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2275 Quadra Street, Victoria

Demolition Impact Assessment &

Construction Impact Assessment

PREPARED FOR: City of Victoria
Parks & Recreation Department
(Facilites & Planning)
1 Centennial Square
Victoria, BC V8W 1P6

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APPENDICES

1. INTRODUCTION

The City of Victoria (Client) retained Talmack Urban Forestry Consultants Limited (Talmack) to update a tree inventory (previous inventory was conducted in 2018); as well as provide a demolition impact assessment and construction impact assessment report for the following proposed project:

Site(s):	2275 Quadra Street, Victoria BC; 940 Caledonia Avenue, Victoria BC
Municipality:	City of Victoria
Client Name:	Parks & Recreation (Facilities & Planning Department)
Dates of Site Visit(s):	March 6, 2024; March 7, 2024; March 15, 2024
Site Conditions:	Pre-Construction, no ongoing activity

The purpose of this report is to provide an initial overview of potential tree related impacts for three possible project options regarding the Crystal Pool & Fitness Centre. The assessment of tree impacts within this report are based on the preliminary plans that we have received from the City of Victoria (see *Appendix C-F*). While we believe our assessment to be accurate, it is subject to change based on the review of detailed plans, future design changes and implementation of recommended mitigation techniques outlined within the report.

2. TREE INVENTORY METHODOLOGY

For this report, the size, health, and structural condition of trees and hedges within influencing distance of the proposed projects were documented (*Appendix A-B*). The on-site trees from site #1 were previously labeled with metal numerated tags, these tag numbers were used in the updated inventory. The on-site trees surrounding site #2 were labeled with metal numerated tags. Trees located on neighbouring properties were not tagged but identified as OS# in the inventory table. Trees located on municipal properties that were identified as M# in the inventory table. Each on-site tree was visually examined on a limited visual assessment basis (level 1), in accordance with Tree Risk Assessment Qualification (TRAQ) methods (Dunster *et al.* 2017) and ISA Best Management Practices.

3. TREE INVENTORY DEFINITIONS

Tag: Tree identification number on a metal tag attached to tree with nail or wire, generally at eye level. Trees on neighboring properties are not tagged.

OS: No tag due to ownership by neighbor.

M: Non-tagged tree owned by the municipality

DBH: Diameter at breast height – diameter of trunk, measured in centimeters at 1.4m above

ground level. For multi-stemmed trees, the DBH is equal to the summation of the DBH of the three largest stems. For trees on a slope, it is taken at the average point between the high and low side of the slope. * Measured over ivy, ~ Approximate due to inaccessibility or on neighbouring property

Dripline: Indicates the radius of the crown spread measured in meters to the dripline of the longest limbs.

Relative Tolerance Rating: Relative tolerance of the tree species to construction related impacts such as root pruning, crown pruning, soil compaction, hydrology changes, grade changes, and other soil disturbance. This rating does not consider individual tree characteristics, such as health and vigor. Three ratings are assigned based on our knowledge and experience with the tree species: Poor (P), Moderate (M) or Good (G).

Critical Root Zone: A calculated radial measurement in meters from the trunk of the tree. It is the optimal size of tree protection zone and is calculated by multiplying the DBH of the tree by 10, 12 or 15 depending on the tree's Relative Tolerance Rating. This methodology is based on the methodology used by Nelda Matheny and James R. Clark in their book "Trees and Development: A Technical Guide to Preservation of Trees During Land Development."

- 15 x DBH = Poor Tolerance of Construction
- 12 x DBH = Moderate
- 10 x DBH = Good

To calculate the critical root zone, the DBH of multiple stems is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. It should be noted that these measures are solely mathematical calculations that do not consider factors such as restricted root growth, limited soil volumes, age, crown spread, health, or structure (such as a lean).

Health Condition:

- Poor – significant signs of visible stress and/or decline that threaten the long-term survival of the specimen
- Fair – signs of stress
- Good – no visible signs of significant stress and/or only minor aesthetic issues

Structural Condition:

- Poor – Structural defects that have been in place for a long period of time to the point that mitigation measures are limited
- Fair – Structural concerns that are possible to mitigate through pruning
- Good – No visible or only minor structural flaws that require no to very little pruning

Suitability ratings are described as follows:

Rating: Suitable.

- A tree with no visible or minor health or structural defects, is tolerant to changes to the growing environment and is a possible candidate for retention provided that the critical root zone can be adequately protected.

Rating: Conditional.

- A tree with good health but is a species with a poor tolerance to changes to its growing environment or has a structural defect(s) that would require that certain measures be implemented, in order to consider it suitable for retention (i.e., retain with other codominant tree(s), structural pruning, mulching, supplementary watering, etc.)

Rating: Unsuitable.

- A tree with poor health, a major structural defect (that cannot be mitigated using ANSI A300 standards), or a species with a poor tolerance to construction impacts, and unlikely to survive long term (in the context of the proposed land use changes).

Retention Status:

- Remove – Not possible to retain given proposed construction plans
- Retain – It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our recommended mitigation measures are followed
- At Risk - See report for more information regarding potential impacts

4. TREE RISK ASSESSMENT

During our March 6, 2024; March 7, 2024; and March 15, 2024 site visits and in conjunction with the tree inventory, on-site trees were assessed for risk, on a limited visual assessment basis (level 1), and in the context of the existing land uses. The time frame used for the purpose of our assessment is one year (from the date of the tree inventory). Unless otherwise noted herein, we did not conduct a detailed (level 2) or advanced (level 3) risk assessment, such as resistograph testing, increment core sampling, aerial examinations, or subsurface root/root collar examinations.

Existing Land Uses

We did not observe any trees that were deemed to be moderate, high, or extreme risk in the context of the existing land uses, that would require hazard abatement to eliminate present and/or future risks (within a 1-year timeframe). Targets considered during this TRAQ assessment included: existing structures (constant use); occupants of existing structures (constant use); vehicles within the on-site parking areas (frequent use); occupants of vehicles travelling on Quadra and Caledonia Avenue (frequent use); pedestrians along Quadra and Caledonia Avenue (frequent use); occupants of vehicles travelling along Pembroke Street, Vancouver Street, Queens Avenue, and Green Street (occasional use); and pedestrians along Pembroke Street, Vancouver Street, Queens Avenue, and Green Street (occasional use).

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impact			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Figure 1: Likelihood and Risk Rating Matrices used to evaluate tree risk in the ISA Tree Risk Assessment Manual, Second Edition (Dunster et al. 2017).

5. PROJECT OVERVIEW

Two sites have been proposed for the project. The first site is located at 2275 Quadra Street where the existing Crystal Pool & Fitness Centre is located. The second site is located at 940 Caledonia Avenue, where there is an existing parking lot and the Caledonia Tiny Home Village.

Three design options have been proposed for the project. Options #1 and #2 (*Appendix C* and *Appendix D*) are located at 2275 Quadra Street and option #3 (*Appendix E*) is located at 940 Caledonia Avenue.

Option #1 would require the demolition of the existing Crystal Pool and Fitness Centre. The proposed new facility would be in the southwestern corner of the park where the existing tennis and basketball courts are located. The underground car park (82 stalls) would be located along the western edge of the property. A new tennis court, basketball court, playground, and fitness area will be installed where the existing building is. The above ground car park will have 28 stalls and there will be long-term and short-term bicycle storage to the east of the parking area.

Option #2 would require the demolition of the existing Crystal Pool and Fitness Centre. The newly constructed facility would be located roughly within the footprint of the existing facility except for a section that extends to the southeast. The above ground car park will be in the same location as option #1, and the underground car park (82 stalls), while still located along the western side of the park, will only extend as far south as Princess Avenue. Short-term and long-term bike storage areas will be installed off of the existing pathway to the north of the tennis court. The basketball court, tennis court, playground, and fitness area would remain in their existing locations.

Option #3 proposes a new facility be constructed at 940 Caledonia Avenue. The underground car park would consist of two levels (107 stalls) with the entrance ramp located at the southwestern corner of the lot. Short-term bike storage would be located above ground in the southeastern corner of the lot, and long-term bike storage would be located within the underground parking area.

6. SITE 1: 2275 QUADRA STREET

6.1. SITE INFORMATION

Site #1 is where the Crystal Pool & Fitness Centre is currently located. The site is also the location of Central Park. The original inventory conducted in 2018 inventoried a total of one hundred and seven (107) individual trees, there are currently one hundred (100) trees on-site. The tree resources are predominately located around the perimeter of the lot. However, there are a row of London Planes located to the west of the southern baseball pitch, and a group of trees located in between the existing fitness centre and the basketball/tennis courts. A majority of the on-site trees are mature elms (*Ulmus spp.*) and London planes (*Platanus* X *acerfolia*). Most of the trees included in the inventory are non-native species except for three mature Garry oaks (*Quercus garryana*), and four bigleaf maples (*Acer macrophyllum*).

The staging areas for site #1 will differ depending on the option. The staging area for Option #1 will be located within the southern baseball pitch, and the staging area for Option #2 will be located within the northern baseball pitch.

6.2. OPTION #1

6.2.1. Anticipated Tree Impacts

The following on-site trees (indicated by tag/ID #) are located where they are expected to be impacted by the proposed on-site construction and will likely require removal:

Remove twenty-nine (29) city-owned trees

- 2-6, 8, 9, 16, 17, 31, 35, 38, 39, 40, 42-44, 58, 91, 95, 99, 100, 151-156, NT01

The following on-site trees (indicated by tag #) are located where they may be possible to retain, however, their retention status will need to be determined during construction and will depend on the size and number of structural roots found during construction:

Determine retention status of twenty-three (23) city-owned trees

- 1, 7, 10, 11, 12, 13, 14, 15, 18-25, 29, 30, 33, 36, 37, 41, *92

***indicates that in the event the tree can be retained, we recommend a level 3 assessment be performed**

The following on-site trees (indicated by tag #) are located where they are expected to be able to be retained, provided that mitigation measures outlined in the report are followed:

Retain and protect forty-eight (48) city-owned trees

- 26-28, 45, 47-57, 59-61, 62-80, 82, 85-87, 89, 90, 93, 94, 96-98

Tree Impact Summary

The tree impacts have been summarized within the table found below:

Table 1: Tree Impact Summary for Option #1

Inventoried Trees	Removed	Retained	Retain*
City-owned	29	48	23

If the project is to move forward using the plans from option #1 a total of twenty-nine trees are expected to require removal; forty-eight trees are expected to be retained, and twenty-three trees will likely be retain*. The mature on-site Garry oaks and specimen trees may be of higher value than less mature or non-native species within the context of the CoV Urban Forest Master Plan and intrinsically to the public.

6.2.2. Potential Mitigation Options

Mitigating disturbance within the CRZs of trees within the area of influence of the proposed project will be crucial in order to maximize on-site tree retention. The recommended mitigations for the project have been broken down into three of the following categories:

Planning Based Mitigation

- Tree protection fencing
    - Tree protection fencing should be installed around the CRZs of retained trees within the area of disturbance
    - Will limit compaction and disturbance within CRZs as well as prevent mechanical damage to trees
- Arborist supervision during excavation
    - Excavation for the foundation of the building and underground parking are likely to have the highest impact to retained on-site trees
    - An arborist should monitor excavations within the CRZs of retained trees to prevent root damage and prune necessary roots to minimize wound surface area and promote wound closure
- Install temporary access roads for on-site construction traffic
    - Pathways should be built using a geotextile base with a 20cm layer of coarse woodchips and plywood or a geotextile and gravel
    - Access between the staging area and the building site (within CRZ of trees #18, #19, #20, #24, #25)
    - Access to the staging area (within CRZs of trees #54, #55, #56, #59, #60)
- Clearance pruning for machine access
    - In order to prevent branch breakage or tear out, limbs that overhang site access areas should be pruned back to allow for clearance
    - Any pruning should be performed by an ISA certified arborist and meet ANSI A300 standards
    - Locations include construction areas, temporary access areas, and site access areas

Design Based Mitigation

- Floating the walkways over the CRZs of retained and “at risk” trees (see *Appendix G*)
- Move walkways as far from the base of trees as possible
    - Altering the walkways around trees #1 and #41 would help to reduce impacts and possibly allow for their retention
- Pave with permeable materials
    - Paving stones
    - Permeable asphalt

Construction Based Mitigation

The trees surrounding the location of the proposed new facility are the most likely to be impacted during the construction phase of the project. If disturbance can mitigated during construction the likelihood of retention will increase. Several methods can be employed to reduce impacts:

- Limit encroachment into CRZs
    - Wherever possible restrict over excavation into CRZs. Particularly in three critical areas:
        - North of the proposed facility (to protect trees #10, #13, #14, #15)
        - East of the proposed facility (to protect trees #18-#25)
        - South of the proposed facility (to protect trees #29, #33, #36, #37)
- Utilize shoring for the foundation of the underground parking (~excavation depth of 6.2m) and new building to avoid the need for cut slopes

6.3. OPTION #2

6.3.1. Anticipated Tree Impacts

The following on-site trees (indicated by tag/ID #) are located where they are expected to be impacted by the proposed on-site construction and will likely require removal:

Remove fourteen (14) city-owned trees

- 8, 9, 91, 92, 94, 99, 100, 151-156, NT01

The following on-site trees (indicated by tag #) are located where they may be possible to retain, however, their retention status will need to be determined during construction and will depend on the size and number of structural roots found during construction:

Determine retention status of ten (10) city-owned trees

- 7, 10, 11, 12, 13, 15, 58, 79, 80, 82

The following on-site trees (indicated by tag #) are located where they are expected to be able to be retained, provided that mitigation measures outlined in the report are followed:

Retain and protect seventy-six (76) city-owned trees

- 1-6,14, 16-29, 30, 31, 33, 35-45, 47-57, 59-78, 85-87, 89, 90, 93, 95-98

Tree Impact Summary

The tree impacts have been summarized within the table found below:

Table 2: Tree Impact Summary for Option #2

Inventoried Trees	Removed	Retained	At Risk
City-owned	14	76	10

If the project is to move forward using the plans from option #2 a total of fourteen trees are expected to require removal; seventy-six trees are expected to be retained, and ten trees are at risk of removal. The mature on-site Garry oaks and specimen trees may be of higher value than less mature or non-native species within the context of the CoV Urban Forest Master Plan and intrinsically to the public.

6.3.2. Potential Mitigation Options

Mitigating disturbance within the CRZs of trees within the area of influence of the proposed project will be crucial in order to maximize on-site tree retention. The recommended mitigations for the project have been broken down into three of the following categories:

Planning Based Mitigation

- Tree protection fencing
    - Tree protection fencing should be installed around the CRZs of retained trees within the area of disturbance
    - Will limit compaction and disturbance within CRZs as well as prevent mechanical damage to trees
- Arborist supervision during excavation
    - Excavation for the foundation of the building and underground parking are likely to have the highest impact to retained on-site trees
    - An arborist should monitor excavations within the CRZs of retained trees to prevent root damage and prune necessary roots to minimize wound surface area and promote wound closure
- Install temporary access roads for site access
    - Option #1: Northern site access from Queens Avenue. Could impact trees #79 and #80 depending on required width of access road. (Highest Potential Impact Option)
    - Option #2: Southern site access from Pembroke Street. Would require the removal of tree #58, and access to the staging area through the southern baseball pitch. (Lower Potential Impact Option)
    - Pathways should be built using a geotextile base with a 20cm layer of coarse woodchips and plywood or a geotextile and gravel
- Clearance pruning for machine access
    - In order to prevent branch breakage or tear out, limbs that overhang site access should be pruned back to allow for clearance
    - Any pruning should be performed by an ISA certified arborist and meet ANSI A300 standards
        - Pruning of tree #79 for site access requirements may result in too much of the existing canopy being removed and may not meet ANSI Standards or require the removal of the tree
    - Locations include construction areas, and site access areas

Design Based Mitigation

- Floating the walkways over the CRZs of retained and at risk trees (see *Appendix G*)
    - Trees #7, #10, #11, #13, #18, #19, #82 would improve retention suitability
- Move walkways as far from the base of trees as possible
- Pave with permeable materials
    - Paving stones
    - Permeable asphalt

Construction Based Mitigation

The trees surrounding the location of the proposed new facility are the most likely to be impacted during the construction phase of the project. If disturbance can mitigated during construction the likelihood of retention will increase. Several methods can be employed to reduce impacts:

- Limit encroachment into CRZs
    - Wherever possible restrict over excavation into CRZs. Particularly:
        - South and east of the southern extent of the underground parking
- Utilize shoring for the foundation of the underground parking (~excavation depth of 6.2m) and new building to avoid the need for cut slopes

7. SITE 2: 940 CALEDONIA AVENUE

7.1. SITE INFORMATION

Site #2 is at 940 Caledonia Avenue where a parking lot currently exists. A total of forty-nine (49) trees were inventoried and includes on-site and off-site trees. The tree resources are predominately around the perimeter of the lot and neighbouring properties to the west.

