Heritage Impact Statement (Update)

2438 Gottingen Street

17 May 2021

Prepared for
Joseph Arab

Prepared by
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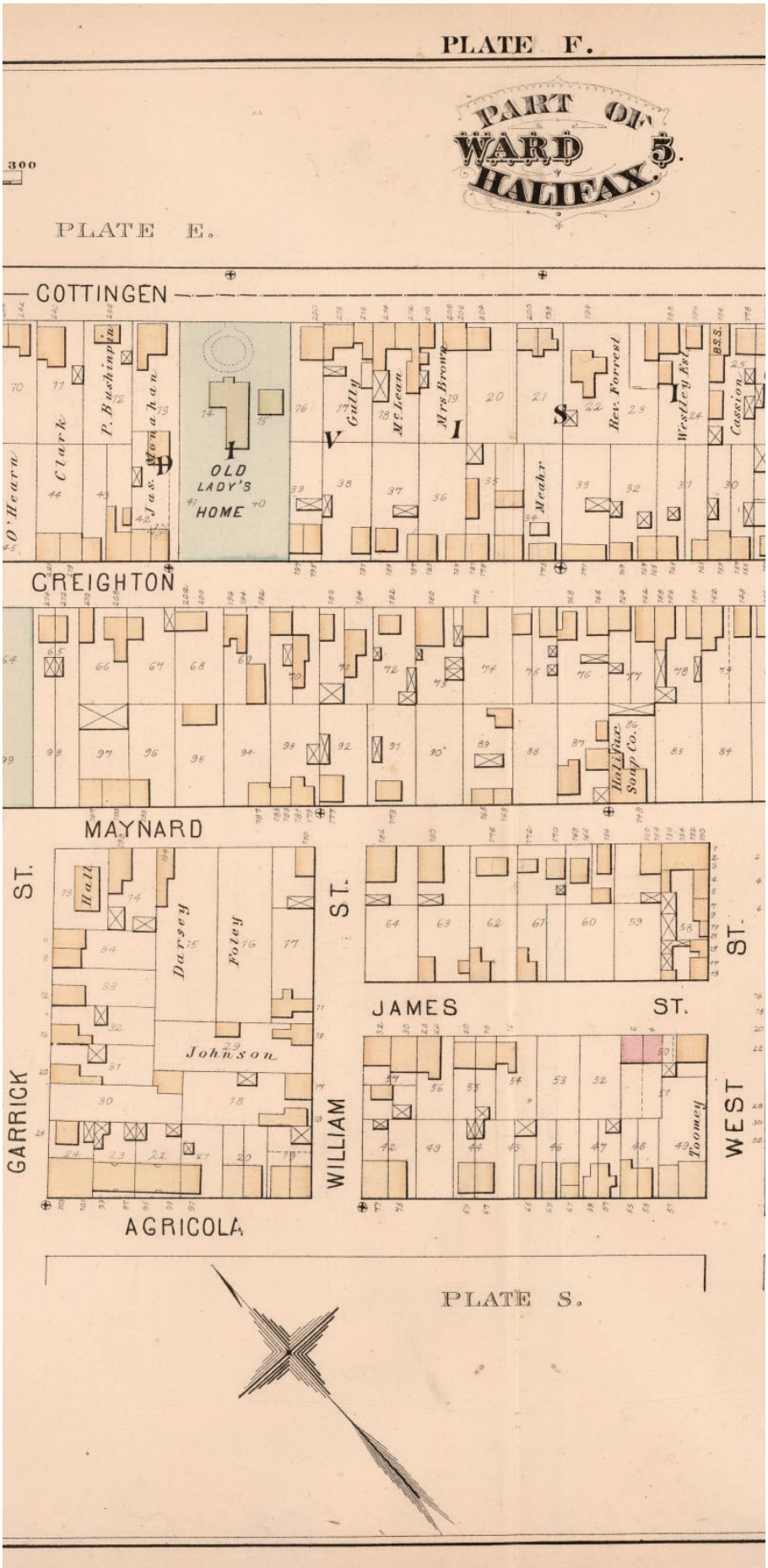

Fig. 1 Plate F - Part of Ward 5
Source: Nova Scotia Archives

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For more than 20 years, major clients throughout the Atlantic provinces, across Canada, and abroad have commissioned Fathom to solve complex problems while providing world-class service.

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Fathom collaborates at all scales from sign designs and museum exhibits, to large residential buildings, up to comprehensive master plans for university campuses and downtowns.

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Fig. 2 Side Elevation of Victoria Hall 1914 Addition
Source: Nova Scotia Archives

01 Letter from Fathom Studio

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ARCHITECTURE LANDSCAPE ARCHITECTURE PLANNING INTERPRETIVE WAYFINDING BRANDED ENVIRONMENTS

March 20, 2020

Aaron Murnaghan, MCIP, LPP
PRINCIPAL PLANNER, HERITAGE
HERITAGE OFFICER, PLANNING & DEVELOPMENT
PO BOX 1749, HALIFAX NS B3J 3A5

Re: 2438 Gottingen Street - Heritage Impact Statement.

Dear Aaron;

This document is presented as an integral part of the Heritage Development Agreement application for 2438 Gottingen Street, Halifax submitted by Fathom Studio (formerly known as Ekistics planning and design) on behalf of our client, Mr. Joe Arab. In the event of conflict in the information presented in the 2018 Heritage Impact Assessment dated on Oct 19, 2018 and this document, the latter supersedes the former.

Victoria Hall is one of the largest existing wood structures of its era, and style surviving to-date in Halifax.[1] Major findings of our work led to the conclusion that in addition to the social heritage value of Victoria Hall (by association to Victoria Hall Society), there is a wealth of value in the place itself. The lot belonged to William H. Roach, a politician who represented Digby and Annapolis County in the Nova Scotia House of Assembly among other roles. During the 1850's, the lot changed hands several times, finally landing in the hands of the Victoria Hall Society, formerly known as 'The Home for the Aged' and 'The Old Ladies Home'. Between 1862 and 1911, the home amassed more property in response to the increasing need for accommodation. Over a course of almost 3 decades, 4 Canadian Architects left their stamp on Victoria Hall, namely William Findlay (1862), Henry Frederick Busch (1884/85), Herbert Gates (1904) and Sydney P. Dumaresq (1914). In the 2000s, Syd Dumaresq (Sydney P. Dumaresq's grandson) completed some conservation work on the building.

Section 4.1 is an amendment to our earlier submitted history of Victoria Hall. It is based on primary sources to the extent that was possible. These sources include a title search of the property, Hopkin's 1878 Halifax city Ward 5 street map, articles from the Acadian Recorder (including the tender call for Busch's 1884 build in the February 24, 1884 edition) and the Halifax Herald, the building's cornerstone, Dumaresq's 1914 drawings, and conversations with Mr. Joe Arab. The search for these primary sources led the research team[2] to the Public Archives of Nova Scotia, Halifax Regional Municipality Municipal Archives, and several conversations with Mr. Sydney Dumaresq. In addition to these primary sources, the research also includes information from key secondary sources such as the Biographical Dictionary of Architects in Canada, James Frost, Irene Fennell, Dumaresq and Pacey & Comiter. The historical accounts from James Frost and Irene Fennell placed emphasis on the social history of Victoria Hall tied to its use as a home for elderly women, leaving out an important piece of the built history.

[1] Landmarks: Historic Buildings of Nova Scotia, p.174

[2] Austin Parsons, Parsons Heritage Works and Philippa Keri Ovonji-Odida, Fathom Studio, formerly known as Ekistics Planning and Design

Any assumptions made in chapter 4 are clearly stated as such. Chapter 5 outlines the project's conservation plan for Victoria Hall in accordance with the Standards and Guidelines for the Conservation of Historic Places in Canada (2010). Chapter 6 focuses on the new development and compliance with Standard 11.

Unfortunately (to our knowledge to date), there are no publicly accessible sources showing any historical plans and/or elevations of Victoria Hall other than architect Sydney P. Dumaresq's plans and elevations from his 1914 addition to the building. Our overall conservation strategy is a rehabilitation of the site in two parts:

1. Restore Victoria Hall based on the building elevations and plans from Syd P. Dumareq's 1914 addition;
2. Remove 90% of Gates's 1904 back addition to build a new development on the site that responds to Halifax Regional Municipality's need for increased density in the area. This new work is in keeping with the site's historical cycle of demolition-rebuild to accommodate the housing needs of the time.

We hope that this document provides you with the comprehensive rationale required to evaluate the merits of this rehabilitation project. We look forward to your review, comments, and to the next steps in this Heritage Development Agreement process.

Sincerely,

Rob LeBlanc,
President, Fathom Studio

02 Executive Summary

2.1 Site Location and Description

Fig. 3 Aerial map showing the Development Site location in red
Source: Google maps, annotated by Fathom Studio

The Development Site, comprised of the property municipally known as Victoria Hall, is located at 2438 Gottingen St. It is a through-lot that extends from Gottingen St to Creighton St. The Development Site contains one registered municipal heritage property and is not part of any heritage conservation district at the time of this application. The surrounding context includes a mixture of building types and uses including civic buildings such as the Halifax North Memorial Library, the Mi'kmaw Native Friendship Centre, as well as old and new residential buildings such as Uniacke Square and the Velo. Victoria Hall was registered as a municipal heritage building in 1990.

This application is subject to Center Plan transition to plan policies 10.25 - 10.28:
Policy 10.25: complete applications for development agreements on file with the Municipality on or before the date of the first publication of the notice of the intention of Council to adopt this Plan shall be considered under the policies in effect on the date of that notice.

At the time of this application, the property fell under the R3, Schedule A zone. For the purposes of this application, these are the Land Use By-laws that shall be applied. As such, building height is regulated by angle controls and rampart height.

Site information
Total Site Area: 36,400 sqft
Gottingen St. Frontage: 153' - 7 3/4"
Creighton St. Frontage: 115' - 3"

2.2 Executive Summary

This summary includes the built history of Victoria hall and an order of magnitude estimate for the conservation intervention to Victoria Hall's Character defining elements.

2.3 Built History of Victoria Hall

1855: Bulk Lot belonging to William H. Roach was foreclosed and sold to William Cleverdon. (See fig. 9)

1855-1862: Lot was potentially subdivided. (See fig. 9)

1862: Lot was purchased by Edward Binney & Honorable Daniel McNeil Parker on behalf of 'The Home for the Aged'.

1867: Nova Scotia passed an act to incorporate 'The Home for the Aged'

1878: Hopkin's Halifax City ward 5 map shows two buildings on the lot, shows the organization as owning the entire lot and references it as the Old Lady's Home.

1880: The Home purchased Lot B from the Lithgow Estate

1884/1885: The home commissioned Henry Frederick Bush to design a building for them on the site. The contract was awarded to James F. Corston. The work cost $11,200 or in today's dollars $294,000 +/- and was completed in five months. Given this cost, schedule and the fact that a building with a footprint similar to that of the 1885 building was built a dozen or less years earlier, the working assumption is that this build was a renovation. From what can be seen on-site, it is speculated that the earlier foundation, first floor plate and front entrance tower/addition core were kept. It is also possible that sections of the walls were also used in the renovation.

1904: A 2-storey structure was torn down and a new addition built onto the 1885 building. The architect was Herbert Gates and the builder William Lowhns.

1905: 'The Home for the Aged' legally changed its name to 'The Old Ladies Home.'

1911: The Old Ladies Home purchased lot C.

1914: Sydney P. Dumaresq designed a south wing to the 1885 building. The working assumption is that the wing was built between 1914 & 1915. We assume that the builder was Corston again due to his signature on the available plans and elevations. Cost and construction schedule are unknown.

1917: Damage to the building from the Halifax Explosion was limited to broken panes of glass.

1917 – 2013: A brick clad elevator core and exterior steel fire stairs were added to the north side of the 1885 building, sashes were changed in selected windows, most typically from two-over-two to one-over-one sash pairs and various repairs and renovations were done to the interior

1970: The Old Ladies Home changed its name to Victoria Hall

1990: The building gained municipal heritage designation

2000s: Renovations done to the building. Insulation was added to the walls and roof

2010 - 2019: A boiler replaced and the roof repaired

The two principal conclusions from the building history study are:

1. Over the course of the building's history, its heritage value has changed from an association with a group (Victoria Hall Society)/use to include the rich architectural and construction history intrinsic in the building itself. This architectural and construction history was a direct result of needs associated with the building's use.
2. The original owners adapted the building as they saw fit to meet the day's need through purchase of property, along with a cycle of build, demolish and re-build.

2.4 Order of Magnitude Estimate for the Conservation Intervention to Victoria Hall's Character Defining Elements

The project requires removal of 90% of the 1904 addition, which will be replaced by a masonry wall that is both subordinate and distinguishable. In addition to this wall, work will be done to eliminate a whole building basement moisture problem which if left unresolved would jeopardize the building's historic fabric.

The above work is a precursor. The conservation intervention concentrates on the building's character defining elements, which include an appropriate intervention to its windows, front door, cornice, pilasters, trim, moldings, shingles and mansard facade. As such, the building's windows will not be replaced but added to, so that from the outside they look like they did in 1914, but with the addition of interior insulated glass units that will more than double their energy efficiency.

Viewing the building as a whole, the proposed work can be considered to be a restoration of the south, east (Gottingen Street) and north sides of the building based on Sydney P. Dumaresq's 1914 drawings and a rehabilitation of the Creighton Street side.

The work will start once the construction of the new build is at grade. The building exterior will be scaffold and tarped. Once in place, the exterior work will begin in conjunction with the interior window work. Work will be billed based on monthly progress. These bills will detail the work done to date and act as interim progress reports. A non-binding estimate of project schedule is completion in sixteen months.

task	intervention	estimate
scaffold	supply & install includes tarp, heat	$385,000.00
mansard roof + cupula	inspect; if sound, no work if work is required, it is assumed to be over the entire length of the roof and cupula, replace shingles, sheathing, dormer flashing, roof flashing + roof work	$264,400.00
wall mouldings & plus eaves trough	replace 200' +/- of the cornice band (100' between the flat roof and mansard roof and 100' between the mansard roof and the wall) repair the remaining 270' of cornice bands 470' of building frieze board repaired and painted repair and paint sixteen pilaster (5 pair on the Gottingen Street façade/3 pair on the Creighton Street façade) replace 50 – 70' of water table inspect and repair/replace dormer window trim as needed in-kind replacement of aluminum eaves trough and gutter	$415,450.00
verandah	inspect; if no structural repair required, complete minor repairs & paint if structural repair is required, re-price	$10,000.00
front steps	replace front steps including structure, no work will be done to the front door system	$45,000.00
wall shingles	4,750 square feet covering main building, 890 square feet covering the back slice replace 40% on main building (1,900 square feet), re-paint the remaining 60% back addition work TBD replace sheathing where needed (e.g. at water table)	$176,320.00
fenestration (105 windows + replacement in-kind of two windows + metal & copper work)	replace vinyl inserts and one-over-one sash pairs back to solid wood, true divided light two-over-two sash pairs, restore all other two-over-two sash pairs lower sash to be single hung c/w weather strip restore existing aluminum storm windows, add wood storm windows to those windows without aluminum storms add operable c/w weather strip inside inserts to selected windows replacement in-kind of one two-over-two side window, and one dormer window in the 1914 wing, replace cupula three window with round tops inspect and install metal and copper work around windows	$879,700.00
Gottingen Street granite wall	make and install iron work, inspect the wall and its base, and if work is required remove stones, replace foundation, re-install stones	$300,000.00
documentation		$45,000.00
CDE task total		$2,520,870.00
project management fee (10% on $3 million)		$300,000.00
project subtotal		$2,820,870.00
contingency	"fuzzy boundaries" and unforeseen scope of work, permits, fees	$179,130.00
project total		$3,000,000.00

Fig. 4 Task + intervention + estimate table (add HST)
Source: Austin Parsons, Parsons Heritage Works

03 Planning Information

3.1 Planning Information

As-Of-Right Conditions

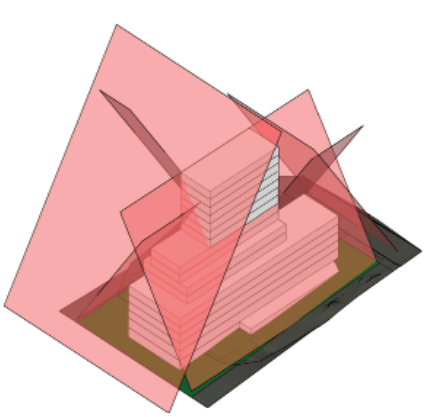
The site is R3 zone, Schedule A area as per the LUB at the time of the initial application. Any As-Of Right calculations for this project are based off the R3, Schedule A policy. Schedule A permitted 250 persons per acre. Height on this site was controlled by the angle control provisions of the LUB for R3 zoned land, and allowed for a building of unlimited height due to the 80 degree angle controls. However the Citadel Rampart Heights resulted in a maximum of 16-17 storeys depending on where one develops on the site.

We used the 36,400 sq.ft lot size as provided from the survey documents. However, the existing LUB allowed for some added 'Gross Lot Area' due to the allowed street frontage as the zoning by-law for the Peninsula allows one to calculate Gross Lot Area as follows;

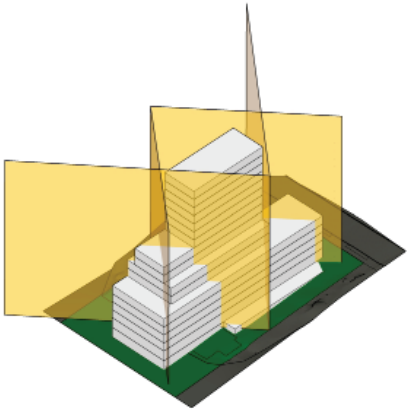
Gross Lot Area: means the area of a lot plus the area of one-half the width of any street or permanent open space abutting upon such lot, or thirty feet, whichever is the lesser.

Depending on the unit type distribution, the number of units could increase or decrease as long as maximum density does not exceed the 250 per Acre while meeting the Open Space requirements. For example, having more 1 bedroom units would increase the amount of units allowed since they only count for '2 persons'. As the allowed density on this site increases, so does the open space requirements.

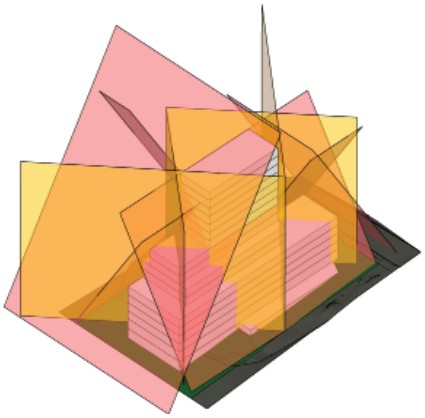
The Land-Use by-law allowed for a point tower if Victoria Hall was maintained on site, provided that the addition is contained within the angle controls for the R-3 zone in Schedule-A. Any portion of the building that protrudes outside of the 60 degree angle control must be contained within the 80 degree angle control (from plan view). See diagrams below which show the angle controls as they relate to this site. As shown, the height of the tower was not the limiting factor in the development and could vary depending on how many units are on each floor.



60-degree angle controls

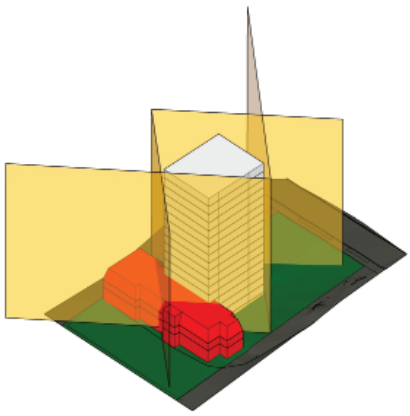


80-degree angle controls

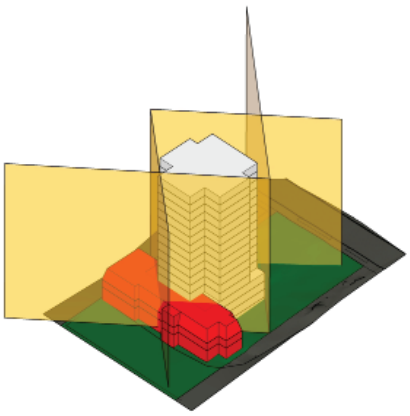


60-degree and 80-degree angle controls

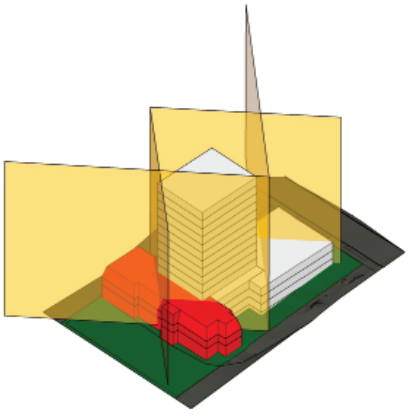
Fig. 5 As-of-Right R3 Angle Controls applied on development site if Victoria Hall is demolished



Small tower footprint



Larger tower footprint with no podium base



Larger tower footprint with podium base

Fig. 6 As-of-Right R3 80-degree Angle Controls applied on development site if Victoria Hall is maintained

Here are the primary limiting factors for the R-3 zone Schedule-A as it applied to this property;

01 MAXIMUM DENSITY:
Lot Area: 3300 sq.m = 0.8 Acres
Lot Area +1/2 width street frontage = 3930 sq.m. = 0.97 Acres

Persons per acre:
250 Persons per Acre allowed in Schedule-A
242 Persons allowed on 0.97 Acres.

Persons per Unit Type:
1 BED = 2 Persons
2 BED = 3 Persons

Unit Mix:
1/3 Units > 800sqft
2/3 Units < 800sqft

Given these parameters, a variety of unit mix options can be explored provided that 1/3 of the units are larger than 800sqft and the overall allowed density is not exceeded. An example mix would be as follow;

34 X 2BEDS = 102 Persons
70 X 1BEDS = 140 Persons

TOTAL: 104 Units @ 240 Persons *bachelor apartments would have a 1 person per unit count

02 OPEN SPACE REQUIREMENTS:
This requirement determines the lot coverage. The Open Space and Landscape Open Space requirements vary per unit type and persons per unit. A large percentage of that is required to be landscaped, and small portions of the landscape open space requirements can be placed on the rooftop. The open space requirements are calculated by the number of persons per unit;

120sqft X 3 persons for 2 bedrooms (34) = 360 sqft X 34 = 12, 240 sqft
80sqft X 2 persons for 1 bedrooms (70) = 160 sqft X 70 Units = 11,200 sqft

Total Required Open Space: 23,440 sqft

03 RAMPART HEIGHT
The rampart height restrictions from the citadel result in a 16-17 storey height maximum depending on how one designs the floor - to - floor heights of the building, and how the ground floor relates to Gottingen St and Creighton St.

MPS and LUB Policy Conformance

According to Policy 99(1) of the Peninsula Land Use By-Law, Council may, by development agreement, pursuant to Section II of the Municipal Planning Strategy, permit any specific development on a lot which is a city registered heritage property in accordance with Policy 6.8.

Policy 6.8 of the MPS states:
"In any building, part of a building, or on any lot on which a registered heritage building is situated, the owner may apply to the City for a development agreement for any development or change in use not otherwise permitted by the land use designation and zone subject to the following considerations:
(i) that any registered heritage building covered by the agreement shall not be altered in any way to diminish its heritage value;
(ii) that any development must maintain the integrity of any registered heritage property, streetscape or conservation area of which it is part;
(iii) that any adjacent uses, particularly residential use are not unduly disrupted as a result of traffic generation, noise, hours of operation,

parking requirements and such other land use impacts as may be required as part of a development;
(iv) that any development substantially complies with the policies of this plan and in particular the objectives and policies as they relate to heritage resources."

To conform with Policy 6.8, this development proposes:
(i) To conserve the heritage value of the historic Victoria Hall building through a series of rehabilitation and restoration treatments as outlined in our conservation plan. This would include streetscape and front yard improvements to restore the urban design character of the traditional landscape and grounds on Gottingen Street.

(ii) The integrity of Victoria Hall must be maintained as a key component of the development. While restoration is part of maintaining (and enhancing) the integrity, the architectural form of the proposed addition must be complimentary to the existing structure. As per the federal Heritage Standards and Guidelines, the new addition must be designed in a manner that draws a clear distinction between what is historic and what is new. Design for the new work may be contemporary or may reference design motifs from the historic place. In either case, it should be compatible in terms of mass, materials, relationship of solids to voids, and color, yet be distinguishable from the historic place.

(iii) Adjacent residential uses must be considered in the design process so that traffic, noise, street scale, and any other impacts are mitigated as part of the design.

(iv) The development must be consistent with the other policies of the MPS and the latest standards for Form Based Design as outlined in the LUB at the time of the application.

Effectively, the trade-off for conserving Victoria Hall requires additional flexibility with respect to the 250 ppa limit in order to finance the restoration, while still maintaining the intent of HRM planning policies and the federal Standards and Guidelines. This Heritage Impact Statement (HIS) outlines how this development will achieve the federal Standards and Guidelines requirements while conforming with HRM policies and standards that have been outline above.

04 Victoria Hall

Fig. 7 Image of Victoria Hall from Gottingen St, circa 1950
Source: unknown. Image obtained from James Frost

Fig. 8 Image of Victoria Hall from Gottingen St taken in 2018
Source: Fathom Studio

4.1 Built History

Victoria Hall, located at 2438 Gottingen Street, is a 19th century residential building that currently holds municipal heritage status in Halifax Regional Municipality. It is considered one of the largest remaining examples of the French Chateau/Second Empire style in Nova Scotia.

The built history of Victoria Hall began in 1862 with the establishment of the Home for the Aged[1]. The Home for the Aged, then the Old Ladies Home, and today the Victoria Hall Society is a not-for-profit organization that was founded in 1860 by Isabella Cogswell, Charlotte Lawson and Jane Liddell. At the time of its creation, it was charged with providing accommodation for older Protestant women who no longer had a means to take care of themselves.

On June 26, 1860 the Home rented a building on Gottingen St formerly called the 'Golden Ball.' The house soon proved too small to cater to the pressing demand for accommodation, necessitating the purchase of a larger house.

In 1862, Edward Binney and the Honorable Daniel McNeill Parker purchased a lot on Gottingen St from the Cleverdon Estate that they then held in trust on behalf of The Home for the Aged. For purposes of this document, the 1862 lot shall be referred to as Lot A. Since 1862, Lot A has been in possession by The Home for the Aged until 2013 when 3273986 Nova Scotia Ltd purchased Victoria Hall.

An 1862 title deed map of Lot A (fig.9) indicates that only a barn was on site at the time of the purchase. However, according to Eileen M. Riley's account of the history of Victoria Hall, the home purchased the lot with an existing building on it.

Prior to 1855, the lot, that included Lot A, extended from Gottingen Street to Albro Street (Creighton Street today) and was owned by

1 Since the sale of Victoria Hall in 2013, this non-for profit operates out of Caritas Residence, a retirement residence belonging to the Sisters of Charity. Even though Victoria Hall is no longer owned or used by the Victoria Hall Society, the new ownership has maintained its residential occupancy..

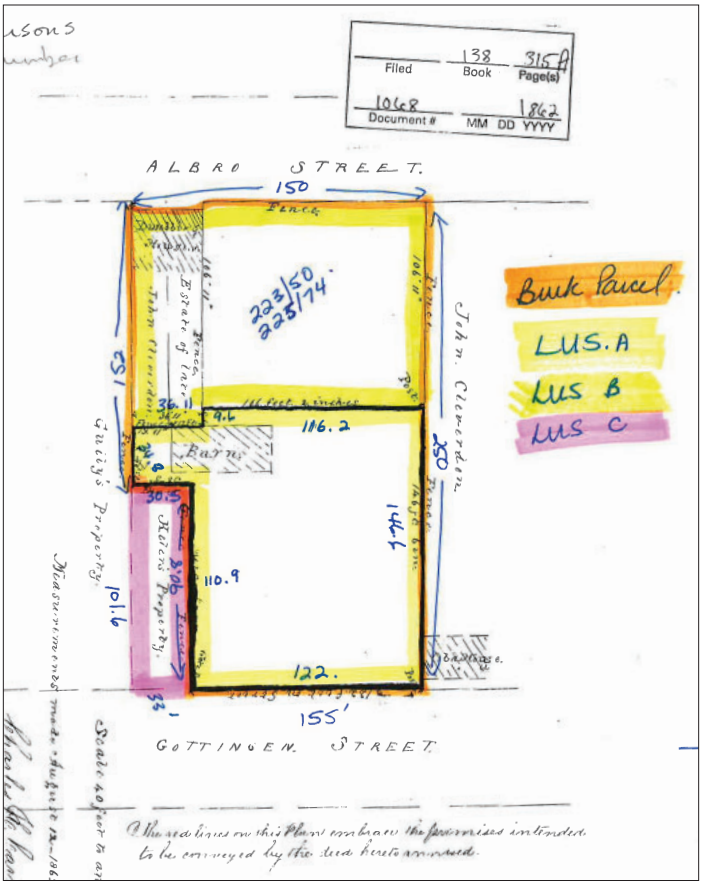


Fig. 9 Map of Lot obtained from title deed search. Annotations by unknown.
Source: Registry of Deeds Nova Scotia

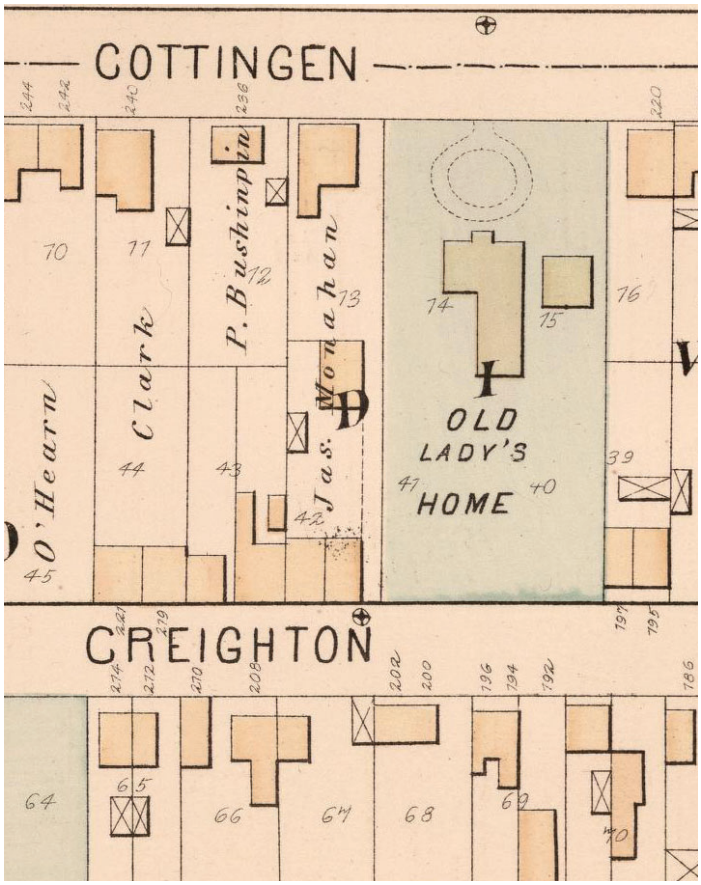


Fig. 10 Plate F - Part of Ward 5
Source: Nova Scotia Archives

Senator William Roach. In 1855, the lot was foreclosed and purchased by William Cleverdon who subdivided the larger lot into two parcels at some point between 1855-1862. One of these subdivided lots was Lot A. It is possible that Lot A included Senator Roach's home, which for some reason was not included on the 1862 Lot A description. This idea is supported by Hopkin's City Atlas of Halifax, Nova Scotia Plate F, Ward 5 map (fig. 4) shows two structures on the site. The larger structure could be Roach's home and the smaller one, the barn.

Based on Riley's account, the home hired architect William Findlay to design an extension to the house in 1862. Assuming Riley's account and the Hopkins map are accurate, one can assume that Findlay's addition was added to the North side of the main home, which ran along an east-west axis perpendicular to Gottingen and Albro (Creighton) Streets.

A second theory about where Finlay's addition was located is based on an on-site analysis of the existing basement foundations. Focusing on the iron stone foundations only, there is a primary basement oriented in a north-south direction symmetrical about the front entrance bump. Attached to the backside of this foundation is a secondary foundation oriented in an east-west direction. This secondary foundation is assumed to be the location of Findlay's addition referenced in Riley. This interpretation corresponds to Ward's map in a descriptive, rather than literal sense.
In May 1867, Nova Scotia passed an act to incorporate The Home for the Aged. This enabled the corporation to purchase the second parcel of the pre-1855 lot located between Lot A and Creighton St (formerly known as Albro St), in March 1880 in its own name. For the purposes of this document, the 1880 lot shall be referred to as Lot B.

