Appendix 2

VIMY PARK ENHANCEMENT | CITY OF MISSISSAUGA

EXISTING CONDITIONS REPORT AND SCHEMATIC DESIGN BRIEF

PREPARED FOR:

MISSISSAUGA

ABOUD & ASSOCIATES INC. | JANUARY 25, 2022

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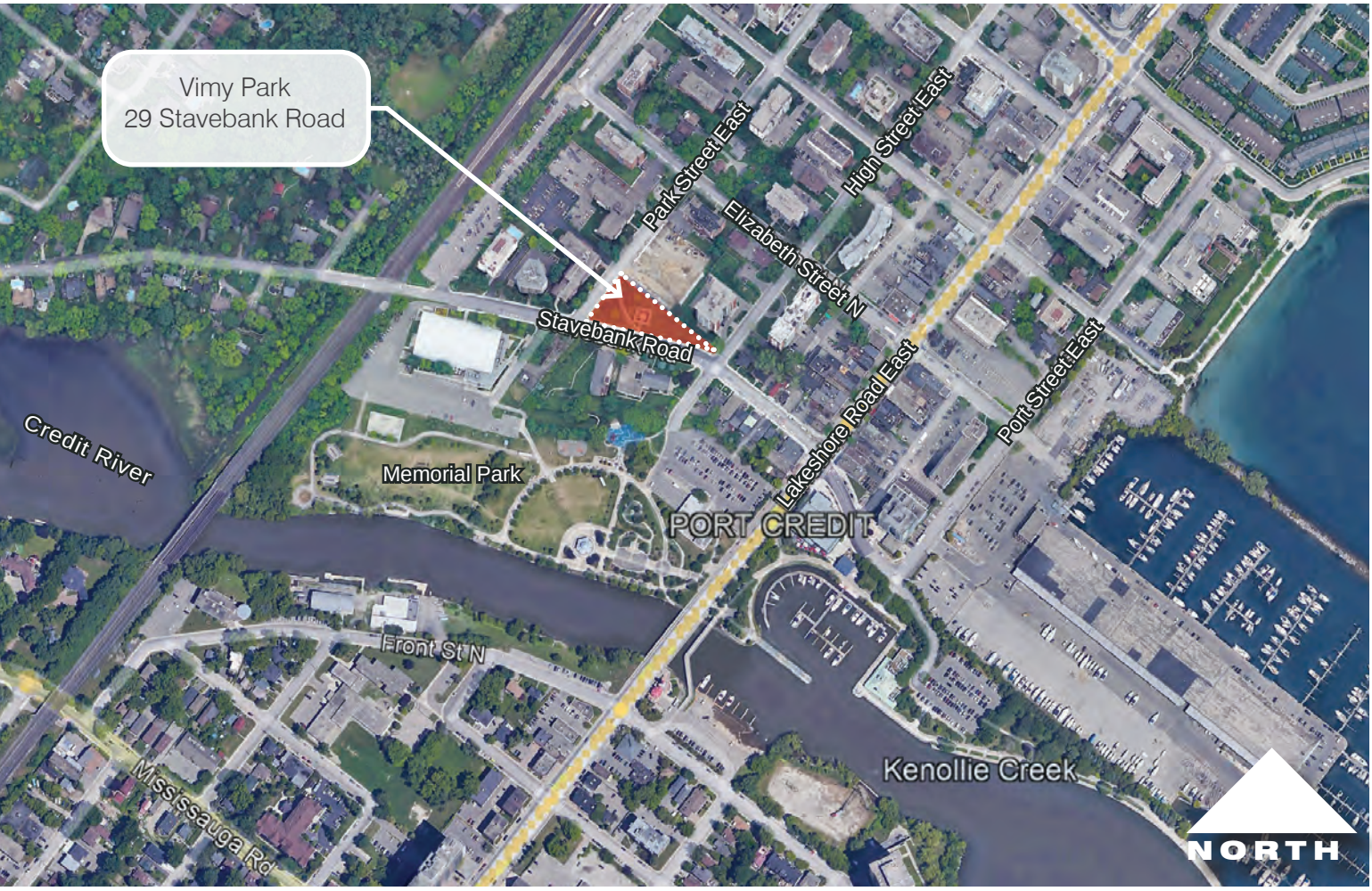
INTRODUCTION

Aboud & Associates Inc. has been retained by the City of Mississauga to complete the design and contract administration for park enhancements at Vimy Park, located at 29 Stavebank Road within the City of Mississauga. This report outlines the existing condtions of the site and provides a range of schematic designs to illustrate a variety of approaches on how to meet the objectives of the park enhancement.



SITE LOCATION AND DESCRIPTION

Vimy Park is located at 29 Stavebank Road within the former Town of Port Credit in the City of Mississauga. The site is triangular in shape and is bordered by Stavebank Road to the south, Park Street East to the west, and high density residential development to the north. The subject property is approximately 2310 square metres (0.57 acres in size).

The surrounding built-form context includes a mixture of building types and land uses including a medium and high density residential development to the east, west, and north of the site; Trinity Anglican Church and Saint Andrew's Memorial Presbyterian Church are located across Stavebank Road, south of the park; The Port Credit Memorial Arena and Port Credit Memorial Park are southwest and south of the park, respectivley. A collection of small commercial and office buildings is found to the southeast. The Credit River lies one block south of Vimy Park.

ZONING AND LAND USE

Vimy Park is zoned OS1 Open Space - Community Park. The park is set within a context of high density residential, commercial, and open space zoning and land ues.

The Port Credit War Memorial or Cenotaph is located within the park. The property is designated under Part IV of the Ontario Heritage Act. It is also included on the City's Cultural Landscape Inventory (2005) as part of the Old Port Credit Historic Settlement Landscape (L-HS-1).

Existing Conditions

TOPOGRAPHY AND DRAINAGE

The Cenotaph is located at the highest point within Vimy Park. The topography to the north west is relatively steep and slopes away from the monument toward Park Street; the slopes on this side of the park range approximately between 10-20%. The overall elevation change between the lowest point at the north west corner of the park and the plateau around the monument is approximately 3.3m. The East side of the park is gently slopes to the north east property line. The slopes on the east side of the site range between 1-10%. The site currently drains to Park Street and to the properites to the north at 21 Park Street East and 30 High Street East. There are no area drains or catch basins present within the park.

VEGETATION

The vegetation within Vimy Park is comrpised of open, maintained lawns and nine decidious trees, the majority of which are located within the sloped area, west of the Cenotaph. The on-site trees range in size between 13cm diameter at breast height (DBH) and 103cm DBH. Species include: Norway maple (*Acer platanoides*); Freeman maple (*Acer x freemanii*); honey locust (*Gleditsia triacanthos*); little leaf linden (*Tilia cordata*); red oak (*Quercus rubra*); and, apple (*Malus pumila*). All of the trees are in good condition with the exeption of a 103cm DBH Norway Maple, which is in poor condition. Major dead & broken branches, extensive dieback, multiple stems and a minor cavity were observed during Aboud & Associates Inc.'s tree inventory and assessment completed January 11, 2022. A Tree Inventory Plan and data table can be found in Appendix 1.

An ornamental planting bed is located in a raised planter around the Cenotaph Terrace. The bed is primarily dedicated to annual planting schemes which change seasonally. The west side of the planter contains boxwood (*Buxus sp.*) hedges that have been pruned into lettering which states "Lest We Forget".

A small, at-grade planting bed, consisting of both perennial poppies (*Papaver sp.*) and seasonal annuals, is located just west of the monument.

View looking west, of pathway and trees.

View looking west from Park Street East

Existing boxwood hedging in planter

Poppy planting bed with flagpole

Typical existing light standard

LIGHTING

Vimy Park contains three pedestrian light posts along the existing pathways. The poles were manufactured in 1992, by Powco Inc. The light fixtures are acorn-style luminaires with a white cap and black accents. Two of the poles contain additional flood light fixtures to illuminate the Cenotaph. The equipment appears to be in moderate condition.

There are existing hydro poles with street lighting and overhead wires along both Park Street and Stavebank. The poles contain guy wires, which extend into the perimeter of Vimy Park.

A fulsome description of the existing lighting system and the proposed lighting approach associated with the park enhancements will be provided under a seperate cover.

SERVICING

There are no existing storm or sanitary sewers within Vimy Park. There are storm water control features along the north side of the park, which are associated with a new condo tower development at 21 Park Street. The private property captures water from the park and property with a swale.

There is a hose bib located at the northeast corner of the Cenotaph, however the service size and connection details are unknown. Given the location of the hose bib, it is possible that the existing service could be from either Stavebank Road or Park Street East. The hose bib is used for irrigation associated with the Cenotaph planting beds. A fulsome description of the existing servicing and the proposed approach for water servicing for a new irrigation system has been provided by WT Infrastructure and is included in Appendix 2 of this report.

BUILT FORM

The Cenotaph is the only built form within the Vimy Park. The Port Credit Cenotaph is Mississauga's oldest cenotaph, with the monument being constructed in 1925 by the McIntosh Granite Company. Constructed of carved granite and designed with an octagonal base, the monument contains the inscription panels with the names of soldiers that fell during the first and second world war, as well as the Korean war. The upper portion of the monument is made of only two monolithic stones: the tri-stepped octagonal base and the soaring Celtic cross, adorned with a down-turned sword.

The monument sits on a raised, flag-stone terrace that is further surrounded by a planting bed bordered by a low stone wall. There are stairs on the north and south sides of the terrace. The terrace and planter walls are made out of random ashlar limestones and sandstones. The planter wall has approximately three courses above grade. The terrace wall has one course above designed grade, The terrace surface and cap stones of the wall are made of limestone.

The monument, terrace, and planter have been observed to be in generally fair condition, however rehabilitation and repairs are needed. A fulsome description of the repair and rehabilitation recommendations has been provided by Tacoma Engineers and is included in Appendix 3 of this report.

Existing monument

10.1

View looking east toward Park Street East

CIRCULATION

Pedestrian Circulation: Municipal sidewalks border the park's perimeter along Stavebank Road and Park Street. A 2 meter wide asphalt pathway runs diagonally from the north west corner of the Vimy Park, from the sidewalk on Park Street, to the south edge of the park, connecting to the sidewalk on Stavebank Road, approximately mid-block. This walkway appears to follow a desire line between Park Street and Stavebank Road. Another asphalt trail, approximately 2.25 meter wide, runs north-south between the Stavebank sidewalk and the monument. This asphalt pathway continues around the monument on all four sides.