The staging area for this option will be within the southeastern corner of Central park (southern baseball pitch) which is the same staging as Option #1.

7.2. OPTION #3

7.2.1. Anticipated Tree Impacts

The following inventoried trees (indicated by tag/ID #) are located where they are expected to be impacted by the proposed on-site construction and off-site staging and will likely require removal:

Remove twenty-eight (28) city-owned trees

- 501-522, M1-M6

Remove ten (10) non-protected off-site trees

- OS1-OS4, OS6-OS11

  ***Prior written consent from the tree owner(s) is required prior to the removal of any trees located on neighbouring properties.**

The following off-site trees (indicated by ID #) are located where they may be possible to retain, however, their retention status will need to be determined during construction and will depend on the size and number of structural roots found during construction:

Determine retention status of one (1) non-protected off-site tree

- OS5

  ***Prior written consent from the tree owner(s) is required prior to the removal of any trees located on neighbouring properties.**

The following inventoried trees (indicated by tag/ID #) are located where they are expected to be able to be retained, provided that mitigation measures outlined in the report are followed:

Retain and protect ten (10) city-owned trees

- M7-M16

Tree Impact Summary Table

The tree impacts have been summarized within the table found below:

Table 3: Tree Impact Summary for Option #3

Inventoried Trees	Removed	Retained	At Risk
City-owned	28	10	0
Off-site	10	0	1

If the project is to move forward using the plans from option #3 a total of thirty-eight (38) trees are expected to require removal; ten (10) trees are expected to be retained, and one (1) tree will be at risk of removal.

7.2.2. Potential Mitigation Options

Given that most trees within influencing distance of the project will require removal there are few trees that will be impacted by the project: The recommended mitigations for the project have been broken down into three of the following categories:

Planning Based Mitigation

- Tree protection fencing
    - Tree protection fencing should be installed around the CRZs of retained trees within the area of disturbance
        - While not strictly necessary, TPF can be installed around the retained trees along Vancouver street to ensure that mechanical damage will not occur as vehicles and machinery are driven from the staging area in Central Park to the project site
- Arborist supervision during excavation
    - Excavation for the foundation of the building and underground parking are likely to have the highest impact to at risk trees
        - The only tree with potential for retention within the project area is OS5
    - During excavation within CRZs of retained trees an arborist should be monitoring to prevent root damage and prune necessary roots to minimize wound surface area and promote wound closure
- Install temporary access roads for site access
    - The staging area for this option will be the same as for Option #1
        - Tree #58 will require removal
        - A pathway from the road to the staging area should be floated over the CRZs of surrounding trees using a geotextile, woodchips, and plywood
- Clearance pruning for machine access
    - In order to prevent branch breakage or tear out, limbs that overhang site access or route to the project site should be pruned back to allow for clearance
    - Any pruning should be performed by an ISA certified arborist and meet ANSI A300 standards
        - Trees #55, #56, and #59 will likely require some pruning for access to the staging area
        - Tree M16 will likely require pruning of the eastern and northeastern limb to allow for clearance from the staging area to the project site
    - Locations include construction areas, site access areas, and the route from the staging area to the project site

8. CONCLUSIONS

Option #1 would likely be the option that results in the highest number of tree removals. The relocation of the fitness facility as well as the size and orientation of the underground car park would result in the project having a high impact to the on-site trees.

The second option located within Central Park would be a lower impact option when compared to Option #1. Constructing the new facility mostly within the footprint of the existing building helps to limit on-site impacts. The orientation and size of the underground car park also lends itself to being a lower impact option. This option results in the lowest number of trees that would likely require removal when comparing all three options. However, the majority of trees that would require removal are larger and mature trees.

Of the three available options the project located at 940 Caledonia Avenue (Option #3) is likely to have the lowest impact to the urban forest. The on-site trees that would require removal are relatively small and none are native species. All of the trees surrounding the property and likely most of the neighbouring trees to the west would require removal.

Option #3 is likely to be the best choice from the perspective of maintaining larger stature trees and retaining canopy cover for the urban forest of Victoria as a whole.

9. DISCLOSURE STATEMENT

This arboricultural field review report was prepared by Talmack Urban Forestry Consultants Ltd. for the exclusive use of the Client and may not be reproduced, used, or relied upon, in whole or in part, by a party other than the Client without the prior written consent of Talmack Urban Forestry Consultants Ltd. Any unauthorized use of this report, or any part hereof, by a third party, or any reliance on or decisions to be made based on it, are at the sole risk of such third parties. Talmack Urban Forestry Consultants Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, in whole or in part.

Arborists are professionals who examine trees and use their training, knowledge, and experience to recommend techniques and procedures that will improve a tree's health and structure or to mitigate associated risks. Trees are living organisms whose health and structure change and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. The arborist's review is limited to a visual examination of tree health and structural condition, without excavation, probing, resistance drilling, increment coring, or aerial examination. There are inherent limitations to this type of investigation, including, without limitation, that some tree conditions will inadvertently go undetected. The arborist's review followed the standard of care expected of arborists undertaking similar work in British Columbia under similar conditions. No warranties, either express or implied, are made as to the services provided and included in this report.

The findings and opinions expressed in this report are based on the conditions that were observed on the noted date of the field review only. The Client recognizes that passage of time, natural occurrences, and direct or indirect human intervention at or near the trees may substantially alter discovered conditions and that Talmack Urban Forestry Consultants Ltd. cannot report on, or accurately predict, events that may change the condition of trees after the described investigation was completed.

It is not possible for an Arborist to identify every flaw or condition that could result in failure, nor can he/she guarantee that the tree will remain healthy and free of risk. The only way to eliminate tree risk entirely is to remove the entire tree. All trees retained should be monitored on a regular basis. Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

Immediately following land clearing, grade changes or severe weather events, all trees retained should be reviewed for any evidence of soil heaving, cracking, lifting or other indicators of root plate instability. If new information is discovered in the future during such events or other activities, Talmack Urban Forestry Consultants Ltd. should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein.

10. IN CLOSING

We trust that this report meets your needs. Should there be any questions regarding the information within this report, please do not hesitate to contact the undersigned.

Yours truly,

Talmack Urban Forestry Consultants Ltd.

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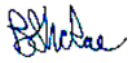

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11. REFERENCES

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Dunster, J.A., E.T. Smiley, N. Matheny, and S. Lily. 2017. Tree Risk Assessment Manual, International Society of Arboriculture (ISA).

12. COMPANY INFORMATION

General Liability: Intact Insurance, Policy No. 5V2147122: $5,000,000

APPENDIX A - TREE INVENTORY TABLE 2275 QUADRA STREET

Table 4: Tree Inventory Table (March 2024)

Tag #	Bylaw Protected (Yes/No)	Name		DBH (cm)	Crown Diameter (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability (Option #1)	Retention Status (Option #1)	Tree Retention Suitability (Option #2)	Retention Status (Option #2)
		Common	*Botanical*				Health	Structural						
1	City	American Elm	*Ulmus americana*	99	21	10	Good	Fair	Good	Codominant union at 4m, end-weighted limbs east side.	Conditional	At Risk	Suitable	Retain
2	City	Field Elm	*Ulmus minor*	89	10	9	Fair/poor	Fair	Good	Sparse crown, decay in pruning wounds, epicormic growth.	Unsuitable	Remove	Suitable	Retain
3	City	American Elm	*Ulmus americana*	73	12	7.5	Fair/poor	Fair	Good	Dieback at branch tips. Stunted growth	Unsuitable	Remove	Suitable	Retain
4	City	Field Elm	*Ulmus minor*	115	16	11.5	Fair	Fair	Good	Inclusion at secondary union north side).	Unsuitable	Remove	Suitable	Retain
5	City	Horse chestnut	*Aesculus hippocastanum*	34	7	3.5	Good	Fair	Good	Small lower trunk wound.	Unsuitable	Remove	Suitable	Retain
6	City	Horse chestnut	*Aesculus hippocastanum*	44	9	4.5	Good	Fair	Good		Unsuitable	Remove	Suitable	Retain
7	City	Horse chestnut	*Aesculus hippocastanum*	37	8	3.5	Good	Fair	Good		Conditional	At Risk	Conditional	At Risk
8	City	Field Elm	*Ulmus minor*	85	17	8.5	Fair	Fair	Good	Codominant union at 4m, limbs slightly end- weighted over parking lot.	Unsuitable	Remove	Unsuitable	Remove
9	City	Field Elm	*Ulmus minor*	65	12	6.5	Fair	Fair/poor	Good	30cm long cavity opening at base	Unsuitable	Remove	Unsuitable	Remove
10	City	Field Elm	*Ulmus minor*	68	14	7	Fair	Fair	Good	Possible cavity in south-facing scaffold limb with irregular response growth and limb taper. Aerial inspection recommended.	Conditional	At Risk	Conditional	At Risk
11	City	Horse chestnut	*Aesculus hippocastanum*	40	9	4	Good	Fair	Good	Surface decay in pruning wounds.	Conditional	At Risk	Conditional	At Risk
12	City	Garry Oak	*Quercus garryana*	108	18	11	Fair	Fair	Good	3 large (40cm+ diameter) pruning wounds with decay on main trunk. Leaning north.	Conditional	At Risk	Conditional	At Risk
13	City	Field Elm	*Ulmus minor*	79	12	8	Fair	Fair	Good		Conditional	At Risk	Conditional	At Risk
14	City	Garry Oak	*Quercus garryana*	94	18	9.5	Fair	Fair	Good	80cm by 40cm tearout wound on main trunk. Leaning. Bark flaking opposite lean	Conditional	At Risk	Suitable	Retain
15	City	London Plane	*Platanus x acerifolia*	92	21	9	Good	Fair	Good	End-weight reduction pruning historically.	Conditional	At Risk	Conditional	At Risk
16	City	London Plane	*Platanus x acerifolia*	113	27	11.5	Good	Fair	Good	Surface roots, end-weight reduction pruning historically.	Unsuitable	Remove	Suitable	Retain
17	City	London Plane	*Platanus x acerifolia*	76	24	7.5	Good	Fair	Good	End-weighted limb south side, decay in wound on southeast limb.	Unsuitable	Remove	Suitable	Retain
18	City	London Plane	*Platanus x acerifolia*	93	24	9.5	Good	Fair	Good	End-weight reduction pruning historically.	Conditional	At Risk	Suitable	Retain
19	City	London Plane	*Platanus x acerifolia*	61	18	6	Good	Fair	Good	Leaning, small hanger.	Conditional	At Risk	Suitable	Retain
20	City	London Plane	*Platanus x acerifolia*	88	22	9	Good	Fair	Good	Some surface rooting, crown raised east side.	Conditional	At Risk	Suitable	Retain

Tag #	Bylaw Protected (Yes/No)	Name		DBH (cm)	Crown Diameter (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability (Option #1)	Retention Status (Option #1)	Tree Retention Suitability (Option #2)	Retention Status (Option #2)
		Common	*Botanical*				Health	Structural						
21	City	London Plane	*Platanus x acerifolia*	115	24	11.5	Good	Fair	Good	Leaf litter gathering at main branch union at 3m, extended limbs west side, crown raised east side, surface roots.	Conditional	At Risk	Suitable	Retain
22	City	London Plane	*Platanus x acerifolia*	103	26	10.5	Good	Fair	Good	30cm wide pruning wound at 3m, good response growth, extended limbs west side, crown raised east side.	Conditional	At Risk	Suitable	Retain
23	City	London Plane	*Platanus x acerifolia*	81	20	8	Good	Fair	Good	Asymmetric and compartmentalized pruning wounds from field lights clearance pruning, small hanger.	Conditional	At Risk	Suitable	Retain
24	City	London Plane	*Platanus x acerifolia*	71	18	7	Fair	Fair	Good	Asymmetric with old and recent pruning wounds (30cm +) on field side of tree and waterspout growth	Conditional	At Risk	Suitable	Retain
25	City	London Plane	*Platanus x acerifolia*	70	22	7	Good	Fair	Good	Crown raised east side.	Conditional	At Risk	Suitable	Retain
26	City	Big Leaf Maple	*Acer macrophyllum*	41	9	5	Fair	Poor	Moderate	Severely asymmetric with 20cm wide pruning wound at main branch union at 2m, lower trunk wound.	Suitable	Retain	Suitable	Retain
27	City	Field Elm	*Ulmus minor*	87	20	8.5	Good	Fair/poor	Good	Codominant union at 3m with included bark and active response, sap ooze. Small hanger, some hydro clearance pruning.	Suitable	Retain	Suitable	Retain
28	City	Oak	*Quercus spp*	32	9	4	Fair	Good	Moderate	Competing for light. Girdling root	Suitable	Retain	Suitable	Retain
29	City	Field Elm	*Ulmus minor*	82	21	8	Good	Fair	Good	Codominant union at 3m. Girdling root	Conditional	At Risk	Suitable	Retain
30	City	Black Walnut	*Juglans nigra*	25	6	3	Fair	Fair	Moderate	Competing for light, topped.	Suitable	Retain	Suitable	Retain
31	City	Purple Leaf Plum	*Prunus cerasifera*	35,32,19	10	7.5	Fair	Fair	Moderate	Lean north, small deadwood.	Unsuitable	Remove	Suitable	Retain
33	City	Field Elm	*Ulmus minor*	69	21	7	Good	Fair	Good	Two branch failures historically, small hanger.	Conditional	At Risk	Suitable	Retain
35	City	Purple Leaf Plum	*Prunus cerasifera*	32,22,20	9	6.5	Fair	Fair	Moderate	Limb failure historically north side, small deadwood.	Unsuitable	Remove	Suitable	Retain
36	City	Field Elm	*Ulmus minor*	80	19	8	Fair	Fair	Good	Small amount of dieback on some branch tips, witch's broom lowest limb over sidewalk, branch failures historically, epicormic growth.	Conditional	At Risk	Suitable	Retain
37	City	Field Elm	*Ulmus minor*	62	13	6	Good	Fair/poor	Good	Torsional crack in lowest limb facing tennis court, codominant at ~5m.	Conditional	At Risk	Suitable	Retain
38	City	Sycamore Maple	*Acer pseudoplatanus*	26	7	3	Fair	Fair	Moderate	Small deadwood, epicormic growth.	Unsuitable	Remove	Suitable	Retain
39	City	Sycamore Maple	*Acer pseudoplatanus*	34	7	4	Fair	Fair	Moderate	Leaning	Unsuitable	Remove	Suitable	Retain
40	City	American Elm	*Ulmus americana*	80	13	8	Fair	Fair	Good	Crown reduction historically with epicormic response throughout. Active inclusion at attachment of lateral limbs mb overhanging street, end-weighted limbs over street.	Unsuitable	Remove	Suitable	Retain