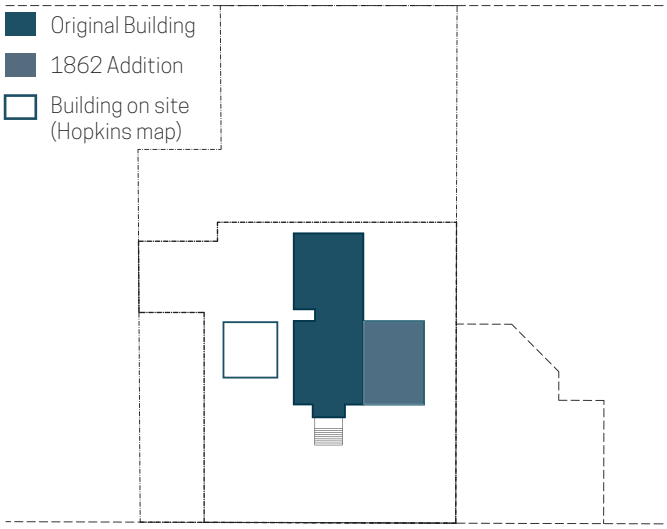


Fig. 11 Illustration of theory 1
Source: Fathom Studio

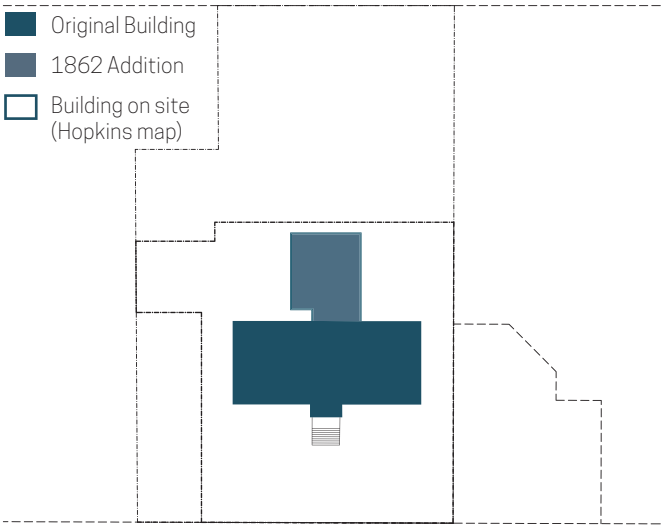


Fig. 12 Illustration of theory 2
Source: Fathom Studio

The Estate of James R Lithgow sold Lot B to the Home for the Aged for a sum of 1000 dollars in the currency of the day. Hopkins map shows the Home for the Aged as already owning Lot B by 1878. While it is quite possible that the previous owners could have held parcel B "in trust" for the Home for the Aged prior to March 1800, there are no primary sources to support this notion. Records show that the estate of William T. Cleverdon purchased the bulk parcel in February 1855 and was in possession of it in 1862 when Lot A was sold to Binney and Hon. Parker. In 1879, ownership of Lot B changed from Cleverdon's Estate to James R. Lithgow before the Home for the Aged purchased it in 1880. There is no mention of an association of the Home for the Aged with the site in the 1879 title deed, even though the organization had been incorporated 12 years prior.

In early 1880's, the Home for the Aged commissioned architect Henry Frederick Busch to design a building. Busch was a well-known and respected architect of the time who is presently listed in the Biographical Dictionary of Architects in Canada and the Public Archives of Nova Scotia Architects and Builders. He is associated with other high-profile buildings in Halifax, and Nova Scotia at large such as the Province House Legislative Library (1862) and the Halifax Public Garden Band Stand (1887).
In 1884, a request for "tenders for the erection of a new building for the Home for the Aged" was placed in the Acadian Recorder. The contract was eventually awarded to James F. Corston for a sum of $11,200, with $1,135 awarded to the "Architect and extras". The overall project cost $12,335 in the currency of the time. According to Riley's account, the main building was demolished in the summer of 1884,

leaving the 1862 addition. Lieutenant-Governor Mathew Richey officially laid the cornerstone on July 5, 1884, with the home officially opening 5 months later, on January 16, 1885.

Given what was built, the express time-line, the present-day value of the construction estimated at $294,000 +/- and an analysis of the current building, we believe that the project was a renovation rather than a new build. The 1885 building was built over a stacked eight-foot high, 22" wide ironstone foundation. The addition was built over a stacked, six-foot high, thickness unknown, ironstone foundation. The work suggests each foundation was built over one build cycle. Looking at the craftsmanship, they could have been built during the same build cycle. As well, the Hall's existing central core that begins over a bump in the foundation topped with a structure that includes different style windows when compared to the rest of the building and a cupula extends into the building and includes a three story central staircase. Finally, the cornerstone was inserted in a corner of the foundation after the foundation was built. How it was inserted into the wall suggests it was an afterthought. To make sense of the five-month construction and cost, we speculate that both foundations and associated ground floor plates, along with the front entrance/stair circulation core that included the front entrance bump tower and interior staircase was kept. It also possible that some of the 1862 home's walls were also kept. The new work was then built around these features. In today's parlance, the project would be considered a "gut retrofit".

In 1894, an act was passed that amended Chapter 75 of the acts of 1867. Through this act, all property held by Binney and Hon Parker 'in trust' for The Home for the Aged was 'declared to be vested in the corporation incorporated by that statute." It is likely that at this time, the organization consolidated Lots A and B into one property.

In 1903-1904, Canadian architect Herbert Gates was commissioned to design an addition to the back (West) of the 1885 building. Some of Gates' other works in Nova Scotia include Quinpol Road Public School in 1902 and the Nova Scotia Technical College in 1908. He is also listed in the Biographical Dictionary of Architects in Canada and the Public Archives of Nova Scotia Architects and Builders. Finlay's 1862 2-storey structure was torn down to make room for the Gates' 3-storey wood addition which measured 42 feet in length and 34 feet in width. The new build was to be directly connected to the 1885 build by a corridor running "right through from the main entrance to the old building to the old door in the rear of the new addition." This addition would supplement the accommodation capacity of the home, allowing the organization to care for a larger number of women. By September 2, 1904, construction of this addition was underway, with William Lownds as contractor.

On April 19, 1905 the act to amend the 115 chapter of the 1894 Act was passed, officially changing the corporation's name from "The Home for the Aged" to "The Old Ladies Home". Prior to this act, both names were used interchangeably although the former was the official name of the organization.

In August of 1911, The Old Ladies Home acquired one more lot (Lot C) at a cost of $1100 in the currency of the day. With this final purchase, The Old Ladies home now owned the extent of the parcel that we see today. Sydney P.Dumaresq of the Dumaresq architectural family legacy was commissioned to design an additional wing to the South side of the building in 1914. James F. Corston was hired as contractor on this addition as well. Records of this design are stored at the Public Archives of Nova Scotia and are available on site upon request. Dumaresq is listed in the Biographical Dictionary of Architects in Canada and the Public Archives of Nova Scotia Architects and Builders. Some of his most notable work includes his collaborations with architect Andrew Cobb as well as personal work like the Halifax Public Market 1912-13 and Bloomfield High School in 1929.
Due to the robust design and construction of the building , the Halifax Explosion of 1917 did not have a huge destructive impact on the building. The building remained undamaged with only the windows shattering. Repairs were conducted in 6 months, with the residents temporarily lodged at Fort Massey Church.

In 1926, an unused chimney on the north side of the building was removed to enlarge the size of the dining room due to a need for more space. Hardwood floors were laid in the parlor and new rugs provided. In 1937, repairs were done to the exterior, halls were redecorated and "hardwood floors were laid in the upper corridor and the new hallways". Between 1917 and 2013, a brick-clad elevator and exterior steel fire stair were added to the North Side of the building, and some of the window sashes (predominantly at the rear of the building) were changed.

In 1970, the corporation changed its name to Victoria Hall, which is the origin of the building's name to date and in 1990, the building received municipal heritage status.

Until the change of ownership in 2013, the home continued to operate as a refuge for elderly women. At the time of the sale, there were 29

residents living in Victoria Hall. 14 of them were moved to Caritas Residence in Bedford, the new location for the Victoria Hall Society, while the rest were rehoused in various nursing homes around the city. At the change of ownership, the home was converted into apartment units for rent. Since 2013, the new owner has conducted a number of renovations to the building such as adding insulation to the walls and roof, replacement of a boiler, and conversion of some interior walls to better suit apartment units.

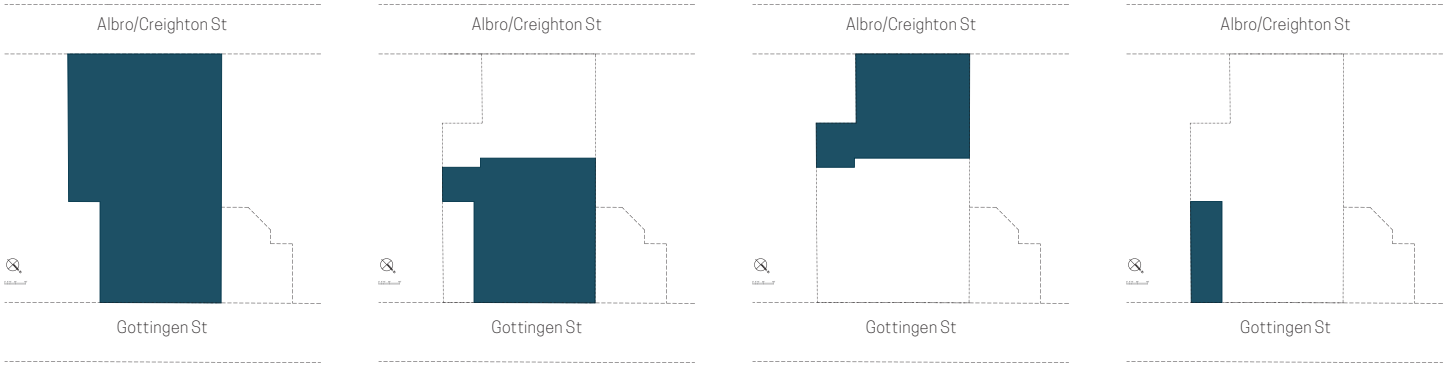


Fig. 13 Progression of lot aquisition by the Home
Source: Fathom Studio

4.2 Second Empire Style

The primary architectural style of Victoria Hall is the Second Empire style. The origins of this architectural style are often traced back to the "Second Empire" period in France under the rule of Napoleon the third. Georges E. Haussman was hired to redesign Paris and the second empire style emerged. In France, the style was characterized by their mansard roofs. These roofs were named after François Mansart. In Canada, this style reached the peak of its popularity during the 1870's. As the style was imported to Canada, there were variations added to the style from various influences including the Italianate style which resulted in central towers that created a focal point at the front facades of buildings. This style was used in France and other areas of the world to signify wealth and grandeur. However in the 19th century, it was also commonly used on commercial, public and religious institutions. This style lost its appeal from the 1890's onwards.

The Second Empire Style in Canada is characterized by the following elements:

- Layout: typically a central hall plan which often became asymmetrical with later additions of rooms and porches. Often a three to five bay facade with center entrance.
- Italianate style tower on front facade
- Windows: Slender and elongated windows. Dormer windows became universal in a variety of shapes (rectangular, pointed, gabled, and rounded) and were often ornamented with pediments and brackets.
- Roof: Mansard roof which allowed for maximized floor space. The roof cladding was often dichromatic
- Materials: Primarily wood or brick.
- Ornamentation: Often had detailed cornices, moldings and brackets.

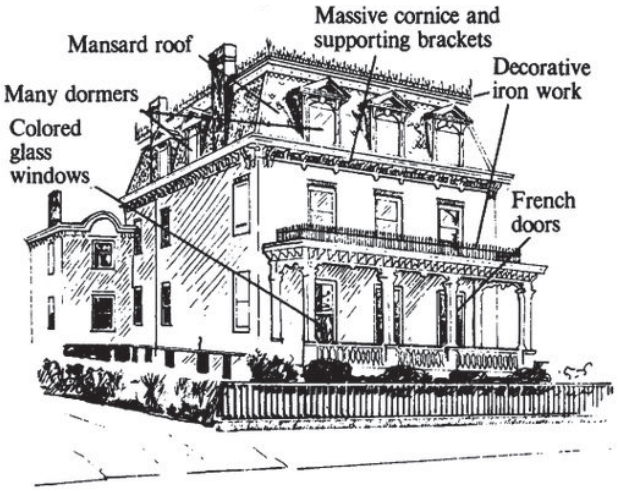


Fig. 14 Character-defining elements of Second Empire
Source: StudyBlue.com

Fig. 15 Character-defining elements of Second Empire
Source: Salem Handbook

Fig. 16 91 Loch Lomond Road, Saint John NB
Source: parkscanadahistory.com

Fig. 17 Queen Hotel, Annapolis Royal NS
Source: parkscanadahistory.com

Fig. 18 31 Lincoln St, Lunenburg NS
Source: parkscanadahistory.com

05 Conservation Intervention

5.1 Introduction

This chapter identifies the heritage value and character defining elements of Victoria Hall, outlines a substantial alteration that comes out of the proposed development, describes a solution to a whole building moisture problem that will contribute to the survivability of the building's character defining elements and discuss the proposed conservation interventions to these elements with a cost estimate and where appropriate, unit prices. Please note:

1. the estimate is not based on drawings or a scaffold inspection
2. the HRM Registry of Heritage Properties does not contain a Statement of Significance for Victoria Hall. We have defined the Character Defining Elements (CDEs) based on an observation of the building, an understanding of the Second Empire building style and the built history of Victoria Hall.

5.2 Proposed Work

The present need is to conserve Victoria Hall's historic fabric at three different spatial scales: a portion of the building, the whole building and specific elements. This work will be guided by Dumaresq's set of 1914 drawings of the south side addition along with discussions with the current owner about the work that has been done over the past decade: insulation of the building's walls and roof, installation of a gas fired mechanical plant and roof repairs.

The proposed work will:

1. focus on removing part of the 1904 west addition, with the resulting opening infilled with a "heritage" wall and connection to the new build
2. enhance its sustainability
3. resolve a basement water problem that is affecting the building's integrity and
4. conserve its character defining elements

Points 1 - 3 are mentioned for completeness and a recognition of the understanding that the conservation of the building's character defining elements happens at different time and space scales. The basement water problem requires a whole building solution and considers control layers, water + vapour management and drying potential. Part 4 describes how the building's character defining elements will be conserved as guided by the standards and guidelines found in the *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010).

At this point, it is necessary to mention what the proposed work will not include. No work will be done to:

1. the building's primary mechanical plant(s) or electrical systems and
2. the structural system including any structural analysis.

As well, there will be no work done to the interior other than that needed to adapt the interior finishes to fit he proposed interior insert behind the existing windows.

A Substantial Alteration

The 1904 addition is a rectangular box with a low slope asphalt shingle roof. It is made from wood, more than likely balloon framed timbers. It is sheathed with 1" x boards, covered in kraft paper weaved into cedar wall shingles. It includes thirty-three one-over-one, solid wood, single hung windows in two original sizes, along with several other non-original windows. The addition's character defining elements include its form, fenestration pattern, wall treatment, structure and foundation. There was a kitchen, storage space and service rooms on the first floor, and tenant units on the second and third floors.[1] The addition's most interesting architectural element is the south side nook that follows the foundation outline at the connection point between the addition and 1885 building.

The proposal to remove a portion of the 1904 addition stems from a need to fit the proposed high-rise within the lot. In recognition of the

1 In 1904, there was an infirmary located in the addition

design work done by Gates on the back addition, 10% will be kept and closed in with a 25' x 36' or 900 square foot masonry wall. This work will in turn be tied into the high–rise with an open-air steel rafter structure at roof level. No other parts of Victoria Hall will be demolished and the demolition work will be documented.

The creation of this masonry wall provides an opportunity to showcase the building's history as well as the history of the area around Victoria Hall. It is conceived of as a permanent display feature or heritage wall. Access to a proposed public community room in Victoria Hall shall also be via this wall, reinstating access from the Creighton street side to the central corridor (this was the case when the 1904 addition was originally built). The heritage wall and connection to the new building will be distinguishable, subordinate and reversible.

Enhancing Sustainability

Protecting the building's heritage value and enhancing its sustainability are connected goals. The building's sustainability will be enhanced by reducing its fossil fuel and water use by increasing the thermal resistance of the foundation wall and windows. Exterior insulation will be added to the below grade portion of the foundation wall. An operable insulated glass unit sash pair will be added to the inside face of each window. There is also preliminary work being done to determine the possibility of adding daylight into the building's interior with the introduction of roof top skylights and a review of the mechanical system to improve plant efficiency.

Solving a Whole Building Moisture Problem

Protecting the building's character defining elements, with the exception of the granite wall, requires solving a whole building moisture problem. The building envelope is vulnerable to degradation due to a combination of a high groundwater table which has saturated the ironstone foundation walls and concrete slab, and a reduced envelope drying potential due to the introduction of wall and attic insulation without first completing air leakage control. This explanation is a working thesis. No inspection of the attic or walls has been done; however, the evidence exists. There are historical signs of basement flooding and chronic damp of the basement walls, a concentration of rot at the cornice line and above average paint peeling of the exterior wall. The premise needs to be validated before work starts. For the purposes of this document, the assumption is the durability problem is due to the above explanation.[2]

The solution to the problem is to create an environment where the wood in the walls and attic is dry more often than it is wet. This will happen when one or more of three factors: 1) the moisture source (groundwater), 2) the course (air leakage pathways between the basement and the attic), or 3) the force (stack effect) is eliminated. This means that work will be done on more parts of the envelope than its character defining elements. The work may also include modifying or adding to the mechanical system depending on how the solution develops. The present description of work is limited to an explanation of how the moisture source will be eliminated through work around the foundation and on the slab.

Depending on the high-rise foundation design, the groundwater control solution will be to either institute a whole site water control strategy or separate strategies for each building. If the latter option is selected, Victoria Hall's groundwater control strategy will have two parts with a designed redundancy. Part one is to build an exterior drain field. Part two is to build an interior drain field.

Exterior Drain Field

Step one will be to dig 470' (approximate) of exterior trench around the main building and addition foundation down past the footer. Step 2 will be to apply 2,640 square feet (approximate) of parget to the below grade foundation wall and footer. If the foundation walls have had parget applied to them, the parget will be repaired as needed. 2,640 square feet of rigid exterior insulation and dimple board will then be applied around the foundation wall creating a continuous whole building below grade thermal control layer. Step 3 will install approximately 470' of an exterior perimeter drain field. Once done, this will create a continuous whole building ground water control layer. The foundation work will start once the addition demolition work is finished and the new foundation for the heritage wall has been built.

An added benefit of this work will be the ability to inspect the foundation and complete any needed repairs. From what has been inspected

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2 This is a wintertime-phenomena where a basement moisture source, interstitial air leakage paths and stack effect have combined to introduce water vapor at a point in the building envelope where it condenses before it can escape the building. In this case, this is at the wall-mansard roof cornice. The result is chronic wetting in combination with exterior conditions that has led to the wood being wet more often than it is dry. The result is rot and peeling paint.

to date, the only spot in the foundation that needs repair is the area around the cornerstone.[3]

Interior Drain Field

The installation of the interior drain field begins with excavating a 2-foot wide trench around the inside perimeter. At its shallowest point, the trench will be a foot and a half below the footer. The trench will be graded and a layer of clear stone will then be applied over the bottom of the trench; with a covered, segmented drain field applied over the gravel base. The drain field terminates at the sump pit or drain pump. The trench is then back filled with clear stone 4 – 6" to the depth of the slab. Concrete will then cover the trench. Where needed, wall sheets will be secured to the wall so any water leakage will be directed into the drain field. Where these sheets are applied is a site decision. The interior perimeter drain system will lead directly to the building's rainwater drain or to a sump pit and pump (c/w back check valves). This interior drain field is a recommended design redundancy. The expectation is that over time, the exterior drain field may once again clog and fail. Given the soil/fill environment around the exterior drain field compared to the one around the interior drain field, there is less chance the interior drain field will clog. One working drain field will keep the ground water levels below the footer.

As part of this work, the building's header band will be spray foamed and covered in fireproof material.

Conservation of Victoria Hall's Character Defining Elements

Every building contains information about how it was built and what was done to it. Most renovations obliterate this information through gut renovations and whole building character defining element (CDE) replacement. Part of the complexity of this project is the desire to not do this type of work. Please note that the CDEs will be treated with respect (Standard 2) and at the same time, every effort will be made to maintain their authenticity (Standard 4). As with the other work completed during the renovation, all work done to the CDEs will be documented (Standard 9). Throughout the project, a repair-first approach using recognized conservation methods (Standard 10) would be carried out under the umbrella principle of undertaking appropriate (Standard 7) rather than minimal (Standard 3) interventions. In those cases where CDEs have to be replaced, there are sufficient examples of the building's character defining elements in good repair to act as prototypes (Standards 13 & 14). All repair and replacement work on the building's character defining elements will be physically and visually compatible along with being identifiable (Standard 9). Victoria Hall will continue to function as an apartment building (Standard 5).[3] There are no plans to remove the high-rise once it is completed, move Victoria Hall from its present location or remove, or to replace or substantially alter its character-defining elements that need no work (Standards 12 & 1). At the end of the project, a best practices guide will be presented to the owner about how the CDEs should be maintained over time (Standard 8).[4]

All of the building's CDEs are found on exterior side of the building envelope with a concentration on the front facade. The facade's CDEs found on the 1885 + 1914 building include the mansard roof, the cornices above and below the mansard roof, the veranda and its cornice, the pilasters, the front entrance, the above grade portions of the exterior wall, the shingled wall and the four fenestration patterns.

Given that the work will require access to the facade and will occur over a year, the decision has been made to erect tarped and heated scaffold around the building perimeter at a cost of $385,000.00 + HST.

CDE: Mansard Roof and Cupula

Victoria Hall is an example of Second Empire architecture whose form is dominated by its three-story mansard roof and cupula over the front entrance. From street level, the mansard roof and cupula appear to be in good repair with the exception of their cornices (see below). Yet, given the concerns with potential moisture damage, it would be prudent to present a cost to repair/replace these elements if needed. The repair work would include removal of the existing shingles, possible replacement of sheathing, sub layers and flashing. The connection between dormer and mansard roof will be assessed and re-flashed as required. The cost to re-shingle and repair the mansard roof around the building and cupula is $264,400.00 + HST.

CDE: Wall Moldings and Trim, Eaves Trough and Gutter

The building is belted with 470' +/- of cornice divided between to strips. Depending on the band in question, the cornice is made up of a

3 If during the course of the work, additional stabilization is required it will be undertaken with Standard 6 in mind. At this point, Standard 6 does not apply to the work.

4 The referenced Standards refer to the ones found in the Standards and Guidelines for the Conservation of Historic Places in Canada (2010).

fascia board and dentils or fascia board, molding plus an eavestrough board and the eavestrough. Lengths of the cornice are rotten and the condition of other lengths is unknown given they are presently hidden by the eavestrough or covered in aluminum. The visible, rotten lengths will be replaced. Once the aluminum is removed, if rot is discovered, these lengths will be replaced. The mansard roof and veranda cornice and frieze bands are also covered in aluminum and their condition cannot be assessed until the aluminum is removed.

The Gottingen Street frieze, which is made up of a frieze board, corbels and crown molding appears to be in good condition and will be repaired on-site. This repair work will include replacement of several missing corbels. The Creighton Street cornice and frieze are in good condition and will be repaired on site.

The pilasters are in good condition around the building and will be repaired on-site. After all work is done, the trim, moldings and water table will be repainted. Like the work described above, the trim around each dormer will be inspected, repaired or replaced and painted.

The estimate includes replacing up to two hundred feet of cornice split between the upper and lower bands with the remaining two hundred and seventy feet repaired on-site. As well, the aluminum eavestrough and gutters will be replaced in-kind once the work to the cornice and friezes are complete. The cost to complete this work is $415,450.00 + HST.

CDE: Veranda
From first appearance, the veranda's substructure appears in good condition, but it needs to be inspected for structural soundness. The veranda's floor, railings, columns, roof and stairs also appear to be in good condition. If the work is limited to minor repairs, e.g. no roof or major element replacement, and scrapping and painting, the estimated cost is $10,000.00 + HST.

CDE: Front Steps and Entry
The front steps along with the railings will be replaced. The cost to complete this work, which includes design work, is $45,000.00 + HST. At this point, no work is planned for the front door and entrance.

CDE: Wall Shingles
The walls are presently covered with shingles. While Dumaresq's plan showed the walls covered in clapboard, there is no information that the walls were initially clad with clapboard and then at a latter time replaced with shingles. The plan is for the shingles to remain.

The condition of the wall shingles will be assessed once scaffold is in place. The working assumption is that up to 40% of the wall shingles will need replacement. It is also assumed that sections of sheathing are rotten and in need of repair, particularly around the water table. The remaining 60% will be scraped and painted once the replacement work is finished. The cost to complete this work is $176,320.00 + HST.

CDE: Fenestration
There are 105 windows in the building divided between four fenestration patterns that include the entrance tower round top windows, the Second Empire frontispiece, the Second Empire side and Creighton Street facades, and the back addition.

The entrance tower pattern is made up of the Palladian window, two round top sidelights and, what was a round top but is now a rectangular, three windows set in the tower's dormer. This set is to be replaced with a set of round top windows (see drawing 2/A-001).

The second fenestration pattern can be found along the Gottingen Street facade. The pattern includes thirteen first floor rectangular two-over-two true divided light (TDL) solid wood window caped with pediments, thirteen second floor rectangular two-over-two TDL solid wood window with a pediment style casings and eleven third floor copper covered circular two-over-two TDL solid wood dormer window punched into the mansard roof.

The third fenestration pattern is one the Creighton Street side of Busch's 1885 design. It is made up of six gable-topped two-over-one dormers and presently, twelve rectangular one-over-one solid wood, TDL single hung windows. There is also a patio door and one double window on the facade. Please note how the gable dormer closest to the addition on the north side has been shifted to accommodate the addition. This detail will be kept.

The fourth fenestration pattern is the one-over-one sliders found on the 1862/1904 addition.

Window Work

Dumaresq's 1914 plan will be used as a guide for the window conservation work with an emphasis on retaining original fabric. The window boxes, casing, pediments and associated moldings will be kept in place. The normal course of work will be assessment of each window box and casing + pediment + molding followed by repair or component replacement, scrap and re-paint.

The single pane two-over-two solid wood, TDL sash pairs will be restored (re-glazed where needed, painted). All one-over-one wood sash pairs found around the building and the seven vinyl one-over-one inserts located in the first floor windows on the Gottingen Street side of Dumaresq's wing will be removed and replaced in-kind with single pane, two-over-two solid wood, TDL sash pairs. At the same time, the energy efficiency and operation of the windows will be improved.

The lower sash of each sash pair will be made operable and come with weather strip. The aluminum storm windows will be kept and repaired as needed. Where there is no aluminum storm window covering a window, a wood storm window with operable sashes will be supplied and installed. A one-over-one wood frame insulated glass unit insert will be installed over the inside face of all operable windows. The interior trim will be modified accordingly. The R-value of this assembly is to be determined but is expected to approach the R-value of a triple glazed window. A unit price for this work $6,900.00 + HST supply & install.

Where noted on the plans, the metal roof will be assessed and repaired/replaced as required.

Two missing windows as per Dumaresq's drawings along with one window will be replaced. According to Dumaresq's plan, one window is missing from the Gottingen Street side dormer of Busch's addition and second from the first-floor window, side elevation of his 1914 addition. These two windows will be supplied as replacements in-kind and installed. (Please note, this may change if the present use of these respective spaces remains the same.)

The rectangular three set window located in the entrance tower cupula will be replaced with a three-set round top window similar in design to the second floor Palladian window.

The cost to complete the above work is $879,700.00 + HST.

CDE: Gottingen Street Granite Wall

From an archival photo (fig.7), the granite wall had an iron railing at least to 1950. This railing will be re-incorporated in the restoration. If after inspection of the wall, it is determined it requires repair, the work could include removing the stones, earthwork, a concrete foundation, re-installation of the stones and ironwork. The cost for this work is estimated at $300,000.00 + HST.

Documentation

The above work plus the work to the addition will be documented with drawings, photos and plans where appropriate. This information will be included in a best practices guide. The cost for this work is $45,000.00 + HST.

Project Management Fees

$300000 + HST has been assigned to the project. It will include project management and design services.

Contingency

In any project of this type there are what best can be described as "fuzzy boundaries" and unforeseen scope of work. The term fuzzy boundaries refer to the work not included between one or more tasks. Unforeseen scope of work is work discovered after the project starts. A contingency of $179,130.00+ HST has been assigned.

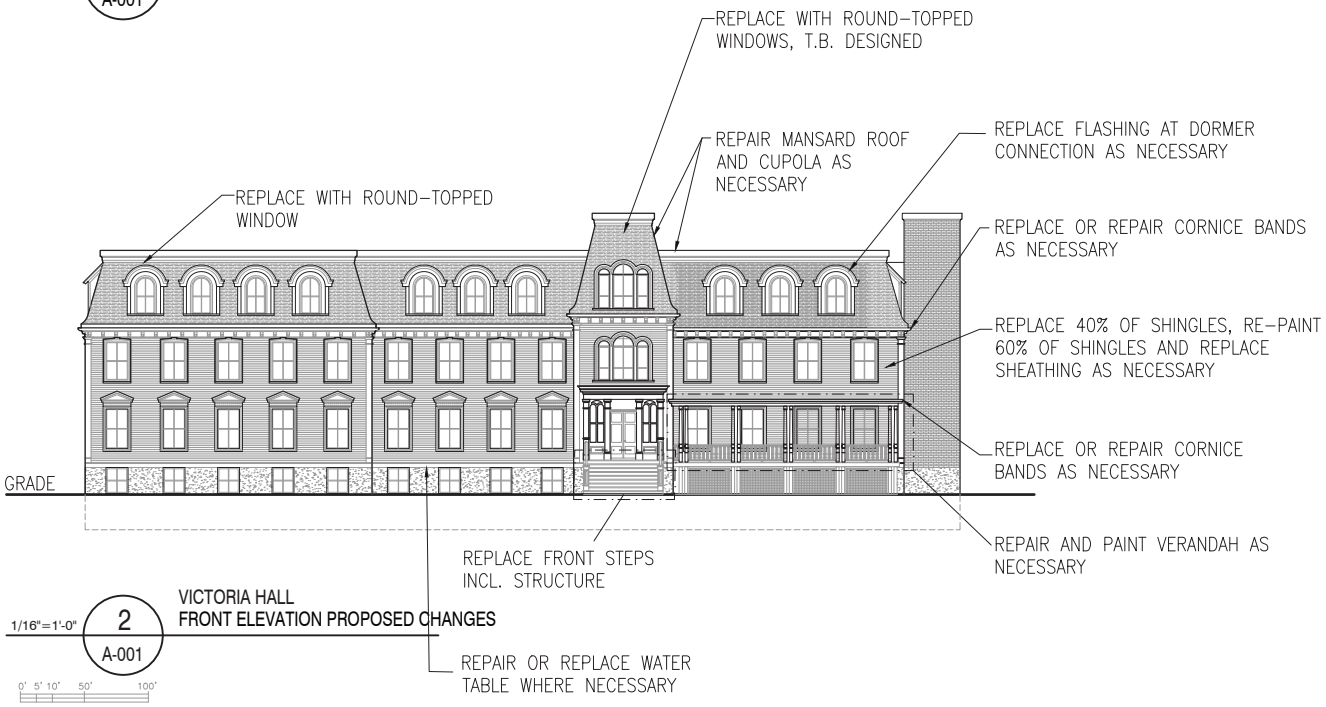
The work will start once the construction of the new build is at grade. The building exterior will be scaffold and tarped. Once in place, the exterior work will begin in conjunction with the interior window work. Work will be billed based on monthly progress. These bills will detail the work done to date and act as interim progress reports. A non-binding estimate of project schedule is completion in sixteen months.

NOTES

*REPLACE OR REPAIR GOTTINGEN ST. GRANITE WALL
*REPLACE IN-KIND ALL ALUMINUM EAVES TROUGH AND GUTTERS
*REPLACE VINYL INSERTS AND ONE-OVER-ONE WINDOWS WITH SOLID WOOD TWO-OVER-TWO TDL WINDOWS AND RESTORE ALL OTHER TWO-OVER-TWO WINDOWS
*ALL ALUMINMUM STORM WINDOWS TO BE RECONDITIONED
*INSTALL METAL AND COPPER WORK AROUND WINDOWS AS NECESSARY
*REPLACE OR REPAIR DORMER WINDOW TRIM AS NECESSARY
*ADD WOOD STORM WINDOWS WHERE STORM WINDOWS NOT PRESENT
*ADD OPERABLE C/W INSERT INSIDE EACH WINDOW (NOT VISIBLE FROM EXT.)