Vehicular Circulation: The park is bordered by Stavebank Road, a minor collector road, to the south and Park Street East, a local road, to the west. The eastern most corner of the park is adjacent to High Street East, also a local road. There is on-street, parallel parking on both sides of Stavebank Road. No parking is permitted on Park or High Street.

There are no bicycle lanes or signed bike routes present on Stavebank Road or Park Street East.

Transit Connections: There are no transit stops directly adjacent to Vimy Park. Transit stops in close proximity to the park are located at Stavebank Road and Lakeshore Road to the east; High Street East and Elizibeth Street North, to the north east of the park. The Port Credit Go Station is located to the north west of the park, at Queen Street East and Helene Street North.

View looking west from the corner of Park and Stavebank

View looking east from Stavebank, near High Street

View of interface between 21 Park Street and Vimy Park

ADJACENT LAND USE

Two high-density residential properties at 21 Park Street East and 30 High Street East border the north edge of the park. The property at 21 Park Street East is a recent 15 storey development that has private and public amenity spaces which overlook the park. These are separated from the park by a narrow landscape bed and metal picket fencing. A gate is located at the eastern most edge of the fence. There is a clear delineation between the public park and the private amenity space. The property at 30 High Street East is a 16 storey building; its side yard that is adjacent to the park is comprised of open lawn. There is no discernible delineation between the public and private space around this building. A small planting bed with a free-standing sign for the apartment block straddles the property line between the park property and 30 High Street East.

LANDSCAPE FURNITURE AND SIGNAGE

Vimy Park contains two wooden benches, just south west of the Cenotaph. The benches are wood with a metal frame and installed through direct burial. Two concrete slabs are located in front of each bench. The benches are not connected to the sidewalk or pathway system through any hardscape surface.

A plastic garbage/recycling bin is located in the park, adjacent to the western most light standard. The bin is tethered to the light post with wire cable.

Three signs have been affixed to the western most light post. Signs included directions to pick up after pets; no smoking/vaping; and acceptable garbage and recycling materials. There was no additional park signage or interpretive signage observed on site.

A third wood bench with a metal frame is located at the very easterly end of the park, directly adjacent to the sidewalk on Stavebank Road. The bench is dedicated with an inscription reading, “Donated by the Women’s Organizations of Port Credit”. The bench is outside of the park’s property boundary and is located within the right-of way. A concrete pad with a newspaper box is also located within the right-of-way at the western edge of the park, fronting the sidewalk on Stavebank Road. There is also a parking meter centrally located along Stavebank Road, within the right-of-way.

THE GOAL OF THE PROJECT IS TO PROVIDE UPGRADES AND IMPROVEMENTS IN VIMY PARK THAT ARE IN KEEPING WITH THE SITE'S HERITAGE SIGNIFICANCE AND IMPORTANCE TO THE LOCAL COMMUNITY.

Project Objectives

- RESPONDS TO THE HERITAGE IMPORTANCE AND CHARACTER OF THE SITE;
- ENHANCES CONNECTIVITY TO THE NEIGHBOURHOOD;
- TO IMPROVE THE SOCIAL CONNECTION, FUNCTION, AESTHETICS AND STREET APPEAL OF THE PARK;
- TO CREATE A FORMAL PUBLIC GATHERING SPACE AT THE CENOTAPH MONUMENT FOR LOCAL EVENTS AND COMMEMORATIVE CEREMONIES;
- TO PREPARE A RESTORATION AND REHABILITATION PLAN FOR THE CENOTAPH FOR CONSTRUCTION IMPLEMENTATION;
- TO UPGRADE SERVICES FOR ELECTRICAL AND WATER;
- TO DESIGN THE SITE AND CENOTAPH FOR ACCESSIBILITY;
- TO INCORPORATE LOW IMPACT DESIGN, GREEN TECHNOLOGIES AND SUSTAINABLE PROCUREMENT;
- TO IMPROVE PEDESTRIAN ACCESS AND VISIBILITY INTO AND OUT OF THE PARK PROVIDING A BARRIER FREE DESIGN;
- TO APPLY THE PRINCIPLES OF CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) TO ALL ASPECTS OF PARK DESIGN;
- TO DESIGN AND COMPLY WITH PARKS OPERATIONS MAINTENANCE LEVELS, BEST PRACTICES AND PROVIDE INTEGRATED MAINTENANCE ACCESS;
- TO EMPLOY CONSTRUCTION METHODS AND MATERIAL OPTIONS WHICH MAINTAIN THE INTEGRITY OF THE HISTORICAL CENOTAPH AND TO ENSURE ITS, DURABILITY INTO THE FUTURE.

Park Programming

CENOTAPH REHABILITATION

- Respect and build on the historical importance of the cenotaph.
- Create an accessible formal gathering space for local events and commemorative ceremonies by enlarging the landscape stone terrace around the base of the monument and allowing for ramped access on at least one side to reach cenotaph.
- Scoped remediation and improvements to Cenotaph as determined through predesign studies and building on work completed by the adjacent Edenshaw Development.
- Integrate Parks Operations maintenance access for trucks (typically 3.5 m wide) and supply/delivery vehicles for event assembly.
- Provide alternative new design solutions to the memorial space, contrasting stone materials with symbolic purpose and meaning
- Provide new low maintenance plant material and irrigation in cenotaph planting beds, where appropriate, while still providing open pockets for seasonal annuals.
- Replace existing asphalt walkway around cenotaph planter.
- Explore the use of up lights or bollard lighting instead of park trail lights to provide light on cenotaph and character on pedestrian areas.

PARK TRAIL

- Evaluate current layout of existing park trail and explore potential realignment while working around existing slopes.
- Develop accessible 3.0m wide asphalt park trails and entranceways to encourage residents/park users to come in and move through the park.
- Explore the potential to relocate existing poppy bed.
- Relocate/replace existing poles, re-tee guy wires that pose a trip hazard and update fixtures to LED.

PARK SERVICING

- Investigate and assess existing lighting system
- Relocate/replace existing poles and update fixtures to LED
- Evaluate water service connection and provide water for irrigation for cenotaph bed and for area immediately surrounding new gathering space and cenotaph walkway (drip irrigation is not acceptable due to frequent horticultural practices)
- Evaluate stormwater and drainage on-site and make recommendations for positive site drainage
- Provide suitable location to relocate electrical outlet and provide additional outlets to support portable sound systems at larger memorial events and ceremonies

SITE FURNISHINGS AND SEATING AREAS

- Consider historic replica materials (e.g. durable light standards).
- Site furnishings to include: typical benches, bicycle parking, bollards and/or access control gate that does not impact the views to the cenotaph.
- Provide concrete pads for litter, waste collection and recycling and benches on accessible concrete pads.
- Provide locations and footings where required for park identification, regulatory and interpretive sign.

GENERAL LANDSCAPING AND EXISTING TREES

- Re-surface and re-grade the park where necessary.
- Buffer the backside of the park with plant material along new development.
- Restore surrounding landscape.
- Identify areas for proposed trees and naturalizing landscape.
- Improve existing poppy planting bed with formalized edge treatment.
- Retain existing trees and/or identify for relocation.

Precedent Images

City of Markham: A new cenotaph and plaza constructed in 2017 for Canada's 150th celebrations.

Rockwood Cenotaph (Township of Guelph-Eramosa): incorporated stairs and accessible walkway 2012.

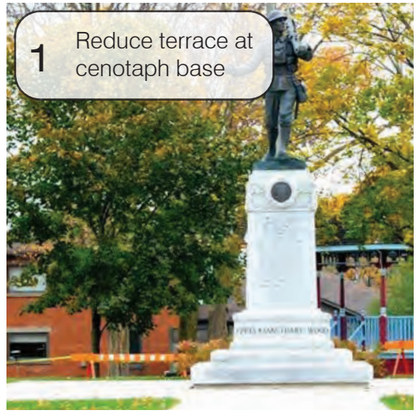
City of St. Catherines: Enhanced plaza space and accessiblity improvements to their cenotaph.

City of St. Catherines: Accessible pathway leads to raised terrace of the monument.

Proposed Schematic Designs

Concept 1

- REMOVE TERRACE AND STAIRS AROUND MONUMENT AND ADD NEW STEPPED GRANITE SURROUND, TO ALLOW FOR A LEVEL ACCESSIBLE PLAZA;
- INCORPORATE CITY STANDARD FURNITURE, INCLUDING BENCHES, WASTE RECEPTACLES, PARK ENTRANCE SIGNAGE (AT PARK STREET), AND INTERPRETIVE PANEL. RELOCATE FLAG POLE TO NEW PLAZA SPACE FOR ACCESSIBILITY;
- INCORPORATE DECORATIVE PAVING, THROUGH UNIT PAVERS. OPPORTUNITY TO INCLUDE ACCENT PAVING BANDS THAT COULD BE ENGRAVED;
- CREATE LOW RETAINING WALLS TO INTEGRATE PLAZA SPACE INTO THE EXISTING LANDFORM. INCORPORATE A GUARD RAIL TO FURTHER ENCLOSE AND FRAME THE SPACE;
- CREATE TIERED PLANTING BEDS WITH LOW MAINTENANCE PERENNIALS AROUND THE PLAZA SPACE. RELOCATE POPPIES TO THE EDGES OF THESE BEDS, WHERE THEY WILL BE PROMINENT WITHIN THE PLAZA SPACE. CREATE NEW ANNUAL PLANTING BEDS WITHIN THE PLAZA, SURROUNDING THE MONUMENT;
- INCORPORATE NEW PEDESTRIAN-LEVEL LIGHTING WITHIN THE PLAZA AND ALONG TRAIL. MOUNT UP-LIGHTING WITHIN ANNUAL BEDS TO LIGHT MONUMENT.

