MORRISON HERSHFIELD

DESIGN BRIEF

West Memorial Building Rehabilitation

Ottawa, Ontario

Presented to:

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Principal, Moriyama & Teshima Architects

Kimberley Baldwin
Planner, Development Review, Central
Planning, Infrastructure and Economic Development
Department

Project No. 2170710 September 5, 2019

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APPENDICES

1. INTRODUCTION

1.1 Site Description and Proposed Development

This report describes the site servicing criteria and civil engineering calculations pertaining to the servicing of the 7 storey 5196m² West Memorial Building (henceforth referred to as WMB) located at 344 Wellington Street between Bay Street and Lyon Street. The WMB is being rehabilitated in order to serve as a temporary space for the Supreme Court of Canada and Courts Administration Service. The rehabilitated WMB has a proposed occupancy load of 2526.

Existing and proposed servicing and grading conditions are shown on Drawings C001 and C002 in **Appendix A**. Additionally, an erosion and sediment control plan is shown on Drawing C006.

The format of this report matches that of the development servicing study checklist found in Section 4 of the City of Ottawa's Servicing Study Guidelines for Development Applications. A copy of the checklist is provided in **Appendix H**.

The rehabilitation of the WMB includes the construction of a new northeast entrance above the existing municipal services (water, sanitary, storm) located along the east side of the building. As such, the municipal services will be replaced to ensure cost effective and resilient long-term site servicing, summarized as follows:

- Replacement of the 2-200mm diameter water services, from the building interface to the isolation valves located within the western most Lyon Street sidewalk.

- Replacement of the 375mm diameter storm service, from the building interface to the City maintenance hole located within the western southbound Lyon Street travel lane.

- Abandonment of the existing building sanitary maintenance hole in accordance with City standards. This involves installation of a new 375mm diameter PVC pipe through the existing maintenance hole, connected to the existing downstream 375mm diameter clay pipe with a concrete collar, followed by backfilling of the maintenance hole with compacted granular material, and demolition of the upper portion of the maintenance hole to the depth required to allow construction of the new northeast entrance above.

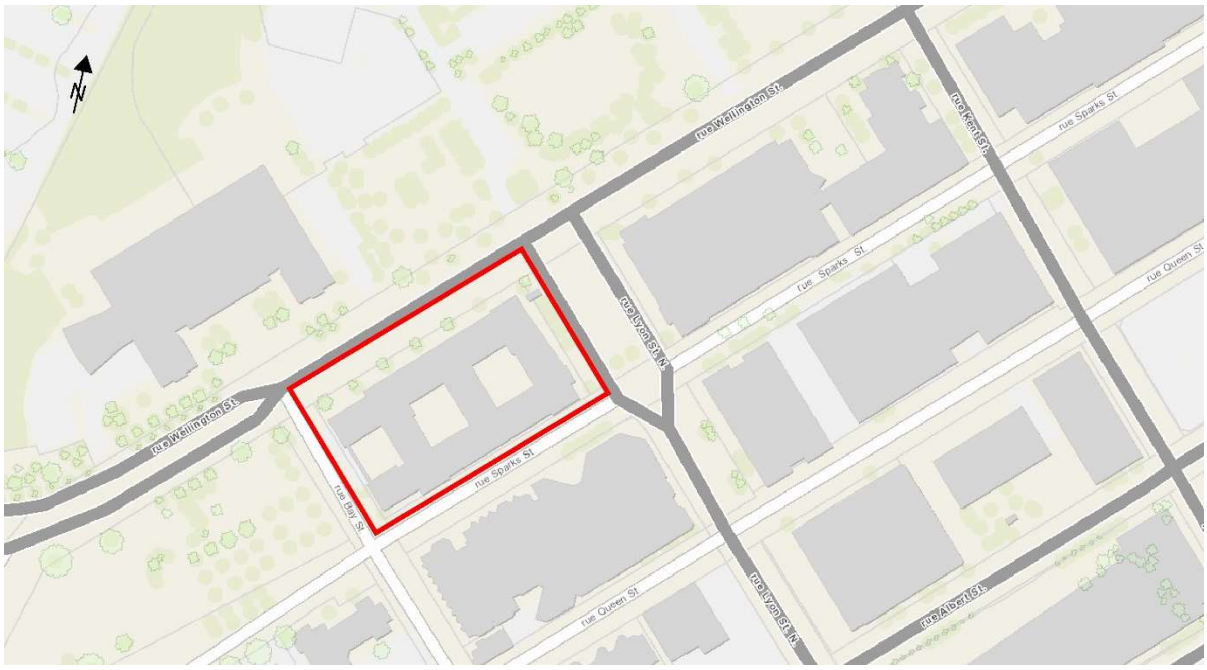
1.1.1 Statement of Objectives and Servicing Criteria

The objective of this Site Servicing and Stormwater Management Report is to show that the rehabilitated WMB meets the servicing requirements, while adhering to the limitations and recommendations of appropriate regulatory agencies.

1.1.2 Location Map and Plan

The proposed development of the site is illustrated in **Figure 1 – Key Plan**. A detailed site layout is provided within the drawings in **Appendix A**.

Figure 1: Key Plan



The site is currently zoned Mixed Use Downtown, Schedule 11, MD S11, and is subject to the Mature Neighborhoods Overlay.

The entirety of the current site is occupied by the existing building.

1.2 Background Documents

There are no relevant past studies or plans on the WMB.

1.3 Concept Level Master Grading Plan

The existing and proposed grading plan is shown in Drawing C002 in **Appendix A**. Grading around the exterior of the WMB will predominately match existing grades and will be tied into existing hardscaping elements.

1.3.1 Impacts on Private Services

There are no existing private services (septic systems and wells) on the site.

1.3.2 Development Phasing

The WMB will be rehabilitated in one phase.

1.4 Consultation and Permits

1.4.1 Pre-Consultation Meeting

Pre-consultation meetings were held with representatives of the City of Ottawa and the consultant design team on January 25th, 2019 and June 4th, 2019. No comments specific to applicable site servicing and stormwater management requirements were noted.

A full commentary summarizing the meetings and stormwater management requirements can be found in **Appendix B**.

1.4.2 Adherence to Zoning and Related Requirements

The rehabilitation works proposed for the WMB are in conformance with zoning and related requirements as indicated by the West Memorial Building Renovation Project, Planning & Regulatory Framework Report (Lloyd Phillips & Associates Ltd., April 30th, 2018). This report is included in **Appendix C**.

1.5 Available Existing Infrastructure

There is no anticipated need for rerouting any of the municipal utilities for the purpose of this project.

1.5.1 Water Services

The WMB is serviced from the 305mm diameter municipal watermain in Lyon Street North. There are 5 fire hydrants in the vicinity of the WMB; 2 on the north side of Wellington Street between Bay and Lyon, 1 on the east side of Bay Street adjacent to the WMB, 1 on the south side of Sparks Street, and 1 on the east side of Lyon Street North, south of Sparks. A fire department connection exists on the east side of the WMB, beneath the colonnade.

1.5.2 Sanitary Sewer

The existing 200mm diameter sanitary sewer service (installed at the time of building construction in 1954) exits the WMB at the east side, to the south of an underground service tunnel and connects to a maintenance hole approximately 3m outside of the building wall. From the maintenance hole, a 375mm diameter sanitary sewer (which is a former combined sewer) runs east and connects to the maintenance hole located within the northbound travel lanes of Lyon Street North. From the maintenance hole, a 600mm diameter sanitary sewer runs north and connects to the Interceptor Outfall Sewer (IOS) located beneath Wellington Street. The existing sanitary service is in poor condition and requires replacement.

A summary of the CCTV inspection of the sanitary service and sewers between the WMB and the IOS is provided in **Appendix G**.

1.5.3 Storm Sewer

The existing 375mm diameter storm service exits the WMB at the east side and connects to a maintenance hole located within the southbound travel lanes of Lyon Street North approximately 11m outside the building wall. This storm sewer drains north and discharges to the Ottawa River adjacent to the Cliff Heating and Cooling Plant.

A summary of the CCTV inspection of the storm service is provided in **Appendix G**.

1.5.4 Environmentally Significant Areas, Watercourses, and Municipal Drains

The development is not occurring in an environmentally significant area. The site drains to existing storm sewers, which in turn discharge to the Ottawa River. There are no watercourses or municipal drains that pass through the site.

2. GEOTECHNICAL STUDY

A materials management plan for the WMB Rehabilitation project was completed by Golder in July 2019 for the EllisDon Corporation. The plan focused on the management of soil and groundwater and did not provide site servicing specific recommendations. The following conclusions provided in the report are noted:

- **Soil:** The analyzed soil samples collected from two of the boreholes completed on north and west sides of the Site building satisfied the CCME Commercial Criteria for all parameters analyzed; however, two of analyzed soil samples collected to the east of the building and one from the west side of the building exceeded the CCME Commercial Criteria for PAHs or metals. Additionally, all but one of the soil samples collected from the perimeter of the Site building as part of the 2015 and 2016 investigations exceeded the CCME Commercial Criteria for PAHs, some of which exceeded for metals as well. Therefore, it is considered that all the fill material outside of the building footprint is considered to be impacted with PAHs above the CCME Commercial Criteria, and to a lesser extent, metals. The majority of the fill material also contains debris including brick and concrete.

  Based on the findings above, none of the fill material is considered suitable for on-Site (without the completion of a risk assessment) and as such all excavated soil will require off-Site disposal at an appropriate receiving site or licensed waste disposal facility. However, based on the concentrations of the some of the PAH parameters and the presence of debris in the fill, the excavated fill material will likely require off-Site disposal at a licensed waste disposal Site.

- **Groundwater:**

  - Best management practices to reduce suspended material in the groundwater will be required prior to discharge to either storm or sanitary sewer;

  - Treatment for suspended materials (sedimentation and filtration) will be required to reduce the TSS in groundwater prior to discharge to the sanitary sewer and potentially to storm if the TSS, manganese and phosphorus can be sufficiently reduced. However, it is possible that the treated groundwater will still contain concentrations of manganese in exceedance of the Storm Sewer Discharge Criteria. As such, an exemption for manganese should be obtained from the City prior to construction to permit discharge of manganese to the storm sewer. Based on the manganese concentration present, it is likely that an exception would be feasible, if not groundwater would require discharge to the sanitary sewer under a Sanitary Sewer Agreement. Testing at the time of construction should be undertaken to evaluate if the groundwater conditions continue to have elevated solids, manganese and phosphorus above the sewer discharge criteria.

3. DEVIATIONS

3.1 Deviations from Guidelines and Standards

No deviations are proposed.

3.2 Deviations from MSS

Not applicable.

4. WATER SERVICES

4.1 Design Criteria

The water services will be designed in accordance with the 2010 City of Ottawa Water Design Guidelines as well as MOE Design Guidelines for Drinking Water Systems.

The required domestic water demand for the WMB has been calculated based on the following parameters:

- Average per capita Daily Demand Flow Rate (ADD) - City of Ottawa Water Design Guidelines, Table 4.2 — 28 000 L/gross ha/day
- Maximum Daily Demand (MDD) – City of Ottawa Water Design Guidelines, Table 4.2 — 1.5 X ADD
- Maximum Hourly Demand- MOE Design Guidelines for Drinking-Water System, Table 3-3 — 1.8 X MDD

The domestic water demands are as follows:

- Average Daily Demand — 0.17 L/s
- Maximum Daily Demand — 0.25 L/s
- Maximum Hourly Demand — 0.45 L/s

The Fire Underwriters Survey (FUS) method was used to calculate the required fire flow.

- Fire Flow as per the Fire Underwriters Survey (FUS) Calculation for Fire-Resistive Building Construction — 147.36 L/s

It is understood from the Mechanical Engineer that the WMB will have a sprinkler system requiring a peak flow rate of 31.5 L/s (500 GPM).

Domestic and fire flow calculations are provided in **Appendix D**.

4.2 Adequacy of Supply for Domestic and Fire Flows

It has been determined that the existing dual 200mm diameter water services to the WMB from the 305mm diameter watermain in Lyon St North have sufficient capacity for the fire demands. The following tables summarize the boundary conditions and residual pressures for scenarios with one and both water services in operation. Calculations are provided in **Appendix D**.

Boundary Conditions	
Minimum HGL	107.4m
Maximum HGL	115.2m
MaxDay + FireFlow (FUS - 147 L/s)	109.1m
MaxDay + FireFlow (NBC - 63L/s)	109.6m

Two Services in Operation – Fire Flow	**FUS**	(Units)
Pressure at Roadside	55.6	(psi)
Length	30	(m)
Size	200	(mm)
Flow	0.0738	(m3/s)
Pressure Loss in each service	1.5	(psi)
Residual Pressure at Meter	54.10	(psi)
Min Allowable Pressure (Under Fire Flow) = 20 psi	OK	

Two Services in Operation – Max Hourly Demand	**Max Hourly Demand**	(Units)
Pressure at Roadside	53.2	(psi)
Length	30	(m)
Size	200	(mm)
Flow	0.0002	(m3/s)
Pressure Loss in each service	0.0	(psi)
Residual Pressure at Meter	53.21	(psi)
Min Allowable Pressure (Max Hourly Demand) = 40 psi	OK	

One Service in Operation – Fire Flow	**FUS**	**NFPA**	(Units)
Pressure at Roadside	55.6	56.3	(psi)
Length	30	30	(m)
Size	200	200	(mm)
Flow	0.1476	0.0636	(m3/s)
Pressure Loss	5.5	1.2	(psi)
Residual Pressure at Meter	50.13	55.18	(psi)
Min Allowable Pressure (Under Fire Flow) = 20 psi	OK	OK	

One Service in Operation – Max Hourly Demand	Max Hourly Demand	(Units)
Pressure at Roadside	53.2	(psi)
Length	30	(m)
Size	200	(mm)
Flow	0.0005	(m3/s)
Pressure Loss	0.0	(psi)
Residual Pressure at Meter	53.21	(psi)
Min Allowable Pressure (Max Hourly Demand) = 40 psi	OK	

4.3 Check of High Pressures

The site is within Pressure Zone 1W, which operates at a maximum head of 115m (City of Ottawa Water Master Plan, 2013). Since the WMB is at an elevation of 68.84m, the maximum pressure expected is 46 m (450 kPa). This falls within the guideline pressures provided in the City of Ottawa Water design guidelines.

4.4 Phasing Constraints

There are no constraints associated with phasing.

4.5 Reliability Requirements

Shut off valves for the water services will be provided approximately 7m from the water main.

4.6 Need for Pressure Zone Boundary Modification

There is no need for a pressure zone boundary modification.

4.7 Capability of Major Infrastructure to Supply Sufficient Water

The boundary conditions provided by the City and the calculations provided in **Appendix D** indicates that there is sufficient capacity in the municipal water distribution network.

4.8 Description of the Proposed Water Distribution Network

No alterations are proposed to the Water Distribution Network.

4.9 Off-Site Requirements

There is no need for off-site improvements.

4.10 Summary and Conclusions

The WMB will be serviced by dual 200mm diameter water services connected to the existing 305mm diameter watermain on Lyon Street North.

5. SANITARY SERVICING

5.1 Background

The sanitary service will be designed in accordance with the 2012 Ottawa City Sewer Design Guidelines. The WMB is served by a sanitary sewer network discharging to the Interceptor Outfall Sewer (IOS) within Wellington Street.

5.2 Consistency with Higher Level Studies

There are no relevant higher level studies.

5.3 Review of Ground Water and Soil Conditions

Refer to **Section 2**.

5.4 Existing Sanitary Infrastructure

The existing 200mm diameter sanitary sewer service exits the WMB at the east side and connects to a maintenance hole approximately 3m outside of the building wall. From the maintenance hole, a 375mm diameter sanitary sewer (which is a former combined sewer) runs east and connects to the maintenance hole installed within the northbound travel lanes of Lyon Street North. From the maintenance hole, a 600mm diameter sanitary sewer runs north and connects to the Interceptor Outfall Sewer (IOS) located beneath Wellington Street. A summary of the CCTV inspection of the sanitary service and sewers between the WMB and the IOS is provided in **Appendix G**.

As per the recommendations provided in the CCTV inspection memo provided in **Appendix G**, it is suggested that the City consider rehabilitating the 375mm diameter clay pipe sanitary sewer by cured-in-place pipe (CIPP) lining as part of the WMB project. A cost sharing agreement between the City of Ottawa and PSPC would facilitate this complete rehabilitation of the sanitary service. As the sanitary service from the West Memorial Building to the building sanitary maintenance hole requires replacement due to poor condition, it is recommended that the adjacent clay pipe sanitary sewer be rehabilitated at the same time. Although the clay pipe has nearly reached the end of its expected service life, the sewer does not show signs of significant deformation. This makes CIPP lining a suitable and cost effective rehabilitation method. The existing service manhole and/or the excavation required to replace the building sanitary service could be used as one of the access pits required to perform the lining. It is also recommended that the joint between the outlet sanitary pipe and the sanitary maintenance hole located within the northbound travel lanes of Lyon Street be repaired as identified in the CCTV inspection memo.

The building sanitary maintenance hole will be demolished as part of the WMB project. It is proposed that a clean out for the sanitary service be provided from within the building mechanical room in lieu.

5.5 Proposed Servicing and Calculations

The WMB will require a new 375mm diameter sanitary service due to poor condition of the existing service (refer to **Appendix G**). The new service will be installed along the same alignment and at the same depth as the existing service.

The WMB will produce a sanitary flow of 13.24 L/s as determined by the Mechanical engineer. Excerpts from the Mechanical sections of the Schematic Design and Design Development reports are provided in **Appendix E**. The proposed service between the building and the sanitary maintenance hole is 375mm in diameter with a slope of 2%, which has a maximum capacity of 248 L/s.

5.6 Description of the Proposed Sewer Network

No changes to the existing sewer network are proposed.

5.7 Environmental Constraints

No environmental constraints have been identified that impact the sanitary servicing design.

5.8 Pumping Requirements

Pumping requirements are minimal and are limited to sanitary discharge from the basement levels of the WMB. The Mechanical engineer will provide the required pumping infrastructure inside the building.

5.9 Forcemains

No new forcemains are required for this development.

5.10 Emergency Overflows from Sanitary Pumping Stations

No pumping stations are required as part of this project.

5.11 Special Considerations

No special considerations are noted.

5.12 Summary and Conclusions

In conclusion the proposed development meets all required sanitary servicing constraints and associated design criteria/requirements.

6. STORM SERVICING AND STORMWATER MANAGEMENT

6.1 Background

Through consultation with the City of Ottawa (provided in **Appendix B**), it was confirmed that the WMB project is not required to provide stormwater quantity control. Stormwater quality treatment will be provided for runoff from the loading dock through installation of an oil and grit separator.

It was also confirmed that it is acceptable to the City for a second storm service to be installed from the WMB, connecting to the existing Bay Street storm sewer. The reason for this second service is to avoid draining the entire building roof area to one side of the building.

6.2 Storm Servicing Strategy including Analysis of Existing Infrastructure

Currently runoff from the WMB is drained by a storm service located on the east side of the building to a storm sewer within Lyon Street. One of the mandates of the project was to maximize the extent of gravity drainage of the building. As such, it was determined that the installation of a second new storm service from the west side of the building connecting to the Bay Street storm sewer would be beneficial. The Bay Street storm sewer is approximately 3m deeper than the Lyon Street storm sewer.

6.3 Proposed Storm Servicing

6.3.1 Design Criteria (Minor and Major Systems)

New 375mm diameter storm services will be installed from the building interface to maintenance holes located within Lyon Street and Bay Street. Design calculations for the services are provided in **Appendix F**.

6.3.2 Stormwater Quantity Control

As per the correspondence included in **Appendix B**, stormwater quantity control is not required.

6.3.2.1 Runoff Coefficient and Peak Flows

A runoff coefficient of 0.9 was applied for the WMB. As per correspondence included in **Appendix F**, approximately 60% of the building will drain to the Bay Street service, and the remaining 40% will drain to the Lyon Street service. Peak flows to each service for a 5-year return period event were determined to be 125L/s and 83L/s, respectively.

6.3.2.2 Stormwater Management Concept

Not applicable.

6.3.2.3 Impact on Existing Stormwater Infrastructure

There is no net increase in flows from the WMB.

6.3.3 Stormwater Quality Control

Stormwater quality control will be provided for the loading dock area through the installation of an oil and grit separator.

6.3.4 Setback from Sewage Disposal Systems, Water Courses, and Hazard Lands

There are no adjacent or on-site private sewage disposal systems, watercourses or hazard lands that create the need for setback.

6.3.5 Pre-Consultation with the Ontario Ministry of the Environment and Conservation and Parks, and Conservation Authority

As the WMB is being rehabilitated and not redeveloped, and there is no potential impacts on a watercourse, the conservation authority was not consulted. Additionally, as there is no new public sewer there is no need for regulatory approval by the MOECP.

6.3.6 Consistency with Higher Level Studies

Not applicable.

6.3.7 Watercourses

There are no watercourses on the project site.

6.3.8 Diversion of Drainage Catchment Areas

No diversion of drainage catchment areas is proposed. The existing WMB catchment area will be split to drain to storm sewers located within Bay Street and Lyon Street.

6.3.9 Minor and Major Systems

The minor and major systems which receive runoff from the WMB drain to the Ottawa River.

6.3.10 Downstream Capacity where Quantity Control is Not Proposed

As per correspondence included in **Appendix B**, the City confirmed that stormwater quantity control is not required as there no issues with surcharging in the downstream sewers.

6.3.11 Impacts to Receiving Watercourses

Impacts to the receiving watercourses are anticipated to remain the same as there will be no net increase in peak flows.

6.3.12 Municipal Drains and Related Approvals

There are no municipal drains on the site or associated with the drainage from the site.

6.3.13 Means of Conveyance and Storage Capacity

The means of flow conveyance are described in **Section 6.3.1**. Storage capacity is not required.

6.3.14 100-Year Flood Levels and Major Flow Routing

The WMB is higher than the areas of the Ottawa River flood plain. Major flow routing is along Sparks, Bay, and Lyon to Wellington Street, and flows westerly along Wellington Street to the Ottawa River.

6.4 Erosion and Sediment Control

As described in the servicing guidelines, an erosion and sediment control plan is required for implementation during the construction phase. To minimize the migration of sediments items such as silt fencing and geotextile membranes for catch-basins downstream of the site and around the building are to be installed to capture and retain sediment. Additionally, all stockpiles are to be covered and located away from watercourses and exposed areas vegetated as soon as feasible.

During construction, all erosion control features shall be maintained and repaired as necessary and adjacent roadways kept free of construction debris and sediment this responsibility falls under the prevue of the Contractor.

6.5 Identification of Floodplains

Refer to **Section 6.3.14**.

6.6 Fill Constraints

No significant fill is proposed.

7. CONCLUSIONS

In conclusion the proposed servicing of the re-development of the West Memorial Building to a temporary Supreme Court of Canada building meets all servicing requirements of the City of Ottawa, and associated design criteria/requirements.

The water service and valves to the building will be replaced on Lyon Street to extend the service life of the water service. Pumping of stormwater from the roof will be eliminated. The storm sewer service will be split between two connections to City storm sewers on Bay Street and Lyon Street. The sanitary sewer service will be rehabilitated, and it is recommended that this rehabilitation be extended to the City manhole on Lyon Street.

Sincerely,

Morrison Hershfield Limited

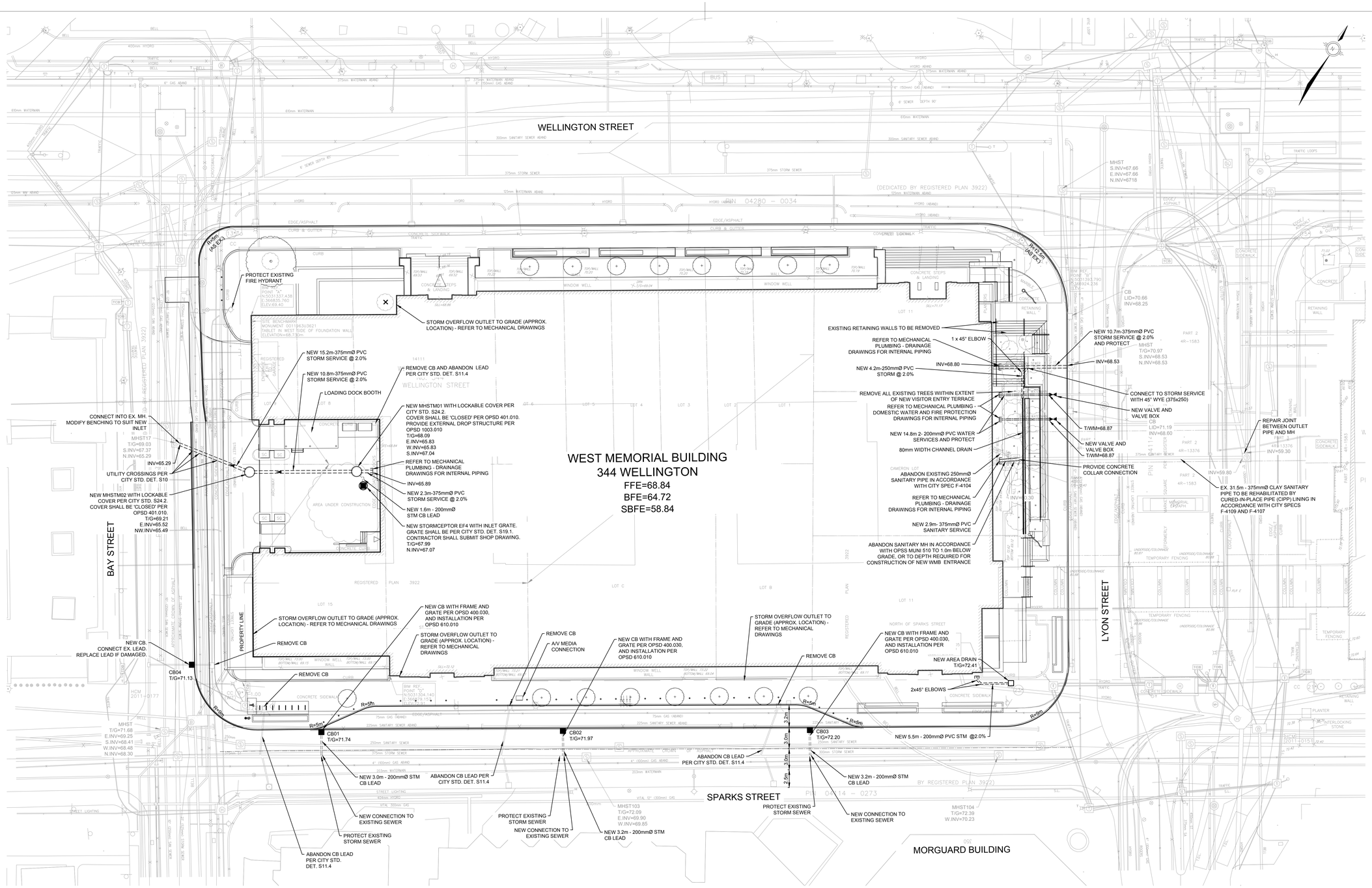
Bryan Kipp, P.Eng.