APPROXIMATE LOCATION OR EXTERIOR FIRE ESCAPE STAIR (NOT SHOWN)

1/16"=1'-0" 1 A-001 VICTORIA HALL FRONT ELEVATION AS BUILT DRAWING



1/16"=1'-0" 2 A-001 VICTORIA HALL FRONT ELEVATION PROPOSED CHANGES

0' 5' 10' 50' 100'

Ekistics Planning & Design
fathomstudio.ca
1 Starr Lane
Dartmouth, NS
B2Y 4V7

fathom

1	ISSUE FOR SUBSTANTIAL ALTERCATION DOCUMENT	2020.01.28

REVISIONS DATE

PROJECT
2438 GOTTINGEN STREET
DEVELOPMENT AGREEMENT
APPLICATION

CLIENT
JOSEPH ARAB

SCALE	DATE	
1/16" – 1'-0"	2020.01.28	
DRAWN BY	CHECKED	REVIEWED

APPROVED

SEAL

NOT FOR CONSTRUCTION

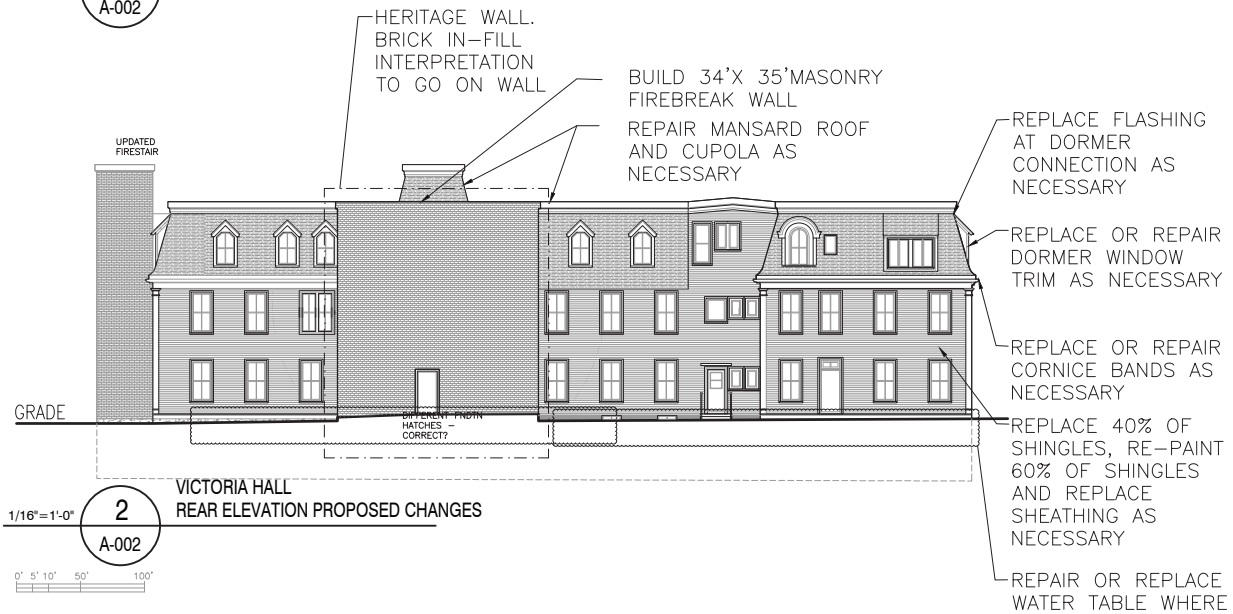
DRAWING

DRAWING NO. A-001

NOTES

*REPLACE OR REPAIR GOTTINGEN ST. GRANITE WALL
*REPLACE IN-KIND ALL ALUMINUM EAVES TROUGH AND GUTTERS
*REPLACE VINYL INSERTS AND ONE-OVER-ONE WINDOWS WITH SOLID WOOD TWO-OVER-TWO TDL WINDOWS AND RESTORE ALL OTHER TWO-OVER-TWO WINDOWS
*ALL ALUMINMUM STORM WINDOWS TO BE RECONDITIONED
*INSTALL METAL AND COPPER WORK AROUND WINDOWS AS NECESSARY
*REPLACE OR REPAIR DORMER WINDOW TRIM AS NECESSARY
*ADD WOOD STORM WINDOWS WHERE STORM WINDOWS NOT PRESENT
*ADD OPERABLE C/W INSERT INSIDE EACH WINDOW (NOT VISIBLE FROM EXT.)

1/16"=1'-0" 1 A-002 VICTORIA HALL REAR ELEVATION AS BUILT DRAWINGS



1/16"=1'-0" 2 A-002 VICTORIA HALL REAR ELEVATION PROPOSED CHANGES

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fathom

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SCALE	DATE	
1/16" - 1'-0"	2020.01.28	
DRAWN BY	CHECKED	REVIEWED
APPROVED		

SEAL

NOT FOR CONSTRUCTION

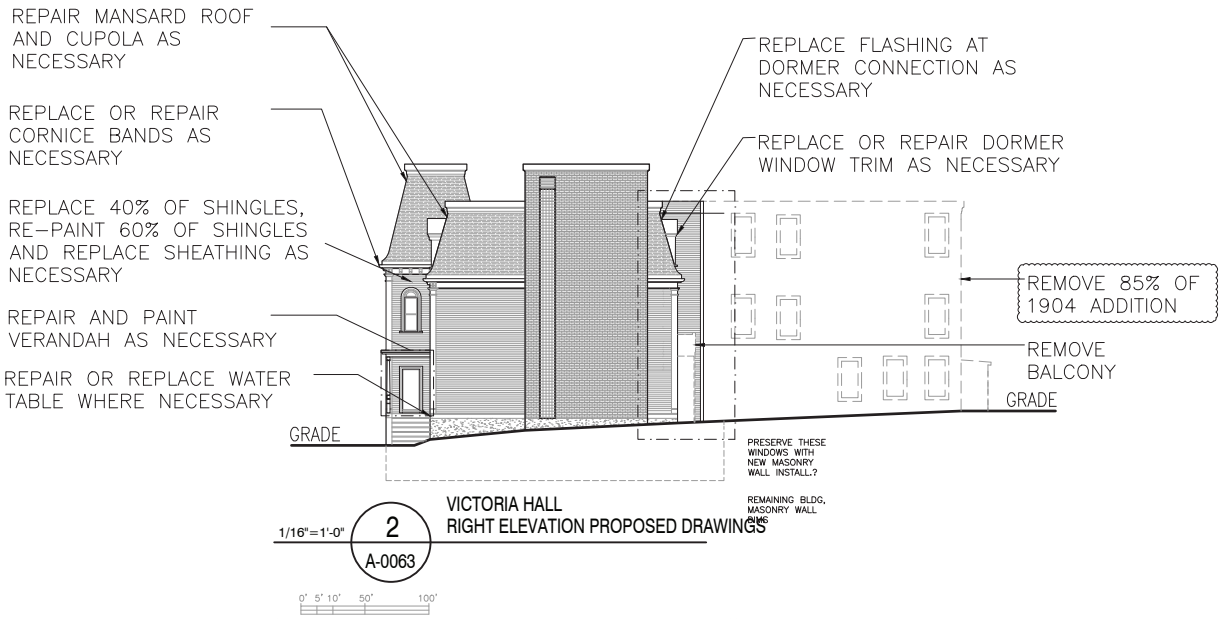
DRAWING

DRAWING NO.
A-002

NOTES

*REPLACE OR REPAIR GOTTINGEN ST. GRANITE WALL
*REPLACE IN-KIND ALL ALUMINUM EAVES TROUGH AND GUTTERS
*REPLACE VINYL INSERTS AND ONE-OVER-ONE WINDOWS WITH SOLID WOOD TWO-OVER-TWO TDL WINDOWS AND RESTORE ALL OTHER TWO-OVER-TWO WINDOWS
*ALL ALUMINMUM STORM WINDOWS TO BE RECONDITIONED
*INSTALL METAL AND COPPER WORK AROUND WINDOWS AS NECESSARY
*REPLACE OR REPAIR DORMER WINDOW TRIM AS NECESSARY
*ADD WOOD STORM WINDOWS WHERE STORM WINDOWS NOT PRESENT
*ADD OPERABLE C/W INSERT INSIDE EACH WINDOW (NOT VISIBLE FROM EXT.)

1/16"=1'-0" 1 A-003 VICTORIA HALL RIGHT ELEVATION AS BUILT DRAWINGS



1/16"=1'-0" 2 A-0063 VICTORIA HALL RIGHT ELEVATION PROPOSED DRAWINGS

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1 Starr Lane
Dartmouth, NS
B2Y 4V7

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1	ISSUE FOR SUBSTANTIAL ALTERCATION DOCUMENT	2020.01.28
REVISIONS		DATE

PROJECT
2438 GOTTINGEN STREET
DEVELOPMENT AGREEMENT
APPLICATION

CLIENT
JOSEPH ARAB

SCALE	DATE	
1/16" – 1'-0"	2020.01.28	
DRAWN BY	CHECKED	REVIEWED
APPROVED		

SEAL

NOT FOR CONSTRUCTION

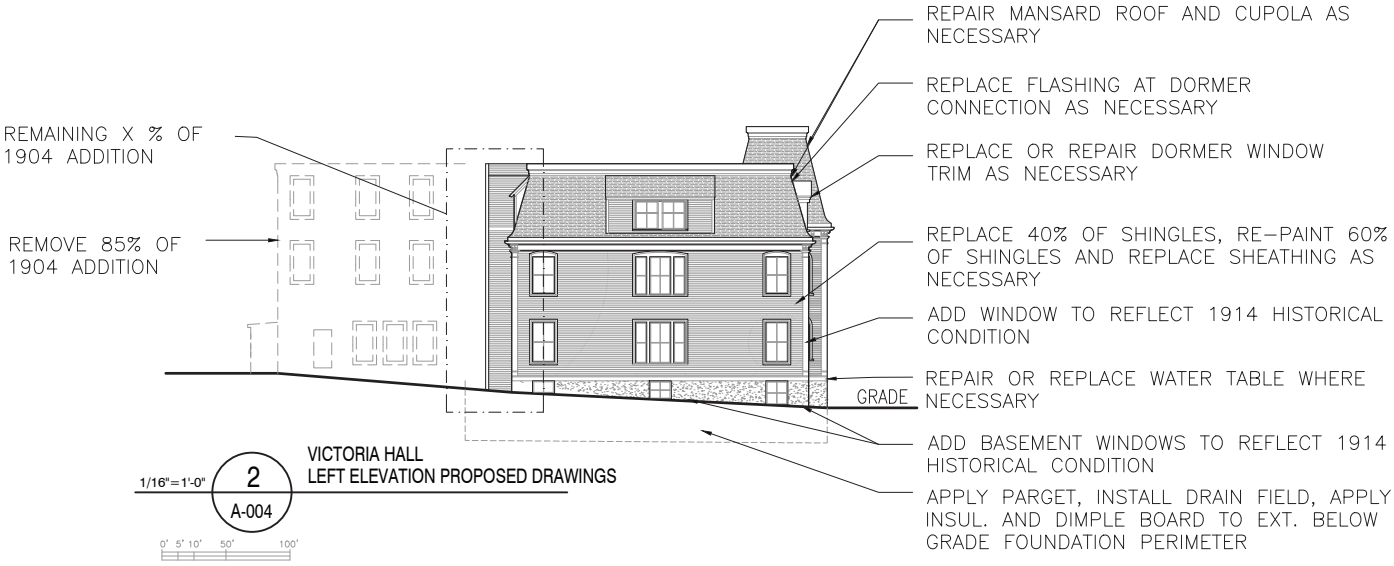
DRAWING

DRAWING NO. A-003

NOTES

*REPLACE OR REPAIR GOTTINGEN ST. GRANITE WALL
*REPLACE IN-KIND ALL ALUMINUM EAVES TROUGH AND GUTTERS
*REPLACE VINYL INSERTS AND ONE-OVER-ONE WINDOWS WITH SOLID WOOD TWO-OVER-TWO TDL WINDOWS AND RESTORE ALL OTHER TWO-OVER-TWO WINDOWS
*ALL ALUMINMUM STORM WINDOWS TO BE RECONDITIONED
*INSTALL METAL AND COPPER WORK AROUND WINDOWS AS NECESSARY
*REPLACE OR REPAIR DORMER WINDOW TRIM AS NECESSARY
*ADD WOOD STORM WINDOWS WHERE STORM WINDOWS NOT PRESENT
*ADD OPERABLE C/W INSERT INSIDE EACH WINDOW (NOT VISIBLE FROM EXT.)

1/16"=1'-0" 1 A-004 VICTORIA HALL LEFT ELEVATION AS BUILT DRAWINGS



1/16"=1'-0" 2 A-004 VICTORIA HALL LEFT ELEVATION PROPOSED DRAWINGS

0' 5' 10' 50' 100'

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Dartmouth, NS
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1	ISSUE FOR SUBSTANTIAL ALTERCATION DOCUMENT	2020.01.28
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PROJECT
2438 GOTTINGEN STREET
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CLIENT
JOSEPH ARAB

SCALE	DATE	
1/16" – 1'-0"	2020.01.28	
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APPROVED		

SEAL

NOT FOR CONSTRUCTION

DRAWING

DRAWING NO.
A-004

06 Design Proposal

6.1 Proposed Development

New Build

Under the HRM Heritage Development Agreement policy, developers are afforded increased development rights in exchange for conservation work to the character-defining elements of the registered property. If Victoria Hall was demolished, the as-of-right development rights on the proposed property could allow for a 104-unit building, depending on the unit mix, whose height limit was determined by the citadel rampart heights (see chapter 3). The developer's expectation is to achieve a higher yield than the as of right in order to fund the proposed conservation work outlined in chapter 5. This development agreement proposes a simple 13-storey tower building containing 118 units. The addition is strategically located behind Victoria Hall in order to allow Victoria Hall to maintain its important presence on Gottingen St thus maintaining the fabric of the Gottingen streetscape. A 3-storey base on Creighton St allows the building to maintain the human-scale streetscape on Creighton St. The tower is stepped back 22'- 6" from the street wall with the top 3 storeys stepped back another 7'-0". The main entrance and parking entry would be accessed off of Creighton St. The 3rd storey of the Creighton St base will be masked with "mansard" roof giving it the appearance of a 2-storey base that matches the scale of the buildings on Creighton St. The design is a modern response to the architecture of Victoria Hall. Each ground floor unit would have its own entry on the street to capture the rhythm and scale of other buildings on Creighton. The main entrance to the tower would be from Creighton St in order to preserve the historic character of Victoria Hall. The tower (with a max 9250sqft/860sqm plate size) is set back 23'-10" from the back of Victoria Hall keeping most of the back of Victoria Hall intact (except the rear Victoria Hall addition portion). An outdoor landscaped terrace creates ability for people to walk from 1 building to the other through an accessible outdoor link. The buildings are lightly connected through an open-air steel roof structure.

Property line setbacks/stepbacks:

Frontyard (Creighton) setback: 3'
Front yard stepback (tower): 22'-6" above the 3rd storey.
Project North:
Min. side-yard setback: 8'-2" min
Tower stepback: 18'-0"
Project East:
Min.setback from Heritage property: 16'-8"
Tower stepback from Heritage property: 23'-10"
Tower stepback from Gottingen St: 126'-0"
Project South:
Min side-yard setback: 0'-6"
Max side-yard setback: 40'-7"
Tower stepback: 14'-0"
The total parking count on 2 underground levels of parking is 62 parking stalls for 118 units (0.52 parking ratio). The design is flexible and allows for the possibility to add or subtract a level of parking depending on the results from the geotechnical investigation.

Calculation of extra density

Under the current design, a reconfiguration of units on levels 1-9 would result in the allowable density of 242 persons. Thus the client is requesting for an additional gross buildable area of 24,548 sqft (levels 10-13). Based on a Halifax Land Sales Data review dated March 8, 2020, the rate/ft^2 of gross buildable area in the North End ranges from $40.00/ft^2 to $50.00/ft^2. This results in a range of $981,920 - $1,227,400 associated with the requested additional gross buildable area from the new building.

Victoria Hall

In addition to the proposed conservation work on the CDEs, the building's health needs to be addressed (as mentioned in chapter 5). The project proposes to renovate the basement floor into 4 -6 units in order to generate funds to deal with Victoria Hall's basement moisture problem. This shall help extend the overall life-span of the building. However this contribution is not accrued towards the Heritage Development agreement CDE contribution as it does not directly affect the CDEs.

Fig. 19 View of development from Park

Fig. 20 View of Development from Creighton St

The existing units in Victoria Hall shall total 17-19 units for an overall unit count of 137-139 units on site. The total GFA for the new building is 109017sq.ft (10,128 sq.m.). The GFA for the Victoria Hall portion of the project is 18,750 sq.ft. (1742 sq.m.) (Discounting the proposed basement level as this is more than .6m below grade). The total GFA for both buildings is 127767 sq.ft. (11870 sqm.). The total lot area is 36,400 sq.ft. giving a FAR of 3.51.

Community Benefits:

Given the social history of Victoria Hall as a home for underpriviledged old women, the complex history of the Gottingen st, the African Nova Scotian community that has historically been marginalized in this area, and the many other complexities associated with this neighborhood whose demographic landscape is quickly changing, the client believes that this project cannot shy away from positively contributing to the community. Over the course of the summer and fall of 2019, the developers hosted 7 community engagement sessions at the Halifax North Memorial Library, Northwood Terrace, the Community Y, and the Squaretown Festival. Written comments were collected at the final three sessions and are included in appendix 8.10. Out of the sessions, a number of areas emerged as meaningful ways that this project could give back to the community. This project shall focus on the following:

Affordable Units:
4 units at a maximum cost of 50% of market rate for 15 years. Will increase as per consumer price index.
3 units at a maximum cost of 10% below market rate for 15 years.

Community Room:
600 sqft in Victoria Hall available for use by the Gottingen Community for 15 years. This room shall be designed as flexible space that is able to accommodate community programming and other community needs as discovered through our community engagement sessions.

Local Employment:
Opportunities for local employment via building operations.

Site Safety:
On-going consultation with Joseph Howe Elementary in regards to pre-existing safety concerns at the intersection of Creighton St and Charles St.

Local History:
Artistic, interpretive elements to be used in and around the building to highlight and celebrate local history. The proposed Heritage wall on Victoria Hall shall be another key component of this community contribution.
Multiple alternative design options were considered at the start of the project:

Fig. 21 Representational renders of proposed community room in Victoria Hall

6.2 Design Alternatives

Alternative 1: Demolition of Victoria Hall.
Considering the development rights of the site at the time, the complexities involved with conservation work, and the financial and time costs associated with the Development Agreement Process, one option was to demolish Victoria Hall and develop a new building on the site. However, in recognizing the importance of preserving Heritage and the significance of Victoria Hall, the team agreed that this was the least viable option.

Alternative 2: Build an attached addition to Victoria Hall
This option would allow the tower to be stepped back further from Creighton St. However, construction would be complex as it would involve adding a building of non-combustible construction to Victoria Hall which is combustible construction. Building onto Victoria Hall would also be more complex to reverse.

Alternative 3: Move Victoria Hall to the front to front of the site
This option would have altered the presence of Victoria Hall on site thus changing the heritage value of the land; which includes the presence of landscaped manicured lawns at the front of the building. It would have involved a high cost, structural complexities and the potential of damaging Victoria Hall in the process of moving it forward.

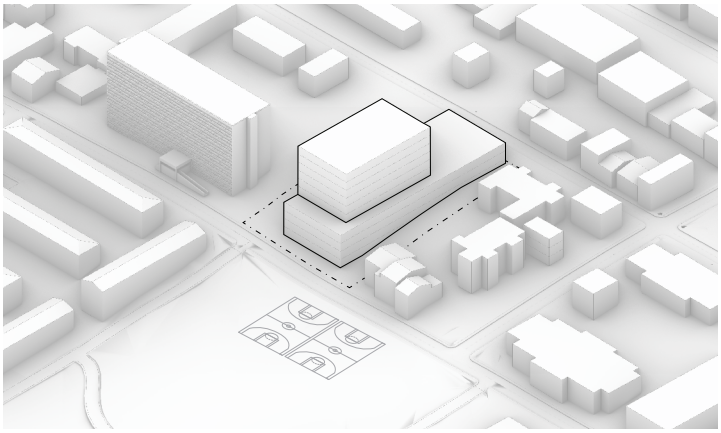

Fig. 22 Alternative 1

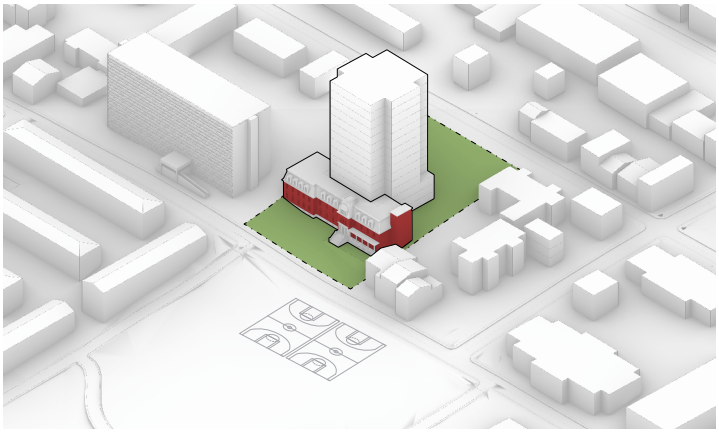

Fig. 23 Alternative 2: Tower with no base

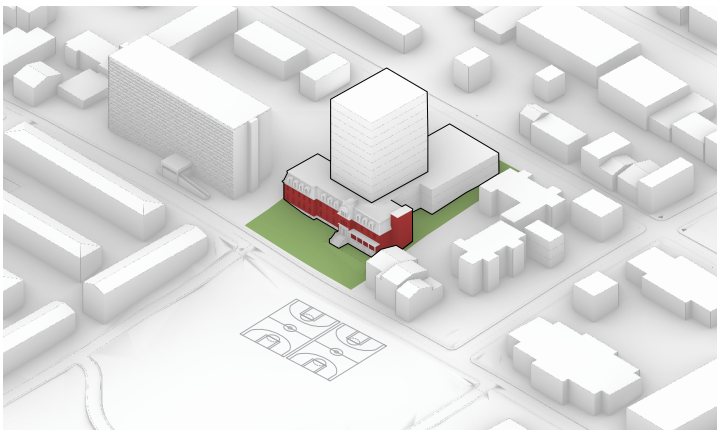

Fig. 24 Alternative 2: Tower with base

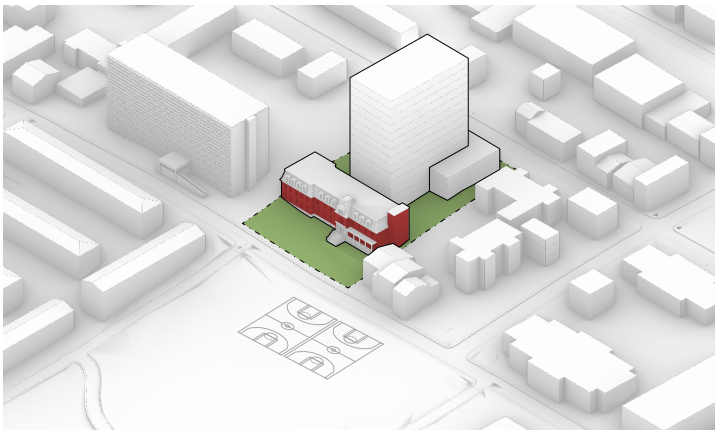

Fig. 25 16 Storey design

6.3 Compliance with Standard 11

Standard 11 of the Standards and Guidelines for the Conservation of Historic Places in Canada requires that one
(a) Conserve the heritage value and character-defining elements when creating any new additions to a historic place or any related new construction.
(b) Make the new work physically and visually compatible with, subordinate to, and distinguishable from the historic place." (Page 34)

6.4 Conservation of Heritage Value

The majority of Victoria Hall's CDEs are located on its Gottingen St Facade and on Dumaresq's 1914 addition. The proposed mid-rise building is located behind Victoria Hall from Gottingen St, and does not attach to the building at any point to ensure that the above mentioned CDEs retain the same visibility as in their current state. The remainder CDE's located on Finlay's back addition will be remembered on the proposed heritage wall.

The building's history shows consistency in the way it has kept up with changing needs. The mid-rise, the latest iteration of this cycle, is appropriate for 2-reasons:

- A need to increase the site density. The lot is currently located in an HR-1 zone under the new center plan and was located in an R-3, schedule A zone under the former by-law (the by-law that this Development Agreement is being processed under). These 2 zonings highlight the potential of this site to contribute to increased density on the HRM peninsular.
- The proposed yield is necessary to make the proposed conservation work financially viable.

Victoria Hall CDE's on the Gottingen St Facade and the 1914 addition

6.5 Compatible, Subordinate and Distinguishable

Compatible:

All additions to heritage buildings are required to be compatible in terms of construction, materials and assembly. Part of this criteria does not directly apply to this project as the new build is a separate, non-combustible building. However given the proximity of Victoria Hall to the building, it will be key to create a safe and robust demolition and construction plan to ensure the structural integrity of Victoria Hall (especially the ironstone foundation).

Subordinate and Distinguishable:

The Standards and Guidelines for the Conservation of Historic Places in Canada defines subordination as not causing a distraction from the historic place or an impairment of heritage value. It goes on to state that "Subordination is not a question of size; a small, ill-conceived addition could adversely affect an historic place more than a large, well-designed addition." (page 34) The proposed design has been carefully designed to fulfill these requirements in the following ways:

Simplified Facade on the Gottingen Facing Elevation:

The proposed design subtly picks up design cues from Victoria Hall while simultaneously acting as a quiet backdrop that allows the colorful, ornate heritage building to stand out. The Gottingen facade is driven by the regular fenestration pattern on Victoria Hall as well as the proportions of the windows on Victoria Hall. A strategically located glazing strip is used to both break up the scale of the facade as well as to frame and thus celebrate the beautiful front entrance and frontispiece of Victoria Hall.

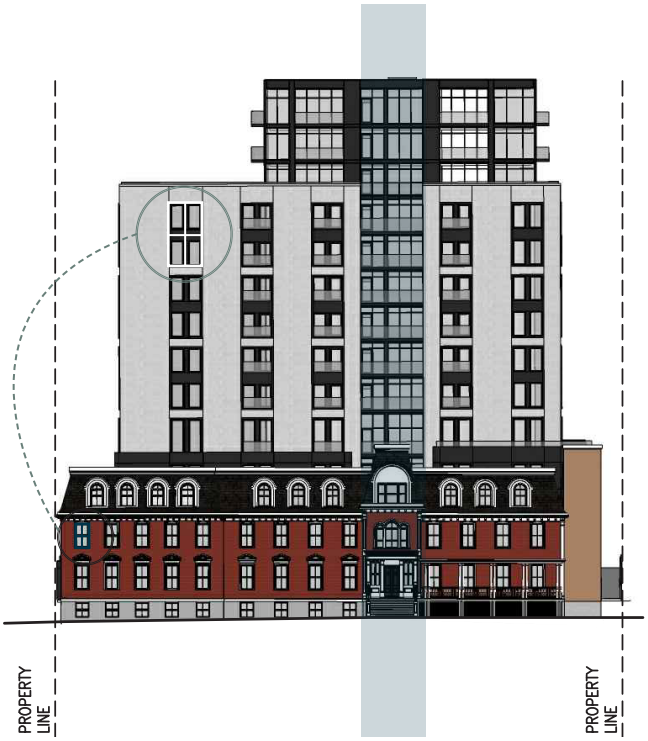

Fig. 26 Fenestration and glazing on the East facade of the new building intentionally draws the eye to Victoria Hall's frontispiece

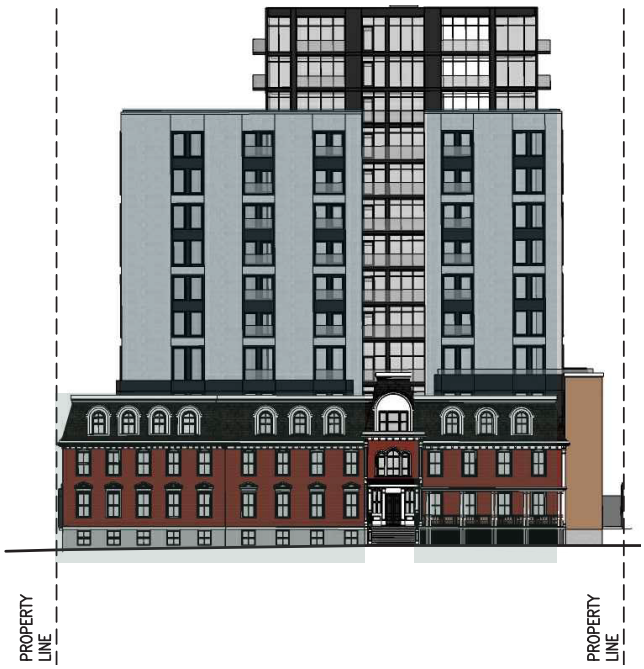

Fig. 27 Rhythm of bays along Victoria Hall and the new building

Location on Site and Massing:

The tower is subordinate to Victoria Hall in its location to the west of the building. This allows Victoria Hall to maintain its current street presence on Gottingen St. The tower portion of the building is set back 125'-0 ½" from Gottingen St, with the three storey penthouse stepped back an additional 22'-0" to reduce the perceived presence of the building from the street.

On Creighton St, the tower is stepped back 22'-6" from the streetwall to allow for a transition between 2-3 storey streetwall that matches the scale of the buildings on the street and the tower. The penthouse is further stepped back 7'-0" from the Tower.

Material and Color Palette:

The materials selected for the new design have been carefully chosen to help the building remain distinct from and subordinate to Victoria Hall while also fitting into the scale of the surrounding context, especially on Creighton St. It was important to create a building that was of its time yet also physically and visually compatible with the heritage building. The 3-storey podium on Creighton St is clad with red-clay brick and a dark standing seam metal mansard roof which picks up on the red shingles of Victoria Hall, the black mansard roof and the human scale of materials at grade. This brick-clad podium and Victoria hall are separated by the main part of the mid-rise tower thus preventing the podium from detracting from Victoria Hall's presence on Gottingen St. The mid-rise tower is clad in dark high-density fiber cement and light grey cut-stone masonry with dark windows. The location of materials is carefully thought out to minimize the presence of the new building on Gottingen St as well as to break up the scale of the mid-rise building so that it relates well within its context. The interplay of color on the Gottingen St facade is a quiet inversion derived from Victoria Hall which has a dark mansard roof with white windows. The new design picks up on this but inverts the colors so as to silence the facade. The interaction between the dark windows and the light grey cut-stone further helps to break up the facade thus giving the building a befitting scale to its surroundings.

Black fiber cement panels or similar

Grey cut-stone or similar

Red clay brick

Grey standing seam metal

Fig. 29 Color palette is derived from Victoria Hall

Fig. 30 View of Victoria Hall from Gottingen St

Fig. 31 View of Victoria Hall indicating the separation between the 2 buildings.

Fig. 32 View of Creighton St Highlighting the use of red brick to drawn design connections between the new building and Victoria Hall. Tower is stepped back to reduce the presence of the tower on the street.

07 Bibliography

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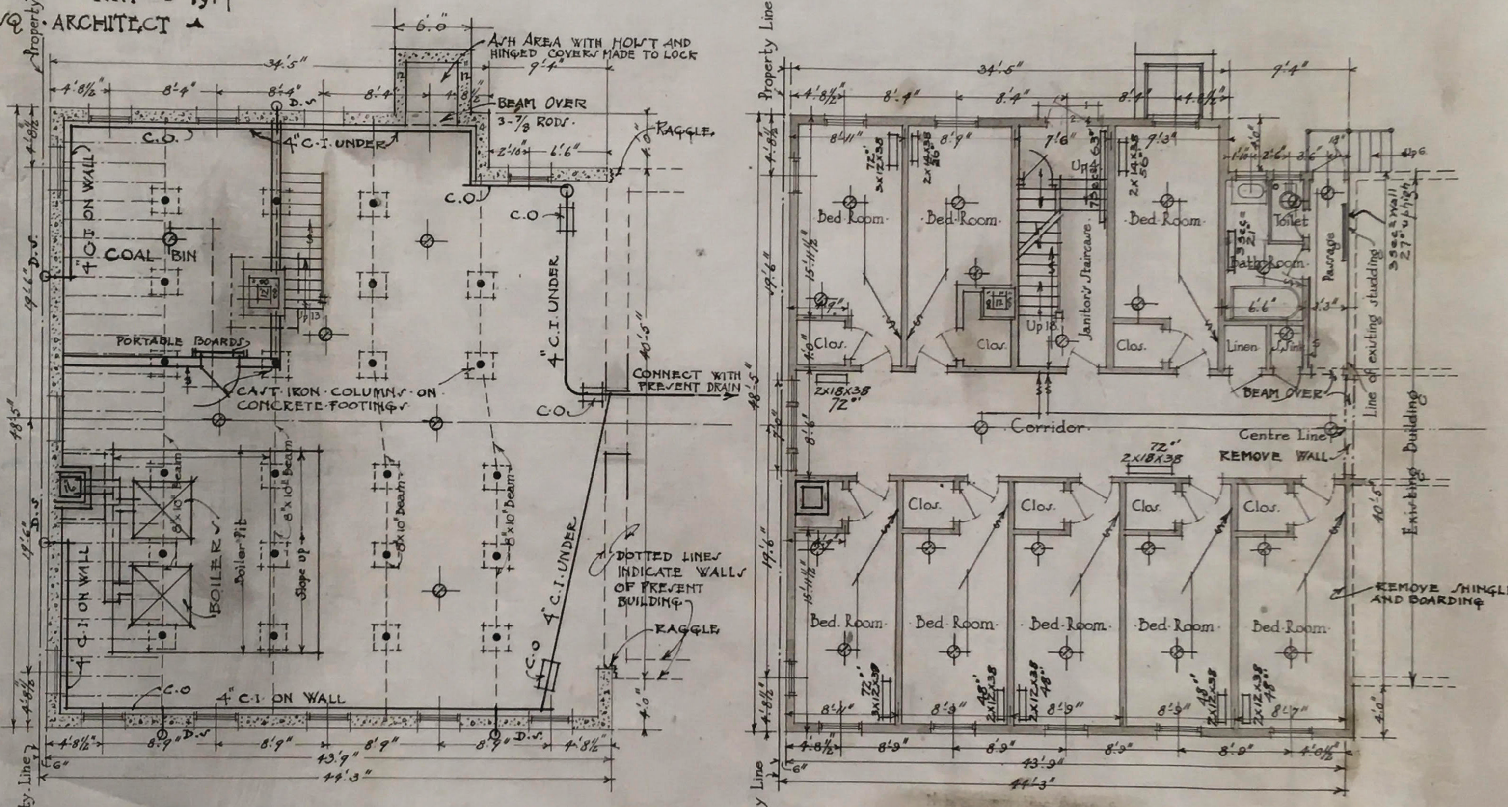
Collection of Sydney P. Dumaresq's drawings of the 1914 addition

ADDITIONS TO OLD LADIES HOME — HALIFAX N.S.