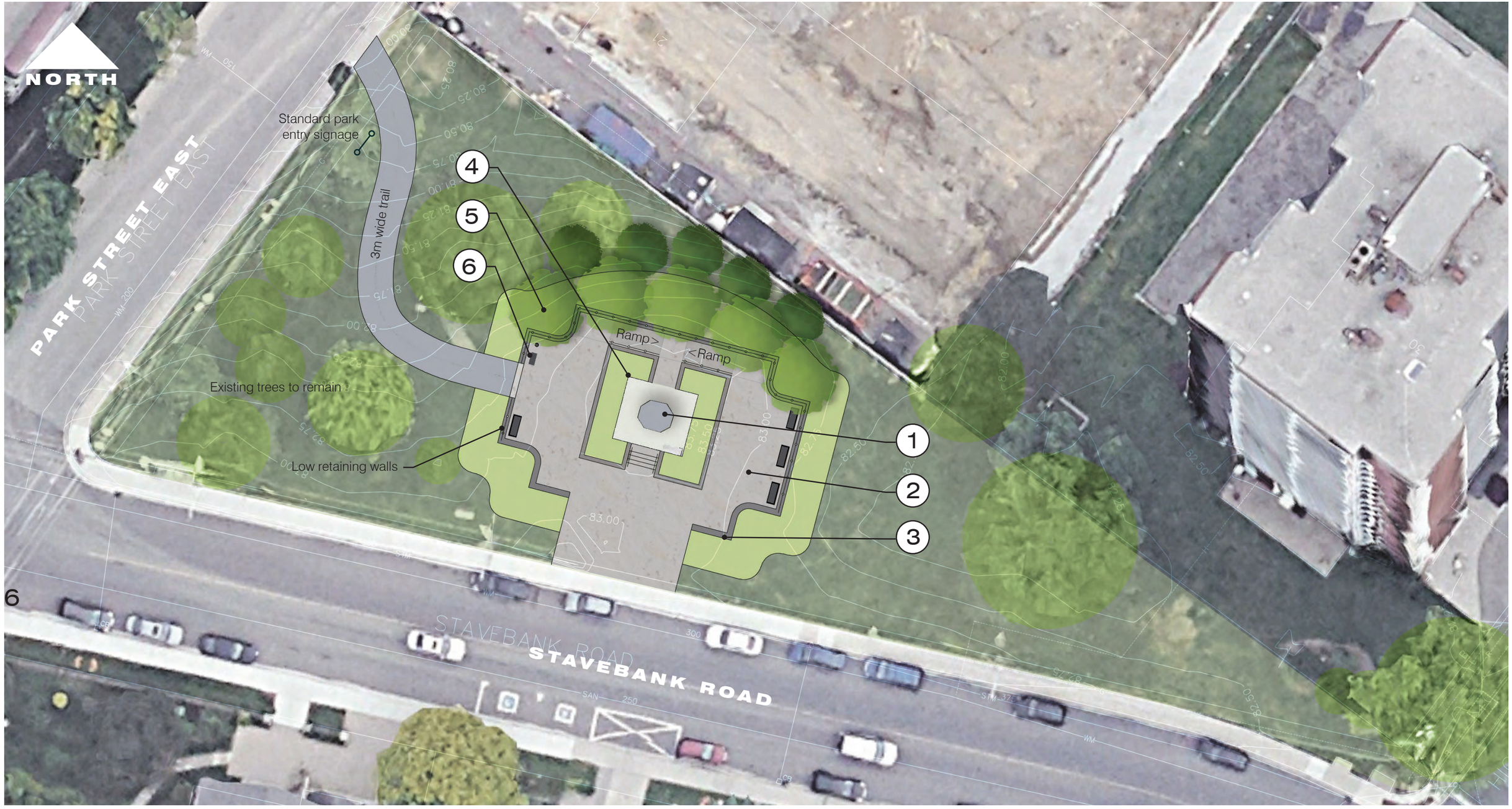


1 Landscape Concept

Vimy Park Design Jan 25/22 For Client Review

Concept 2

- RETAIN TERRACE AND PLANTING BED AROUND MONUMENT. BRING FRONT STAIRS TO CODE. REMOVE BACK STAIRS AND REPLACE WITH RAMPS TO ALLOW FOR ACCESSIBLE TERRACE;
- INCORPORATE CITY STANDARD FURNITURE; CLUSTER BENCHES, WASTE RECEPTACLES, INTERPRETIVE PANEL AND FLAG POLE WITHIN NEW PLAZA SPACE FOR ACCESSIBILITY; ADD NEW PARK ENTRY SIGNAGE (AT PARK STREET) AND INCORPORATE CONTEXT SENSITIVE SIGNAGE AT ENTRY FROM STAVEBANK ROAD;
- INCORPORATE DECORATIVE PAVING, THROUGH UNIT PAVERS. OPPORTUNITY TO INCLUDE ACCENT PAVING BANDS THAT COULD BE ENGRAVED;
- CREATE LOW RETAINING WALLS TO INTEGRATE PLAZA SPACE INTO THE EXISTING LANDFORM. INCORPORATE A GUARD RAIL TO FURTHER ENCLOSE AND FRAME THE SPACE;
- CREATE FORMAL PLANTING BEDS TO COMPLIMENT THE TRADITIONAL PLAZA LAYOUT. RELOCATE POPPIES TO THE EDGES OF THESE BEDS, WHERE THEY WILL BE PROMINENT WITHIN THE PLAZA SPACE. RETAIN ANNUAL PLANTING BEDS WITHIN THE PLAZA, SURROUNDING THE MONUMENT;
- INCORPORATE NEW PEDESTRIAN-LEVEL LIGHTING WITHIN THE PLAZA AND ALONG TRAIL. MOUNT UP-LIGHTING WITHIN ANNUAL BEDS TO LIGHT MONUMENT.



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2 Landscape Concept

Vimy Park Design Jan 25/22 For Client Review

Concept 3

- RETAIN TERRACE AND PORTION OF PLANTING BED AROUND MONUMENT. BRING FRONT STAIRS TO CODE. REMOVE BACK STAIRS AND REPLACE WITH SLOPING PATHWAY TO ALLOW FOR ACCESSIBLE TERRACE;
- CONSIDER CUSTOM FURNITURE FOR THE SPACE, SUCH AS CURVED BENCHES. BRING INTERPRETIVE PANEL, FLAG POLE, WASTE BINS WITHIN NEW PLAZA SPACE FOR ACCESSIBILITY; ADD NEW PARK ENTRY SIGNAGE (AT PARK STREET) AND INCORPORATE CONTEXT SENSITIVE SIGNAGE AT ENTRY FROM STAVEBANK ROAD;
- INCORPORATE DECORATIVE PAVING, THROUGH UNIT PAVERS. OPPORTUNITY TO INCLUDE ACCENT PAVING BANDS THAT COULD BE ENGRAVED;
- CREATE LOW RETAINING WALLS TO INTEGRATE PLAZA SPACE INTO THE EXISTING LANDFORM. WORK WITHIN EXISTING GRADES TO AVOID GUARD RAIL;
- INCORPORATE EXISTING POPPY BED IN SITU. ADD ADDITIONAL PLANTING BEDS WITH IN A NATURALIZED OR MATRIX STYLE SCHEME. RETAIN ANNUAL PLANTING BEDS WITHIN THE PLAZA, SURROUNDING THE MONUMENT;
- INCORPORATE NEW PEDESTRIAN-LEVEL LIGHTING WITHIN THE PLAZA AND ALONG TRAIL. MOUNT UP-LIGHTING WITHIN ANNUAL BEDS TO LIGHT MONUMENT.

3 Landscape Concept

Vimy Park Design Jan 25/22 For Client Review

Appendix 1
Tree Inventory

GENERAL TREE NOTES

1. All arboricultural work performed on trees such as pruning of branches and roots shall be conducted by an ISA Certified Arborist.
2. Prune and mitigate limbs and roots damaged by construction work in accordance with ANSI A300 (Part 1) - 2008 Pruning and the Best Management Practices companion publication (revised 2008).
3. Tree Protection Fence to be erected prior to the commencement of any construction or grading, and maintained throughout the duration of the work.
4. Tree Protection Zone is delimited by Tree Protection Fence shown on the drawings.
5. No construction or activities including the following to occur within Tree Protection Zone: excavation, equipment parking or access, storage of supplies, topsoil or fill, and refueling.
6. Tree removals (if required) will be undertaken in compliance with the Migratory Birds Convention Act. Efforts will be made to remove vegetation outside the General Nesting period (April 1 - Aug 31) for regions C1 and C2 of Ontario. In the event vegetation must be removed within the General Nesting Period, a qualified avian biologist is to review the site prior to removal to ensure compliance with the Migratory Birds Convention Act.
7. Any soils and vegetation within tree protection zone damaged by the Contractor shall be restored to the satisfaction of the Municipality by the Contractor at no additional cost to the Owner.

CONSTRUCTION WITHIN MINIMUM TREE PROTECTION ZONE

1. An ISA Certified Arborist must be present on site during construction activities within MTPZ to confirm and/or modify mitigation measures for trees to be preserved.
2. Use trenchless methods (e.g. horizontal directional drilling) to install underground services (e.g. sanitary sewers and water lines) within Minimum Tree Protection Zones.

CONSTRUCTION ACCESS PIT WITHIN MINIMUM TREE PROTECTION ZONE

1. Where access within/immediately adjacent the MTPZ cannot be avoided (e.g. underground service connection), a pit for worker access may be constructed within the MTPZ as per the following instructions.
2. Excavate soil using Air-Spade or Hydro-Vac or accepted alternative (e.g. hand dig) to avoid/minimize damage to roots.
3. Immediately following construction, topsoil is to be replaced within the excavated pit throughout the root zone. The depth of topsoil will be at least 600mm below the soil surface so as to cover all roots.
4. A qualified tree professional (e.g. ISA Certified Arborist) must be present to assess the construction process, the condition of roots during excavation, and provide guidance on root pruning as needed within the MTPZ.
5. Roots over 8cm diameter must be assessed by an ISA Certified Arborist prior to pruning, the results of which may necessitate relocation of construction activities or tree removal.
6. Do not leave tree roots exposed for more than six (6 hours). Where roots must be left exposed longer and to prevent drying, see *Exposed Root Protection*.