Tag #	Bylaw Protected (Yes/No)	Name		DBH (cm)	Crown Diameter (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability (Option #1)	Retention Status (Option #1)	Tree Retention Suitability (Option #2)	Retention Status (Option #2)
		Common	*Botanical*				Health	Structural						
41	City	Field Elm	*Ulmus minor*	93	17	9.5	Fair	Fair	Good	40cm wide wound at 2m, possible canker infection. Cavity within pruning wound north side at ~6m, some decay in other pruning wounds, burl forming at ~6m.	Conditional	At Risk	Suitable	Retain
42	City	Big Leaf Maple	*Acer macrophyllum*	65	13	8	Fair	Fair	Moderate	Bulbous base.	Unsuitable	Remove	Suitable	Retain
43	City	Big Leaf Maple	*Acer macrophyllum*	49	13	6	Fair	Fair	Moderate	Bulbous base, burls forming on trunk.	Unsuitable	Remove	Suitable	Retain
44	City	Big Leaf Maple	*Acer macrophyllum*	76	17	9	Fair	Poor	Moderate	Large cavity in main trunk at 2m. Codominant unions, topped/top failure.	Unsuitable	Remove	Suitable	Retain
45	City	Sycamore Maple	*Acer pseudoplatanus*	36	7	4.5	Fair	Fair	Moderate	Potential decay in old pruning wound at 3m	Suitable	Retain	Suitable	Retain
47	City	Purple Leaf Plum	*Prunus cerasifera*	32	8	4	Good	Fair/poor	Moderate	Decay at tearout wound at 4m, scaffold limb wounds.	Suitable	Retain	Suitable	Retain
48	City	Jeffrey pine	*Pinus jeffreyi*	87	12	10.5	Good	Good	Moderate	Crown raised, compacted soil.	Suitable	Retain	Suitable	Retain
49	City	Purple Leaf Plum	*Prunus cerasifera*	31	6	3.5	Good	Fair/poor	Moderate	Decay in trunk, frass.	Suitable	Retain	Suitable	Retain
50	City	Jeffrey pine	*Pinus jeffreyi*	84	12	10	Good	Good	Moderate		Suitable	Retain	Suitable	Retain
51	City	Red Maple	*Acer rubrum*	42	10	6.5	Fair		Poor	Some branch dieback. Codominant at 3m	Suitable	Retain	Suitable	Retain
52	City	Hawthorn	*Crataegus laevigata*	36, 27, 26	12	7	Fair	Fair/poor	Good	Endweighted limb over sidewalk . Wound on largest stem	Suitable	Retain	Suitable	Retain
53	City	Norway Maple	*Acer platanoides*	46	12	4.5	Fair	Fair	Good		Suitable	Retain	Suitable	Retain
54	City	Lawson Cypress	*Chamaecyparis lawsonia*	22	5	3.5	Good	Fair	Poor	Competing for light.	Suitable	Retain	Suitable	Retain
55	City	Horse chestnut	*Aesculus hippocastanum*	64	12	6.5	Poor	Fair	Good	30cm pruning wound. Several cracks in scaffold limb MB's including active shearplane crack over informal pathway, surface roots.	Suitable	Retain	Suitable	Retain
56	City	Norway Maple	*Acer platanoides*	50	12	5	Fair	Fair	Good	Small deadwood.	Suitable	Retain	Suitable	Retain
57	City	Garry Oak	*Quercus garryana*	133	26	13.5	Snag	Snag	Good	Snag, ~7m height.	Suitable	Retain	Suitable	Retain
58	City	Red Maple	*Acer rubrum*	8	2	1	Good	Fair	Poor	Included bark.	Unsuitable	Remove	Conditional	At Risk
59	City	Field Elm	*Ulmus minor*	79	17	8	Good	Fair	Good	Canopy weighted southeast.	Suitable	Retain	Suitable	Retain
60	City	London Plane	*Platanus x acerifolia*	105 below swelling	20	10.5	Good	Fair	Good	Codominant at 3m	Suitable	Retain	Suitable	Retain
61	City	Black Locust	*Robinia pseudoacacia*	52	10	5	Fair	Poor	Good	Decay (hollow trunk) at ~5m.	Suitable	Retain	Suitable	Retain
62	City	Red Maple	*Acer rubrum*	7	2	1	Good	Fair	Poor	Lower trunk wound.	Suitable	Retain	Suitable	Retain
63	City	Field Elm	*Ulmus minor*	123	18	12.5	Fair	Fair	Good	15cm long cavity opening on east side at base. Small cavity in pruning wound within west-facing limb at ~13m. Inclusion in some branch unions esp. overhanging street.	Suitable	Retain	Suitable	Retain

Tag #	Bylaw Protected (Yes/No)	Name		DBH (cm)	Crown Diameter (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability (Option #1)	Retention Status (Option #1)	Tree Retention Suitability (Option #2)	Retention Status (Option #2)
		Common	*Botanical*				Health	Structural						
64	City	London Plane	*Platanus x acerifolia*	113	20	11.5	Good	Fair	Good	Small 4cm hanger at 5m	Suitable	Retain	Suitable	Retain
65	City	Horse chestnut	*Aesculus hippocastanum*	82	14	8	Fair	Fair/poor	Good	Tridominant branch union at 3m. 3 small cavity openings from 3-6m at old pruning wounds	Suitable	Retain	Suitable	Retain
66	City	Sycamore Maple	*Acer pseudoplatanus*	27	7	3	Fair	Poor	Moderate	Large wounds at base, no cambium on 60% of circumference. 4 codominant branches at 2m. 1.5m long wound on one of main branches	Suitable	Retain	Suitable	Retain
67	City	London Plane	*Platanus x acerifolia*	131 below swelling	20	13.1	Good	Fair	Good	Cavity at 2m, some end weight. Small tear-out wound in upper central stem.	Suitable	Retain	Suitable	Retain
68	City	Horse chestnut	*Aesculus hippocastanum*	90	16	9	Good	Fair/poor	Good	Large extended codominant limbs at 4m, likely internal crack (response growth rib visible) within NNE facing limb, possible crack with small cavity within east facing limb. Decay in pruning wound within west facing limb.	Suitable	Retain	Suitable	Retain
69	City	Red Maple	*Acer rubrum*	5	1	1	Fair	Good	Poor	Suppressed.	Suitable	Retain	Suitable	Retain
70	City	Field Elm	*Ulmus minor*	96	20	9.5	Good	Fair	Good	Codominant at 3m. Deadwood, small hanger over street.	Suitable	Retain	Suitable	Retain
71	City	London Plane	*Platanus x acerifolia*	78	20	8	Good	Fair	Good	Tear out injury east side upper crown, extended limb north side interacts with canopy of #72.	Suitable	Retain	Suitable	Retain
72	City	Horse chestnut	*Aesculus hippocastanum*	72	16	7	Good	Fair/poor	Good	20cm wide cavity opening at 3m and another small cavity opening above within branch union. Extended codominant limbs, girdling roots.	Suitable	Retain	Suitable	Retain
73	City	Field Elm	*Ulmus minor*	116	22	11.5	Fair	Fair	Good	End-weighted limb over street, extended limbs, epicormic growth throughout.	Suitable	Retain	Suitable	Retain
74	City	London Plane	*Platanus x acerifolia*	77	16	7.5	Good	Fair	Good	Girdling roots, some small enough to prune. End weighted limb over road. Small opening at base.	Suitable	Retain	Suitable	Retain
75	City	Horse chestnut	*Aesculus hippocastanum*	67	16	6.5	Fair	Fair	Good	Clearance pruned for hydro lines above. Cavity at 2m. Two 15cm wide wounds on trunk	Suitable	Retain	Suitable	Retain
76	City	Horse chestnut	*Aesculus hippocastanum*	69	16	7	Fair	Fair	Good	Significantly clearance pruned for hydro lines above, cavities in pruning wounds, 10cm diameter branch failure historically over road.	Suitable	Retain	Suitable	Retain
77	City	Horse chestnut	*Aesculus hippocastanum*	64	14	6.5	Fair	Fair	Good	Significantly clearance pruned for hydro lines above.	Suitable	Retain	Suitable	Retain
78	City	Horse chestnut	*Aesculus hippocastanum*	87	16	8.5	Fair	Fair/poor	Good	Multiple extended codominant limbs at 2m with included bark . Active inclusion at 3 and 4m with end weight over field. Small girdling root. Significantly clearance pruned for hydro lines above. Cavities in pruning wounds. Crack in limb overhanging street.	Suitable	Retain	Suitable	Retain
79	City	Horse chestnut	*Aesculus hippocastanum*	75	16	7.5	Fair	Fair/poor	Good	Significantly clearance pruned for hydro lines above. Soil within codominant branch union with reaction wood. Cavities at pruning wounds	Suitable	Retain	Conditional	At Risk
80	City	Jeffrey pine	*Pinus jeffreyi*	90	11	11	Good	Good	Moderate	Crown raised historically.	Suitable	Retain	Conditional	At Risk
82	City	Ponderosa Pine	*Pinus ponderosa*	102	14	12	Good	Good	Moderate	Codominant limb has been subordinated.	Suitable	Retain	Conditional	At Risk
85	City	Jeffrey pine	*Pinus jeffreyi*	84	10	10	Fair	Good	Moderate	Crown raised historically. Hanger near bench.	Suitable	Retain	Suitable	Retain

Tag #	Bylaw Protected (Yes/No)	Name		DBH (cm)	Crown Diameter (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability (Option #1)	Retention Status (Option #1)	Tree Retention Suitability (Option #2)	Retention Status (Option #2)
		Common	*Botanical*				Health	Structural						
86	City	Purple Leaf Plum	*Prunus cerasifera*	55	8	6.5	Poor	Poor	Moderate	Active separation within primary stem union, heavy lean.	Suitable	Retain	Suitable	Retain
87	City	Ponderosa Pine	*Pinus ponderosa*	91	13	11	Good	Fair	Moderate	Many codominant branches	Suitable	Retain	Suitable	Retain
89	City	Purple Leaf Plum	*Prunus cerasifera*	32	6	4	Fair	Fair	Moderate	Cavity in lowest south facing limb.	Suitable	Retain	Suitable	Retain
90	City	Jeffrey pine	*Pinus jeffreyi*	85 below swelling	12	10.2	Good	Fair	Moderate	Multiple leaders.	Suitable	Retain	Suitable	Retain
91	City	Ponderosa Pine	*Pinus ponderosa*	71	14	8.5	Good	Fair/poor	Moderate	Codominant at 8m	Unsuitable	Remove	Unsuitable	Remove
92	City	Garry Oak	*Quercus garryana*	99	20	10	Fair	Fair	Good	Extended endweighted limbs. Decayed pruning wound at 4m. Ganoderma fruiting bodies on west and south sides at base.	Conditional	At Risk	Unsuitable	Remove
93	City	European White Birch	*Betula pendula*	43	11	6.5	Fair	Fair/poor	Poor	Clearance pruned for hydro lines on one side. Central stub decayed.	Suitable	Retain	Suitable	Retain
94	City	Flowering Cherry	*Prunus spp*	75	11	9	Good	Fair	Moderate	Large surface roots, epicormics from base.	Suitable	Retain	Unsuitable	Remove
95	City	Lindsay Plum	*Prunus cerasifera*	64	12	7.5	Good	Fair	Moderate	Top of surface root lawnmower damage. Codominant at 2m	Unsuitable	Remove	Suitable	Retain
96	City	Horse chestnut	*Aesculus hippocastanum*	79	17	8	Fair	Fair/poor	Good	Significantly pruned due to hydro lines directly above. Extended endweighted limbs. Small cavity opening at 3m	Suitable	Retain	Suitable	Retain
97	City	Horse chestnut	*Aesculus hippocastanum*	72 below unions	11	7.2	Good	Fair	Good	Tridominant branch union at 2m . Utility pole anchor wire against limb. Hydro clearance pruning north side.	Suitable	Retain	Suitable	Retain
98	City	Horse chestnut	*Aesculus hippocastanum*	72 below unions	16	7.2	Good	Fair	Good	Codominant at 1.5m. Low limbs over street.	Suitable	Retain	Suitable	Retain
99	City	Sweetgum	*Liquidambar styraciflua*	39	7	6	Good	Fair/poor	Poor	Codominant at 3m and 5m. Girdling roots.	Unsuitable	Remove	Unsuitable	Remove
100	City	Sycamore Maple	*Acer pseudoplatanus*	21	6	2.5	Fair	Fair/poor	Moderate	Branch tearout wound. Stunted growth.	Unsuitable	Remove	Unsuitable	Remove
151	City	Field Elm	*Ulmus minor*	81 below swelling	11	8.1	Fair	Fair/poor	Good	Some dieback at branch tips. Some pruning due to hydro wires on one side.	Unsuitable	Remove	Unsuitable	Remove
152	City	Field Elm	*Ulmus minor*	75	14	7.5	Fair/poor	Fair/poor	Good	Some branch dieback. Codominant at 2m with included bark. Cavities in pruning wounds.	Unsuitable	Remove	Unsuitable	Remove
153	City	Field Elm	*Ulmus minor*	62	11	6	Fair/poor	Fair/poor	Good	Some dieback at branch tips, sparse canopy . Small cavity opening at 6m	Unsuitable	Remove	Unsuitable	Remove
154	City	Field Elm	*Ulmus minor*	63	9	6.5	Fair/poor	Fair/poor	Good	Some dieback at branch tips. Hydro clearance pruning.	Unsuitable	Remove	Unsuitable	Remove
155	City	Chusan Palm	*Trachycarpus fortunei*	18	2	2	Good	Good	Moderate		Unsuitable	Remove	Unsuitable	Remove
156	City	Chusan Palm	*Trachycarpus fortunei*	16	2	2	Good	Good	Moderate		Unsuitable	Remove	Unsuitable	Remove
NT 01	City	Chusan Palm	*Trachycarpus fortunei*	~15	2	2	Good	Good	Moderate		Unsuitable	Remove	Unsuitable	Remove

APPENDIX B - TREE INVENTORY TABLE 960 CALEDONIA AVENUE

Table 5: Tree Inventory Table (March 2024)

Tag or ID #	Location (On, Off, Shared, City)	Bylaw protected (Yes/No/City)	Name		DBH (cm)	Crown Radius (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability	Retention Status
			Common	Botanical				Health	Structural				
501	City	City	Norway Maple	*Acer platanoides*	21	3.25	2.1	Good/Fair	Fair/Poor	Good	Primary union included, various other included unions, surface roots	Unsuitable	Remove
502	City	City	Norway Maple	*Acer platanoides*	19	3	1.9	Good/Fair	Fair/Poor	Good	Included unions, girdling roots, epicormics around pruning wounds	Unsuitable	Remove
503	City	City	Norway Maple	*Acer platanoides*	17	3	1.7	Good/Fair	Fair	Good	Codominant, included unions	Unsuitable	Remove
504	City	City	Norway Maple	*Acer platanoides*	20	3	2.0	Good	Fair	Good	Included bark, girdling root,	Unsuitable	Remove
505	City	City	Norway Maple	*Acer platanoides*	19	3	1.9	Good	Fair	Good	Codominant (secondary leader subordinated), included primary union and other unions,	Unsuitable	Remove
506	City	City	Norway Maple	*Acer platanoides*	19	3	1.9	Good/Fair	Fair/Poor	Good	Girdling root, large surface roots, codominant, included bark	Unsuitable	Remove
507	City	City	Norway Maple	*Acer platanoides*	18	3	1.8	Good	Fair	Good	Codominant, included bark,	Unsuitable	Remove
508	City	City	Norway Maple	*Acer platanoides*	18	3	1.8	Good	Fair	Good	Deflection in upper leader, included unions	Unsuitable	Remove
509	City	City	London plane	*Platanus X acerfolia*	35	4.5	3.5	Good	Good/Fair	Good	Codominant leaders	Unsuitable	Remove
510	City	City	London plane	*Platanus X acerfolia*	36	4.5	3.6	Good	Good/Fair	Good	Slight lean to the east, codominant, dropped service line in tree, some epicormics, some hangers	Unsuitable	Remove