SCALE: 1/8 INCH = 1 FOOT — MAY-5-1914

SYDNEY P. DUMARESQ ARCHITECT

(1)



BASEMENT PLAN

FIRST FLOOR PLAN

13 Rads = 703"

June 8th 1914

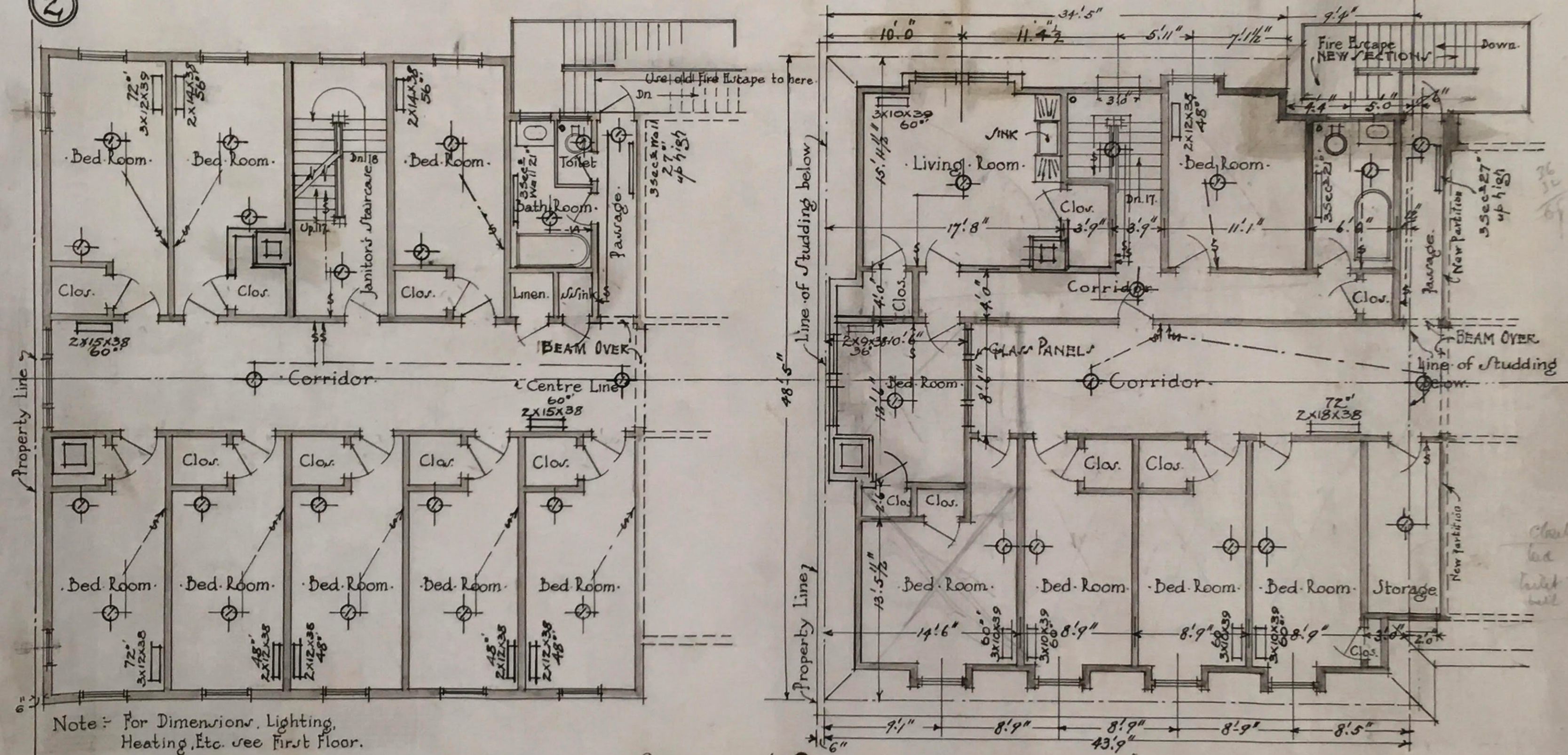
(1)

ADDITIONS TO OLD LADIES HOME — HALIFAX N.S.

SCALE: 1/8 INCH = 1 FOOT — MAY 5 1914

SYDNEY P. DUMARESQ — ARCHITECT

(2)



SECOND FLOOR PLAN. 12 Rads 616'

THIRD FLOOR PLAN. 10 Rads 504'

James J Corston June 8th 1914

John Foley, per M. G. Foley, Attorney June 8th 1914.

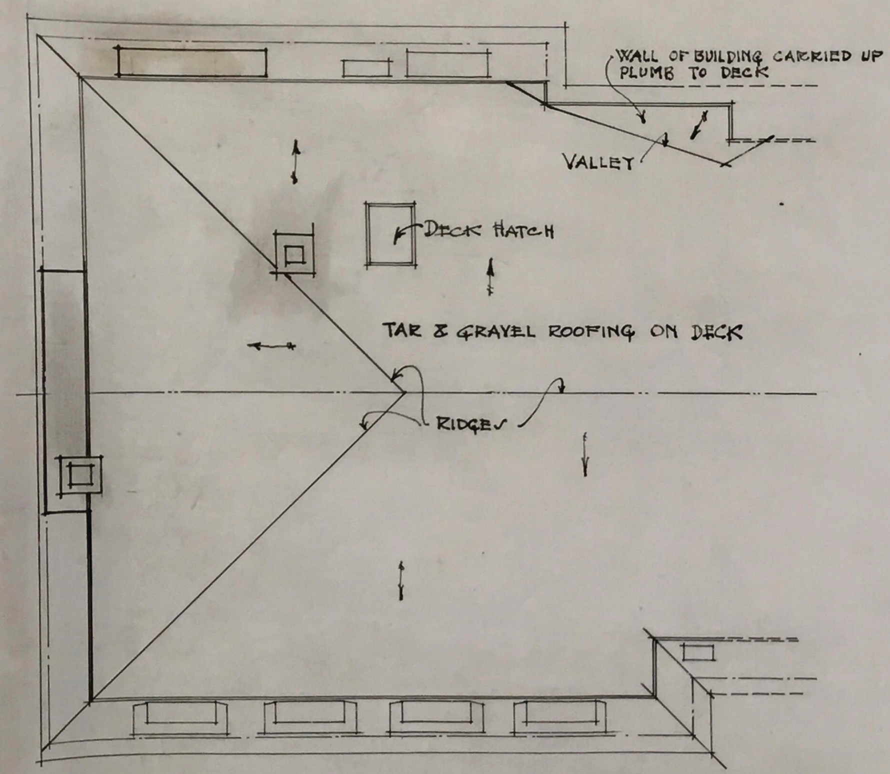
Farquhar Bros Ltd June 9/14

Martin. T. Moore July 15th

(2)

- ADDITIONS · TO · OLD · LADIES · HOME - - HALIFAX - N · S -
- SCALE: 1/8 INCH = 1 FOOT - MAY · 5 · 1914 -
- SYDNEY · P · DUMARESQ · ARCHITECT -

(3)



ROOF · PLAN ·

James [illegible] June 8th 1914
John Foley [illegible] M. G. Foley [illegible]
June 8th 1914
Farquhar Bros Ltd June 9/14
Martin [illegible] July 15th

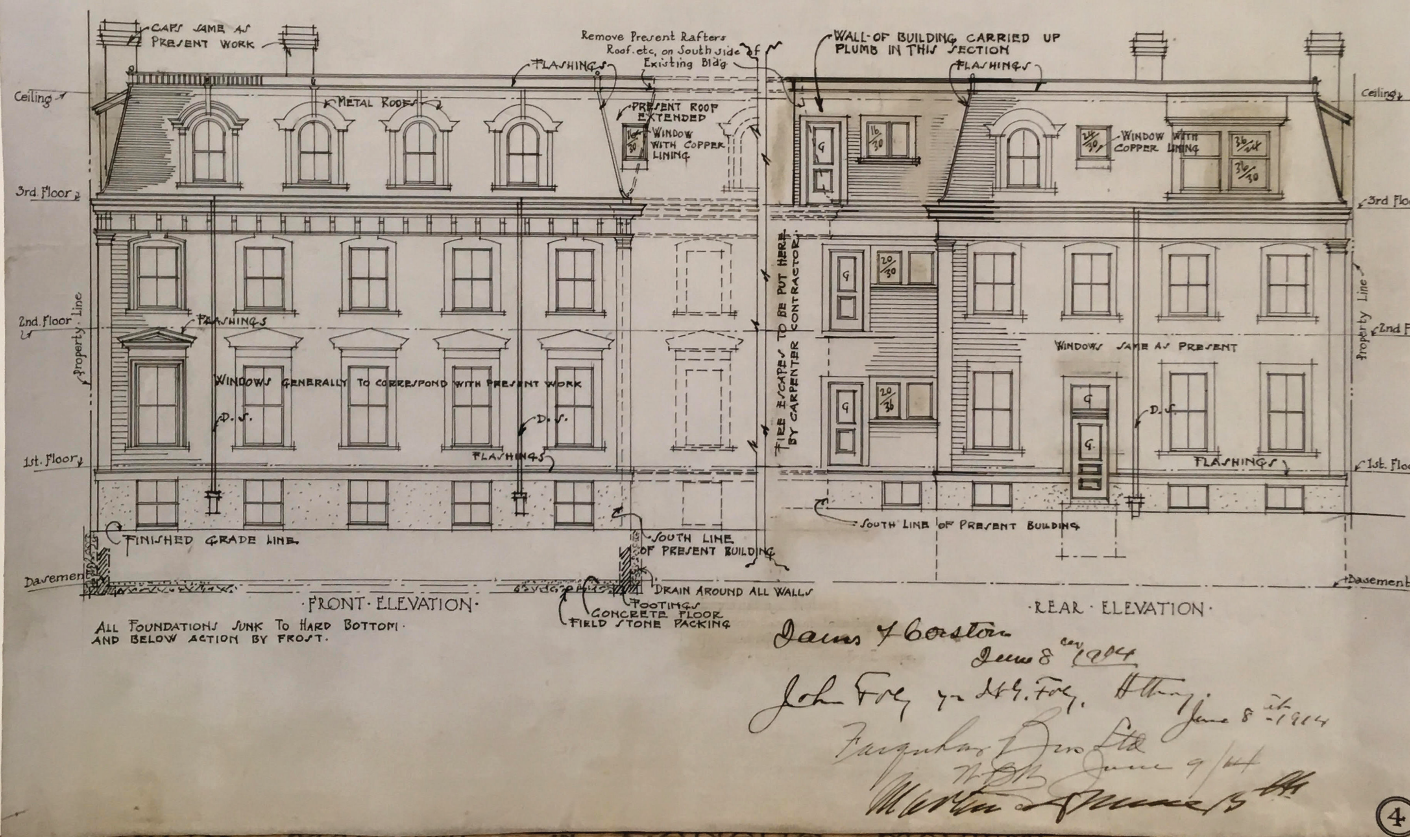
(3)

ADDITIONS TO OLD LADIES HOME — HALIFAX N.S.

SCALE: 1/8 INCH = 1 FOOT MAY 5 1914

SYDNEY P. DUMARESQ ARCHITECT

(4)



CAPS SAME AS PRESENT WORK
Remove Present Rafters Roof, etc., on South side of Existing Bldg.
FLASHINGS
METAL ROOFS
PRESENT ROOF EXTENDED
WINDOW WITH COPPER LINING
WALL OF BUILDING CARRIED UP PLUMB IN THIS SECTION
WINDOW WITH COPPER LINING
Ceiling
3rd Floor
2nd Floor
1st Floor
Basement
Property Line
2nd Fl.
WINDOWS GENERALLY TO CORRESPOND WITH PRESENT WORK
D.S.
FIRE ESCAPES TO BE PUT HERE BY CARPENTER CONTRACTOR
WINDOWS SAME AS PRESENT
FINISHED GRADE LINE
SOUTH LINE OF PRESENT BUILDING
DRAIN AROUND ALL WALLS
FOOTINGS
CONCRETE FLOOR
FIELD STONE PACKING
FRONT ELEVATION
REAR ELEVATION
ALL FOUNDATIONS SUNK TO HARD BOTTOM AND BELOW ACTION BY FROST.

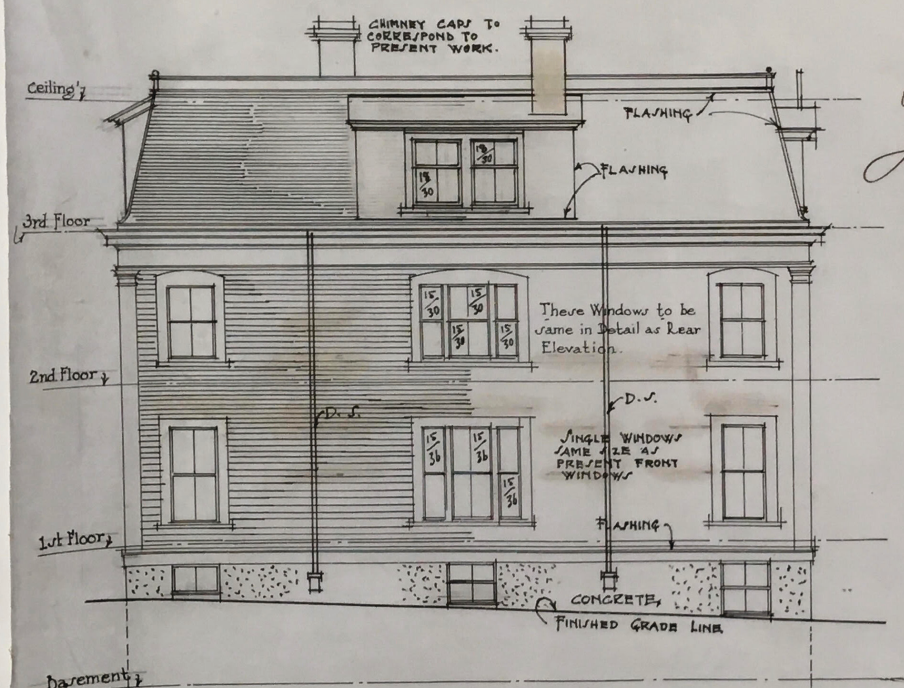
(4)

ADDITIONS · TO · OLD · LADIES · HOME · HALIFAX N · S ·

SCALE: 1/8 INCH = 1 FOOT · MAY · 5 1914

SYDNEY · P · DUMARESQ · ARCHITECT

(5)



· SIDE · ELEVATION ·

James & Corston June 8th 1914

John Foley for H. G. Foley Heating, June 8th 1914

Farquhar Bros Ltd ... June 9/14

Martin & Moore July 15

(5)

Architectural Drawing Package for New Build

2021-05-07
2438 Gottingen St Project Summary

Total Units in Development	137

Development Lot Area	
PID	00148791
Total Lot Area	36,400
Total Development GFA excluding Parking	127,767
Floor Area Ratio	3.51

New Development

Building Floor Level	FA	Amenity	Units	Parking Stalls	Bicycle Parking (Class A)	Bicycle Parking (Class B)
Parking -02	15700			32		
Parking -01	15700			30		
Main Level	10575		8		20	8
Level 02	12,503	360	13			
Level 03	12,503	360	13			
Level 04	8,162		10			
Level 05	8,538		10			
Level 06	8,538		10			
Level 07	8,538		10			
Level 08	8,538		10			
Level 09	8,538		10			
Level 10	8,538		10			
Level 11	4,682	635	4			
Level 12	4,682		5			
Level 13	4,682		5			
Totals	109,017	1355	118	62	20	8

FA MEASURED TO INTERIOR OF EXTERIOR WALL, DOES NOT INCLUDE ELEVATOR SHAFT
Calculation based on centerplan definition of Floor Area

Victoria Hall

	GFA	Units	Parking Stalls
Basement	6,250	6	
Main Level	6250	5	
Level 02	6250	4	
Level 03	6,250	4	
Totals	18750	19	

Level	BACH	1 BED	1 BED + DEN	2 BED	3 BED	Total Units
Main Level	0	6	0	1	1	8
Level 02	0	7	1	4	1	13
Level 03	0	7	1	4	1	13
Level 04	0	7	0	3	0	10
Level 05	0	5	0	5	0	10
Level 06	0	5	0	5	0	10
Level 07	0	5	0	5	0	10
Level 08	0	5	0	5	0	10
Level 09	0	5	0	5	0	10
Level 10	0	5	0	5	0	10
Level 11	0	1	0	3	0	4
Level 12	0	2	0	3	0	5
Level 13	0	2	0	3	0	5
Total Units	0	62	2	51	3	118

Unit %	BACH	1 BED	1 BED + DEN	2 BED	3 BED	Total Units
	0%	53%	2%	43%	3%	100%

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1 Starr Lane
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4	ISSUE FOR DA RE-SUBMISSION	2021-05-07
3	ISSUE FOR HAC	2021-02-10
2	ISSUE FOR DA RE-SUBMISSION	2021-01-25
1	ISSUE FOR DA RE-SUBMISSION	2020-12-23

REVISIONS DATE

PROJECT

2438 GOTTINGEN STREET
DEVELOPMENT AGREEMENT
APPLICATION

CLIENT

JOSEPH ARAB

SCALE
1/32" - 1'-0"

DATE
2021-05-07

DRAWN BY | CHECKED | REVIEWED

APPROVED

SEAL

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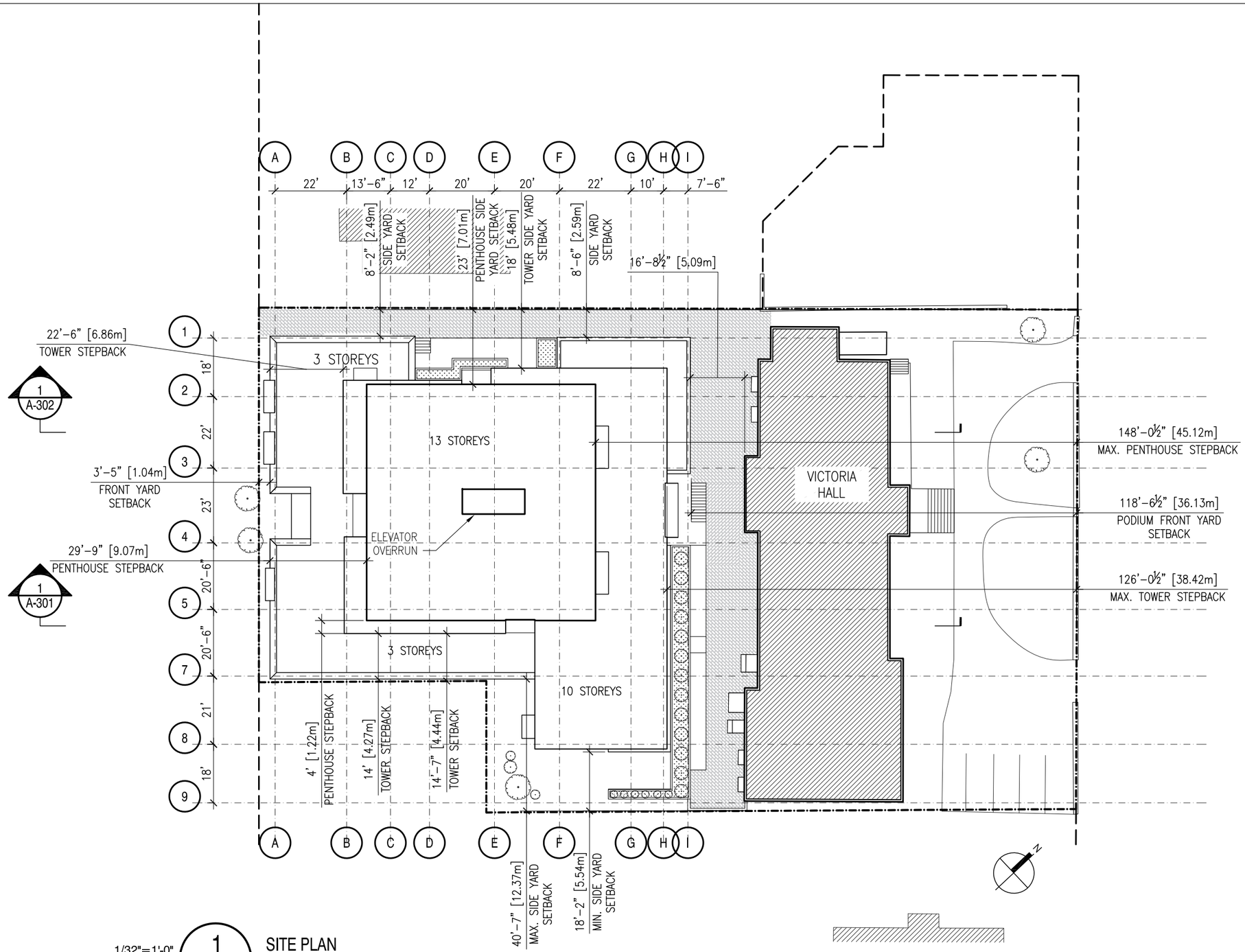
DRAWING
PROJECT YIELD

DRAWING NO.
A-001



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REVISIONS DATE

PROJECT

2438 GOTTINGEN STREET
DEVELOPMENT AGREEMENT
APPLICATION

CLIENT

JOSEPH ARAB

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1/32" - 1'-0"	2021-05-07	
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SITE PLAN - PROPOSED

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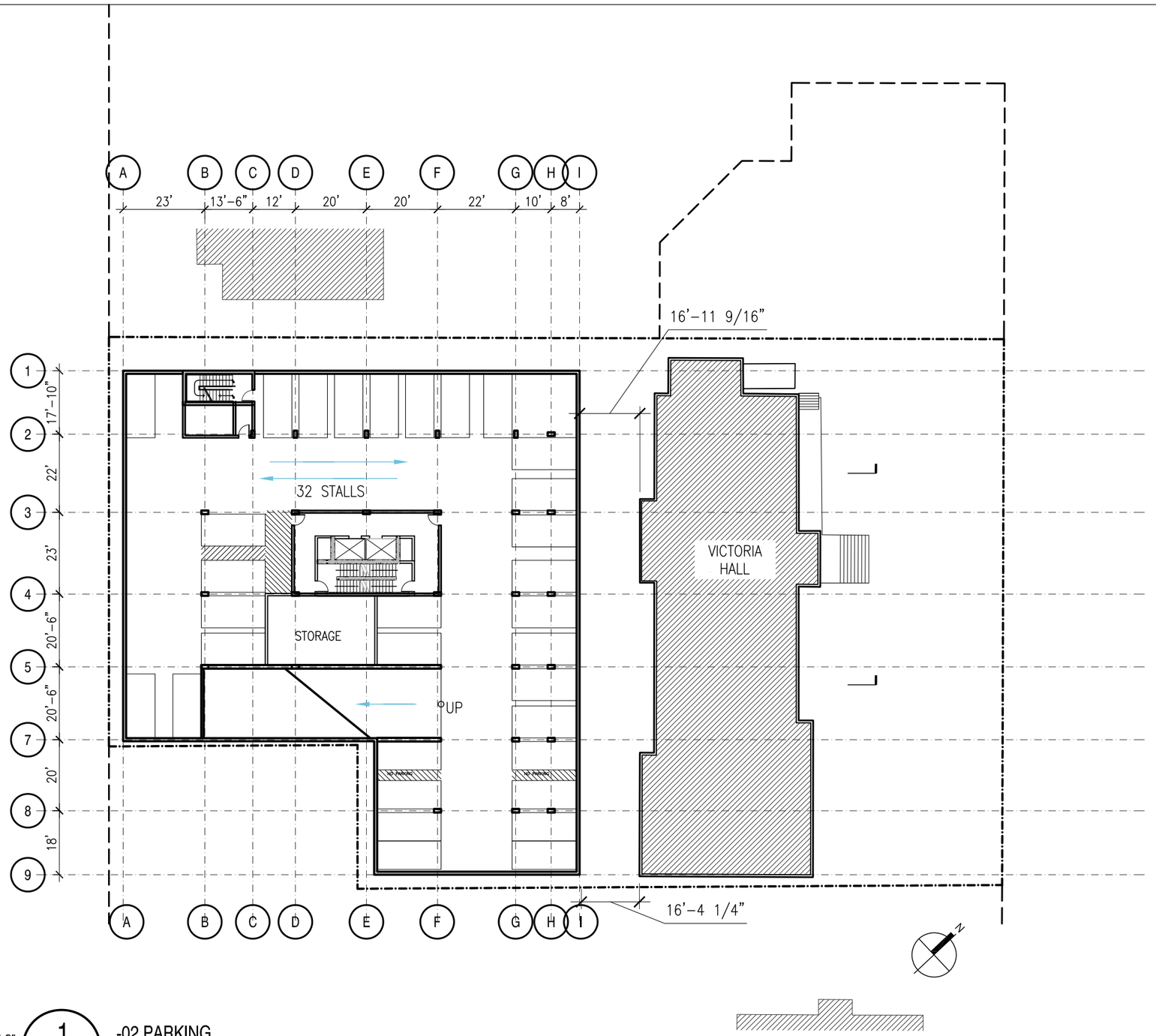

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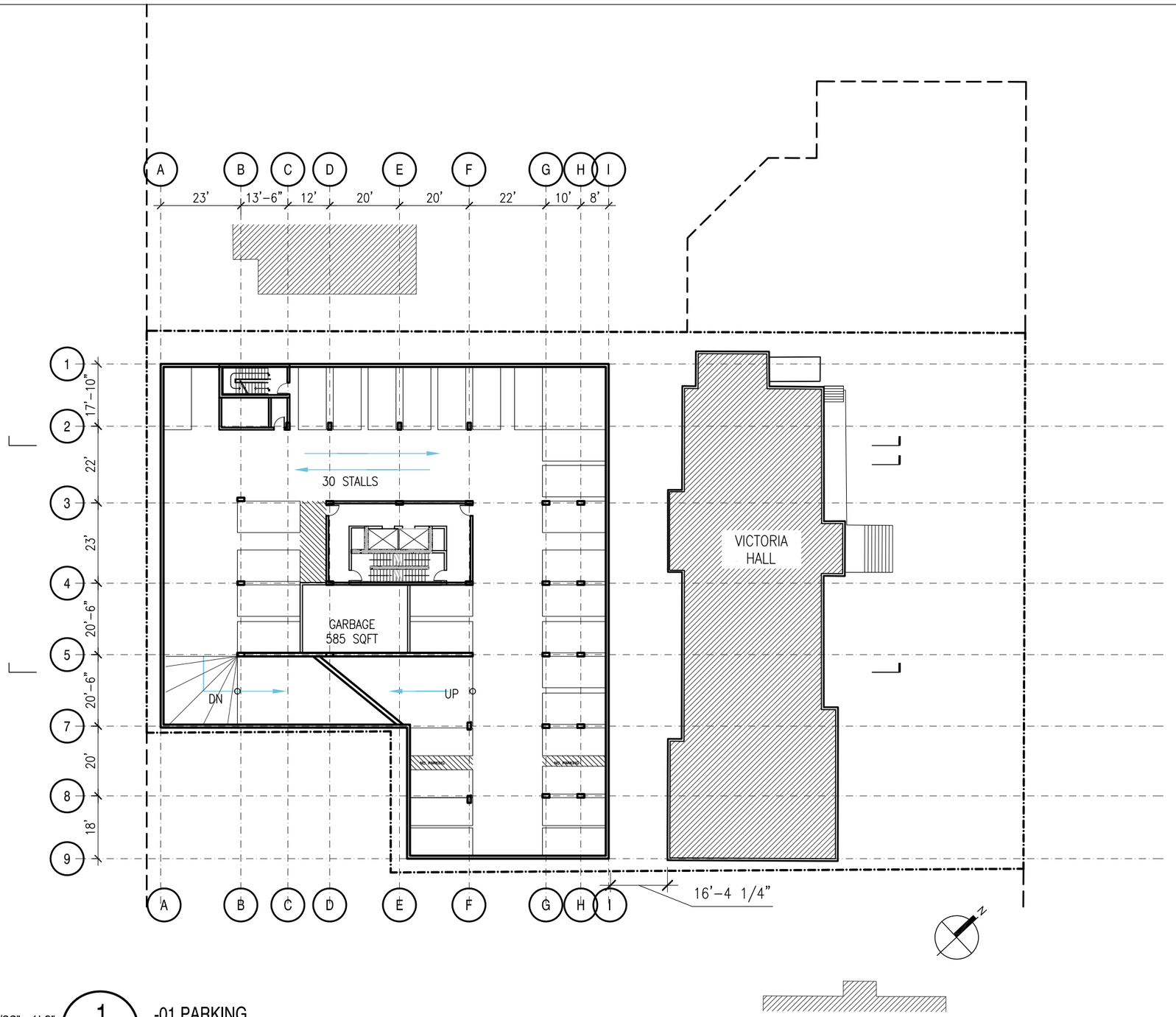

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LEVEL -01 PARKING LEVEL

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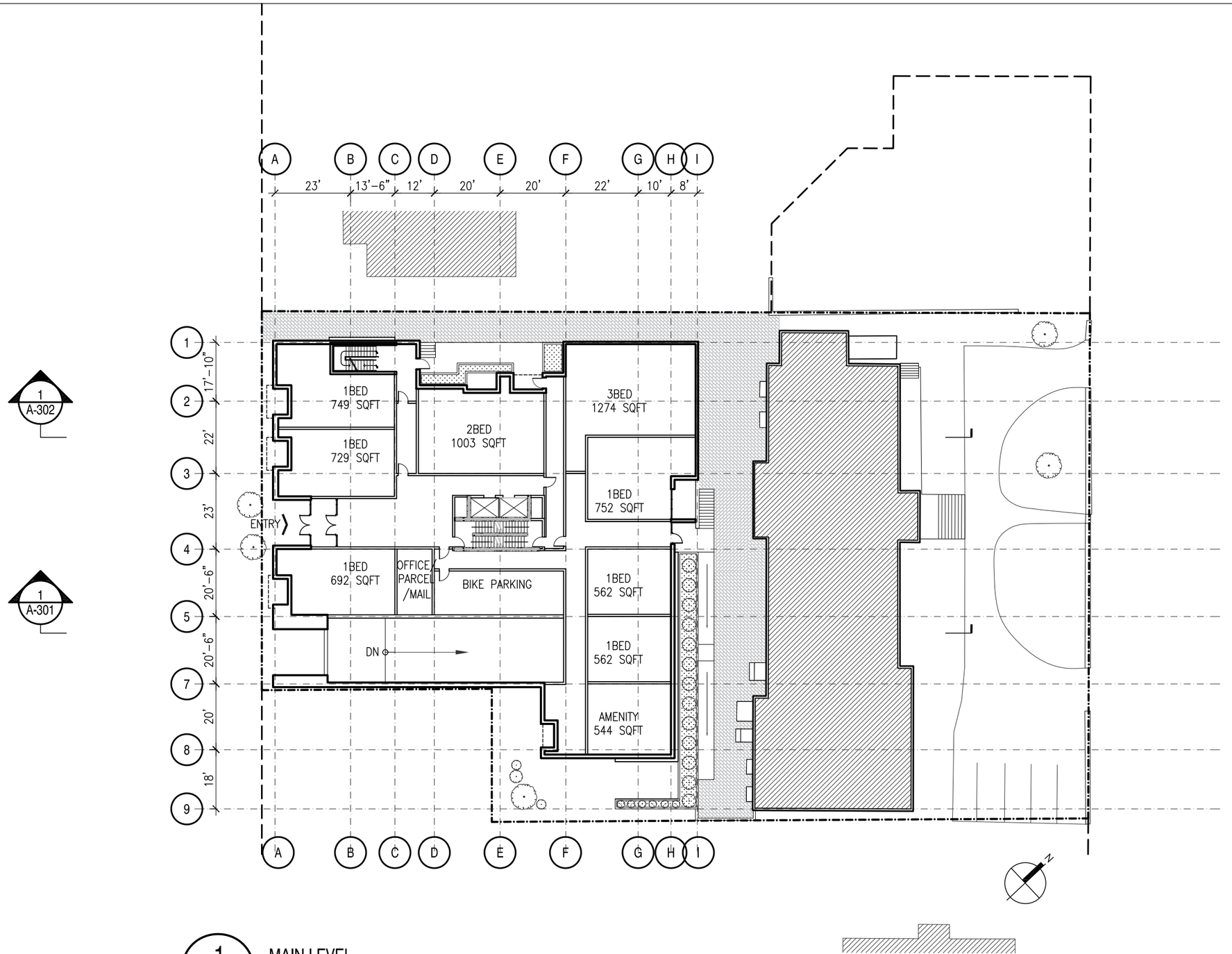