EXISTING UNDERGROUND SERVICES WITHIN TREE PROTECTION ZONES

1. Existing sanitary/storm sewers and watermains to be discontinued within tree protection zones will be filled (as needed) and abandoned.
2. Excavation and access for construction/removal of abandoned underground services will be conducted outside of tree protection zones.

POLE / POST CONSTRUCTION NEAR TREES - INCLUDES FENCES, RAMPS, DECKS, ETC.

1. An ISA Certified Arborist must be present on site during construction activities within tree protection zones (e.g. within 1.5 metres of outer edge of trunks) to confirm and/or modify any of the mitigation measures for trees to be preserved.
2. Pruning of branches/limbs/roots shall be in accordance with ANSI A300 (Part 1)-2008 Pruning and the Best Management Practices companion publication (revised 2008).
3. Excavate post holes using Air-Spade or Hydro-Vac technology.
4. Prune exposed roots using sharp tools.
5. Roots over 8cm in diameter must be assessed by an ISA Certified Arborist prior to pruning and may require relocation of proposed construction.
6. Do not leave tree roots exposed for more than six (6 hours). Where roots must be left exposed longer and to prevent drying, see *Exposed Root Protection*.

FINISH GRADING WITHIN TREE PROTECTION ZONES

Where finish grading of cuts and fills, and including swales occurs within tree protection zones, the following steps are required.

Grade Cut:

1. Excavate by hand or Air-Spade technology to a maximum depth of 100mm.
2. Roots encountered are to be assessed by the Project Arborist to determine the extent of roots to be pruned. Based on findings, other treatments may be required (e.g. crown reduction, tree removal), and which may require approval from the City.
3. Based on root findings, local, minor adjustments to grading within the tree protection zone may be required based on field consultation between the Project Arborist and Project Engineer.
4. No access by heavy equipment into tree protection zone is permitted. Fine grading to be carried out using light equipment and/or by hand.

Grade Fill:

5. Add topsoil to meet grade requirements to a maximum of 150mm.
6. No topsoil to be added onto trunk base or above-ground section of trunk base flare.
7. Maintain positive drainage away from trunk base.
8. Based on local conditions (e.g. surface drainage), local, minor adjustments to grading within the tree protection zone may be required based on field consultation between the Project Arborist and Project Engineer.

EXPOSED ROOT PROTECTION

Do not leave tree roots exposed for more than six (6 hours). Where roots must be left exposed longer and to prevent drying, implement the following measures:

1. Place topsoil to 150mm depth over exposed roots and soak until water penetrates 150mm into soil;
2. Apply light-coloured, breathable tarpaulin over topsoil and pruned roots;
   -OR-
   Apply light-coloured, breathable tarpaulin over six, wet layers of burlap over pruned roots;
3. Maintain tarpaulin, topsoil/burlap and moist conditions in place until backfilling completed.

ROOT SENSITIVE EXCAVATION

All root sensitive excavation must be performed under the supervision of a qualified arborist. All roots exposed must be documented by the supervising arborist. Every effort should be made to preserve as many exposed roots as possible. Roots approved for pruning should be cleanly cut with a sharp, non-vibrating tool such as a handsaw, secateurs, chainsaw at face of trench such that no further disturbance of the roots are to be expected once mechanical excavation begins. All root pruning is to be performed by the arborist only, as per guidelines below.

1. When root sensitive excavation is performed in regards to the installation of a deep site feature such as a foundation, roots of less than 5cm diameter can be cut sharply, if necessary, unless an abundance of smaller roots are involved. If roots of 5cm diameter or greater or an abundance of smaller roots are exposed in the excavation areas inside or just outside the Tree Protection Zone (TPZ) of bylaw trees they should be preserved.
2. When root sensitive excavation is performed in regards to the installation of site features such as post holes, all roots exposed of under 5cm diameter may be cleanly cut at face of hole such that no further disturbance of the roots are to be expected once mechanical excavation begins for the lower portion of the holes (below hand dug area). If roots of 5cm diameter or greater are uncovered they should be preserved, the post holes filled in with viable soil and the hole moved at least 0.5 metre away to avoid significant roots.
3. When root sensitive excavation is performed in regards to the installation of site features such as driveways, walkways, curbs, etc. roots of less than 5cm diameter can be cut sharply, if necessary, unless an abundance of smaller roots are involved. If roots of 5cm diameter or greater or an abundance of smaller roots are exposed in the excavation areas inside or just outside the TPZ of bylaw trees they should be preserved
4. When root sensitive excavation is performed in regards to the installation of utilities such as water lines or sewers, every effort should be made to preserve as many exposed roots as possible by installing the utilities underneath the roots without root pruning. If roots of 5cm diameter or greater are uncovered they should be preserved.

TREES OWNED BY OTHERS

1. Trees owned by others require permission (i.e. written consent) from the land owner(s) prior to activities that may damage or destroy trees. Trees owned by others are Offsite Trees and Shared Trees:
   a. Offsite Trees - Trees on property adjacent to the subject property;
   b. Shared (Boundary) Trees - Trees whose trunk including the basal trunk flare growing on the boundary between the subject property and adjoining property (from *Ontario Forestry Act*).

The Provincial Forestry Act, R.S.O. 1990 (Section 10):

10. (2) Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands. 1990, c. 18 Sched. I, s. 21.

11. (3) Every person who injures or destroys a tree growing on the boundary between adjoining lands without the consent of the land owners is guilty of an offence under this Act. 1998, c. 18, Sched. I, s. 21.

Tree No.	Tree Species	DBH (cm) 1, 2	Minimum Tree Protection Zone (m) (from outer trunk of tree) 3	Crown Reserve est. (m)	Biological Health (H, M, L)	Structural Condition (H, M, L)	Overall Condition (G, F, P, D)	Ownership: Private, Offsite, Municipal, Shared	Rec. Action - Condition: Preserve, Remove	Rec. Action - Development: Preserve, Remove	Final Recommendation: Preserve, Remove	Compensation - Yes, No	Observations/ Tree Preservation Notes
1	Acer saccharinum Sugar Maple	72	9.60	14.0	M(H)	M	G	O	P				Dead wood minor, Broken branches minor
2	Rhus typhina Staghorn Sumac	14 [10,10]	2.40	5.0	M(L)	M	F	P	P				Dieback moderate
3	Syringa vulgaris Common Lilac	19 [10,9, 8,8,7]	2.40	4.0	M(H)	M(H)	G	P	P				
4	Acer platanoides Norway Maple	103	12.36	15.0	M(L)	L	P	M	P				Major dead & broken branches, extensive dieback, multiple stems & minor cavity at 2m
5	Pinus nigra Austrian Pine	47	6.00	10.0	H	H	G	P	P				Broken branches minor; tree not surveyed - tree point location estimated.
6	Acer X freemanii Freeman Maple	25	3.60	8.0	M(H)	M	G	M	P				Frost crack minor
7	Acer platanoides Norway Maple	63	8.40	12.0	M(H)	M(L)	G	M	P				Broken branches moderate, hanging branches
8	Gleditsia triacanthos Honey Locust	21	3.60	7.0	H	M(H)	G	M	P				Unbalanced crown minor
9	Tilia cordata Basswood	18	2.40	6.0	H	H	G	M	P				
10	Quercus rubra Red Oak	19	2.40	6.0	H	H	G	M	P				
11	Malus pumila Apple sp.	30	3.60	8.0	M(H)	M	G	M	P				Cavity minor, Deadwood minor
12	Acer X freemanii Freeman Maple	32	4.80	9.0	H	M(H)	G	M	P				Broken branch minor
13	Quercus rubra Red Oak	13	2.40	4.0	H	H	G	M	P				
Tree Inventory Summary		Detailed inventory data follows on subsequent pages.											

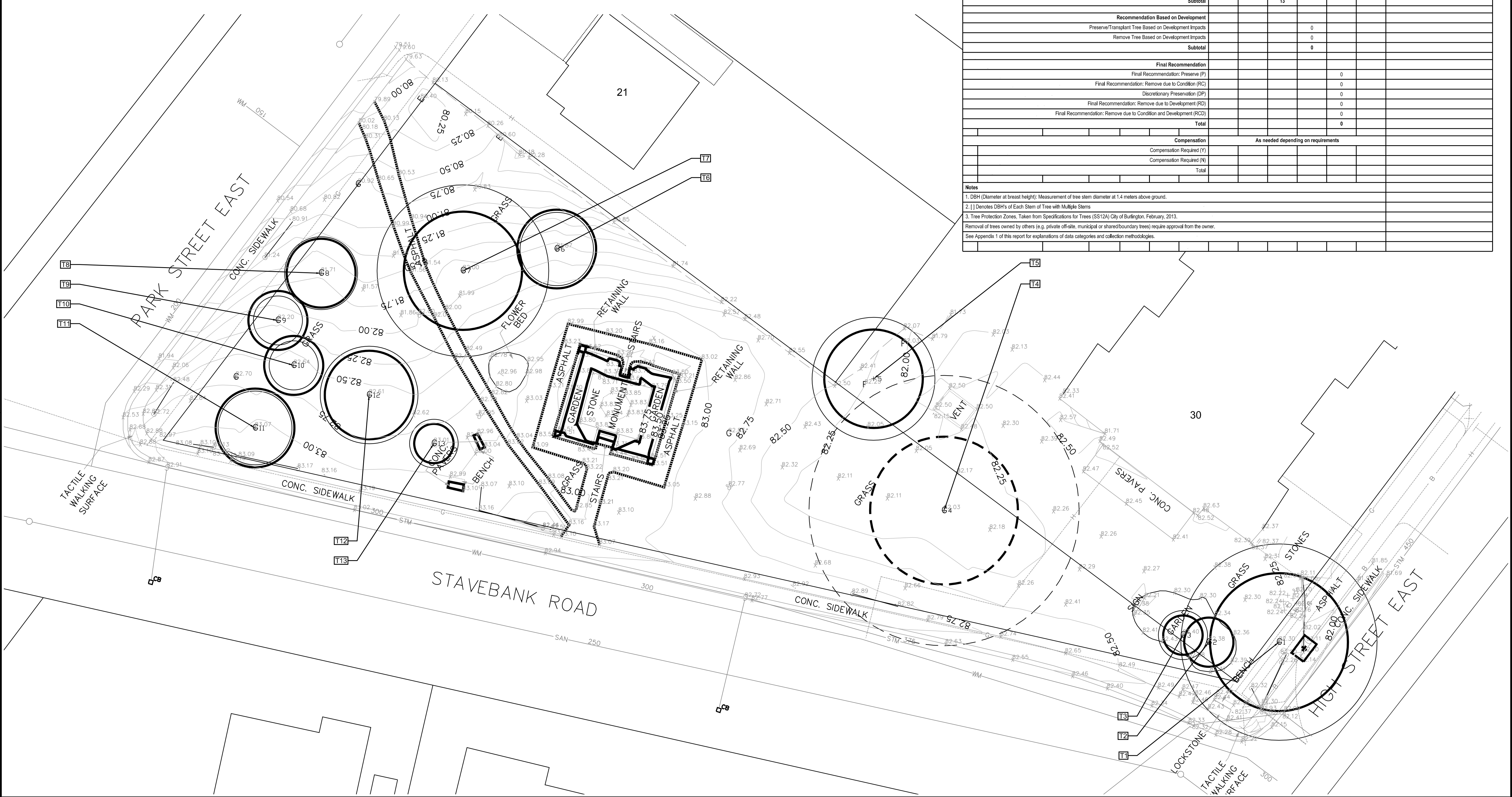
	Ownership	Rec. Action - Condition	Rec. Action - Development	Final Recommendation
Ownership				
Private Trees	3			
Offsite	1			
Municipal	9			
Shared Trees	0			
Subtotal	**13**			
Recommendation Based on Condition				
Preserve Tree Based on Health & Structure		13		
Remove Tree Based on Health & Structure		0		
Subtotal		**13**		
Recommendation Based on Development				
Preserve/Transplant Tree Based on Development Impacts			0	
Remove Tree Based on Development Impacts			0	
Subtotal			**0**	
Final Recommendation				
Final Recommendation: Preserve (P)				0
Final Recommendation: Remove due to Condition (RC)				0
Discretionary Preservation (DP)				0
Final Recommendation: Remove due to Development (RD)				0
Final Recommendation: Remove due to Condition and Development (RCD)				0
Total				**0**
Compensation	**As needed depending on requirements**			
Compensation Required (Y)				
Compensation Required (N)				
Total				

