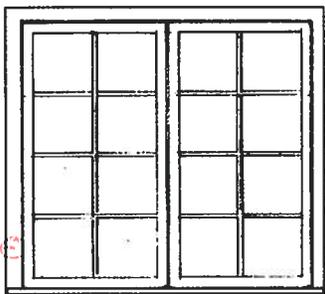
ÉLEVATION INTÉRIEURE

The drawing shows two elevations of a window. The top elevation, labeled 'ÉLEVATION EXTÉRIEURE', is a detailed sketch of a double window with a rough, textured background. The window has two panes, each divided into six smaller panes (two columns by three rows). Red lines are drawn over the window panes. The bottom elevation, labeled 'ÉLEVATION INTÉRIEURE', is a clean, black-and-white line drawing of the same double window, showing the frame and the six-pane grid.

FENÊTRE / WINDOW : F-31
TYPE B

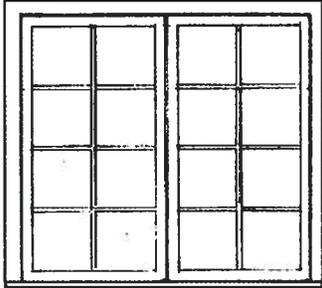


PATTE DE
SCÈLLEMENT →
MANQUANTE



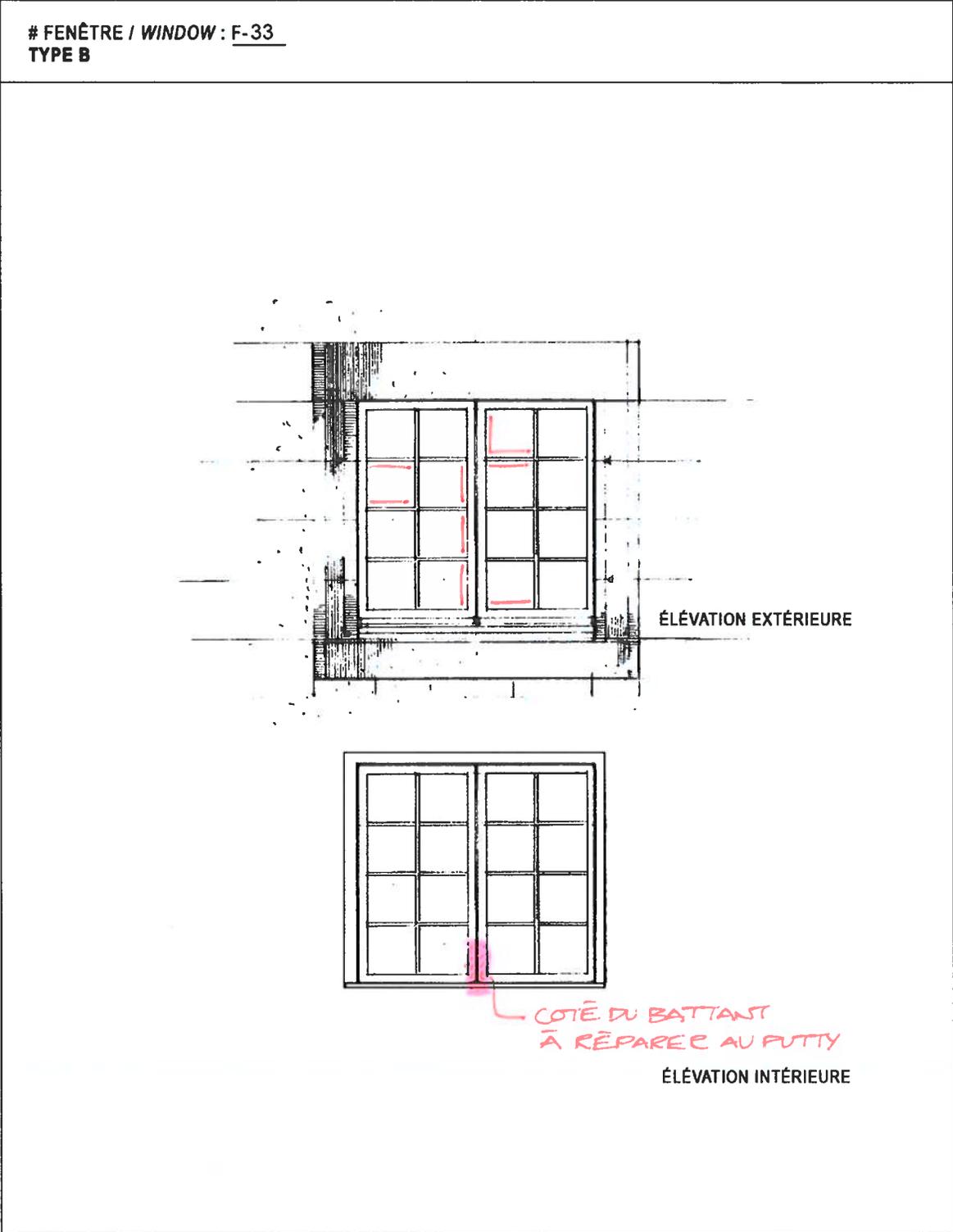
ÉLEVATION INTÉRIEURE

FENÊTRE / WINDOW : F-32
TYPE B



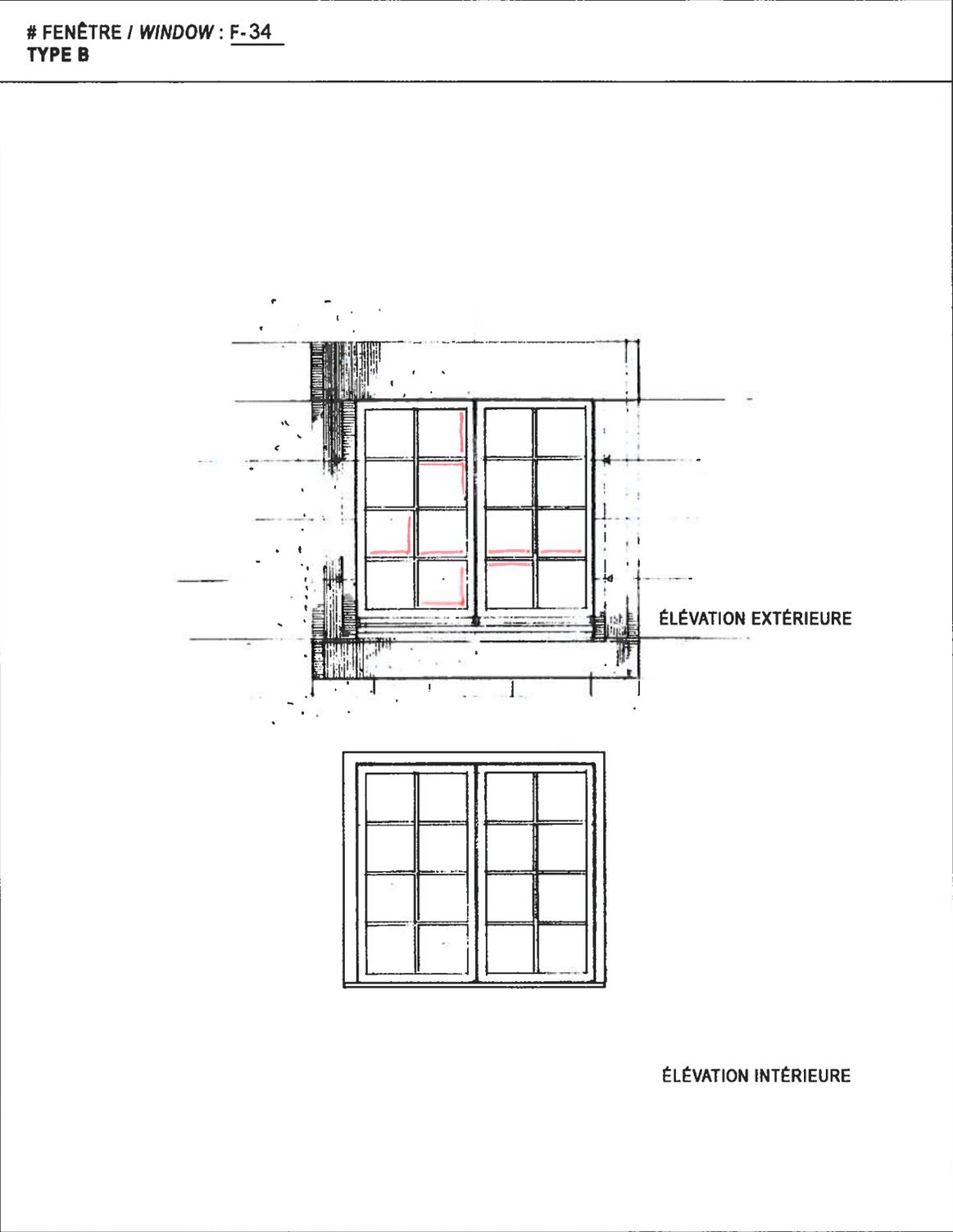
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

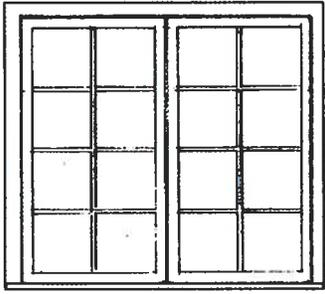
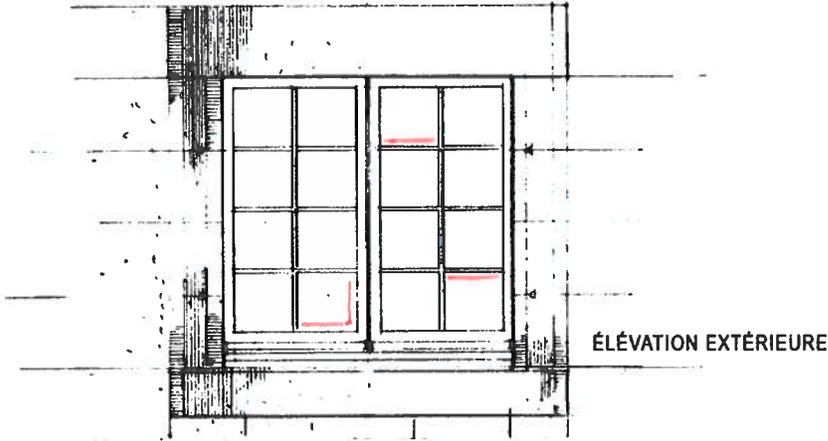


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

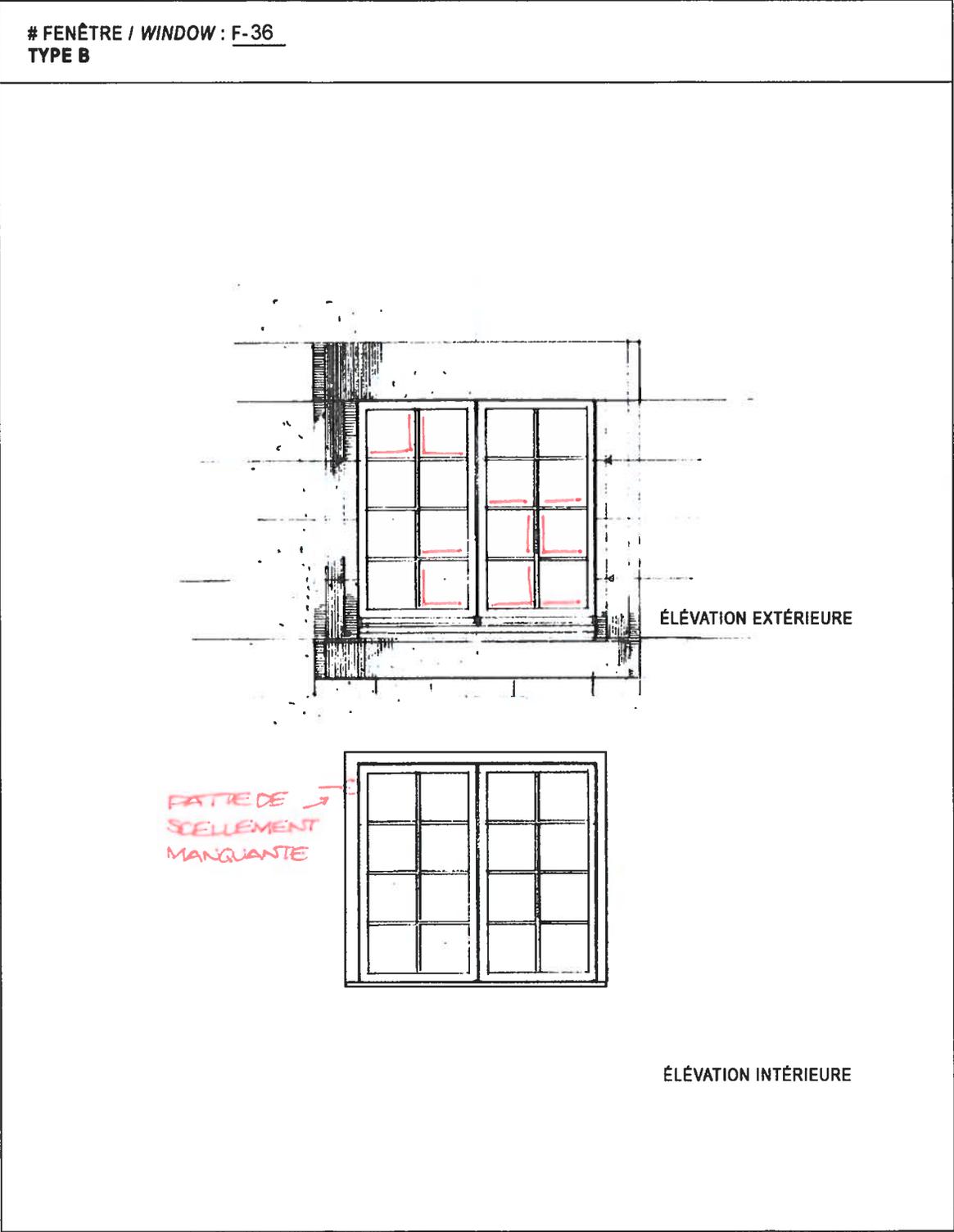


FENÊTRE / WINDOW : F-35
TYPE B



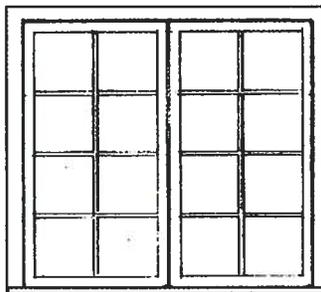
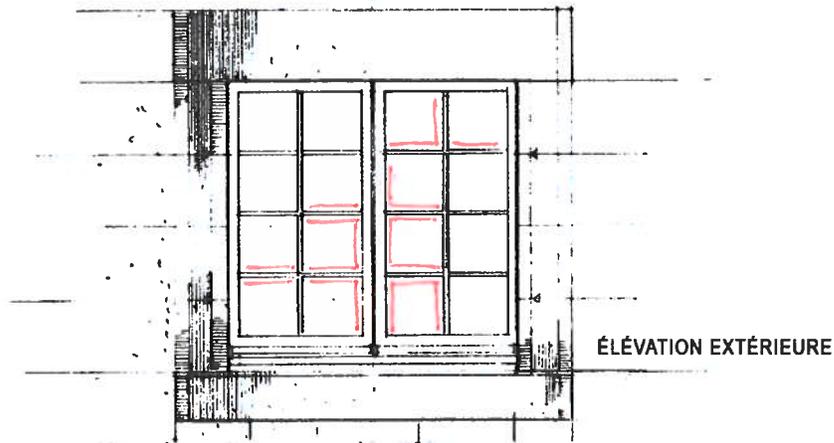
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS
Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