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MAIN LEVEL

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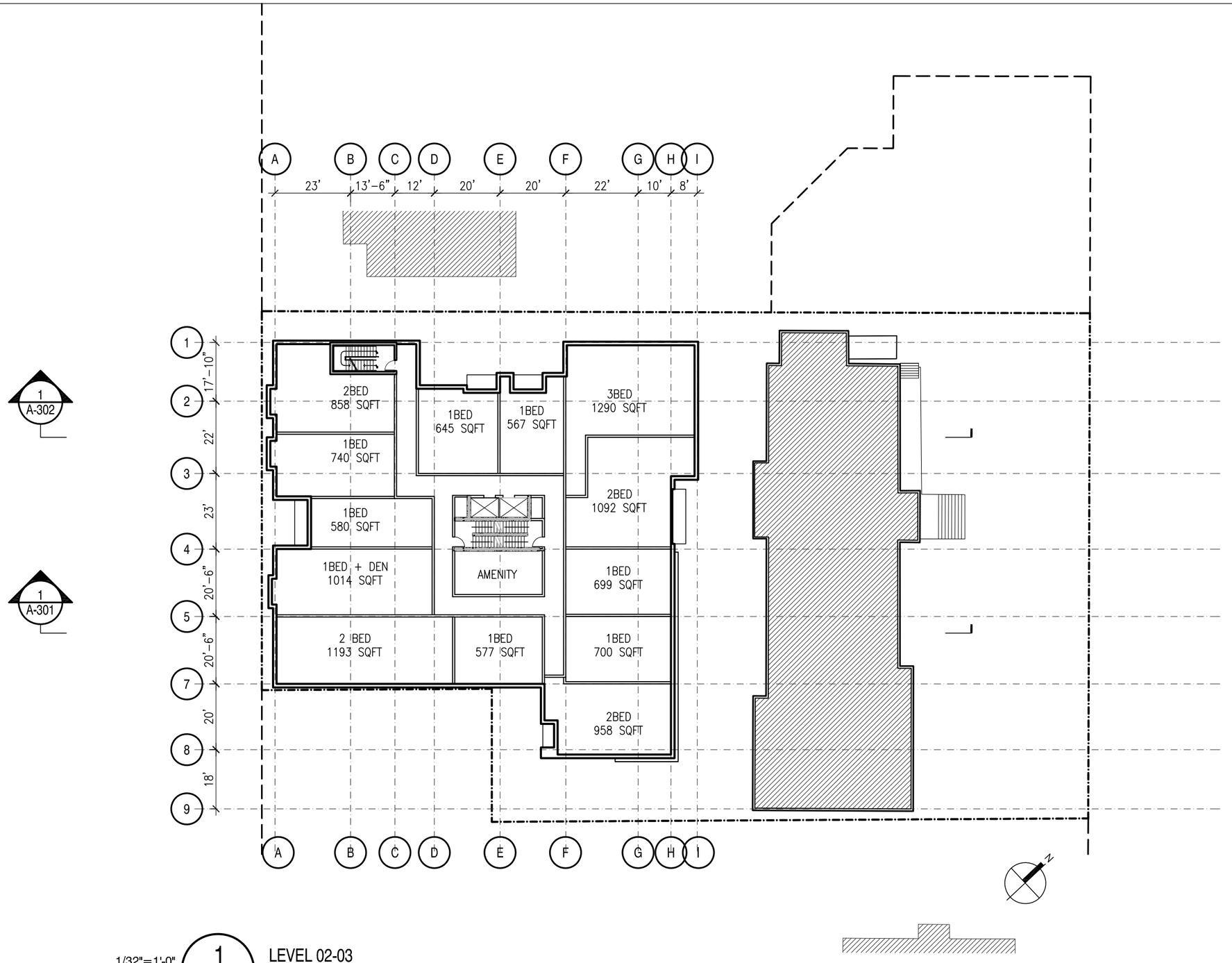

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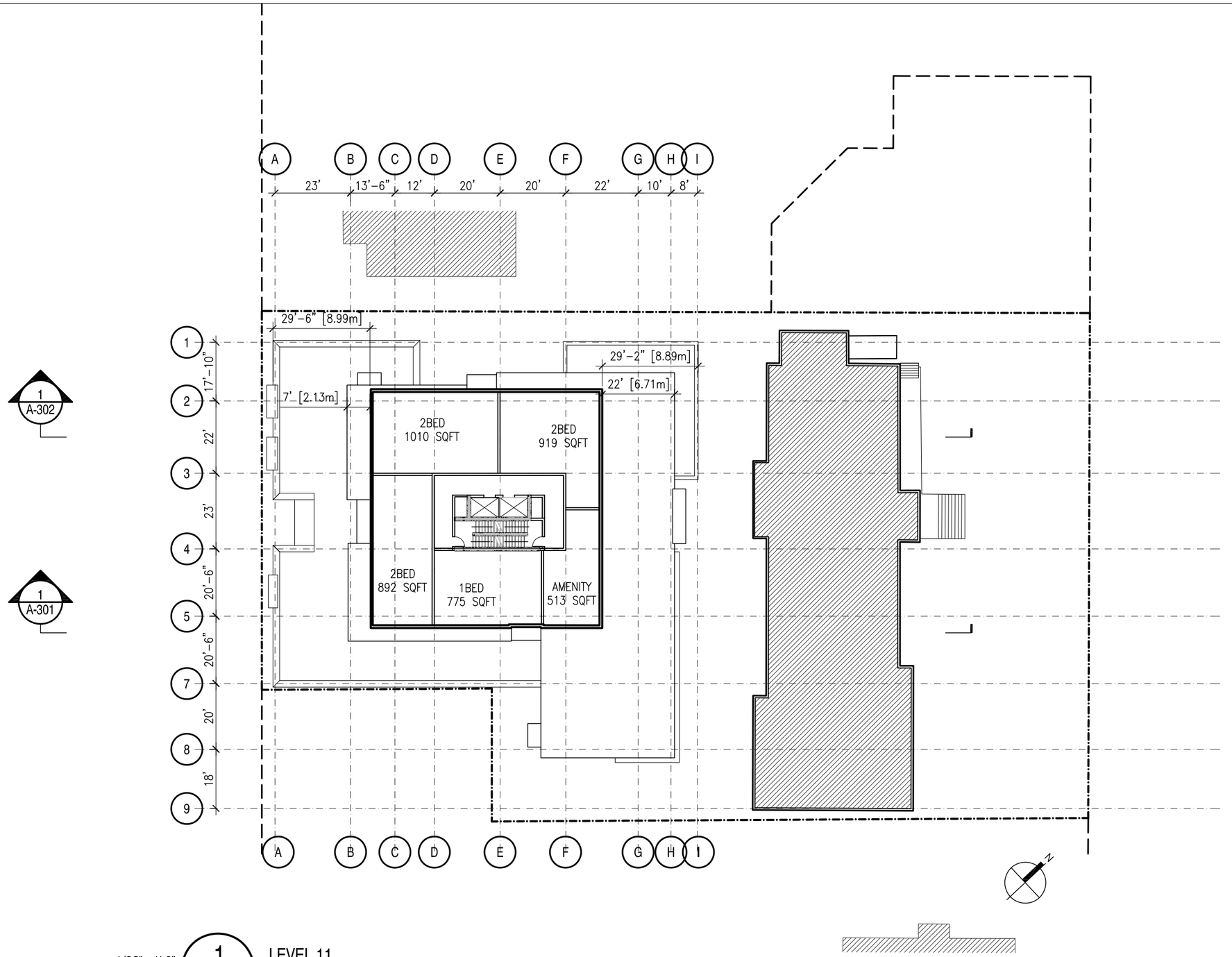

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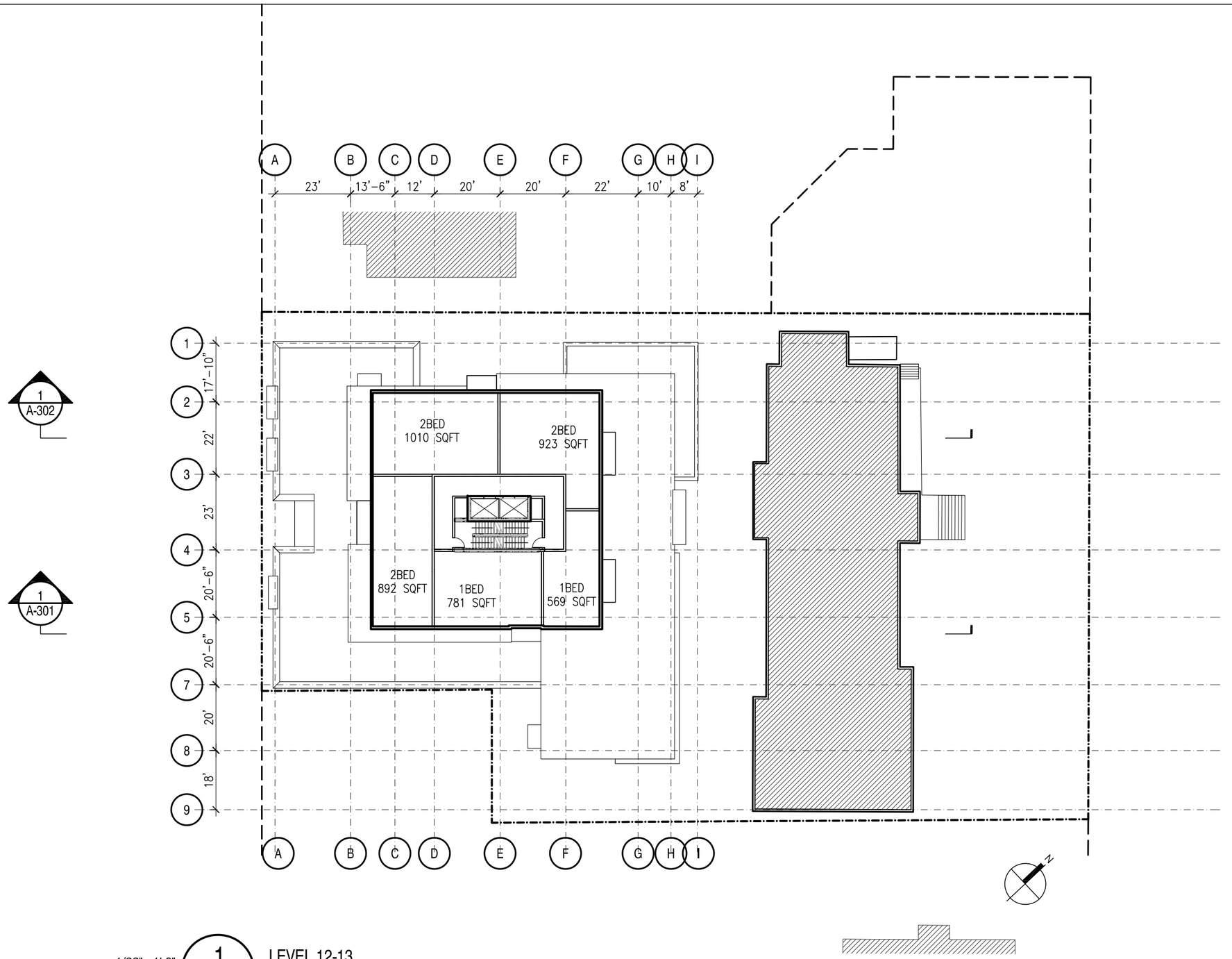
LEVEL 11

DRAWING NO.
A-107



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1/32" - 1'-0"	2021-05-07	
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LEVEL 12-13

DRAWING NO.
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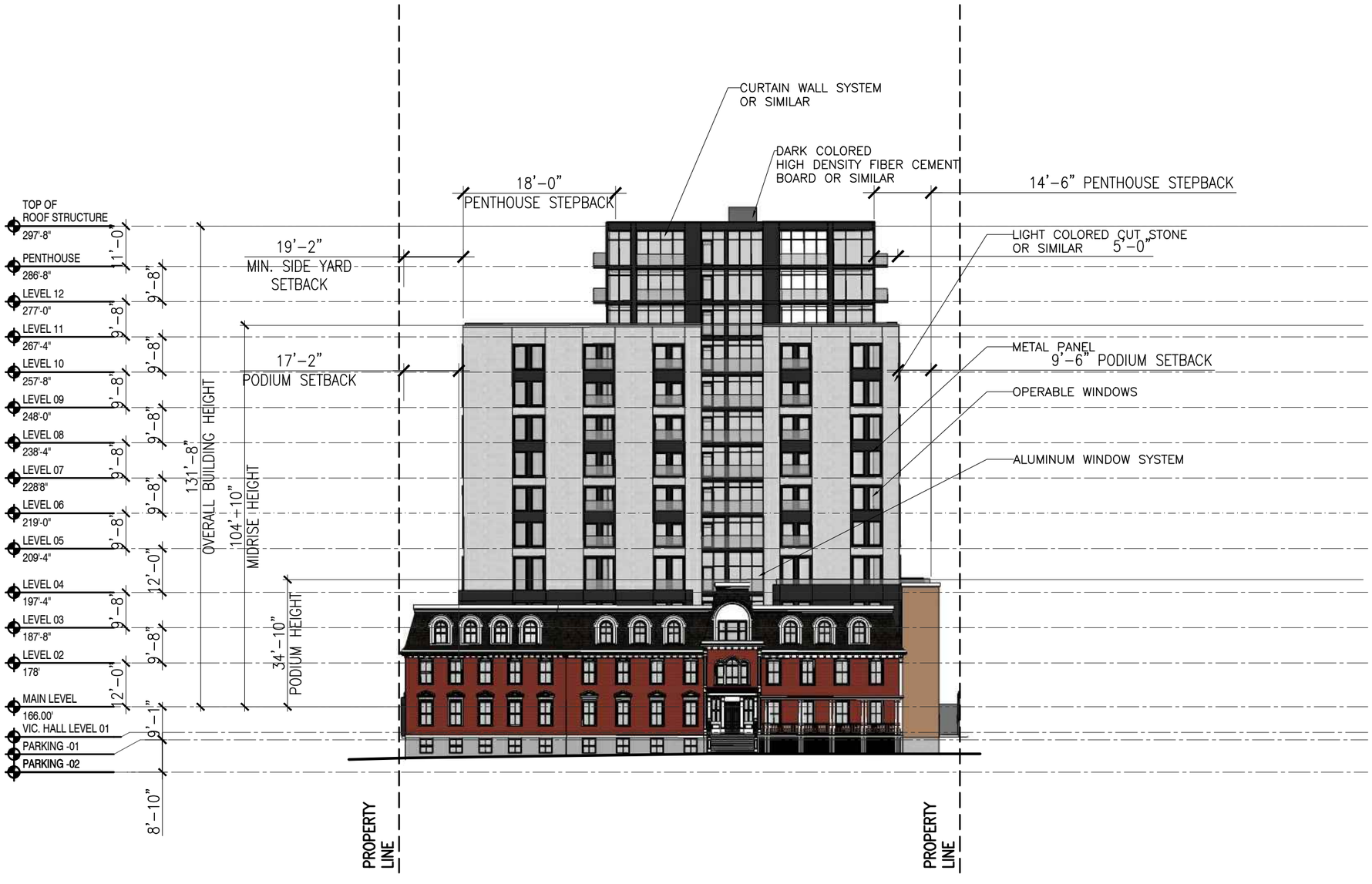

1/32"=1'-0" 1 A-201 GOTTINGEN ST ELEVATION W/ VICTORIA HALL

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JOSEPH ARAB

SCALE	DATE	
1/32" - 1'-0"	2021-05-07	
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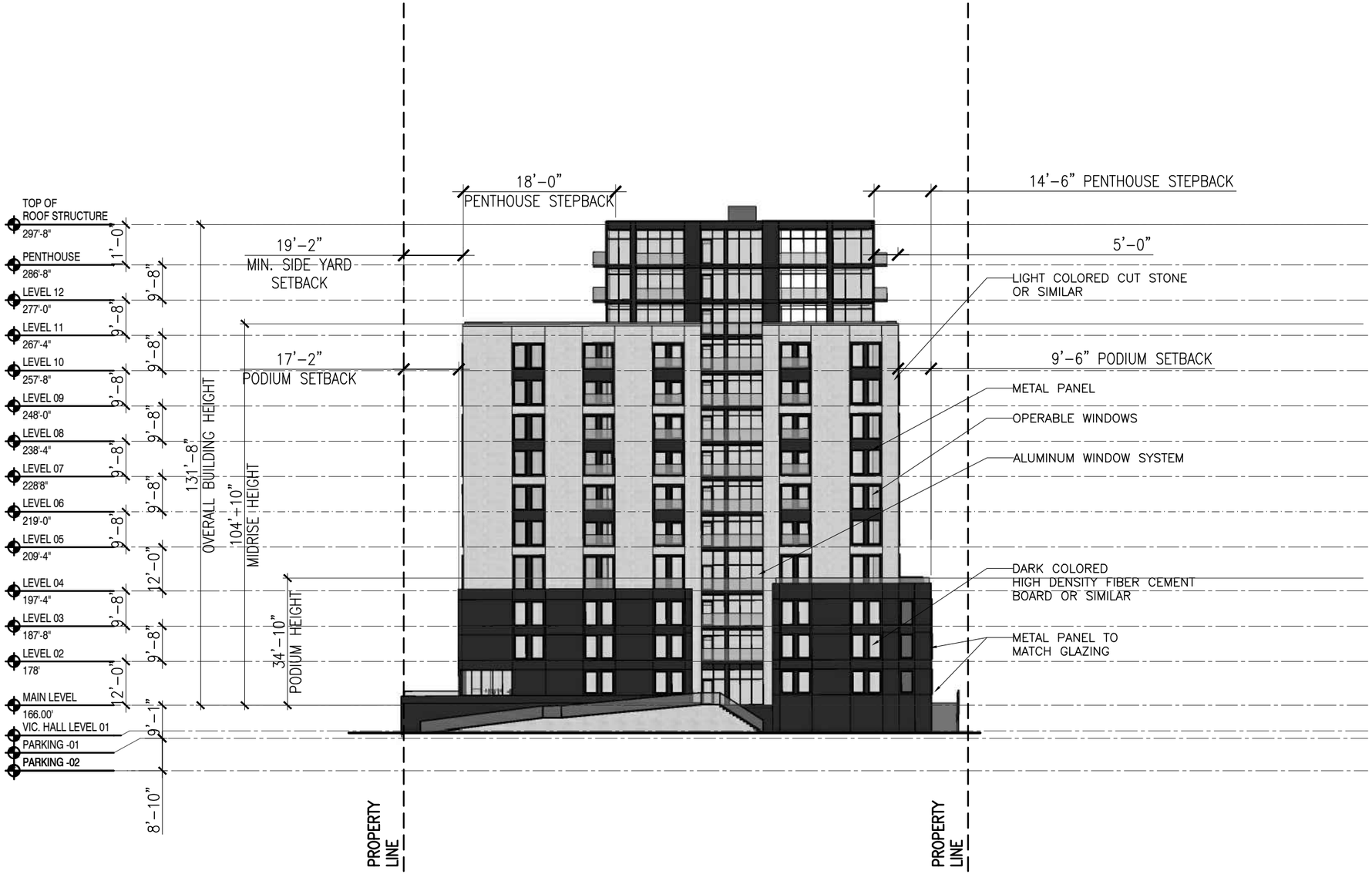
GOTTINGEN ST ELEVATION WITH VICTORIA HALL

DRAWING NO. A-201



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DRAWING
GOTTINGEN ST ELEVATION W/O VICTORIA HALL

DRAWING NO. A-202

1/32"=1'-0" 1 A-203 CREIGHTON ST ELEVATION

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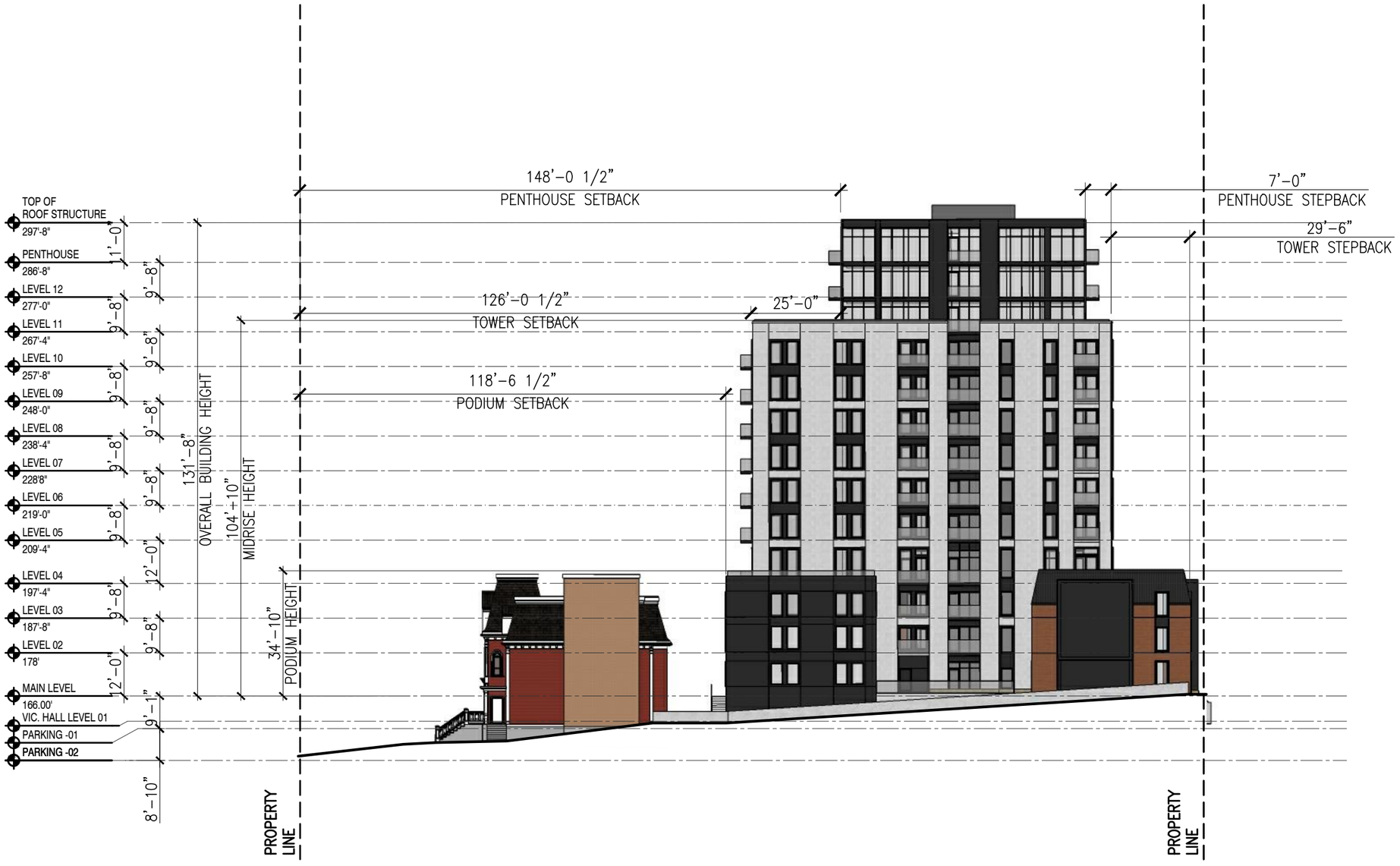
CREIGHTON ST ELEVATION

DRAWING NO.

A-203



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DEVELOPMENT AGREEMENT
APPLICATION

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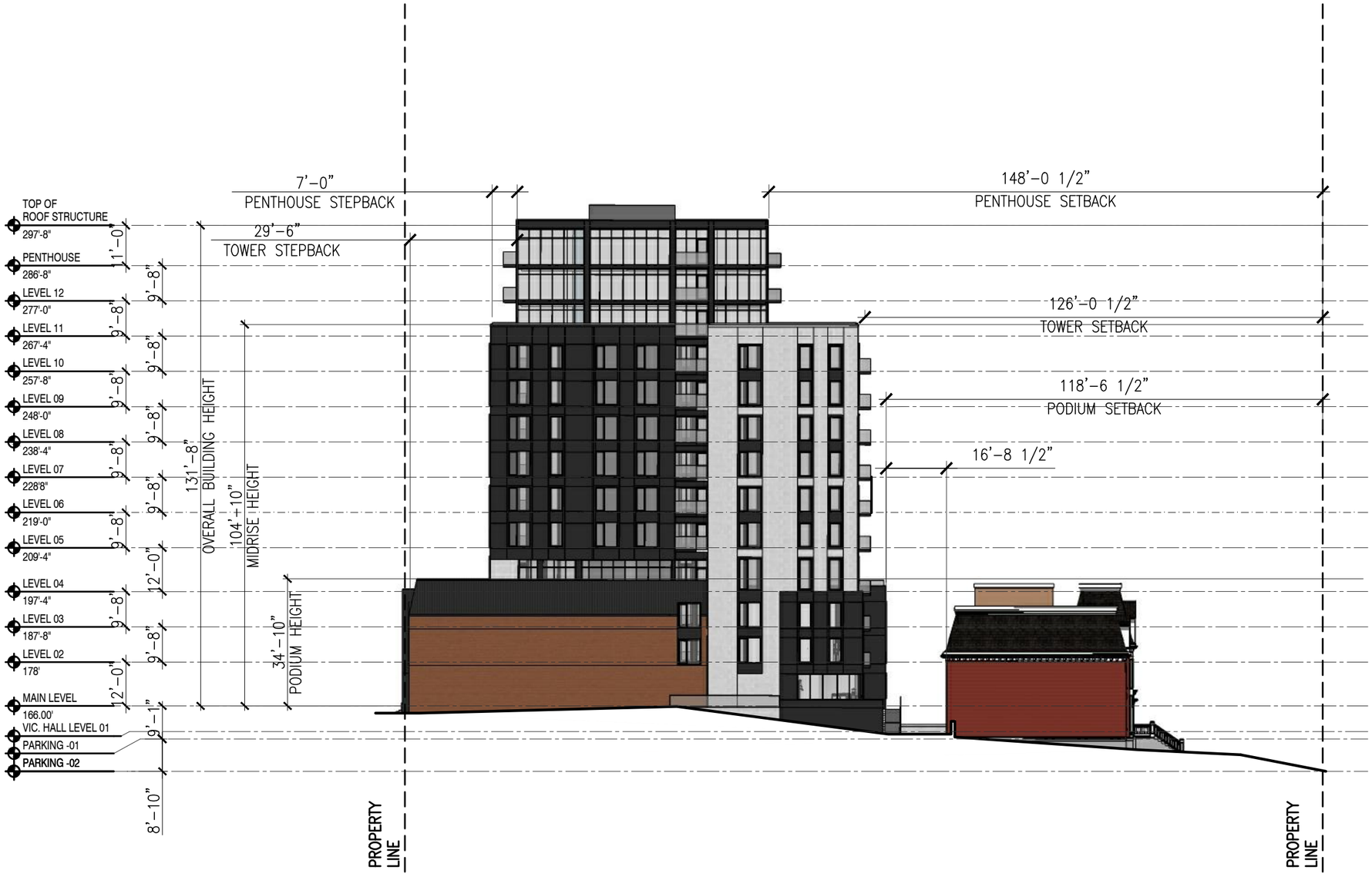
DRAWING

NORTHWEST ELEVATION

DRAWING NO.

A-204



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DEVELOPMENT AGREEMENT
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SCALE
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SOUTHEAST ELEVATION

DRAWING NO.
A-205

Traffic Impact Statement

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2438 Gottingen Street Halifax, NS

Transportation Impact Study

May 2021

Prepared by:
Fathom Studio
1 Starr Lane
Dartmouth, Nova Scotia
902 461 2525
fathomstudio.ca

Release

Final Report — October 4, 2018
Final Report, Revision 1 — May 20, 2021

TABLE OF CONTENTS

APPENDICIES

1. INTRODUCTION

This Transportation Impact Study follows HRM's Guidelines for the Preparation of Transportation Impact Studies (8th Edition) and general transportation engineering principles recommended for such studies. It is intended to address the transportation impacts that can be reasonably expected on the roadway and active transportation networks resulting from the:

- Addition of a multi-story residential development as described below.

Proposed Development	2438 Gottingen Street, Halifax, Nova Scotia
Owner / Developer	Joseph Arab
Location	Between Gottingen Street and Creighton Street, and Between Charles Drive and Buddy Day Street.
Buildings	118 Residential Units in New Building 19 Units in Victoria Hall (13 existing, 6 new) 1355 ft^2 Amenity Space
Parking	Vehicles = 62 Indoor, Bicycle = 20 Class A, 8 Class B

2. EXISTING CONDITIONS

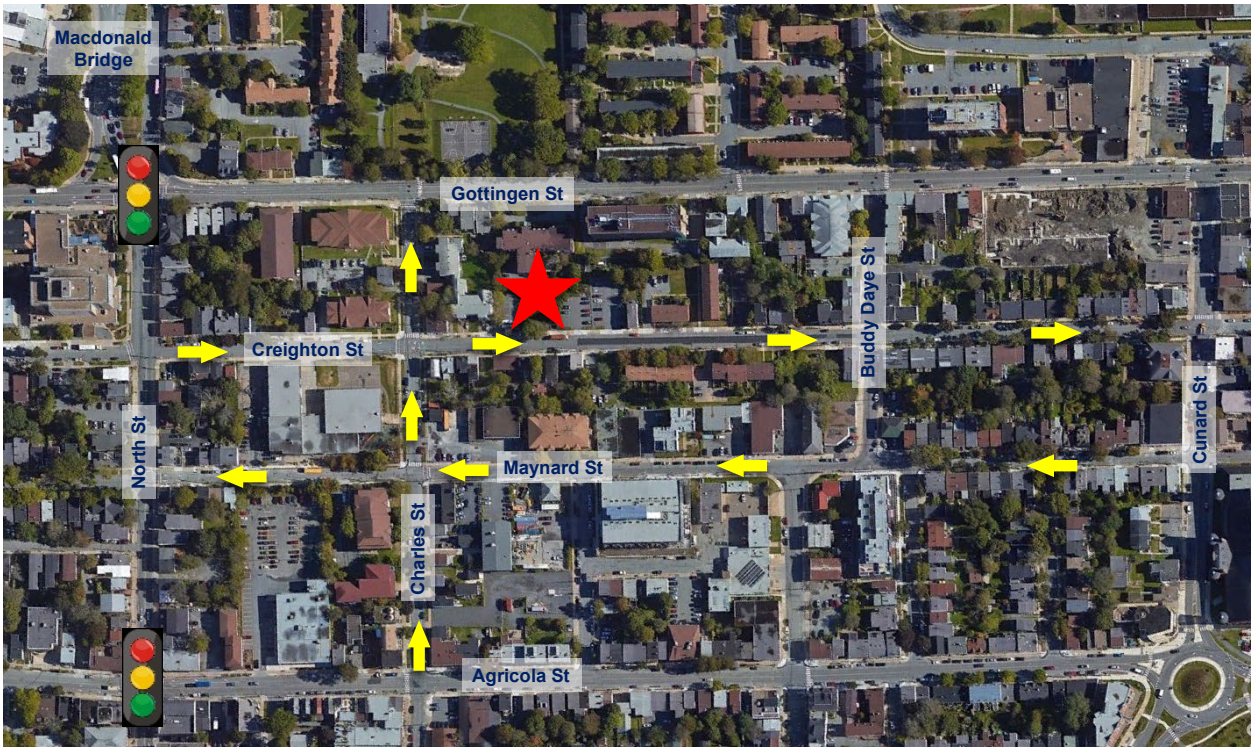
2.1 Study Area

The proposed development is located about 250 meters southeast of North Street (considered east for this study) in the block between Gottingen and Creighton Street, and between Charles Street and Buddy Daye Street. The development is in the middle of a larger residential area within a grid-based road network and only about 400 meters from the Halifax end of the Macdonald Bridge.