Tag or ID #	Location (On, Off, Shared, City)	Bylaw protected (Yes/No/City)	Name		DBH (cm)	Crown Radius (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability	Retention Status
			Common	Botanical				Health	Structural				
511	City	City	London plane	*Platanus X acerfolia*	37	5	3.7	Good	Good/Fair	Good	Surface root, codominant (slightly included some minimal activity)	Unsuitable	Remove
512	City	City	London plane	*Platanus X acerfolia*	34	5	3.4	Good	Good	Good	Roots heaving asphalt to the west, hanging twigs, old service line in tree	Unsuitable	Remove
M1	City	City	European beech	*Fagus sylvatica*	17	2.5	2.0	Good/Fair	Good/Fair	Moderate	Included union, asymmetrical canopy, weighted to the east, growing in tree well	Unsuitable	Remove
M2	City	City	European beech	*Fagus sylvatica*	19	2.75	2.3	Good/Fair	Good/Fair	Moderate	Asymmetrical canopy, growing in tree well (compacted soil)	Unsuitable	Remove
M3	City	City	European beech	*Fagus sylvatica*	10	1.25	1.2	Fair	Fair	Moderate	Asymmetrical canopy, growing in tree well (compacted soil), lower trunk wound, trunk deflection, stunter	Unsuitable	Remove
M4	City	City	European beech	*Fagus sylvatica*	13 below unions	1.5	1.6	Fair/Poor	Fair/Poor	Moderate	Trunk wound on west side with decay, growing in tree well, included primary union	Unsuitable	Remove
M5	City	City	European beech	*Fagus sylvatica*	13 below unions	1.75	1.6	Fair/Poor	Fair/Poor	Moderate	Trunk wound on west side (cambium dead), growing in tree well	Unsuitable	Remove
M6	City	City	European beech	*Fagus sylvatica*	16	2	1.9	Fair	Fair	Moderate	Trunk wound on west side (some response), growing in tree well (metal grate over soil)	Unsuitable	Remove
513	City	City	Red maple	*Acer rubrum*	31	2	3.1	Fair	Fair/Poor	Good	Large surface root to the west, girdling roots, codominant (reduced), hydronpruned	Unsuitable	Remove
514	City	City	Red maple	*Acer rubrum*	33	2.5	3.3	Fair/Poor	Fair/Poor	Good	Surface roots, girdling roots, stressed, hydro pruned	Unsuitable	Remove

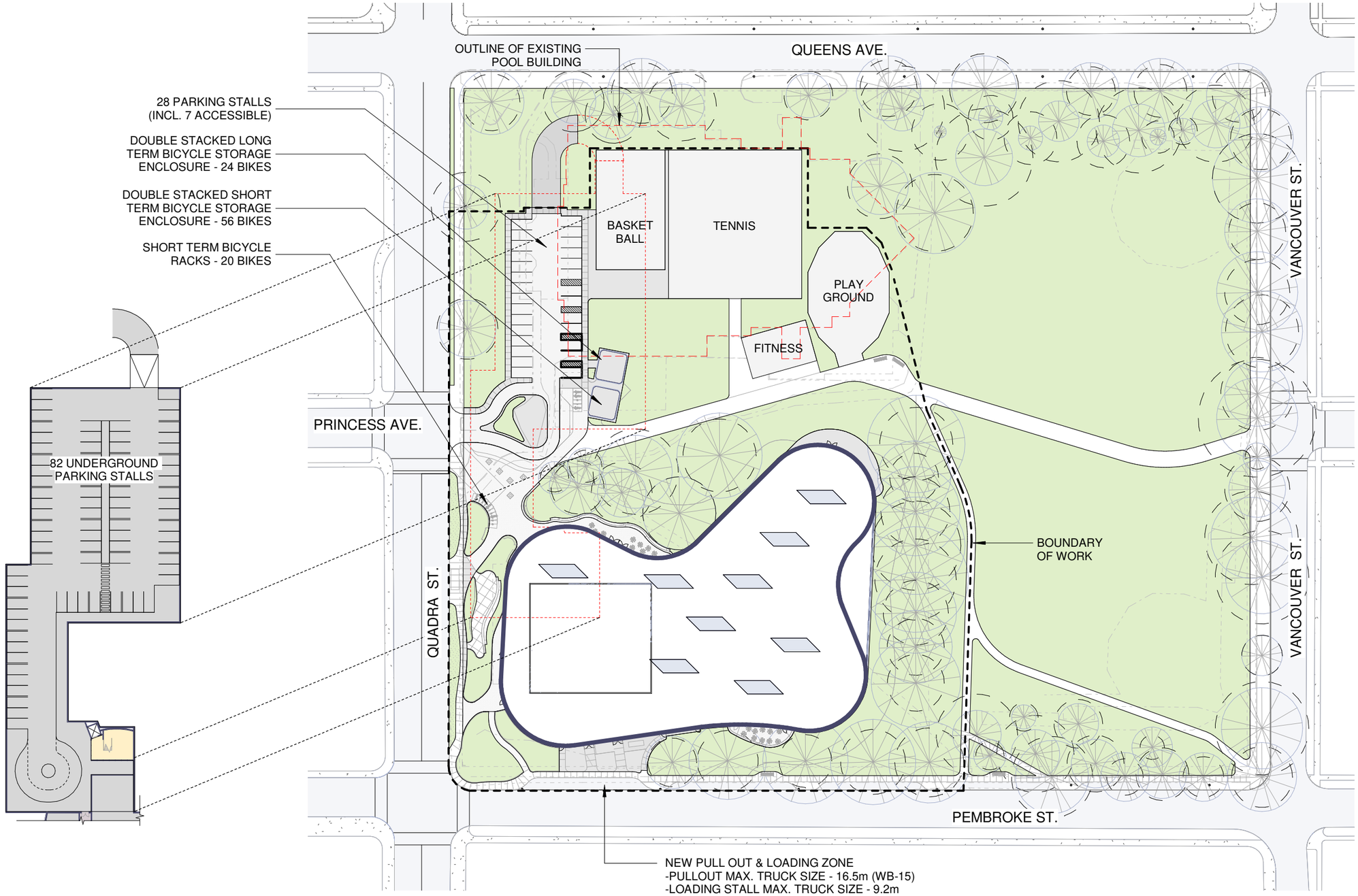
Tag or ID #	Location (On, Off, Shared, City)	Bylaw protected (Yes/No/City)	Name		DBH (cm)	Crown Radius (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability	Retention Status
			Common	Botanical				Health	Structural				
515	City	City	Red maple	*Acer rubrum*	28	2.5	2.8	Fair	Fair/Poor	Good	Large surface root to the east, medium surface root to the west, codominant (secondary stem removed), included bark, hydro pruned	Unsuitable	Remove
516	City	City	Red maple	*Acer rubrum*	31	2.5	3.1	Fair	Fair/Poor	Good	Lower trunk wounds (compartmentalizing), surface roots, girdling roots, had active separation between central leaders (reduced from hydro pruning but should be addressed eventually), hydrobpruned	Unsuitable	Remove
517	City	City	Red maple	*Acer rubrum*	34	2.5	3.4	Fair	Fair/Poor	Good	Codomiant (height of both reduced but active and included), surface roots, girdling roots	Unsuitable	Remove
518	City	City	Red maple	*Acer rubrum*	30	2.5	3.0	Fair	Fair/Poor	Good	Codomiant (height of both reduced but active and included), surface roots, girdling roots	Unsuitable	Remove
519	City	City	Red maple	*Acer rubrum*	24	2	2.4	Fair	Fair/Poor	Good	Codomiant (height of both reduced but active and included), surface roots, girdling roots	Unsuitable	Remove
520	City	City	Green ash	*Fraxius pennsylvanica*	65	6.5	6.5	Fair	Poor	Moderate	Historically topped, hydropruned, large epicormics, endweight reduction, large surface roots to the north and south (southern one damaged)	Unsuitable	Remove
521	City	City	Norway Maple	*Acer platanoides*	12, 11, 10	3	2.5	Good	Poor	Good	Multiple stems, growing at edge of parking lot, included bark	Unsuitable	Remove
522	City	City	Norway Maple	*Acer platanoides*	13, 13, 12, 9, 7	3	2.8	Fair	Poor	Good	Multiple stems (growing from stump), growing at edge of parking lot, included bark, two stems are dead	Unsuitable	Remove
OS1	Off-site	No	Red maple	*Acer rubrum*	~20	2.25	2.0	Good	Fair	Good	Growing ~0.5m west of fence, tridominant, included bark	Unsuitable	Remove
OS2	Off-site	No	Red maple	*Acer rubrum*	~18	3	1.8	Good	Fair	Good	Growing ~0.5m west of fence, tridominant, included bark	Unsuitable	Remove

Tag or ID #	Location (On, Off, Shared, City)	Bylaw protected (Yes/No/City)	Name		DBH (cm)	Crown Radius (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability	Retention Status
			Common	Botanical				Health	Structural				
OS3	Off-site	No	Red maple	*Acer rubrum*	~22	2.75	2.2	Good	Fair/Poor	Good	Growing ~0.5m west of fence, codominant (active union), included bark	Unsuitable	Remove
OS4	Off-site	No	Red maple	*Acer rubrum*	~25	3.25	2.5	Good	Fair	Good	Growing ~1.5m west of fence, codomiant (included)	Unsuitable	Remove
OS5	Off-site	No	Red alder	*Acer rubrum*	~12	2	1.2	Good	Good	Good	Growing ~2.5m north of OS4	Conditional	At Risk
OS6	Off-site	No	Willow	*Salix spp.*	~28	2.5	3.4	Good	Poor	Moderate	Codominant, topped historically, canopy is comprised of epicormics	Unsuitable	Remove
OS7	Off-site	No	Fig	*Ficus*	~10	1	1.2	Fair	Fair	Moderate	Topped, overhangs fence by ~0.75m	Unsuitable	Remove
OS8	Off-site	No	Plum	*Prunus*	~18	1	2.2	Fair	Fair	Moderate	Topped at fence level	Unsuitable	Remove
OS9	Off-site	No	Apple	*Malus*	~15	2.5	1.8	Fair	Fair	Moderate	Topped historically pruned for fruit production	Unsuitable	Remove
OS10	Off-site	No	Mountain ash	*Sorbus spp.*	~15, ~6, ~4	2.25	2.5	Good/Fair	Fair	Moderate	Growing ~0.5m west of fence, two stems, overhangs property by ~1.5m	Unsuitable	Remove
OS11	Off-site	No	Mountain ash	*Sorbus spp.*	~11	1.5	1.3	Fair/Poor	Fair	Moderate	Dieback	Unsuitable	Remove
M7	City	Yes	European hawthorn	*Crataegus monogyna*	34	4	3.4	Good	Fair	Good	Codominant, fused scaffold limbs in upper canopy, historical mechanical wound on east side (compartmentalised) , canopy weighted to the south	Suitable	Retain

Tag or ID #	Location (On, Off, Shared, City)	Bylaw protected (Yes/No/City)	Name		DBH (cm)	Crown Radius (m)	Critical Root Zone Radius (m)	Condition		Relative Tolerance	General Field Observations/Remarks	Tree Retention Suitability	Retention Status
			Common	Botanical				Health	Structural				
M8	City	Yes	European hawthorn	*Crataegus monogyna*	36 measured 1.4m from base	3.5	3.6	Good/Fair	Poor	Good	Heavily prostrated to the west, large and small historical pruning wounds (responding), deflected scaffold limbs, canopy weighted to the west, crack forming on tension side of lean,	Suitable	Retain
M9	City	Yes	European beech	*Fagus sylvatica*	45	4.5	5.4	Good	Fair/Poor	Moderate	Tridominant (included), active unions particularly northernmost, sidewalk planting pit (limited rooting area and soil compacted), hydropruned,	Suitable	Retain
M10	City	Yes	European beech	*Fagus sylvatica*	28, 16, 10	3.5	5.2	Fair	Fair	Moderate	10cm stem has been topped at ~2m, included primary union, sidewalk planting pit (limited rooting area and compact soil), hydropruned,	Suitable	Retain
M11	City	Yes	European beech	*Fagus sylvatica*	22, 12	3	3.5	Fair	Fair/Poor	Moderate	Included primary union, planted in sidewalk planting pit (limited soil volume and compacted soils), hydropruned	Suitable	Retain
M12	City	Yes	European beech	*Fagus sylvatica*	29, 23	3.5	5.1	Good/Fair	Fair	Moderate	Codominant and included primary union, included secondary unions, growing in sidewalk planting pit (limited rooting zone and compacted soil), hydropruned	Suitable	Retain
M13	City	No	European beech	*Fagus sylvatica*	6, 2, 1	0.5	0.8	Fair	Good	Moderate	Younger tree, growing in sidewalk planting pit with grate cover	Suitable	Retain
M14	City	Yes	European beech	*Fagus sylvatica*	34	3.5	4.1	Fair	Fair	Moderate	Codominant (inclusions), hydro pruned, slight lean to the west (corrected), planted in sidewalk planting pit	Suitable	Retain
M15	City	Yes	European beech	*Fagus sylvatica*	31	3	3.7	Fair	Fair	Moderate	Planted in sidewalk planting pit, codominant (included), hydro pruned, mechanical wounds near base on east and west sides (response)	Suitable	Retain
M16	City	Yes	London Plane	*Platanus X acerfolia*	38	6.5	3.8	Good	Good/Fair	Good	Lower limbs to the east and northeast may require pruning for vehicle clearance	Suitable	Retain