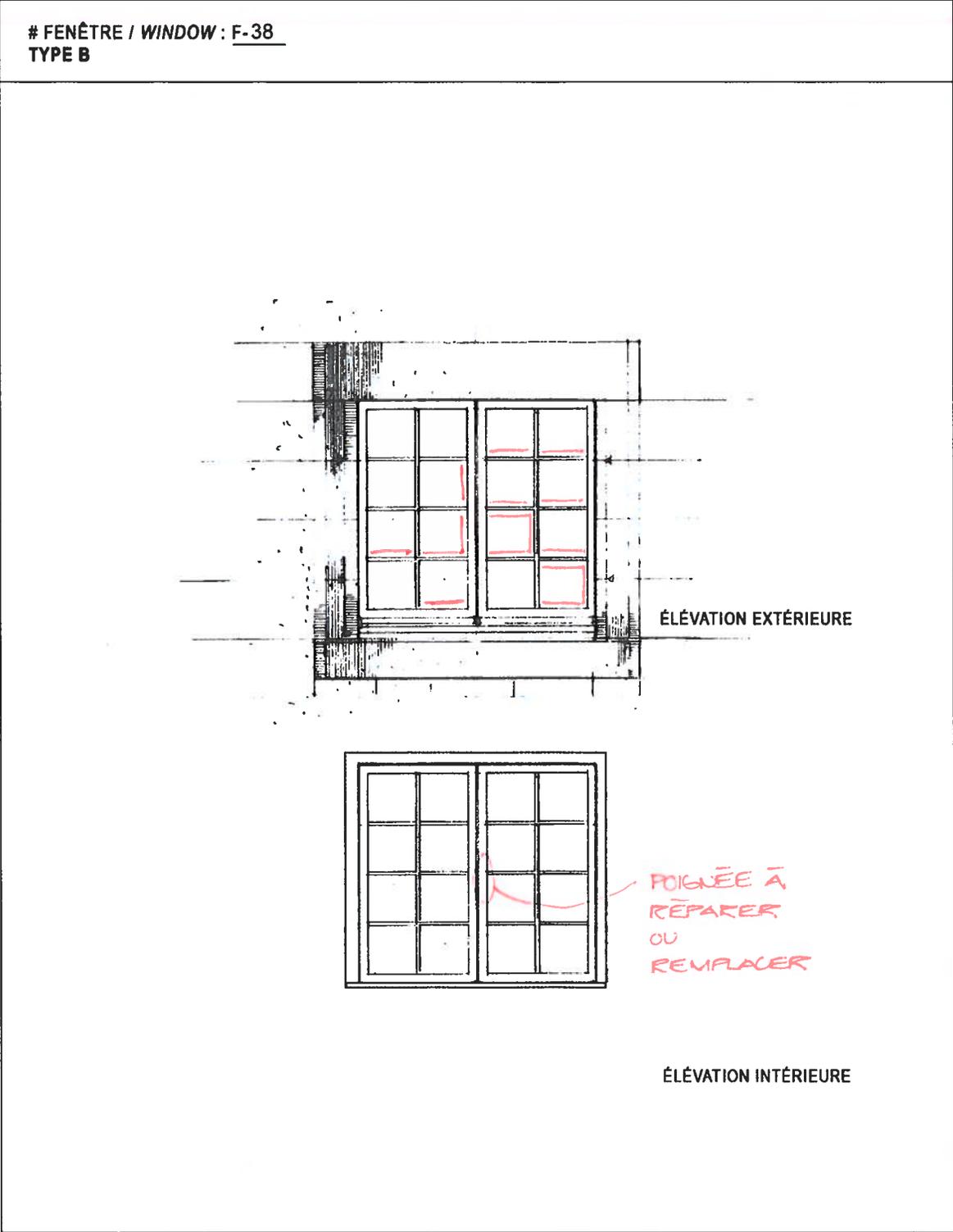
FENÊTRE / WINDOW : F-37
TYPE B



ÉLEVATION INTÉRIEURE

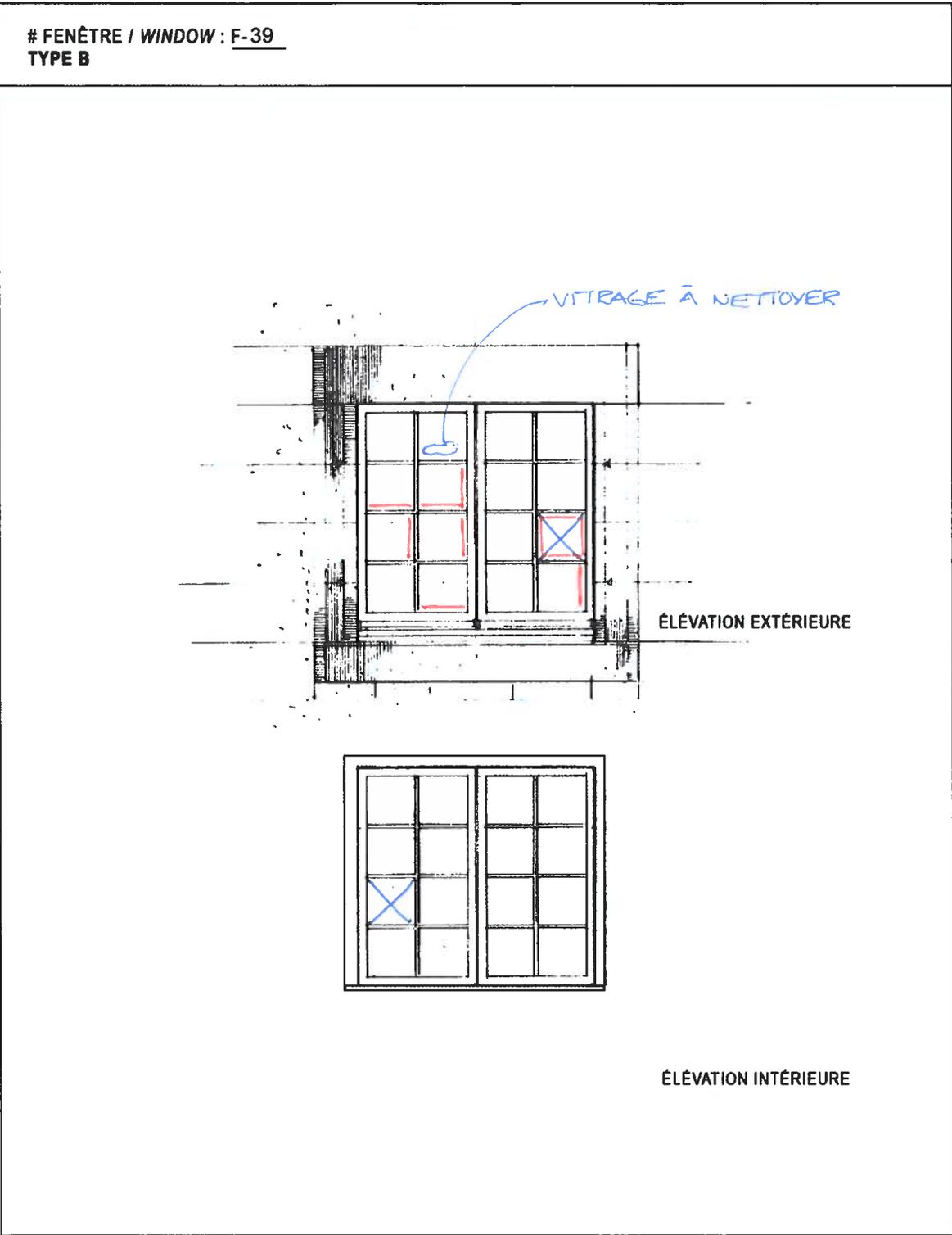
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



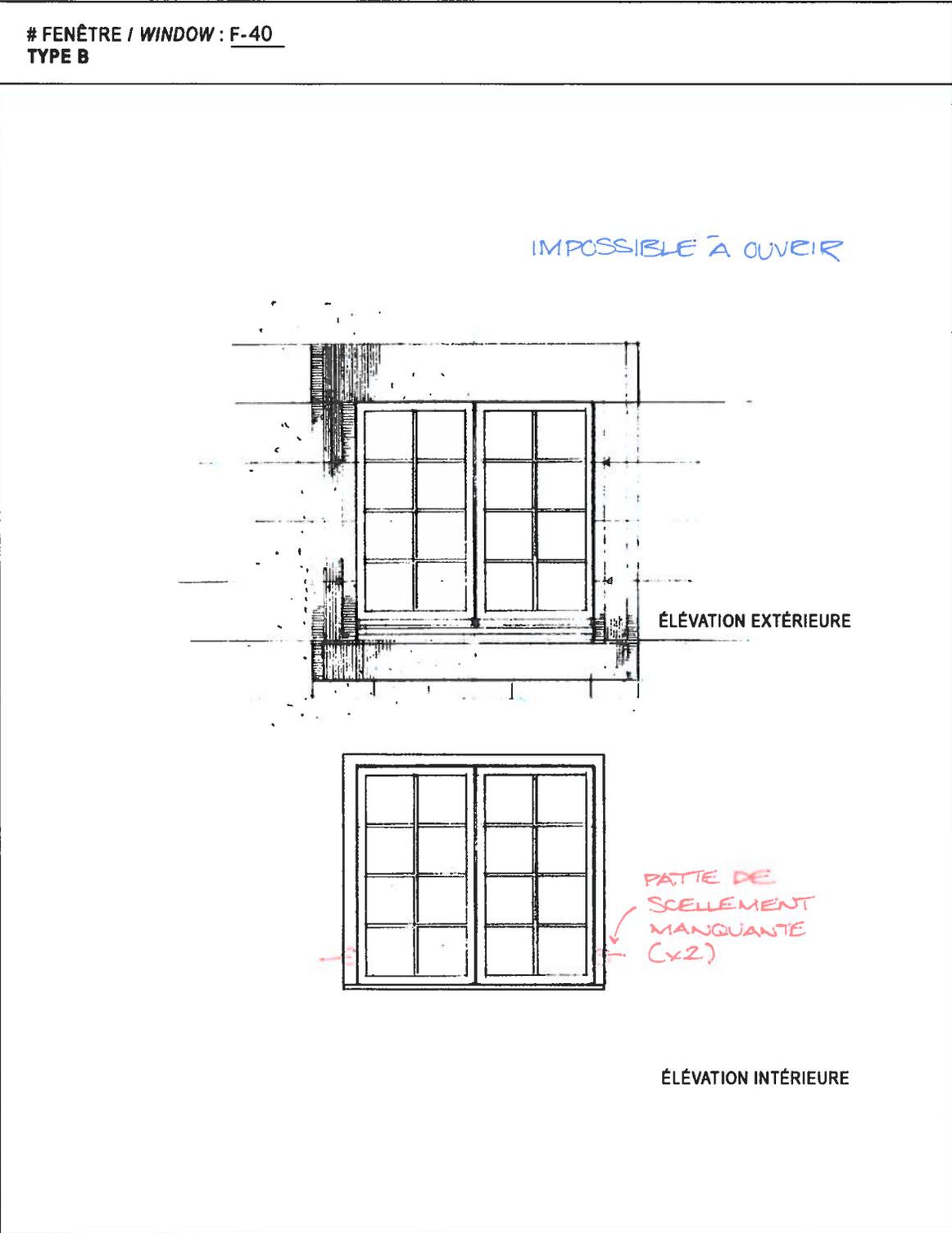
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



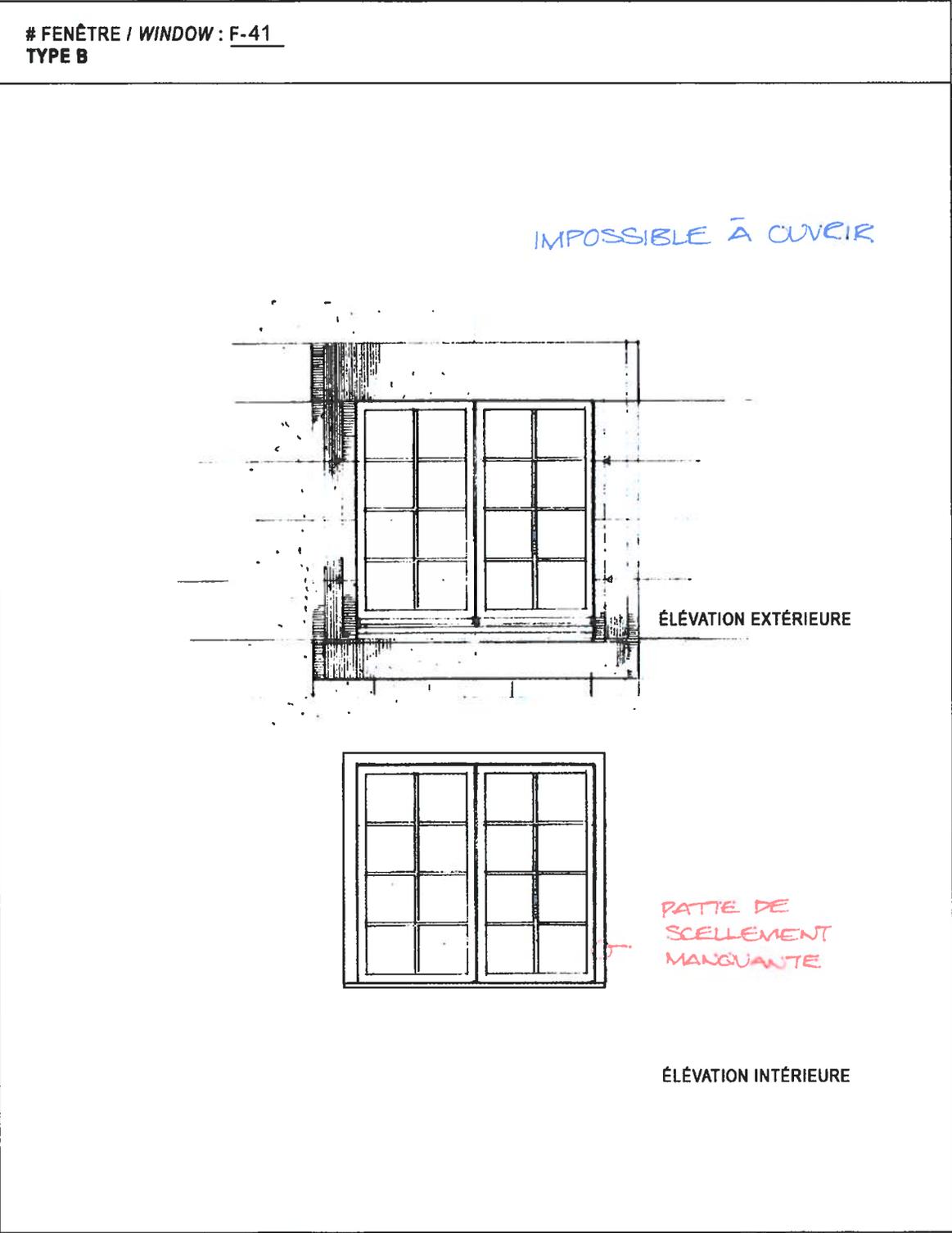
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



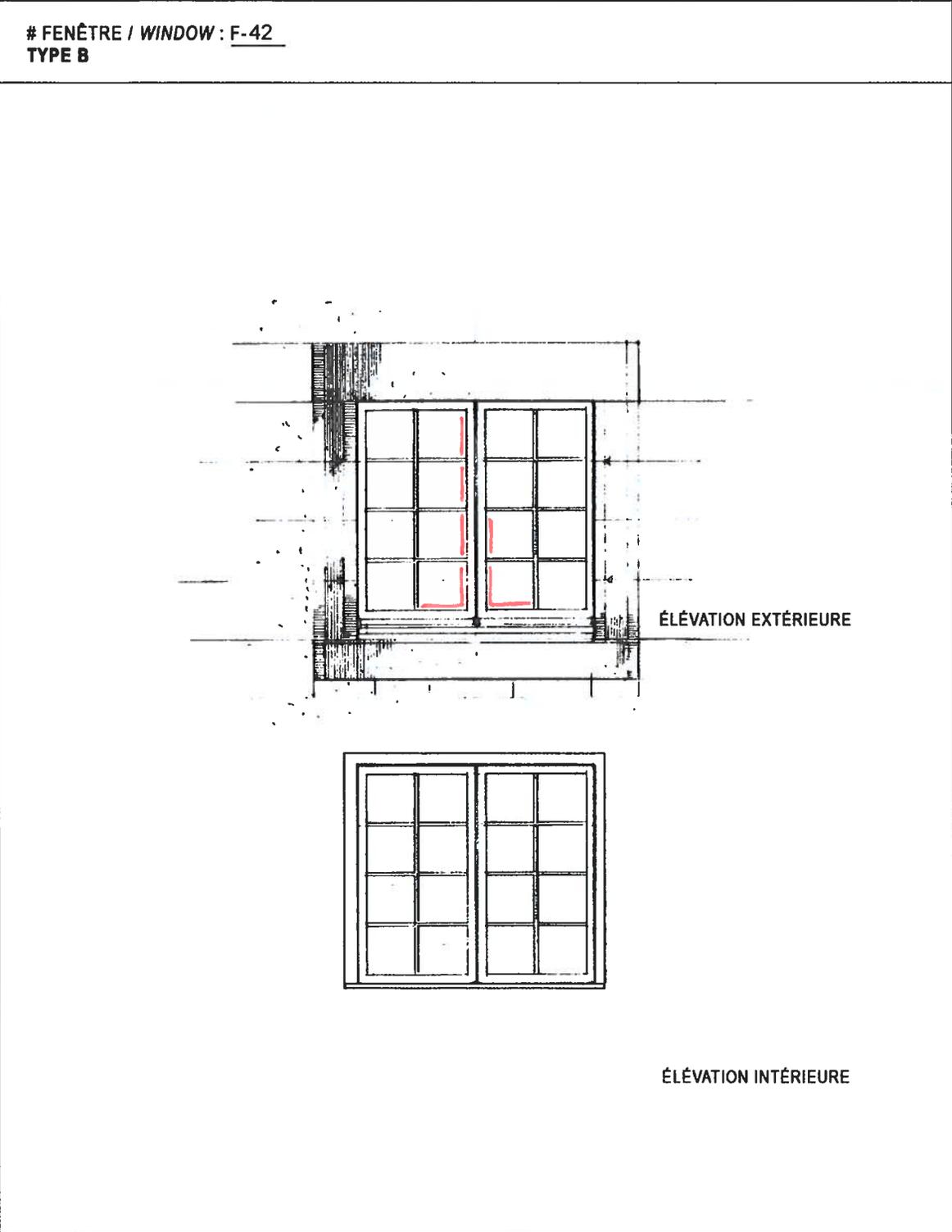
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-43
TYPE B

The image contains two architectural drawings of a window. The top drawing is the exterior elevation, showing a double window with a grid pattern. The bottom drawing is the interior elevation, showing the same window from the inside. Red lines and handwritten text are used to highlight specific details.