Municipal Engineer

Eric Emery, P.Eng., MBA

Infrastructure Department Manager

APPENDIX A: Site Servicing, Grading, and Erosion and Sediment Control Plans



NOTES:

GENERAL

1. COORDINATES ARE IN MTM ZONE 9 (76°30' WEST LONGITUDE) NAD-83 (ORIGINAL)
2. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING.
3. CONTRACTOR TO VERIFY ALL EXISTING UTILITY ELEVATIONS AT CONNECTION AND CROSSING LOCATIONS PRIOR TO CONSTRUCTION AND ADVISE THE ENGINEER OF ANY DISCREPANCIES.
4. UNLESS DIRECTED OTHERWISE ANY DAMAGED ASPHALT OR CURB (REGARDLESS OF WHETHER WITHIN OR EXTERNAL TO THE SITE) SHALL BE REINSTATED IN ACCORDANCE WITH CITY STD. DET. R10 AND S1.
5. UNLESS DIRECTED OTHERWISE THE CONTRACTOR SHALL REINSTATE ALL SIGNS, LIGHTING AND OTHER STREET FURNITURE DISTURBED BY THE WORK.
6. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT TRAFFIC MANAGEMENT PLANS FOR WORK IN RIGHT OF WAY IN ACCORDANCE WITH OTM BOOK 7.

SEWERS

7. ALL STORM SEWERS, SANITARY SEWERS AND CATCH BASINS LEADS SHALL BE PVC DR 35 UNLESS OTHERWISE SPECIFIED.
8. REFER TO DETAIL 1 FOR SEWER INSTALLATION DETAIL.
9. MAINTENANCE HOLES AND CATCH BASIN MAINTENANCE HOLES ON STORM SEWERS LESS THAN 900mm DIAMETER SHALL BE CONSTRUCTED WITH A 300mm SUMP. BENCHING SHALL BE INSTALLED IN MAINTENANCE HOLES ON STORM SEWERS 900mm AND ABOVE.
10. STORM SEWER MAINTENANCE HOLE COVERS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL S24.1 ON FRAMES TO DETAIL S25.
11. CCTV INSPECTION OF ALL COMPLETED SEWERS SHALL BE PERFORMED IN ACCORDANCE WITH OPSS 409. SEWERS SHALL NOT BE PUT INTO SERVICE UNTIL THIS INSPECTION HAS BEEN SUCCESSFULLY COMPLETED AS AGREED BY THE OWNER'S REPRESENTATIVE. WHERE DEFICIENCIES ARE FOUND, THE CONTRACTOR SHALL REPEAT THE CCTV INSPECTION AT NO ADDITIONAL COST TO THE CONTRACT.
12. CONTRACTOR SHALL MAINTAIN EXISTING SEWER FLOWS DURING CONSTRUCTION IN ACCORDANCE WITH CITY OF OTTAWA SPECIFICATIONS.
13. ALL MAINTENANCE HOLES, CATCHBASINS AND CLEANOUTS SHALL BE ADJUSTED TO EXISTING GRADE.

WATERMAINS

14. ALL WATERMAIN MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE 2017 EDITION OF THE CITY OF OTTAWA STANDARD SPECIFICATIONS AND STANDARD DRAWINGS. PVC PIPE TO BE CLASS 150 DR18 TO LATEST EDITION OF A.W.W.A. SPECIFICATION C900 AND CSA B137.3 LATEST AMENDMENT WITH GASKETED BELL AND SPIGOT COUPLINGS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A WATER PERMIT AS REQUIRED FROM THE CITY OF OTTAWA, AND COMPLYING WITH ALL CITY OF OTTAWA REQUIREMENTS. THE CITY MAY REQUIRE THAT CERTAIN ACTIVITIES (E.G. VALVE OPERATION, CONNECTION OF NEW WATER SERVICE TO EXISTING WATERMAIN, DISINFECTION) BE CARRIED OUT ONLY BY CITY FORCES.
16. ALL VALVES 300mm DIAMETER AND SMALLER SHALL INCLUDE A VALVE BOX AS PER W24.
17. THE NEW WATERMAIN IS TO BE INSTALLED WITH A MINIMUM OF 2.4m COVER (INCLUDING HYDRANT LEAD). WHERE 2.4m COVER IS NOT POSSIBLE, PROVIDE INSULATION IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAILS W22 & W23.
18. THRUST RESTRAINT SHALL BE PROVIDED BY BOTH RESTRAINING/RETAINING RINGS AND THRUST BLOCKS AT ALL DEAD END CAPS, PLUGS, VALVES, BENDS AND REDUCERS AS PER CITY OF OTTAWA STANDARD DETAILS W25.3, W25.4, W25.5 AND W25.6. ALL TEMPORARY THRUST RESTRAINTS ARE THE RESPONSIBILITY OF THE CONTRACTOR
19. TRACER WIRE SHALL BE PROVIDED FOR ALL NEW PVC WATERMAINS IN ACCORDANCE WITH THE SPECIFICATIONS AND CITY OF OTTAWA STANDARD DETAIL W36.
20. CATHODIC PROTECTION SHALL BE PROVIDED FOR ALL NEW WATERMAINS IN ACCORDANCE WITH THE SPECIFICATIONS AND CITY OF OTTAWA STANDARD DETAILS W39, W40, W41, W42 AND W47. CATHODIC PROTECTION OF EXISTING WATERMAINS SHALL ALSO BE PROVIDED AT CONNECTIONS BETWEEN EXISTING AND NEW WATERMAINS.
21. ADJUST ALL VALVE CHAMBERS, VALVE BOXES AND HYDRANTS TO NEW GRADE.

UTILITY NOTE

22. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUPPORTING AND PROTECTING ANY EXISTING UTILITIES, AS REQUIRED, IN ACCORDANCE WITH THE UTILITY OWNERS' REQUIREMENTS. CONTRACTOR IS REQUIRED TO OBTAIN LOCATES, IN ADVANCE OF EXCAVATION WORK, AND FORWARD COPIES OF THE LOCATES TO THE CONSULTANT AND THE OWNER PRIOR TO EXCAVATION. HAND EXCAVATION IS REQUIRED PER UTILITY OWNERS REQUIREMENTS.
23. ALL CROSSING OF EX. UTILITIES TO BE IN ACCORDANCE WITH CITY STD. DET. S10

LEGEND

NEW SANITARY SEWER	EXISTING SANITARY SEWER
NEW STORM SEWER	EXISTING STORM SEWER
NEW WATERMAIN	EXISTING WATERMAIN
NEW STORM LEAD	EXISTING MAINTENANCE HOLE
NEW STORM MAINTENANCE HOLE	EXISTING CATCH BASIN
NEW STORM HANDHOLE	EXISTING HYDRO
NEW CATCH BASIN	EXISTING BELL
NEW CHANNEL DRAIN	EXISTING TRAFFIC
NEW OGS	EXISTING GAS
NEW CAP	
NEW AREA DRAIN	

SCALE 1:200
HORIZONTAL
0m 4 8

0 10 20mm 40 60 80 100 120 140 160 180 200mm

Canada

Public Works and Government Services Canada
Travaux Publics et Services gouvernementaux Canada

Real Property Branch
Direction générale des biens immobiliers

architect / architecte

REGENERATE 344
Moriyama & Teshima Architects + Kasian Architecture in Joint Venture

MORRISON HERSHFIELD

LICENSED PROFESSIONAL ENGINEER E. A. EMERY PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER B. J. F. KIPP 100198757 PROVINCE OF ONTARIO

NOT FOR CONSTRUCTION

Contractor to verify all dimensions & conditions on site and immediately notify the departmental representative of all discrepancies.

revisions	description	date
0	ISSUED FOR CITY OF OTTAWA SITE COORDINATION	2019/09/05

A detail no. no. du detail
B location drawing no. sur dessin no.
C drawing no. dessin no.

project / projet

WEST MEMORIAL BUILDING REHABILITATION PROJECT

344 WELLINGTON, OTTAWA, ON

drawing / dessin

SITE SERVICING PLAN

Designed By	BK	Conçu par
Date	2018/12/14	(yyyy/mm/dd)
Drawn By	NI	Dessiné par
Date	2018/12/14	(yyyy/mm/dd)
Reviewed By	EE	Examiné par
Date	2018/12/14	(yyyy/mm/dd)
Approved By	Approver	Approuvé par
Date	2018/12/14	(yyyy/mm/dd)
Tender	Tender Project Manager	Soumission
Project Manager		Administrateur de projets
Project no.		No. du projet

R.086471.405

Drawing no. / No. du dessin

C-001

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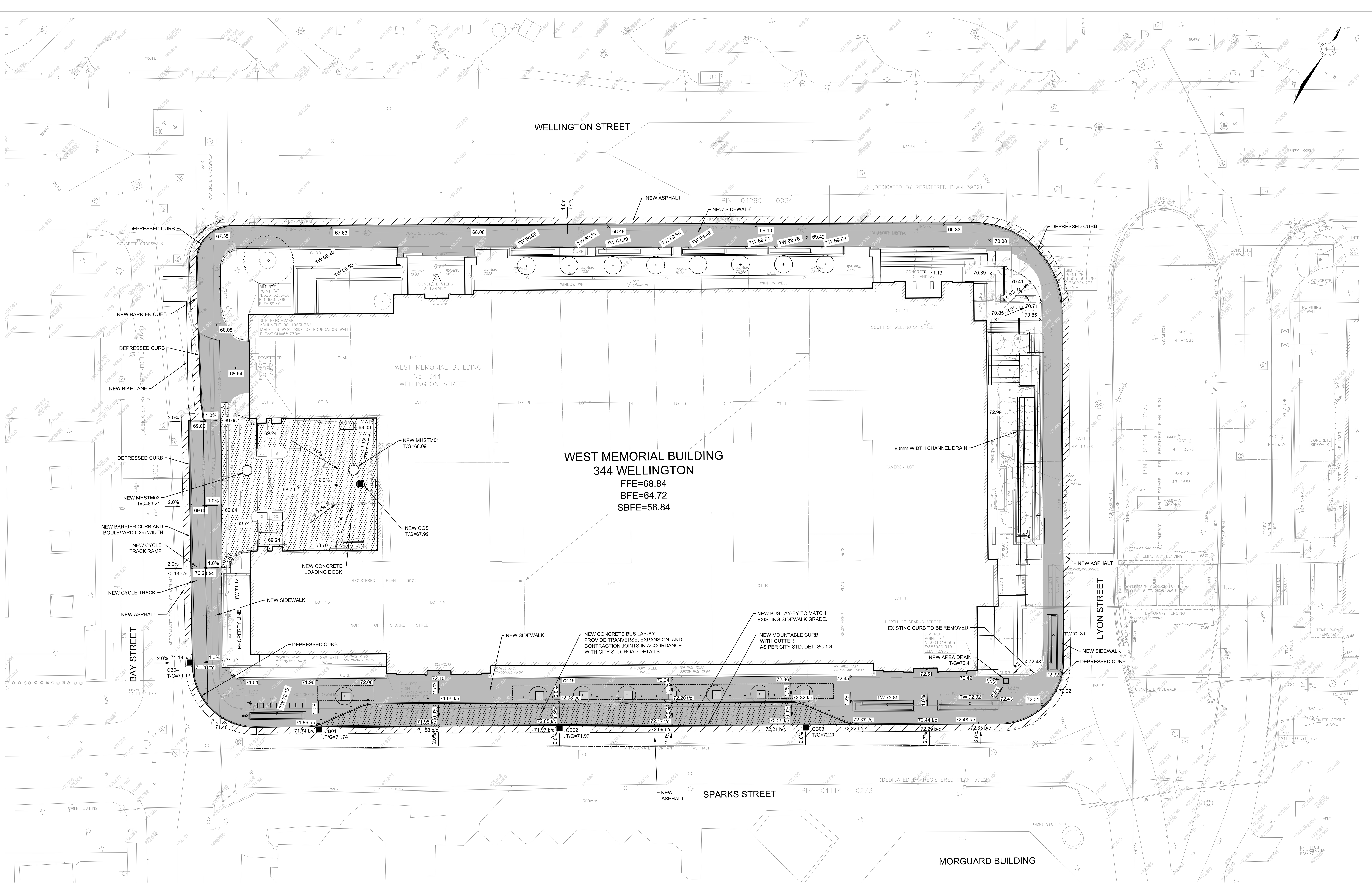
PWGSC A0 (1189x841)



NOTES:
GENERAL

1. ALL ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS.
3. REINSTATE ALL DISTURBED/DAMAGED AREAS TO THEIR ORIGINAL CONDITION.
4. PROVIDE POSITIVE DRAINAGE, MATCHING EXISTING OVERALL DRAINAGE PATTERN INDICATED.
5. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA AND/OR ONTARIO PROVINCIAL STANDARDS.
6. ALL AREAS SHALL DRAIN AT A MINIMUM OF 1%. ANY DISCREPANCIES PREVENTING THIS SHALL BE REPORTED TO THE ENGINEER PRIOR TO CONTINUING WORK.
7. CONCRETE SIDEWALKS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DRAWING SC1.4 AND SC4.
8. CONCRETE BARRIER CURBS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DRAWING SC1.1 OR SC2, WHERE INDICATED.
9. CONCRETE MOUNTABLE CURB WITH GUTTER SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DRAWING SC1.3.
10. CYCLE TRACK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DRAWING SC21.
11. PROVIDE 10H:1V FROST TAPER IN SUBBASE AT ALL TRANSITIONS BETWEEN PAVEMENT STRUCTURES.

UTILITY NOTE

12. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUPPORTING AND PROTECTING ANY EXISTING UTILITIES, AS REQUIRED, IN ACCORDANCE WITH THE UTILITY OWNERS' REQUIREMENTS. CONTRACTOR IS REQUIRED TO OBTAIN LOCATES, IN ADVANCE OF EXCAVATION WORK, AND FORWARD COPIES OF THE LOCATES TO THE CONSULTANT AND THE OWNER PRIOR TO EXCAVATION. HAND EXCAVATION IS REQUIRED PER UTILITY OWNERS REQUIREMENTS.

LEGEND

Symbol	Description
(large circle)	NEW STORM MAINTENANCE HOLE
(small circle)	NEW STORM HANDHOLE
(filled square)	NEW CATCH BASIN
(dashed bar)	NEW CHANNEL DRAIN
(filled circle)	NEW OGS
(open square)	NEW AREA DRAIN
(grey fill)	NEW SIDEWALK
(dotted fill)	NEW CONCRETE
(hatched fill)	NEW ASPHALT
x 67.63	NEW SPOT ELEVATION
2.0%	NEW SLOPE
x TW 69.35	NEW GRADE TOP OF WALL
x 72.10 b/c	NEW GRADE BOTTOM OF CURB
x 72.25 t/c	NEW GRADE TOP OF CURB
+91.078	EXISTING GROUND ELEVATION

SCALE 1:200
HORIZONTAL
0m 4 8

Canada

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada
Real Property Branch / Direction générale des biens immobiliers

architect / architecte

REGENERATE 344
Moriyama & Teshima Architects + Kasian Architecture in Joint Venture

MORRISON HERSHFIELD

LICENSED PROFESSIONAL ENGINEER E. A. EMERY Sept 5 2019 PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER B. J. F. KIPP 100198759 Sept. 5, 2019 PROVINCE OF ONTARIO

NOT FOR CONSTRUCTION

Contractor to verify all dimensions & conditions on site and immediately notify the departmental representative of all discrepancies.

revisions	description	date
0	ISSUED FOR CITY OF OTTAWA SITE COORDINATION	2019/09/05

A detail no. / no. du detail
B location drawing no. / sur dessin no.
C drawing no. / dessin no.

project / projet

WEST MEMORIAL BUILDING REHABILITATION PROJECT

344 WELLINGTON, OTTAWA, ON

drawing / dessin

GRADING PLAN

Designed By / Date	BK 2018/12/14	Conçu par (yyyy/mm/dd)
Drawn By / Date	NI 2018/12/14	Dessiné par (yyyy/mm/dd)
Reviewed By / Date	EE 2018/12/14	Examiné par (yyyy/mm/dd)
Approved By / Date	Approver 2018/12/14	Approuvé par (yyyy/mm/dd)
Tender / Project Manager	Tender Project Manager	Soumission / Administrateur de projets

Project no. / No. du projet: R.086471.405

Drawing no. / No. du dessin: C-002

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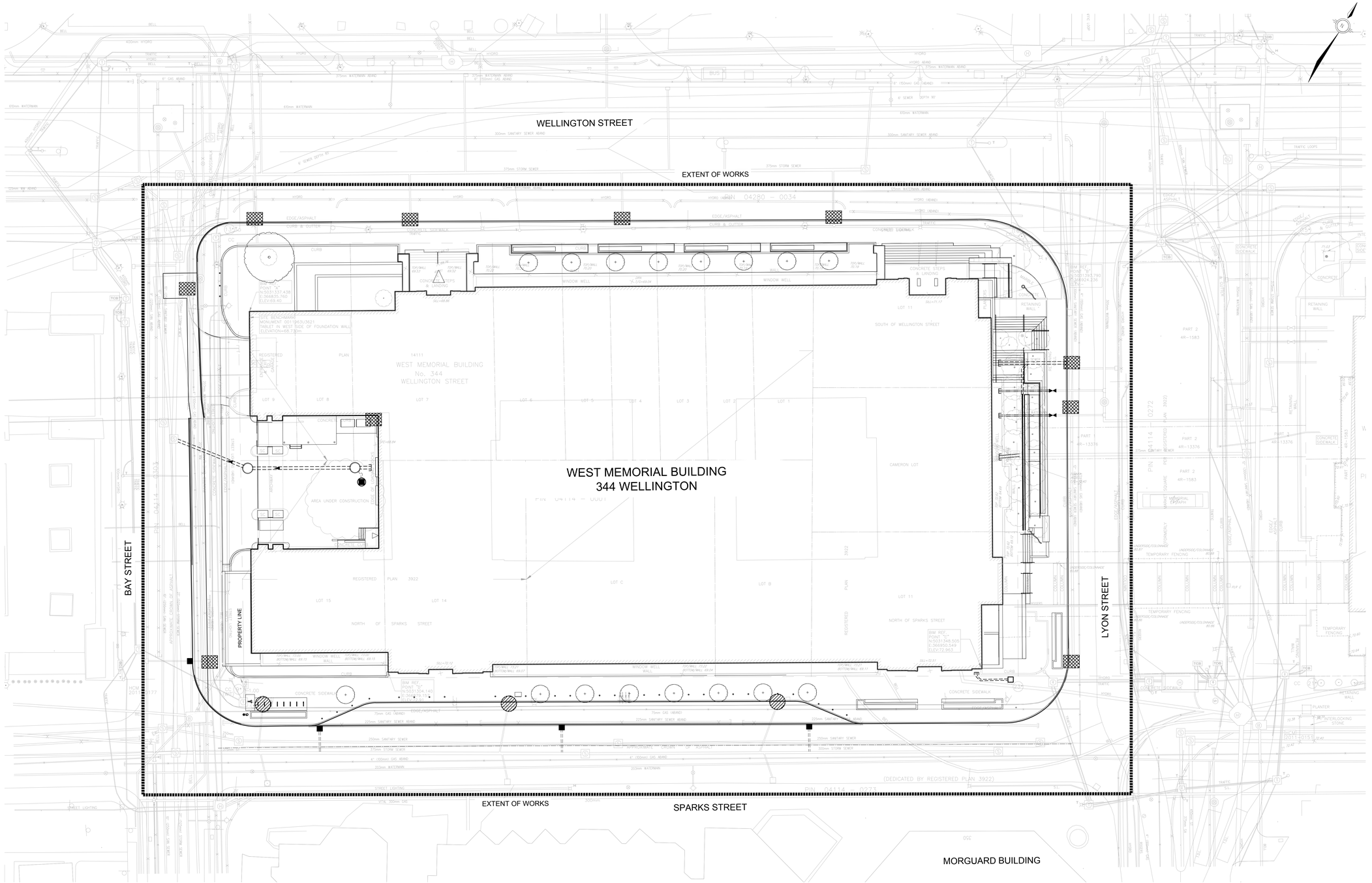

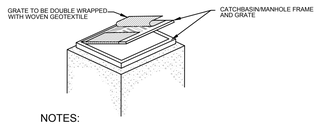

NOTES:

1) TO BE USED UNDER APPROPRIATE DRAINAGE CIRCUMSTANCES, DURING THE CONSTRUCTION PERIOD.
2) WOVEN GEOTEXTILE TO HAVE A MINIMUM EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm.
3) WOVEN GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERE WITH DRAINAGE.
4) ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

CATCH BASIN /MANHOLE PROTECTION DETAIL
N.T.S.

EROSION AND SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING FILTER CLOTH UNDER THE GRATES OF CATCHBASINS AND MANHOLES, AND INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY TO BE PAID FOR AT THE CONTRACTOR'S EXPENSE.
2. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IMPLEMENTED PRIOR TO CONSTRUCTION AND REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED AND APPROVAL IS GRANTED BY THE ENGINEER TO REMOVE MEASURES.
3. REGULAR INSPECTION AND MAINTENANCE OF THE EROSION AND SEDIMENT MEASURES SHALL BE UNDERTAKEN. THE IMPLEMENTATION AND ADJUSTMENT AND/OR CORRECTIVE MAINTENANCE OF THE EROSION AND SEDIMENT MEASURES IS AN INTEGRAL PART OF THE PLAN AND MUST BE PERFORMED.
4. GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STRUCTURE FRAME AND COVER FOR ALL MANHOLES, CATCHBASINS, AND CATCHBASIN MANHOLES RECEIVING RUNOFF FROM THE CONSTRUCTION AREA.
5. ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED ON A REGULAR BASIS AND FOLLOWING STORM EVENTS FOR INTEGRITY AND FUNCTION BY THE CONTRACTOR. ANY REQUIRED REPAIRS TO EROSION AND SEDIMENT CONTROL MEASURES TO BE COMPLETED WITHIN 24 HOURS
6. ALL SEDIMENT CONTROL MEASURES ARE TO BE MAINTAINED BY THE CONTRACTOR AS NECESSARY. SEDIMENTS REMOVED FROM THE CONTROL MEASURES (SILT FENCES, CATCHBASIN SEDIMENT CONTROLS, ETC.) SHALL BE DISPOSED OF IN ACCORDANCE WITH MOECC GUIDELINES
7. IF NECESSARY, ADDITIONAL SEDIMENT CONTROL MEASURES MAY BE INSTALLED AS DIRECTED BY THE ENGINEER OR THE RIDEAU VALLEY CONSERVATION AUTHORITY
8. SEDIMENT CAPTURE FILTER SOCKS SHALL BE INLETSOXX BY FILTREX CANADA OR APPROVED EQUIVALENT, SHALL FULLY SURROUND THE INLET BEING PROTECTED WITH ONE FOOT OF OVERLAP, SHALL BE ANCHORED TO THE GROUND, AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
9. ONCE NEW CATCH BASINS ARE INSTALLED, GEOTEXTILE FILTER FABRIC SHALL BE PLACED AS PER NOTE 4, AND SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION ACTIVITIES.