APPENDIX C – OPTION 1 SITE PLAN

DRAFT

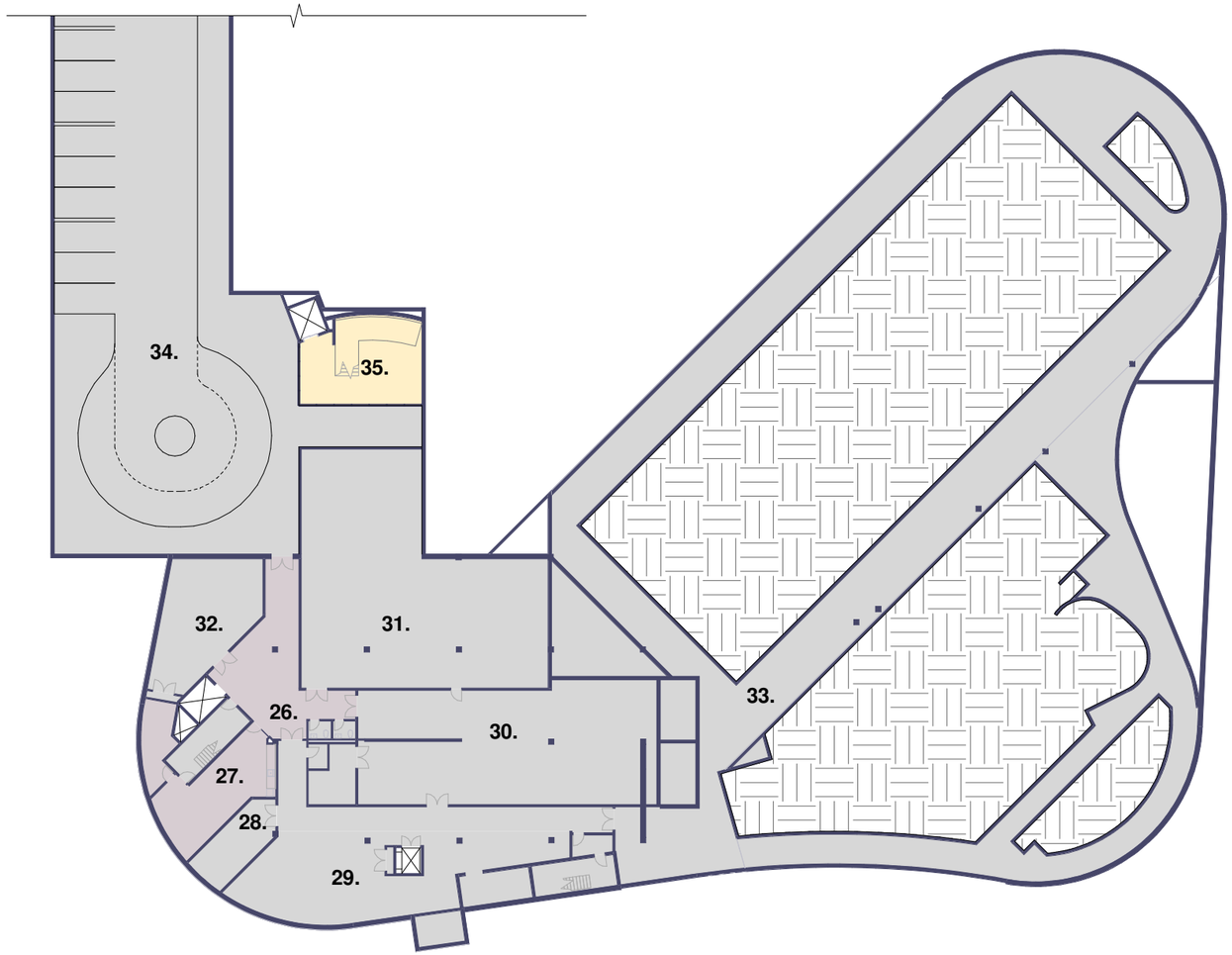


NOTES:

1. +/- 56 Short Term Covered Bike Parking
2. +/- 20 Short Term Open Bike Parking
3. +/- 24 Long Term Secure Bike Parking
4. 28 Surface Parking Stalls
5. +/- 82 Underground Parking Stalls

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 1	OPTION 1 - SITE PLAN	15 FEB 2024	1	10m, 5m, 20m

DRAFT



26. Bsmt Lobby
27. Staff Room
28. Workshop
29. Open Storage
30. Pool Mechanical
31. Building Mechanical
32. Electrical
33. Crawlspace
34. Parking
35. Lower Lobby

Admin Lobby Services

North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 1	OPTION 1 - BASEMENT PLAN	15 FEB 2024	1	1m 5m 10m

DRAFT

1. Lobby
2. Reception
3. MPR
4. Guards
5. Univ. Change
6. M Change
7. W Change
8. Admin
9. Loading
10. 50m Pool
11. 25m Pool
12. Leisure Pool
13. Family Hot Pool
14. Hot Pool
15. Steam
16. Sauna
17. Pool Stor.

Admin
Change Rooms
Lobby
MPR
Natatorium
Services

North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 1	OPTION 1 - STREET LEVEL PLAN	15 FEB 2024	1	1m 5m 10m

DRAFT

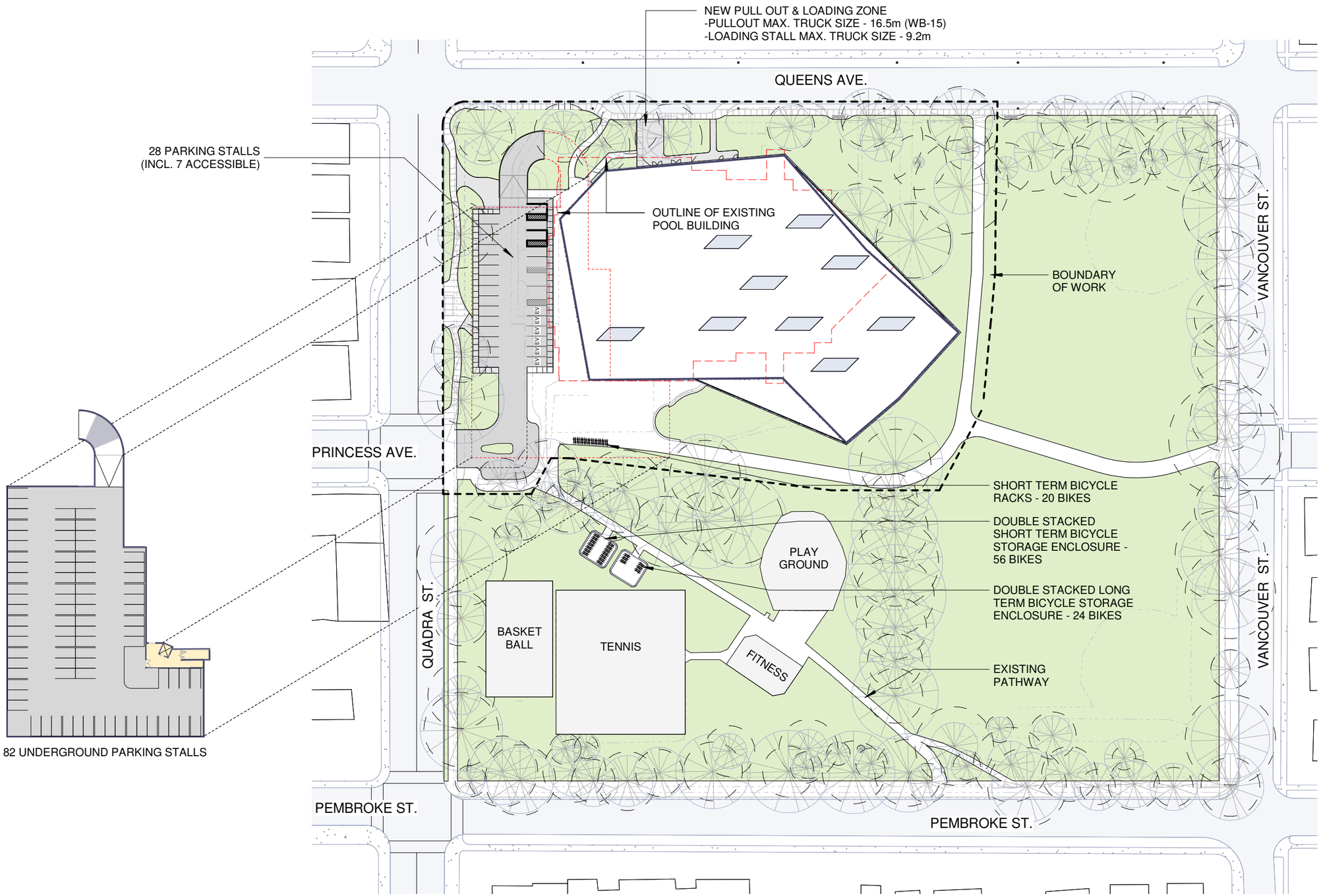
18. Upper Lobby
19. Fitness
20. Dry Change
21. MPR - Minding
22. MPR - Art
23. MPR - Half Gym
24. MPR - Dance
25. Viewing

Change Rooms
Fitness
Lobby
MPR

North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 1	OPTION 1 - UPPER LEVEL PLAN	15 FEB 2024	1	1m 5m 10m

APPENDIX D – OPTION 2 SITE PLAN



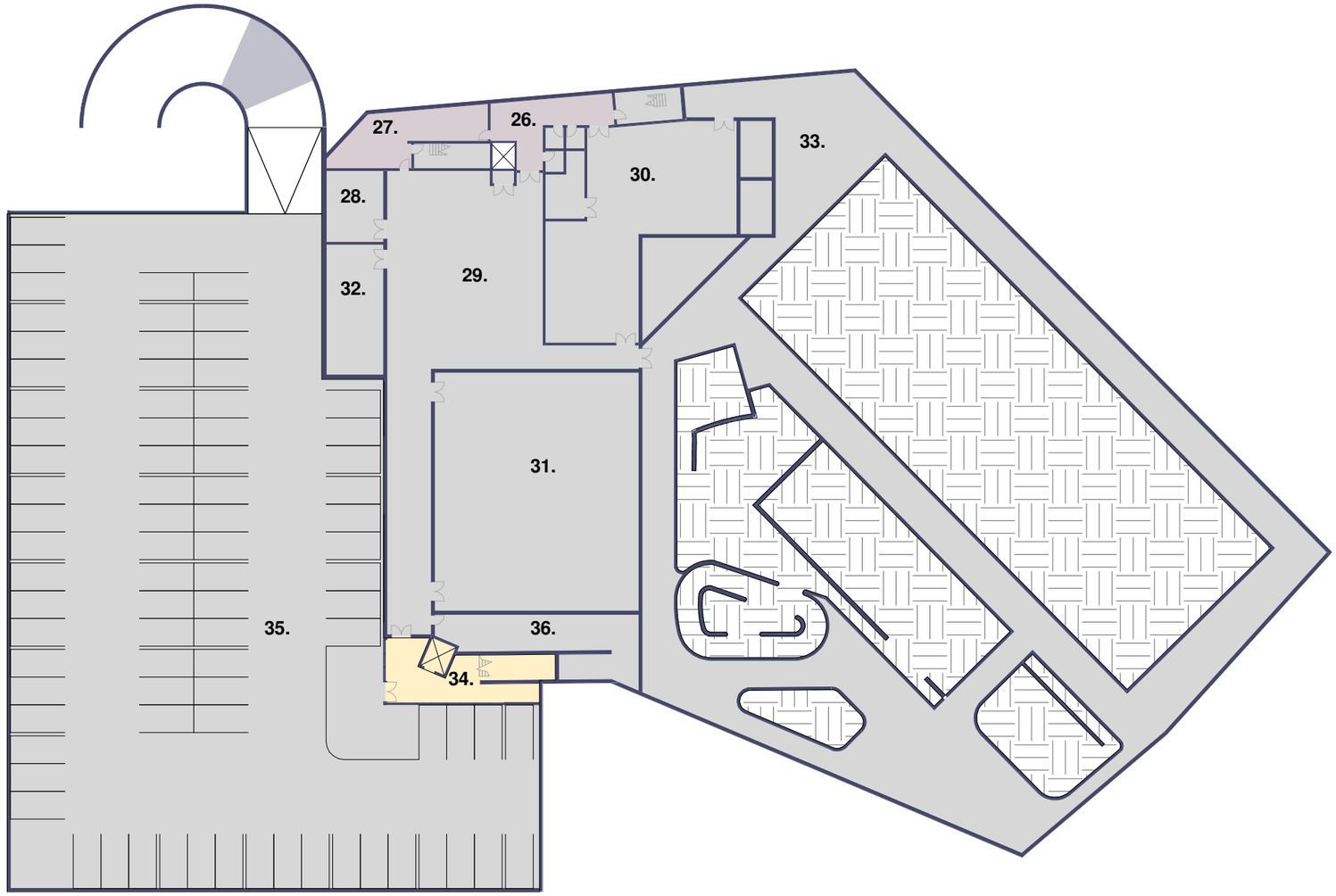
DRAFT

NOTES:

1. +/- 56 Short Term Covered Bike Parking
2. +/- 20 Short Term Open Bike Parking
3. +/- 24 Long Term Secure Bike Parking
4. 28 Surface Parking Stalls
5. +/- 82 Underground Parking Stalls

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 2	OPTION 2 - SITE PLAN	15 FEB 2024	1	10m 5m 20m

DRAFT



26. Bsmt Lobby
27. Staff Room
28. Workshop
29. Open Storage
30. Pool Mechanical
31. Building Mechanical
32. Electrical
33. Crawlspace
34. Lower Lobby
35. Parking
36. Mechanical

Admin Lobby Services

North

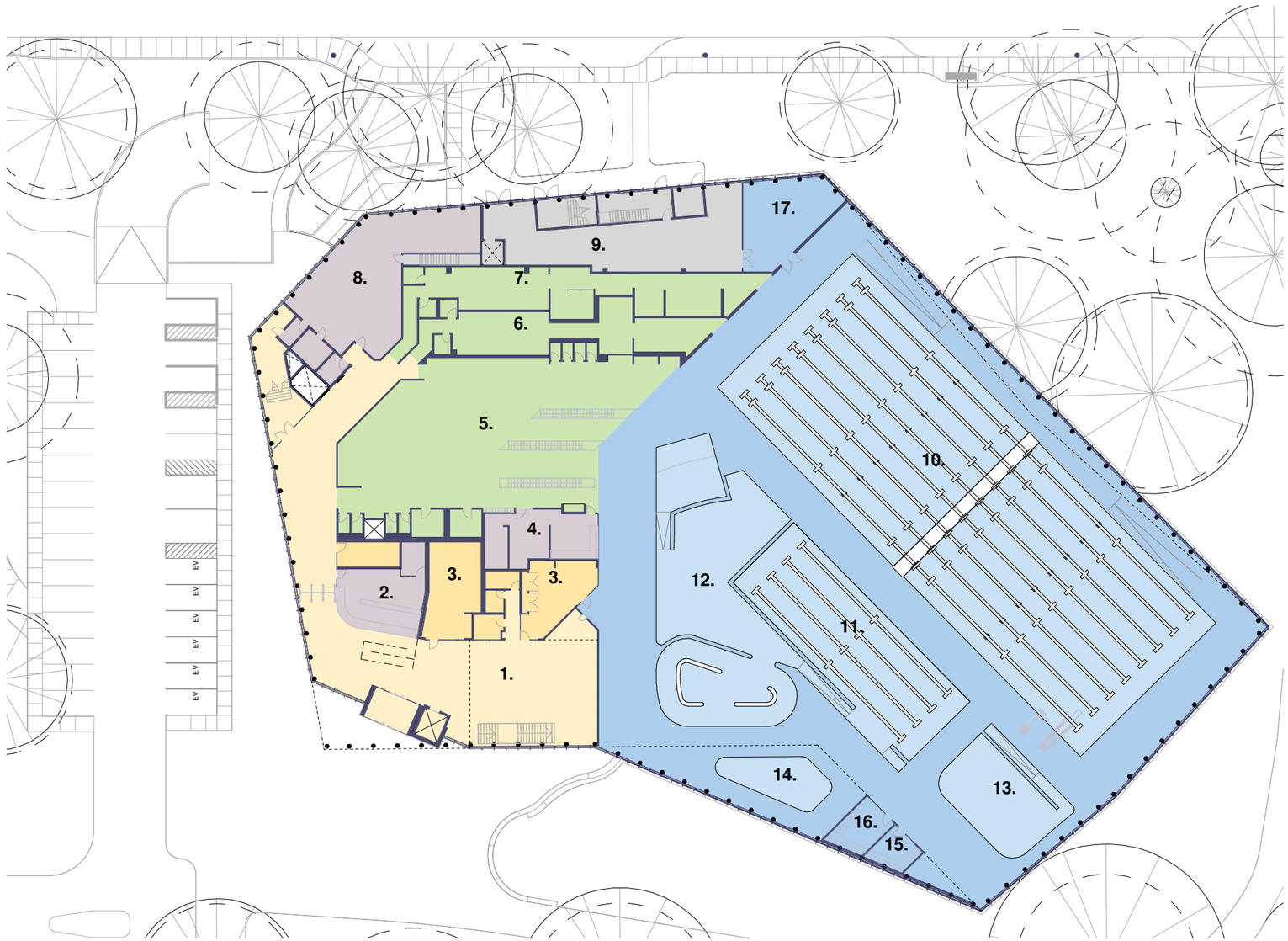
Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 2	OPTION 2 - BASEMENT PLAN	15 FEB 2024	1	1m 10m 5m

DRAFT

NOTES:

1.