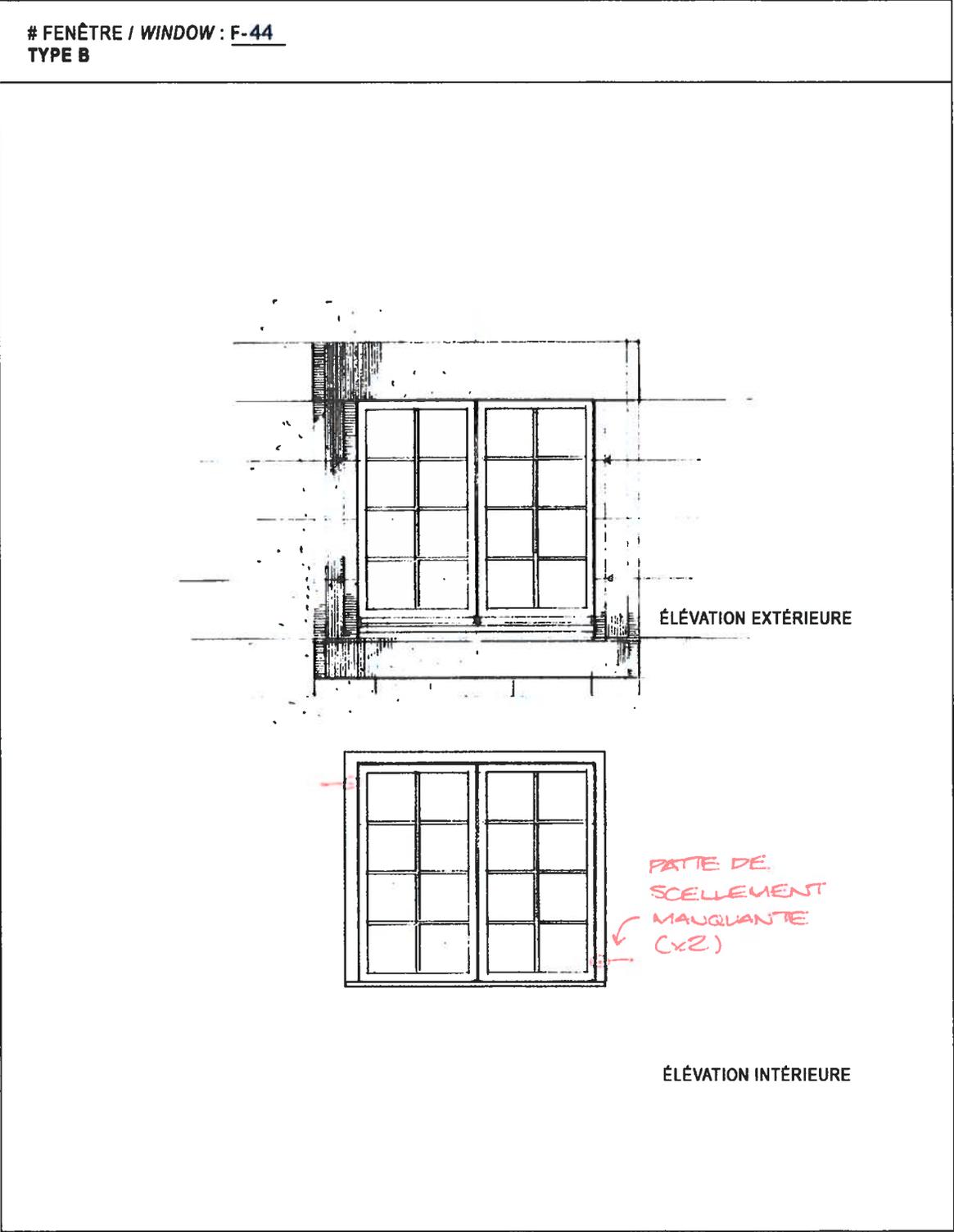
ÉLEVATION EXTÉRIEURE

PATTE DE
SCELLEMENT
MANQUANTE
(x2.)

ÉLEVATION INTÉRIEURE

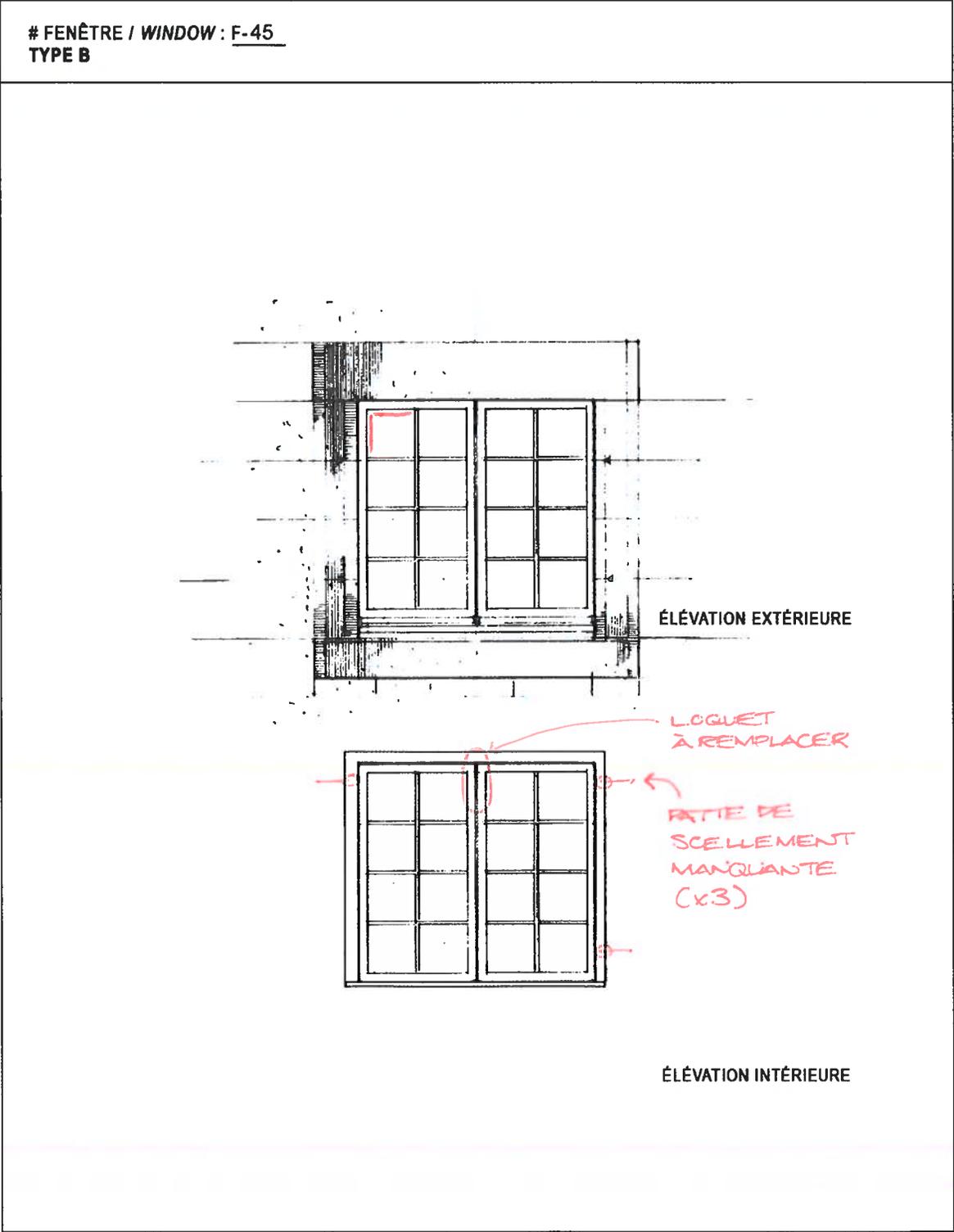
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

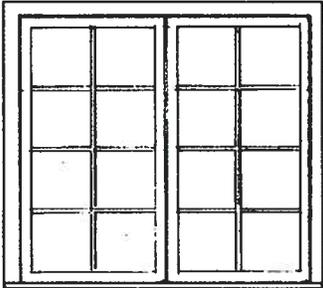
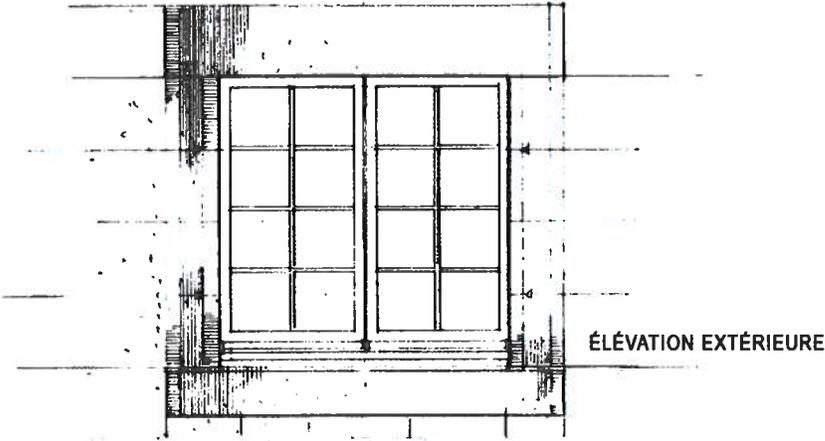


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-46
TYPE B

AUCUN DÉFAUT APPARENT

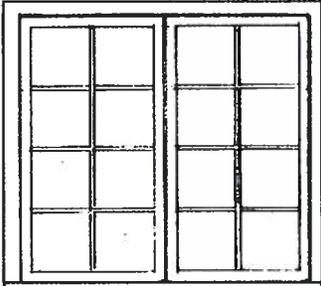
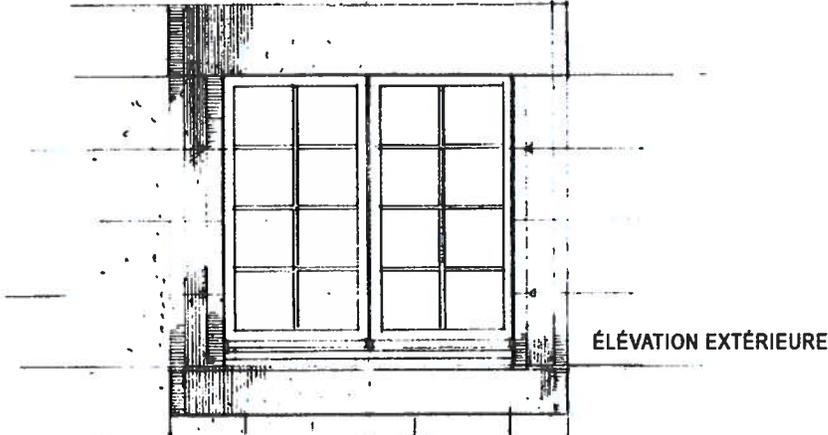


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

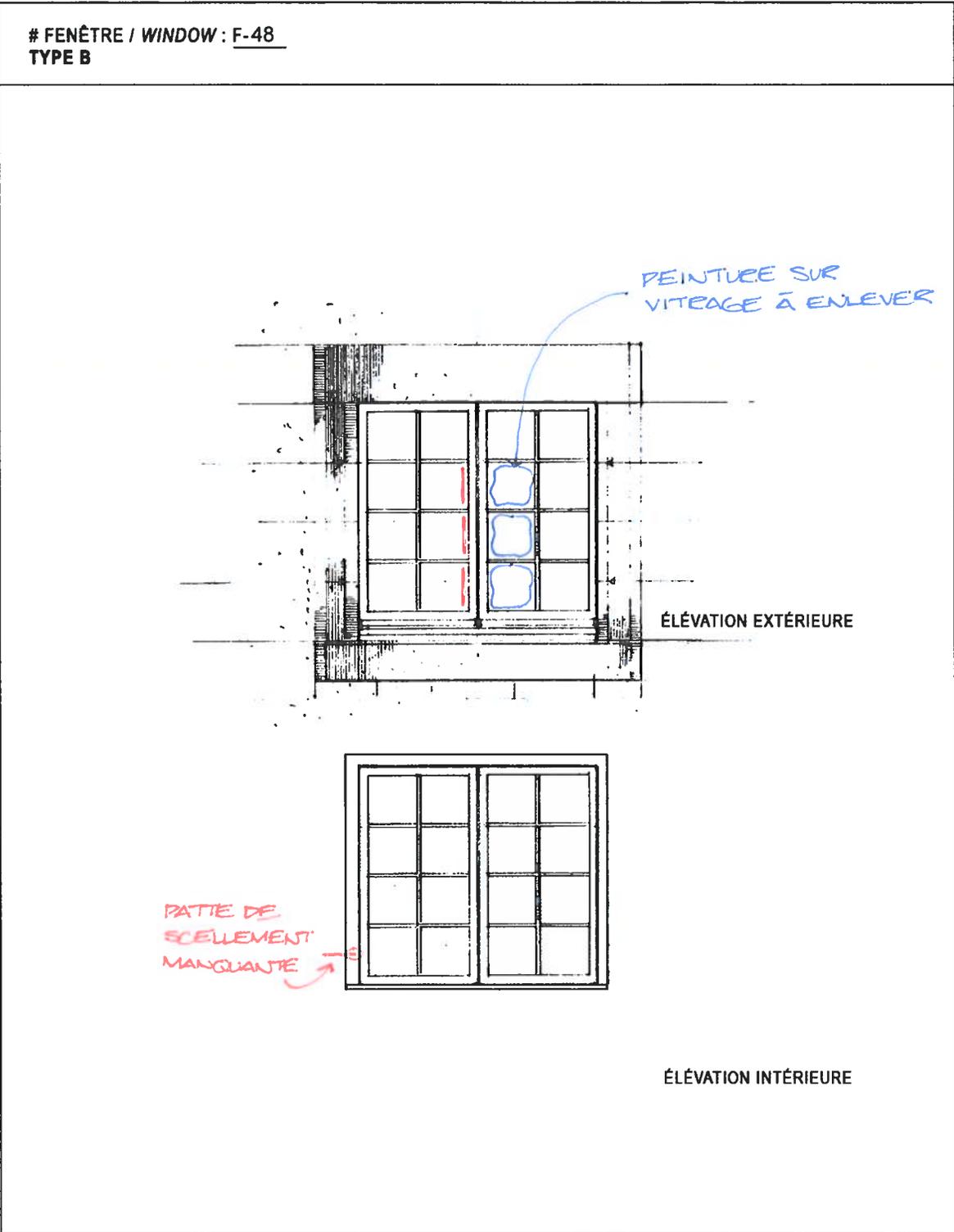
FENÊTRE / WINDOW : F-47
TYPE B

AUCUN DÉFAUT APPARENT



LHN DU FORT LENNOX / FORT LENNOX NHS

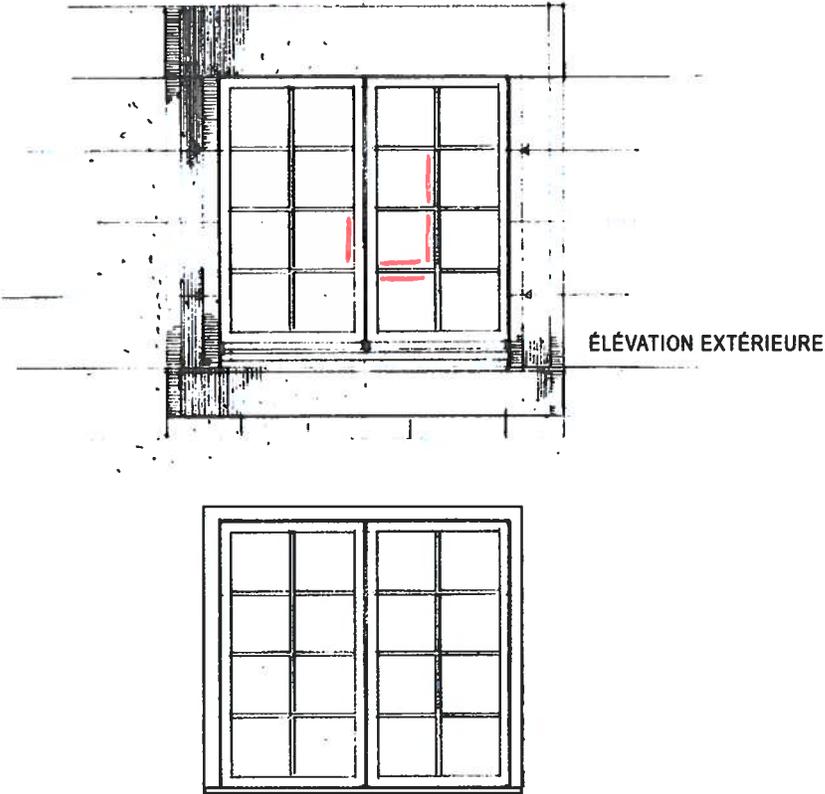
Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-49
TYPE B