LEGEND

- GEOTEXTILE FILTER FABRIC FOR EXISTING CATCH BASINS
- SEDIMENT CAPTURE FILTER SOCKS AS PER NOTE 8, FOR EXISTING CURB-INLET CATCH BASINS
- NEW CATCH BASINS (SEE NOTE 9)

SCALE 1:200
HORIZONTAL
0m 4 8

0 10 20mm 40 60 80 100 120 140 160 180 200mm

Canada

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada
Real Property Branch / Direction générale des biens immobiliers

architect / architecte

REGENERATE 344
Moriyama & Teshima Architects + Kasian Architecture in Joint Venture

MORRISON HERSHFIELD

LICENCED PROFESSIONAL ENGINEER E. A. EMERY PROVINCE OF ONTARIO

LICENCED PROFESSIONAL ENGINEER B. J. F. KIPP 100198750 Sept. 5, 2019 PROVINCE OF ONTARIO

NOT FOR CONSTRUCTION

Contractor to verify all dimensions & conditions on site and immediately notify the departmental representative of all discrepancies.

revisions	description	date
0	ISSUED FOR CITY OF OTTAWA SITE COORDINATION	2019/09/05

A detail no. no. du detail
B location drawing no. sur dessin no.
C drawing no. dessin no.

project / projet
WEST MEMORIAL BUILDING REHABILITATION PROJECT

344 WELLINGTON, OTTAWA, ON

drawing / dessin
EROSION AND SEDIMENT CONTROL PLAN

Designed By	BK	Conçu par
Date	2018/12/14	(yyyy/mm/dd)
Drawn By	NI	Dessiné par
Date	2018/12/14	(yyyy/mm/dd)
Reviewed By	EE	Examiné par
Date	2018/12/14	(yyyy/mm/dd)
Approved By	Approver	Approuvé par
Date	2018/12/14	(yyyy/mm/dd)
Tender	Tender Project Manager	Soumission
Project Manager		Administrateur de projets
Project no.		No. du projet

R.086471.405

Drawing no. / No. du dessin
C-006

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APPENDIX B: City of Ottawa Specific Requirements Correspondence

AGENDA

Pre-Application Consultation Meeting
Subject Property: 344 Wellington Street (West Memorial Building)
Meeting Date: January 25, 2019, 1:30-3:30pm
Location: 110 Laurier, 4th Floor, Room 4103E
City's Pre-Consult File Number: PC2018-0301

1.	**Design Presentation** a. Architecture, Site, Landscape & Civil, Staging
2.	**City of Ottawa projects:** a. Bay Street Cycling Facility Project b. Intersection of Lyon Street and Wellington Street c. Lyon street d. Resurfacing of Wellington Street e. Sparks Street Public Realm
3.	**Next steps:** a. Site design process b. City of Ottawa Process (Site Plan, MOU) c. Coordination of design with CoO/NCC/FHBRO
4.	**Other matters**

Internal Invitees:
Planning and Infrastructure:
Planner (File Lead) – Kimberley Baldwin
Project Manager, Infrastructure – Shawn Wessel
Planning Co-op Student – Caleb Miller
Planner, Sparks Street Public Realm Plan - David Atkinson
Program Manager, Right of Way - Linda Carkner
Agreement Coordinator, Right of Way – Peter Grunstra

Transportation Services:
Traffic Assessment, Abdul Waheed

Public Works
Parking Studies, Claude Marchand
Parking Studies, Greg Saarinen

ISD:
Project Manager, Design and Construction (Bay Street Cycling Project) - Justin Kurosky
Infrastructure Projects (Works at Corner of Lyon and Wellington) – Dale Stevenson
Design and Construction, Bruce Kenny

External Invitees:
MTArch - Emmanuelle van Rutten
MTArch - Carolyn Gillespie
PWGSC - Abderrahim Benjelloun
PWGSC – Susan Cook
PGWSC – Susan Coles
PWGSC - Michel Letourneau
PWGSC - Carolyn Walsh
NCC – Christopher Hoyt
dhaley@ellisdon.com
gplourde@ellisdon.com
Lloyd Philips and Assoc. - Lloyd Phillips
Lloyd Philips and Assoc. - Jessica D'Aoust
Morrison Hershfield - Bryan Kipp

Other city contacts not in attendance:
Urban Design – Christopher Moise
Heritage - Mackenzie Kimm
Project Manager, Transportation – Wally Dubyk
Phil Edens, Traffic Assessment
Wellington Road Resurfacing – Jacek Taracha

Pre-Application Consultation Meeting Notes

Property Address: 344 Wellington (West Memorial Building)
Planning File No: D07-01-18-0301
Date: January 25, 2019, 1:30-3:30pm
Location: 110 Laurier, 4th Floor, Room 4103E

Attendees:

City Staff

Planning and Infrastructure:
Planner (File Lead) – Kimberley Baldwin
Project Manager, Infrastructure – Shawn Wessel
Planning Co-op Student – Caleb Miller
Planner, Sparks Street Public Realm Plan – David Atkinson
Agreement Coordinator, Right of Way – Peter Grunstra

Transportation Services:
Traffic Assessment, Abdul Waheed
Traffic Assessment – Phil Edens

Public Works:
Parking Studies, Claude Marchand
Parking Studies, Greg Saarinen

ISD:
Project Manager, Design and Construction (Bay Street Cycling Project) – Justin Kurosky
Infrastructure Projects (Works at Corner of Lyon and Wellington) –outgoing Project Manager – Dale Stevenson
Infrastructure Projects (Works at Corner of Lyon and Wellington) – incoming Project Manager– Kyle Delaney

External Invitees

Project Team
MTArch – Emmanuelle van Rutten
MTArch – Carolyn Gillespie
PSPC – Abderrahim Benjelloun
PSPC – Susan Cook
PSPC – Michel Letourneau
PSPC – Carolyn Walsh
Lashley and Associates – Ric Carreon
Ellisdon – Guy Plourde
Lloyd Philips and Assoc. – Jessica D'Aoust
Morrison Hershfield – Bryan Kipp

NCC
Christopher Hoyt

Regrets:

City Staff

Urban Design – Christopher Moise
Heritage – Mackenzie Kimm
Project Manager, Transportation – Wally Dubyk
Infrastructure Projects, Wellington Road Resurfacing – Jacek Taracha
Program Manager, Right of Way – Linda Carkner

Meeting notes:

Opening & attendee introduction

- Introduction of meeting attendees

Design Presentation:

Overview of proposal: Movement of the Supreme Court of Canada (SCCB) to 344 Wellington [West Memorial Building (WMB)] temporarily while SCCB undergoes renovations.

Projected timeline:

2016 – 2018 | WMB Asset Integrity Project – Phase 1
2018 – 2023 | Rehabilitate WMB and Fit up Interim Accomodation for SCC – Phase 2
2023 | SCCB Move to WMB
2019 – 2028 | Rehabilitate and Re-fit SCCB – Phase 3
2028 | SCC Returns to SCCB
2026 – 2030 I WMB Refit as a Government of Canada office building – Phase 4

WMB Site Context

Significant and complex endeavour to move the Supreme Court of Canada, which is currently in a park-like setting into to a dense downtown urban site, the West Memorial Building.

Other notable characteristics of the WMB

- Restrained Landscape Design
- Interlocking Terraces at North-East Corner of Site
- Stepped Massing and Soft Landscaping
- Direct Street Frontage on Sparks
- East and West Memorial built as a WWII Memorial – any exterior alterations proposed subject to review and approval by FEBRO, NCC Board and the Department of Veteran Affairs

Proposed WMB Rehabilitation includes:

- Infilling the two interior spaces within the WMB to accommodate three institutions and necessary spaces which currently exist in the SCCB: the Supreme Court, Federal Courts and Grand Hall
- Establishing accessible entrances to the building.
- Tour bus/loading areas proposed along Sparks Street.
- A sidewalk bumpout, proposed at the corner of Sparks and Lyon Street, to function as a public gathering space for visitors (eg. school groups)
- One-storey exterior visitor entry pavillion on Lyon side. Exterior pavilion retains the internal heritage components of the WMB. This pavillion is subject to further review with FEBRO and NCC. The FHBRO and NCC's ACPDR did not view the security pavilion favourably and consultation is underway to consider moving the security function to the interior of the building. Consultations about security with the R.C.M.P. is ongoing.
- Night lighting features are being proposed and reviewed to keep the site vibrant at night.

Mr. Plourde, from Ellis Don, then described the proposed staging around the WMB.

- Time line is to start exterior hoarding, around the perimeter around the start of September 2019.
- He provided a visual and described their intended staging (see attached Draft Logistic Plan.)

The staging for each street frontage is described as follows:

Bay Street

- Set the exterior hoarding to the exterior face of sidewalk curb. There will be sliding gates at the loading dock area and to the underground parking.
- Loading dock will be used for delivery of materials and garbage removals.

Wellington Street

- Hoarding to be erected at the edge of the sidewalk to maintain a predestination clear access along Wellington Street
- Gates will be added to both exits on Wellington for emergency access

Lyon Street

- Hoarding to be placed on the first lane to allow for construction of possible visitor center and to protect the crane base at the corner of Lyon and Sparks Street which will extend onto Lyon street

Sparks Street

- We propose to make Sparks Street a one way having traffic flowing in an easterly direction to one lane. Our hoarding will be set up on the parking lane southerly edge and protruding into the west bound lane around the second crane base
- Our loading zone will incorporate the westerly lane from Sparks and Lyon to the westerly crane base and will delineated with low concrete curb and reflective decliner posts to meet the highway act. All signage require and approve by the appropriate bodies will be followed.
- There will be a covered hoarding at the corner of Sparks and Bay Street running easterly to the entrance on Sparks Street for access to the Building by all personnel accessing the site

Coordination with City of Ottawa Infrastructure Projects and other Government Agencies

Ms. Van Rutten briefly described the proposed interferences and coordination required with City of Ottawa Infrastructure Projects surrounding the building:

- Location of proposed security bollards and landscaping presents a conflict with Bay Street Cycling Project:
- Sidewalk widening/bumpouts at Sparks/Lyon and Sparks/Bay intersections may conflict with city-initiated projects along Bay St and/or along Lyon Street
- The site expects about 20-25 deliveries each day to the loading bay area along Bay Street. Concerns raised over safety of cyclists on Bay Street.
- The Project Team also briefly discussed coordination opportunities between all parties.

Mr. Hoyt, representing the National Capital Commission also explained the NCC's role and interest in the project and coordination required:

- PSPC owns the West Memorial Building, but the NCC has approval authority over federal land at this location. FEBRO and NCC approvals are required.
- At the January 2019 NCC meeting, the NCC provided concept approval for the proposed WMB Rehabilitation. Mr. Hoyt further noted that the proposed landscaping and Lyon Street visitor pavilion did not form part of that approval. These elements of the project are subject to further review by FEBRO, ACPDR and the NCC Board.
- He also clarified that Lyon Street is municipally-owned.

Bay Street Cycling Facility Project

Project Works: To introduce a Southbound cycling lane on West side of Bay Street.

City of Ottawa Project Lead: Justin Kurosky

Project Timeline: Design Winter/Spring 2019, construction 2020.

Mt. Kurosky further described the Bay Street Cycling Facility Project.

- There is an existing Northbound cycling lane on the East side of Bay Street.
- Bay Street is the preferred north – south cycling connection in this area of downtown. Connection required between Laurier Avenue bike lanes to Ottawa River Pathways and connections to Quebec. Currently, on this stretch of Bay Street, cyclists are legally permitted to use sidewalks on the West side until proper cycling infrastructure constructed.
- He explained that the 'jog' in the cycle track near the Sparks/Bay intersection is a safer design that increases visibility of cyclists (as the bikes and cars meet perpendicular at the intersection).
- The city project must be "in-tender" by April, so consultation is time-sensitive.

Mr. Kurosky identified conflicts with proposed security measures with proposed cycle track. It's important for him to know if the conflicts are mandatory or desired features for the proposed security of this building.

Further consultations are required to determine a mutually agreeable solution.

Options presented for consideration/further discussion:

- Could the planters be located closer to the building?
- Could the security bollards be places on the other side of the cycle track?
- Thermoplastic and Signage can be established to minimize conflicts and signal potential danger around the loading bay area.
- Interest was shown in transferring the design of the bike lane from the city project to the site plan of the applicant.

Intersection of Lyon Street and Wellington Street

City Project Works: Currently a project to develop two left-turn lanes from Lyon entering Wellington. Project works include: altering curbs, relocating certain crosswalks to accommodate new bus movements (STO and OC)

City of Ottawa Project Lead for Intersection of Lyon and Wellington: outgoing: Dale Stevenson, new project lead: Kyle Delaney

Project Timeline: Construction Spring 2019, as soon as weather permits. Completion Date: June 21, 2018

Mr. Delaney further described the project at the intersection of Wellington and Lyon:

- Relocating pedestrian crosswalk from west to the east side of Lyon
- No conflicts with the staging presented by WMB

There was a recommendation made to alter the timing of any road/sidewalk construction on southwest corner of Lyon and Wellington to line up with West Memorial Building project works

Ms. Van Rutten identified other projects occurring along Lyon and requested information about them.

Mr. Delaney confirmed he would send design drawings of other works occurring along Lyon for the applicant's information.

Mr. Delaney noted that the OC Transpo contact for the Lyon Street connections is Dan Richardson

PSPC Project Works: New one-storey security pavillion proposed along Lyon Street, proposed to be located on the City Right-of-Way.

City staff will await approvals from FEBRO and NCC prior to engaging in further conversations regarding the proposed pavilion

ROW staff will be involved in developing agreements or MOUs for if any buildings are proposed on City Right-of-way.

Resurfacing of Wellington Street

City of Ottawa Project Lead: Jacek Taracha

Project Works: Resurfacing of Wellington from Sir John A MacDonald Parkway to Bank Street

Ms. Baldwin confirmed on Mr. Taracha's behalf that the proposed resurfacing of Wellington Street is planned for 2021, subject to funding availability. In 2020, we may be in a better position to confirm the actual resurfacing year.

Sparks Street Public Realm

PSPC Project Works: Tour bus loading zone, removal of on-street parking and sidewalk bulbouts.

Mr. Atkinson highlighted the longterm plan of greening Sparks all the way to Lebreton Flats. More landscaping and greening is desired**.** Introduce full canopy trees for pedestrian comfort and to align with the vision for Sparks Street. Add more gathering spaces. Look to the recent Bank of Canada renovations for examples. After security concerns were raised regarding landscaping, lighter canopy trees were chosen.

For the proposed tour buses, Mr. Edens noted that PSPC must provide a business case to rationalize the extent of tour bus loading zone requested.

PSPC Project team replied that the loading area is required for tour buses, media trucks, and taxi pickups

Mr Eden responded that the City and Highway Traffic Act will not reserve spaces for media

Mr. Marchand also identified potential conflict with tour bus movement at northwest corner of Lyon and Sparks with the sidewalk bulbout as presented.

Mr. Hoyt noted that NCC is supportive of public realm improvements and street trees along Sparks Street and would like to be kept informed on further discussions involving these elements of the project.

Other Matters:

City Infrastructure staff (Shawn Wessel) and Project Team engineering consultant (Bryan Kipp) will continue to coordinate civil works

Submission requirements and fees

Ms. Baldwin confirmed that the project coordination would be subject to a “Site Plan, Staff approval process”

Project will be subject to standard engineering review fees. Securities not typically requested for government-initiated projects.

Next steps

- File lead to coordinate further discussions between Bay Street Cycling Project with WMB project works, given the time sensitivies
- Mr. Delaney to send project details of Lyon Street project works, near the site
- PSPC to submit Site Plan Control application materials for formal circulation
- PSPC to present to ACPDR and NCC
    - ACPDR for comment – May 2019
    - NCC Board for Concept Approval (Building Entry and Landscape) – June 2019
    - ACPDR for comment and NCC Board for Development Design Approval – TBD

WELLINGTON STREET

Perimeter hoarding/Fencing

BIKE RACKS

BIKE RACKS

West Memorial Building

Garbage box

Sliding Gates

BAY STREET

M & M Hoist

Exterior Guard Shack

Loading Platform TYP

Siamese connection extended to hoarding

LYON STREET

50 m crane & Base

50.5 m

Loading zone

Lay down Area

68.5 m

SPARKS STREET

One way Traffic

TOUR BUS DROP OFF

Construction access route

Over head protection to site entrance

Site Main Entrance

68.5 m crane & base

Gates

Low profile continuious curb with deliniers

Option 1 - Axial Procession - Site Plan

REGENERATE 344
Moriyama & Teshima Architects + Kuwabara Architecture in Joint Venture

DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON SITE. ANY DISCREPANCIES SHALL BE REPORTED TO THE AR CHITECTS IMMEDIATELY. ALL DRAWINGS REMAIN THE PROPERTY OF THE ARCHITECTS.

WEST MEMORIAL BUILDING - REHABILITATION PROJECT

ISSUED FOR:

SCALE: 1 : 500

DRAWN BY:

DATE: 2018-09-21

CHECKED BY:

PROJECT NO.: R.086471.405

DRAWING NO.: 100.2

22/09/2018 8:09:39 PM

AGENDA

Pre-Application Consultation Meeting
Subject Property: 344 Wellington Street (West Memorial Building)
Meeting Date: June 4, 2019, 10:30am-noon
Location: 110 Laurier, 4th Floor, Room 4102E
City's Pre-Consult File Number: PC2018-0301

1.	**Round Table Introductions**
2.	**Discussion:** a) Site Plan process timing b) Road modification/Licence of occupation along Sparks c) Other items For discussion on Temporary Encroachment permits during construction, contact Joel Jonsson at Joel.Jonsson@ottawa.ca or 613-222-4279 To provide an update on the crane base location and impact on Lyon Traffic, contact Britney McGrath at Britney.McGrath@ottawa.ca or 613-580-2424 x44218 For general information related to building and/or alteration permits, contact a Development Information officer (via 311). For building code questions, ask to speak to a Building Official for a non-residential project.
3.	**Next steps**

Internal Invitees:
Planning and Infrastructure:
Planner (File Lead) – Kimberley Baldwin
Planning Co-op Student – Mark Gordon
Infrastructure - Shawn Wessel
Program Manager, Right of Way - Linda Carkner
Agreement Coordinator, Right of Way – Peter Grunstra
Transportation (Planning), Wally Dubyk
Transportation (Infrastructure Applications), Mike Giampa

Transportation Services
Parking Studies, Tour Bus Loading Areas, Robert Charbonneau

External Invitees:
Regenerate344 - Emmanuelle van Rutten
PSPC - Abderrahim Benjelloun
PSPC – Susan Cook
PSPC – Carolyn Walsh
PSPC – Maureen Kent
PSPC – Susan Coles
EllisDon – David Haley
EllisDon – Guy Plourde
Morrison Hershfield – Eric Emery
Morrison Hershfield – Bryan Kipp

Bryan Kipp

From: Eric Emery
Sent: Friday, June 7, 2019 3:27 PM
To: Bryan Kipp
Subject: FW: West Memorial Building - Storm Sewer requirements

FYI

From: Wessel, Shawn [mailto:shawn.wessel@ottawa.ca]
Sent: Wednesday, April 24, 2019 2:51 PM
To: Eric Emery <EEmery@morrisonhershfield.com>
Subject: RE: West Memorial Building - Storm Sewer requirements

Good afternoon Mr. Emery.

Further to your inquiry, there are no restrictions identified by our Water Resource Dept. for you to utilize both Bay St. and Lyon St. storm sewers for your design, as there are no current capacity issues noted.

We understand that you are attempting to divert part of roof and footing drain flows to these sewers including the use of a first floor or UG cistern and gravity flow.

Again, as previously stated, SWM is not necessary due to the nature of this application.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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Planning, Infrastructure and Economic Development Department | Direction générale de la planification de l'infrastructure et du développement économique
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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Eric Emery <EEmery@morrisonhershfield.com>
Sent: April 23, 2019 2:32 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Shawn,
Further to our meeting today, we would like confirmation that we are able to connect a portion of the storm discharge to the Bay Street storm sewer, in addition to the connection to the Lyon Street sewer.

Secondly, we would like to understand if the City is willing to cost share in the rehabilitation of the existing sanitary sewer connection for the building – perhaps the portion of the sanitary connection that is on the City right-of-way.

Much appreciated.

Eric Emery, P.Eng., MBA
Manager – Ottawa Infrastructure
eemery@morrisonhershfield.com

200-2932 Baseline Road | Ottawa, ON K2H 1B1
Tel: 613 739 2910 x1022420 | Dir: 613 739 3261
Mobile: 613-978-7130
morrisonhershfield.com

From: Wessel, Shawn [mailto:shawn.wessel@ottawa.ca]
Sent: Tuesday, April 02, 2019 2:50 PM
To: Eric Emery <EEmery@morrisonhershfield.com>
Cc: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Thank you for your email mr. Emery.

I have forwarded this information back to Eric Tousignant for comment.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
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shawn.wessel@ottawa.ca

From: Eric Emery <EEmery@morrisonhershfield.com>
Sent: April 02, 2019 1:32 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Hello Shawn – further to my email last week, are you able to confirm if the City supportive of a second storm connection to the Bay Street storm sewer? This would service approximately half of building. I have been able to confirm that the Bay Street sewer is sufficiently deep to make this connection work.

Thank you

Eric Emery, P.Eng., MBA
Manager – Ottawa Infrastructure
eemery@morrisonhershfield.com

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From: Eric Emery
Sent: Thursday, March 28, 2019 6:53 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Thanks Shawn. Does Eric mean that the City is supportive of the proposal to have two storm connections, to both the Bay Street and Lyon Street sewers?

The proposal on the table right now is to add a visitor pavilion on the east side of the building – so I will propose stormwater management to account for only this portion of the footprint of the building, as it involves an expansion of the building.

Regards,

Eric Emery, P.Eng., MBA
Manager – Ottawa Infrastructure
eemery@morrisonhershfield.com

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Did You Know? We're moving! Effective April 22nd, we're relocating our office to 200 - 2932 Baseline Road, Ottawa, ON K2H 1B1.

From: Wessel, Shawn [mailto:shawn.wessel@ottawa.ca]
Sent: Wednesday, March 27, 2019 2:47 PM
To: Eric Emery <EEmery@morrisonhershfield.com>
Subject: FW: West Memorial Building - Storm Sewer requirements

Good afternoon Mr. Emery.

Please see comments below from our Water Resource Dept. in regards to SWM requirements for 344 Wellington (West Memorial Building) as previously discussed.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
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shawn.wessel@ottawa.ca

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From: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Sent: March 27, 2019 2:39 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Hi Shawn

As per our phone discussions, if they are not re-building the outer shell they don't need to do any on-site stormwater management. If they choose to do so, I would only recommend that they do rooftop storage if the roof is flat. This is a very small drainage basin and they are close to the outlet and there are no basement connected to the storm system. Surcharging is not a concern. I also have no issues with their proposed storm and sanitary connections.

Eric

Eric Tousignant, P.Eng.
Senior Water Resources Engineer
Infrastructure Services
613-580-2424 ext 25129

From: Eric Emery <EEmery@morrisonhershfield.com>
Sent: March 06, 2019 4:24 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Cc: Bryan Kipp <BKipp@morrisonhershfield.com>; Michael Paquette <Michael.Paquette@Kasian.com>; Emmanuelle van Rutten (emma@mtarch.com) <emma@mtarch.com>; Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Thanks for your quick reply Shawn. We have considered pumping to the storm sewer however, our client has not been in favor of this approach.

Eric Emery, P.Eng., MBA
Manager – Ottawa Infrastructure
eemery@morrisonhershfield.com

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From: Wessel, Shawn [mailto:shawn.wessel@ottawa.ca]
Sent: Wednesday, March 06, 2019 4:02 PM
To: Eric Emery <EEmery@morrisonhershfield.com>

Cc: Bryan Kipp <BKipp@morrisonhershfield.com>; Michael Paquette <Michael.Paquette@Kasian.com>; Emmanuelle van Rutten (emma@mtarch.com) <emma@mtarch.com>; Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Good afternoon and thank you for your email Mr. Emery.

I have sent an internal circulation to our Water Resources Dept. for comment on your request as they have the ability to complete modeling on the two storm sewer mains to ensure capacity.

May I ask whether or not you have considered pumping into the storm sewer main as opposed to gravity feed?

Please also see Section 5.4.5 of the City's Sewer Design Guidelines (2010 as amended) in regards to C values.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
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From: Eric Emery <EEmery@morrisonhershfield.com>
Sent: March 06, 2019 3:10 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Cc: Bryan Kipp <BKipp@morrisonhershfield.com>; Michael Paquette <Michael.Paquette@Kasian.com>; Emmanuelle van Rutten (emma@mtarch.com) <emma@mtarch.com>
Subject: FW: West Memorial Building - Storm Sewer requirements

Hello Shawn,
I am working with Bryan on the municipal servicing design for the West Memorial Building project. We have had some discussions with the design team about the stormwater storage requirements for the site.

We have determined that we require 140 cubic meters of storage to meet a maximum discharge of 0.08 cms. Roof storage is not available for the design, so the entire volume will need to be stored in a cistern in the basement of the building at an elevation that will allow for gravity flow to the storm sewer on Lyon Street. This storage calculation is based on C=0.5 and the 100 year storm plus 20%.

Would it be possible to split the storage requirement so that part of it is on the west side of the building and the other portion on the east side of the building? This would need two storm connections – one to the Lyon Street Sewer and the other to the Bay Street sewer. The reason for this is the difficulty of finding space for the storage in one location, and secondly, routing all of the drains to the east side of the building presents some significant design challenges. Can you help provide as-built drawings for the 525mm storm sewer on Bay Street?

Secondly, is it possible to reduce the required storage by the actual C value instead of the C=0.5 value? We are finding that the 140 cubic meters to be a difficult requirement to accommodate as part of a renovation of an existing building.

Much appreciated Shawn.

Eric Emery, P.Eng., MBA
Manager – Ottawa Infrastructure
eemery@morrisonhershfield.com

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From: Wessel, Shawn [mailto:shawn.wessel@ottawa.ca]
Sent: Thursday, January 24, 2019 3:44 PM
To: Bryan Kipp <BKipp@morrisonhershfield.com>
Cc: McCreight, Andrew <Andrew.McCreight@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Good after Mr. Kipp and thank you for your message and update.

Further to your comments below, please calculate the allowable release rate assuming a C=0.5 and the Tc may be computed with a maximum of 20 and minimum of 10-minute restraints.

Please also be advised that any proposed on-site storage (if applicable) will require you to demonstrate the flows for 2, 5 and 100 year events as well as provide the following:

1. Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self cleansing), chart of storage values, length, width and height, capacity etc. and include manufacturer specifications and details.
2. Provide a plan and profile drawing of proposed UG storage system.