Notes

1. DBH (Diameter at breast height): Measurement of tree stem diameter at 1.4 meters above ground.
2. [ ] Denotes DBH's of Each Stem of Tree with Multiple Stems
3. Tree Protection Zones, Taken from Specifications for Trees (SS12A) City of Burlington. February, 2013.

Removal of trees owned by others (e.g. private off-site, municipal or shared/boundary trees) require approval from the owner.

See Appendix 1 of this report for explanations of data categories and collection methodologies.



LEGEND:

EXISTING TREE
ID NUMBER
THICK CIRCLE DENOTES CROWN DIAMETER (ESTIMATED). THIN RED CIRCLE DENOTES MINIMUM TREE PROTECTION ZONE (MTPZ) Per Specifications for Trees (SS12A) City of Burlington. February, 2013. SINGLE THICK CIRCLE DENOTES BOTH CROWN DIAMETER AND MTPZ

DISCRETIONARY PRESERVATION
TREE HAS LOW BIOLOGICAL HEALTH AND/OR STRUCTURAL CONDITION. REMOVAL IS AT THE DISCRETION OF THE OWNER

REMOVE TREE
TREE IS IN CONFLICT WITH PROPOSED DEVELOPMENT

REMOVE TREE
TREE HAS LOW BIOLOGICAL HEALTH AND/OR STRUCTURAL CONDITION AND IS IN CONFLICT WITH PROPOSED DEVELOPMENT

PROPERTY BOUNDARIES

TPF TREE PROTECTION FENCE

No.	Description	By	Date
0	Existing Conditions Report	ee	25 JAN-22

REVISIONS: All previous issues of this drawing are superceded

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
190 Nicklin Road . Guelph . Ontario . N1H 7L5 . 519.822.6839 . www.aboudtng.com

Title:

TREE INVENTORY

Project:

VIMY PARK REDEVELOPMENT
29 STAVEBANK ROAD
CITY OF MISSISSAUGA

Date: MONTH 2022 | Designer: EE
Project: 21-217A | Drawn: EE
Scale: 1:200 | Checked: JD

Drawing No:

TP-1

Appendix 2

Water Servicing Investigation and Reommendations Report

WATER SERVICING INVESTIGATION AND RECOMMENDATION REPORT

Vimy Park Redevelopment, Mississauga, ON
PRC002783

January 18, 2022

WT INFRASTRUCTURE
PRACTICAL INNOVATION

OFFICE
114 Downey Road
Guelph, ON N1C 1A2
T: 519.400.6701
www.wtinfrastructure.ca

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3 WATER SERVICING 2

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3.2 Fire Flow Demand 2

3.3 Proposed Water Servicing 2

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B Drawing Details for Road Reinstatement

1 INTRODUCTION

WT Infrastructure Solutions Inc. (WT) has been retained by Aboud and Associates, for the Corporation of the City of Mississauga (City), to complete the civil engineering and design work associated with the redevelopment of Vimy Park in Mississauga, Ontario. The following brief is intended to outline the water servicing investigations and recommendations for the provision of a new water service for the Vimy Park site.

2 SITE DESCRIPTION

Located at 29 Stavebank Road, in Ward 1, Vimy Park is an existing 0.23-hectare Community Park. The Port Credit Cenotaph located within the park has historical importance and was designated under the terms of the Ontario Heritage Act in 1984. The Cenotaph is used as a gathering place for Remembrance Day and various other battle anniversary dates.

The existing Cenotaph and park require upgrades for improved accessibility, lighting, drainage, seating and landscaping enhancements. The goal of this project is to provide upgrades and improvements in Vimy Park that are in keeping with the site's heritage significance and importance to the local community.

Figure 1 depicts a map of the project area.

Figure 1: Project Area

There are no existing storm or sanitary sewers on the Site. There is a new residential development adjacent to the site, at 21, 25 and 29 Park Street East. There are stormwater control features along the north side of the park, which are associated with this new development. The private property captures water from the Site and property with a swale. Grading is at a maximum 3:1 slope. Within the private

property, there is also a retaining wall along the edge of the property to contain the private property drainage.

There is as hose bib located at the northeast corner of the Cenotaph, however the service size and connection details are unknown, though it is assumed to be a 19mm or 25mm service based on the size of the tap. Given the location of the hose bib, it is possible that the existing service could be from either Stavebank Road or Park Street East. The hose bib is used for irrigation only.

3 WATER SERVICING

The following section outlines the proposed design of water servicing for the Park.

3.1 Design Water Demand

The water demand for this Site is limited to irrigation for the Cenotaph bed and surrounding area. From information provided by Smart Watering Systems, the irrigation sub-consultant for this project, it has been identified that the peak flow rate for the site will be 2.84 L/s (45pgm).

3.2 Fire Flow Demand

As the Site is a public park with no structures, there is no fire flow demand for this Site.

3.3 Proposed Water Servicing

The proposed water service will be designed in accordance with the Region of Peel's "Public Works Watermain Design Criteria" document:

Table 1: Design Components for Irrigation Water Service

Components	Vimy Park
Water Service Pipe Material and Size	50mm Copper Type K or Brass per section 6.0 "Water Services" of the Region of Peel's "Public Works Watermain Design Criteria".
Mainstop Size	50mm per section 6.5 "Mainstops" of the Region of Peel's "Public Works Watermain Design Criteria".
Meter Chamber	Aboveground meter chamber per City of Mississauga Detail 15430-11 "50mm Water Service Backflow – Section View"

The drawings details related to this water service can be found in **Appendix A**.

All components of the water service are to be as indicated in the Region's list of approved products for watermains and must meet all applicable AWWA Standards, NSF/ANSI 60 Standards and any other applicable standards for approved materials, coatings or linings.

Any area disturbed by construction will be restored to the same or better condition prior to the start of construction per Region of Peel's "Standard Specifications for Restoration" document. Per Region of Peel's STD DWG 5-2-2B "Trench Restoration on Regional Roads Cross Section", restoration of the road includes 150mm granular 'A', 100mm (or match existing) HDBC and 50mm HL-1. Road reinstatement drawing details are provided in **Appendix B**.

4 PRELIMINARY LAYOUT

There is limited information related to the water servicing for the existing hose bib; however, it is assumed that the existing service is either a 19mm or 25mm service. It is proposed to decommission the existing service and provide a new 50mm water service for irrigation purposes from the watermain on Park Street East at the north end of the Site. The new meter chamber for the irrigation system will be placed at the property line, adjacent to the new condominium development.

Figure 2 details a preliminary layout of the new irrigation system.