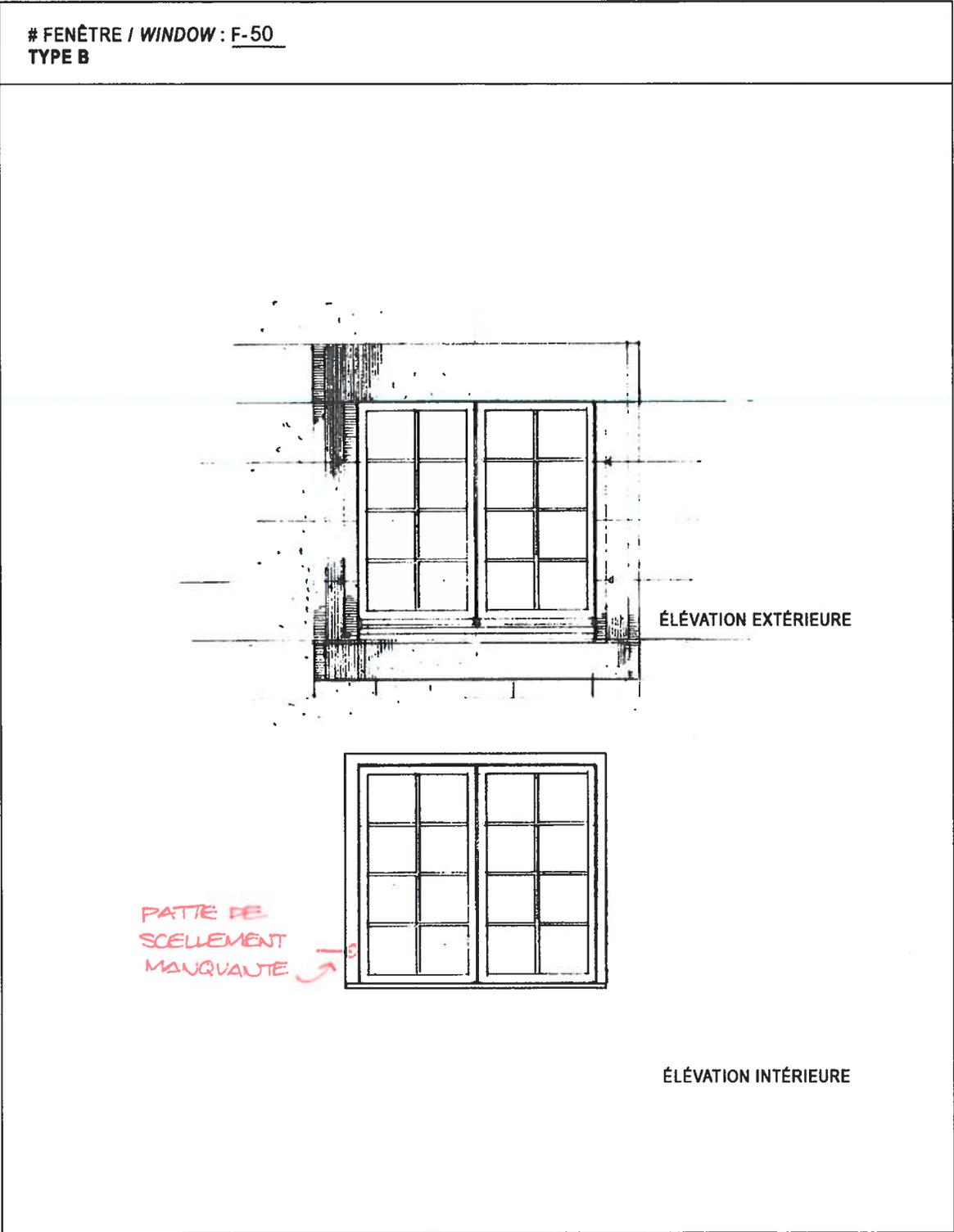
The drawing shows two elevations of a window. The top elevation, labeled 'ÉLEVATION EXTÉRIEURE', is a detailed architectural sketch of a double window with a grid pattern. It includes construction lines for the window frame and surrounding wall, with some red lines indicating specific details or materials. The bottom elevation, labeled 'ÉLEVATION INTÉRIEURE', is a simplified line drawing of the same window from the interior perspective, showing the frame and the grid pattern.

ÉLEVATION EXTÉRIEURE

ÉLEVATION INTÉRIEURE

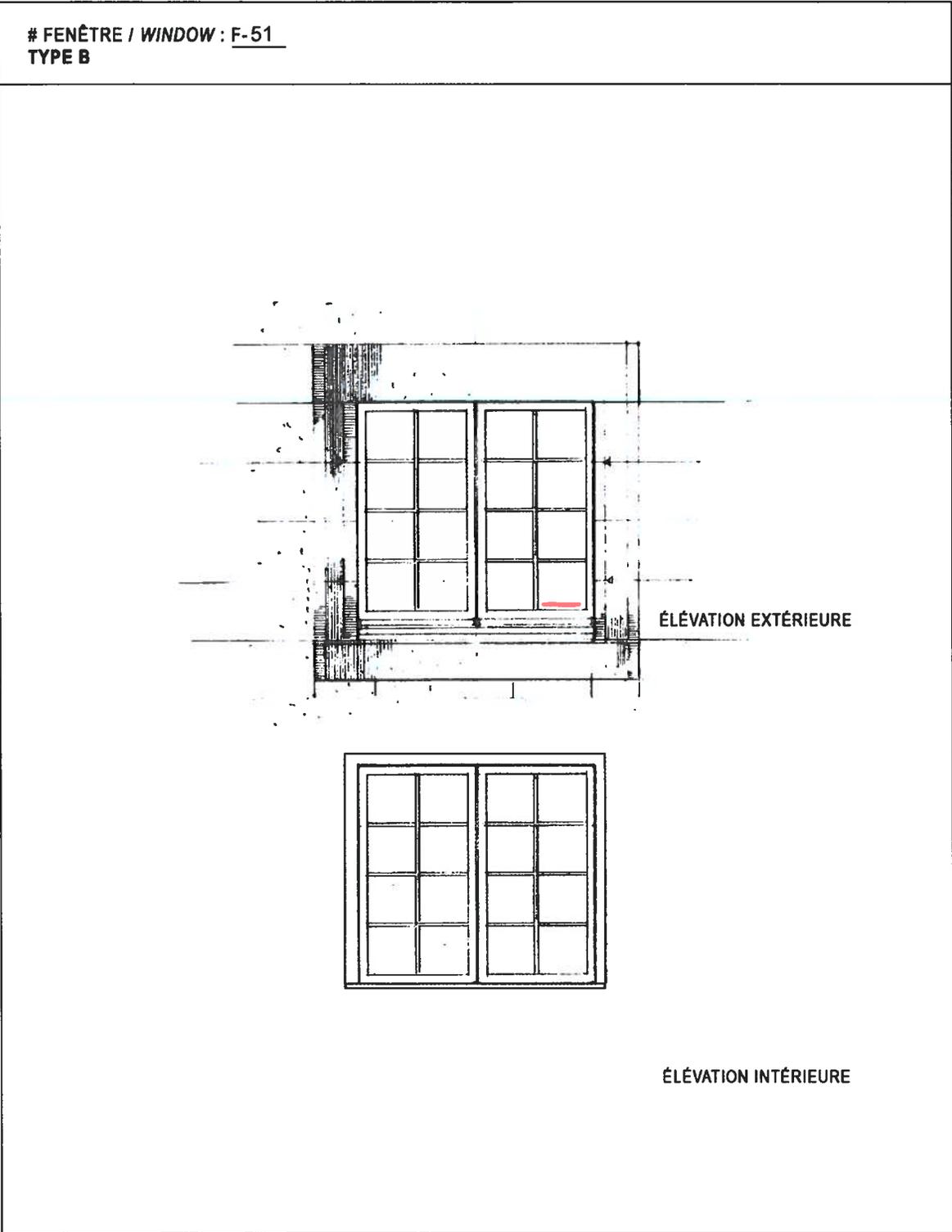
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



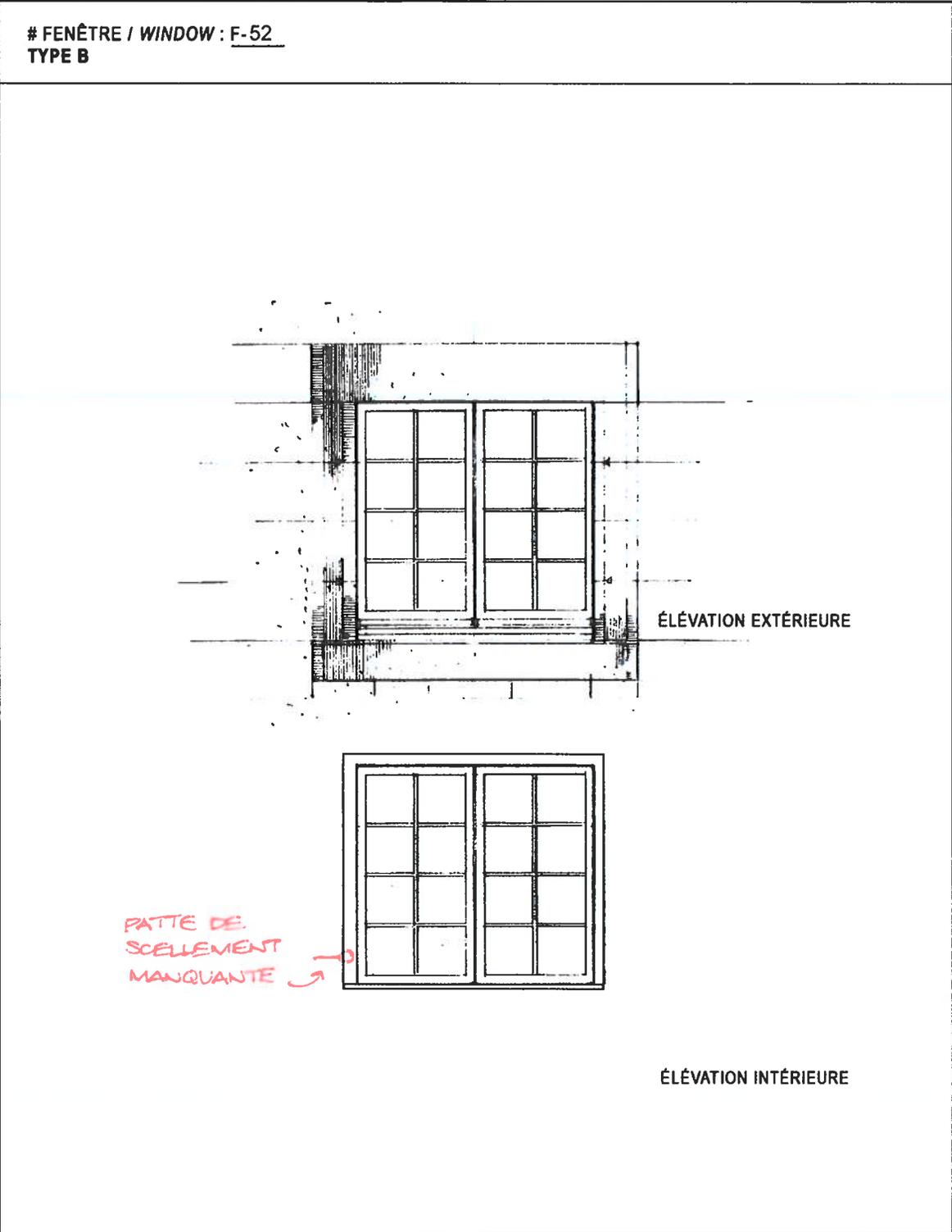
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

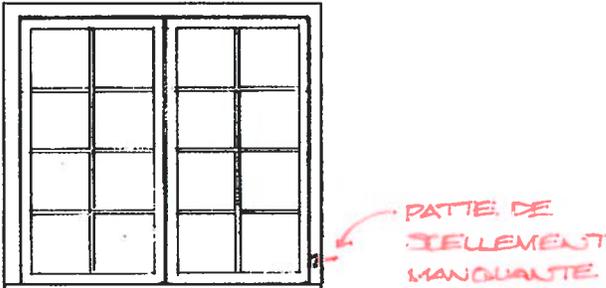
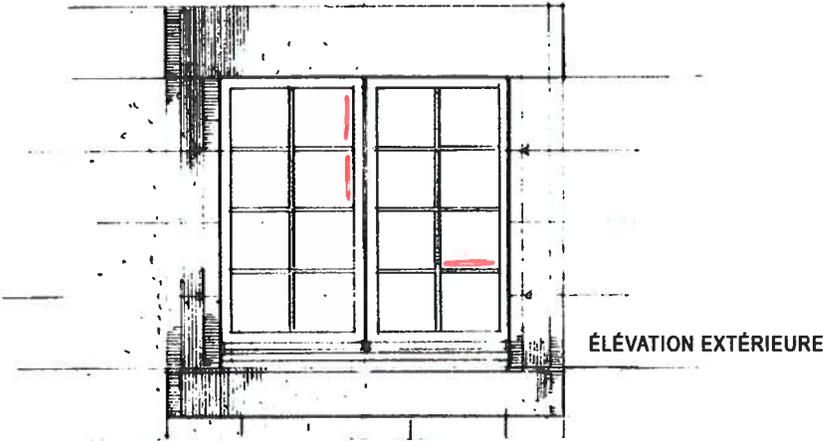
FENÊTRE / WINDOW : F-53
TYPE B

PEINTURE SUR VITRAGE À ENLEVER

ÉLEVATION EXTÉRIEURE

ÉLEVATION INTÉRIEURE

FENÊTRE / WINDOW : F-54
TYPE B

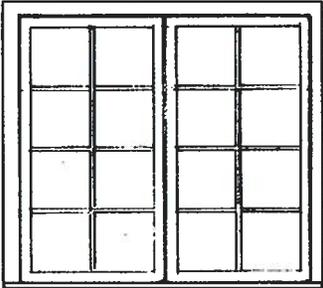
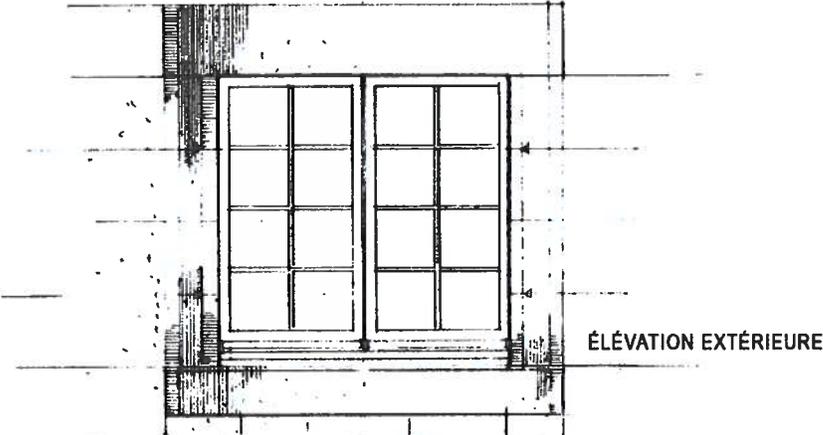


LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-55
TYPE B

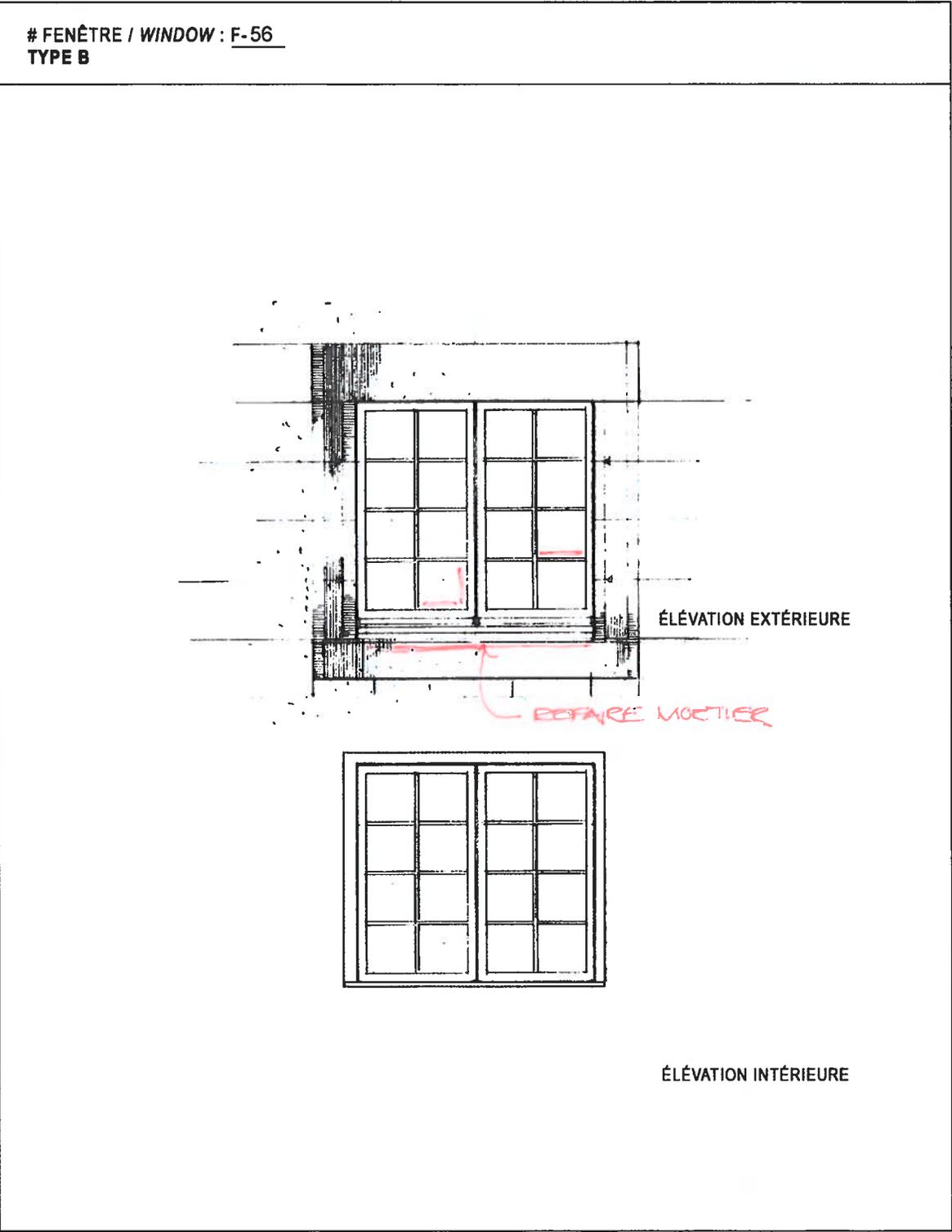
AUCUN DÉFAUT APPARENT



ÉLEVATION INTÉRIEURE

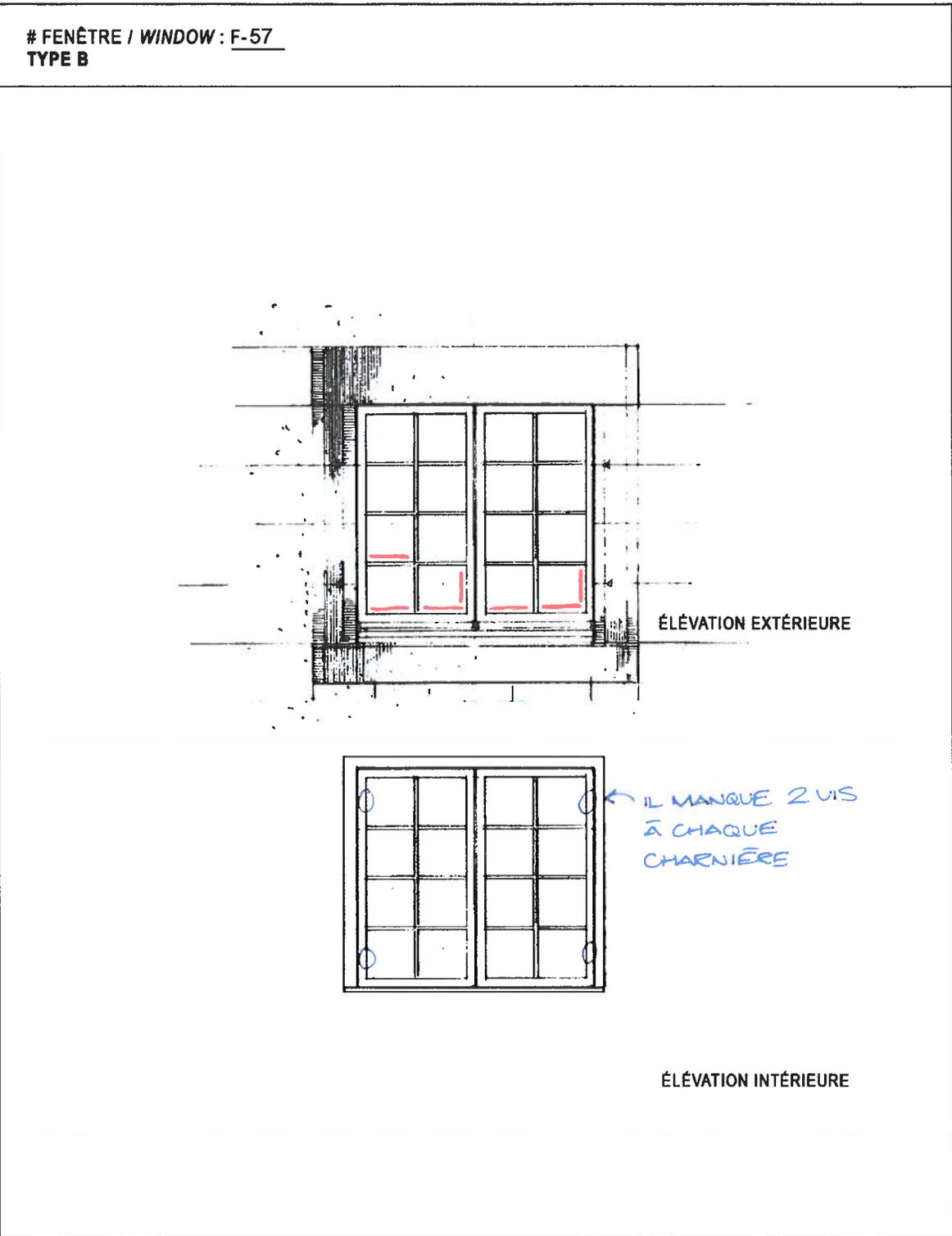
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396



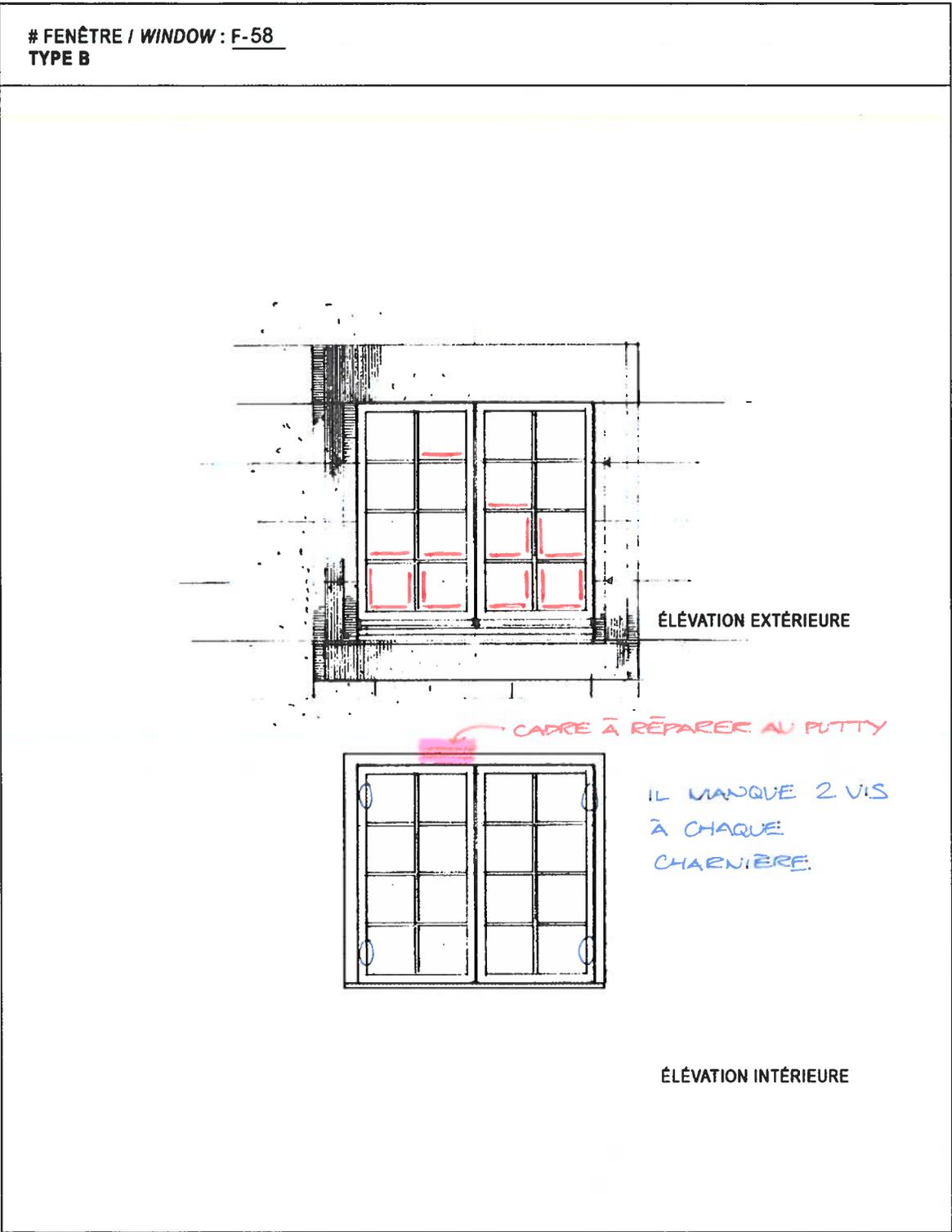
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-59
TYPE B

The drawing shows two elevations of a window. The top elevation, labeled 'ÉLEVATION EXTÉRIEURE', is a detailed sketch of a double window with a grid pattern. Red lines highlight the horizontal muntins and the lower portion of the vertical muntins. The bottom elevation, labeled 'ÉLEVATION INTÉRIEURE', is a simpler line drawing of the same window. Blue circles are drawn around the four hinge locations (top and bottom of each sash). A handwritten note in blue ink points to these circles: 'IL MANQUE 2 VIS À CHAQUE CHARNIÈRE'.

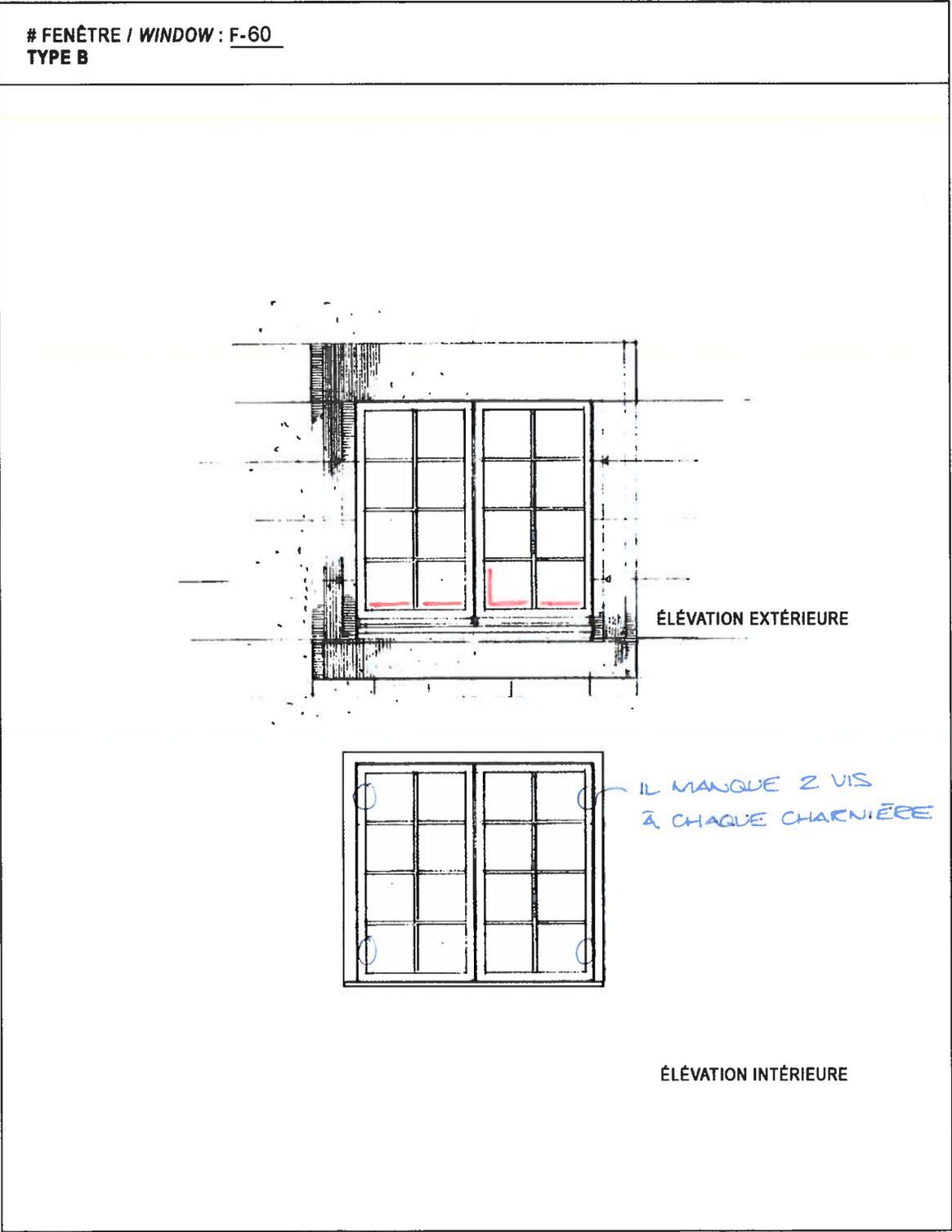
ÉLEVATION EXTÉRIEURE

IL MANQUE 2 VIS À CHAQUE CHARNIÈRE

ÉLEVATION INTÉRIEURE

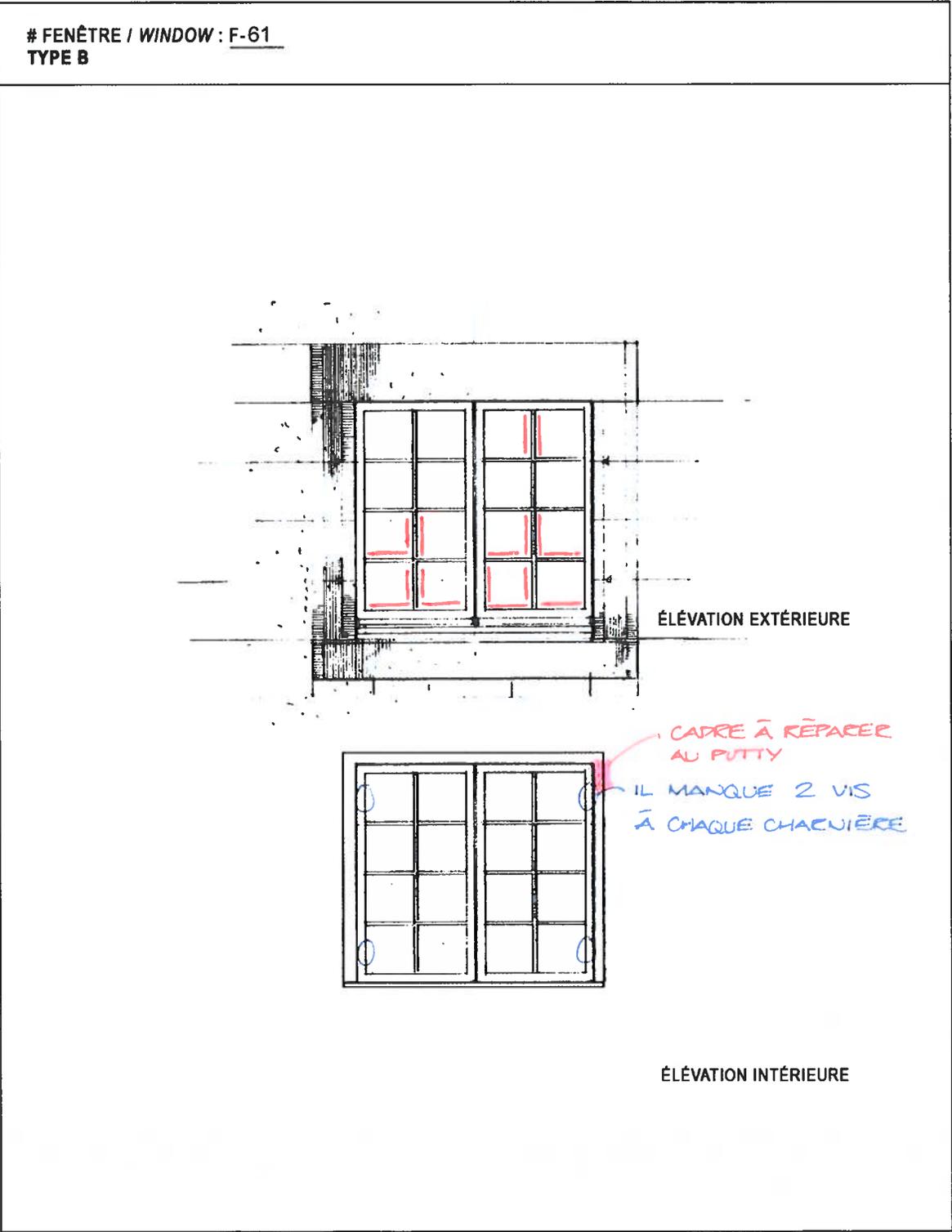
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-62
TYPE B

ÉLEVATION EXTÉRIEURE

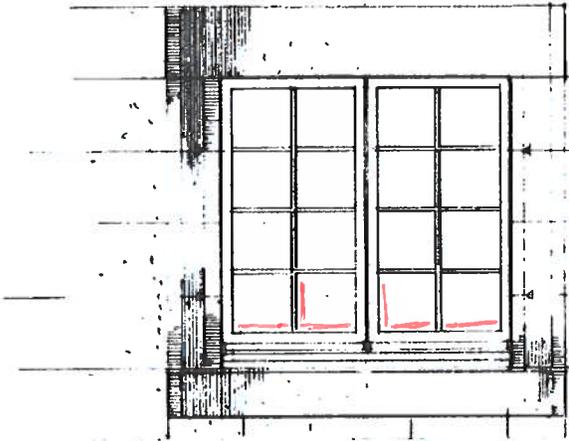
IL MANQUE 2 VIS
À CHAQUE CHARNIÈRE

ÉLEVATION INTÉRIEURE

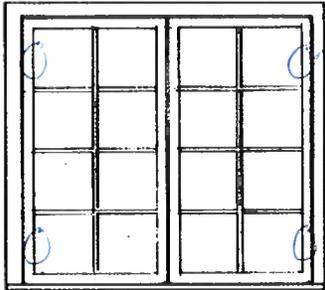
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-63
TYPE B