Please also note that footing drains are to be independently connected to the sewermain and, if applicable, roof drains are to be connected downstream of the integrated ICD (installed at the required MH or within a

cistern/tank) within the SWM system, otherwise discharged to the surface via a wall outlet located 600 mm above grade. Furthermore, it is also recommended that a pressurized drainpipe type material be used for the roof drain leader pipe in the event of surcharge in the system.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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shawn.wessel@ottawa.ca

From: Bryan Kipp <BKipp@morrisonhershfield.com>
Sent: Thursday, January 24, 2019 1:26 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: West Memorial Building - Storm Sewer requirements

Hi Shawn,

I appreciate you reaching out. I am aware of the pre-consultation meeting tomorrow and will be attending.

To update you on our approach to the building storm and sanitary drainage, as Ted described previously we have determined that installing a new storm sewer from the building to the storm maintenance hole located north of Wellington is not a cost effective option. We don't believe our client wants to pursue this option. Our plan is to pump the foundation drains to the building storm service, and the parking garage drains will be drained to sanitary.

To determine the level of service of the receiving City storm sewer, we have performed a rational method analysis. Our calculations and drawings will be included in our Site Servicing Brief as part of our submission for Site Plan Approval.

Despite Site Plan Approval not being a mandatory requirement for the project, our client would like to go through the process. For your information, we have determined the level of service of the receiving sewer to be the 1 in 5 year storm event. Our plan is to restrict outflow from the building to the 5 year storm event. Detention will be provided for the difference in volume between the climate change design storm (100 year + 20%) and the 5 year event.

Please let me know if you have any questions or comments. Looking forward to meeting you tomorrow.

Regards,
Bryan

Bryan Kipp, EIT
Municipal Designer, Ottawa Infrastructure
BKipp@morrisonhershfield.com

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From: Wessel, Shawn [mailto:shawn.wessel@ottawa.ca]
Sent: Wednesday, January 23, 2019 1:12 PM
To: Bryan Kipp <BKipp@morrisonhershfield.com>
Subject: RE: West Memorial Building - Storm Sewer requirements

Good afternoon Mr. Kipp.

After being informed that Mr. Donaldson is no longer with MH, I wanted to ensure that your firm had an opportunity to discuss capacity and restrictions (if applicable) of our system for the footing (storm) and parking garage drains (sanitary), as part of your scope, with our Infrastructure Services and/or Water Resources staff.

Please also note, if not already aware, that a pre-consultation meeting has been arranged for Jan. 25th at 1:30 pm at 110 Laurier West (City Hall) in room 4103E in order to discuss various Capital Works projects, planned in this area, that may affect the proposed work at 344 Wellington.

If there is any information you need in preparation for this meeting or for your design, please let me know now and I will do my best to obtain the information in a timely manner.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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APPENDIX C: West Memorial Building Renovation Project, Planning & Regulatory Framework Report

Lloyd Phillips & Associates Ltd.
1827 Woodward Drive, Suite 109 Ottawa, ON K2C 0P9
613.236.5373 office
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jessica@lloydphillips.com

West Memorial Building Renovation Project

PLANNING & REGULATORY FRAMEWORK

Project No. 170490 | 344 Wellington Street, Ottawa, ON

Prepared for:
REGENERATE 344 Moriyama & Teshima Architects + Kasian Architecture in Joint Venture

Prepared by:
Lloyd Phillips & Associates Ltd.
File: 1812
Date: April 30, 2018

CONTENTS

1. INTRODUCTION

Lloyd Phillips & Associates Ltd. is working as part of the retained consulting team with Moriyama & Teshima Architects and Kasian Architecture, in Joint Venture, on the rehabilitation of the West Memorial Building located at 344 Wellington Street, Ottawa. Public Works and Government Services is seeking to rehabilitate the existing building in order to accommodate government offices in a Workplace 2.0 Fit-up in the long-term, and government office swing space in the short-term. The project scope includes elements such as, but not limited to: landscape work; some excavation; potential infill of light wells; architectural rehabilitation; universal accessibility; heritage conservation; structural, seismic and building envelope upgrades, sustainable development; abatement and demolition of designated substances; mechanical system upgrades; and, interior fit-up. The intent is to accommodate government office spaces to house the Supreme Court of Canada, the Court Administrative Services (Federal Courts), the Royal Canadian Mounted Police, and Public Works and Government Services.

2. REGULATORY CONTEXT

2.1 FEDERAL

2.1.1 NATIONAL CAPITAL COMMISSION (NCC)

The National Capital Commission (NCC) is the long-term planner of federal lands, a steward of public spaces, and the review and approval authority for development and conservation in the National Capital Region (NCR). All individuals and federal organizations undertaking works on federal lands are required to apply for Federal Land Use, Design and Transaction Approval. Projects on federal lands subject to NCC review and approval include: building, demolishing or altering a building; change of land use; sale or transfer of property control; signage, landscaping and infrastructure projects; and, any works by federal departments on lands in the NCR.

Through the FLUDTA process, the NCC will review proposals with guidance from federal policy including: Plan for Canada's Capital, Master and Demonstration Plans; Canadian Environmental Assessment Act (2012), and, Treasury Board Policy on Heritage Buildings. The NCC will also considering urban design guidelines and best practices in planning, urban design, architecture, and landscape architecture.

Specific details regarding the NCC's approval role, process, as well as applicable plans will be discussed in Section 3 of this report.

2.1.2 FEDERAL HERITAGE BUILDINGS REVIEW OFFICE (FHBRO)

The role of the Federal Heritage Buildings Review Office (FHBRO) is to apply the Treasury Board Policy on Management of Real Property to assist federal departments in protecting federal built heritage, including buildings, complexes, cultural landscapes, canals, and historic districts. Buildings may be designated either "Classified", which is the highest level of heritage recognition, or "Recognized". Federal Departments are responsible for managing real property while conserving and maintaining the heritage character of the buildings. As such, the heritage character of the West Memorial Building must be conserved during its redevelopment. In order to ensure this heritage integrity is respected and conserved, consultation with FHBRO must be undertaken before any physical interventions are undertaken. This consultation is completed through a Review of Intervention (ROI) by FHBRO to assess potential impacts of the proposed intervention on the building's heritage character. The ROI process is detailed in Section 3.5 of this report.

2.2 PROVINCIAL

2.2.1 PROVINCE OF ONTARIO

The Province of Ontario regulates planning and development through the *Planning Act (1990)* by setting out the various mechanisms to control land use by municipalities. The *Provincial Policy Statement (2014) (PPS)* is issued under the Planning Act and is the province-wide policy direction on land use planning. These policies include: efficient use of land and infrastructure, protection of the environment, promotion of employment growth, as well as built and cultural heritage. All planning matters in the Province shall be consistent with the PPS.

The Ministry of Environment and Climate Change (MOECC) is responsible for enforcing compliance with environmental laws in the Province of Ontario. Dependent on the nature of an operation or business, if a business releases pollutant into the air, land or water, or stores, transports or disposes of waste, an environmental approval may be required. There are three types of environmental approvals, including Environmental Compliance Approval, Environmental Activity and Sector Registry, or a Renewable Energy Approval. Dependent on the nature of operations at the West Memorial Building, an application for Environmental Compliance Approval may be required.

2.3 MUNICIPAL

2.3.1 CITY OF OTTAWA

The City of Ottawa is the approval authority for planning and development within its municipal boundaries. The City has various policy mechanisms in place to guide and regulate development in the City, which are listed and described below.

a. Official Plan (2003):
The Official Plan (OP) sets out the long-term vision for planning, development, and growth in the City of Ottawa. The Official Plan sets the basis for municipal policies and strategies including assessment of development applications, planning for infrastructure and new community development, preservation of the natural environment, as well as providing guidance for the Zoning By-law.

   i. Central Area Secondary Plan
   Included under the broad framework of the Official Plan is various Secondary Plans that apply to specific neighbourhoods or geographic areas within the City of Ottawa. The West Memorial Building falls within the Central Area Secondary Plan, which will be discussed in Section 5.1.1 of this report.

b. Downtown Ottawa Urban Design Strategy 20/20
The Downtown Ottawa Urban Design Strategy 20/20 (DOUDS) is a document that sets out a framework for urban design for the downtown area to ensure the downtown area is aesthetically pleasing and lively for visitors and residents. The development strategies outlined in this guiding document could be beneficial in the redevelopment of the West Memorial Building.

c. Zoning By-law, 2008-250
The City of Ottawa Zoning By-law 2008-250 sets out specific provisions for development in varying zones across the City which is intended to regulate the use and development of land. These provisions relate to parking, setbacks, floor areas, among others and are specifically set out for certain zones within the City to ensure development is compatible and desirable for those areas.

d. Site Plan Control By-law, 2014-256

The City of Ottawa's Site Plan Control By-law regulates certain development within the City in order to ensure development is well designed, appropriate, safe, and minimizes impacts on surrounding neighbourhoods. Aspects of development including but not limited to parking, grading, drainage and stormwater management, landscaping, and building locations are reviewed through the Site Plan Control Application process.

e. Building Permit to Construct or Demolish
In order to construct, alter, demolish or add to any building over 10 square metres in the City of Ottawa, a building permit under the Ontario Building Code Act is required. An Application for a Permit to Construct or Demolish can be obtained through the City of Ottawa's Building Code Services.

Though not mandated to adhere to municipal planning and development policies, direction and approvals, the federal government applies the 'good neighbour' approach and will engage with municipalities in these processes. Development of the West Memorial Building should apply this approach and follow the guidelines and municipal approvals processes through the City of Ottawa, which are detailed in Section 5 of this report.

3. NCC & FHRBO

3.1 PLAN FOR CANADA'S CAPITAL

The *Plan for Canada's Capital, 2017* (PFCC) is the long-range plan for the National Capital Region and guides the vision for development of federal lands in the National Capital Region (NCR) over the next 50 years. The PFCC represents the highest planning document of the NCC, and features three overarching themes which are to guide the future of development, detailed as follows.

1) An inclusive and Meaningful Capital
To create an inclusive and meaningful Capital, the PFF sets out objectives to maintain and create symbols that represent the Canadian identity, celebrate Canadian values, and respect Canadians' diversity and traditions.

2) A Picturesque and Natural Capital
To create a picturesque and natural Capital, the PFCC sets out objectives to protect and enhance the NCR's ecology and natural beauty, maintain and create distinctive cultural and natural landscapes, and animate the shorelines and waterways.

3) A Thriving and Connected Capital
To create a thriving and connected Capital, the PFCC Aims to support a livable, attractive accessible and economically completive region, promote sustainable transit and mobility, and conserve cultural heritage through design excellence and stewardship.

The PFCC outlines policies for Federal Head Offices and Accommodations considering the prominence of the federal public service in the NCR. Key policy direction relevant to the redevelopment of the West Memorial Building includes:

a. "The federal government will strive to present a pleasing public face for client-centred services in the Capital. To respond to the changing needs of the urban region, PSPC and the NCC will continue to encourage the location of offices near transit stations and in support of active mobility. Both will develop strategies to promote environmental sustainability through "noncommuter" federal accommodations and to create adapted and inclusive workspaces.

b. In collaboration with the municipalities, both organizations will ensure that federal sites become better integrated with their context and more closely linked to the urban fabric of the community…
c. The head offices of federal departments, Crown corporations and agencies will locate, wherever possible, in the Capital's core area, or will cluster in inner-urban transit-oriented sites.
h. Federal accommodations should be located and designed in a manner that contributes positively to the character of the Capital." (Chapter 3)

The West Memorial Building is also located along Confederation Boulevard, which is Capital's Ceremonial Route, characterized by symbolic streets and federally significant landmarks (see Figure 1).

Figure 1. Map of Confederation Boulevard (Plan for Canada's Capital, 2017)

Considering its location along Confederation Boulevard, redevelopment of the West Memorial Building must be mindful of the historic and symbolic value of the Ceremonial Route. The PFCC outlines the following policy objectives regarding Confederation Boulevard:

a. "The NCC will work with the municipalities to create seven symbolic nodes at key intersections along an expanded Confederation Boulevard. They will provide opportunities for commemoration or public art, improved pedestrian experience and better placemaking.

b. The NCC will complete a renewal of Confederation Boulevard to ensure that it presents a lively, exciting, inclusive and meaningful place for discovering Canada, Canadians and the Capital…" (Chapter 3)

The PFCC sets out policy objectives for the preservation and conservation of built heritage within the NCR. In order to do preserve this heritage, the following policies are outlined:

a. "The NCC will strive to protect heritage buildings and sites and bring them to life with new uses that respect their character, are compatible with the heritage features to be preserved, and have well-integrated accessibility features. Project-specific development criteria will be applied. The NCC will give special attention to 20th century architecture.
b. The NCC will promote the quality of design to ensure the creation of responsive, accessible, enduring and responsible places, buildings, structures and landscapes over time." (Chapter 5).

Throughout the redevelopment of this federal institutional building, it will be important to incorporate the federal policy objectives noted above as they encompass the long-term vision for the National Capital Region.

3.2 CORE AREA SECTOR PLAN

Canada's Capital Core Area Sector Plan, 2005 is the NCC's lead policy document governing planning and development of federal lands in the NCR's Core Area until 2025. Figure 2 below depicts the boundary of the Core Area, spanning across both Ottawa and Gatineau. The *Core Area Sector Plan* has several key priorities regarding the management of lands within this Area including: regulating land use for federal properties; preserving the character and symbolism of the core; maintaining the symbolism of Confederation Boulevard; promoting preservation of heritage; reinforcing excellent urban design and built form; planning and managing federal accommodations; and, protection of views to national symbols and the Parliament Buildings; among others.

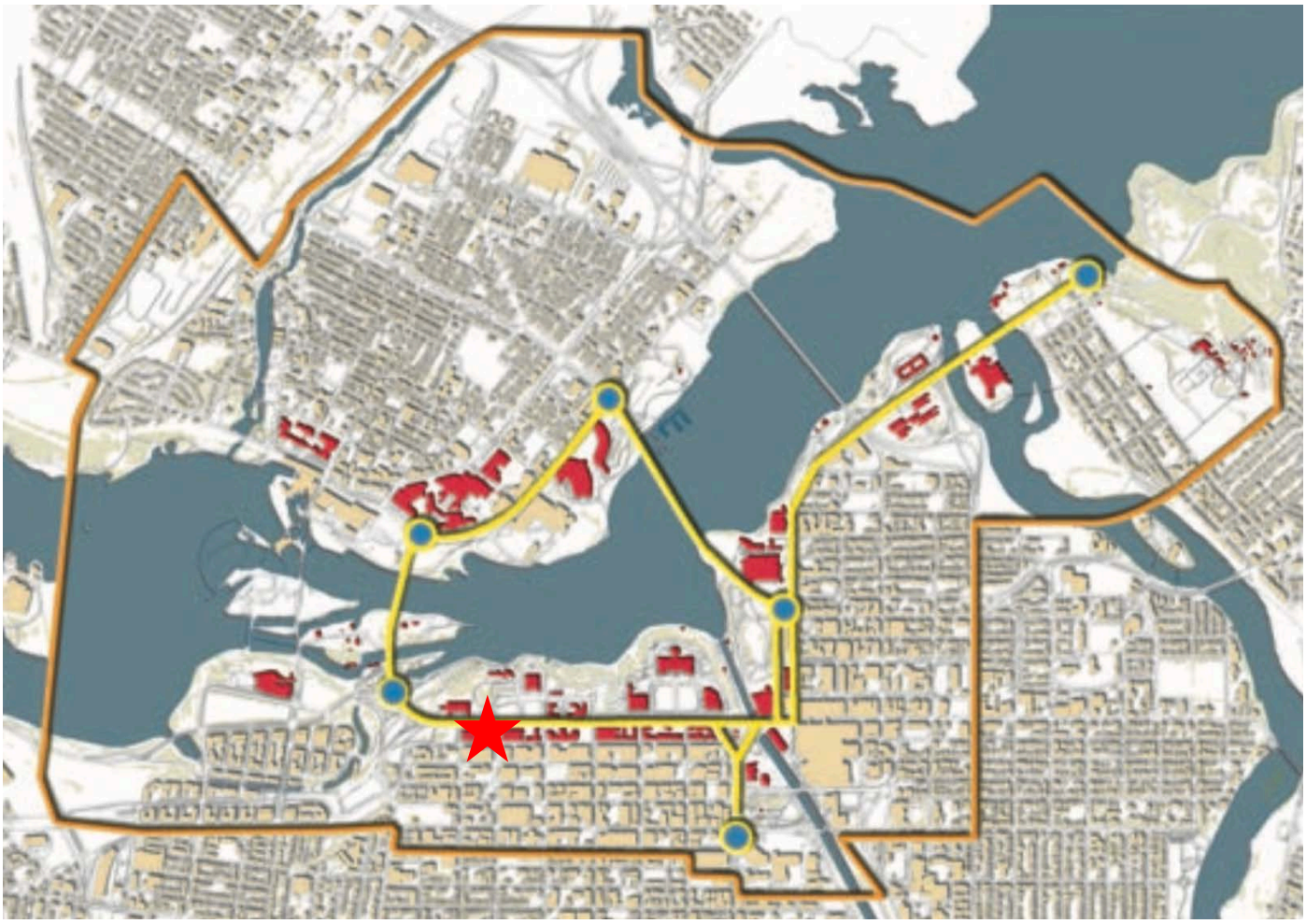

Figure 2. Map of the Core Area (Core Area Sector Plan, 2005)

The West Memorial Building is located within the Core Area, adjacent to Confederation Boulevard. **Section 3.1, Confederation Boulevard** of the *Core Area Sector Plan* sets out the following polices to preserve and enrich the character of the Ceremonial Route:

- "Promote use of the highest standards for institutions located along the Boulevard in terms of building design, heritage preservation and adaptive reuse, landscape architecture and programming activities;
- Continue to locate Canada's foremost political, judicial and cultural institutions along the Capital's official ceremonial route;
- Protect and enhance views of the Parliamentary Buildings and other national symbols from around Confederation Boulevard and key approach routes".

Under Section 3.2, Land Use in the Capital Realm: Federal Accommodation, Cultural Institutions & International Presence, the NCC regulates land use activities on federal lands through its FLUDA process, and sets out the following policies within the Core Area Sector:

- "Pursue a high quality of land use planning and design for all lands in the Capital realm, in order to enhance the symbolic and visual quality of the Capital Core Area, and the functionality of the transportation and infrastructure systems supporting these precincts, sectors and sites.

- Apply corresponding standards regarding signage and landscape treatments to federal buildings and lands that are appropriate to their location, visibility and role.
- Encourage custodians of federal heritage properties, including the NCC, to balance heritage requirements with the need to provide functional living and working environments.
- Work in partnership with other federal agencies, the cities of Ottawa and Gatineau, business development agencies, cultural institutions, embassies and the private sector in the planning and development of federal lands and nearby lands.
- Demand high quality and leading standards for all federal Crown-owned accommodation and facilities along Confederation Boulevard, in terms of architecture and design, building construction and energy efficiency."

As a federally owned building that will accommodate federal government and/or administration uses, it is important for the West Memorial Building redevelopment to uphold the high-quality of design standards as demonstrated in the NCC's Core Area Sector policies.

3.3 CANADA'S CAPITAL VIEWS PROTECTION

Canada's Capital Views Protection, 2007 sets out policies and controls for the protection and enhancement of views of National Symbols, including Canada's parliamentary, judicial and cultural buildings and landscapes within the NCR. The policy sets out views controls within and beyond the Parliamentary Precinct Area to ensure the visual primacy of these symbolic buildings.

As demonstrated in Figure 3, the West Memorial Building is subject to height control limits to protect foreground views of the National Symbols (Section 5.1.1).

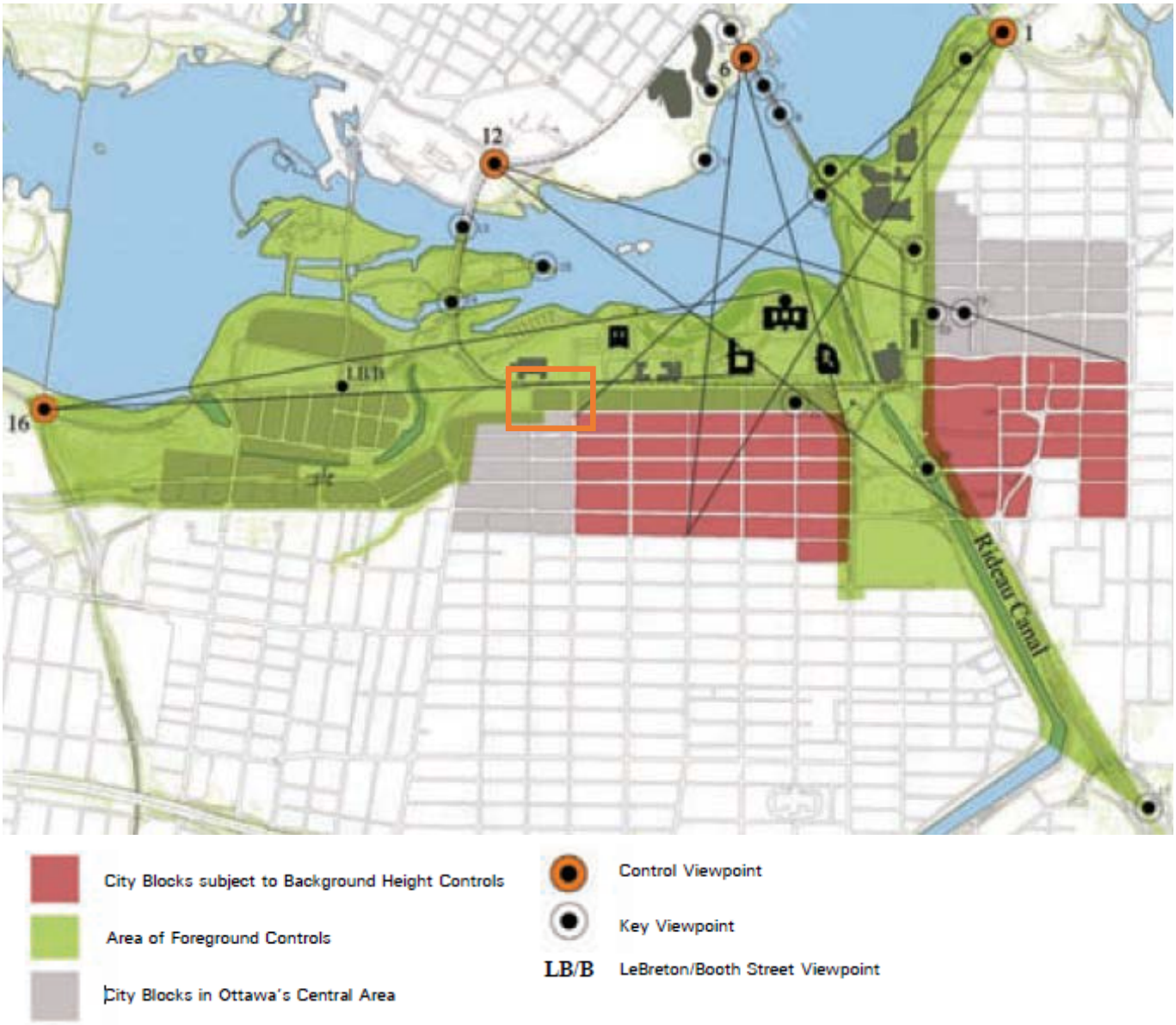

Figure 3. Areas subject to Background and Foreground Height Controls (Canada's Capital Views Protection)

In order to preserve the visual integrity of these National Symbols, any redevelopment of or addition to the West Memorial Building must be carefully designed so as to ensure the height limits are respected as set out within the Views Protection policy. In addition to the NCC's policies regarding views protection, the redevelopment must also adhere to the site-specific height limits set out within the City of Ottawa's Zoning By-law 2008-250, as detailed in Section 5.2 of this report.

3.4 FEDERAL LAND USE AND DESIGN APPROVAL (FLUDTA) PROCESS

The National Capital Commission has the authority to review and approve under section 11 and 12 of the *National Capital Act, 1985*. Through this authority, the NCC has mandated a process for review of development proposals impacting federal lands. Any works at the West Memorial Building must follow this process, as follows:

1. Initiate Federal Land Use, Design and Transaction request via the online submission
2. Participate in pre-application meeting to discuss the proposal and receive preliminary feedback
4. Coordinate necessary plans and studies to address NCC requirements
5. Make official FLUDTA submission

There are three levels of approval for federal projects as per the NCC's review requirements, demonstrated in Table 1 below.

Table 1. NCC FLUDA levels of review

	Level 1	Level 2	Level 3
General Definition	Simple projects with few issues for the Capital	Complex projects with several issues for the Capital	Projects of great importance for the Capital (national symbols)
Planning Projects	No plans approved at this level	Sector plans and area plans outside the core area and not involving NILM lands	Plan for Canada's Capital – Master Plans – Sector plans and area plans located within the core area of involving NILM lands
Examples of Development and Construction Projects	Temporary projects (less than one year) – Projects in requiring an environmental assessment – Projects not involving a FHBRO-designated heritage building	Projects requiring an environmental assessment – Projects involving a FHBRO-designated heritage building – New buildings and major improvements to existing buildings – Official residences, except those located along Confederation Boulevard – Signs in the core area – Level 3 commemorations	Projects located along Confederation Boulevard – National institutions – Federal department or agency headquarters – Major public works and infrastructures in the Capital (airport, interprovincial crossing, etc.) – Projects with an impact on protected views – Purchase or disposal of NILM lands – Level 1 and 2 commemorations
Approximate Review Time	Approx. 3 to 5 weeks	Approx. 2 to 4 months	Minimum 8 months

Considering the definitions outlined in Table 1, the importance of revitalization the West Memorial Building to the Capital, its designation as a FHBRO Classified Building, and the site's location along Confederation Boulevard within the Core Area Sector, it is likely that the project would be defined as a Level 3 project (to be confirmed through a formal pre-consultation with the NCC's Capital Planning Branch, Federal Approvals department). Should the project be defined as a Level 3 review, the following steps will be undertaken, in addition to 1-4 above:

6. Iterative review with NCC staff and the project proponent (including Environmental Assessment and FHBRO review as detailed below)
7. Review by the Advisory Committee on Planning, Design and Realty (ACPDR)

It is important to note that in addition to the above-noted requirements, as a federal development being undertaken on federal lands, consultation with Aboriginal communities regarding the proposal may be required. If any excavation is to take place, an archaeological review may also be necessary. The NCC will provide further guidance on these processes.