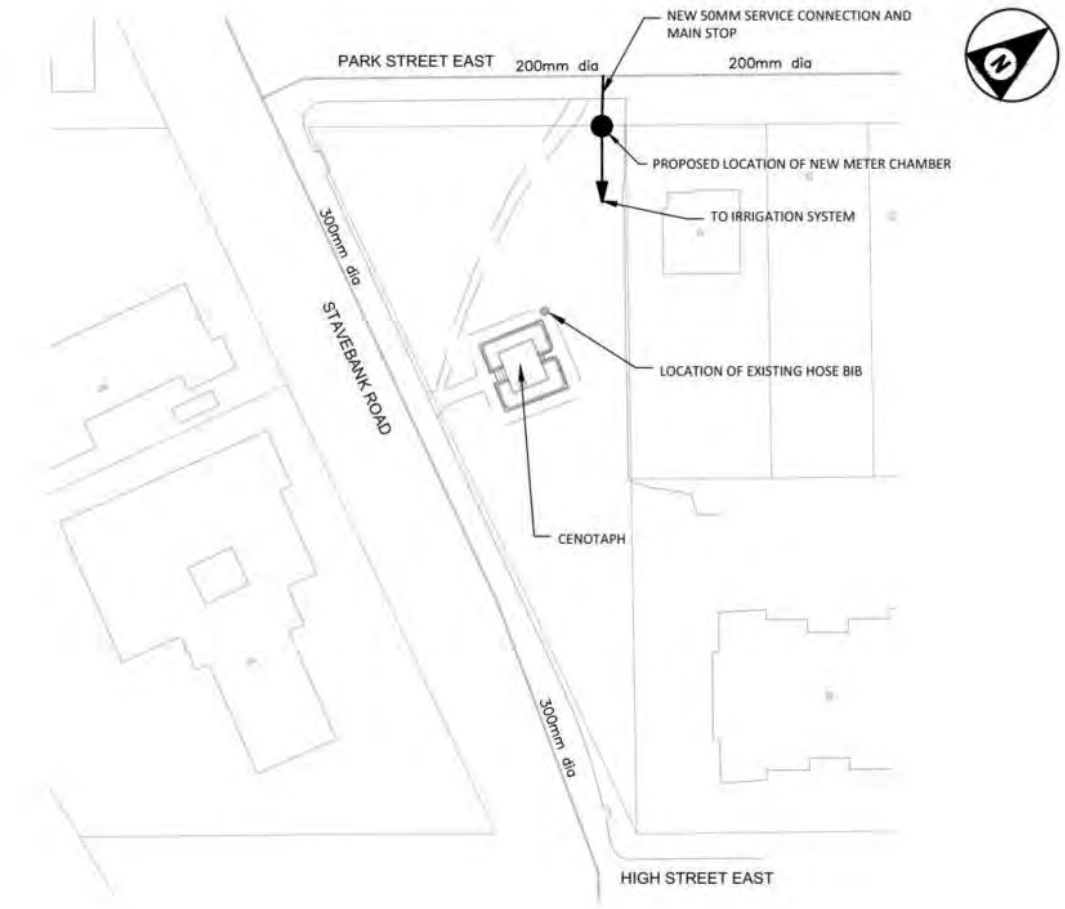


Figure 2: Preliminary Layout

5 CLOSURE

This design brief is intended to provide clarity into the design approach, decisions and basis of design for the completion of the Vimy Park Redevelopment.

Based on the need for an irrigation system at the Vimy Park site, the existing water service is proposed to be decommissioned and a new 50mm water service and metering chamber are proposed. As this is essentially a replacement and upsizing of the existing service, and is limited to intermittent, seasonal summer use, we do not anticipate any negative impact to the water distribution system as a result of this undertaking.

Please do not hesitate to contact the undersigned if you have any questions or concerns regarding this report.

Regards,

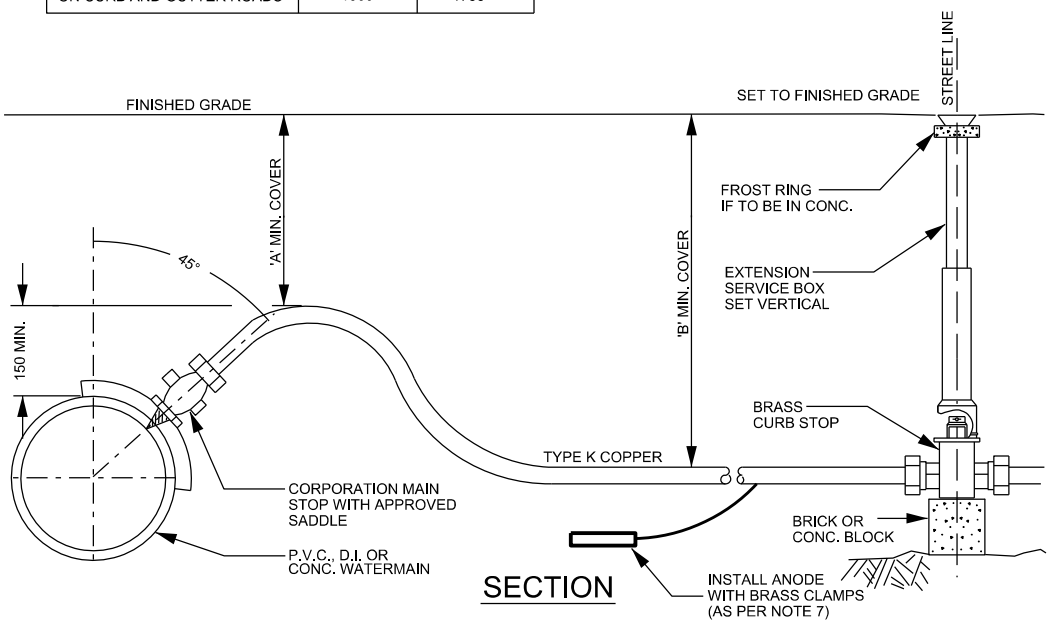
Warisha Ahmad, E.I.T.
Municipal Engineering Group

Andrew Tulk, P.Eng.
Lead Design Engineer

APPENDIX A

Drawing Details for Water Servicing for Irrigation System

	'A'	'B'
ON UNIMPROVED ROADS	1950	2100
ON CURB AND GUTTER ROADS	1500	1700



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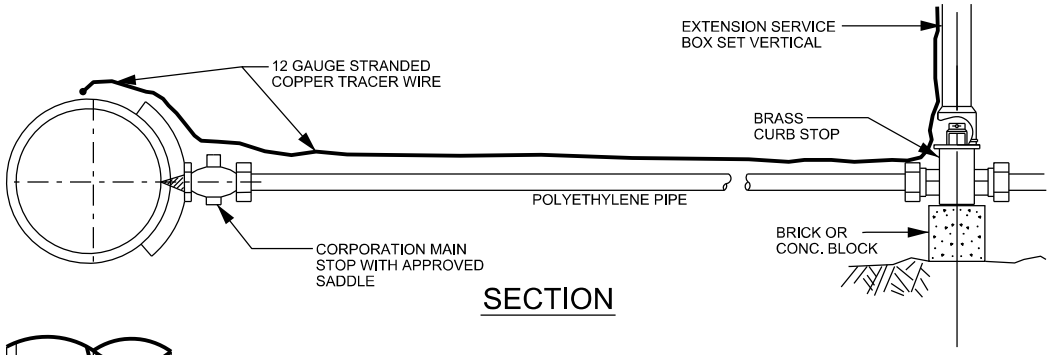

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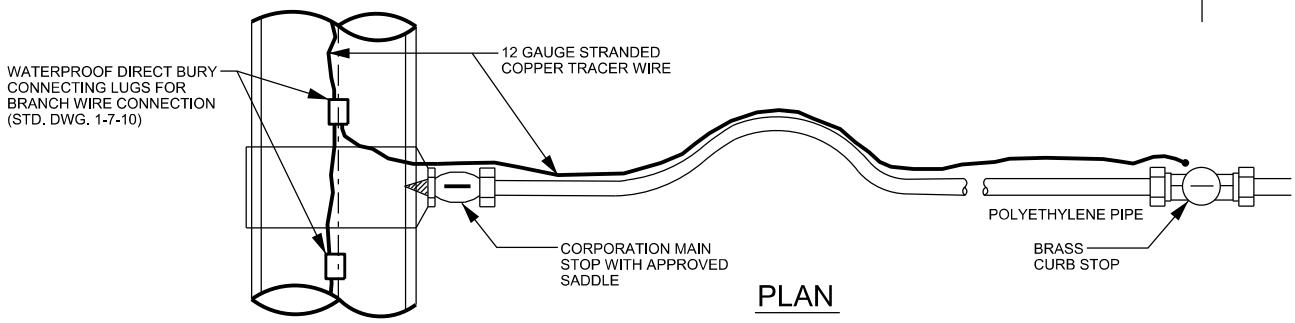


PLAN

NOTE

1. ALL SERVICES TO BE AT 90° TO THE WATERMAIN UNLESS OTHERWISE SPECIFIED.
2. WATER SERVICE TO BE A MIN. OF 1100mm UNDER THE BOTTOM OF DITCH.
3. SERVICE BOX TO BE SET TO FINISH GRADE.
4. NO DIRECT TAPPING OF PVC WATERMAINS. ALL CONNECTIONS TO PVC PIPE TO BE MADE USING AN APPROVED WIDE-BAND SERVICE SADDLE.
5. TRACER WIRE TO BE INSTALLED AS PER REGION STANDARDS.
6. ALL WATER SERVICE MATERIALS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. ZINC ANODE (Z-12-24) TO BE INSTALLED 1000mm FROM CURB STOP AS PER OPSS 442.