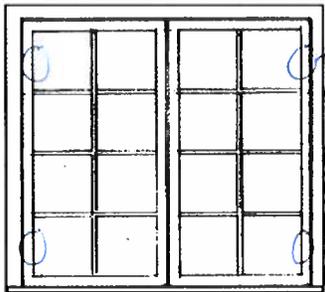
ÉLEVATION EXTÉRIEURE



IL MANQUE 2 VIS
À CHAQUE CHARNIÈRE

ÉLEVATION INTÉRIEURE

FENÊTRE / WINDOW : F-64
TYPE B



IL MANQUE 2 VIS
À CHAQUE CHARNIÈRE

ÉLEVATION INTÉRIEURE

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-65
TYPE B

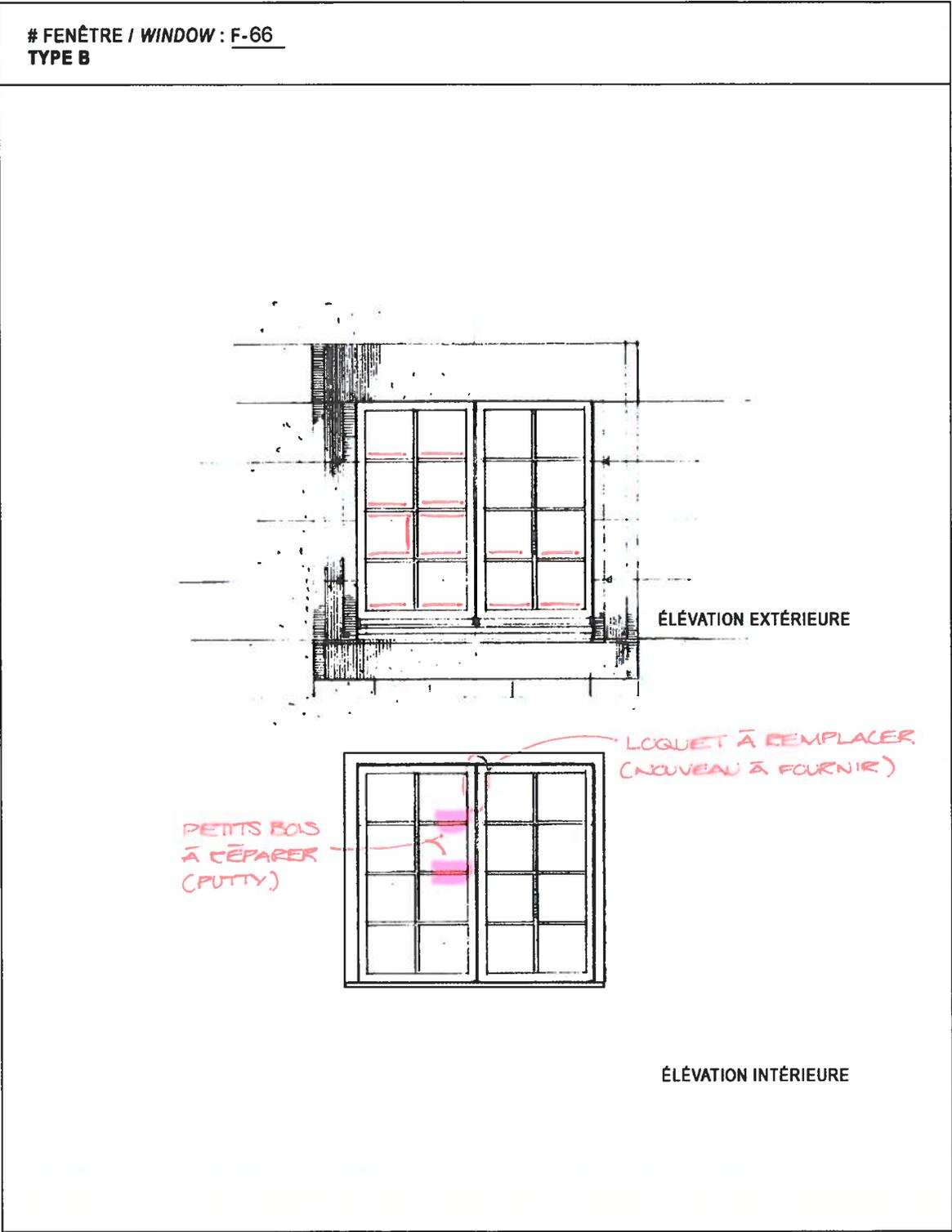
ÉLEVATION EXTÉRIEURE

ÉLEVATION INTÉRIEURE

IL MANQUE 2 VS
À CHAQUE CHARNIÈRE

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-67
TYPE B

The drawing shows two elevations of a window. The top elevation, labeled 'ÉLEVATION EXTÉRIEURE', is a hand-drawn sketch of a double window with a 2x2 grid of panes on each side. Red lines highlight the panes. The bottom elevation, labeled 'ÉLEVATION INTÉRIEURE', is a clean line drawing of the same window. Blue circles are drawn at the four hinge locations (top and bottom on both sides). A blue handwritten note with an arrow points to these circles: 'IL MANQUE 2 VIS À CHAQUE CHARNIÈRE'.

ÉLEVATION EXTÉRIEURE

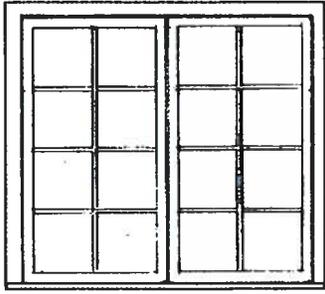
IL MANQUE 2 VIS À CHAQUE CHARNIÈRE

ÉLEVATION INTÉRIEURE

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / Project no. PRO-1396

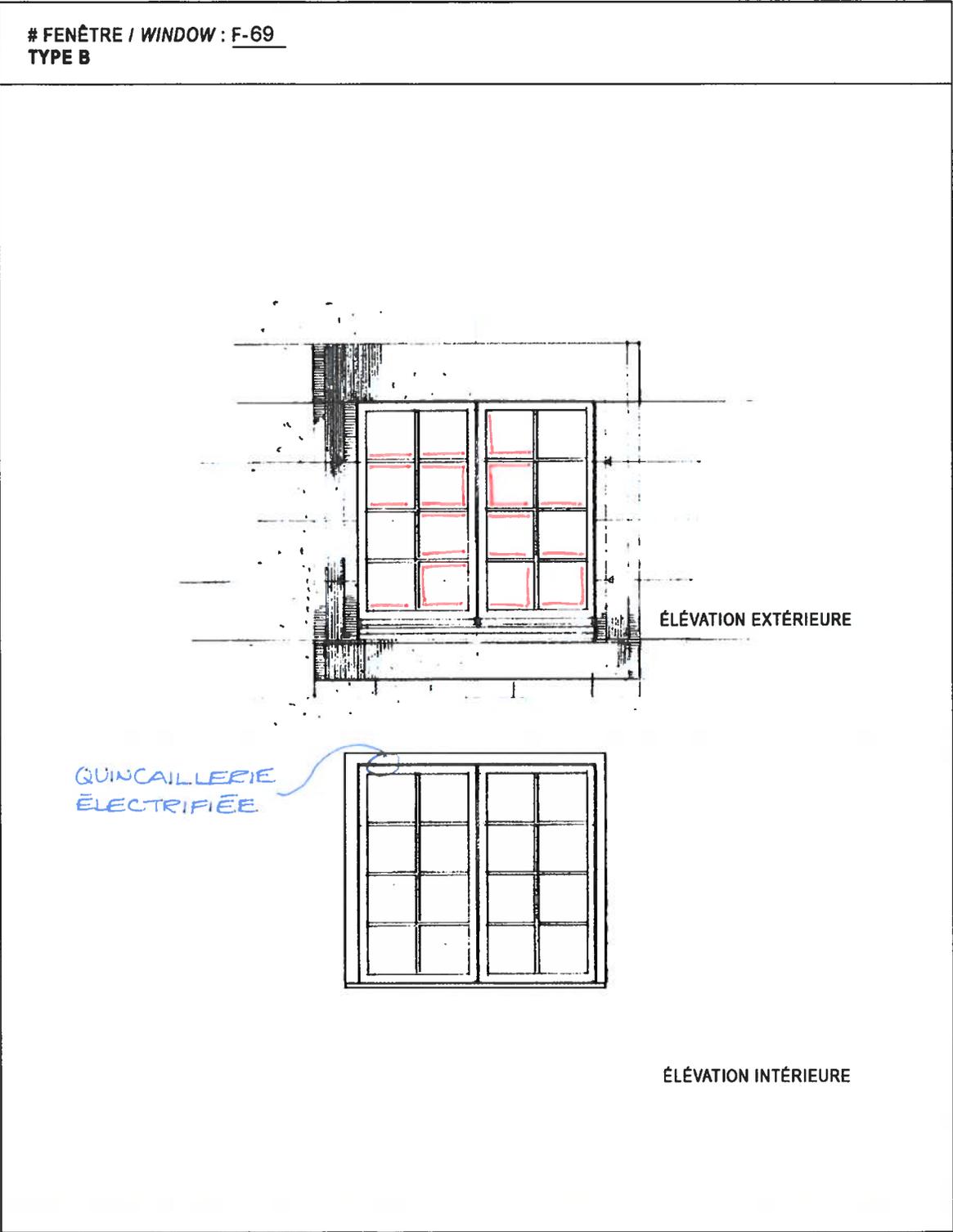
FENÊTRE / WINDOW : F-68
TYPE B



ÉLEVATION INTÉRIEURE

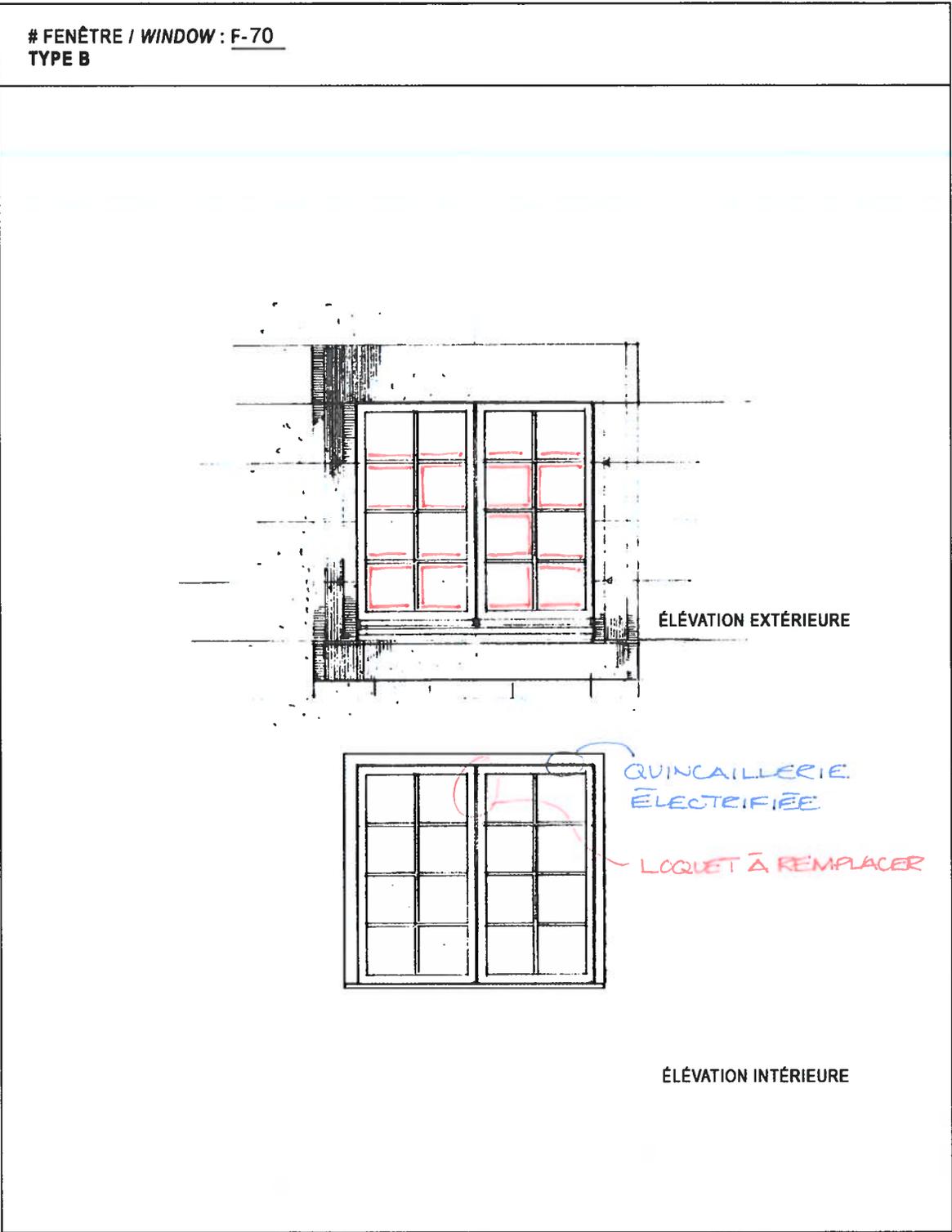
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

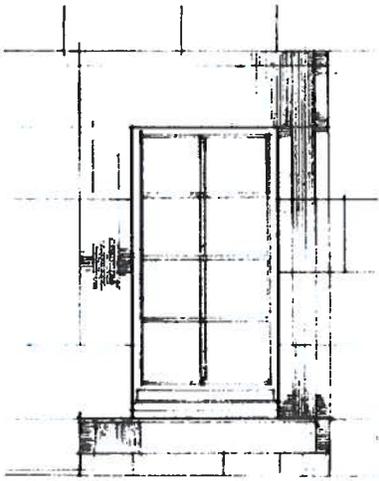


LHN DU FORT LENNOX / FORT LENNOX NHS

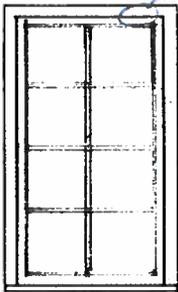
Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-71
TYPE C