Following an iterative review and consultation process and once the NCC is satisfied by the outcomes of the project design, the proposal would be presented to the NCC's Board of Directors for approval, which approves all Level 3 projects. Following approval by the Board of Directors, a Federal Land Use and Design Approval document would be issued outlining various conditions that the project must adhere to. The project would then be able to proceed.

3.4.1 ENVIRONMENTAL ASSESSMENT

As part of the National Capital Commission's review of proposals, an Environmental Assessment (EA) under section 67 of the *Canadian Environmental Assessment Act (CEAA) (2012)* may be required. Section 67 of CEAA, 2012 states:

> s. 67: An authority must not carry out a project on federal lands, or exercise any power or perform any duty or function conferred on it under any Act of Parliament other than this Act that could permit a project to be carried out, in whole or in part, on federal lands, unless
>
> (a) the authority determines that the carrying out of the project is not likely to cause significant adverse environmental effects; or
>
> (b) the authority determines that the carrying out of the project is likely to cause significant adverse environmental effects and the Governor in Council decides that those effects are justified in the circumstances under subsection 69(3).

The intent of an EA is to assess potential environmental effects of a proposed project impacting federal lands, provide mitigation strategies to ensure the project prevents environmental issues where possible, and identify methods to increase a project's environmental benefits. An EA is necessary for most projects requiring a FLUDA, and the review process is often triggered when a proponent engages with the NCC for the federal review of a project. The EA review may be completed alongside the FLUDA review.

3.5 FHBRO REVIEW

The West Memorial Building was designated as a Classified Federal Heritage Building in 1992 due to its historical associations, architectural and environmental value. Further details regarding the rationale for its designation are outlined within its Heritage Character Statement provided by FHRBRO. Considering its heritage value, consultation with FHBRO is required before any intervention may take place. In order to commence the review process, a request for Review of Intervention (ROI) may be undertaken alongside the NCC FLUDA review.

The ROI process includes the following steps:

1. <u>Submission of a request for a Review of Intervention</u>
   This submission would include the following details: building information, project contacts, project purpose, scope of work, and photographs of the building and plans of the proposed development. It is important to note that depending on the scope of the project, a ROI report may not be required. Conversely, if the project is significant and there are major potential impacts, a formal review by the Federal Heritage Buildings Committee (FHBC) may be requested.

2. Preparation of the Review of Intervention Report
   The Review of Intervention Report is intended to assess how elements of the building's Heritage Character Statement will be conserved, and demonstrate how the proposed intervention applies the heritage conservation principles defined in the *Standards and Guidelines for the Conservation of Historic Places in Canada*, which was developed and adopted by FHBRO (see FHBRO's guidelines document for further details regarding heritage conservation principles to be applied on Classified Federal Heritage Buildings).

Upon reviewing the above-noted ROI report, FHRBO may provide and comment on technical methods that can be used to ensure its historic value is appropriately maintained. This review period can take up to three to four weeks, and follow-up ROIs may be required depending on the complexity of the project. It is recommended that heritage conservation experts are consulted early in and throughout the redevelopment process in order to ensure adequate steps are taken to conserve and protect the heritage character of the building.

4. PROVINCIAL

4.1 PROVINCIAL POLICY STATEMENT 2014

The *Provincial Policy Statement 2014* (PPS) provides policy direction on planning matters for the Province of Ontario. Decisions affecting all planning matters shall be consistent with the Provincial Planning Policies. Applicable policies that must be recognized throughout the redevelopment of the West Memorial Building are outlined bellow.

Section 1.1.1 of the PPS states that healthy, livable, and safe communities are sustained by:

a) promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long term;
b) accommodating an appropriate range and mix of residential […] employment (including industrial and commercial), institutional […] and other uses to meet long-term needs;
c) avoiding development and land use patterns which may cause environmental or public health and safety concerns;
e) promoting cost-effective development patterns and standards to minimize land consumption and servicing costs;
f) improving accessibility for persons with disabilities and older persons by identifying, preventing and removing land use barriers which restrict full participation in society.

Section 1.2.2 of the PSS states that: planning authorities are encouraged to coordinate planning matters with Aboriginal communities.

Section 1.3.1 of the PPS states that planning authorities shall promote economic development and competitiveness by:

a) providing for an appropriate mix and range of employment and institutional uses to meet long-term needs;
b) providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;
c) encouraging compact, mixed-use development that incorporates compatible employment uses to support livable and resilient communities; and,

d) ensuring the necessary infrastructure is provided to support current and projected needs.

Section 1.7.1 of the PPS states that long-term economic prosperity should be supported by:

a) promoting opportunities for economic development and community investment-readiness;
c) maintaining and, where possible, enhancing the vitality and viability of downtowns and Mainstreets;
d) encouraging a sense of place by promoting well-designed built form and cultural planning, and by conserving features that help define character, including built heritage resources and cultural heritage landscapes.

Section 2.6.1 of the PPS states that:
Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

Section 2.6.3 of the PPS states that:
Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

4.2 ENVIRONMENTAL COMPLIANCE APPROVAL

An application for Environmental Compliance Approval (ECA) may be required dependent on the nature of the proposed future uses of the West Memorial Building and their impacts on the environment. Activities that fall under the following sections within the *Environmental Protection Act* (EPA) and *Ontario Water Resources Act* (OWRA) may require an ECA:

- s.9: Activities that may discharge, or from which may be discharged, a contaminant into the natural environment other than water, which includes most industrial processes or modifications to industrial processes and equipment (EPA);
- s. 27: A Waste Management System or Waste Disposal Site (EPA), and/or,
- s. 53: Sewage works (OWRA).

Should the proposed development activities at the West Memorial Building involve or impact any of the above-noted activities, an ECA application can be made online. Details to be included in the application requirements are as follows: project description; proof of site location ownership and zoning; site plan; financial assurance calculation and rationale; as well as maps, plans and drawings of the proposed development. Once the application is submitted and deemed complete, an iterative technical review is undertaken, and a recommendation will be made once the reviewer has all necessary information. A decision is made by the Director regarding whether the proposal can proceed as presented.

It is important to reiterate that the requirement for an ECA will be dependent on the proposed uses relating to potential contaminants, waste management and disposal, and sewer systems on site. It is recommended that the civil engineering consultants assigned to the project contact the MOECC to further discuss ECA requirements.

5. CITY OF OTTAWA

5.1 Official Plan

The site is designated Central Area in the City of Ottawa Official Plan, as shown in the below extract of Schedule B – Urban Policy Area. Policies applicable to the proposed development within the Central Area are summarized below.

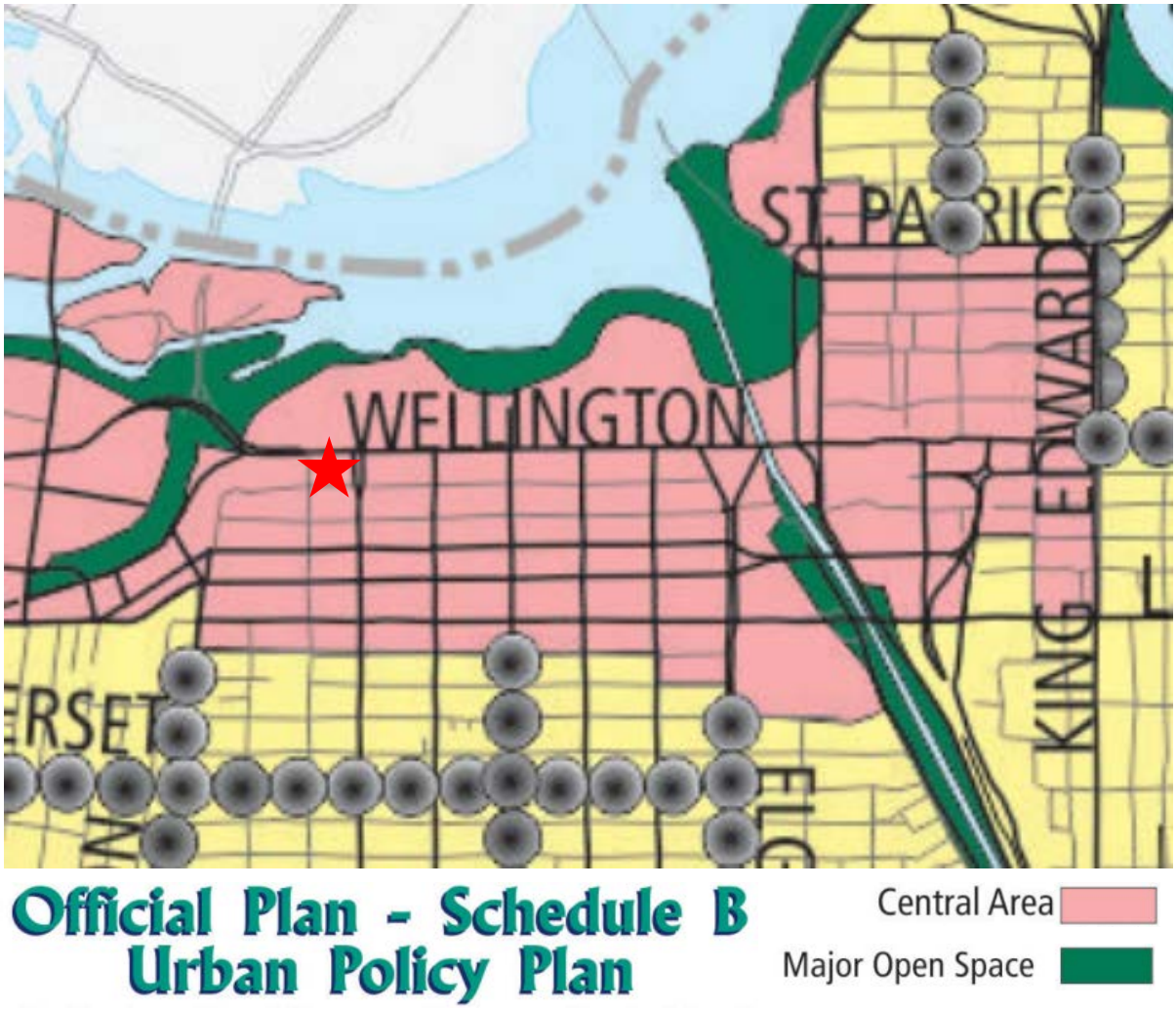

Figure 4. Extract from City of Ottawa Official Plan, Schedule B - Urban Area

As per **Section 2.5.1, Urban Design and Compatibility,** the site falls within a Design Priority Area, as recognized by the Downtown Ottawa Urban Design Strategy (DOUDS). As such, the application would be subject to review by the Urban Design Review Panel (UDRP), which provides design-related feedback on development projects. Urban design is an important consideration in any redevelopment or new development proposal. The primary objects of Urban Design and Compatibility policies of the OP are as follows.

In terms of **Urban Design,** the OP states that: **"**[c]ommunity design generally deals with patterns and locations of land use, relative densities, street networks, and the allocation of community services and facilities. Urban design is more concerned with the details relating to how buildings, landscapes and adjacent public spaces look and function together. As the City grows and changes over time, design of these elements should work together to complement or enhance the unique aspects of a community's history, landscape and its culture. Encouraging good urban design and quality and innovative architecture can also stimulate

the creation of lively community places with distinctive character that will attract people and investment to the City."

In terms of **Compatibility**, the OP states that: "compatible development means development that, although it is not necessarily the same as or similar to existing buildings in the vicinity, nonetheless enhances an established community and coexists with existing development without causing undue adverse impact on surrounding properties. It 'fits well' within its physical context and 'works well' among those functions that surround it."

As per **Section 3.6.6, Central Area**, "[t]he Central Area is the economic and cultural heart of the city and the symbolic heart of the nation, based on its unique combination of employment, government, retain, housing, entertainment and cultural activities. It is also the main tourist destination in the National Capital Region, with 5.5 million visitors yearly. These policies promote the Central Area's vital role in the city, its distinct identity and heritage character, as well as the primacy of the Parliament Buildings and other national symbols. The Plan also aims to enhance the diversity and attractiveness of the Central Area by encouraging a broad range of land uses and day/night, year-round activities.

"New buildings and spaces will reflect a human scale of development, and will be guided by design criteria, which will result in a significantly enhanced pedestrian environment. The Central Area's unique heritage resources will be protected through heritage conservation, and enhanced through new development which respects and complements nearby heritage buildings. This urban design renaissance will ensure development which is worthy of a nation's capital and which is conducive to the attraction of people and businesses.

Specific relevant **Policies** include:

2. The City will support the Central Area's role as the economic and cultural heart of the city and the symbolic heart of the nation by:
   a. Implementing the Central Area Secondary Plan, which establishes a vision and detailed policies for the desired future of the Central Area as the focus of government, tourism, business, retail, housing, major community facilities, entertainment and cultural activities;
   c. Implementing the Downtown Ottawa Urban Design Strategy to promote the liveability of the downtown, as described in policy 5 below; [Amendment 24, May 25, 2005]
   d. Ensuring development applications and public works have regard for the Central Area Secondary Plan policies to enhance the physical character, identity and unique heritage resources of the Central Area's distinctive streets (including the symbolic Confederation Boulevard), theme streets, character areas, and heritage conservation districts;
   e. Protecting the visual integrity and symbolic primacy of the Parliament Buildings and other national symbols as seen from Confederation Boulevard and the main approach routes to the Central Area, depicted as key viewpoints and view sequences on Annex 8A – Central Area Key Views and View Sequences of the Parliament Buildings and Other National Symbols (see Figure 5 below for reference with the subject site indicated in orange). In realizing this aim, the City will ensure that:
      i. Buildings constructed in the areas of height control as set out on Annex 8A do not rise above the ridgeline of the roof of the Centre Block, and thus do not visually mar the silhouette of the Parliament Buildings (Figure 3.1), and do not visually dominate the Parliament Buildings and other national symbols (Figure 3.2),
      iii. No building, part of a building, or building roof structure exceeds the angular building height limits that are defined by the perimeter above sea-level heights for each block on Annex 8B – Central

Area Maximum Building Heights/Angular Planes, without a thorough analysis of the impact of any projection or protrusion, and without an official plan amendment to Annex 8B,

iv. For blocks that do not have angular height planes established on Annex 8B, maximum permitted building heights do not violate the intent and aim of this policy, permitted heights are consistent and compatible with building heights generally in the area where no height planes apply, and permitted heights are in keeping with the intent and aim for those areas that are set out by the Central Area Secondary Policy Plan contained in Volume 2, Annex 8C – LeBreton Flats Foreground View Control Planes and as indicated on Annex 8B – Central Area Maximum Building Heights;

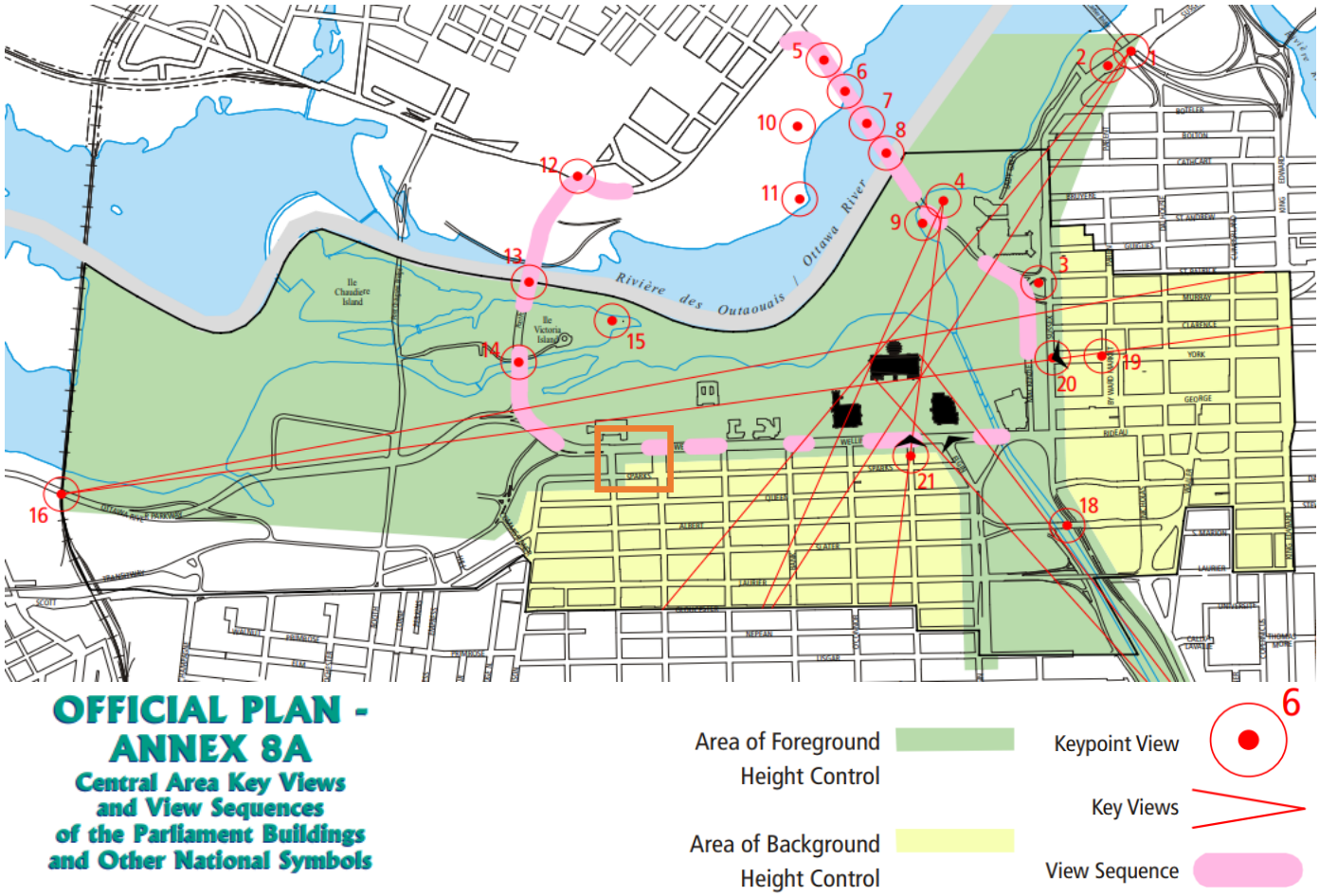

Figure 5. Extract from City of Ottawa Official Plan, Annex 8A, for reference purposes

g. Working with federal agencies to encourage the federal government to maintain its concentration of administrative functions in the Central Area;

5. The City will enhance the appearance and liveability of the Central Area and the surrounding residential neighbourhoods by:

b. Ensuring that all public and private development has regard for the compatibility criteria in Section 2.5.1, the design criteria in policy 6 below and that residential development:

i. Contributes to a sense of a human scale,

ii. Where appropriate, results in a transition from lower-profile to higher-profile buildings, and vice versa,

iii. Minimizes sun shadowing and undesirable wind conditions,

vii. Creates an identifiable entrance, and a strong transition from the public right-of-way through the use of landscape elements, changes in direction, or lighting, and
viii. Provides appropriate landscape elements;

7. The following streets are recognized as distinctive streets in the Central Area for their unique pedestrian characteristics:
   a. Confederation Boulevard which extends through the Central Area and links points of political, historical, cultural, and architectural importance within the National Capital Region, serves as a pedestrian and vehicular promenade connecting the national institutions on the banks of the Ottawa River, and provides an important sequence of views of the Parliament Building."

Heritage policy within the City of Ottawa's OP is outlined throughout **Section 4.6.1, Heritage Buildings and Areas**. Though federally managed and regulated through FHBRO, consideration should be given to the City of Ottawa's policies on heritage management. The policy states that: "[h]eritage buildings and areas are buildings, structures, sites, landscapes, areas or environments which may have cultural, architectural, historical, contextual and/or natural interest, and which may warrant designation under the Ontario Heritage Act, and/or may warrant other means of cultural heritage recognition, for example, by the federal government. Heritage significance does not only flow from recognition but is dependent on a property's inherent values.

Specific relevant **Policies** include:

2. Where a structure designated under Part V of the Ontario Heritage Act is to be altered, added to, partially demolished, demolished, relocated, or where new construction in a district designated under Part V of the Ontario Heritage Act is proposed, the approval of City Council, after consultation with its municipal heritage committee, currently known as the Ottawa Built Heritage Advisory Committee (OBHAC) is required. If the alteration, addition, partial demolition, demolition or relocation or new construction has the potential to adversely affect the heritage conservation district, the City will require that a cultural heritage impact statement be conducted by a qualified professional with expertise in cultural heritage resources […].
3. Where development is proposed on a property that is adjacent to or within 35 metres of the boundary of; a property containing an individually designated heritage building (Part IV of the Ontario Heritage Act), a heritage conservation district (Part V of the Ontario Heritage Act) or a federally-recognized heritage property, the City may require that a cultural heritage impact statement be conducted by a qualified professional with expertise in cultural heritage resources."
9. When reviewing applications for zoning amendments, site plan control approval, demolition control, minor variance, or the provision of utilities affecting lands/properties adjacent to or across the street from a designated heritage resource, adjacent to or across the street from the boundary of a heritage conservation district, or within heritage conservation district, the City will ensure that the proposal is compatible by: [Amendment 14, September 8, 2004] [Amendment #76, OMB File #PL100206, August 18, 2011]
   a. Respecting the massing, profile and character adjacent to or across the street from heritage buildings; [Amendment #76, August 04, 2010]
   b. Approximating the width of nearby heritage buildings when constructing new buildings facing the street;
   c. Approximating the established setback pattern on the street;
   d. Being physically oriented to the street in a similar fashion to existing heritage buildings;
   e. Minimizing shadowing on adjacent heritage properties, particularly on landscaped open spaces and outdoor amenity areas;
   f. Having minimal impact on the heritage qualities of the street as a public place in heritage areas;

g. Minimizing the loss of landscaped open space;
h. Ensuring that parking facilities (surface lots, residential garages, stand-alone parking and parking components as part of larger developments) are compatibly integrated into heritage areas;
i. Requiring local utility companies to place metering equipment, transformer boxes, power lines, conduit equipment boxes, and other utility equipment and devices in locations that do not detract from the visual character or architectural integrity of the heritage resource.

11. Where development is proposed adjacent to or across the street from a building on the Heritage Reference List (but not designated under the *Ontario Heritage Act*) the applicant shall demonstrate the proposal's compatibility with that heritage resource and its streetscape. [Amendment #76, August 04, 2010] [Amendment #96, February 22, 2012]"

In addition to heritage conservation, the OP addresses urban design requirement in **Section 4.11, Urban Design and Compatibility.** The policy states that "[a]t the city-wide scale, issues of compatibility are addressed in the Official Plan through the appropriate designation of land and associated policies that direct where and how certain categories of land use should be permitted to develop. […] It is recognized that because land use designations such as General Urban Area […] contain broad use permissions, it will be necessary for the zoning by-law to establish more specific permitted use lists and development regulations within areas and on individual sites in a manner that achieves compatibility among proximate uses and built forms.

At the scale of neighbourhoods or individual properties, issues such as noise, spillover of light, accommodation of parking and access, shadowing, and micro-climatic conditions are prominent considerations when assessing the relationships between new and existing development. Often, to arrive at compatibility of scale and use will demand a careful design response, one that appropriately addresses the impact generated by infill or intensification. Consequently, the issue of 'context' is a dominant theme of this Plan where it speaks to compatibility and design.

Objective criteria that can be used to evaluate compatibility include: height, bulk or mass, scale relationship, and building/lot relationships, such as the distance or setback from the street, and the distance between buildings. An assessment of the compatibility of new development will involve not only consideration of built form, but also of operational characteristics, such as traffic, access, and parking."

On December 11, 2013, City Council adopted **Official Plan Amendment 150 (OPA 150**) to implement the completion of the five-year review of the Official Plan. OPA 150 is under appeal to the OMB and therefore not technically enforceable by the City.