1. Lobby
2. Reception
3. MPR
4. Guards
5. Univ. Change
6. M Change
7. W Change
8. Admin
9. Loading
10. 50m Pool
11. 25m Pool
12. Leisure Pool
13. Family Hot Pool
14. Hot Pool
15. Steam
16. Sauna
17. Pool Stor.

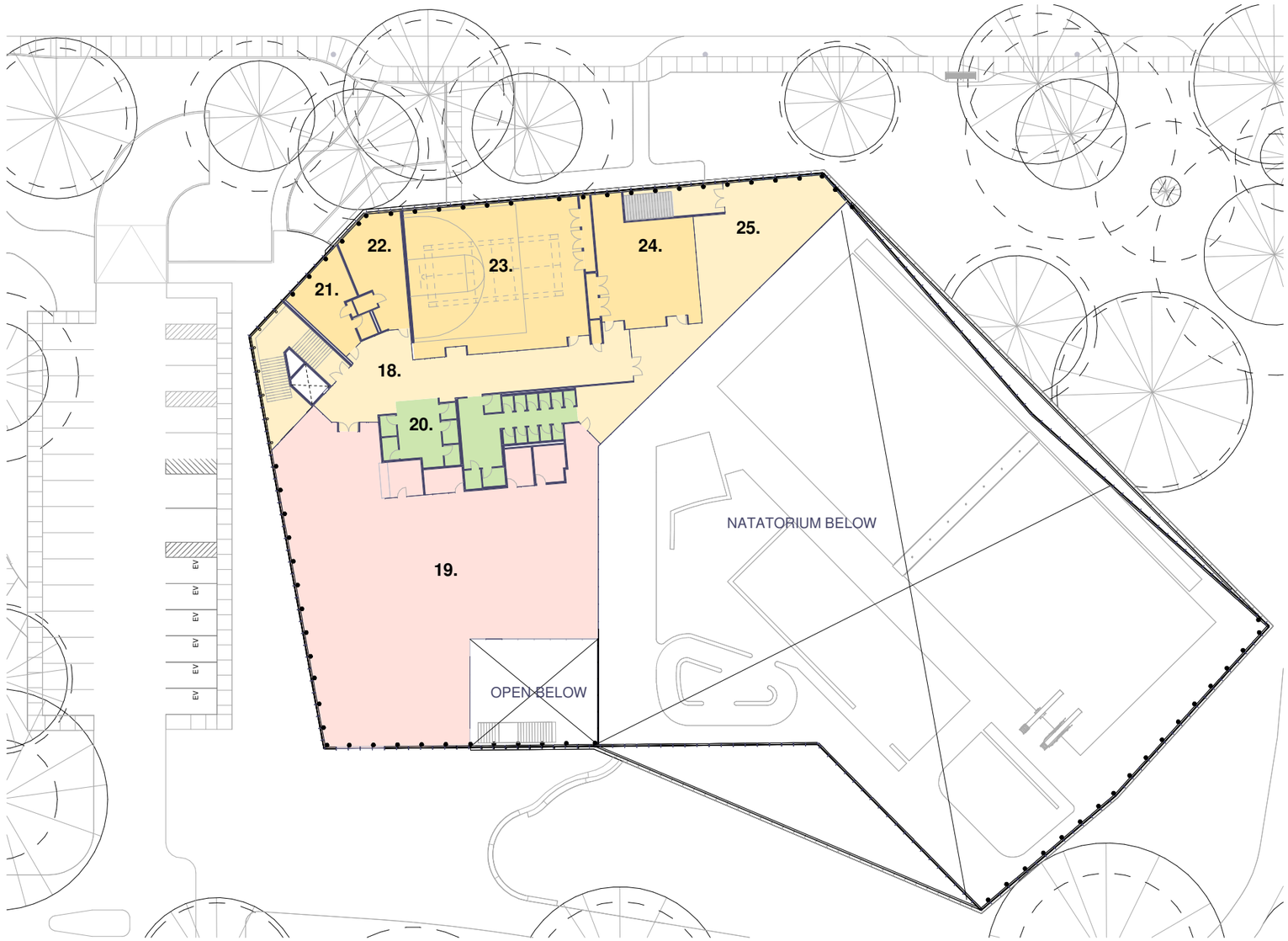


Admin
Change Rooms
Lobby
MPR
Natatorium
Services

North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 2	OPTION 2 - STREET LEVEL PLAN	15 FEB 2024	1	1m 10m 5m

DRAFT



18. Upper Lobby
19. Fitness
20. Dry Change
21. MPR - Minding
22. MPR - Art
23. MPR - Half Gym
24. MPR - Dance
25. Viewing

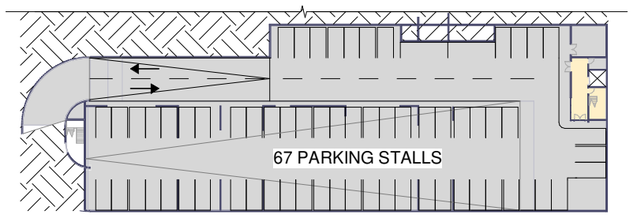
Admin
Change Rooms
Fitness
Lobby
MPR
Natatorium
Services

North

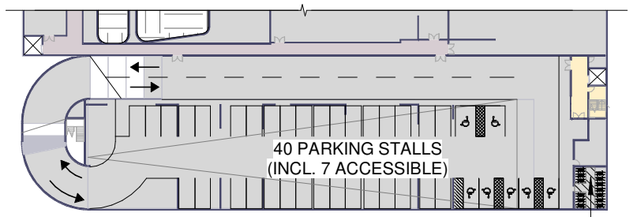
Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 2	OPTION 2 - UPPER LEVEL PLAN	15 FEB 2024	1	1m 10m 5m

APPENDIX E – OPTION 3 SITE PLAN

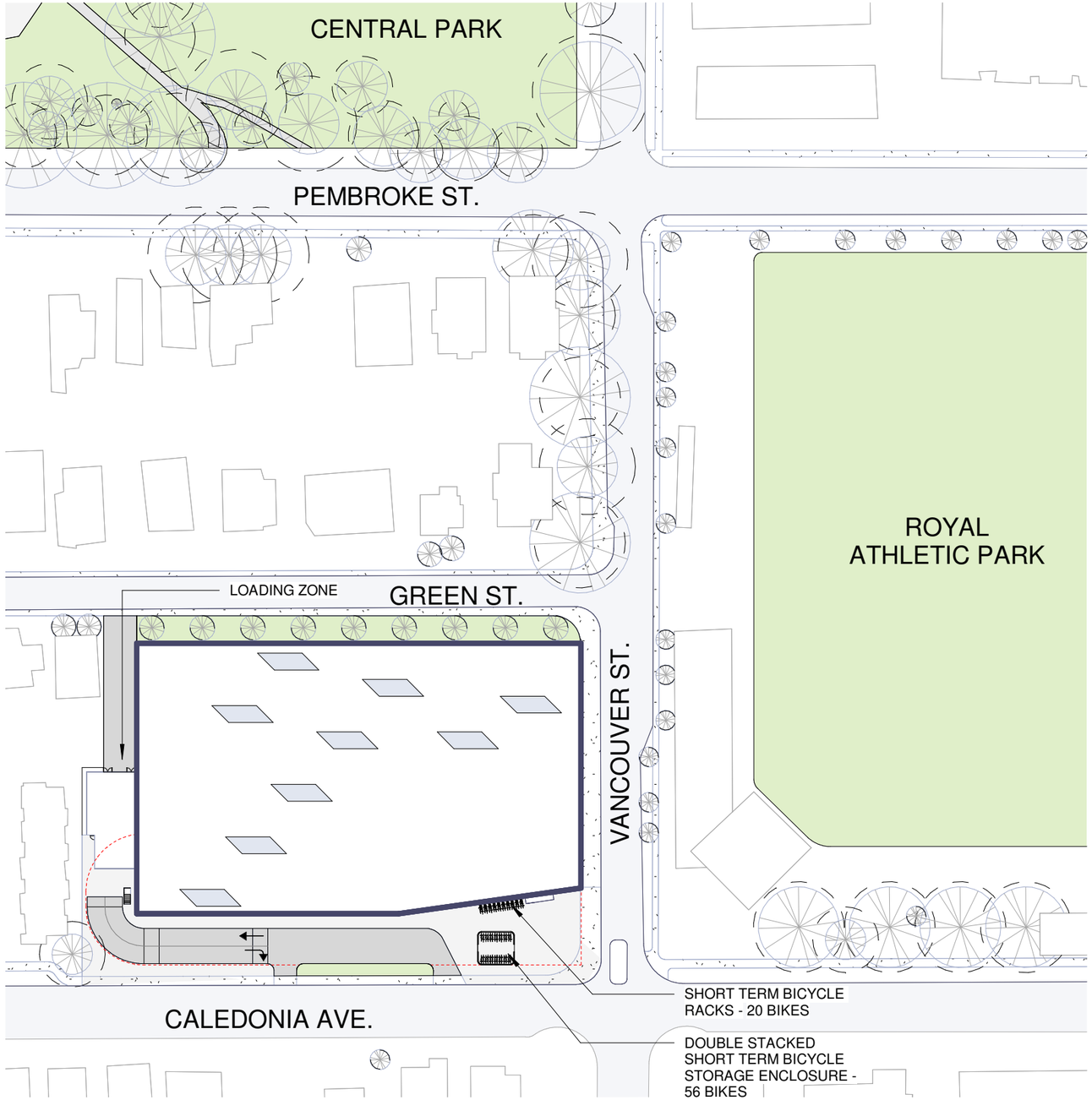
DRAFT



2 P2 PLAN
1 : 1000



1 P1 PLAN
1 : 1000



NOTES:

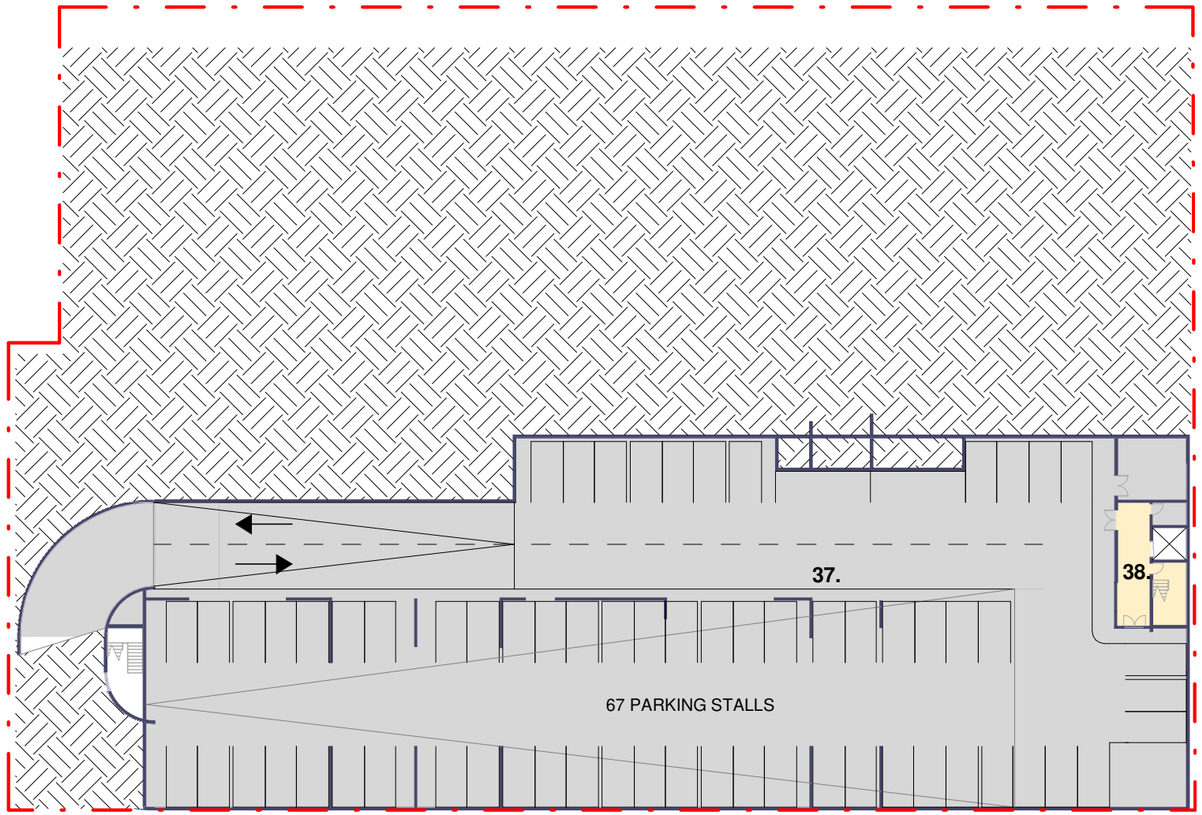
1. +/- 56 Short Term Covered Bike Parking
2. +/- 20 Short Term Open Bike Parking
3. +/- 24 Long Term Secure Bike Parking
4. +/- 107 Underground Parking Stalls

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 3	OPTION 3 - SITE PLAN	20 DEC 2023	1	10m / 5m / 20m

DRAFT

NOTES:

1. +/- 67 Parking Stalls



37. P2 Parking
38. Lower Lobby 2

Lobby

Services

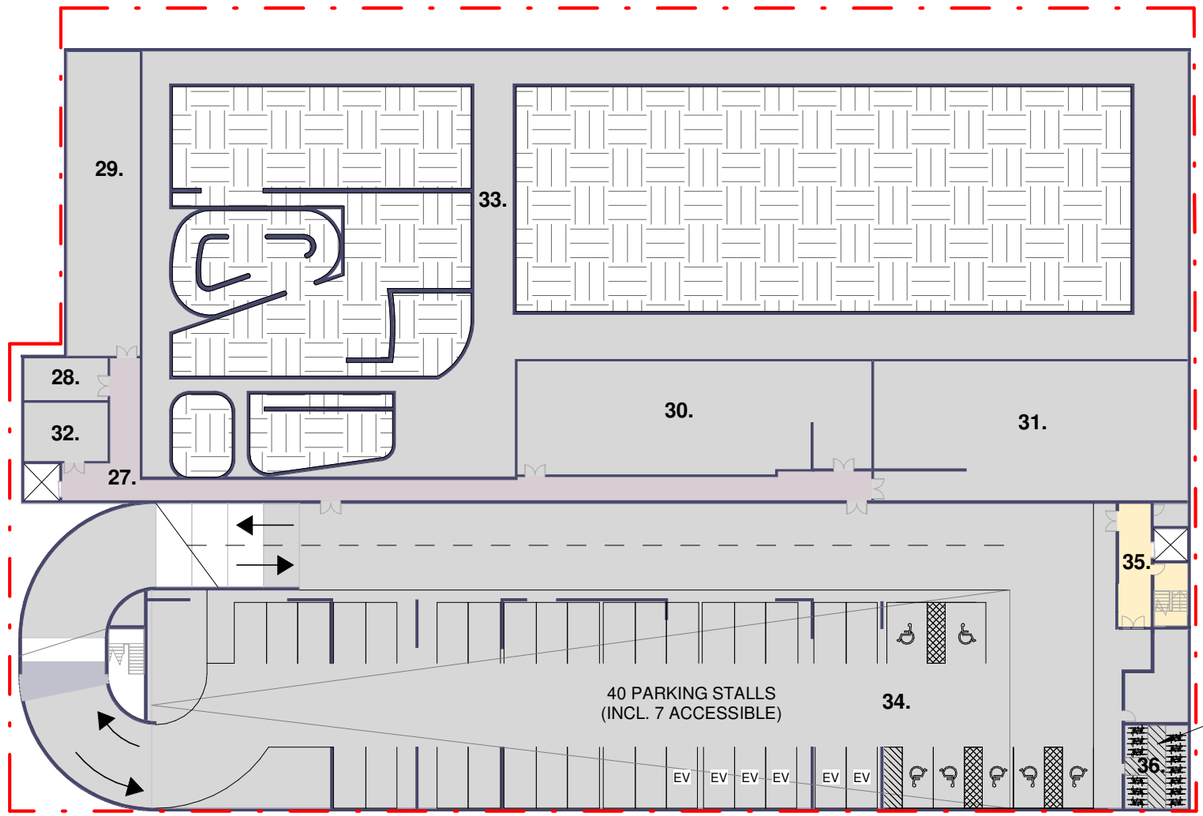
North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 3	OPTION 3a - BASEMENT 2 PLAN	20 DEC 2023	1	1m 5m 10m