AUCUN DÉFAUT APPARENT



ÉLEVATION EXTÉRIEURE



QUINCAILLERIE
ÉLECTRIFIÉE

ÉLEVATION INTÉRIEURE

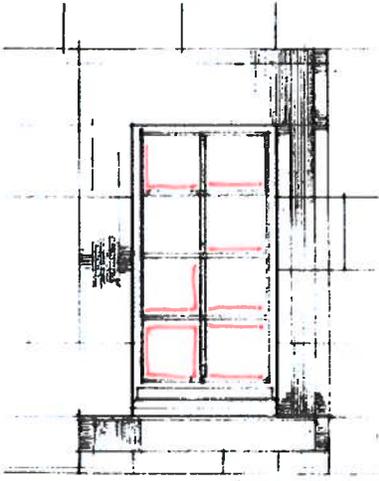
FIN DE LA SECTION

LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

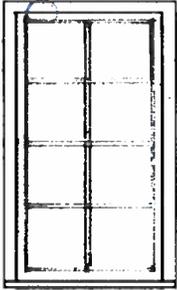
FENÊTRE / WINDOW : F-72
TYPE C

NE FERME PLUS



ÉLEVATION EXTÉRIEURE

QUINCAILLERIE
ÉLECTRIFIÉE

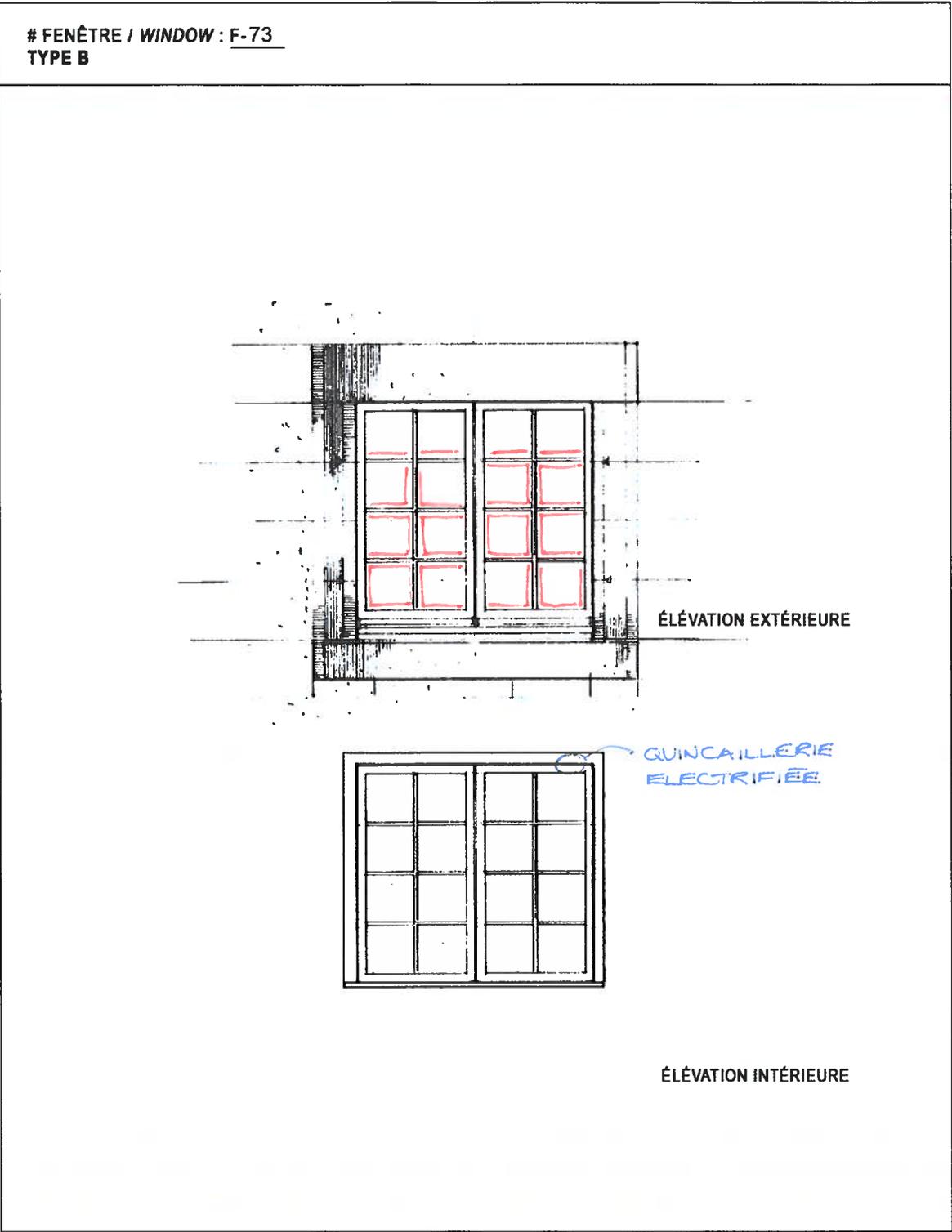


ÉLEVATION INTÉRIEURE

FIN DE LA SECTION

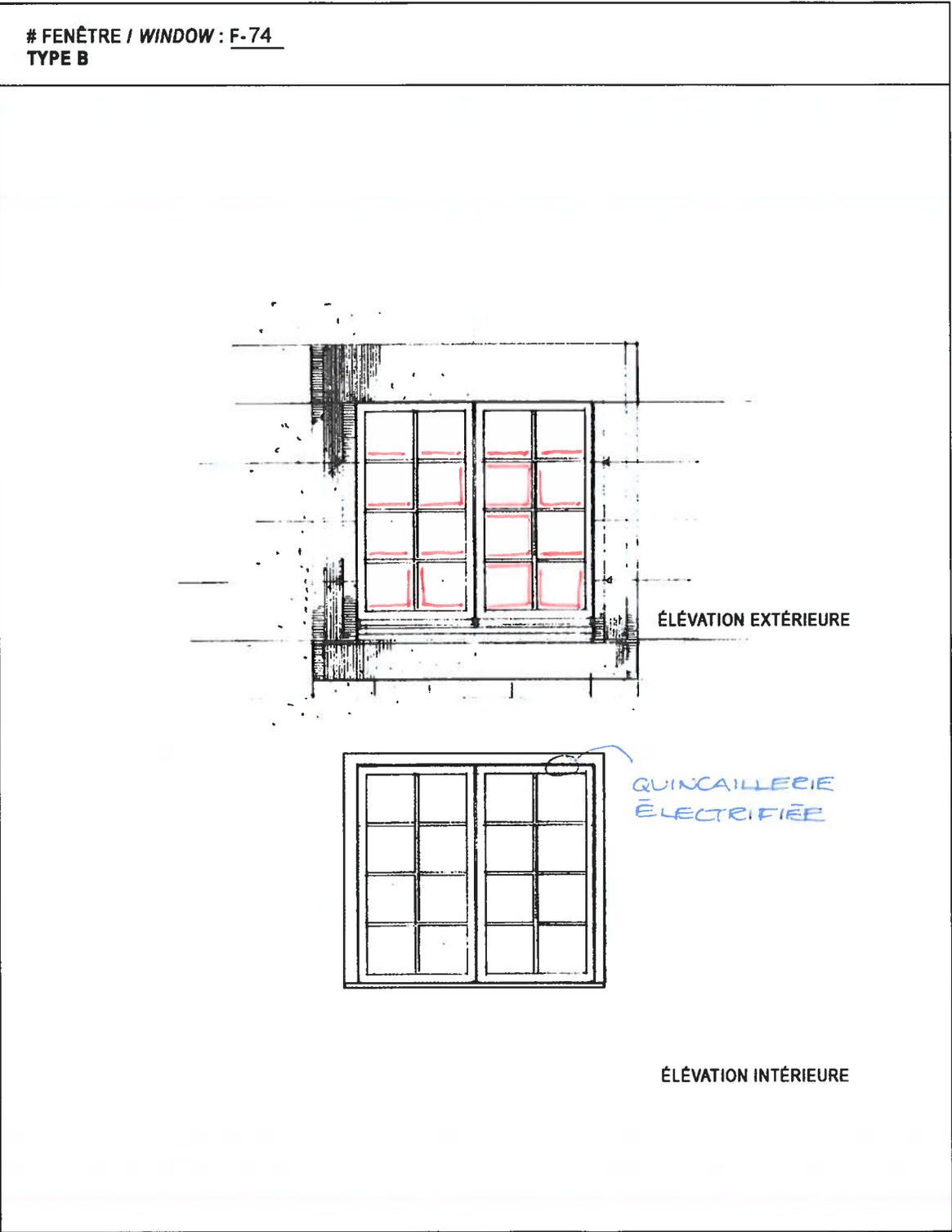
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



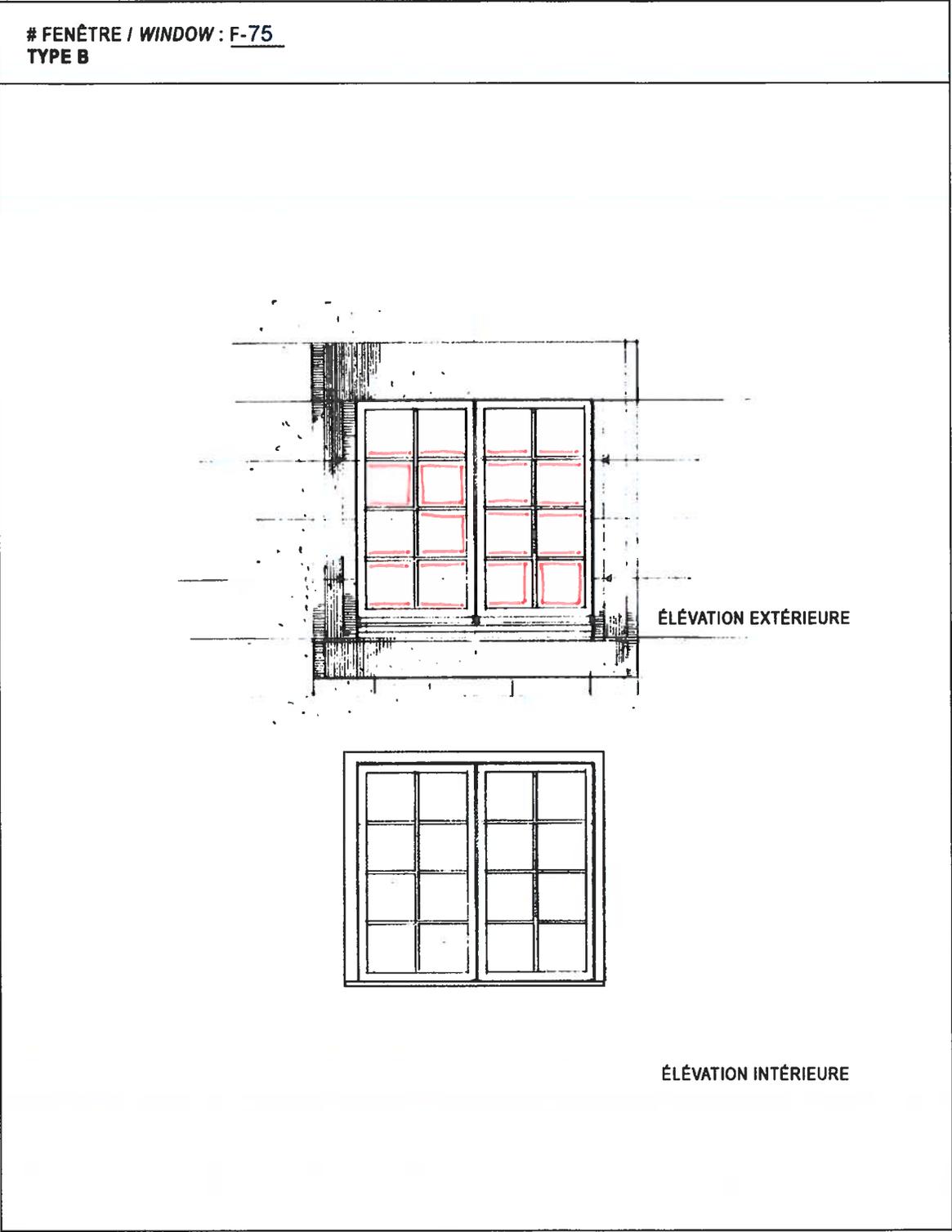
LHN DU FORT LENNOX / FORT LENNOX NHS

Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

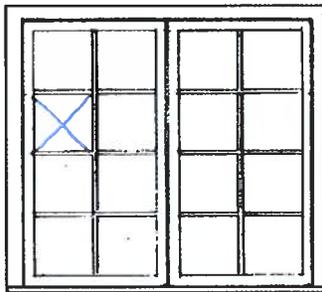
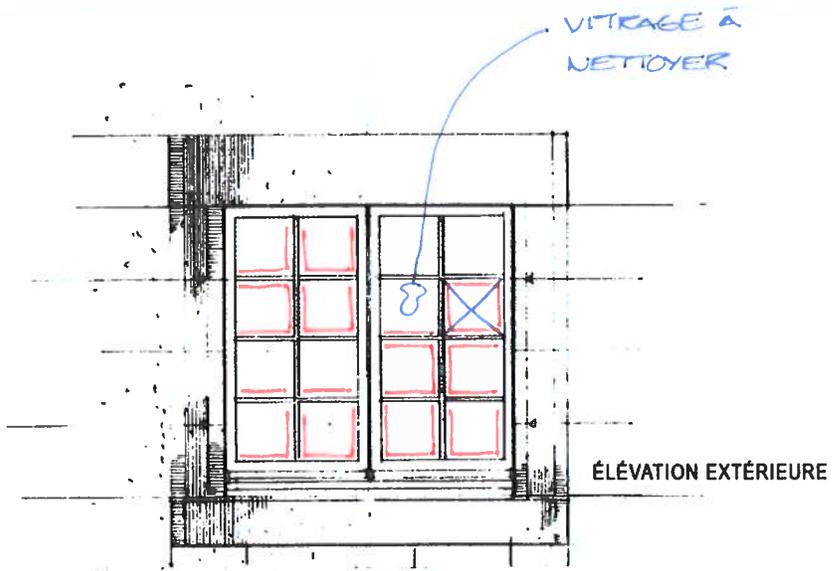


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Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

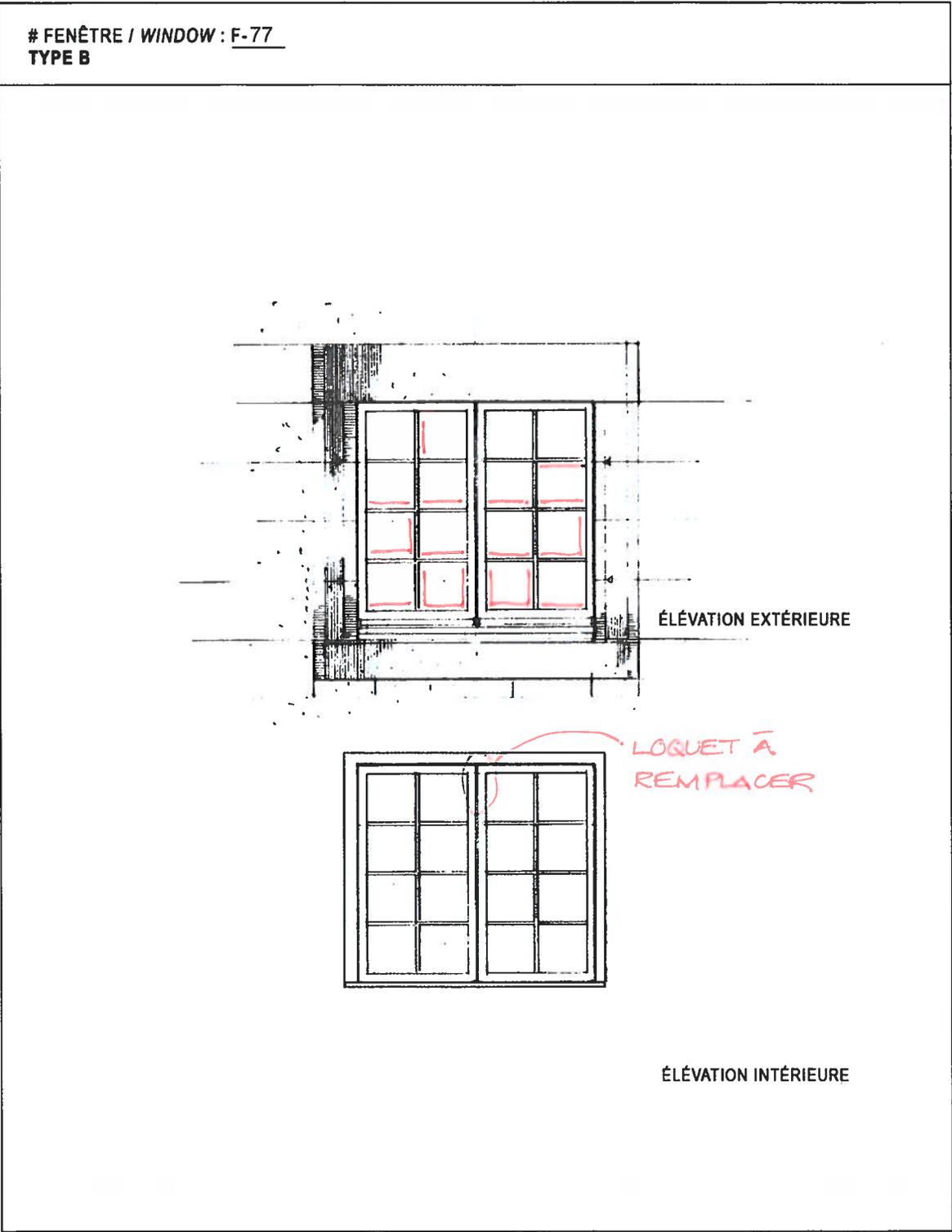


FENÊTRE / WINDOW : F-76
TYPE B



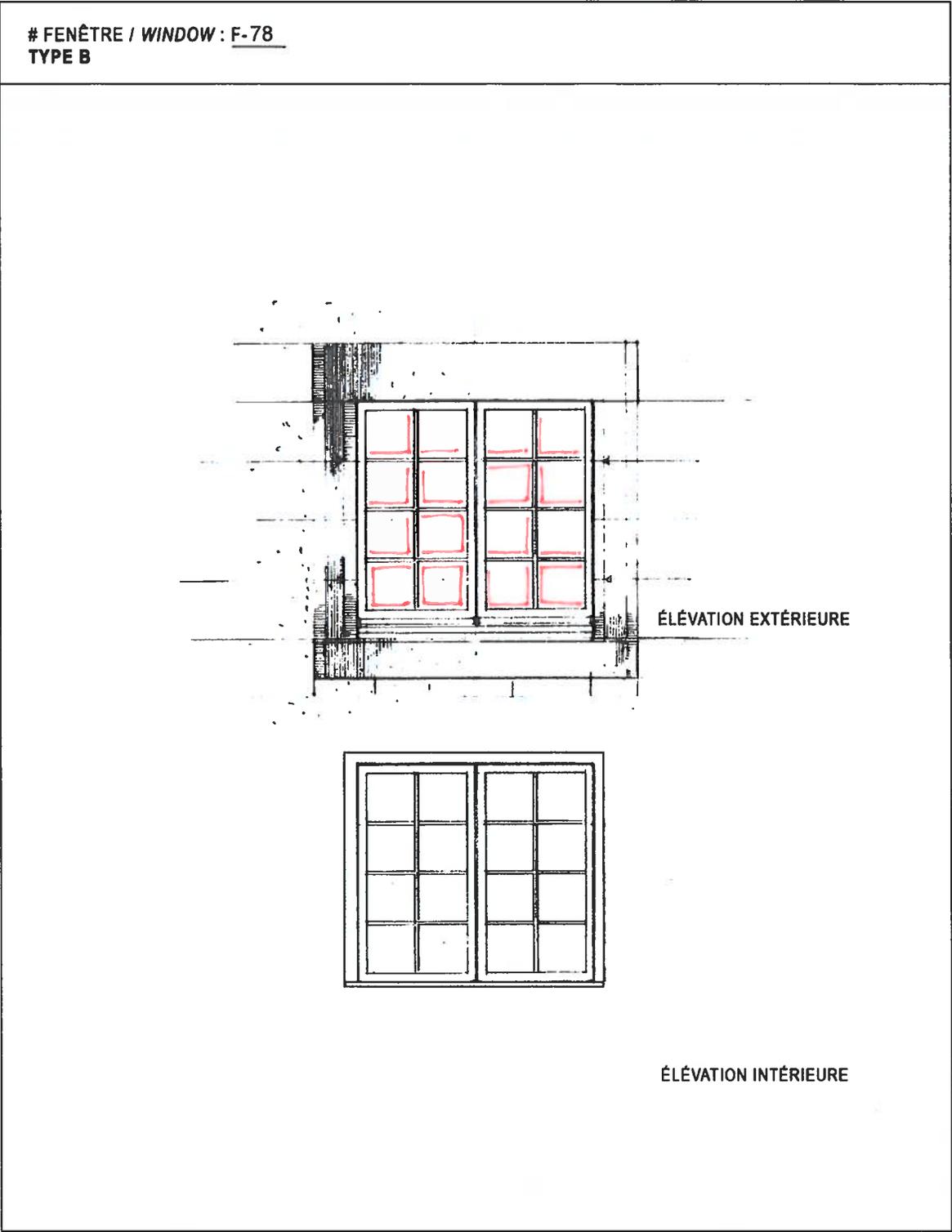
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Projet / Project no. PRO-1396