5.1.1 Central Area Sector Plan

The Central Area Sector Plan outlines sector-specific direction for development within the areas defined in Figure 6. Policies within the Central Area Sector plan focus on a high quality of design, protection and conservation of heritage resources, and respect for the visual primacy of the Parliamentary Precinct

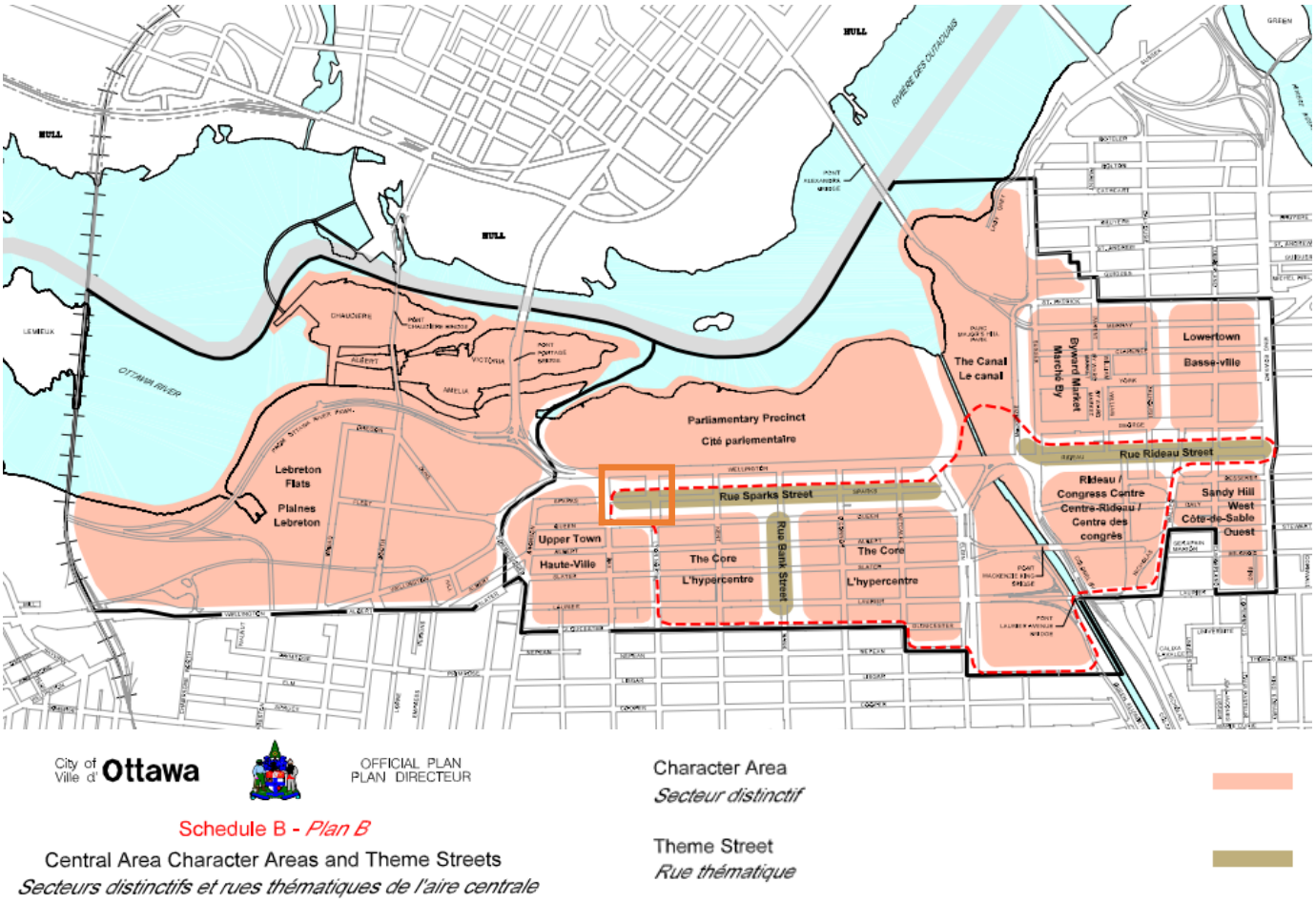

Figure 6. Central Area Character Areas and Theme Streets (Central Area Sector Plan, Schedule B)

The West Memorial Building falls within the Parliamentary Precinct character area, which is intended to be an area of federal presence, with Confederation Boulevard and Wellington Street acting as the primary avenue to the Capital. The intent of this precinct is to maintain visual and symbolic primacy of Parliament Hill. As such, building heights are limited, and building are encouraged to enhance the symbolic importance of the area (Section 1.4.1). The retention and improvement of existing built heritage resources is also promoted.

As reiterated through most of the over-arching policy tools, it is important that the West Memorial project respect the views of this important region, as well as the heritage character of the existing building.

5.2 ZONING BY-LAW 2008-250

The site is zoned Mixed Use Downtown, Schedule 11, MD S11, and is subject to the Mature Neighbourhoods Overlay.

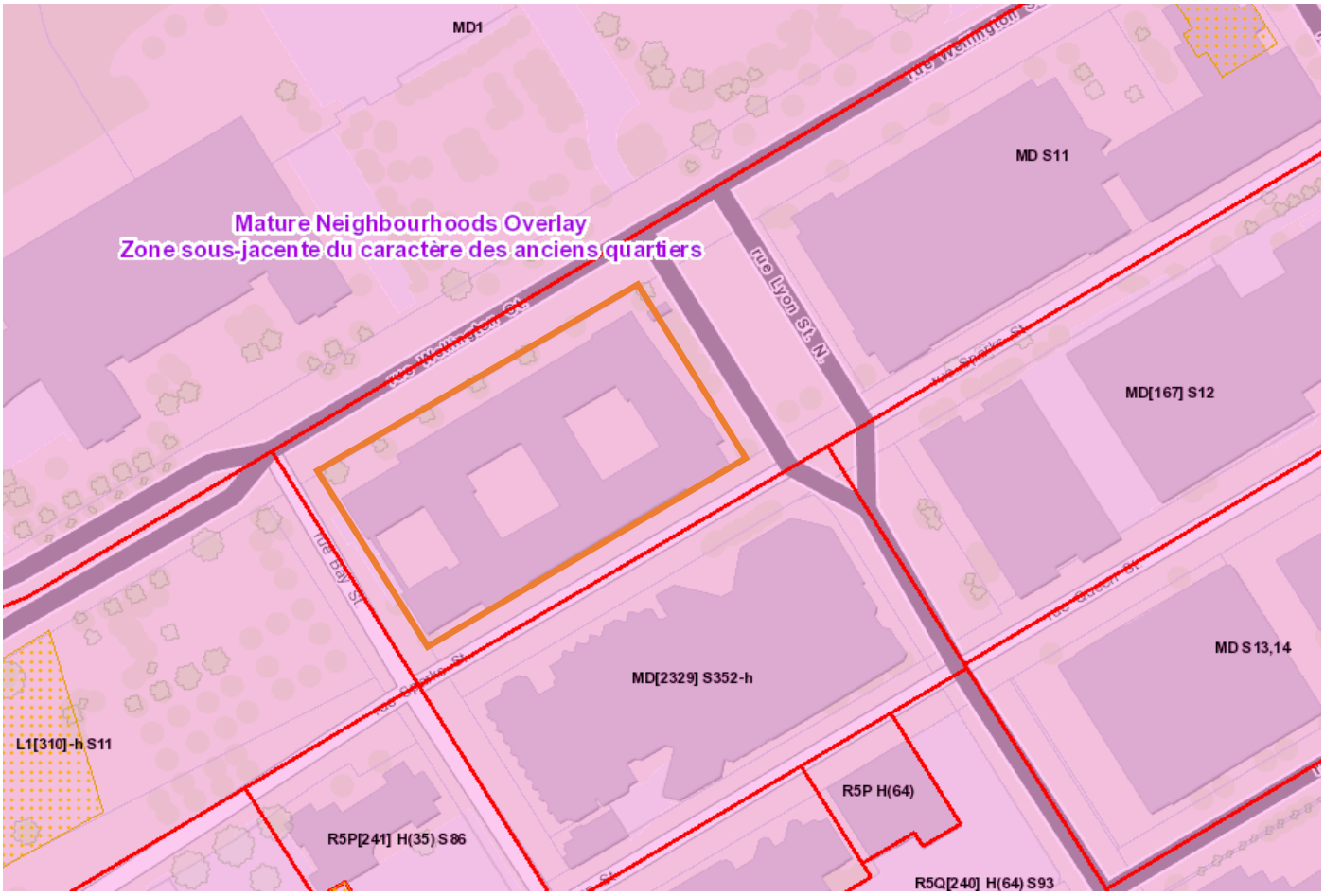

Figure 7. Extract of Zoning By-law 2008-250

The purpose of the MD – Mixed-Use Downtown Zone is to:

(1) support the Central Area, as designated in the Official Plan, as the central place in the region for employment and shopping while also allowing residential, cultural and entertainment uses;
(2) ensure that the Character Areas in the Central Area, namely the Core Area, the Parliamentary Precinct, the ByWard Market, the Rideau/Congress Centre, the Canal Area, Lowertown, Upper Town, Sandy Hull West, LeBreton Flats and the four Business Improvement Areas, Rideau, Sparks, ByWard Market and Bank Streets, continue to serve as primary business or shopping areas and maintain their distinct character;
(3) facilitate more intense, compatible and complementary development to ensure that the active, pedestrian-oriented environment at street level, particularly along Bank Street, Sparks Street and Rideau Street is sustained; and
(4) impose development standards that will protect the visual integrity and symbolic primacy of the Parliament Buildings and be in keeping with the existing scale, character and function of the various Character Areas and Business Improvement Areas in the Central Area while having regard to the heritage structures of the Central Area.

The Mixed-Use Downtown Zone permits a variety of uses including residential, commercial, office, service industry, and others. The provisions of the MD zone are outlined in Table 3 below.

Table 3. Provisions of Mixed-Use Downtown Zone

Zoning Mechanism	Provision
(a) Minimum lot area	No minimum
(b) Minimum lot width	No minimum
(c) Minimum front yard and corner side yard	No minimum
(d) Minimum interior side yard	No minimum
(e) Minimum rear yard	No minimum
(f) Maximum building height (see Schedule 11)	North side: 108m above sea level South side: 125m above sea level
(g) Maximum floor space index	Not applicable
(h) Minimum width of landscaped area	No minimum, except that where a yard is provided and not used for required driveways, aisles, parking, loading spaces or outdoor commercial patio, the whole yard must be landscaped
(i) Minimum width of landscaped area around a parking lot (see s.110)	See subsection 6 (surface parking is not permitted)
Table 193 (6)	All parking spaces, whether principal, accessory, required or provided must be located in a parking garage
s. 101 Minimum Parking Rates (Schedule 1A)	No minimum of-street parking required (as per Area Z)

Section 139 of Zoning By-law 2008-250 outlines specific provisions for infill development in Mature Neighbourhoods and applies only to low-rise residential use buildings of four storeys or less. Considering the proposal is a non-residential use, Section 139 provisions do not apply to the West Memorial Building.

5.3 DOWNTOWN OTTAWA URBAN DESIGN STRATEGY 20/20

The goal of the Downtown Ottawa Urban Design Strategy (DOUDS) is to enhance the public realm and urban environment by making improvements to streets, parks, open spaces and special character areas, thereby improving the overall “urban experience”. The document focuses on encouraging good urban design that captures the Civic experience of downtown Ottawa, and protection of historic character and built form.

Appendix A of the DOUDS defines various streetscape styles. Located along Confederation Boulevard, within the block bounded by Lyon Street to the East, Bay Street to the West and Sparks Street to the South, the section of Wellington Street pertinent to the site is considered to be the Business Precinct (see Figure 8). The Street Category is “Distinct”, with primarily Institutional/National uses.

Figure 8. Extract of the Business Precinct mapping from the Downtown Ottawa Urban Design Strategy

Specifically, Targeted Precinct Strategy #13 refers to the need for Wellington Street/Confederation Boulevard to reflect a high quality of design and demonstrate the civic importance of this area. The DOUDS highlights the importance of collaboration with the NCC to ensure the streetscape elements and quality of design reflect the street's importance within the Nation's Capital. Elements of these guidelines should be incorporated into the rehabilitation of the West Memorial Block.

5.4 MUNICIPAL APPROVAL PROCESS & REQUIREMENTS

The following section of this report outlines the potential municipal approvals required as part of the redevelopment and rehabilitation of the West Memorial Building. It is important to note that in order to determine which approvals and associated plans and studies may be required, a Pre-Application Consultation request with the City of Ottawa's Development Review planners is recommended.

5.4.1 Official Plan Amendment

Though the goals and policies of the Central Area designation of the City of Ottawa's Official Plan are broad and permissive of a wide range of uses, should the development proposal deviate from any of the permitted policy direction, an Application for Official Plan Amendment may be required, which is a formal municipal process requiring review, public consultation, presentation to Planning Committee, and approval by Council.

Considering the project scope and objectives, this type of application is not anticipated to be required.

5.4.2 Zoning By-law Amendment

The existing Mixed-Use Downtown zone permits a variety of land uses, which encompasses the proposed office use at the West Memorial Building. In terms of specific provisions, of importance is the maximum height limit controls set out in Schedule 11, as well as the requirement to locate all parking in a parking garage. Should any deviation be required form these provisions or those listed in Table 3, an Application for Zoning By-law Amendment may be required. A Zoning By-law Amendment may be either Minor (to permit deviations to the provisions of the zoning), or Major (to permit a change of use), and are subject to municipal review, public consultation, presentation to Planning Committee, and approval by Council.

As detailed in Table 2, there are no minimums or maximums required for lot setbacks, lot areas, lot coverage, or floor space indexes within the MD zone. As such, provided the proposed redevelopment adheres to existing height limits and follows the provisions required in the parking standards, it is not anticipated that

this type of planning approval would be required. Confirmation of this can be determined as the design progresses.

5.4.3 Site Plan Control Approval

Site Plan Control approval is a mechanism by which municipalities review and control site-specific development details including landscaping, parking, site plan, urban design, among others. Depending on the nature of the design proposal, the redevelopment of the West Memorial Block may be subject to Site Plan Control Approval. An application for site plan control is required if:

- The proposed development is located within a Design Priority Area;
- The size of proposed additions exceeds 55 square metres, or 30% of the existing gross floor area, to a maximum of 600 metres;
- The addition of a surface parking spaces exceeds nine spaces *(note that surface parking is not permitted in current zoning).*

A Pre-Application Consultation with City of Ottawa staff should be requested to determine whether Site Plan Control Approval will be required, and if so, to confirm the necessary plans and studies for the application submission. These could include but are not limited to: site plans, Stormwater management plans, landscape plans, site servicing plans, architectural elevations, urban design comments, and/or environmental site assessments, among others.

It is noted that if a federally-owned property is being reviewed through the FLUDA process, then the City of Ottawa Urban Review Panel process does not apply. The same principle applies with respect to designated heritage properties and buildings, where FHBRO process will apply and the City of Ottawa Heritage review process does not apply.

The Site Plan Control process may be subject to public consultation and may be approved at either a staff or managerial level, depending on the scope.

6. CONCLUSION & NEXT STEPS

It is understood that the proposed redevelopment project of the West Memorial Building located at 344 Wellington Street will adhere to multi-jurisdictional policies and processes at the federal, provincial, and municipal levels. It is important to note that the above-noted policies are not necessarily an exhaustive overview all relevant policy applicable to the redevelopment of the West Memorial Building and are intended to provide a broad overview of the considerations to be applied throughout the early stages of the design process.

Considering the complexity of the policy framework, careful consideration must be given to ensure that the appropriate authorities are consulted early in the design process, including the National Capital Commission, the Federal Heritage Buildings Review Office, the Ministry of Environment and Climate Change, and the City of Ottawa. Through these consultation processes, the various needs for levels and complexity of approvals will be more clearly determined.

In terms of next steps, it will be important to initiate the Federal Land Use and Design Approval Process with the NCC in order to ensure open engagement and dialogue as early as possible in the process, so as to avoid any project delays. Once this process is initiated, consultation with FHBRO, MOECC, and the City of Ottawa may follow suit.

For additional details do not hesitate to contact the undersigned.

Lloyd Phillips & Associates Ltd.

Reviewed by:

Lloyd Phillips, MCIP RPP
Principal

Prepared by:

Jessica D'Aoust, M.Pl
Planner

APPENDIX A: REFERENCE MATERIAL

I) National Capital Commission

Canada's Capital Views Protection (2007)

Canadian Environmental Assessment Act (2012)

Core Area Sector Plan (2005)

National Capital Act (1985)

Plan for Canada's Capital (2017)

Web: National Capital Commission (www.ncc-ccn.gc.ca)

II) Parks Canada

A Guide to Working with the Federal Heritage Buildings Review Office (2009)

Web: Federal Heritage Buildings Review Office (https://www.pc.gc.ca/en/culture/beefp-fhbro)

III) Government of Ontario

Provincial Policy Statement (2014)

Web: Ministry of Environment and Climate Change (https://www.ontario.ca/page/ministry-environment-and-climate-change)

IV) City of Ottawa

Official Plan (2003)

Central Area Secondary Plan (2003)

Downtown Ottawa Urban Design Strategy 20/20 (2004)

Zoning By-law, 2008-25

Site Plan Control By-law, 2014-256

Web: City of Ottawa Building Code Services (www.ottawa.ca)

APPENDIX D: Water Demand and FUS Calculations

MORRISON HERSHFIELD

Project Name	West Memorial Building
Project Number	2170710
Site Address	344 Wellington St, Ottawa
Completed By	BK
Date	4/23/2018

Excerpt from City of Ottawa Water Design Guidelines (2010), Table 4.2

Demand Type	Amount	Units
AVERAGE DAILY DEMAND		
Residential	350	L/person/day
Industrial - Light	35000	L/gross ha/d
Industrial - Heavy	55000	L/gross ha/d
Commercial & Instutional		
Shopping Centre	2500	L/(100m2/d)
Hospital	900	L/(bed/day)
School	70	L/(Student/day)
Trailer Park no Hook-up	340	L/(space/day)
Trailer Park with Hook Up	800	L/(space/day)
Campgrounds	225	L/(Campsite/day)
Mobile Home Parks	1000	L/(space/day)
Motels	150	L/(bed-space/day)
Hotels	225	L/(bed-space/day)
Tourist Commercial	28000	L/gross ha/d
Other Commercial	28000	L/gross ha/d

MAXIMUM DAILY DEMAND			
Residential	2.5	x avg. day	L/person/day
Industrial	1.5	x avg. day	L/gross ha/d
Commercial	1.5	x avg. day	L/gross ha/d
Instutional	1.5	x avg. day	L/gross ha/d

MAXIMUM HOURLY DEMAND			
Residential	2.2	x max day	L/person/day
Industrial	1.8	x max day	L/gross ha/d
Commercial	1.8	x max day	L/gross ha/d
Instutional	1.8	x max day	L/gross ha/d

	Value
Class of Building (A-N)	Other Commercial
Quantity (persons/spaces/gross ha)	0.5
Category of Building (1-4)	Commercial
Size of building (gross ha)	0.5

Average Daily Demand	14419.2	L/day
Maximum Daily Demand	21628.7	L/day
Maximum Hourly Demand	38931.7	L/day

MORRISON HERSHFIELD

Project Name	West Memorial Building
Project Number	2170710
Site Address	344 Wellington St, Ottawa
Completed By	BK
Date	23-Apr-18

(Per Fire Underwriters Survey, Water Supply for Pulic Fire Protection, 1999)

1. Determine Estimated Fire Flow based on Building Floor Area

F= 220 C √A

F= Required flow in litres / minute
A= Total floor area in m^2
C= Coefficient related to Construction
= 1.5 for wood frame construction
= 1.0 for ordinary construction
= 0.8 for non-combustible construction
= 0.6 for fire-resistive construction

C=	0.6	
A=	10299.4	m^2
F=	13396.1	L/min

2. Adjust flow based on Fire hazard and contents

A	Non-combustible	-25%
B	Limited Combustible	-15%
C	Combustible	0%
D	Free Burning	15%
E	Rapid Burning	25%

Type of Construction (A,B,C,D)	A	
Reduction Factor	-25%	
Flow From 1.	13396.1	L/min
Reduced Flow	10047.1	L/min
Minimum Flow (2000 L/min)	10047.1	L/min
Flow	10047.1	L/min

3. Reduce flow from No. 2. based on automatic sprinkler protection

Flow from 2.	10047.1	L/min
Complete Automatic Sprinkler Protection (yes/no)	No	
Reduction	0%	
Sprinkler system is standard for fire department hose lines (yes/no)	Yes	
Additional Reduction	10%	
Sprinkler System is fully supervised (yes/no)	Yes	
Additional Reduction	10%	
Total Reduction	20%	
Flow after Sprinkler Reduction	8037.7	L/min

4. Adjacent Structures / Fire Separation with other buildings

Flow from 3.	8037.7	L/min

A	0m-3m	25%
B	3.1m - 10m	20%
C	10.1m to 20m	15%
D	20.1m to 30m	10%
E	30.1 m to 45m	5%
F	45m +	0%

	Distance to Adjacent Building	Flow Increase	
North	F	0%	48.4
East	F	0%	51.1
South	D	10%	21.7
West	F	0%	45+

Cumulative Increase (Max 75%)	10%	
Flow Increased for Adjacent Structures	8841.5	L/min
Maximum Permitted Flow (45 000 L/min)	8841.5	L/min
Minimum Permitted Flow (2 000 L/min)	8841.5	L/min

MORRISON HERSHFIELD

Project Name	West Memorial Building
Project Number	2170710
Site Address	344 Wellington St, Ottawa
Completed By	BK
Date	23-Apr-18

(Fire flow estimate per NFPA 1142)

WS_{min} = **(VS) * (CC) / (OHC)**

where:
- WS_{min} = minimum water supply in gal (for results in L, multiply by 3.785)
- VS = total volume of structure in ft^3 (if voume is measured in m^3, multiply by 35.3)
- OHC = occupany hazard classification number
- CC = construction classification number

1. Calculate VS

Floors	Area (m^2)	# Floors	Height (m)	Volume (m^3)
Basement + Ground	5150	2	8	42382
1st Floor - 5th Floor	4203	5	20	83266
6th Floor - 7th Floor	2647	2	8	20366
Roof	2647	1	8	10073

(obtained from Background Information)

Total VS = 156088 m^3
5509896 ft^3

2. Determine OHC

For, (13) Offices (including data processing) (section 5.2.5.2)
OHC number 7 shall be used.

OHC = **7**

3. Determine CC (Table 6.2.1, Section 6.3)

- Type 1 construction shall be those types in which the fire walls, structural elements, walls, arches, floors, and roofs are made of approved noncombustible or limited combustible materials (CC = 0.5)
- Type II construction shall be those types not qualifying as Type I construction in which the fire walls, structural elements, walls, arches, floors, and roofs are of approved noncomustible or limited combustible materials (CC = 0.75)

CC = **0.75**

4. Calculate WS

$$WS = \frac{5509896 * 0.75}{7}$$

= 2234460 L
= 590299.2 Gal

5. Table 4.6.1 of NFPA 1142 states if the total water supply is greater than 75,700 L, the water supply rate shall be **3,800 L/min**, subject to adjustment by the Authority Having Jurisdiction (AHJ).

6. Water Supply	=	1000 gpm	3800 L/min

Bryan Kipp

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Monday, June 11, 2018 9:41 AM
To: Bryan Kipp
Cc: Ted Donaldson
Subject: FW: Water Pressure / Flow Boundary Condition Request - West Memorial Building- 344 Wellington St.
Attachments: 344 Wellington June 2018.pdf

Good morning Mr. Kipp.

As requested:

The following are boundary conditions, HGL, for hydraulic analysis at 344 Wellington (zone 1W) assumed to be connected to the 305mm on Lyon (see attached PDF for location).

Minimum HGL = 107.4m

Maximum HGL = 115.2m

MaxDay + FireFlow (147 L/s) = 109.1m

MaxDay + FireFlow (63L/s) = 109.6m

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

Development Review Central Branch | Direction de l'examen des projets d'aménagement, Centrale
Planning, Infrastructure and Economic Development Department | Direction générale de la planification de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa

110 Laurier Ave. W. | 110, avenue Laurier Ouest, Ottawa ON K1P 1J1
(613) 580 2424 Ext. | Poste 33017
shawn.wessel@ottawa.ca

From: Bryan Kipp <BKipp@morrisonhershfield.com>
Sent: Wednesday, June 06, 2018 1:08 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Cc: Ted Donaldson <TDonaldson@morrisonhershfield.com>
Subject: Water Pressure / Flow Boundary Condition Request - West Memorial Building

Hi Shawn,

I understand from Ted that you are able to provide us with the boundary conditions for the water distribution system in the area of the West Memorial Building (344 Wellington St).
Our client has requested that we analyze the building water services using the fire flow calculated using the FUS as well as the NBC. Can you please provide us with the boundary conditions for both fire flows provided below?

The locations of the two existing 203mm building services to be replaced are approximately 24m and 27.5m south from the south curb-line of Wellington. The services connect to the 305mm Lyon St loop.

The building is an office building. The existing building and demand will not change from current use.

The fire flow calculated from the FUS process is 8841 L/min. The fire flow calculated using the NBC (NFPA 1142) is 3800 L/min.

Calculating the demand values using Table 4.2 of the City Water Design Guidelines
Average Daily Demand 14419 L/day
Max Daily Demand 21629 L/day
Max Hourly Demand 38932 L/day

If you require other details or need more information about the site, or if I should direct this request to one of your colleagues, please let me know.