This area is heavily influenced by commuter traffic in the AM and PM peak hours which includes high volumes of traffic on Gottingen Street, and the frequent use of Creighton Avenue as a short cut route to bypass the queues that often occur when coming off the Macdonald Bridge and turning left onto Gottingen Street.

Creighton Street is a one-way street in the eastbound direction toward downtown and forms a one-way couplet with Maynard Street immediately to the south. Charles Street is a one-way street in the northbound direction towards Gottingen Street.

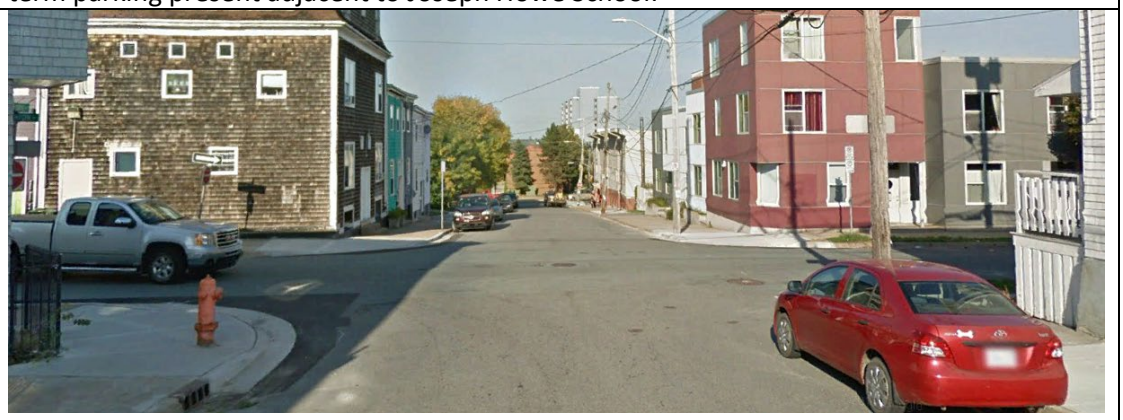
Figure 2-1: Study Area



2.2 Impacted Roadways

The following sections provide a brief summary of each of the key roadways in the study area.

Gottingen Street	 Gottingen Street near the development is an urban three-lane roadway with one inbound lane and two outbound lanes complete with sidewalks on both sides of the road. There are regular midblock crosswalks along the roadway and traffic is highly commuter oriented during the peak hours. As one of the primary corridors to and from downtown Halifax, the roadway remains busy throughout the day with vehicular and pedestrian traffic. Roadside uses are a mix of low and medium rise residential units with small scale commercial / retail uses in some areas. Areas further east towards downtown become increasingly commercial.

Creighton Street	 Creighton Street is a local residential one-way street with sidewalks, numerous driveways and parking permitted on both sides of the street in many areas. Adjacent residential development includes predominantly low-rise multi-unit single family residences as well as some mid-rise buildings and institutional land uses including the Joseph Howe Elementary School at the intersection of Creighton and Charles Street.
Charles Street	 Charles Street on the west side of the development is a local residential one-way street running from Robie Street to Gottingen Street (two-way south of Robie). It has sidewalks on both sides of the roadway and the adjacent land uses include low and medium rise residential units with some commercial and small industrial properties near the development. Parking is permitted on both sides of the road in most areas with some short-term parking present adjacent to Joseph Howe School.
Buddy Daye Drive	 Buddy Daye Street east of the development is a two-way residential street with sidewalks and parking permitted on one side of the street in most areas. It is only 2 blocks in length between Maynard and Gottingen Street and the roadside includes low rise multi-unit residential buildings and auto some repair / autobody properties.

2.3 Active Transportation (AT)

The areas surrounding the development and the Halifax Peninsula in general are known for high levels of active transportation (AT) activity. In the area of the development, both local and commuter based AT traffic is expected, including commuter traffic that uses the Macdonald Bridge bike and pedestrian lanes to cross the Harbour. The development is well connected to surrounding areas through sidewalks and on-road facilities. All roadways in the area typically have sidewalks along both sides of the road and all major intersections provide pedestrian crossings across the intersection.

2.4 Vehicle Traffic

Recent and historical traffic counts were provided from HRM for all intersections and some road sections in the study area which were also supplemented by site observations during typical weekday peak traffic. The background counts reviewed in this study are provided in Appendix B of this report and the figures in Section 4 of this report show the network model incorporating the count volumes at key impacted intersections. Due to the COVID19 pandemic impacts on roadway traffic, more recent counts were not able to be collected.

2.5 Transit

The development is in the heart of one of Halifax's busiest transit areas which includes many routes on Gottingen and Barrington Street as well as North and Cornwallis Street. It is in close proximity to two major terminals with Scotia Square just over a kilometer to the east and the Bridge Terminal in Dartmouth about 2 kilometers to the north over the Macdonald Bridge. To further support transit accommodation, Gottingen Street has recently been upgraded to include a transit corridor in the westbound direction toward the Macdonald Bridge.

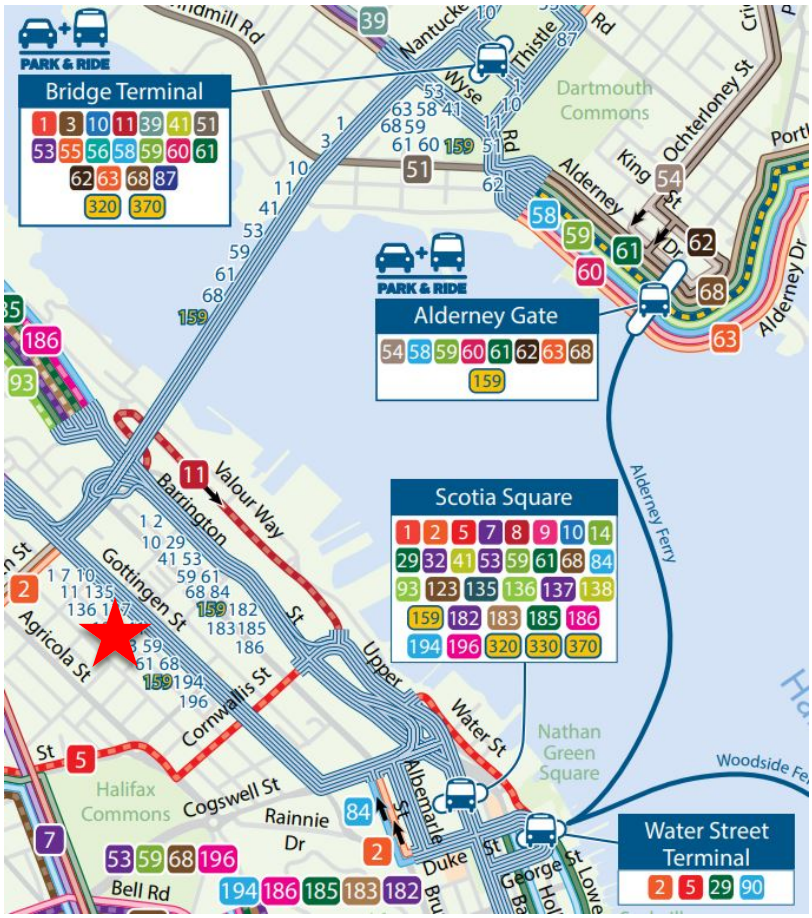
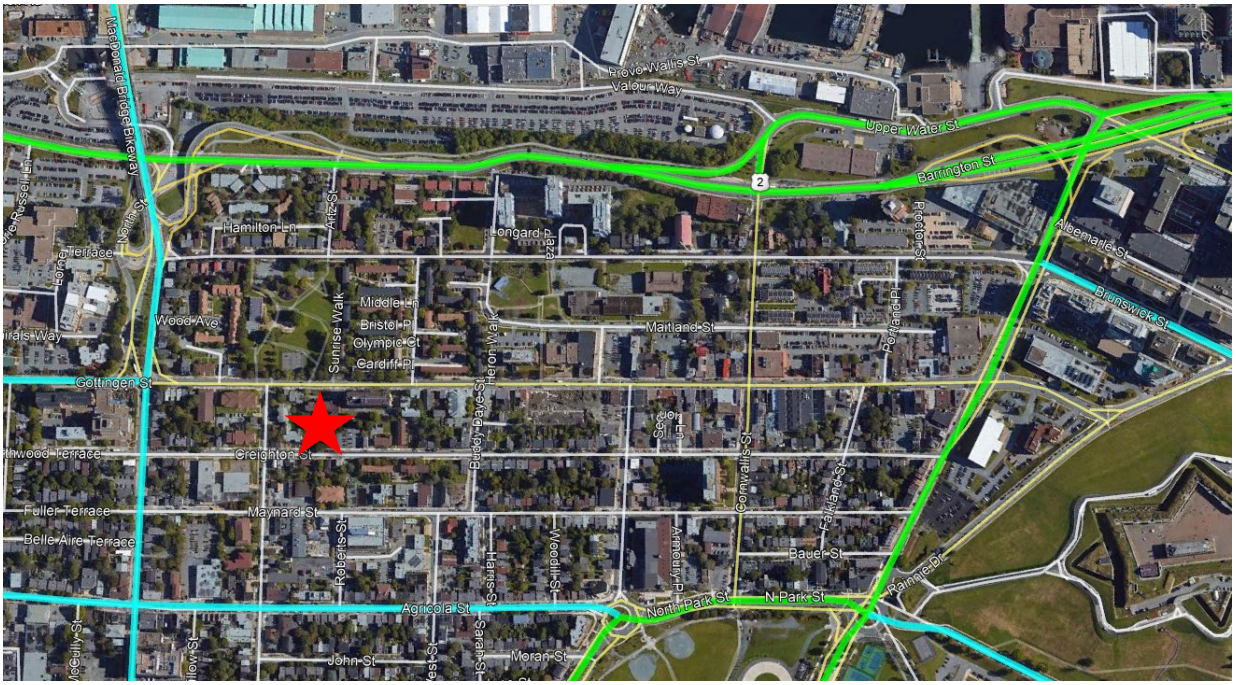


Figure 2-2: Transit Routes

2.6 Truck Routes

Halifax's By-Law T-400 "Respecting the Establishment of Truck Routes for Certain Trucking Motor Vehicles within the HRM" Barrington Street, Cogswell Street and North Park Street as "Full Time" truck routes. In addition, North Street, a portion of Gottingen Street west of North Street and Agricola Street are defined as daylight routes between the hours of 7 am and 9 pm. The red star identifies the location of the development near the middle of these routes which should allow for adequate access to the new development, though it is expected that delivery requirements will be minimal to this site. For service vehicles and moving trucks, Creighton Street is of adequate width to accommodate curbside parking for loading and unloading activities.

Figure 2-3: Truck Routes



3. FUTURE CONDITIONS

3.1 Context

3.1.1 Analysis Time Horizon

Based on recommended HRM guidelines, the base year for this study has been established as 2018. Given the relatively low volumes predicted from the development and the high level of traffic dispersion that is expected, future traffic scenarios are not considered relevant to the results of this study.

3.1.2 Analysis Period

This area of Halifax is highly commuter oriented therefore, the weekday AM and PM peak hours are considered to be the critical periods for the analysis.

3.2 The Development

Future development traffic is impacted by the addition of new units in the proposed new building and the reconfiguration of the existing building. Construction of the new building will result in the removal of some existing parking, though it is assumed that this parking will relocate to the underground parkade in the future, therefore no impact to traffic volumes was accounted for.

The new 13-story residential building includes 118 units of mixed sizing, and about 62 underground parking spaces with access to 2 levels of underground parking located off Creighton Street. This access will be configured as right-in, right-out driveway due to Creighton Street being one-way in the eastbound direction. The existing Victoria Hall building will be reconfigured to include 6 additional residential units.

Figure 3-2: Building Rendering from Gottingen

Figure 3-1: Building Rendering from Creighton

3.3 Trip Generation

New traffic generated by the development was based on the Institute of Transportation Engineers (ITE) Trip Generation Guide (10th Edition) and was limited to residential trips as no commercial or retail uses are proposed for the development. The existing Victoria Hall building will see a reduction of approximately 3 units (based on an existing unit count of 16 units), though for the purposes of this report it was assumed that trips from this portion of the development would remain the same as today. A more detailed summary of the trip generation rates and background calculations are provided in Appendix C of this report.

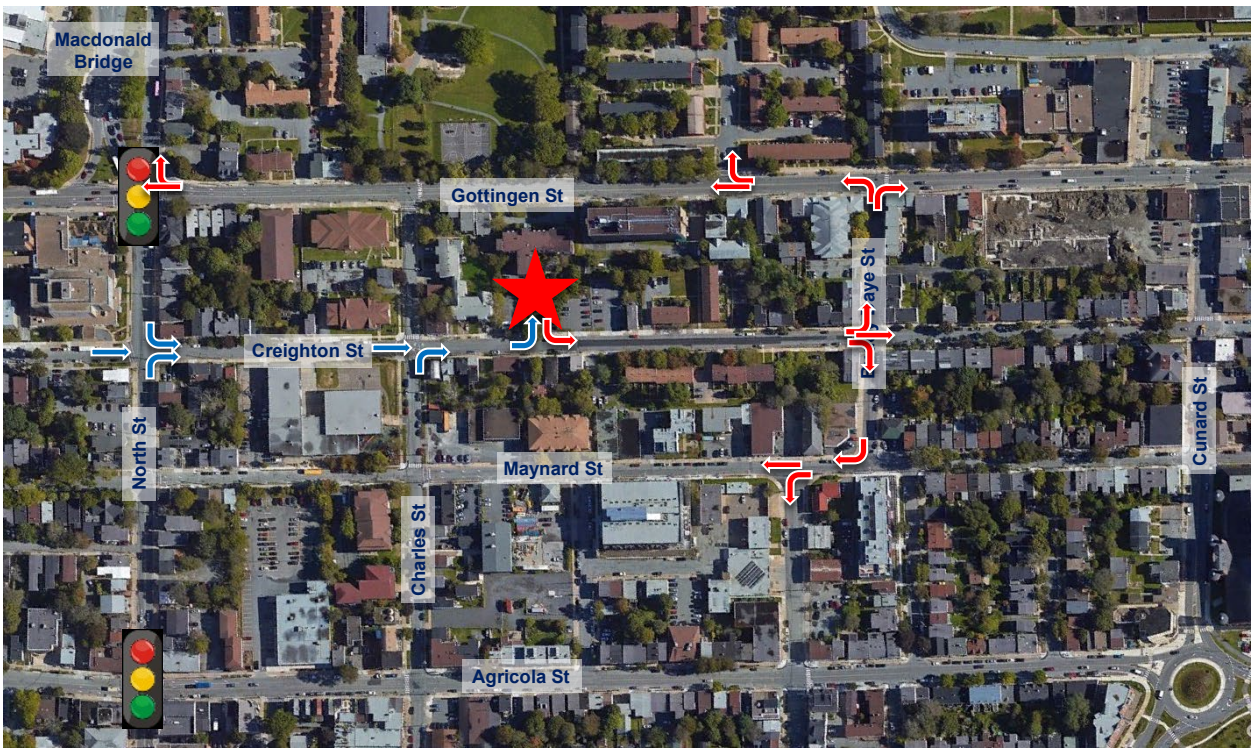
Table 3-1: Trip Generation Table

		ITE Land Use Type	AM Peak			PM Peak		
			Enter	Exit	Total	Enter	Exit	Total
Multi-Unit High-Rise	118 Units	ITE 222	3	18	21	15	9	24
Multi-Unit Low Rise	6 Units	ITE 220	1	2	3	2	1	3
Sub-Total			**4**	**20**	**24**	**17**	**10**	**27**

3.4 Trip Distribution and Assignment

All traffic entering the site will do so as an eastbound left turn from Creighton Street and all exiting traffic will make a southbound left turn onto Creighton Street. Upstream and downstream of these movements, there are numerous route options that drivers can select depending on their origins and destinations as shown in the figure below. Note that only the movements immediately upstream and downstream are indicated and beyond these intersections are a wide variety of other options.

Figure 3-3: Traffic Distribution



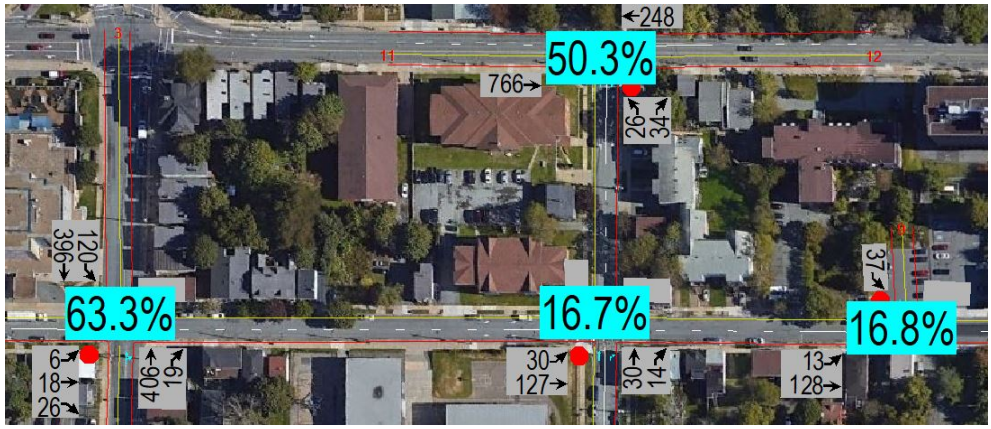
4. ANALYSIS

4.1 Transportation Modelling

A microscopic traffic model was prepared using the Synchro/SimTraffic platform for the AM and PM peak hours of analysis for an isolated area surrounding the development. Limited formal analysis was carried out for this project as intersections surrounding the development operate at a high level of service presently, and with the development added to the road network. The following two figures show the turning movement volumes (grey boxes with black numbers) and overall intersection capacity utilization (ICU) percentages (blue boxes with black numbers) surrounding the development. The figures are for the AM and PM peak hours and for the purposes of this analysis, all volumes were increased by 20% from the counted volumes to account for any potential traffic increases to a 2021 baseline year.

The results shown below are taken from the preceding version of this report which assumed the same baseline intersection volumes but used a trip generation rate that was higher than what is shown in Section 3.3 of this report. The higher volumes in the previous study were related to more units on site (reduction from 137 units to 124 units) as well as differences in the trip generation rates between the 9th and 10th versions of the ITE Trip Generation Guide.

Figure 4-1: AM Peak Hour – Development Driveway, Creighton and Gottingen Street



0Figure 4-2: PM Peak Hour – Development Driveway, Creighton and Gottingen Street

The above figures suggest that there is significant excess capacity at all intersections along Creighton Drive and that drivers to and from the development are expected to experience very little delay or queuing. Beyond these intersections, traffic is dispersed in several different directions and therefore has very minimal impact on existing traffic operations or safety performance.

5. CONCLUSIONS

This report analyzed the impacts of the addition of a new multi-story residential development proposed for 2438 Gottingen Street. The primary vehicle driveway to the underground parkade is located off Creighton Street, which is a low volume, one-way residential street oriented towards downtown Halifax. All movements to the development will be right-in and right-out due to Creighton being a one-way street, therefore the entrance and exit driveway can be accommodated with single entry and exit lanes.

There are a wide variety of route options to get to and from the site resulting in significant traffic dispersion throughout the road network. Combined with the relatively low volumes destined to and from the development, there is very minimal impact anywhere throughout the adjacent road network. While the area can be busy during peak hour traffic, and Creighton can frequently be used as an alternate route to downtown, there is significant available excess capacity to accommodate the proposed development without any infrastructure upgrade requirements.

Both transit and active transportation modal shares are expected to be high in this area and it is likely that residents of this development will take advantage of these travel modes to some degree. In general, the development is highly compatible with surrounding land uses and is a desirable infilling location to help support regional planning initiatives.

We trust that this report satisfies the Halifax requirements for the preparation of Transportation Impact Studies for such a development. Should there be any questions or comments regarding the content of the study, please do not hesitate to contact the undersigned.

Sincerely,

Roger Boychuk ▪ P Eng ▪ Senior Transportation Engineer
www.fathomstudio.ca (formerly Ekistics Planning & Design and Form:Media)
1 Starr Lane, Dartmouth, NS B2Y 4V7
902.233.1152 [mobile]

APPENDIX A

Site Statistics

2021-05-07
2438 Gottingen St Project Summary

Total Units in Development	137

Development Lot Area	
PID	00148791
Total Lot Area	36,400
Total Development GFA excluding Parking	127,767
Floor Area Ratio	3.51

New Development

Building Floor Level	FA	Amenity	Units	Parking Stalls	Bicycle Parking (Class A)	Bicycle Parking (Class B)
Parking -02	15700			32		
Parking -01	15700			30		
Main Level	10575		8		20	8
Level 02	12,503	360	13			
Level 03	12,503	360	13			
Level 04	8,162		10			
Level 05	8,538		10			
Level 06	8,538		10			
Level 07	8,538		10			
Level 08	8,538		10			
Level 09	8,538		10			
Level 10	8,538		10			
Level 11	4,682	635	4			
Level 12	4,682		5			
Level 13	4,682		5			
Totals	109,017	1355	118	62	20	8

FA MEASURED TO INTERIOR OF EXTERIOR WALL, DOES NOT INCLUDE ELEVATOR SHAFT
Calculation based on centerplan definition of Floor Area

Victoria Hall

	GFA	Units	Parking Stalls
Basement	6,250	6	
Main Level	6250	5	
Level 02	6250	4	
Level 03	6,250	4	
Totals	18750	19	

Level	BACH	1 BED	1 BED + DEN	2 BED	3 BED	Total Units
Main Level	0	6	0	1	1	8
Level 02	0	7	1	4	1	13
Level 03	0	7	1	4	1	13
Level 04	0	7	0	3	0	10
Level 05	0	5	0	5	0	10
Level 06	0	5	0	5	0	10
Level 07	0	5	0	5	0	10
Level 08	0	5	0	5	0	10
Level 09	0	5	0	5	0	10
Level 10	0	5	0	5	0	10
Level 11	0	1	0	3	0	4
Level 12	0	2	0	3	0	5
Level 13	0	2	0	3	0	5
Total Units	0	62	2	51	3	118

Unit %	BACH	1 BED	1 BED + DEN	2 BED	3 BED	Total Units
	0%	53%	2%	43%	3%	100%

fathomstudio.ca
1 Starr Lane
Dartmouth, NS
B2Y 4V7

fathom

4	ISSUE FOR DA RE-SUBMISSION	2021-05-07
3	ISSUE FOR HAC	2021-02-10
2	ISSUE FOR DA RE-SUBMISSION	2021-01-25
1	ISSUE FOR DA RE-SUBMISSION	2020-12-23

REVISIONS DATE

PROJECT

2438 GOTTINGEN STREET
DEVELOPMENT AGREEMENT
APPLICATION

CLIENT

JOSEPH ARAB

SCALE
1/32" - 1'-0"

DATE
2021-05-07

DRAWN BY | CHECKED | REVIEWED

APPROVED

SEAL

NOT FOR CONSTRUCTION

DRAWING
PROJECT YIELD

DRAWING NO.
A-001

APPENDIX B

Traffic Counts

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC & RIGHT OF WAY

CODE NO. 16-TM-349

MANUAL TRAFFIC COUNTS

INTERSECTION: CHARLES STREET AT GOTTINGEN STREET

WEATHER: CLEAR
RECORDER: AD

DAY	DATE	MONTH	YEAR
TUES	9	AUG	2016

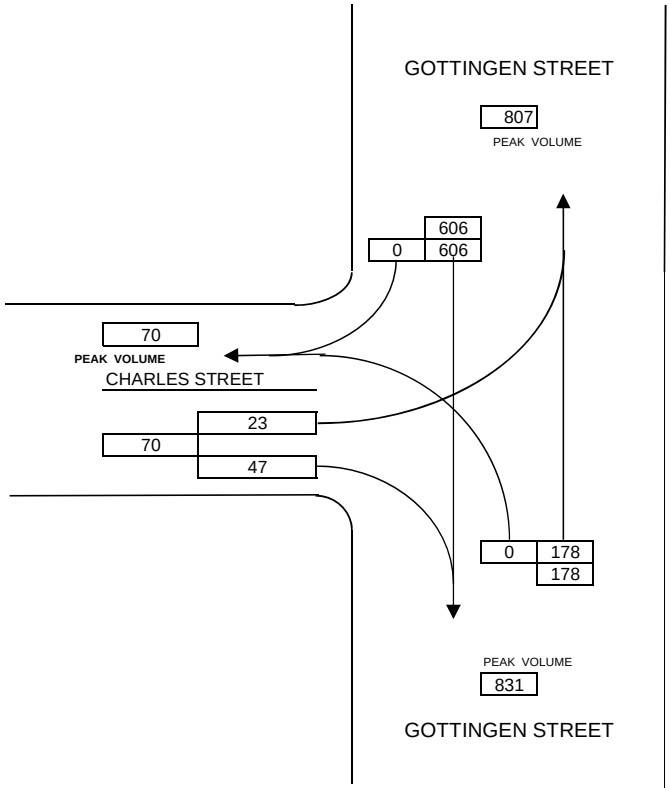
STREET:					CHARLES STREET			GOTTINGEN STREET			GOTTINGEN STREET			
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	0	0	0	5	0	11	0	134	0	0	27	0	177
07:15:00 AM	07:30:00 AM	0	0	0	6	0	8	0	152	0	0	48	0	214
07:30:00 AM	07:45:00 AM	0	0	0	9	0	18	0	174	0	0	59	0	260
07:45:00 AM	08:00:00 AM	0	0	0	3	0	10	0	146	0	0	44	0	203
TOTAL		0	0	0	23	0	47	0	606	0	0	178	0	854
PEAK			0			70			606			178		
15 MIN PEAK			0			108			696			236		
PEAK HOUR FACTOR			0			0.65			0.87			0.75		
TWO WAY TOTALS			0			70			807			831		FACTOR
														1.03
														880

DAY	DATE	MONTH	YEAR
TUES	9	AUG	2016

TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM	08:15:00 AM	0	0	0	5	0	12	0	187	0	0	49	0	253
08:15:00 AM	08:30:00 AM	0	0	0	5	0	7	0	166	0	0	51	0	229
08:30:00 AM	08:45:00 AM	0	0	0	3	0	6	0	161	0	0	55	0	225
08:45:00 AM	09:00:00 AM	0	0	0	9	0	3	0	124	0	0	52	0	188
TOTAL		0	0	0	22	0	28	0	638	0	0	207	0	895
PEAK			0			50			638			207		
15 MIN PEAK			0			68			748			220		
PEAK HOUR FACTOR			0			0.74			0.85			0.94		
TWO WAY TOTALS			0			50			867			873		FACTOR
														1.03
														922

VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : CHARLES STREET AT GOTTINGEN STREET



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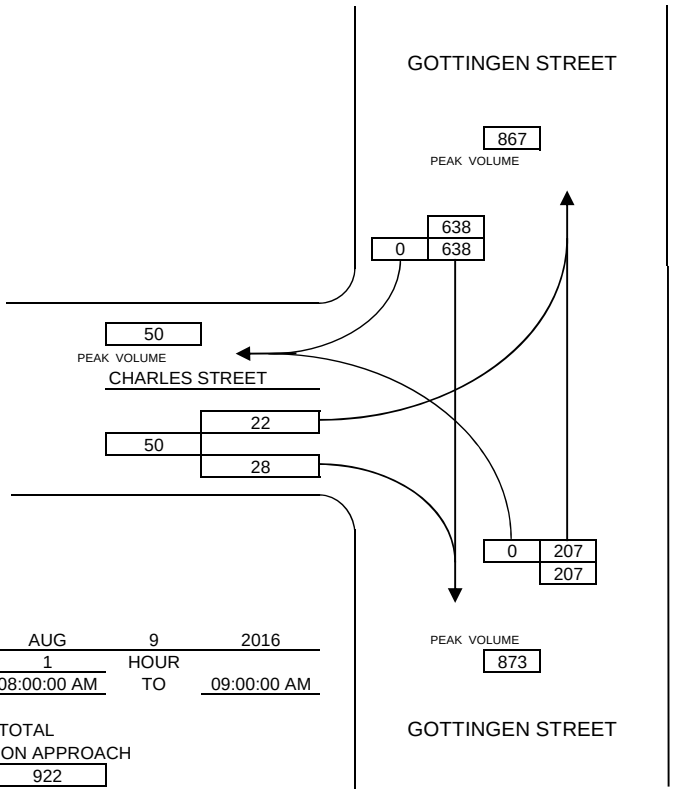
FROM: 07:00:00 AM TO 08:00:00 AM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 880



DATE: AUG 9 2016
TIME: 1 HOUR
FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 922

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC & RIGHT OF WAY

CODE NO. 16-TM-349

MANUAL TRAFFIC COUNTS

INTERSECTION: CHARLES STREET AT GOTTINGEN STREET

WEATHER: CLEAR
RECORDER: AD

DAY	DATE	MONTH	YEAR
TUES	9	AUG	2016

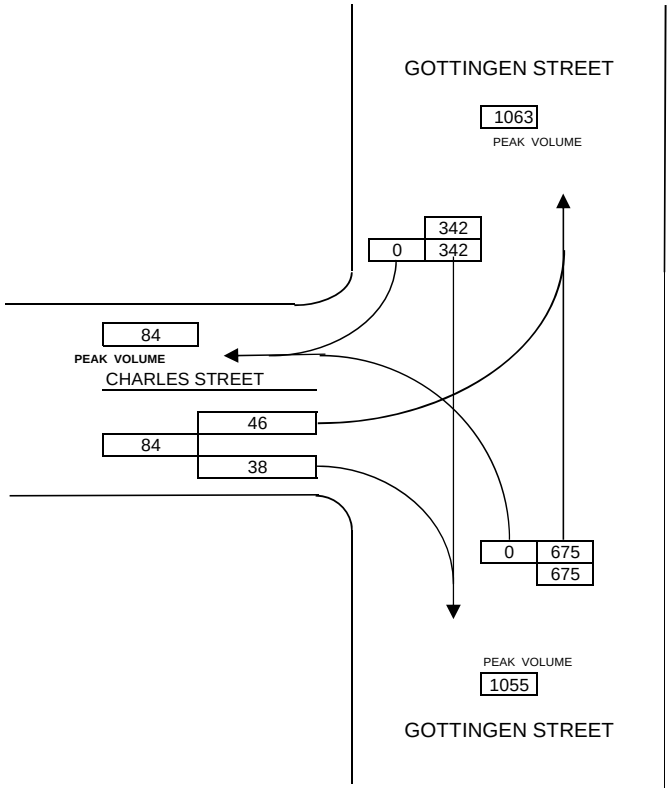
STREET:					CHARLES STREET			GOTTINGEN STREET			GOTTINGEN STREET			
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	0	0	0	15	0	7	0	92	0	0	182	0	296
04:15:00 PM	04:30:00 PM	0	0	0	12	0	14	0	85	0	0	158	0	269
04:30:00 PM	04:45:00 PM	0	0	0	6	0	9	0	80	0	0	153	0	248
04:45:00 PM	05:00:00 PM	0	0	0	13	0	8	0	85	0	0	182	0	288
TOTAL		0	0	0	46	0	38	0	342	0	0	675	0	1101
PEAK			0			84			342			675		
15 MIN PEAK			0			104			368			728		
PEAK HOUR FACTOR			0			0.81			0.93			0.93		
TWO WAY TOTALS			0			84			1063			1055		FACTOR
														1.03
														1134

DAY	DATE	MONTH	YEAR
TUES	9	AUG	2016

TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	0	0	0	7	0	7	0	92	0	0	128	0	234
05:15:00 PM	05:30:00 PM	0	0	0	13	0	16	0	113	0	0	145	0	287
05:30:00 PM	05:45:00 PM	0	0	0	4	0	9	0	81	0	0	87	0	181
05:45:00 PM	06:00:00 PM	0	0	0	4	0	5	0	97	0	0	70	0	176
TOTAL		0	0	0	28	0	37	0	383	0	0	430	0	878
PEAK			0			65			383			430		
15 MIN PEAK			0			116			452			580		
PEAK HOUR FACTOR			0			0.56			0.85			0.74		
TWO WAY TOTALS			0			65			841			850		FACTOR
														1.03
														904

VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : CHARLES STREET AT GOTTINGEN STREET