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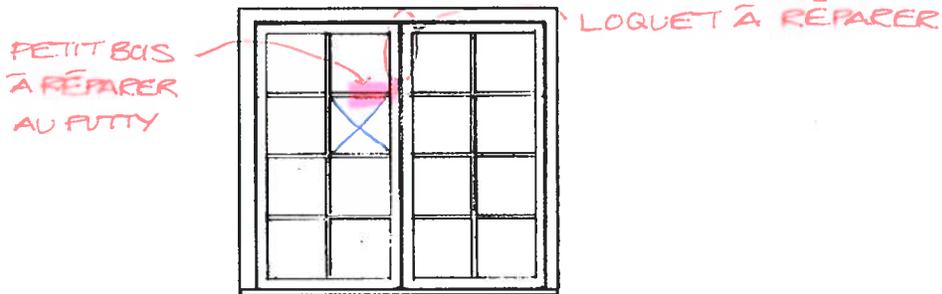
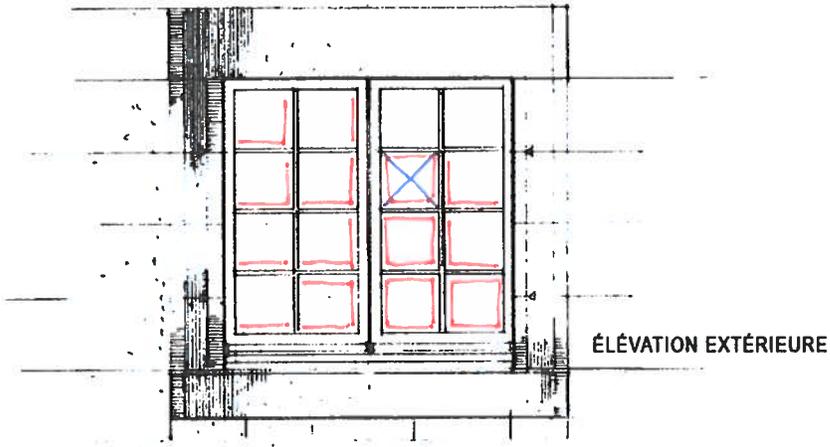
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Projet / Project no. PRO-1396



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Projet / Project no. PRO-1396

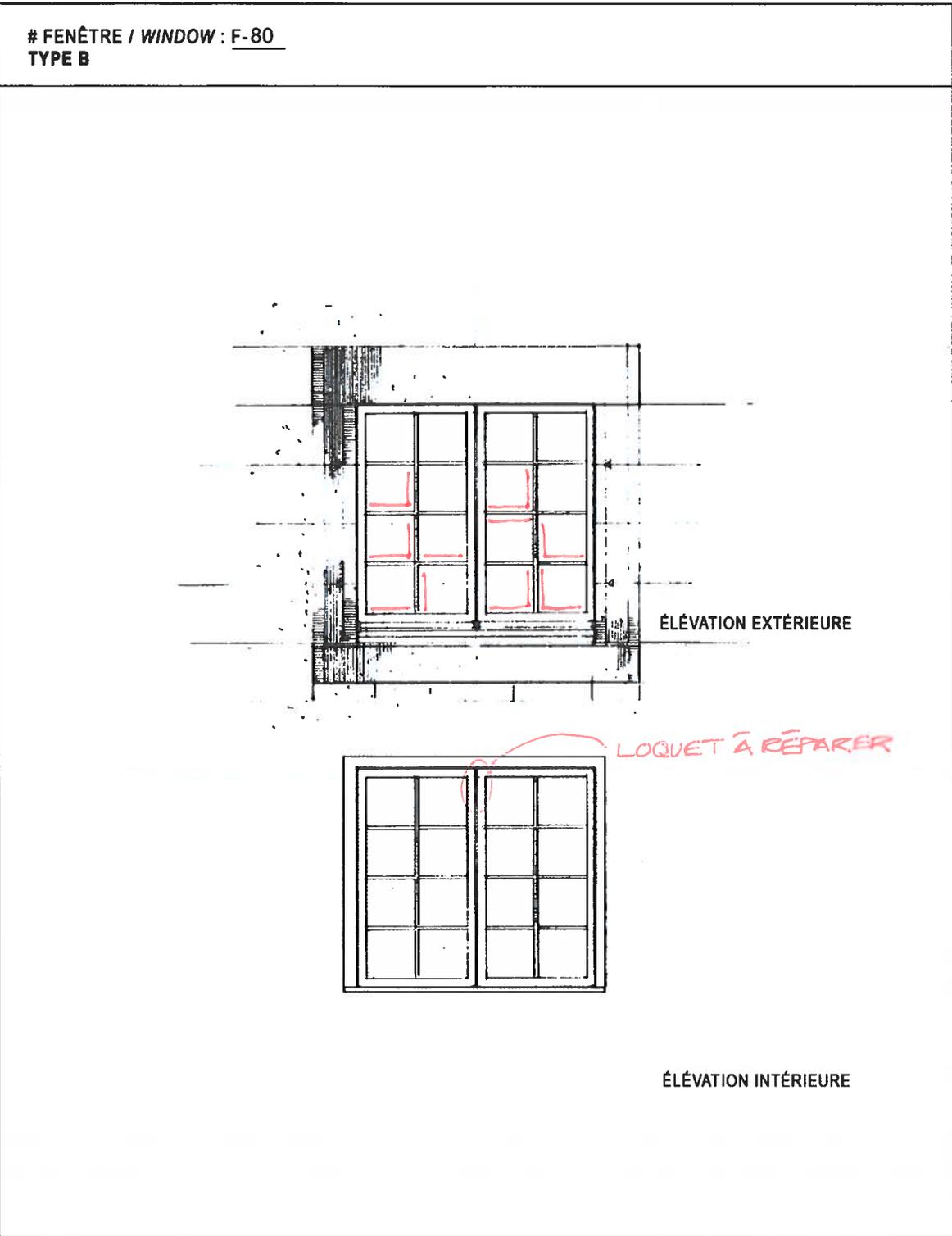
FENÊTRE / WINDOW : F-79
TYPE B



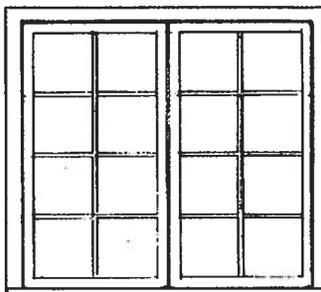
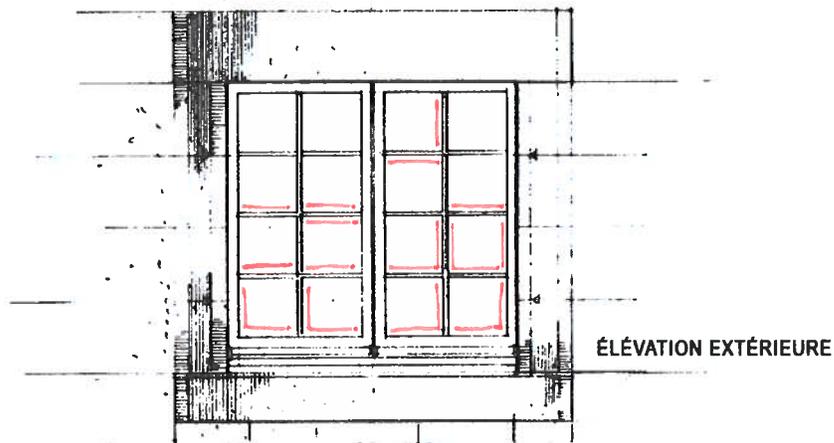
ÉLEVATION INTÉRIEURE

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Projet / Project no. PRO-1396



FENÊTRE / WINDOW : F-81
TYPE B



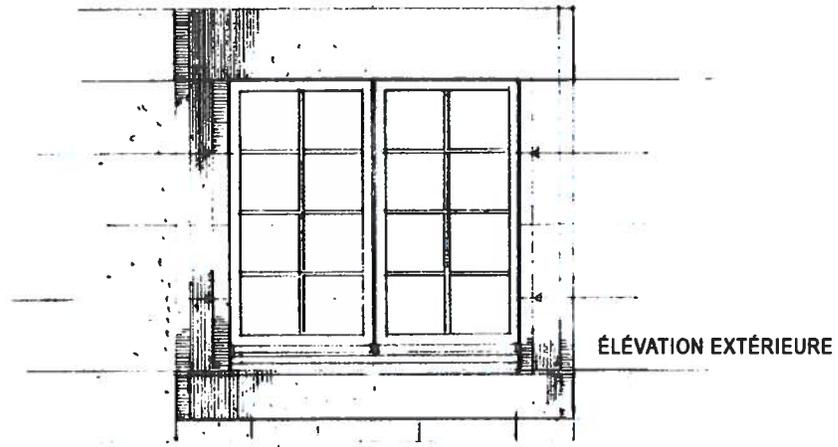
LHN DU FORT LENNOX / FORT LENNOX NHS

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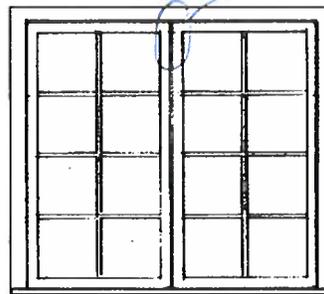
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-82
TYPE B

IMPOSSIBLE À OUVRI



ÉLEVATION EXTÉRIEURE

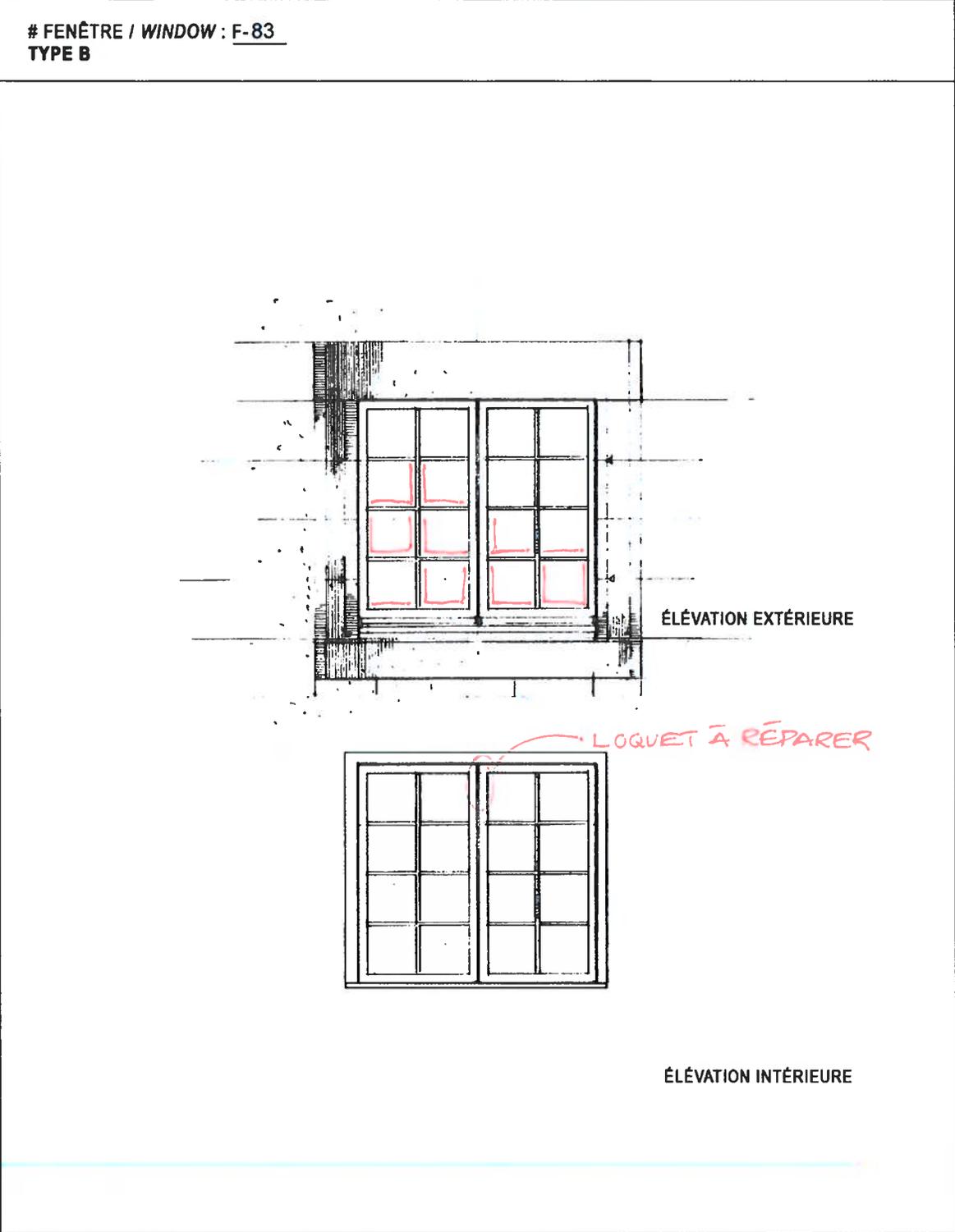


LOQUET
IMPOSSIBLE
À BAISSER
MÊME À GRANDS
COUPS DE MARTEAU

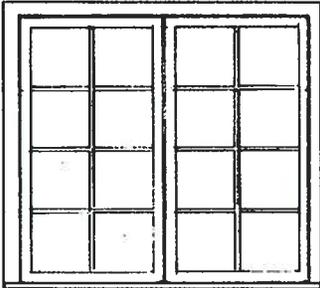
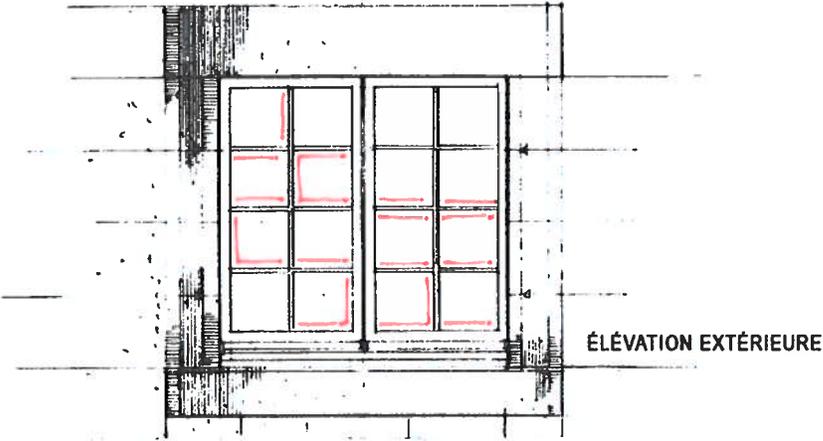
ÉLEVATION INTÉRIEURE

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Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396



FENÊTRE / WINDOW : F-84
TYPE B



ÉLEVATION INTÉRIEURE

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Conservation de la Caserne / *Men's Barrack Conservation Project*
Projet / *Project* no. PRO-1396

FENÊTRE / WINDOW : F-85
TYPE B



ÉLEVATION EXTÉRIEURE

ÉLEVATION INTÉRIEURE

The image contains two architectural drawings of a window. The top drawing, labeled 'ÉLEVATION EXTÉRIEURE', shows a double window with a decorative surround. Each window unit is divided into six panes (two columns by three rows). The panes are outlined in red. The drawing includes construction lines and shading to indicate depth and material. The bottom drawing, labeled 'ÉLEVATION INTÉRIEURE', shows the same window from the inside, with a simple rectangular frame and the same six-pane grid. The panes are white with black outlines.

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Conservation de la Caserne / Men's Barrack Conservation Project
Projet / Project no. PRO-1396

FENÊTRE / WINDOW : F-86
TYPE B

N'A PU ÊTRE OUVERTE
AU MOMENT DU RELEVÉ