DRAFT

NOTES:

1. +/- 40 Underground Parking Stalls
2. +/- 24 Long Term Secure Bike Parking



27. BSMT Lobby
28. Workshop
29. Storage
30. Pool Mechanical
31. Room
32. Electrical
33. Crawlspace
34. P1 Parking
35. Lower Lobby 1
36. Long Term Bike Parking

Admin Lobby Services

North

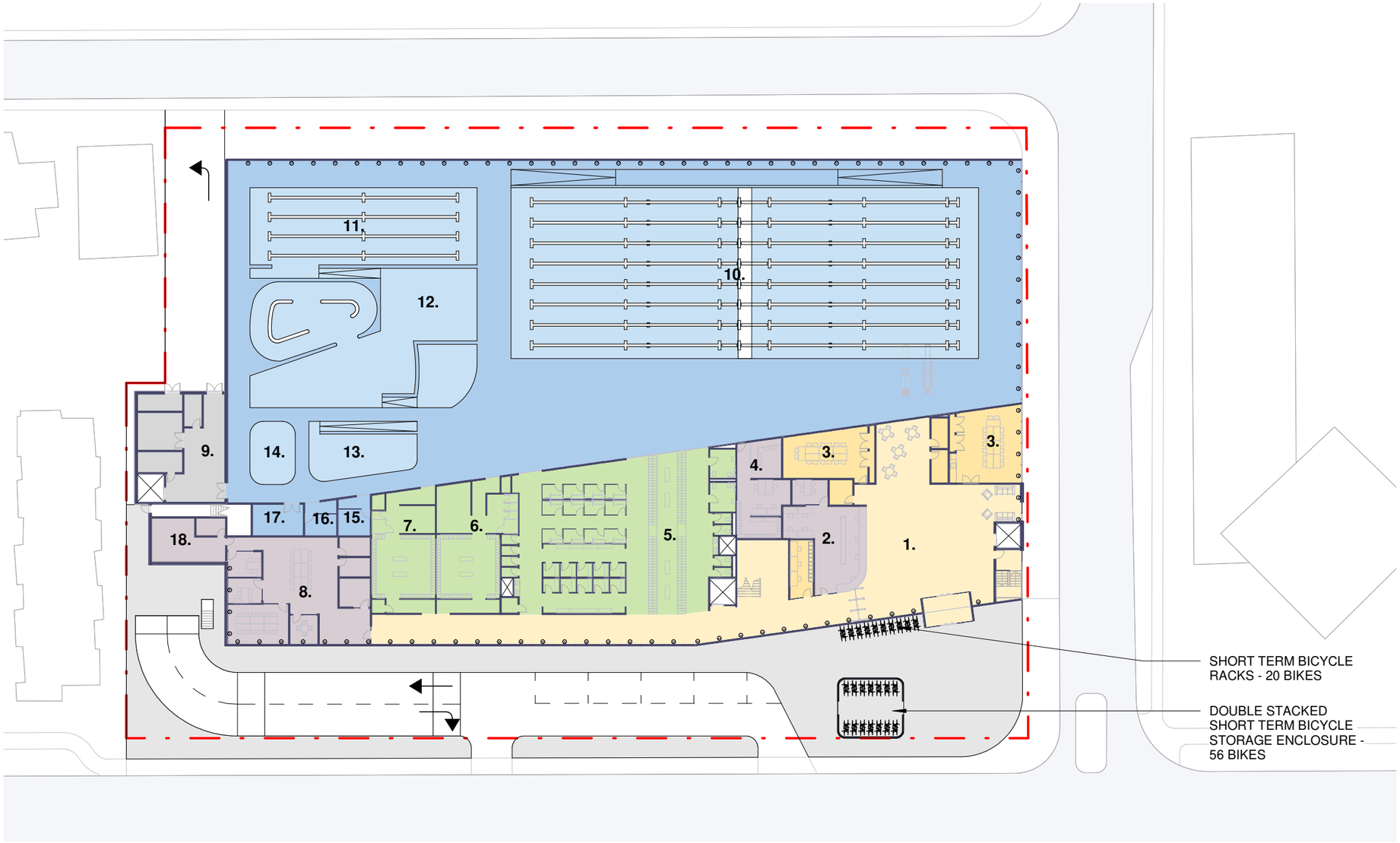
Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 3	OPTION 3a - BASEMENT 1 PLAN	20 DEC 2023	1	1m 10m 5m

DRAFT

NOTES:

1. +/- 56 Short Term Covered Bike Parking
2. +/- 20 Short Term Open Bike Parking

1. Lobby
2. Reception
3. MPR
4. Guards
5. Univ. Change
6. W Change
7. M Change
8. Admin
9. Loading
10. 50m Pool
11. 25m Pool
12. Leisure Pool
13. Family Hot Pool
14. Hot Pool
15. Steam
16. Sauna
17. Pool Stor.
18. Staff Room

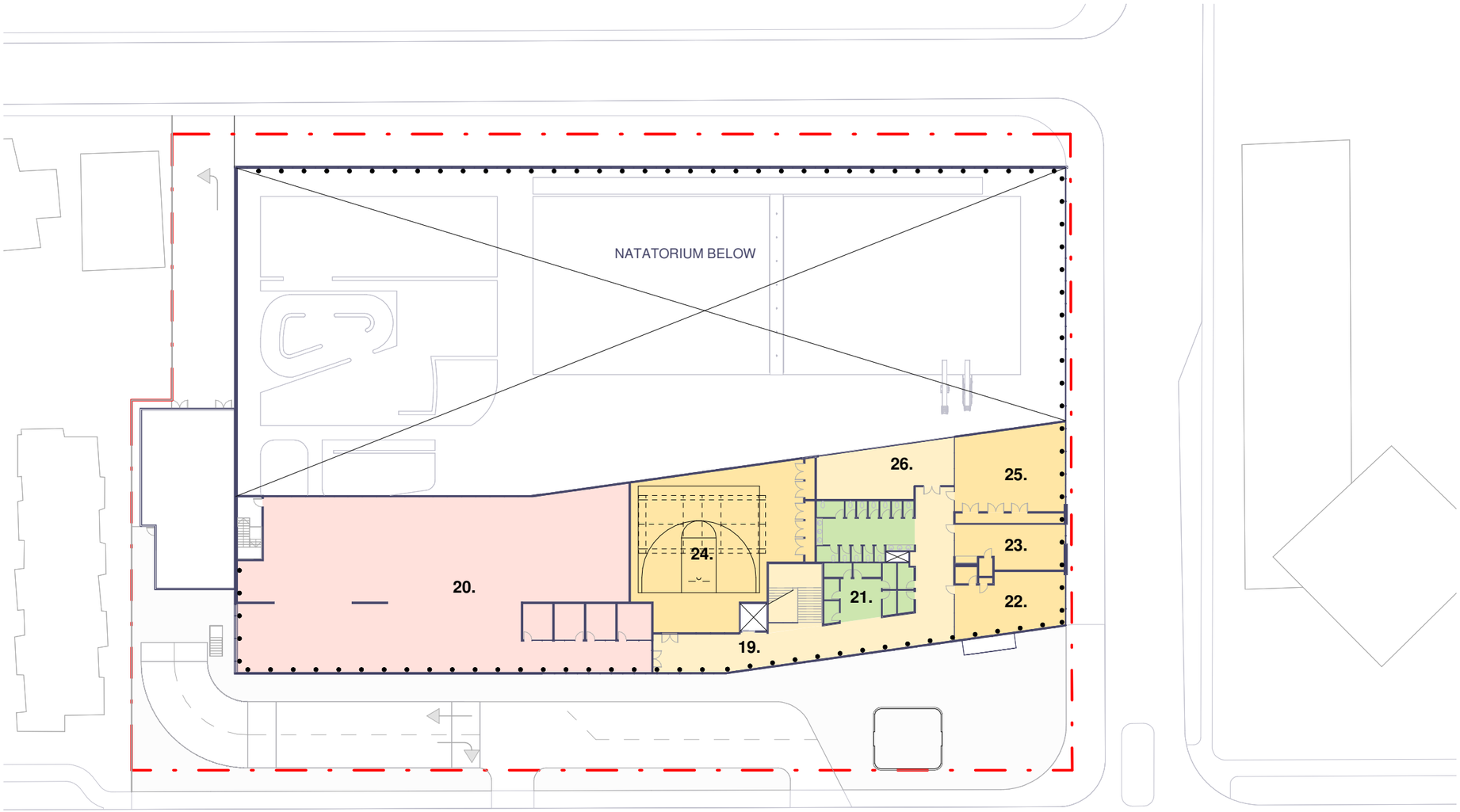


Admin | Change Rooms | Lobby | MPR | Natatorium | Services

North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 3	OPTION 3a - STREET LEVEL PLAN	20 DEC 2023	1	1m 5m 10m

DRAFT



19. Upper Lobby
20. Fitness
21. Dry Change
22. MPR - Minding
23. MPR - Art
24. MPR - Half Gym
25. MPR - Dance
26. Viewing

Admin
Change Rooms
Fitness
Lobby
MPR

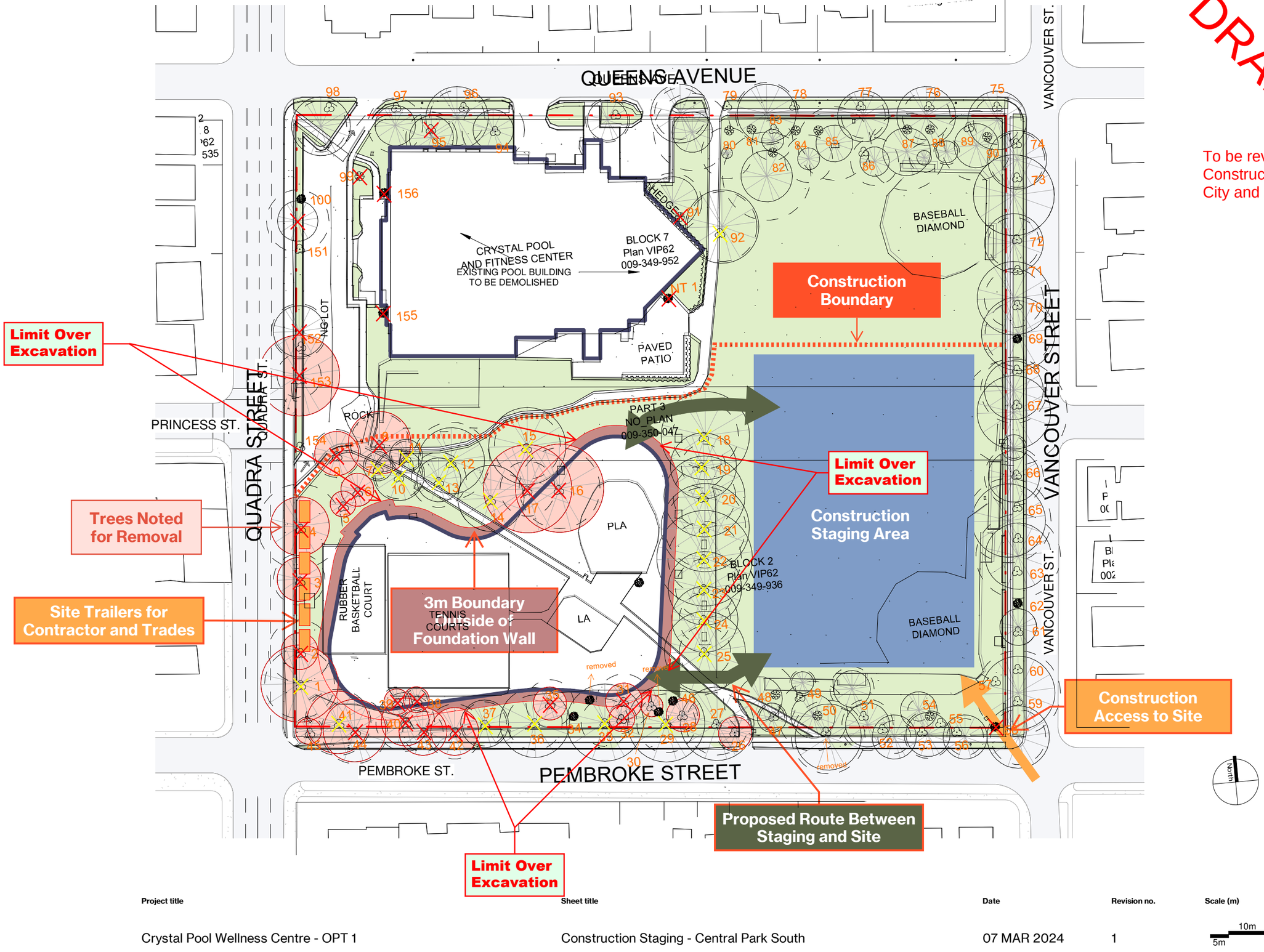
North

Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 3	OPTION 3a - UPPER LEVEL PLAN	20 DEC 2023	1	1m 5m 10m

APPENDIX F – STAGING PLAN

DRAFT

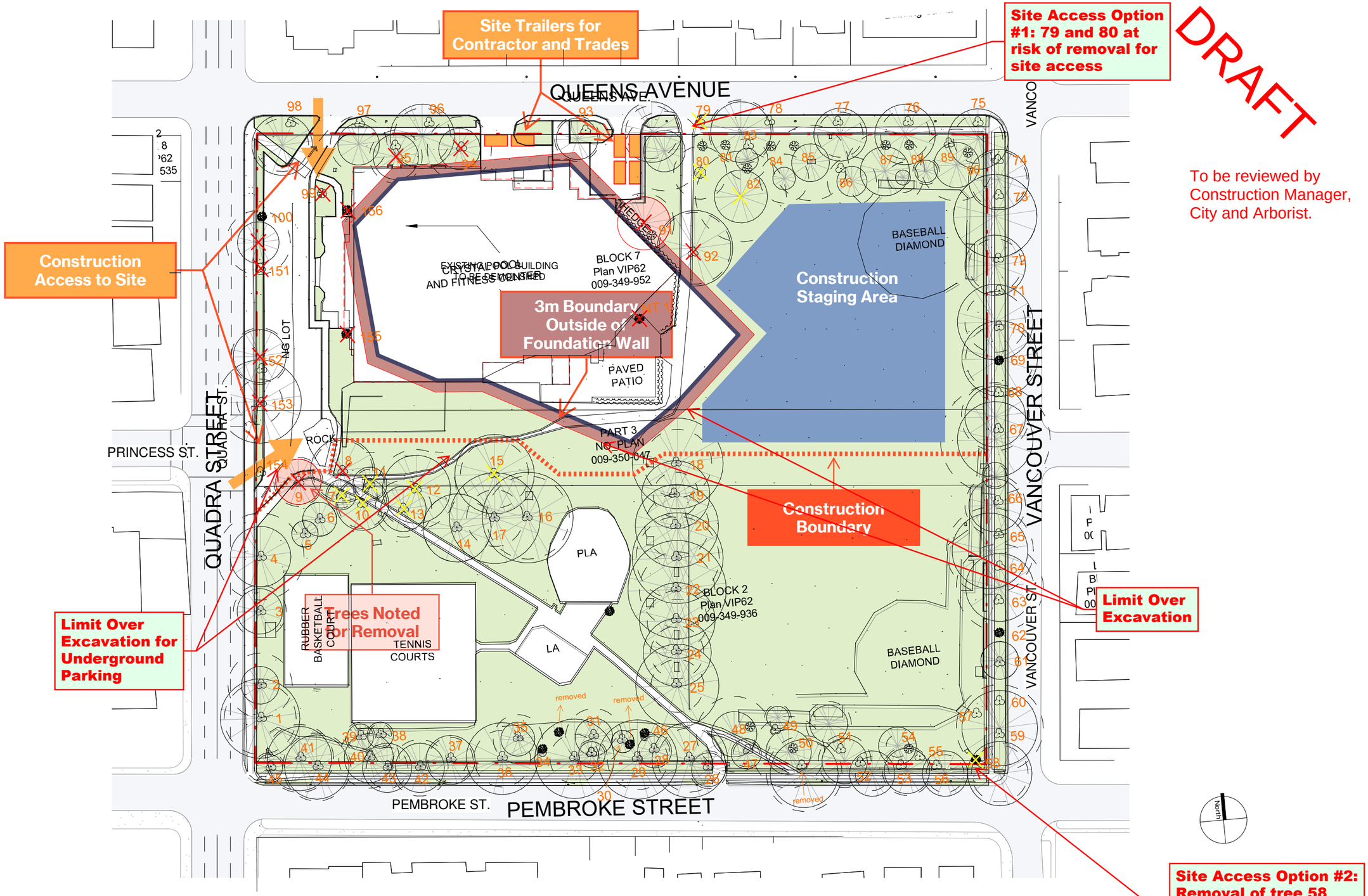
To be reviewed by Construction Manager, City and Arborist.



Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 1	Construction Staging - Central Park South	07 MAR 2024	1	10m 5m 20m

DRAFT

To be reviewed by Construction Manager, City and Arborist.

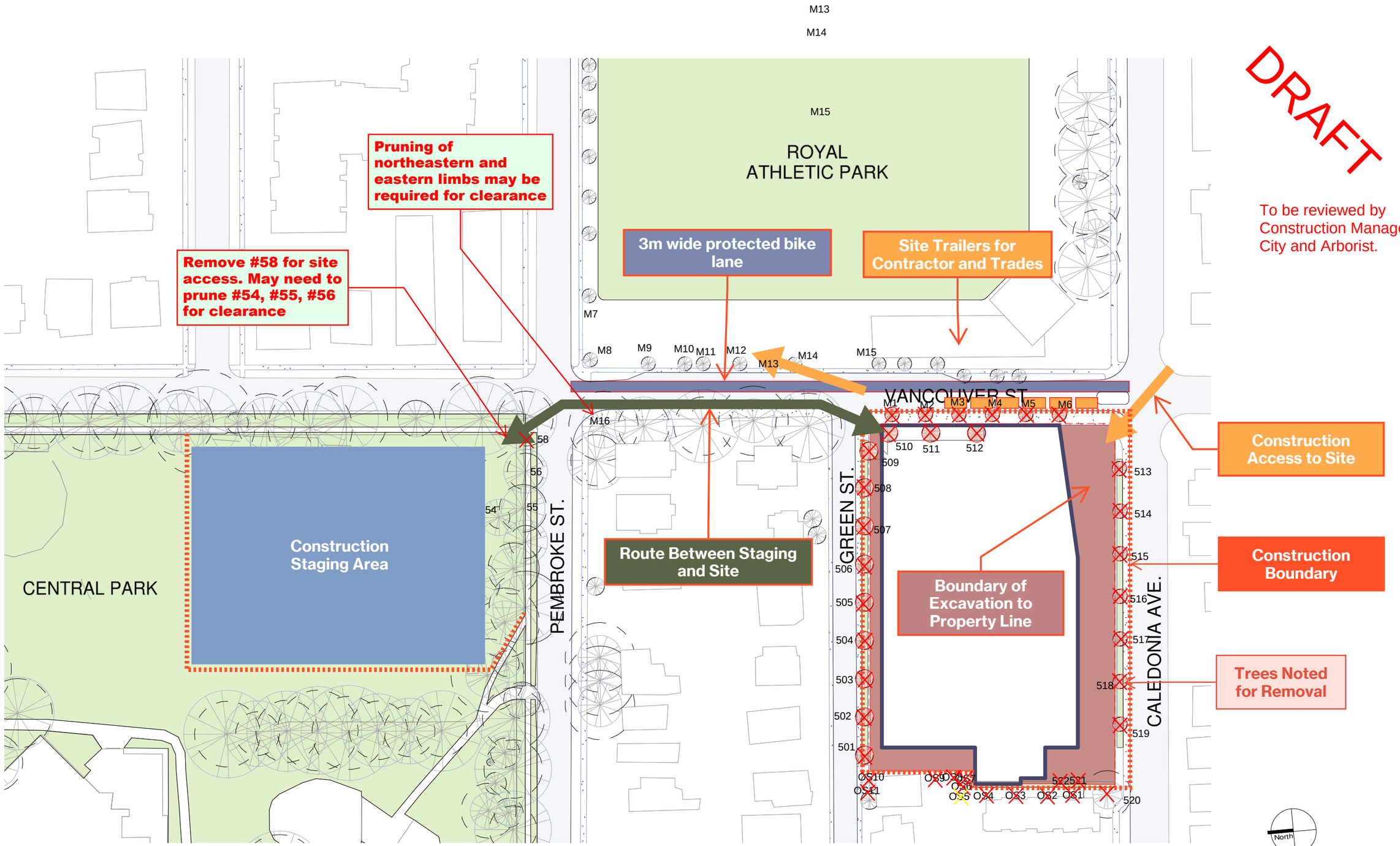


Project title	Sheet title	Date	Revision no.
Crystal Pool Wellness Centre - OPT 1	Construction Staging - Central Park North	07 MAR 2024	1

10m
5m 20m

DRAFT

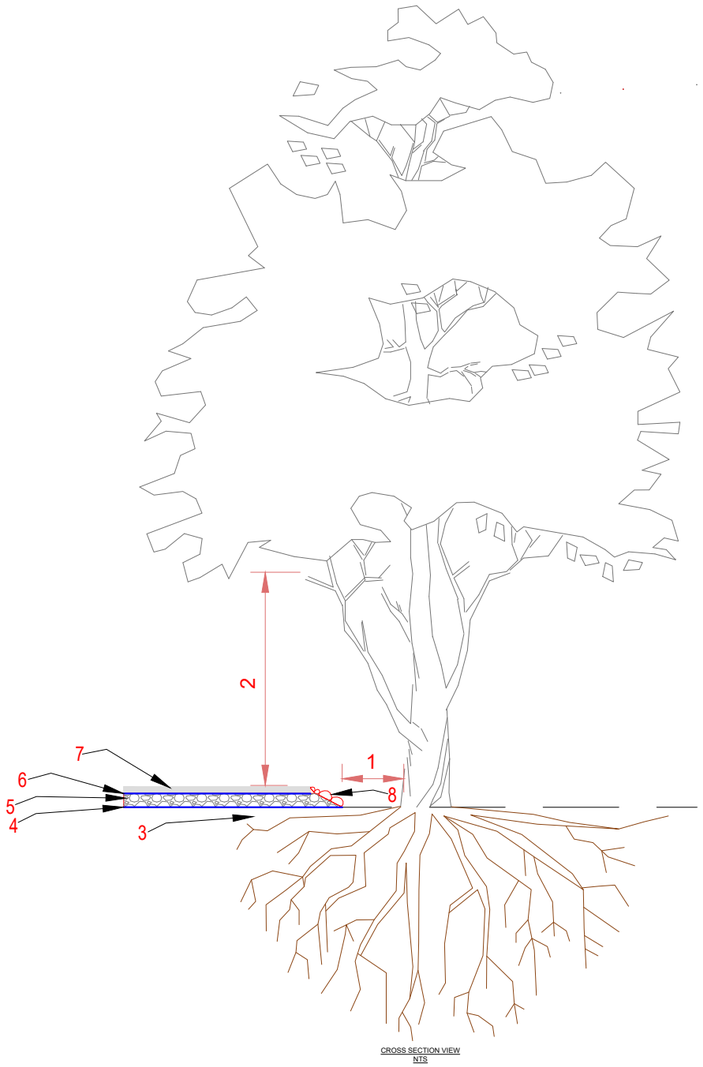
To be reviewed by Construction Manager, City and Arborist.



Project title	Sheet title	Date	Revision no.	Scale (m)
Crystal Pool Wellness Centre - OPT 3	Construction Staging - 940 Caledonia			10m / 5m / 20m

APPENDIX G – HARD SURFACE OVER ROOTS DIAGRAM

HARD SURFACE ABOVE TREE ROOTS DETAIL



CROSS SECTION VIEW
NTS

HARD SURFACE ABOVE TREE ROOTS NOTES

1. Maintain as large a setback between the fill encroachment and the root collar of the tree as possible.
2. Review any canopy clearance pruning requirements to accommodate vehicle or pedestrian clearances (Pruning to be performed to ANSI A300 standards).
3. Excavate the new footprint of the driveway or sidewalk under the supervision of the project arborist. Excavation will be limited to the removal of the existing sod layer. Excavation around root structures must be performed by hand, airspade, or hydroexcavation.
4. Install a two-dimensional (such as Combigrid $\frac{30}{30}$) or Three-dimensional geogrid reinforcement.
5. Install a 150mm depth layer of clear crushed gravel (no fines) using 20mm and/or 75mm diameter material or approved equivalent. *Note - the depth may be less than 150mm in some situations (dependant on grading constraints).
6. Install 4 oz non woven geotextile over the clear crushed gravel layer to prevent fine particles of sand from infiltrating this layer.
7. The bedding or base layer and new driveway or sidewalk surface can be installed directly on top of the felted filter fabric.
8. Fill slopes - where possible install loose stacked boulders to reduce the footprint of the fill slopes that encroach within the critical root zone. Fill slope materials must be permeable to air and water. Do not pile fill material directly against the trunk of a tree.

TALMACK
URBAN FORESTRY
Consultants Limited

APPENDIX H – SITE PHOTOGRAPHS

Photo 1: Tree #9 (left) and tree #8 (right)

Photo 2: Cavity at the base of tree #9

Photo 3: Tree #12 (left) and tree #14 (right)

Photo 4: Large wound on tree #14

Photo 5: Trees #18-25 (left); trees #15 and #16 (right)

Photo 6: Site access to staging area (outlined in red) for Option #1 and Option #3. Potential site access for Option #2. Required removal of tree #58 and some clearance pruning of trees #55, #56, and #59

Photo 7: Tree #61 with cavity

Photo 8: Close-up of cavity within tree #61

Photo 10: Tree #73 with extended limb over Vancouver Street

Photo 11: Trees #61-#65 along Vancouver Street

Photo 12: Trees #67-#74 along Vancouver Street and tree #90

Photo 13: Tree #86

Photo 14: Crack along trunk of tree #86

Photo 15: Tree #92

Photo 16: Ganoderma fruiting body found at the base of tree #92

Photo 17: Tree #93

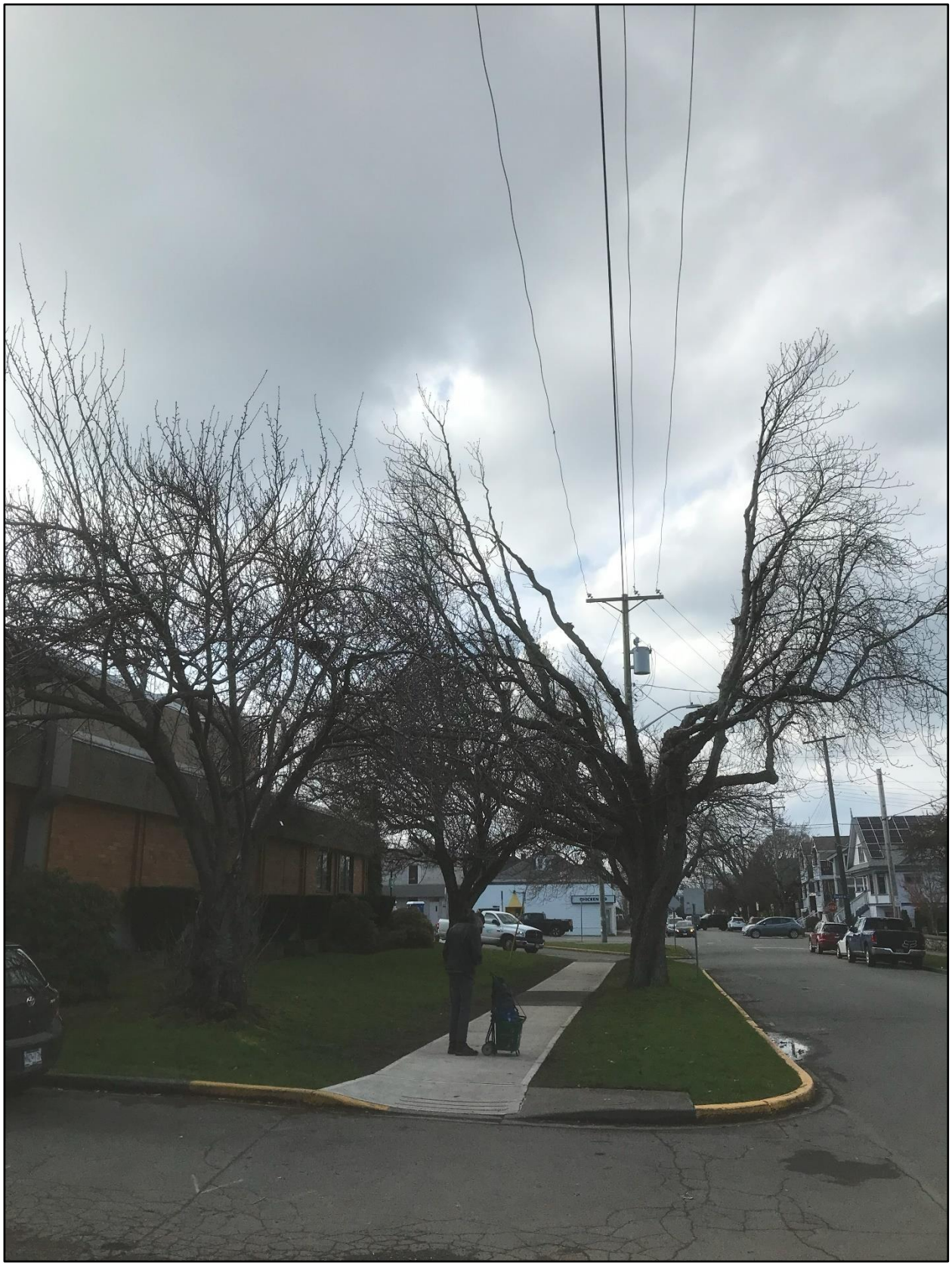


Photo 18: Trees #94-#95

Photo 19: Trees #151-#154

Photo 20: Trees #501-#508 along Green Street

Photo 21: Trees #509-#512 and M1-M6 along Vancouver Street

Photo 22: Trees #513-#519 along Caledonia Avenue

Photo 23: Tree #520

Photo 24: Trees OS1-OS3 and trees OS1-OS2

Photo 25: Trees OS4-OS8

Photo 26: Trees OS10 and OS11