Region of Peel
working with you

PUBLIC WORKS
STANDARD DRAWING

REV. DATE: MAR. 2018

APPROVED BY	DRAWN BY
E.O.	AINLEY GROUP

WATER SERVICE CONNECTION

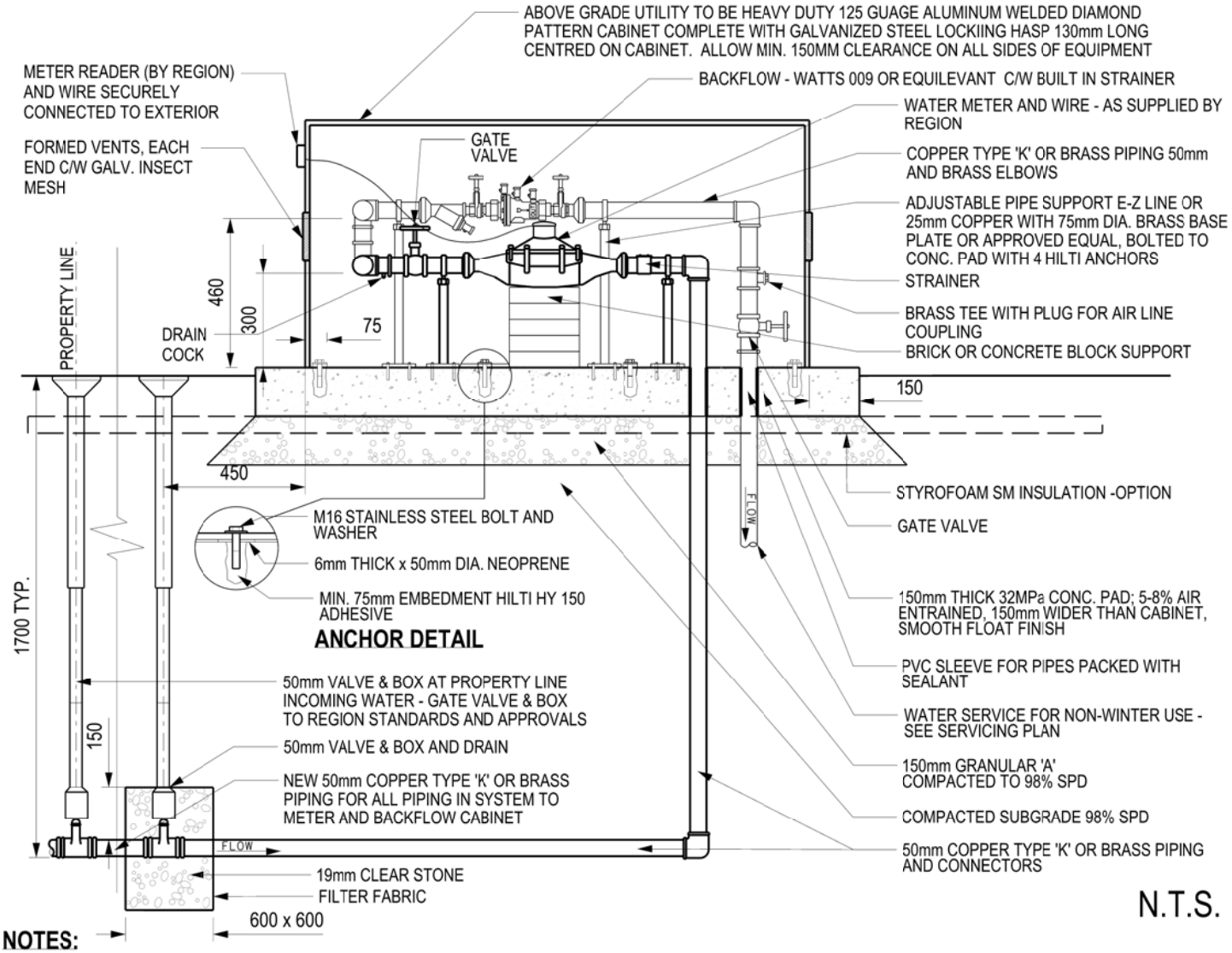
STD. DWG. NUMBER	SCALE
1-7-1	N.T.S.

15430-11

50mm Water Service Backflow - Section View

FOR NON WINTER PARK USE - IRRIGATION, SPRAY PADS & YARD HYDRANTS

NOTE:
TO BE USED AS A GUIDELINE ONLY.
NOT TO SCALE. REMOVE CITY TITLE BLOCK AND REDRAW TO REPRESENT SITE SPECIFIC CONDITIONS. ALL SITE SPECIFIC CONDITIONS ARE TO BE CONFIRMED BY THE PROJECT CONSULTANT.



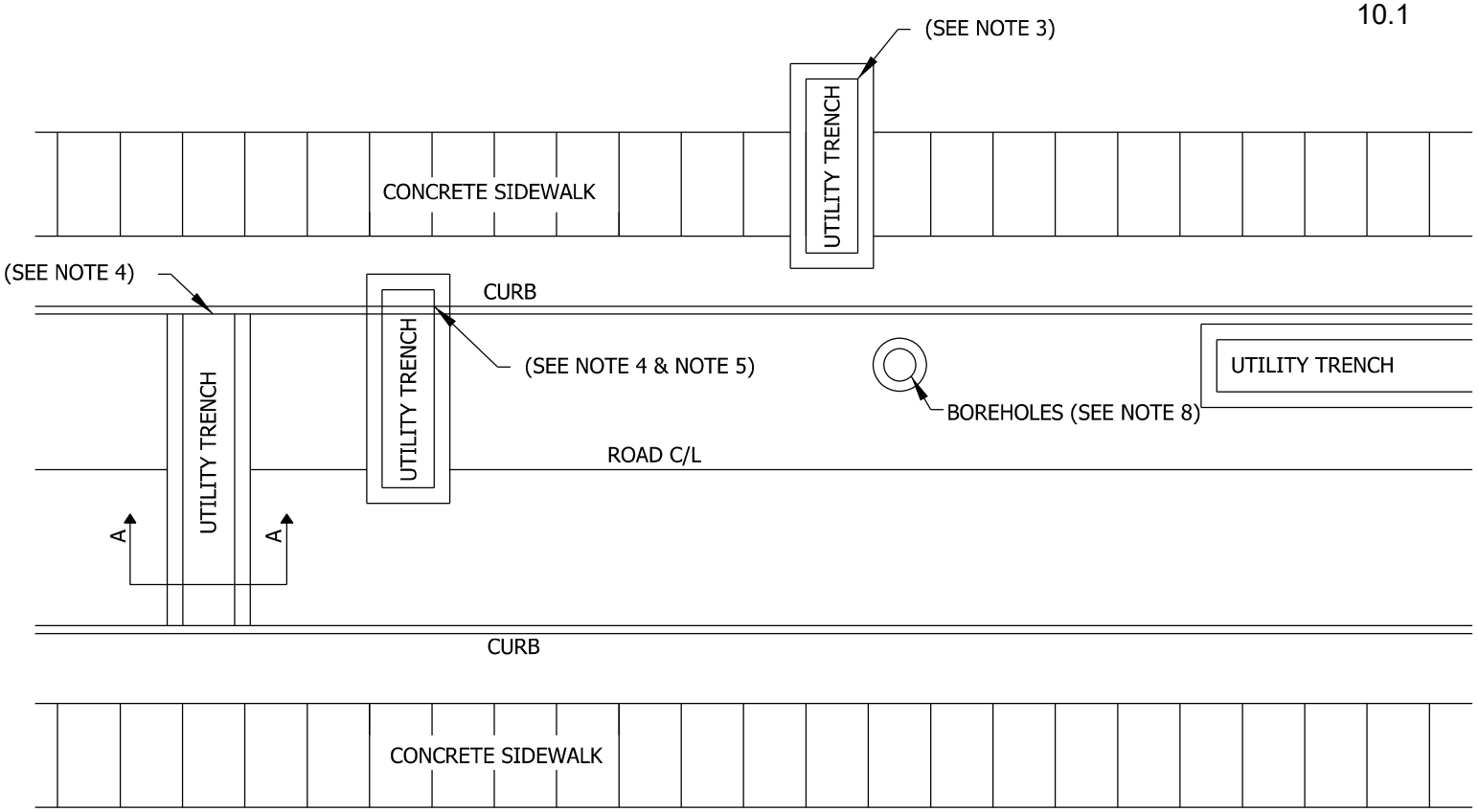
N.T.S.

NOTES:

1. PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATIONS OF BACKFLOW PREVENTER AND METER ASSEMBLY CABINET.
2. LOCATION OF PAD MIN. 1000mm FROM PROPERTY LINE AND/OR PER LAYOUT DRAWINGS.
3. BACKFLOW ASSEMBLY TO BE INSTALLED BY A CERTIFIED PLUMBER, APPROVED BY THE CITY PLUMBING DEPARTMENT.
4. ALL SUPPORTS, FLANGES AND CLAMPS TO BE BRASS.
5. ALL PIPING APPURTENANCES AND DEVICES AS PER REGION OF APPROVED MANUFACTURER'S PRODUCT LIST FOR WATER SERVICE.
6. WHERE PLASTIC PIPE IS USED, A TRACER WIRE CONSISTING OF 12-GAUGE TWU STRANDED COPPER, LIGHT COLOURED PLASTIC COATED TRACER WIRE MUST BE INSTALLED WITH THE PIPE.
7. CONTRACTOR/INSTALLER TO OBTAIN ALL PERMITS AND APPROVALS FROM BOTH THE REGION OF PEEL AND THE CITY PLUMBING DEPARTMENT.
8. WHEN INSTALLED NEAR CHILDERN'S FACILITIES SUCH AS SPRAY PADS, ENSURE THAT POWDER COATED PAINTED FINISH OPTION IS USED WITH APPROVED HEAT REFLECTIVE LIGHT COLOUR PAINT.
9. PLUMBING DEPARTMENT REQUIRES A YEARLY SERVICE TEST ON THE WINTERIZATION EQUIPMENT. ASSEMBLY MUST BE CERTIFIED AND APPROVED.
10. DRAIN AND COMPLETELY FLUSH SYSTEM IN THE FALL AND REMOVE METER FOR WINTER STORAGE.

APPENDIX B

Drawing Details for Road Reinstatement



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH STANDARD DRAWING 5-2-2B
2. ALL APPLICABLE DRAWINGS TO BE USED IN CONJUNCTION WITH REGION ROAD OCCUPANCY PERMIT
3. SIDEWALK RESTORATION SHALL BE A MINIMUM OF 1 FULL BAY INCLUDING EXPANSION JOINT MATERIAL. EXPANSION JOINTS SHALL BE FULL DEPTH AND FULL WIDTH OF SIDEWALK BAY. ALL CONCRETE SHALL BE 30MPA AND 130mm THICK. SIDEWALK BAYS TO BE RESTORED WITHIN 14 DAYS OF REMOVAL. TEMP REPAIR TO BE HOT MIX ASPHALT UNTIL PERMANENT IS COMPLETED
4. WHERE A CURB HAS BEEN UNDERMINED THE CURB SHALL BE REMOVED AND REPLACED TO MATCH EXISTING. CURB RESTORATION SHALL BE A MINIMUM OF 2.0m AND SHALL EXTEND 500mm BEYOND THE OUTER TRENCH EDGES WHICH EVER IS GREATER. ALL CONCRETE SHALL BE 32MPa
5. SUB-DRAINS UNDER THE CURB SHALL BE RESTORED TO MATCH EXISTING OR BETTER, AND CONFIRMED TO BE IN PROPER WORKING CONDITION
6. ALL GRASSED AREAS SHALL BE RE-INSTATED WITH NUMBER 1 NURSERY SOD. SOD IS TO BE PLACED ON TOP OF 100mm OF TOPSOIL, PACKED AND LAID WITH STAGGERED JOINTS. WHERE APPLICABLE ON SLOPES, SOD IS TO BE STAKED INTO THE GROUND. SOD IS TO BE WATERED DAILY FOR 30 DAYS AFTER BEING PLACED. ALL DEAD SOD SHALL BE REPLACED IF NOT SURVIVING AFTER 90 DAYS. ALL SOD AND TOPSOIL SHALL BE IN ACCORDANCE WITH OPSS 802 AND 803
7. USE OF STEEL PLATES IS NOT PERMITTED UNLESS PRE-APPROVED BY ROAD OPERATIONS AND MAINTENANCE
8. BOREHOLES ARE TO BE RESTORED TO ORIGINAL CONDITION OR BETTER. COLD PATCH IS NOT TO BE USED
9. VIRGIN GRANULAR BASE COURSE CLASS "A" BACKFILL MUST BE USED WITHIN 1.0m OF SIDEWALKS, CURBS AND PAVED AREAS COMPACTED TO 100% SPMDD
10. CONCRETE ROAD RESTORATION SHALL BE DONE IN ACCORDANCE WITH REGION OF PEEL STANDARD 5-2-2