DATE: AUG 9 2016
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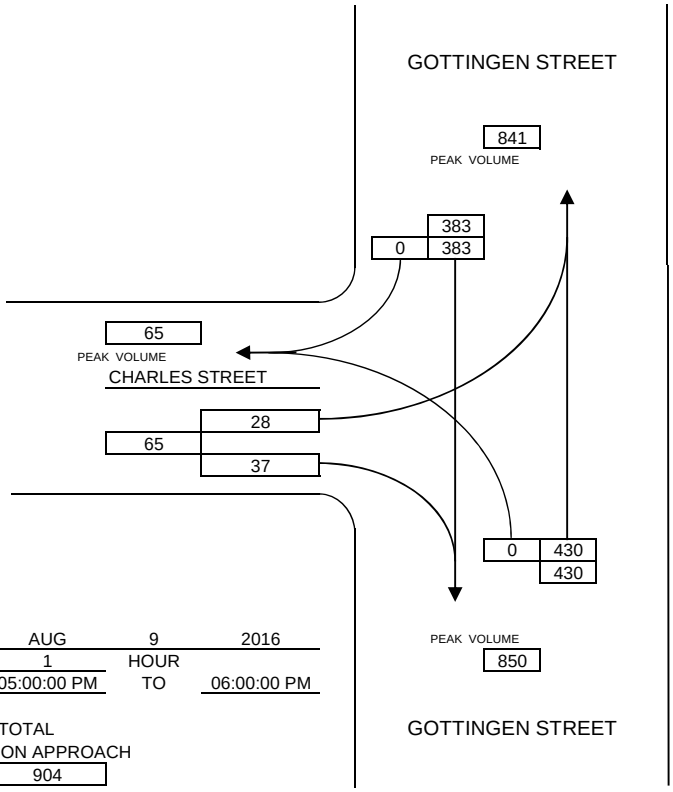
FROM: 04:00:00 PM TO 05:00:00 PM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 1134



DATE: AUG 9 2016
TIME: 1 HOUR
FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 904

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC & RIGHT OF WAY

CODE NO. 16-TM-351

MANUAL TRAFFIC COUNTS

INTERSECTION: BUDDY DAYE STREET AT GOTTINGEN STREET

WEATHER: CLEAR
RECORDER: AD

DAY	DATE	MONTH	YEAR
THURS	11	AUG	2016

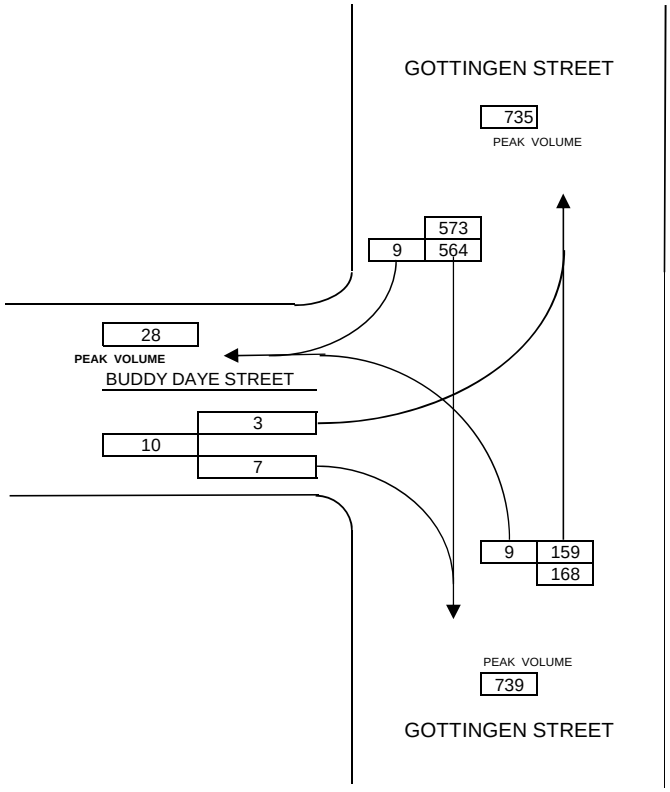
STREET:					BUDDY DAYE STREET			GOTTINGEN STREET			GOTTINGEN STREET			
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	0	0	0	1	0	1	0	134	0	1	41	0	178
07:15:00 AM	07:30:00 AM	0	0	0	0	0	1	0	119	2	5	30	0	157
07:30:00 AM	07:45:00 AM	0	0	0	0	0	1	0	151	4	2	40	0	198
07:45:00 AM	08:00:00 AM	0	0	0	2	0	4	0	160	3	1	48	0	218
TOTAL		0	0	0	3	0	7	0	564	9	9	159	0	751
PEAK			0			10			573			168		
15 MIN PEAK			0			24			652			196		
PEAK HOUR FACTOR			0			0.42			0.88			0.86		
TWO WAY TOTALS			0			28			735			739		FACTOR
														1.02
														766

DAY	DATE	MONTH	YEAR
THURS	11	AUG	2016

TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM	08:15:00 AM	0	0	0	1	0	2	0	155	7	2	45	0	212
08:15:00 AM	08:30:00 AM	0	0	0	3	0	3	0	170	7	1	49	0	233
08:30:00 AM	08:45:00 AM	0	0	0	2	0	4	0	179	4	2	45	0	236
08:45:00 AM	09:00:00 AM	0	0	0	4	0	5	0	146	3	5	48	0	211
TOTAL		0	0	0	10	0	14	0	650	21	10	187	0	892
PEAK			0			24			671			197		
15 MIN PEAK			0			36			732			212		
PEAK HOUR FACTOR			0			0.67			0.92			0.93		
TWO WAY TOTALS			0			55			868			861		FACTOR
														1.02
														910

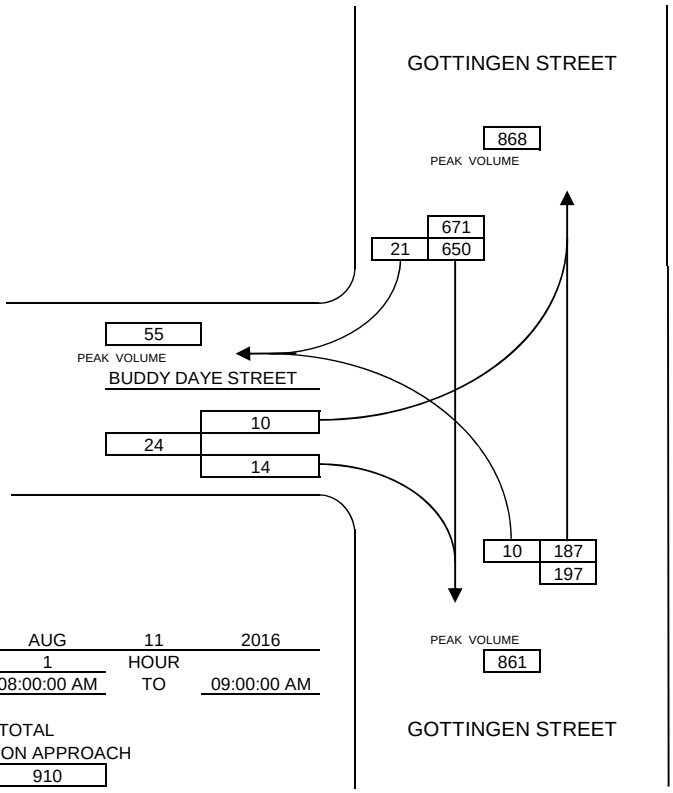
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : BUDDY DAYE STREET AT GOTTINGEN STREET



DATE: AUG 11 2016
TIME: 1 HOUR
FROM: 07:00:00 AM TO 08:00:00 AM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 766



DATE: AUG 11 2016
TIME: 1 HOUR
FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 910

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC & RIGHT OF WAY

CODE NO. 16-TM-351

MANUAL TRAFFIC COUNTS

INTERSECTION: BUDDY DAYE STREET AT GOTTINGEN STREET

WEATHER: PARTLY CLOUDY
RECORDER: AD

DAY	DATE	MONTH	YEAR
THURS	11	AUG	2016

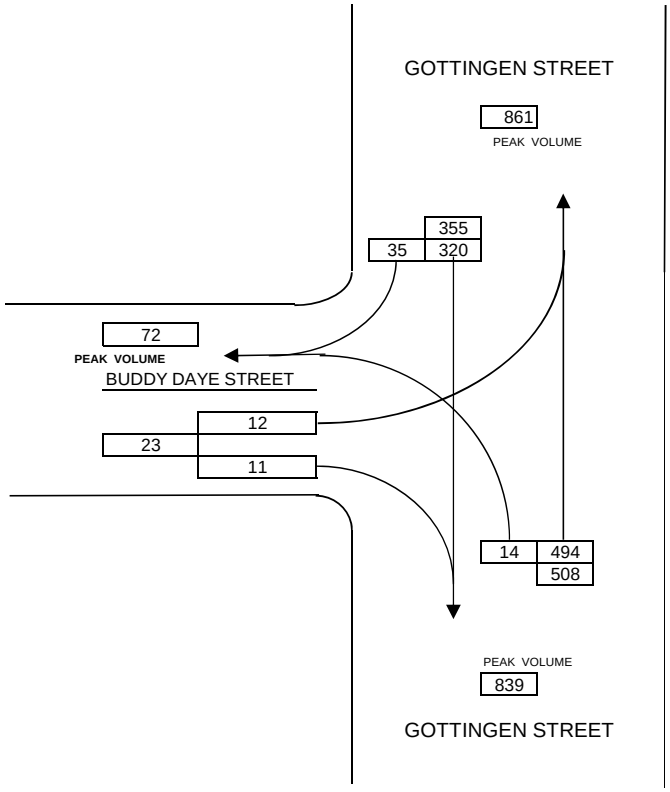
STREET:					BUDDY DAYE STREET			GOTTINGEN STREET			GOTTINGEN STREET			
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	0	0	0	2	0	3	0	66	10	4	115	0	200
04:15:00 PM	04:30:00 PM	0	0	0	5	0	5	0	92	8	2	131	0	243
04:30:00 PM	04:45:00 PM	0	0	0	1	0	2	0	90	7	4	138	0	242
04:45:00 PM	05:00:00 PM	0	0	0	4	0	1	0	72	10	4	110	0	201
TOTAL		0	0	0	12	0	11	0	320	35	14	494	0	886
PEAK			0			23			355			508		
15 MIN PEAK			0			40			400			568		
PEAK HOUR FACTOR			0			0.58			0.89			0.89		
TWO WAY TOTALS			0			72			861			839		FACTOR
														1.02
														904

DAY	DATE	MONTH	YEAR
THURS	11	AUG	2016

TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	0	0	0	4	0	1	0	75	6	5	127	0	218
05:15:00 PM	05:30:00 PM	0	0	0	1	0	3	0	70	13	4	71	0	162
05:30:00 PM	05:45:00 PM	0	0	0	4	0	4	0	78	7	2	79	0	174
05:45:00 PM	06:00:00 PM	0	0	0	1	0	4	0	72	9	6	71	0	163
TOTAL		0	0	0	10	0	12	0	295	35	17	348	0	717
PEAK			0			22			330			365		
15 MIN PEAK			0			32			340			528		
PEAK HOUR FACTOR			0			0.69			0.97			0.69		
TWO WAY TOTALS			0			74			688			672		FACTOR
														1.02
														731

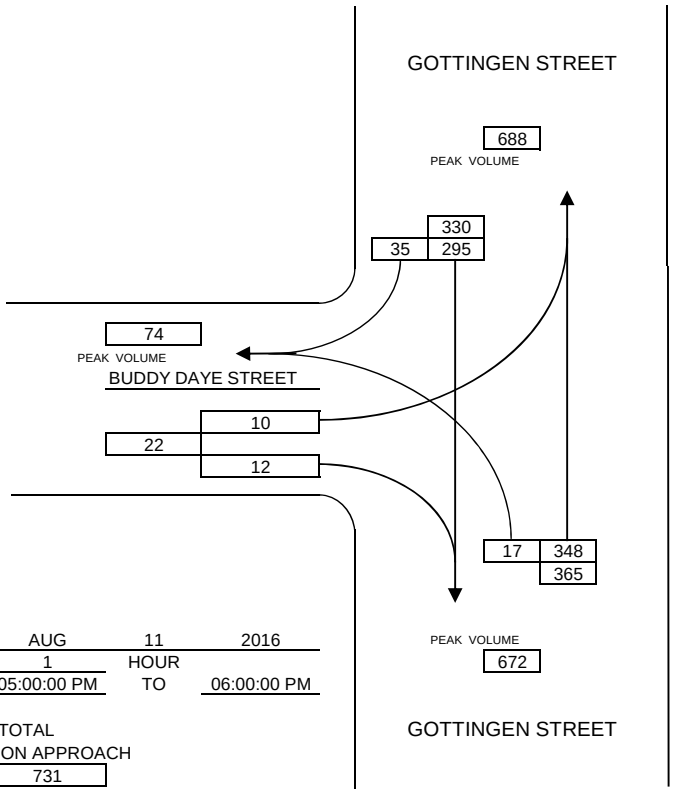
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : BUDDY DAYE STREET AT GOTTINGEN STREET



DATE: AUG 11 2016
TIME: 1 HOUR
FROM: 04:00:00 PM TO 05:00:00 PM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 904



DATE: AUG 11 2016
TIME: 1 HOUR
FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 731

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 18RQ236

MANUAL TRAFFIC COUNTS

INTERSECTION: CREIGHTON STREET AT NORTH STREET & NORTHWOOD TERRACE

WEATHER: SUNNY
RECORDER: LIAM BRADLEY

DAY	DATE	MONTH	YEAR
TUES.	31	JULY	2018

STREET:		NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
07:02:00 AM	07:17:00 AM	26	56	0	0	71	5	3	2	2	0	0	0	165
07:17:00 AM	07:32:00 AM	26	64	0	0	95	7	0	3	4	0	0	0	199
07:32:00 AM	07:47:00 AM	39	78	0	0	76	5	0	2	4	0	0	0	204
07:47:00 AM	08:02:00 AM	32	93	0	0	85	4	2	2	8	0	0	0	226
TOTAL		123	291	0	0	327	21	5	9	18	0	0	0	794
PEAK			414			348			32			0		
4(15 MIN PEAK)			500			408			48			0		
PEAK HOUR FACTOR			0.83			0.85			0.67			0		AAWT
TWO WAY TOTALS			746			657			32			153		FACTOR
														1.03
														818

DAY	DATE	MONTH	YEAR
TUES.	31	JULY	2018

TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
08:02:00 AM	08:17:00 AM	26	77	0	0	82	1	3	1	2	0	0	0	192
08:17:00 AM	08:32:00 AM	25	73	0	0	94	3	2	2	7	0	0	0	206
08:32:00 AM	08:47:00 AM	27	98	0	0	77	2	0	5	7	0	0	0	216
08:47:00 AM	09:02:00 AM	15	82	0	0	85	9	0	6	6	0	0	0	203
TOTAL		93	330	0	0	338	15	5	14	22	0	0	0	817
PEAK			423			353			41			0		
4(15 MIN PEAK)			500			388			48			0		
PEAK HOUR FACTOR			0.85			0.91			0.85			0		AAWT
TWO WAY TOTALS			766			705			41			122		FACTOR
														1.03
														842

Intersection Peak Hour

		NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:45 - 8:45	Car	110	332	3	1	328	11	6	9	24	0	0	0	824
	Truck	0	9	0	0	9	0	1	1	0	0	0	0	20
	Bicycle	0	2	0	1	17	0	0	10	0	0	1	0	31
	Vehicle Total	110	343	3	2	354	11	7	20	24	0	1	0	875
	Approach Factor		0.9			0.9			0.91			0.25		FACTOR
														1
														875

Peak Hour Pedestrians

		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
7:45 - 8:45	Pedestrians	5	10	15	24	3	27	1	14	15	11	7	18	75

Car traffic

Interval starts	NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:02	26	55	0	0	69	5	3	2	2	0	0	0	163
7:15	26	60	0	0	93	6	0	3	4	0	0	0	193
7:30	39	75	0	0	72	4	0	2	4	0	0	0	196
7:45	32	91	0	0	82	4	2	2	8	0	0	0	222
8:00	26	74	0	0	82	2	2	1	2	0	0	0	190
8:15	25	70	0	0	88	3	2	2	7	0	0	0	197
8:30	27	97	0	0	76	2	0	4	7	0	0	0	215
8:45	15	80	0	0	82	8	0	6	6	0	0	0	197
TOTAL	216	602	0	0	644	34	9	22	40	0	0	0	1573

Truck traffic

Interval starts	NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:02	0	1	0	0	2	0	0	0	0	0	0	0	3
7:15	0	4	0	0	2	1	0	0	0	0	0	0	7
7:30	0	3	0	0	4	1	0	0	0	0	0	0	8
7:45	0	2	0	0	3	0	0	0	0	0	0	0	5
8:00	0	3	0	0	2	0	1	0	0	0	0	0	6
8:15	0	3	0	0	2	0	0	0	0	0	0	0	5
8:30	0	1	0	0	2	0	0	1	0	0	0	0	4
8:45	0	2	0	0	1	0	0	0	0	0	0	0	3
TOTAL	0	19	0	0	18	2	1	1	0	0	0	0	41

Bicycle traffic

Interval starts	NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:02	0	1	0	0	5	1	0	0	1	0	0	0	8
7:15	0	1	0	0	4	0	0	0	0	0	0	0	5
7:30	0	1	0	0	6	0	1	3	0	0	0	0	11
7:45	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00	0	1	0	0	3	0	0	6	0	0	0	0	10
8:15	0	0	0	0	8	0	0	2	0	0	0	0	12
8:30	0	1	0	0	5	0	0	2	0	0	0	0	8
8:45	0	1	0	0	3	1	1	2	1	0	0	0	10
TOTAL	0	6	0	0	35	2	2	15	2	0	0	0	65

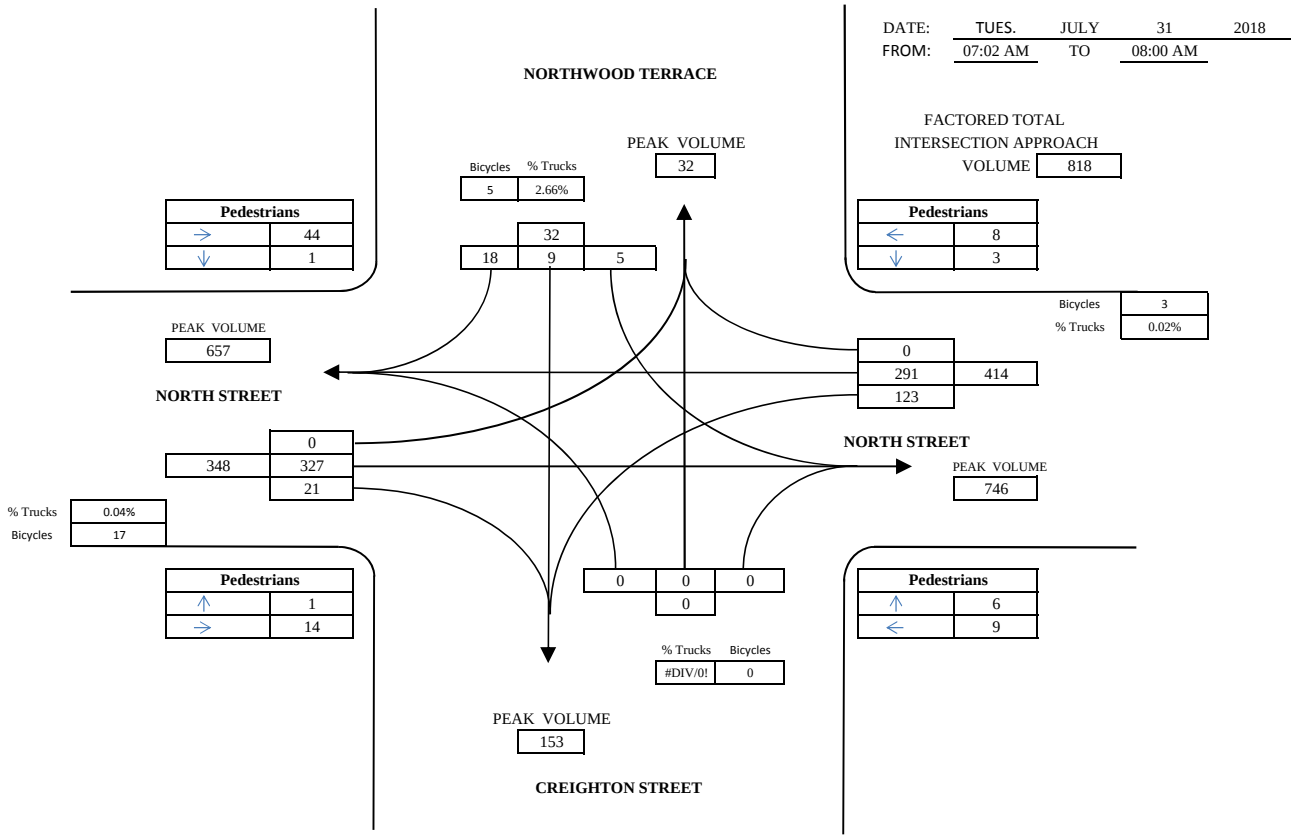
Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
7:02	0	2	2	15	0	15	1	4	5	3	1	4	26
7:15	0	0	0	15	0	15	0	3	3	3	3	6	24
7:30	0	4	4	5	1	6	0	4	4	1	1	2	16
7:45	3	2	5	9	0	9	0	3	3	2	1	3	20
8:00	0	2	2	6	0	6	0	1	1	1	2	3	12
8:15	0	0	0	7	1	8	0	5	5	2	4	6	19
8:30	2	6	8	2	2	4	1	5	6	6	0	6	24
8:45	0	5	5	3	0	3	0	11	11	3	2	5	24
TOTAL	5	21	26	62	4	66	2	36	38	21	14	35	165

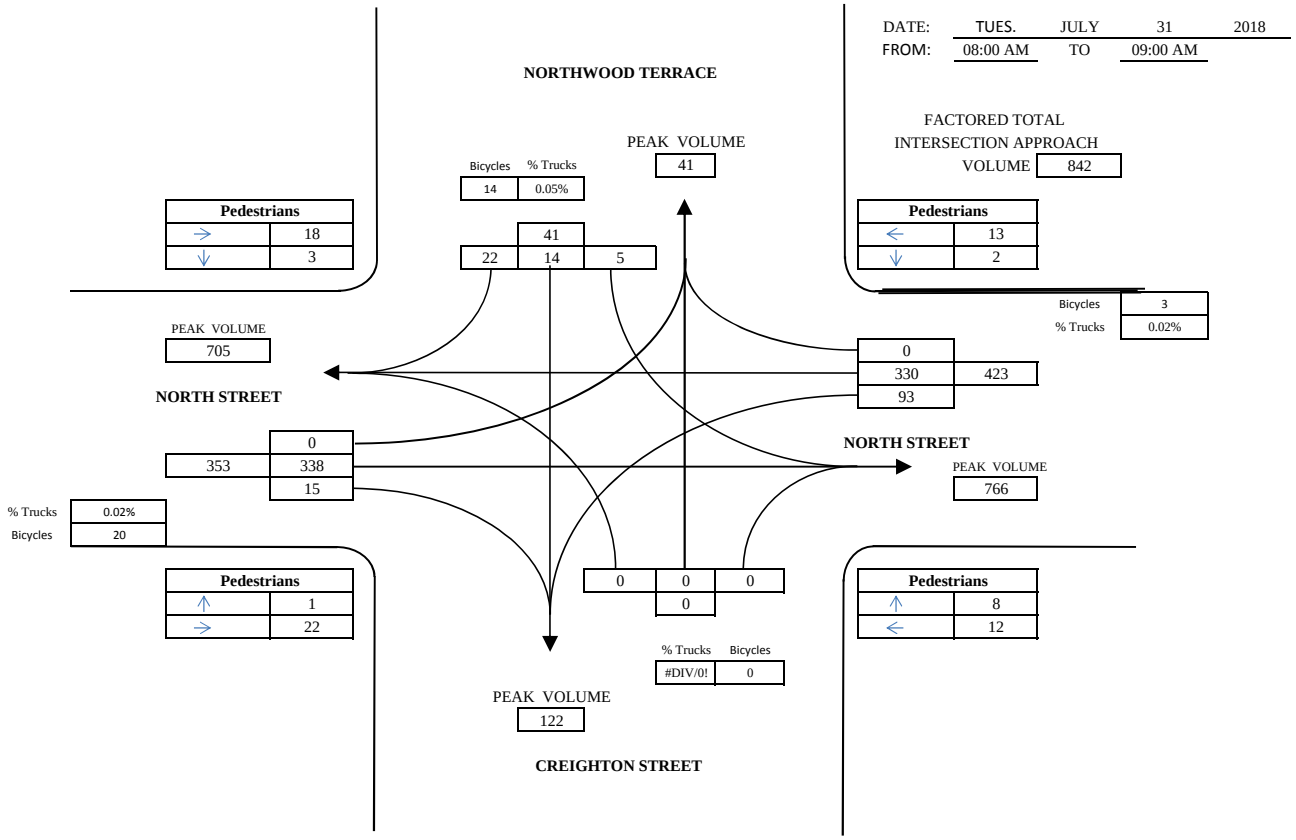
VEHICULAR GRAPHIC SUMMARY SHEET

CREIGHTON STREET AT NORTH STREET & NORTHWOOD TERRACE

DATE: TUES. JULY 31 2018
FROM: 07:02 AM TO 08:00 AM



DATE: TUES. JULY 31 2018
FROM: 08:00 AM TO 09:00 AM



HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 18RQ236

MANUAL TRAFFIC COUNTS

INTERSECTION: CREIGHTON STREET AT NORTH STREET & NORTHWOOD TERRACE

WEATHER: SUNNY
RECORDER: LIAM BRADLEY

DAY	DATE	MONTH	YEAR
TUES.	31	JULY	2018

STREET:		NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	3	91	0	0	155	1	9	4	13	0	0	0	276
04:15:00 PM	04:30:00 PM	15	104	0	0	162	8	0	2	6	0	0	0	297
04:30:00 PM	04:45:00 PM	17	98	0	0	136	1	1	5	6	0	0	0	264
04:45:00 PM	05:00:00 PM	10	103	0	0	167	7	2	2	6	0	0	0	297
TOTAL		45	396	0	0	620	17	12	13	31	0	0	0	1134
PEAK			441			637			56			0		
4(15 MIN PEAK)			476			696			104			0		
PEAK HOUR FACTOR			0.93			0.92			0.54			0		AAWT
TWO WAY TOTALS			1073			1064			56			75		FACTOR
														1.03
														1168

DAY	DATE	MONTH	YEAR
TUES.	31	JULY	2018

TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	7	109	0	0	122	7	2	0	1	0	0	0	248
05:15:00 PM	05:30:00 PM	11	108	0	0	113	6	3	2	5	0	0	0	248
05:30:00 PM	05:45:00 PM	9	79	0	0	104	4	0	2	3	0	0	0	201
05:45:00 PM	06:00:00 PM	4	96	0	0	97	4	1	0	2	0	0	0	204
TOTAL		31	392	0	0	436	21	6	4	11	0	0	0	901
PEAK			423			457			21			0		
4(15 MIN PEAK)			476			516			40			0		
PEAK HOUR FACTOR			0.89			0.89			0.53			0		AAWT
TWO WAY TOTALS			865			860			21			56		FACTOR
														1.03
														928

Intersection Peak Hour

		NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00-17:00	Car	45	384	1	1	611	16	12	12	31	0	0	0	1113
	Truck	0	11	0	0	8	1	0	1	0	0	0	0	21
	Bicycle	0	11	0	0	11	0	1	4	1	0	0	1	29
	Vehicle Total	45	406	1	1	630	17	13	17	32	0	0	1	1163
	Approach Factor		0.94			0.91			0.57			0.25		FACTOR
														1
														1163

Peak Hour Pedestrians

		NE			NW			SW			SE			Total
16:00-17:00		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
	Pedestrians	7	37	44	7	2	9	3	47	50	17	5	22	125

Car traffic

Interval starts	NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	3	88	0	0	152	1	9	4	13	0	0	0	270
16:15	15	102	0	0	160	7	0	2	6	0	0	0	292
16:30	17	95	0	0	135	1	1	4	6	0	0	0	259
16:45	10	100	0	0	165	7	2	2	6	0	0	0	292
17:00	7	106	0	0	120	7	2	0	1	0	0	0	243
17:15	11	106	0	0	114	6	3	2	5	0	0	0	247
17:30	9	75	0	0	102	4	0	2	3	0	0	0	195
17:45	4	94	0	0	93	4	1	0	2	0	0	0	198
TOTAL	76	766	0	0	1041	37	18	16	42	0	0	0	1996

Truck traffic

Interval starts	NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	3	0	0	3	0	0	0	0	0	0	0	6
16:15	0	2	0	0	2	1	0	0	0	0	0	0	5
16:30	0	3	0	0	1	0	0	1	0	0	0	0	5
16:45	0	3	0	0	2	0	0	0	0	0	0	0	5
17:00	0	3	0	0	1	0	0	0	0	0	0	0	4
17:15	0	2	0	0	2	0	0	0	0	0	0	0	4
17:30	0	4	0	0	3	0	0	0	0	0	0	0	7
17:45	0	2	0	0	4	0	0	0	0	0	0	0	6
TOTAL	0	22	0	0	18	1	0	1	0	0	0	0	42

Bicycle traffic

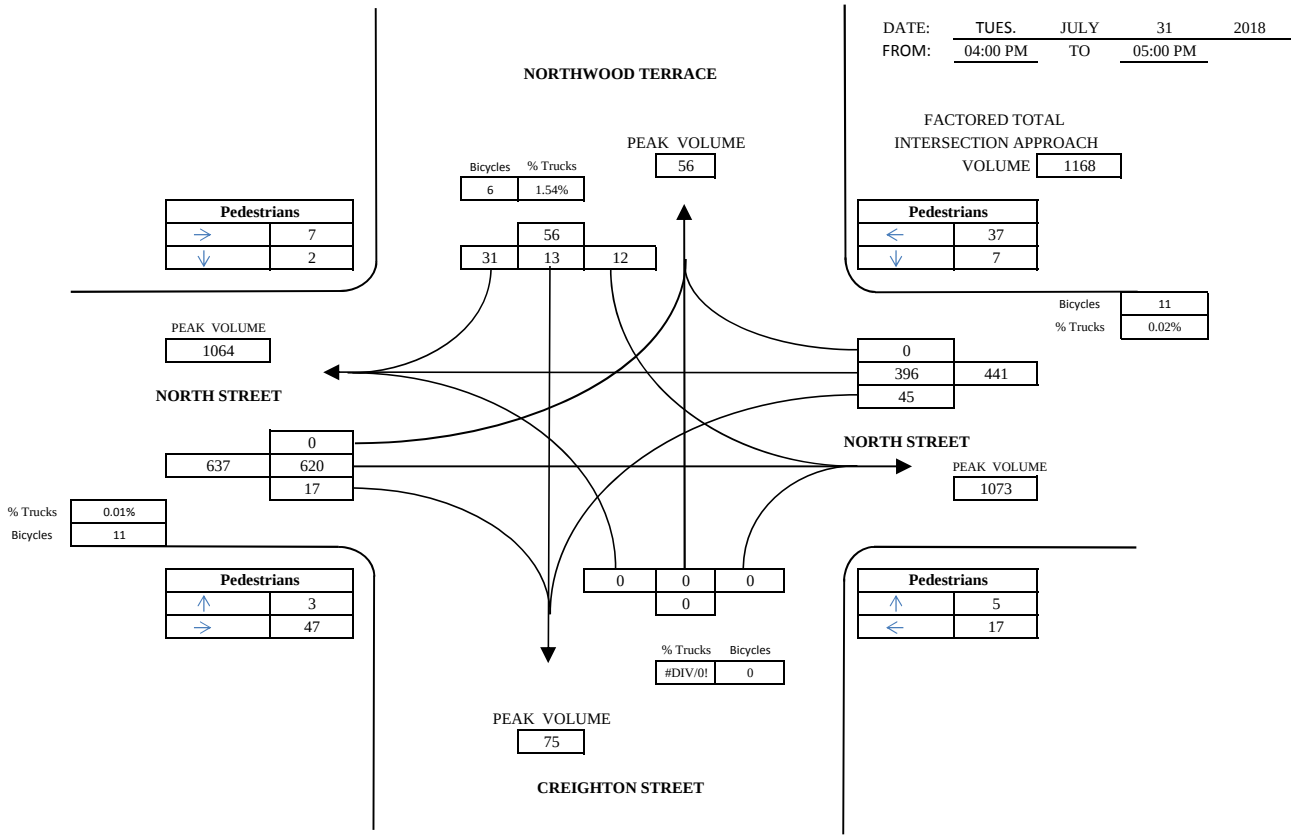
Interval starts	NORTH STREET			NORTH STREET			NORTHWOOD TERRACE			CREIGHTON STREET			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	3	0	0	1	0	0	1	0	0	0	0	5
16:15	0	1	0	0	3	0	0	0	0	0	0	0	4
16:30	0	4	0	0	3	0	1	1	1	0	0	0	11
16:45	0	3	0	0	4	0	0	2	0	0	0	0	9
17:00	0	2	0	0	2	0	0	0	0	0	0	0	4
17:15	0	3	0	0	0	0	0	0	0	0	0	0	3
17:30	0	5	0	0	2	0	0	1	0	0	0	0	8
17:45	0	1	0	0	4	0	0	2	0	0	0	0	7
TOTAL	0	22	0	0	19	0	1	7	1	0	0	0	51