Thanks for your help,

Bryan Kipp

Bryan Kipp, EIT
Municipal Designer, Ottawa Infrastructure
BKipp@morrisonhershfield.com

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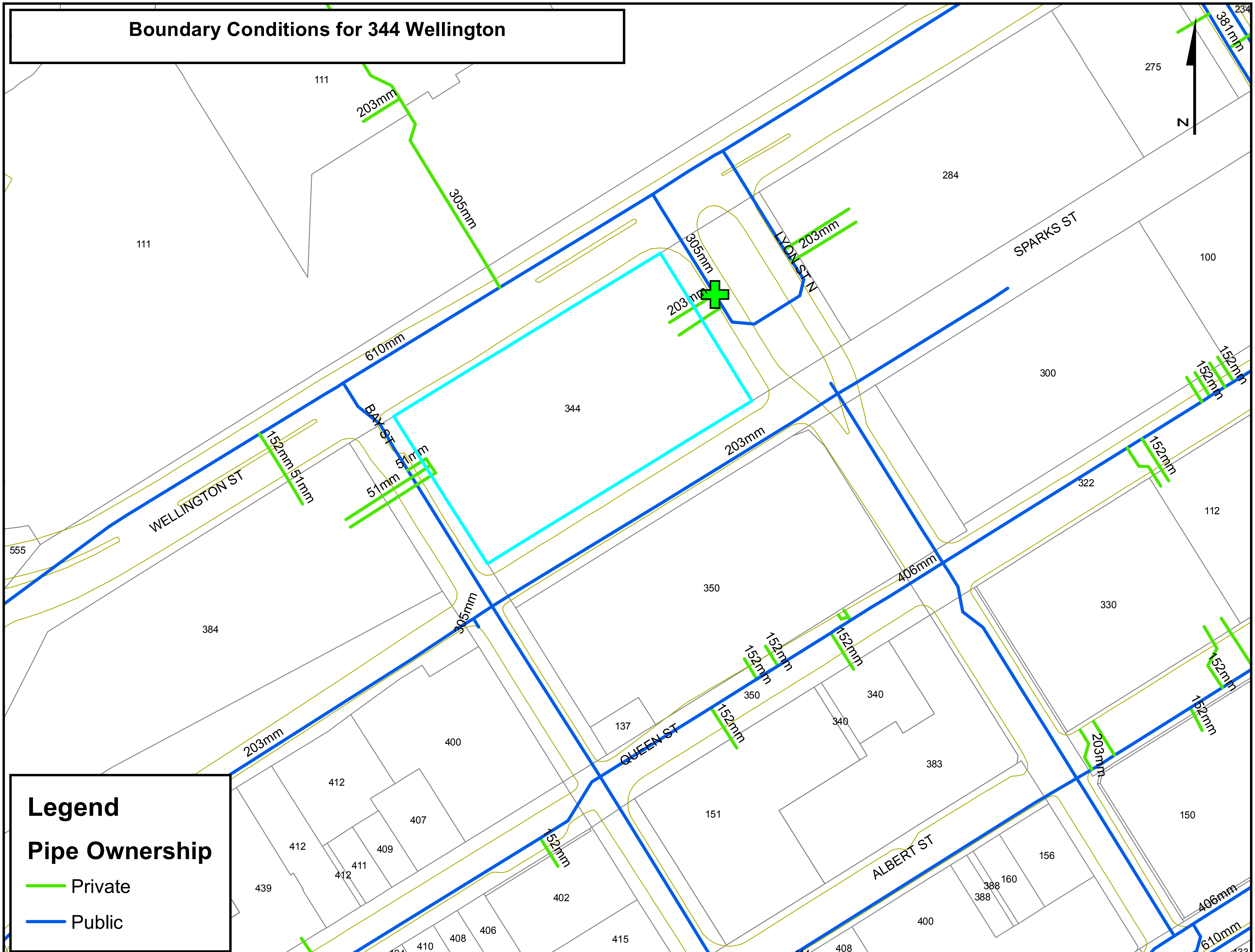
Boundary Conditions for 344 Wellington



Water Demand Calculations - Sprinkler System Fire Flow

Water demands for West Memorial Building, 344 Wellington Street:

Average Day Demand

Average Day Demand	0.17	L/s

Maximum Day Demand

Factor (x Average Day)	1.5	
Maximum Day Demand	0.25	L/s

Peak Hour Demand

Factor (x Maximum Day)	1.8	
Peak Hour Demand	0.45	L/s

Fire Demand

Fire Flow Requirement From Sprinkler System Design	31.5	L/s
Maximum Day + Fire Flow	32	L/s

Maximum Day + Fire Flow =	32.00	L/s
Peak Hour =	0.45	L/s

Water Demand Calculations - FUS Fire Flow

Water demands for West Memorial Building, 344 Wellington Street:

Average Day Demand

Average Day Demand	0.17	L/s

Maximum Day Demand

Factor (x Average Day)	1.5	
Maximum Day Demand	0.25	L/s

Peak Hour Demand

Factor (x Maximum Day)	1.8	
Peak Hour Demand	0.45	L/s

Fire Demand

Fire Flow Requirement From FUS Calculation	147.4	L/s
Maximum Day + Fire Flow	148	L/s

Maximum Day + Fire Flow =	147.61	L/s
Peak Hour =	0.45	L/s

Water Demand Calculations - NFPA 1142 Fire Flow

Water demands for West Memorial Building, 344 Wellington Street:

Average Day Demand

Average Day Demand	0.17	L/s

Maximum Day Demand

Factor (x Average Day)	1.5	
Maximum Day Demand	0.25	L/s

Peak Hour Demand

Factor (x Maximum Day)	1.8	
Peak Hour Demand	0.45	L/s

Fire Demand

Fire Flow Requirement From NBC (NFPA 1142) Calculation	63.3	L/s
Maximum Day + Fire Flow	64	L/s

Maximum Day + Fire Flow =	63.58	L/s
Peak Hour =	0.45	L/s

Building Service Sizing - Fire Flow: WMB (Lyon Street)

Scenario: *One service operational*

Connection Point: Lyon Street
Size of City Main: 305 mm
Building FFE 70 m

	HGL	Static Water Level	Pressure	Pressure
	m	m	kPa	PSI
Minimum HGL	107.4	37.4	366.86	53.2
Maximum HGL	115.2	45.2	443.37	64.3
Max Day + FireFlow	109.1	39.1	383.53	55.6

P_{Road}= 55.6 (psi) Max Day + FireFlow Water Pressure at valve on Lyon Street

Existing Service to WMB

Pipe Diameter	C-Factor
150	100
200-250	110
300-600	120
600+	130

Length

L= 30 (m)
98 (ft)

Size

d= 200 (mm)
8 (in)

Flow

Q = 0.0320 (m3/s) (Sprinkler design)
507 (Usg/min)

Velocity

$$V = \frac{1.274Q}{d^2}$$

V= 1.02 (m/s)

Head Loss

$$P_d = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

$$P = 0.434hSG$$

SG= specific gravity of water
= 1
C = 110
P_d= 0.003301292 (psi)
h= 0.007607 (ft/ft)
0.7487 (ft)

Pressure Loss

P_{ROAD}= 55.63 (psi)
P_L= 0.32 (psi)
$P_{AT\ METER}$= 55.30 (psi)

Min Allowable Pressure (Under Fire Flow) 20 psi OK

Building Service Sizing - Fire Flow: WMB (Lyon Street)

Scenario: *One service operational*

Connection Point: Lyon Street
Size of City Main: 305 mm
Building FFE 70 m

	HGL	Static Water Level	Pressure	Pressure
	m	m	kPa	PSI
Minimum HGL	107.4	37.4	366.86	53.2
Maximum HGL	115.2	45.2	443.37	64.3
Max Day + FireFlow	109.1	39.1	383.53	55.6

P_{Road}= 55.6 (psi) Max Day + FireFlow Water Pressure at valve on Lyon Street

Existing Service to WMB

Pipe Diameter	C-Factor
150	100
200-250	110
300-600	120
600+	130

Length

L= 30 (m)
98 (ft)

Size

d= 200 (mm)
8 (in)

Flow

Q = 0.1476 (m3/s) (FUS)
2340 (Usg/min)

Velocity

$$V = \frac{1.274Q}{d^2}$$

V= 4.70 (m/s)

Head Loss

$$P_d = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

$$P = 0.434hSG$$

SG= specific gravity of water
= 1
C = 110
P_d= 0.055848237 (psi)
h= 0.128683 (ft/ft)
12.6656 (ft)

Pressure Loss

P_{ROAD}= 55.63 (psi)
P_L= 5.50 (psi)
$P_{AT\ METER}$= 50.13 (psi)

Min Allowable Pressure (Under Fire Flow) 20 psi OK

Building Service Sizing - Fire Flow: WMB (Lyon Street)

Scenario: *One service operational*

Connection Point: Lyon Street
Size of City Main: 305 mm
Building FFE 70 m

	HGL	Static Water Level	Pressure	Pressure
	m	m	kPa	PSI
Minimum HGL	107.4	37.4	366.86	53.2
Maximum HGL	115.2	45.2	443.37	64.3
Max Day + FireFlow	109.6	39.6	388.44	56.3

P_{Road}= 56.3 (psi) Max Day + FireFlow Water Pressure at valve on Lyon Street

Existing Service to WMB

Pipe Diameter	C-Factor
150	100
200-250	110
300-600	120
600+	130

Length

L= 30 (m)
98 (ft)

Size

d= 200 (mm)
8 (in)

Flow

Q = 0.0636 (m3/s) (NFPA 1142)
1008 (Usg/min)

Velocity

$$V = \frac{1.274Q}{d^2}$$

V= 2.03 (m/s)

Head Loss

$$P_d = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

$$P = 0.434hSG$$

SG= specific gravity of water
= 1
C = 110
P_d= 0.011758333 (psi)
h= 0.027093 (ft/ft)
2.6666 (ft)

Pressure Loss

P_{ROAD}= 56.34 (psi)
P_L= 1.16 (psi)
$P_{AT\ METER}$= 55.18 (psi)

Min Allowable Pressure (Under Fire Flow) 20 psi OK

Building Service Sizing - Fire Flow: WMB (Lyon Street)

Scenario: *Both services operational*

Connection Point: Lyon Street
Size of City Main: 305 mm
Building FFE 70 m

	HGL	Static Water Level	Pressure	Pressure
	m	m	kPa	PSI
Minimum HGL	107.4	37.4	366.86	53.2
Maximum HGL	115.2	45.2	443.37	64.3
Max Day + FireFlow	109.1	39.1	383.53	55.6

P_{Road}= 55.6 (psi) Max Day + FireFlow Water Pressure at valve on Lyon Street

Pipe Diameter	C-Factor
150	100
200-250	110
300-600	120
600+	130

Existing Service to WMB

Length

L= 30 (m)
98 (ft)

Size

d= 200 (mm)
8 (in)

Flow

Q = 0.0738 (m3/s) (FUS)
1170 (Usg/min)

Velocity

$$V = \frac{1.274Q}{d^2}$$

V= 2.35 (m/s)

Head Loss

$$P_d = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

$$P = 0.434hSG$$

SG= specific gravity of water
= 1
C = 110
P_d= 0.015491875 (psi)
h= 0.035696 (ft/ft)
3.5133 (ft)

Pressure Loss

P_{ROAD}= 55.63 (psi)
P_L= 1.52 (psi)
$P_{AT\ METER}$= 54.10 (psi)

Min Allowable Pressure (Under Fire Flow) 20 psi OK

MORRISON HERSHFIELD

Building Service - Sizing - Max Hourly Demand

Scenario: *One service operational*

Connection Point: Lyon Street
Size of City Main: 305 mm
Building FFE 70 m

	HGL	Static Water Level	Pressure	Pressure
	m	m	kPa	PSI
Minimum HGL	107.4	37.4	366.86	53.2
Maximum HGL	115.2	45.2	443.37	64.3
Max Day + FireFlow	109.1	39.1	383.53	55.6

P_{Road}= 53.2 (psi) Mimimum Water Pressure (HGL) at valve on Lyon Street

Existing Service to WMB

Pipe Diameter	C-Factor
150	100
200-250	110
300-600	120
600+	130

Length

L= 30 (m)
98 (ft)

Size

d= 200 (mm)
8 (in)

Flow

Q = 0.0005 (m3/s)
7 (Usg/min)

Velocity

$$V = \frac{1.274Q}{d^2}$$

V= 0.01 (m/s)

Head Loss

$$P_d = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

$$P = 0.434hSG$$

SG= specific gravity of water
= 1
C = 110
P_d= 1.2407E-06 (psi)
h= 0.000003 (ft/ft)
0.0003 (ft)

Pressure Loss

P_{ROAD}= 53.21 (psi)
P_L= 0.00 (psi)
$P_{AT\ METER}$= 53.21 (psi)

Min Allowable Pressure (Max Hourly Demand)) 40 psi OK

MORRISON HERSHFIELD

Building Service - Sizing - Max Hourly Demand

Scenario: *Both services operational*

Connection Point: Lyon Street
Size of City Main: 305 mm
Building FFE 70 m

	HGL	Static Water Level	Pressure	Pressure
	m	m	kPa	PSI
Minimum HGL	107.4	37.4	366.86	53.2
Maximum HGL	115.2	45.2	443.37	64.3
Max Day + FireFlow	109.1	39.1	383.53	55.6

P_{Road}= 53.2 (psi) Mimimum Water Pressure (HGL) at valve on Lyon Street

Existing Service to WMB

Pipe Diameter	C-Factor
150	100
200-250	110
300-600	120
600+	130

Length

L= 30 (m)
98 (ft)

Size

d= 200 (mm)
8 (in)

Flow

Q = 0.0002 (m3/s)
4 (Usg/min)

Velocity

$$V = \frac{1.274Q}{d^2}$$

V= 0.01 (m/s)

Head Loss

$$P_d = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

$$P = 0.434hSG$$

SG= specific gravity of water
= 1
C = 110
P_d= 3.44162E-07 (psi)
h= 0.000001 (ft/ft)
0.0001 (ft)

Pressure Loss

P_{ROAD}= 53.21 (psi)
P_L= 0.00 (psi)
$P_{AT\ METER}$= 53.21 (psi)

Min Allowable Pressure (Max Hourly Demand)) 40 psi OK

APPENDIX E: Sanitary Sewer Design Calculations and Mechanical Engineering Report Excerpts

MORRISON HERSHFIELD

WMB Sanitary Flow Estimate

Occupancy Based Calculation

Occupancy	2526	persons	(per Section 4.2.2 - Occupant Load of 100% RS 4 - Design Development Report)
Per Capita Flow	75	l/c.d	(Sewer Design Guidelines, Appendix 4-A.3)
Daily average flow	189 450	l/d	
	189.45	m^3/d	
Peak Factor	1.5		(Sewer Design Guidelines, Figure 4.3)
Peak Flow	3.29	l/s	
Site Area	0.8	ha	
Infiltration allowance	0.28	l/s.gross ha	
Infiltration flow	0.224	l/s	
Peak Flow	3.51	l/s	

Building Use Peak Flow

Gross Area	0.8	ha
Institutional Average Flow	28 000	L/ha/d
Peaking Factor	1.5	
Peak Extraneous Flows	0.28	L/s/effective gross ha
Peak Flow	22 400	L/day
	0.26	L/sec

Mechanical Based Calculation

Peak Flow	13.24	L/s	(per Mechanical Section 13.2.1 of 100% RS 3 - Schematic Design Report)

Peak flow occurs based on the mechanical based estimate, so a peak sanitary flow of 13.24 L/sec will be used for design.

Designed: **N. Chauvin**		Project: **West Memorial Building Rehabilitation Proposed Servicing**	
Checked: **B. Kipp**	Date: **September 4, 2019**	Location: **West Memorial Building**	
Dwg Reference: **C-001**	File Ref: **2170710**		Sheet No.: **1 of 1**

MORRISON HERSHFIELD

375 mm PROPOSED SANITARY SERVICE CALCULATION SHEET

Location			Maintenance Hole Elevations						Pipe						Notes
Building	From	To	Invert (upstream)	Invert source (upstream)	Invert (downstream)	Invert source (downstream)	Drop in downstream MH	Reason	Length (m)	Length source	Diameter (mm)	Slope (%)	Capacity (Full) (L/s)	Velocity (Full) (m/s)	
Proposed Sanitary Sewers															
Proposed Private Building Service	Building	MHSA1	60.40	Design	60.30	Survey (Field Measurement)	0.00	Straight	5.0	Design	375	2.00%	248	2.25	
Existing Private Building Service	MHSA1	MHSA2	60.30	Survey (Field Measurement)	59.80	Survey (Field Measurement)	0.50	Bend 90	31.5	Survey	375	1.60%	222	2.01	

Design Parameters

Manning Roughness Coefficient, n = 0.013

Designed: **N. Chauvin**

Project: **West Memorial Building Rehabilitation**
Proposed Servicing

Checked: **B. Kipp**

Location: **West Memorial Building**

Dwg Reference: **C-001**

File Ref: **2170710**

Date: **June 10, 2019**

Sheet No.: **1 of 1**

13 Mechanical

13.1 Mechanical Systems Design - Approach and Methodology

The project intent is to provide the best mechanical solution to meet the clients' requirements. The selected systems shall be energy efficient, cost-effective, safe, and capable of providing a healthy and comfortable environment while reducing maintenance cost.

The mechanical systems will strive to meet the following design criteria:

a) Controllability of temperature, humidity, air quality and relative pressure where required (negative or positive);
b) The selected system shall have the ability to fulfill all of the design parameters;
c) Optimize filtration and dehumidification for optimal indoor air quality;
d) Base building systems are selected to serve a maximum potential occupancy rate in the building;
e) Meet the sustainable requirements of the project.

The options described below have been developed to be incorporated in the Sustainable Options. Life Cycle Costing, capital cost, carbon neutrality and energy usage are all being considered to determine the optimal choice of mechanical systems for each option. All of the mechanical options being proposed are considered feasible and advantages and disadvantages are listed to aid in determining the best approach.

13.2 Plumbing Systems

13.2.1 Capacities

Quantity and types of plumbing fixtures have been determined using room data sheet requirements, proposed layouts and functional programming layouts. The number of fixture units and flow has been determined using the NBC. All numbers will be confirmed as the design progresses.

There will be approximately 2300 fixture units or 23 L/s (360 gpm) domestic water demand for the building and the existing 200mm water main will be sufficient serving the building will be sufficient.

The sanitary flow rate has been calculated to be 1,300 Fixture Units (13.24 L/s). It is anticipated that the existing sanitary connection will be sufficient.

It is assumed that there will not be water retention on the roof and that the drainage rate will be 114 L/s (1800 gpm), for which it is anticipated that the 375mm storm connection will be sufficient.

The water main and sanitary and storm mains connect to the building at the North-East Corner in the basement mechanical room. The exact location and inverts will be determined in future deliverables.

13.2.2 Plumbing Systems Sub-Option 1 – City Services

Both a new domestic cold water system and a new domestic hot water heating system will be installed. All of the domestic cold water will be provided from the city water main.

New sanitary and storm drainage systems will be installed. For all levels above the basement, sanitary and storm drainage will be gravity drained.

As much as possible, sanitary and storm will be gravity drained. Basement sanitary drains, foundation drains and air well drains may be below the building invert and require pumping. This type of arrangement is very typical for commercial buildings with basements. Refer to Section 14 for further discussion concerning the inverts and connections to City services.

Plumbing fixtures will be chosen to be water efficient and match flow rates required for sustainable requirements.

In areas of heritage value, plumbing fixtures will also be chosen to closely match their original counterparts. Consideration will also be given to re-using washroom lavatories.

13.2.3 Plumbing Systems Sub-Option 2 – City Services + Rainwater Harvesting

This option will be similar to Sub-Option 2 but will also include rainwater harvesting. Rainwater will be collected from roofs of the building and directed to the rain water storage tanks located in the West sub-basement mechanical room. The total tank volume will be determined in future deliverables and will be sized to meet the sustainable requirements. A water treatment system will be installed to prevent growth of bacteria and algae in accordance with current codes and regulations. An appropriate filtration system will be installed to resolve any issues with odours and colours. Water colour must be transparent.

14 Mechanical Design

14.1 Demolition

The existing mechanical systems will be demolished. Where possible equipment will be salvaged for re-use or re-sale. Refer to Appendix ZZ4: Mechanical, DM200D, DM300D and DM400 series for demolition drawings.

14.2 Plumbing Systems

Based on NBC rainfall intensity for a five year storm, the required storm drainage rate will be 114 L/s (1800 gpm). Storage is not available on the roof but the municipal system has sufficient capacity for this flow rate. Due the heritage façade of the building, roof scuppers will not be provided. A separate overflow drainage system sized at 200% capacity will be provided and will drain to grade in multiple locations. Refer to Section 15 Civil/Municipal Design for further site requirements.

Both a new domestic cold water system and a new domestic hot water heating system will be installed. New sanitary and storm drainage systems will also be installed. Plumbing pipe sizing has been based on the National Plumbing Code Sections 2.3 and 2.5. Refer to plumbing drawings in Appendix ZZ4: Mechanical, M100 and M200 series for details.

Refer to Section 15 Civil/Municipal Design for further discussion concerning the inverts and connections to City services.

14.2.1 Plumbing Fixtures

Plumbing fixtures will be chosen to be water efficient and match flow rates required for sustainable requirements.

Refer to plumbing fixture specifications in Appendix YY3: Mechanical and drawings in Appendix ZZ4: Mechanical, M100 and M200 series for details.

Flow requirements to meet the following:

1. Water closets: 4.2 LPF
2. Urinals: 0.5 LPF
3. Kitchen Sinks: 5.7 LPM
4. Bathroom sinks: 1.9 LPM
5. Showers: 5.7 LPM

14.3 Heating and Cooling

14.3.1 Capacities

Heating, cooling and outdoor air calculations have been performed and are included in Appendix K: Mechanical Load Calculations. They have been calculated to the following conditions:

APPENDIX F: Storm Sewer Design Calculations

MORRISON HERSHFIELD

375 mm PROPOSED STORM SERVICE CALCULATION SHEET

Bay St Outlet

LOCATION			INDIVIDUAL							CUMULATIVE		DESIGN				PIPE													
Description	From	To	Asphalt Area	Lawn Areas	Bldg. Area	Gravel Area	Other	Total	R*A*N	Area	R*A*N	Time of Conc.	Storm Event Return Period	Rainfall Intensity	Peak Flow	Length	Diameter	Grade	Full Capacity	Full Velocity	Time of Flow	Reserve Capacity	Upstream Invert	Upstream Invert Source	Downstream Invert	Downstream Invert Source	Drop in Downstream MH	Reason	q/Q	Notes
			(ha)	(ha)	(ha)	(ha)	(ha)	(ha)		(ha)		(min.)	(year)	(mm/hr)	(L/s)	(m)	(mm)	(%)	(L/s)	(m/s)	(min)	(L/s)	(m)		(m)		(m)			
West Memorial Building to Bay St	Building	STMH1			0.480			0.480	1.201	0.480	1.201	10.00	5.00	104.19	125.13	6.7	375	2.1	253.44	2.29	0.05	128.31	65.89	Design	65.75	Design		Straight	0.49	60% of building runoff will drain to Bay St (0.6 x 0.8ha)
	STM1	STMH2							0.000	0.480	1.201	10.05	5.00	103.94	124.82	16	375	1.9	244.05	2.21	0.12	119.23	65.75	Design	65.44	Design	0.03	Bend 45	0.51	
	STMH2	STMH3 (City)							0.000	0.480	1.201	10.17	5.00	103.31	124.07	6	375	2.0	247.95	2.25	0.04	123.89	65.41	Design	65.29	As-Built			0.50	

Q = RAIN, where
Peak flow (L/s)
R = Runoff coefficient
A = Area (ha)
I = Rainfall intensity (mm/hr)
N = 2.78

Asphalt Area: R = 0.90
Lawn Area: R = 0.30
Building Area: R = 0.90
Gravel Area: R = 0.50

Mannings Roughness Coefficient = 0.013

Prepared By: N. Chauvin

Checked by: B. Kipp

Date: June 10, 2019

Project No. 2170710

MORRISON HERSHFIELD

375 mm PROPOSED STORM SERVICE CALCULATION SHEET

Lyon St Outlet

LOCATION			INDIVIDUAL							CUMULATIVE		DESIGN				PIPE													
Description	From	To	Asphalt Area	Lawn Areas	Bldg. Area	Gravel Area	Other	Total	R*A*N	Area	R*A*N	Time of Conc.	Storm Event Return Period	Rainfall Intensity	Peak Flow	Length	Diameter	Grade	Full Capacity	Full Velocity	Time of Flow	Reserve Capacity	Upstream Invert	Upstream Invert Source	Downstream Invert	Downstream Invert Source	Drop in Downstream MH	Reason	q/Q	Notes
			(ha)	(ha)	(ha)	(ha)	(ha)	(ha)		(ha)		(min.)	(year)	(mm/hr)	(L/s)	(m)	(mm)	(%)	(L/s)	(m/s)	(min)	(L/s)	(m)		(m)					
West Memorial Building to Lyon St	Building	STMH1 (City)			0.320			0.320	0.801	0.320	0.801	10.00	5.00	104.19	83.42	10.7	375	2.0	245.63	2.22	0.08	162.20	68.80	Design	68.59	As-Built	0.06	Bend 90	0.34	40% of building area will drain to Lyon St (0.4 x 0.8ha)

Q = RAIN, where
Peak flow (L/s)
R = Runoff coefficient
A = Area (ha)
I = Rainfall intensity (mm/hr)
N = 2.78

Asphalt Area:	R = 0.90
Lawn Area:	R = 0.30
Building Area:	R = 0.90
Gravel Area:	R = 0.50

Mannings Roughness Coefficient = 0.013

Prepared By: N. Chauvin

Checked by: B. Kipp

Date: June 10, 2019

Project No. 2170710

Bryan Kipp

From: Baribeau, Celine <cbaribeau@bpa.ca>
Sent: Monday, June 10, 2019 10:34 AM
To: Bryan Kipp
Cc: Eric Emery; Wallace, Megan
Subject: RE: WMB: Design workshop for Storm drainage

Hi Bryan,

Yes, 60% to Bay St and 40% to Lyon St is still good.

Thanks,

Celine Baribeau_EIT
Mechanical
cbaribeau@bpa.ca | t: 6135966454x5396

From: Bryan Kipp <BKipp@morrisonhershfield.com>
Sent: June 10, 2019 9:41 AM
To: Baribeau, Celine <cbaribeau@bpa.ca>
Cc: Eric Emery <EEmery@morrisonhershfield.com>; Wallace, Megan <mwallace@bpa.ca>
Subject: RE: WMB: Design workshop for Storm drainage

Hi Celine,

Thanks for your quick response and updated schematic. We will hold off showing the roof overflow locations for this submission until you have had a chance to confirm with the team.

For the roof drains designed to capture the 5-year flow, could you please tell me how many drain to Bay St vs. Lyon St? Or the approximate percentage of controlled flow roof area that drains to Bay St vs. Lyon St? I just need a rough estimate to finalize the design of the new minor storm outlets for this submission. In the past I remember Megan had mentioned approximately 60% to 40% split of controlled roof flow to Bay St vs. Lyon St.