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

Region of Peel
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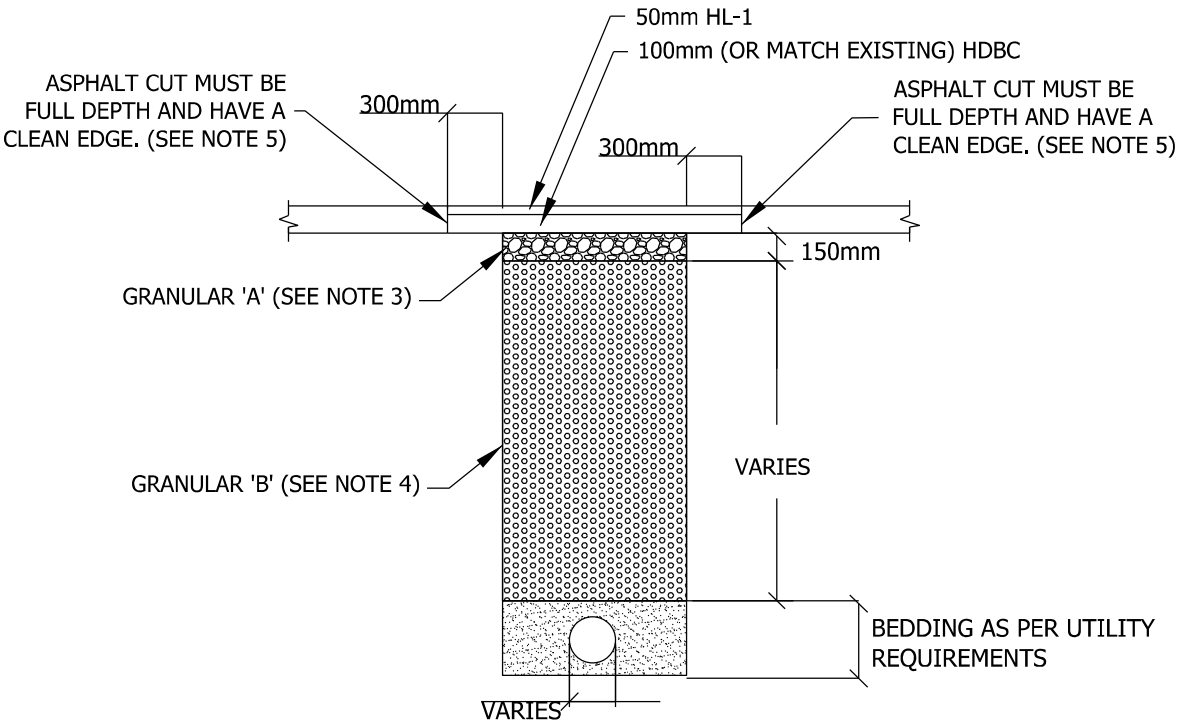
PUBLIC WORKS
STANDARD DRAWING

REV. DATE: FEBRUARY 2015

APPROVED BY	DRAWN BY
G.K./S.L.	O.A.
STD. DWG. NUMBER	SCALE
5-2-2A	N.T.S.

TRENCH RESTORATION ON REGIONAL ROADS



SECTION A-A

NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH STANDARD DRAWING 5-2-2A
2. ALL APPLICABLE DRAWINGS TO BE USED IN CONJUNCTION WITH REGION ROAD OCCUPANCY PERMIT
3. VIRGIN GRANULAR BASE COURSE CLASS 'A' CRUSHER RUN LIMESTONE (19mm) COMPACTED TO 100% SPMDD
4. VIRGIN GRANULAR 'B' (50mm CRL) AS PER DESIGN REQUIREMENTS COMPACTED TO 100% SPMDD (*)
5. THE FULL DEPTH OF EXISTING PAVEMENT SHALL BE SAW CUT AND REMOVED TO A MINIMUM OF 300mm WIDER THAN THE EXCAVATION ON ALL SIDES
   WHERE THE PAVEMENT CUT IS WITHIN 1.0m FROM THE CURB, THE PAVEMENT SHALL BE REMOVED TO CURB
   THE GRANULAR BELOW THE REMOVED PAVEMENT SHALL BE RECONSOLIDATED PRIOR TO PAVING
   TBOND HMA JOINT TAPE OR EQUIVALENT SHALL BE PLACED ON ALL COLD JOINTS
   TACK COAT SHALL BE APPLIED TO ANY EXPOSED PAVEMENT AND ABUTTING CURB
6. PERMANENT PAVEMENT RESTORATION MUST BE COMPLETED WITHIN 14 DAYS OF THE COMPLETION OF THE EXCAVATION
   TEMPORARY PAVEMENT RESTORATION MUST BE DONE PRIOR TO RE-OPENING OF ROADWAY TO TRAFFIC
   FOR TEMPORARY RESTORATION, A MINIMUM DEPTH OF 100mm HDBC SHALL BE USED
   AT NO TIME SHALL COLD PATCH ASPHALT BE USED AS TEMPORARY RESTORATION
7. USE OF STEEL PLATES IS NOT PERMITTED UNLESS PRE-APPROVED BY ROAD OPERATIONS AND MAINTENANCE
8. ASPHALT RESTORATION WILL BE DONE IN ACCORDANCE WITH OPSS 351
9. ALL HORIZONTAL DIRECTIONAL DRILLING SHALL BE DONE IN ACCORDANCE WITH OPSS 450

(*) OPTIMAL CONDITIONS FOR UNSHRINKABLE FILL (THE UNDERSIDE OF UNSHRINKABLE FILL MUST BE A MINIMUM OF 1200mm FROM SURFACE AND CAN NOT EXCEED ROAD SUB-GRADE.)

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

Region of Peel
Working for you

PUBLIC WORKS
STANDARD DRAWING

REV. DATE: FEBRUARY 2015

TRENCH RESTORATION
ON REGIONAL ROADS
CROSS SECTION

APPROVED BY	DRAWN BY
G.K./S.L.	O.A.
STD. DWG. NUMBER	SCALE
5-2-2B	N.T.S.

Appendix 3
Cenotaph Condition Report

Background

Tacoma Engineers has been retained by Aboud & Associates Inc. to provide structural engineering for the rehabilitation and restoration work related to the cenotaph memorial located at Vimy Park, Port Credit.

Our repair recommendations in this report are based on conditions noted during the site review completed by Gerry Zegerius of Tacoma Engineers on January 18, 2021 and in the monitoring reports completed by Steven Burgess Architects (SBA) on September 28, 2020 and November 12, 2021. Prior to preparation of complete set of project drawings, a site visit should be completed to verify the current conditions and confirm the scope of the repairs.

Structural Conditions & Recommendations

The following is a summary of the elements where repairs are recommended:

1. *Cenotaph monument & base*

The cenotaph monument and base appears to generally be in **fair condition**. Note that a visual review of the joints above the top of the base must be completed prior to completion of comprehensive repair construction documents.

i. Full repointing of all vertical and horizontal joints on the base is recommended.
ii. The horizontal joint between the base of the cenotaph and the terrace pavers is in poor condition and has been observed to be increasing in size since it was originally noted in 2019.

It is recommended that this repair work is prioritized as ongoing weathering of these joints and exposure to moisture has been observed to accelerate the deterioration. This deterioration will continue until the joints have been closed.

Photograph 1: Open joints in cenotaph base (Photo taken Jan. 2020)

2. ***Terrace paving stones***

As indicated in SBA's report from November 12, 2021, temporary repairs were completed in May 2021 address open horizontal joints between the terrace paving stones. SBA noted in their report that the repaired joints appeared to be performing well and there were no signs of cracking. Based on SBA's report, and assuming ongoing performance through the winter, it is assumed that no additional repairs will be required to the terrace paving stones. Tacoma Engineers will complete a site review of these previously completed repairs prior to completion of comprehensive repair documents to confirm if addition maintenance is required.

3. ***Retaining walls (upper level around terrace and lower level around planters)***

The retaining walls appear to generally be in **fair condition**.

i. Open joints were noted within the retaining walls around the upper terrace as well as the lower planter walls. Specifically, the horizontal joint where the retaining walls meet grade is generally in poor condition around much of the perimeter.
ii. Repointing is recommended for 100% of the upper and lower retaining walls.
iii. Cleaning of the stones is recommended with special attention to shaded areas and areas near grade.

Photograph 2: Deteriorated horizontal joint at grade (Photo taken Jan. 2020)

iv. Approximately 50% of upward facing capstone joints in the lower planter walls were previously noted to have failed and require repair with a compatible material.

Photograph 3: Failed joints between capstones (Photo taken Jan. 2020)

Non-Structural Conditions & Recommendations

1. *Cenotaph base & retaining walls*

Additional non-structural restoration work is recommended for the cenotaph base and retaining walls to address observed stone chips, organic growth and failed lead-coated lettering.

It is recommended that a conservator with a specialization in masonry & stonework be retained to complete a review and specification for remedial work related to the cenotaph monument and base.

i. Cleaning of the cenotaph base is recommended to remove organic growth (noted on approximately 50% of the base)
ii. Stone chips were observed in a minimum of two locations on the inscription panels. It is recommended to repair all stone chips to the cenotaph base.
iii. Restoration and repairs are recommended for the lead coated lettering on the inscription panels to address failing lead coatings.

Per _____
Emily van Riesen, P.Eng., CAHP Intern
Structural Engineer
Tacoma Engineers

Encl. None