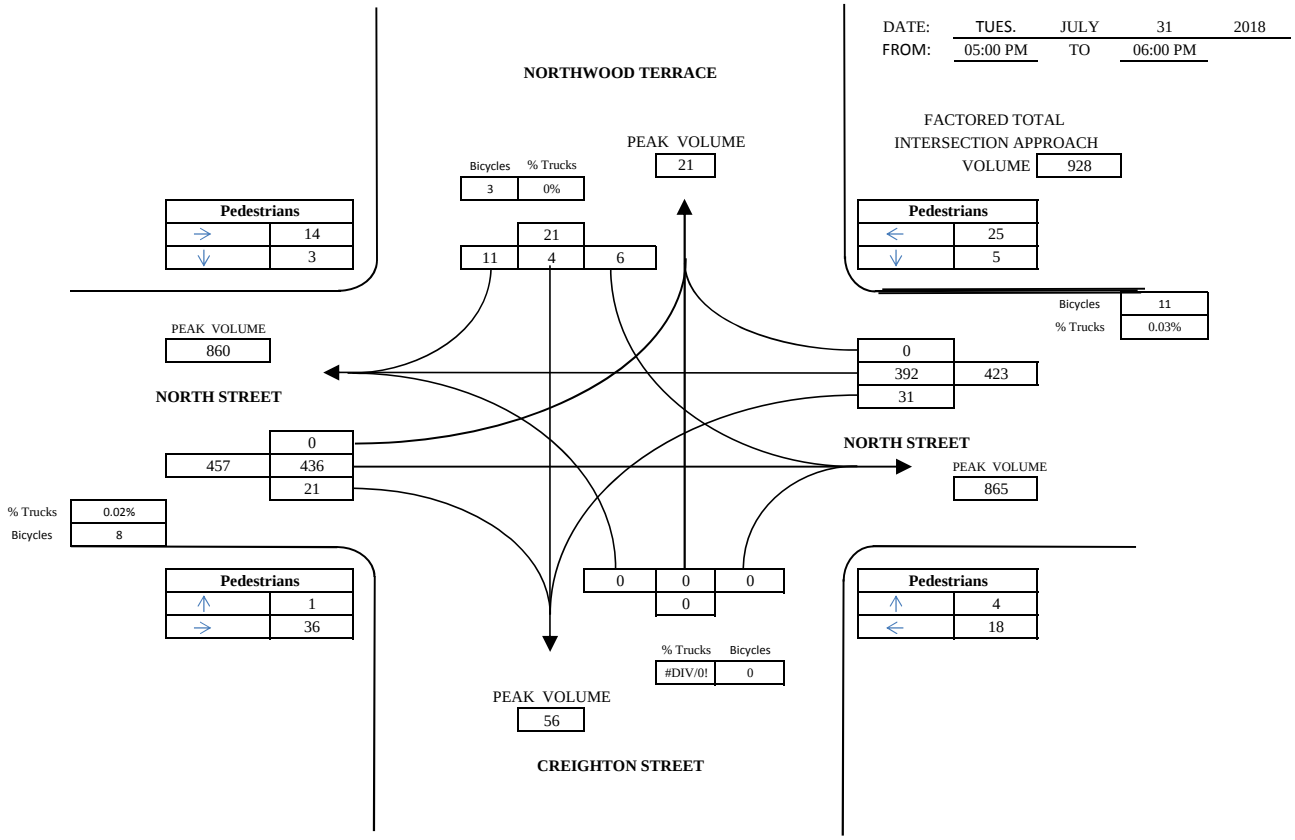
Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
16:00	2	10	12	2	2	4	1	11	12	7	0	7	35
16:15	1	12	13	1	0	1	0	11	11	1	2	3	28
16:30	2	7	9	1	0	1	1	17	18	3	3	6	34
16:45	2	8	10	3	0	3	1	8	9	6	0	6	28
17:00	1	4	5	3	1	4	0	18	18	1	1	2	29
17:15	1	5	6	1	1	2	1	6	7	7	0	7	22
17:30	0	8	8	4	1	5	0	10	10	8	2	10	33
17:45	3	8	11	6	0	6	0	2	2	2	1	3	22
TOTAL	12	62	74	21	5	26	4	83	87	35	9	44	231

VEHICULAR GRAPHIC SUMMARY SHEET

CREIGHTON STREET AT NORTH STREET & NORTHWOOD TERRACE





HOURLY TRAFFIC COUNTER SUMMARY

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION AND PUBLIC WORKS
TRAFFIC AND RIGHT OF WAY

Region: WESTERN
CODE No. 18-VOL-183
COUNTER No. Houston Radars 0007/908
File Name: R:\TPW\Engineering\Traff

DATE: 7/20/18
LOCATION: GOTTINGEN STREET
BETWEEN: CHARLES STREET AND UNIACKE STREET

AAWT: 13901

1-WAY		N-BOUND	X
2-WAY	X	E-BOUND	
		S-BOUND	X
		W-BOUND	

Axle Factor	1									
A.A.W.T. Factor	1.07	1.03	1	0.99	1		1	1		
Date	7/16/18	7/17/18	7/18/18	7/19/18	7/20/18		7/21/18	7/22/18		
Day	Monday	Tuesday	Wednesday	Thursday	Friday	**Subtotal**	Saturday	Sunday	**Subtotal**	**Total**
hour ending										
100	0	0	105	112	122	339	0	0	0	339
200	0	0	44	64	81	189	0	0	0	189
300	0	0	26	40	45	111	0	0	0	111
400	0	0	29	31	27	87	0	0	0	87
500	0	0	36	40	51	127	0	0	0	127
600	0	0	169	142	115	426	0	0	0	426
700	0	0	549	565	572	1686	0	0	0	1686
800	0	0	943	937	853	2733	0	0	0	2733
900	0	0	1013	997	350	2360	0	0	0	2360
1000	0	0	784	920	0	1704	0	0	0	1704
1100	0	0	810	768	0	1578	0	0	0	1578
1200	0	0	758	854	0	1612	0	0	0	1612
1300	0	0	789	924	0	1713	0	0	0	1713
1400	0	0	868	870	0	1738	0	0	0	1738
1500	0	0	885	917	0	1802	0	0	0	1802
1600	0	772	1021	1075	0	2868	0	0	0	2868
1700	0	1364	1374	1094	0	3832	0	0	0	3832
1800	0	999	927	1005	0	2931	0	0	0	2931
1900	0	751	796	809	0	2356	0	0	0	2356
2000	0	673	590	689	0	1952	0	0	0	1952
2100	0	473	420	521	0	1414	0	0	0	1414
2200	0	305	361	398	0	1064	0	0	0	1064
2300	0	259	262	282	0	803	0	0	0	803
2400	0	139	137	195	0	471	0	0	0	471

24 Hour TOTAL	0	5735	13696	14249	2216	35896	0	0	0	35896

24 Hour Factored TOTAL	0	5907	13696	14107	2216	35926	0	0	0	35926

Peak Hours (Factored)										
AM	0	0	1013	987	853	2853	0	0	4693	8399
Noon	0	0	885	915	0	1800	0	0	2715	4514
PM	0	1405	1374	1083	0	3862	0	0	4945	8807

HOURLY TRAFFIC COUNTER SUMMARY

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION AND PUBLIC WORKS
TRAFFIC AND RIGHT OF WAY

DISTRICT WESTERN
CODE No. 18-VOL-183
COUNTER No. HOUSTON RADAR 0007
File Name: R:\TPW\Engineering\Traffi

DATE: 20-Jul-18
LOCATION: GOTTINGEN STREET
BETWEEN: CHARLES STREET AND UNIACKE STREET

AAWT: 6311

1-WAY	X	N-BOUND	X
2-WAY		E-BOUND	
		S-BOUND	
		W-BOUND	

Axle Factor	1									
A.A.W.T. Factor	1.07	1.03	1.00	0.99	1.00		1.00	1.00		
Date	7/16/18	7/17/18	7/18/18	7/19/18	7/20/18		7/21/18	7/22/18		
Day	Monday	Tuesday	Wednesday	Thursday	Friday	**Subtotal**	Saturday	Sunday	**Subtotal**	**Total**
hour ending										
100	0	0	69	66	72	207	0	0	0	207
200	0	0	22	38	37	97	0	0	0	97
300	0	0	10	22	22	54	0	0	0	54
400	0	0	14	13	14	41	0	0	0	41
500	0	0	19	19	25	63	0	0	0	63
600	0	0	57	51	37	145	0	0	0	145
700	0	0	131	129	130	390	0	0	0	390
800	0	0	280	270	250	800	0	0	0	800
900	0	0	321	277	84	682	0	0	0	682
1000	0	0	292	334	0	626	0	0	0	626
1100	0	0	329	314	0	643	0	0	0	643
1200	0	0	362	357	0	719	0	0	0	719
1300	0	0	335	419	0	754	0	0	0	754
1400	0	0	386	381	0	767	0	0	0	767
1500	0	0	429	424	0	853	0	0	0	853
1600	0	422	586	619	0	1627	0	0	0	1627
1700	0	910	897	645	0	2452	0	0	0	2452
1800	0	538	492	514	0	1544	0	0	0	1544
1900	0	347	386	366	0	1099	0	0	0	1099
2000	0	312	286	331	0	929	0	0	0	929
2100	0	251	217	294	0	762	0	0	0	762
2200	0	196	188	209	0	593	0	0	0	593
2300	0	143	141	153	0	437	0	0	0	437
2400	0	86	73	118	0	277	0	0	0	277
24 Hour TOTAL	0	3205	6322	6363	671	16561	0	0	0	16561
24 Hour Factored TOTAL	0	3301	6322	6299	671	16594	0	0	0	16594
Peak Hours (Factored)										
AM	0	0	321	331	250	902	0	0	1482	2634
Noon	0	0	429	420	0	849	0	0	1269	2117
PM	0	937	897	639	0	2473	0	0	3111	5584

HOURLY TRAFFIC COUNTER SUMMARY

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION AND PUBLIC WORKS
TRAFFIC AND RIGHT OF WAY

DISTRICT WESTERN
CODE No. 18-VOL-183
COUNTER No. HOUSTON RADAR 9089
File Name: R:\TPW\Engineering\Traffi

DATE (dd/mm/yy): 20-Jul-18
LOCATION: GOTTINGEN STREET
BETWEEN: CHARLES STREET AND UNIACKE STREET

AAWT: 7591

1-WAY	X	N-BOUND	
2-WAY		E-BOUND	
		S-BOUND	X
		W-BOUND	

Axle Factor	1									
A.A.W.T. Factor	1.07	1.03	1.00	0.99	1.00		1.00	1.00		
Date	7/16/18	7/17/18	7/18/18	7/19/18	7/20/18		7/21/18	7/22/18		
Day	Monday	Tuesday	Wednesday	Thursday	Friday	**Subtotal**	Saturday	Sunday	**Subtotal**	**Total**
hour ending										
100	0	0	36	46	50	132	0	0	0	132
200	0	0	22	26	44	92	0	0	0	92
300	0	0	16	18	23	57	0	0	0	57
400	0	0	15	18	13	46	0	0	0	46
500	0	0	17	21	26	64	0	0	0	64
600	0	0	112	91	78	281	0	0	0	281
700	0	0	418	436	442	1296	0	0	0	1296
800	0	0	663	667	603	1933	0	0	0	1933
900	0	0	692	720	266	1678	0	0	0	1678
1000	0	0	492	586	0	1078	0	0	0	1078
1100	0	0	481	454	0	935	0	0	0	935
1200	0	0	396	497	0	893	0	0	0	893
1300	0	0	454	505	0	959	0	0	0	959
1400	0	0	482	489	0	971	0	0	0	971
1500	0	0	456	493	0	949	0	0	0	949
1600	0	350	435	456	0	1241	0	0	0	1241
1700	0	454	477	449	0	1380	0	0	0	1380
1800	0	461	435	491	0	1387	0	0	0	1387
1900	0	404	410	443	0	1257	0	0	0	1257
2000	0	361	304	358	0	1023	0	0	0	1023
2100	0	222	203	227	0	652	0	0	0	652
2200	0	109	173	189	0	471	0	0	0	471
2300	0	116	121	129	0	366	0	0	0	366
2400	0	53	64	77	0	194	0	0	0	194
24 Hour TOTAL	0	2530	7374	7886	1545	19335	0	0	0	19335
24 Hour Factored TOTAL	0	2606	7374	7807	1545	19332	0	0	0	19332
Peak Hours (Factored)										
AM	0	0	692	713	603	2008	0	0	3324	5934
Noon	0	0	482	500	0	982	0	0	1482	2464
PM	0	475	477	486	0	1438	0	0	1924	3362

APPENDIX C

Trip Generation

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: Victoria Hall

Open Date: 5/20/2021
Analysis Date: 5/20/2021

ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
220	Multi-Unit Low Rise			22	22	44		1	2	3		2	1	3
	6	Dwelling Units												
222	Multi-Unit High Rise			135	134	269		3	18	21		15	9	24
	118	Residents												
Unadjusted Volume				157	156	313		4	20	24		17	10	27
Internal Capture Trips				0	0	0		0	0	0		0	0	0
Pass-By Trips				0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets				157	156	313		4	20	24		17	10	27

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

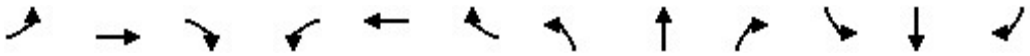
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

APPENDIX D

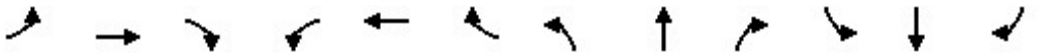
Synchro Output



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	15	22	0	0	0	0	338	16	100	330	0
Future Volume (Veh/h)	5	15	22	0	0	0	0	338	16	100	330	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	20	29	0	0	0	0	441	21	130	430	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1142	1152	430	1180	1142	452	430			462		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1142	1152	430	1180	1142	452	430			462		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	89	95	100	100	100	100			88		
cM capacity (veh/h)	162	174	625	132	177	608	1129			1099		

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	7	49	462	560
Volume Left	7	0	0	130
Volume Right	0	29	21	0
cSH	162	304	1700	1099
Volume to Capacity	0.04	0.16	0.27	0.12
Queue Length 95th (m)	1.0	4.3	0.0	3.0
Control Delay (s)	28.3	19.1	0.0	3.1
Lane LOS	D	C		A
Approach Delay (s)	20.3		0.0	3.1
Approach LOS	C			

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	63.3%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	106	0	0	0	0	0	25	12	0	0	0
Future Volume (Veh/h)	25	106	0	0	0	0	0	25	12	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	138	0	0	0	0	0	33	16	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33	49	0	102	33	33	0			49		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33	49	0	102	33	33	0			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	84	100	100	100	100	100			100		
cM capacity (veh/h)	974	843	1085	768	860	1041	1623			1558		

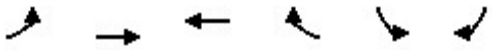
Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total	33	138	33	16
Volume Left	33	0	0	0
Volume Right	0	0	0	16
cSH	974	843	1700	1700
Volume to Capacity	0.03	0.16	0.02	0.01
Queue Length 95th (m)	0.8	4.4	0.0	0.0
Control Delay (s)	8.8	10.1	0.0	0.0
Lane LOS	A	B		
Approach Delay (s)	9.9		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay	7.7			
Intersection Capacity Utilization	16.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	638	0	0	207	22	28
Future Volume (Veh/h)	638	0	0	207	22	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	832	0	0	270	29	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			832		967	832
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			832		967	832
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		88	88
cM capacity (veh/h)			796		252	312

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	832	135	135	29	37
Volume Left	0	0	0	29	0
Volume Right	0	0	0	0	37
cSH	1700	1700	1700	252	312
Volume to Capacity	0.49	0.08	0.08	0.12	0.12
Queue Length 95th (m)	0.0	0.0	0.0	2.9	3.0
Control Delay (s)	0.0	0.0	0.0	21.1	18.1
Lane LOS				C	C
Approach Delay (s)	0.0	0.0		19.4	
Approach LOS				C	

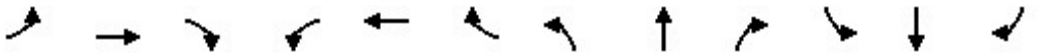
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	107	0	0	31	0
Future Volume (Veh/h)	11	107	0	0	31	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	140	0	0	40	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0				168	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				168	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	100
cM capacity (veh/h)	1623				815	1085

Direction, Lane #	EB 1	EB 2	SB 1
Volume Total	14	140	40
Volume Left	14	0	40
Volume Right	0	0	0
cSH	1623	1700	815
Volume to Capacity	0.01	0.08	0.05
Queue Length 95th (m)	0.2	0.0	1.2
Control Delay (s)	7.2	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	0.7		9.6
Approach LOS			A

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		16.8%	ICU Level of Service A
Analysis Period (min)		15	

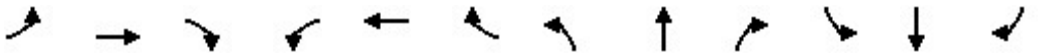


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	15	31	0	0	0	0	620	30	59	396	0
Future Volume (Veh/h)	12	15	31	0	0	0	0	620	30	59	396	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	20	40	0	0	0	0	809	39	77	517	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1500	1519	517	1550	1500	828	517			848		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1500	1519	517	1550	1500	828	517			848		
tC, single (s)	*6.0	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	81	93	100	100	100	100			90		
cM capacity (veh/h)	148	107	558	68	110	371	1049			790		

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	16	60	848	594
Volume Left	16	0	0	77
Volume Right	0	40	39	0
cSH	148	232	1700	790
Volume to Capacity	0.11	0.26	0.50	0.10
Queue Length 95th (m)	2.7	7.6	0.0	2.5
Control Delay (s)	32.2	25.8	0.0	2.5
Lane LOS	D	D		A
Approach Delay (s)	27.1		0.0	2.5
Approach LOS	D			

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	83.6%	ICU Level of Service	E	
Analysis Period (min)	15			

* User Entered Value



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	64	0	0	0	0	0	44	15	0	0	0
Future Volume (Veh/h)	40	64	0	0	0	0	0	44	15	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	83	0	0	0	0	0	57	20	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	57	77	0	98	57	57	0			77		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57	77	0	98	57	57	0			77		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	90	100	100	100	100	100			100		
cM capacity (veh/h)	940	813	1085	814	834	1009	1623			1522		

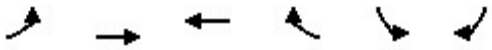
Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total	52	83	57	20
Volume Left	52	0	0	0
Volume Right	0	0	0	20
cSH	940	813	1700	1700
Volume to Capacity	0.06	0.10	0.03	0.01
Queue Length 95th (m)	1.3	2.6	0.0	0.0
Control Delay (s)	9.1	9.9	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.6		0.0	
Approach LOS	A			

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	14.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	0	0	675	46	38
Future Volume (Veh/h)	342	0	0	675	46	38
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	446	0	0	880	60	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			446		886	446
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			446		886	446
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		79	91
cM capacity (veh/h)			1111		284	560

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	446	440	440	60	50
Volume Left	0	0	0	60	0
Volume Right	0	0	0	0	50
cSH	1700	1700	1700	284	560
Volume to Capacity	0.26	0.26	0.26	0.21	0.09
Queue Length 95th (m)	0.0	0.0	0.0	5.9	2.2
Control Delay (s)	0.0	0.0	0.0	21.0	12.1
Lane LOS				C	B
Approach Delay (s)	0.0	0.0		17.0	
Approach LOS				C	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

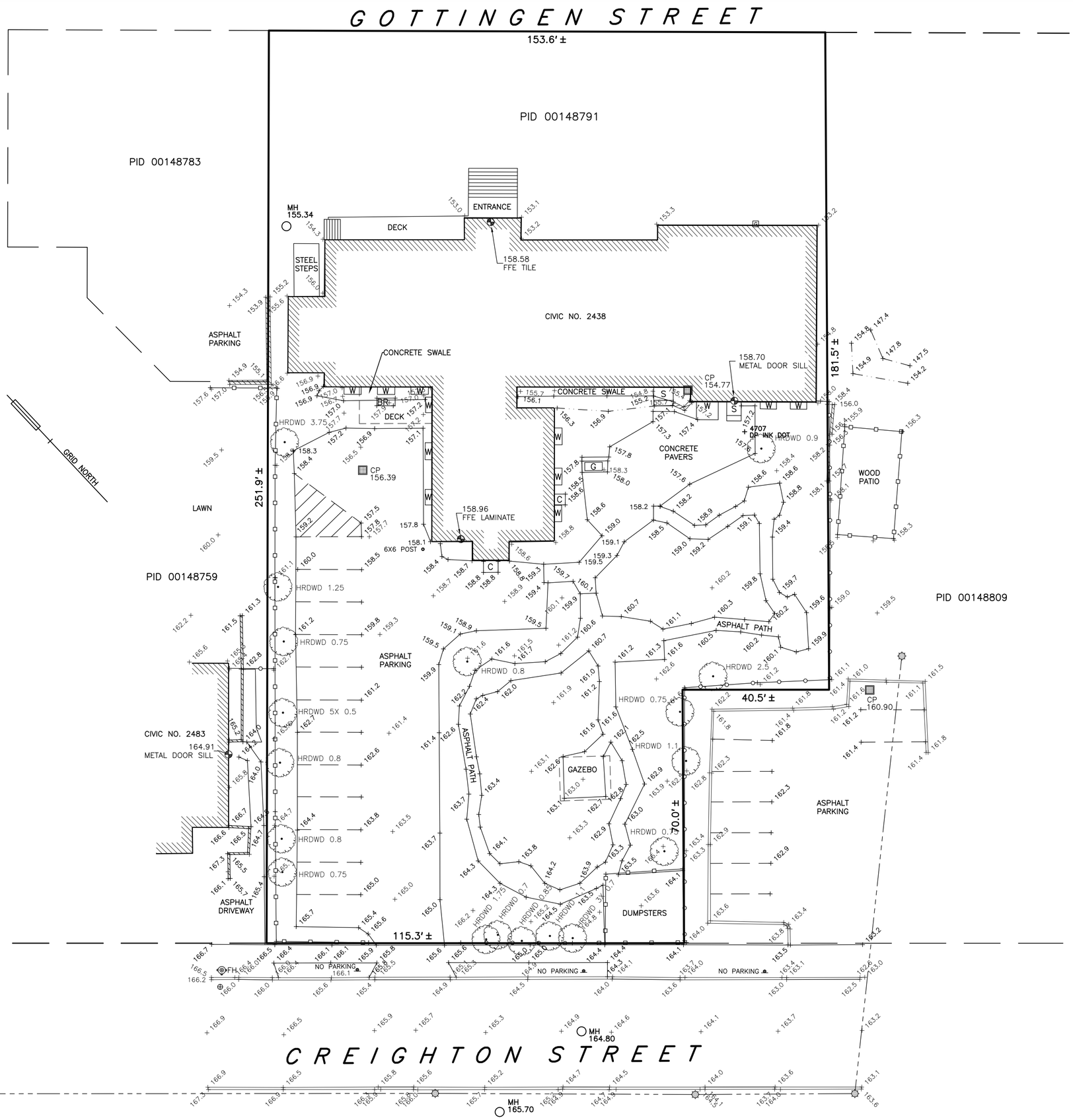


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	45	0	0	22	0
Future Volume (Veh/h)	34	45	0	0	22	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	44	59	0	0	29	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0				147	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				147	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				96	100
cM capacity (veh/h)	1623				822	1085

Direction, Lane #	EB 1	EB 2	SB 1
Volume Total	44	59	29
Volume Left	44	0	29
Volume Right	0	0	0
cSH	1623	1700	822
Volume to Capacity	0.03	0.03	0.04
Queue Length 95th (m)	0.6	0.0	0.8
Control Delay (s)	7.3	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	3.1		9.5
Approach LOS			A

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Topographic Survey



LEGEND

———	PERIMETER OF LANDS SURVEYED
◉	SURVEY MARKER
MH	MANHOLE
▨ ▦ ⌀	CATCHBASIN
⊗	WATER VALVE
	UTILITY POLE & ANCHOR
	FIRE HYDRANT
B	BOLLARD
SN	SIGN POST
G	GAS LEAD RISER
	HARDWOOD TREE
Fd	FOUND
PID	PARCEL IDENTIFICATION NUMBER
C	CONCRETE
W	WINDOW WELL
BR	BIKE RACK
S	STEP
G	GENERATOR
——o——o——	CHAINLINK FENCE
——□——□——	WOOD FENCE

NOTES:

1. ELEVATIONS ARE BASED ON CANADIAN GEODETIC VERTICAL DATUM AND REFER TO NOVA SCOTIA COORDINATE MONUMENT No. 448; ELEVATION = 179.78 FEET.
2. **CAUTION:** BOUNDARY LINES SHOWN HEREON HAVE BEEN COMPILED FROM VARIOUS PLANS AND DOCUMENTS. SUFFICIENT FIELD SURVEY HAS NOT BEEN CONDUCTED TO VERIFY THEIR ACCURACY.
3. **CAUTION:** DIGITAL DATA BASED ON THIS SURVEY MUST BE USED IN CONJUNCTION WITH THIS PLAN. USERS ARE ADVISED TO CONFIRM THE ACCURACY OF DIGITAL INFORMATION NOT EXPRESSLY INDICATED HEREON.
4. **CAUTION:** SERVICE INFORMATION SHOWN HEREON WAS COMPILED FROM FIELD SURVEY. THE EXACT LOCATION OF UNDERGROUND SERVICES IS NOT CONFIRMED. CONTACT SHOULD BE MADE WITH ALL UTILITY OPERATORS RELATING TO THE CONFIRMATION OF THE SERVICES SHOWN HEREON AND FOR OTHER SERVICES WHICH MAY EXIST BEFORE CONSTRUCTION COMMENCES.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
CARL K. HARTLEN
544
MEMBER

SITE PLAN

PID 00148791

GOTTINGEN STREET, CREIGHTON STREET
HALIFAX, HALIFAX COUNTY, NOVA SCOTIA

Servant, Dunbrack, McKenzie & MacDonald Ltd.
NOVA SCOTIA LAND SURVEYORS & CONSULTING ENGINEERS
36 OLAND CRESCENT
BAYERS LAKE BUSINESS PARK
HALIFAX, NS B3S 1C6
PHONE: (902) 455–1537
FAX: (902) 455–8479
WEB: www.sdmm.ca

DATE: OCTOBER 23, 2017
SCALE: 1" = 20'
FILE No. 1–1–503 (32901)
PLAN No. 13–2571–0

Site Servicing

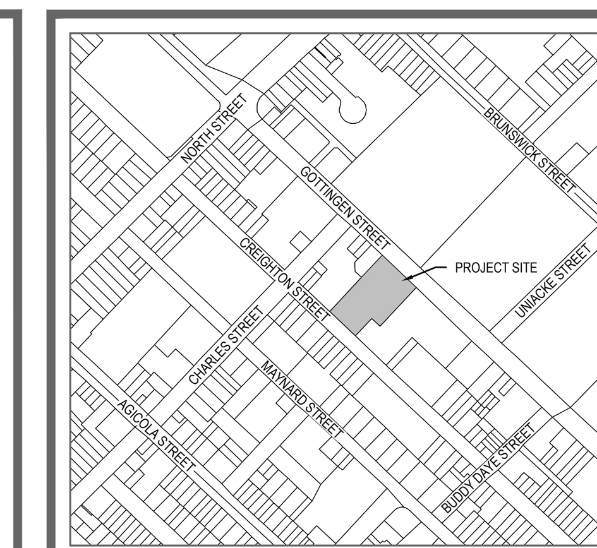
PRELIMINARY SANITARY CALCULATIONS:

TOTAL UNITS = 138
(No Commercial or Retail)

138 units @ 2.25 p/unit = 311 people

DESIGN FLOW = q = 5.52 L/s
a = 93 cu.m./day
M = 4.07
Assumed I/I area = 1000 sq.m.

PIPE CAPACITY: Approx. 100 l/s



KEY PLAN SCALE: N.T.S.

EKISTICS PLANNING & DESIGN
1 STARR LANE, DARTMOUTH, NOVA SCOTIA
T: (902)461-2525 W: WWW.EKISTICS.NET

Landscape Architecture
Engineering
Environmental Planning
Visual Impact Assessment
Golf Architecture

GENERAL NOTES:

1. EXISTING UTILITY INFORMATION PROVIDED BY HALIFAX WATER.
2. PIPE SIZES AND INVERTS TO BE CONFIRMED DURING DETAILED DESIGN.
3. DEPTH OF WATERMAIN ON CREIGHTON TO BE CONFIRMED.

NOT FOR CONSTRUCTION

0 10' 20'
1" = 10'-0"

NO.	REVISION	DATE
1	ISSUED FOR DEVELOPMENT AGREEMENT	OCT 3, 2018

CLIENT

PROJECT
2438 GOTTINGEN STREET

HALIFAX
NOVA SCOTIA

DRAWING
CIVIL SERVICING SCHMATIC

SCALE	DATE
1"=10'	2018/10/03

DRAWN BY	CHECKED	REVIEWED
RNB		

APPROVED	DEPT. APPROVAL
RNB	

SEAL SEAL

NOT FOR CONSTRUCTION

DEPT. PROJECT NO.

CONSULTANT'S NO.

TENDER NO.

DRAWING NO.
C100

October 3, 2018

Halifax Land Sales Data Review

ARA
ATLANTIC REALTY ADVISORS
www.ara.ca

March 8, 2020

3273986 Nova Scotia Limited
6214 Shirley Street
Halifax, NS B3H 2N5

Attention: Joseph Arab

Dear Mr. Arab:

Re: Halifax Land Sales Data - Price per Buildable Square Foot

As per your request, I have undertaken a review of land sales for large multi-unit residential developments on the Halifax Peninsula to determine typical rates per square foot of gross buildable area associated with these transactions. The price per square foot of gross buildable area tends to be the most relevant unit of comparison for this class of land as the densities that can be achieved vary significantly and the price paid is largely influenced by the maximum density that can be developed.

The attached table outlines the most relevant data that has been considered. The rates/ft² of gross buildable area range from $40.00 to $69.00/ft² averaging $52.00/ft². For good quality locations in the North End area of Halifax Peninsula, Index 3 provides one of the best indicators. However, this transaction is somewhat dated and there has been ongoing increases in land values since that time. In general terms, North End locations would be expected to reflect rates in the $45.00 to $50.00 per square foot of gross buildable area. However, these rates can be impacted by locational considerations, site configuration and physical characteristics that impact on development costs and on the marketability of completed developments.

If you have any questions, please contact me at your convenience.

Sincerely,

John A. Ingram, AACI, MRICS
President

e-mail: jingram@ara.ca

INGRAM VARNER
and Associates

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SCHEDULE OF DEVELOPMENT SITE SALES

#	Property	Sale Date	Sale Price	Lot Size (ft²) / Buildable Area (ft²)	$/ft² / $/ft²	Remarks
1]	5562 Sackville Street Halifax PID 41036112	Dec-19	$4,350,000	16,429 98,998	$265 $44	3 level multi-tenant office building. 53% vacant at time of sale. Existing tenant lease expires 2022. Acquired by adjacent property owner for future redevelopment. Zoned DH-1 with a maximum pre-bonus height of 75 feet. Vendor: TPP Investments 1 and PSS Investments 1 Purchaser: 3330567 Nova Scotia Limited
2]	1221 Barrington Street Halifax PID 00092742	Mar-19	$1,230,000	7,774 22,950	$158 $54	2 level masonry office building on site which was being vacated by the property owner. Acquired by the adjacent landowner for redevelopment. Zoned DH-1 with a maximum pre-bonus height of 45 feet. Vendor: Nova Scotia Health Authority Purchaser: Galaxy Properties Limited
3]	2710 Agricola Street Halifax PID 00161497, 40346314, 40346322, 40346330, 40346348, 40346355 and 40346363	Sep-18	$2,580,000	17,376 61,000	$148 $42	Single level multi-tenant commercial building on site. Acquired for redevelopment. Development agreement in place for a 68 unit, 7 storey residential building with main level commercial space and underground parking. Demolition cost estimated at $70,000.00. Vendor: 3283365 Nova Scotia Limited Purchaser: Boston Developments Limited
4]	1874 Brunswick Street Halifax PID 00002030	Jul-18	$5,625,000	14,262 90,000	$394 $63	5 storey office building on site with expiring lease. Acquired for redevelopment. High profile location at prime downtown intersection. Vendor: 778938 Ontario Limited Purchaser: Steele Hotels Limited
5]	5185 South Street Halifax PID 00092734	Jan-18	$3,320,000	12,384 48,140	$268 $69	Older wood frame multi-unit residential building on site. Acquired for proposed development of a 6 storey, 42 unit residential building with main level commercial space. Site plan approval in place for the proposed development at the time of the sale. Zoned DH-1 with maximum 45' pre-bonus height. Vendor: Principal Developments Limited Purchaser: Galaxy Properties Limited
6]	1047 Barrington Street Halifax PID 40883969	Dec-17	$5,150,000	32,372 128,994	$159 $40	Single tenant fast food restaurant leased to Tim Hortons. Acquired for redevelopment with 107 unit residential building with main level commercial space. Proposed development is on an as-of-right basis. Zoned RC-4. Demolition costs at $28,000.00. Vendor: Zanax Properties Limited Purchaser: 3313022 Nova Scotia Limited