Thanks,
Bryan

From: Baribeau, Celine [mailto:cbaribeau@bpa.ca]
Sent: Monday, June 10, 2019 9:11 AM
To: Bryan Kipp <BKipp@morrisonhershfield.com>
Cc: Eric Emery <EEmery@morrisonhershfield.com>; Wallace, Megan <mwallace@bpa.ca>
Subject: RE: WMB: Design workshop for Storm drainage

Hi Bryan,

I attached the schematic showing the percentage of overflow storm drainage at the locations we show on our drawings for now (purple arrows). Please note these locations are very preliminary since they have not been confirmed by the team. I did not show any outlets to the Lyon St. since there is larger heritage concerns and it's the main entrance of the building. However, if on a Civil side it makes more sense please let us know we will coordinate a location with the architect during design development.

Thank you,

Celine Baribeau_EIT
Mechanical
cbaribeau@bpa.ca | t: 6135966454x5396

From: Bryan Kipp <BKipp@morrisonhershfield.com>
Sent: June 7, 2019 4:18 PM
To: Baribeau, Celine <cbaribeau@bpa.ca>; Wallace, Megan <mwallace@bpa.ca>
Cc: Eric Emery <EEmery@morrisonhershfield.com>
Subject: RE: WMB: Design workshop for Storm drainage

Hi Celine and Megan,

I am wondering if the attached roof drainage schematic still represents your latest design, and if you can confirm which sections of the yellow areas (flat roofs with overflow roof drains) drain to Bay St vs. Lyon St.

I assume the roofs adjacent to the loading dock drain to the Bay St outlet, however am unsure about the split of the central flat roof area. Alternatively if you could tell me the approximate percentage of runoff from the flat roofs that drains to each storm outlet, that would also work.

I need this information in order to finalize our storm sewer design sheets for Monday's submission.

Thanks,
Bryan

Bryan Kipp, P.Eng.
Civil Engineer
BKipp@morrisonhershfield.com

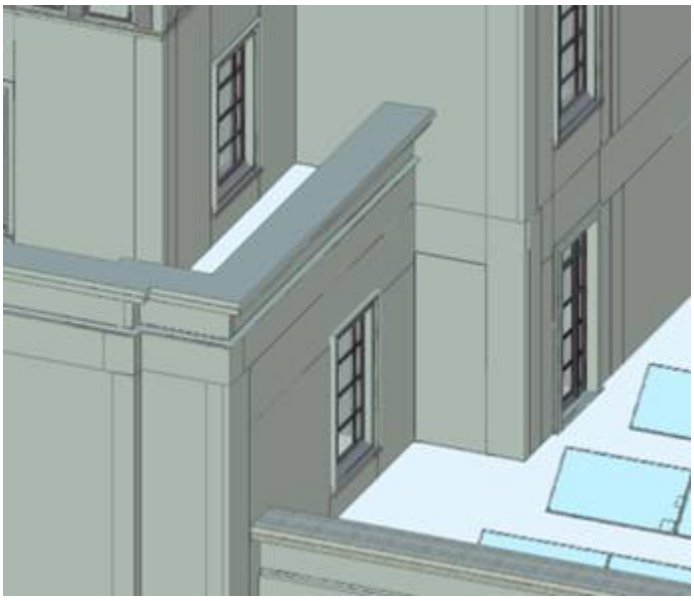
MORRISON HERSHFIELD
People • Culture • Capabilities
200 – 2932 Baseline Road | Ottawa, ON K2H 1B1 Canada
Dir: 613 690 3722 | Office: 613 739 2910 | Fax: 613 739 4926
morrisonhershfield.com

From: Baribeau, Celine [mailto:cbaribeau@bpa.ca]
Sent: Wednesday, May 8, 2019 1:11 PM
To: Eric Emery <EEmery@morrisonhershfield.com>; Bryan Kipp <BKipp@morrisonhershfield.com>; Michael Paquette <Michael.Paquette@Kasian.com>; Emmanuelle van Rutten (emma@mtarch.com) <emma@mtarch.com>; Shawn Geddes <shawn@mtarch.com>
Cc: Wallace, Megan <mwallace@bpa.ca>
Subject: RE: WMB: Design workshop for Storm drainage

All,

Please see attached our preliminary roof overflow schematic showing the direction of the flows.

The small roof sections highlighted in orange have a high parapet and wont allow the rainwater to overflow over the parapets. To allow for overflow drainage of these areas we are hoping to have some sort of gutter system or scuppers to direct the overflows to the adjacent roofs (blue arrows). Thoughts?



Please review and provide comment. Once we get confirmation if we drain the overflow to grade or to a cistern, we will be able to finalise the storm system and coordinate all riser locations.

Thank you,

Celine Baribeau_EIT
Mechanical
cbaribeau@bpa.ca | t: 6135966454x5396

-----Original Appointment-----
From: Eric Emery <EEmery@morrisonhershfield.com>
Sent: May 2, 2019 5:07 PM
To: Eric Emery; Bryan Kipp; Wallace, Megan; Michael Paquette; Emmanuelle van Rutten (emma@mtarch.com); Baribeau, Celine; Shawn Geddes
Subject: WMB: Design workshop for Storm drainage
When: May 8, 2019 10:30 AM-12:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Ottawa - Commons Room

Meeting to coordinate storm drainage outlet design and the 1:100 year condition

We can meet in person at our office at

2932 Baseline Road. Please come to the 2nd floor to the receptionist. We have a meeting room booked on that floor.

Eric Emery, P.Eng., MBA
Manager – Ottawa Infrastructure
eemery@morrisonhershfield.com

200-2932 Baseline Road | Ottawa, ON K2H 1B1
Tel: 613 739 2910 x1022420 | Dir: 613 739 3261
Mobile: 613-978-7130
morrisonhershfield.com

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1-778-374-3091 (North America)	English (United States)
1-780-801-4899 (North America)	English (United States)
1-204-515-1159 (North America)	English (United States)
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APPENDIX G: CCTV Inspection Report

MEMORANDUM

MORRISON HERSHFIELD

TO:	Eric Emery, P.Eng.	**FROM:**	Bryan Kipp, P.Eng.
		PROJECT No.:	2170710
RE:	West Memorial Building Storm and Sanitary Sewer Condition Assessment	**DATE:**	Revised August 9, 2019 for RS4 100% Submission R1

\\OTT01FP.MH.LOCAL\DATA1\SHARED\PROJ\2170710\CIVIL\10 DESIGN\WORK IN PROGRESS\CCTV REVIEW\MEMO\2170710 SEWER CONDITION MEMO FOR RS4 100% R1\2170710 SEWER CONDITION MEMO.DOCX

The rehabilitation of the West Memorial Building includes assessment of the existing building services and adjoining sewers. The project provides an opportunity inspect and evaluate the existing infrastructure on Lyon Street south of Wellington Street (Figure 1) for need of replacement. This memorandum describes the condition assessment completed to determine whether replacement is necessary.

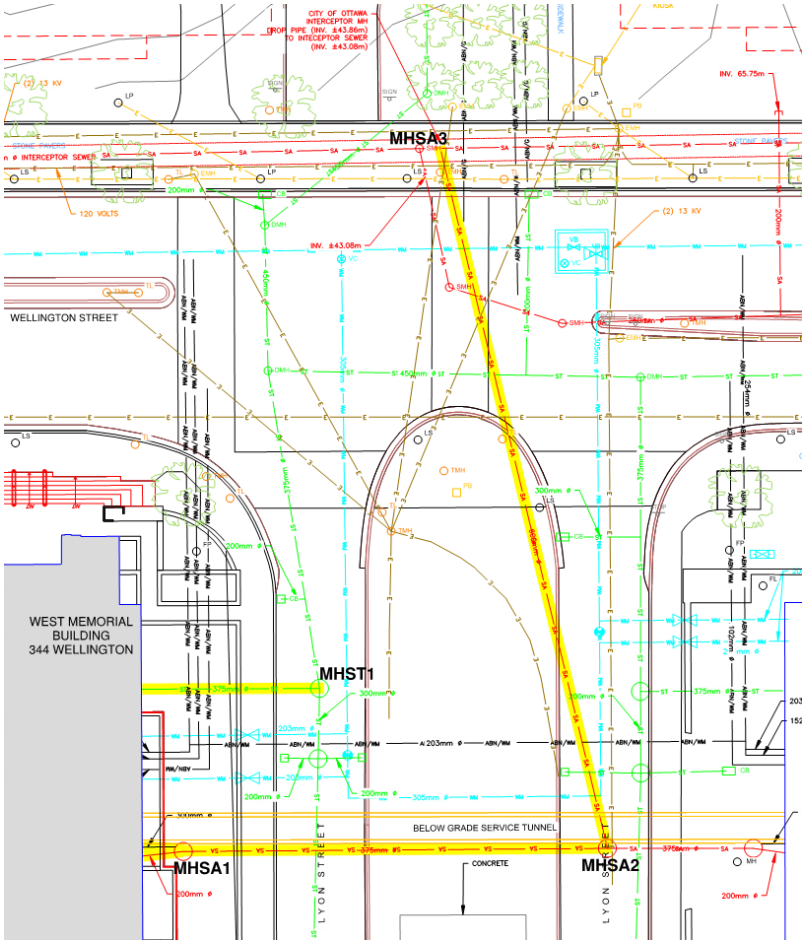

Figure 1 – Existing sanitary sewer and storm sewer servicing West Memorial Building

Information from the following sources was reviewed:

- CCTV inspection by Clean Water Works, dated May 1, 2018
- Field inspection of maintenance holes, completed by Morrison Hershfield on May 1, 2018

- CCTV inspection (from MHSA1 to MHSA2) by Clean Water Works, dated July 20, 2018
- Original building construction drawings, dated 1954
- West Memorial Building Modifications to Storm and Sanitary Services “Issued for Tender” drawings, dated April 1996

Sanitary Sewer

1. Building to MHSA1

Based on a review of available information and drawings of the West Memorial Building, there was no evidence that the sanitary service has been replaced since the building’s construction in 1954. The building construction drawings indicate the sanitary service between lower mechanical room #2 (located near the east side of the building) and MHSA1 is a 200mm diameter cast-iron pipe. The CCTV indicates that the service is in very poor condition (Figures 2 and 3). The invert of the service is misaligned with the invert of MHSA1, and over half of the pipe is blocked by what appears to be calcite. Replacement of the service is recommended to prevent failure and restore unobstructed flow.

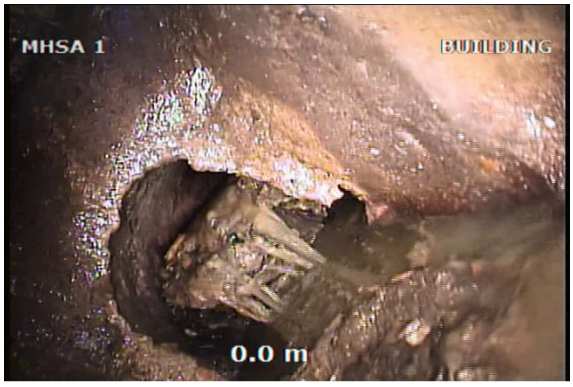

Figure 2 – Misaligned with MHSA1 invert

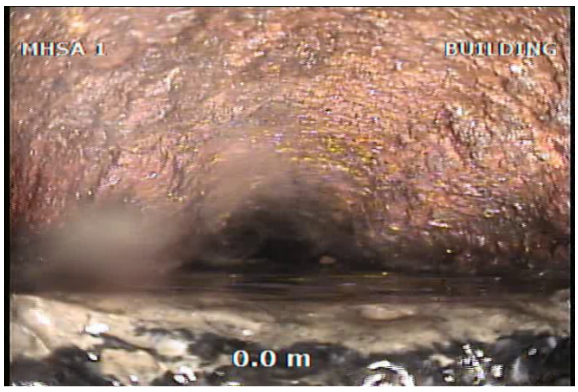

Figure 3 – Service obstructed by calcite

The construction drawings from 1954 also indicate that a 300mm diameter cast-iron storm service was installed and connected to MHSA1. The modifications to the storm and sanitary services drawings from 1996 indicate that the combined service was separated and this 300mm storm service abandoned. The CCTV indicates that the pipe was not properly abandoned (Figures 4 and 5) in 1996. It is recommended that the storm service be abandoned as per City of Ottawa specification F-4104 by filling with grout from MHSA1 to avoid potential future collapse and prevent sanitary backflow into the abandoned service from the adjacent sanitary pipe.

Figure 4 – 300mm diameter storm service

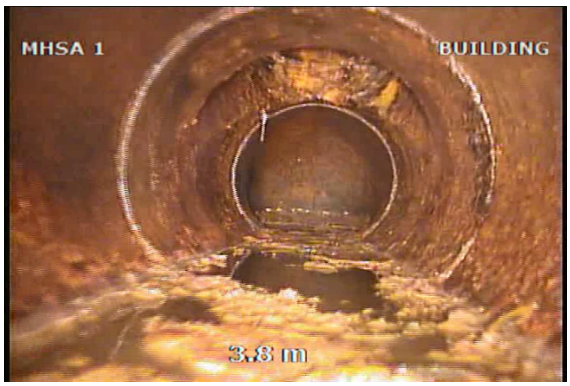

Figure 5 – Sanitary backflow in abandoned storm service

2. MHSA1 to MHSA2

The building construction drawings indicate the sanitary pipe from MHSA1 to MHSA2 is a 375mm diameter vitrified clay tile pipe (Figure 6). A partial blockage is evident 2.0m from MHSA1 (Figure 7). Hairline cracking exists in a few sections of pipe (Figure 8). A 100mm diameter pipe connects to the sanitary pipe at 11 o'clock, 10.3m from MHSA1 (Figure 9). No flow was observed through the 100mm diameter pipe connection. Another partial blockage is evident 24.6m from MHSA1 (Figure 10). This same blockage is observed from the other side, approximately 6m from MHSA2 (Figure 11).

The pipe appears to be in good structural condition throughout. It is recommended that the pipe be thoroughly cleaned to remove the blockages observed. Considering that MHSA1 is to be abandoned as part of the rehabilitation of the West Memorial Building, it is recommended that the section of sewer from MHSA1 to MHSA2 be rehabilitated by cured-in-place pipe (CIPP) lining prior to MHSA1 being decommissioned.

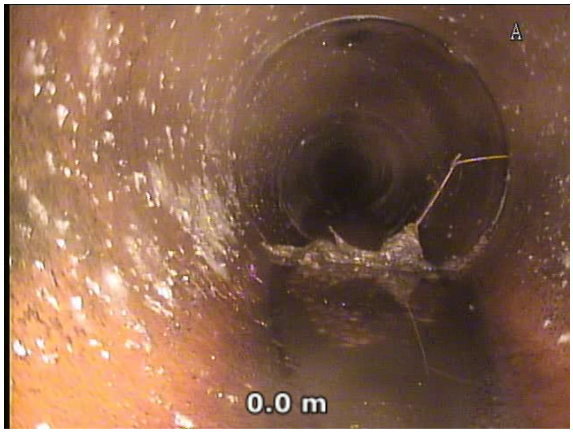

Figure 6 – 375mm diameter vitrified clay tile sanitary sewer between MHSA1 and MHSA2

Figure 7 – Partial blockage (2.0m from MHSA1)

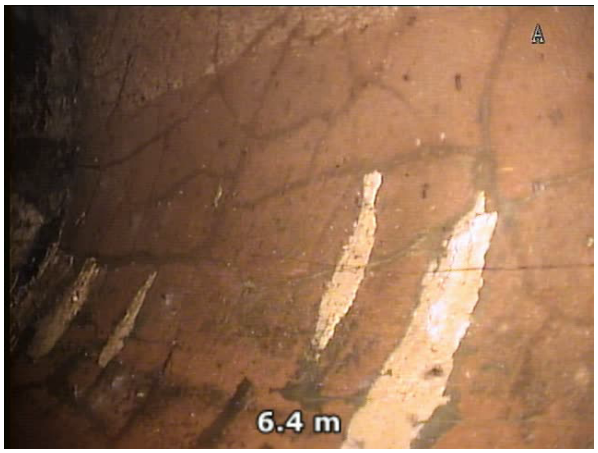

Figure 8 – Hairline cracking between 3 & 5 o'clock (6.4m from MHSA1)

Figure 9 – 100mm diameter pipe connection at 11 o'clock (10.3m from MHSA1)

Figure 10 – Partial blockage (24.6m from MHSA1)

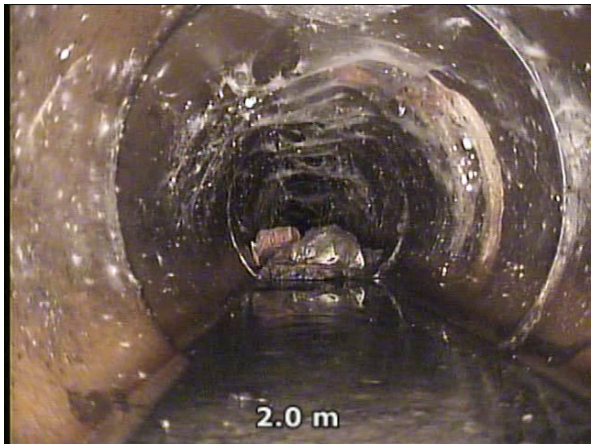

Figure 11 – Partial blockage approximately 6m from MHSA2

3. MHSA2 to MHSA3

The year of installation of the sanitary sewer from MHSA2 (Lyon Street northbound) to MHSA3 (north side of Wellington Street) could not be confirmed from a review of available information and drawings of the West Memorial Building. The sanitary sewer is shown on available record drawings of Lyon Street and Wellington Street dating from 1969 to present. Therefore, it assumed that the 600mm diameter concrete sewer from MHSA2 to MHSA3 was installed when the West Memorial Building was constructed in 1954.

Reinforcing steel is exposed at the joint between MHSA2 and the first segment of concrete pipe (Figure 12 and 13). It is recommended the joint be repaired by parging to prevent further deterioration. Otherwise, the pipe appears to be in good structural condition throughout. Minor hairline cracking is evident in a few sections of pipe (Figure 15) and encrustation at some of the pipe joints (Figure 14). No further repairs are recommended.

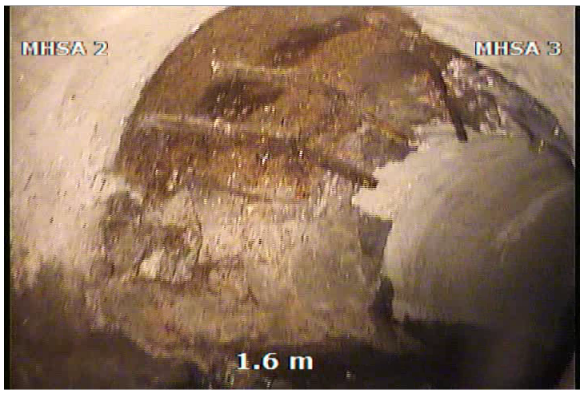

Figure 12 – Rebar exposed at MH-pipe joint

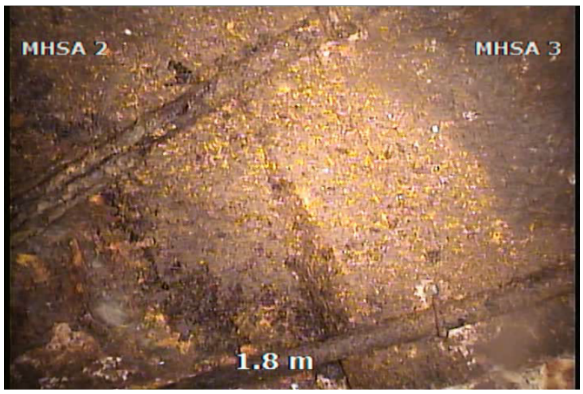

Figure 13 – Rebar exposed and rust-stained concrete

Figure 14 – Encrustation at pipe joints

Figure 15 – Minor cracking at 9 and 1 o'clock

Storm Sewer

The building rehabilitation drawings from 1996 indicate that a 375mm diameter service was installed from the lower mechanical room #2 to MHST1. The 375mm diameter service is cast-iron from the mechanical room and changes to PVC pipe (approximately 3m from the building) before connecting to MHST1 (Figures 16, 17, and 18). Both the cast-iron and PVC portions of the storm service appear to be in good condition. Considering that a new visitor entry terrace will be constructed over top of the existing storm service as part of the rehabilitation of the West Memorial Building, it is recommended that the storm service be replaced to ensure resilient long-term site servicing is provided and that the new entry terrace does not have to be removed and reinstated to allow replacement of the service at a later time.

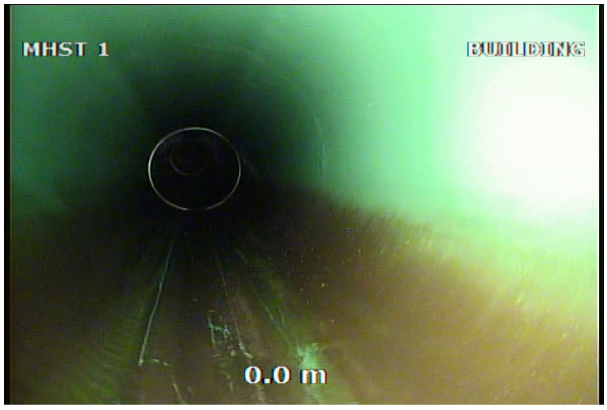

Figure 16 – PVC pipe from MHST1

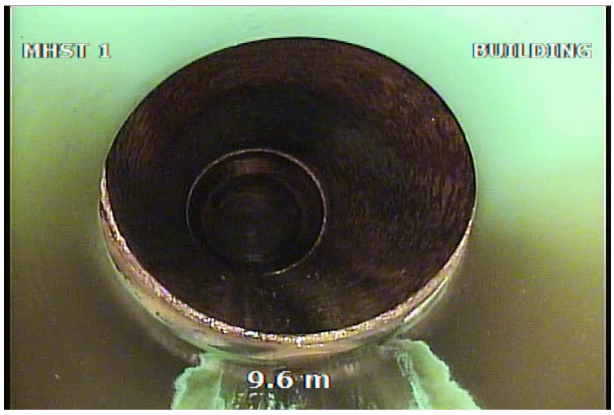

Figure 17 – PVC to cast-iron pipe joint

Figure 18 – Cast-iron service from building

Summary of Conclusions and Recommendations

Section	Recommendation
Sanitary Sewers	
Building to MHSA1	Replace to prevent failure and restore unobstructed flow.
Building to MHSA1 (abandoned storm)	Abandon as per City of Ottawa specification F-4104 and fill with grout from MHSA1 to avoid potential future collapse and prevent sanitary backflow from the adjacent sanitary service.
MHSA1 to MHSA2	Clean pipe thoroughly and rehabilitate by CIPP lining.
MHSA2 to MHSA3	Repair deteriorated joint between MHSA2 and the first segment of concrete pipe to prevent further deterioration.
Storm Sewers	
Building to MHST1	Replace storm service.

Bryan Kipp, P.Eng.

Municipal Engineer

APPENDIX H: Site Servicing Checklist

4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

4.1 General Content

- ☐ Executive Summary (for larger reports only).
- ☐ Date and revision number of the report.
- ☐ Location map and plan showing municipal address, boundary, and layout of proposed development.
- ☐ Plan showing the site and location of all existing services.
- ☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.
- ☐ Summary of Pre-consultation Meetings with City and other approval agencies.
- ☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.
- ☐ Statement of objectives and servicing criteria.
- ☐ Identification of existing and proposed infrastructure available in the immediate area.
- ☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).

☐ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.

☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.

☐ Proposed phasing of the development, if applicable.

☐ Reference to geotechnical studies and recommendations concerning servicing.

☐ All preliminary and formal site plan submissions should have the following information:

- Metric scale
- North arrow (including construction North)
- Key plan
- Name and contact information of applicant and property owner
- Property limits including bearings and dimensions
- Existing and proposed structures and parking areas
- Easements, road widening and rights-of-way
- Adjacent street names

4.2 Development Servicing Report: Water

☐ Confirm consistency with Master Servicing Study, if available

☐ Availability of public infrastructure to service proposed development

☐ Identification of system constraints

☐ Identify boundary conditions

☐ Confirmation of adequate domestic supply and pressure

☐ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.

☐ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.

☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design

☐ Address reliability requirements such as appropriate location of shut-off valves

☐ Check on the necessity of a pressure zone boundary modification.

- ☐ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range
- ☐ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.
- ☐ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.
- ☐ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.
- ☐ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.

4.3 Development Servicing Report: Wastewater

- ☐ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).
- ☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.
- ☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.
- ☐ Description of existing sanitary sewer available for discharge of wastewater from proposed development.
- ☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)
- ☐ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.
- ☐ Description of proposed sewer network including sewers, pumping stations, and forcemains.

- ☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).
- ☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.
- ☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.
- ☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.
- ☐ Special considerations such as contamination, corrosive environment etc.

4.4 Development Servicing Report: Stormwater Checklist

- ☐ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)
- ☐ Analysis of available capacity in existing public infrastructure.
- ☐ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.
- ☐ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.
- ☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.
- ☐ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.
- ☐ Set-back from private sewage disposal systems.
- ☐ Watercourse and hazard lands setbacks.
- ☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.
- ☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.

- ☐ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).
- ☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.
- ☐ Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.
- ☐ Any proposed diversion of drainage catchment areas from one outlet to another.
- ☐ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.
- ☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.
- ☐ Identification of potential impacts to receiving watercourses
- ☐ Identification of municipal drains and related approval requirements.
- ☐ Descriptions of how the conveyance and storage capacity will be achieved for the development.
- ☐ 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.
- ☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.
- ☐ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.
- ☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.
- ☐ Identification of fill constraints related to floodplain and geotechnical investigation.

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

- ☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.
- ☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.
- ☐ Changes to Municipal Drains.
- ☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

4.6 Conclusion Checklist

- ☐ Clearly stated conclusions and recommendations
- ☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.
- ☐ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario