



Talbot Mackenzie & Associates

Consulting Arborists

1210 Topaz Ave.—Victoria, BC

Construction Impact Assessment &

Tree Preservation Plan

Prepared For: Bob Gill
Pacific Concept Developments Ltd.
4275 Faithwood Road
Victoria, BC V8X 5C6

Prepared By: Talbot, Mackenzie & Associates
Robert McRae
ISA Certified # PN-7125A
TRAQ – Qualified

Date of Issuance: October 28, 2020

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Jobsite Property: 1210 Topaz Avenue; Victoria, BC

Date of Site Visit(s): October 26, 2020

Site Conditions: No ongoing construction activity.

SUMMARY

- The proposal includes demolition the existing prep kitchen, construction of a new prep kitchen (excavating to match existing kitchen lobby grade), as well as construction of a new stairwell and sidewalk within the CRZs of bylaw protected trees on the boundary of or within Summit Park.
- One tree has been identified “To Be Determined.” Each of the remaining two trees and two seedlings have been identified for retention, provided the mitigation measures outlined in this report are followed.

SCOPE OF ASSIGNMENT

- Inventory the existing bylaw protected trees and any trees on municipal or neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line.
- Review the proposal to demolish the existing prep kitchen, construct a new prep kitchen (excavation to match existing kitchen lobby grade), as well as construct a new stairwell and sidewalk within the CRZs of bylaw protected trees on the boundary of or within Summit Park.
- Comment on how construction activity may impact existing trees.
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts.

METHODOLOGY

- We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet.
- Each bylaw protected tree was previously identified using a numeric metal tag attached to its lower trunk. Park trees were not tagged.
- Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory.

- The conclusions reached were based on the information provided within the attached plans from MISRA Architect Ltd. (dated June 10, 2019).
- A Tree Protection Site Plan was created using the Site Plan Provided.

LIMITATIONS

- No exploratory excavations have been conducted and thus the conclusions reached are based solely on critical root zone calculations, observations of site conditions, and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.
- The extent of impacts to some trees will largely depend on the cut-slope prescribed by the geotechnical engineer during excavation for the foundations. Therefore, the proximity of excavation to trees (without shoring) can only be estimated and may be closer or farther from trees than we estimate.
- No servicing plans or locations were provided for this assessment. The installation of hydro, telecommunications, storm, water and sanitary sewer services could result in additional tree impacts.

SUMMARY OF TREE RESOURCE

- 1 tree was inventoried on the subject property (likely shared ownership), with an additional 2 trees and 2 seedlings within 3m of the property line in the adjacent Summit Park. All are Garry Oaks (*Quercus garryana*).

POTENTIAL IMPACTS TO TREES

- We expect the greatest potential for impacts to trees will occur during:
 - 1) Construction of the retaining wall and stairwell within the CRZ of **Garry Oak #154; 67cm DBH, and Garry Oak NT#2, 49cm DBH.**
 - 2) Excavation for the new prep kitchen as deep as -2.134m within the CRZ of #154.
 - 3) Demolition of the existing prep kitchen within the CRZ of #154.
 - 4) Construction of the new sidewalk within the CRZ of #154, NT#2, and **Garry Oak NT#1; 25cm DBH.**

RETAINING WALL/STAIRWELL

- Garry Oak #154 grows within 2.5m of the existing prep kitchen, at 47.5m elevation, according to the site plan provided. The top of stair/retaining wall elevation shows as 47.48m finished grade, resulting in minimal grade changes within 2m of the tree. Bottom of stairs finished

grade shows as 45.32m, a -2.16m change over a span of 3.073m. Additional excavation within the CRZ may be required outside the retaining wall—we recommend that this be limited to 0.5m at the bottom of the stairs and minimal at the top, as it is likely that roots from #154 will be encountered here. We also recommend the project arborist supervise the excavation and make the tree’s final retention determination at that time. Small machinery will also be recommended.

Roots from NT#2 could be restricted (due to the presence of #154) to the west, and is likely retainable if mitigation measures for #154 are followed.

PREP KITCHEN DEMOLITION AND CONSTRUCTION

- Excavation for the new prep kitchen will occur within the CRZ of #154, to a finished grade of 45.47m, a difference of -2.03m from the 47.5m elevation at the tree. The foundation will be constructed at 2.5m from the tree. However, if a cut-slope prescribed by the geotechnical engineer, excavation may be required further into the CRZ. We recommend this excavation be limited to 0.5m outside the foundation. The project arborist should supervise this excavation as well as the demolition of the existing foundation, as roots are likely to be encountered in this area.

SIDEWALK

- The new sidewalk east of the new prep kitchen is shown to be installed at 48.48m elevation, within the CRZs of #154, NT#1, and NT#2. Given the sidewalk edge is within 1m of #154, roots are likely to be encountered during excavation. We recommend the excavation be completed under the direction of the project arborist, and that the sidewalk be constructed from permeable surface materials (see “Paved Surfaces Above Tree Roots”).

BARRIER FENCING

- Protective barrier fencing should be erected and maintained throughout the construction timeframe, located as close to the sidewalk and retaining wall as possible; approximately 0.75m west of the tree, to the north and south edges of the CRZ, ending at the east property fence.

MITIGATION MEASURES (FOR REFERENCE)

ARBORIST SUPERVISION

- All excavation occurring within the critical root zones of protected trees should be completed under the direction or supervision of the project arborist. This includes (but is not limited to) the following activities within CRZs:

- Excavation for the retaining wall/stairwell, foundations, and sidewalk.
- Demolition of the existing foundation.

PRUNING ROOTS

- Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Backfilling the excavated area around the roots should be done as soon as possible to keep the roots moist and aid in root regeneration. Ideally, the area surrounding exposed roots should be watered; this is particularly important if excavation occurs or the roots are exposed during a period of drought. This can be accomplished in a number of ways, including wrapping the roots in burlap or installing a root curtain of wire mesh lined with burlap, and watering the area periodically throughout the construction process.

BARRIER FENCING

- The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones.

The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

MINIMIZING SOIL COMPACTION

- In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one or a combination of the following methods (depending on the size of machinery and the frequency of use):
 - Placing a layer of geogrid (such as Combigrid 30/30) over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top or a layer of hog fuel or coarse wood chips at least 30 cm in depth and maintaining it in good condition until construction is complete.
 - Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.

- Placing two layers of 19mm plywood.
- Placing steel plates

MULCHING

- Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces (not dyed) and be 5-8cm deep. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.

SCAFFOLDING

- This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see “Minimizing Soil Compaction” section).

ARBORIST ROLE

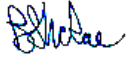
- It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
 - Locating the barrier fencing
 - Reviewing the report with the project foreman or site supervisor
 - Locating work zones, where required
 - Supervising any excavation within the critical root zones of trees to be retained
 - Reviewing and advising of any pruning requirements for machine clearances

REVIEW AND SITE MEETING

- Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

Please do not hesitate to call us at (250) 479-8733 should you have any further questions.

Thank you,



Robert McRae
ISA Certified # PN-7125A
TRAQ – Qualified

Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Attached:

1-page tree resource spreadsheet
1-page Tree Protection Site Plan
1-page construction site plan
2-page tree resource spreadsheet methodology and definitions

Disclosure Statement

The tree inventory attached to the Tree Preservation Plan can be characterized as a limited visual assessment from the ground and should not be interpreted as a “risk assessment” of the trees included.

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

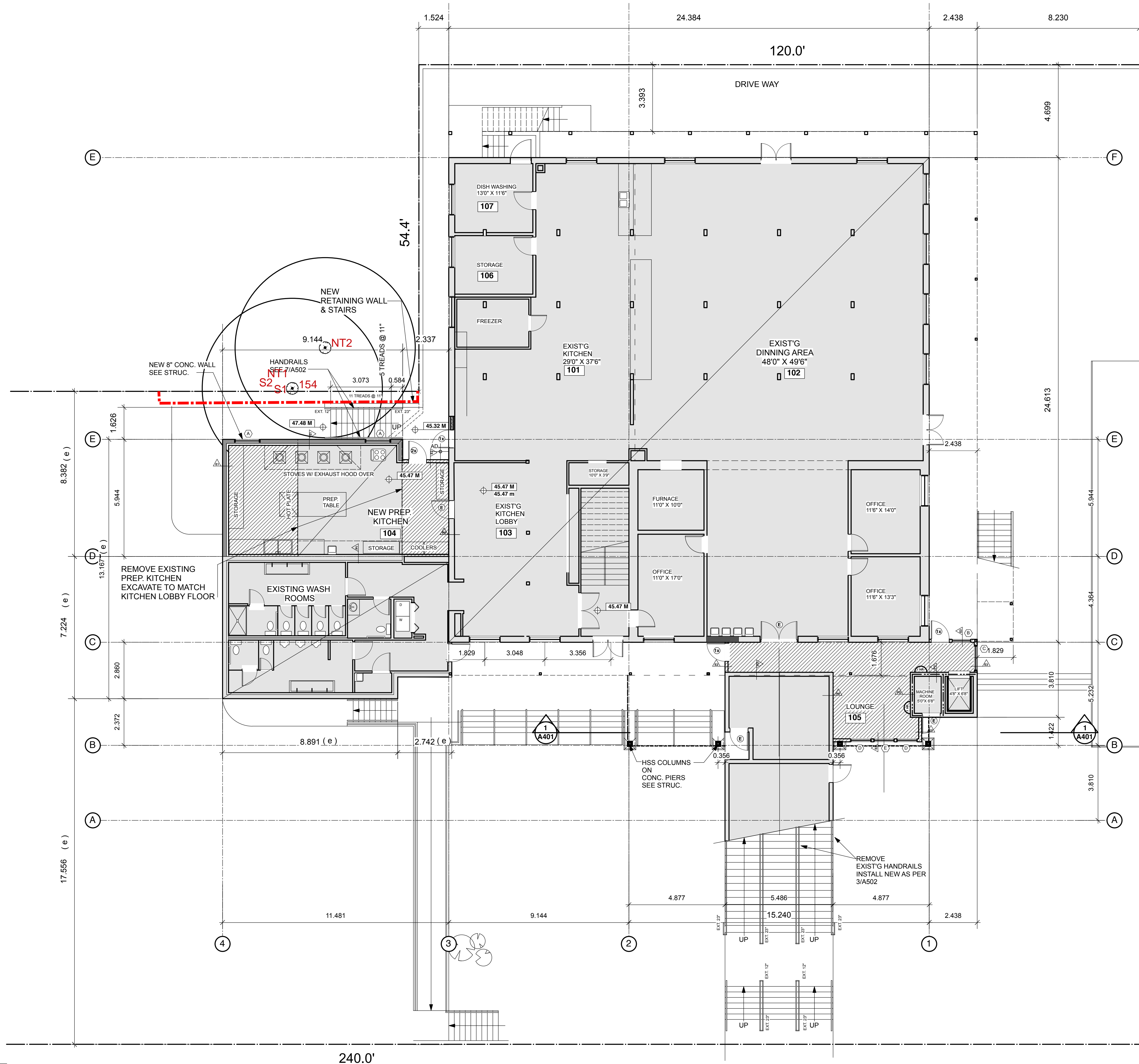
Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

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.

Tree Resource Spreadsheet - 1210 Topaz Avenue

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (diameter in metres)	CRZ (radius in metres)	Relative Tolerance (good, moderate, poor)	Health	Structure	Remarks and Recommendations	Bylaw Protected	Retention Status
154	Garry Oak	<i>Quercus garryana</i>	67.0	10.0	6.7	Good	Good	Fair	Some previous clearance pruning for building; canopy begins at ~6m.	Yes	TBD
NT1	Garry Oak	<i>Quercus garryana</i>	25.0	4.0	2.5	Good	Fair	Fair	Seam up lower trunk with active response growth, suppressed by 154. Past ~8cm and ~5cm limb failures.	Yes	Retain
NT2	Garry Oak	<i>Quercus garryana</i>	49.0	8.0	4.9	Good	Good	Fair	Canopy measured in one direction, lean south over existing building, past clearance pruning with good compartmentalization.	Yes	Retain
S1	Garry Oak	<i>Quercus garryana</i>	4 at caliper	1.0	0.5	Good	Good	Fair-poor	Seedling growing through chain-link fence.	Yes	Retain
S2	Garry Oak	<i>Quercus garryana</i>	4 at caliper	1.0	0.5	Good	Good	Good	Seedling.	Yes	Retain

1 MAIN FLOOR PLAN
A201 Scale: 1 : 100
 EXIST'G AREA : 8 196.83 SQ. FT.
 NEW ADDITIONAL AREA : 736.52 SQ. FT.



LEGEND:
 0.00' FINISHED GRADE
 0.00' EXISTING GRADE

NO.	REVISIONS	DATE	BY	CHKD.	APP'D.
1	ISSUED FOR BUILDING PERMIT APPLICATION REVIEW	MAY 11, 2020			
2	DESIGN DEVELOPMENT	NOV 12, 2019			

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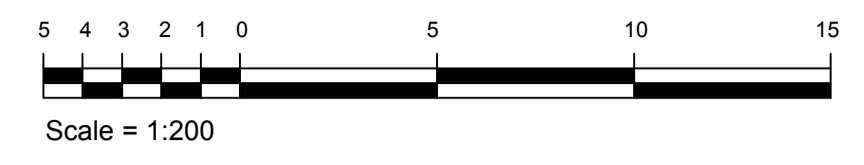
ADDITIONS AND ALTERATIONS TO EXISTING SIKH TEMPLE ON 1210 TOPAZ AVENUE.
MAIN FLOOR PLAN
 SCALE: AS NOTED
 JUNE 10, 2019
 DRAWN: PKM
 VICTORIA, B.C.
 FOR: KHALSA DIWAN SOCIETY OF VICTORIA

PROJECT NO. 19:04
A-201

TOPAZ AVENUE

BLACKWOOD AVENUE

Site Plan Of:
Lot C (DD 337713i), Block 14, Section 4,
Victoria District, Plan 299,
P.I.D. 008-618-500



Scale = 1:200

Legend:
 ○ Lamp Standard

Dated this 5th day of March, 2020.

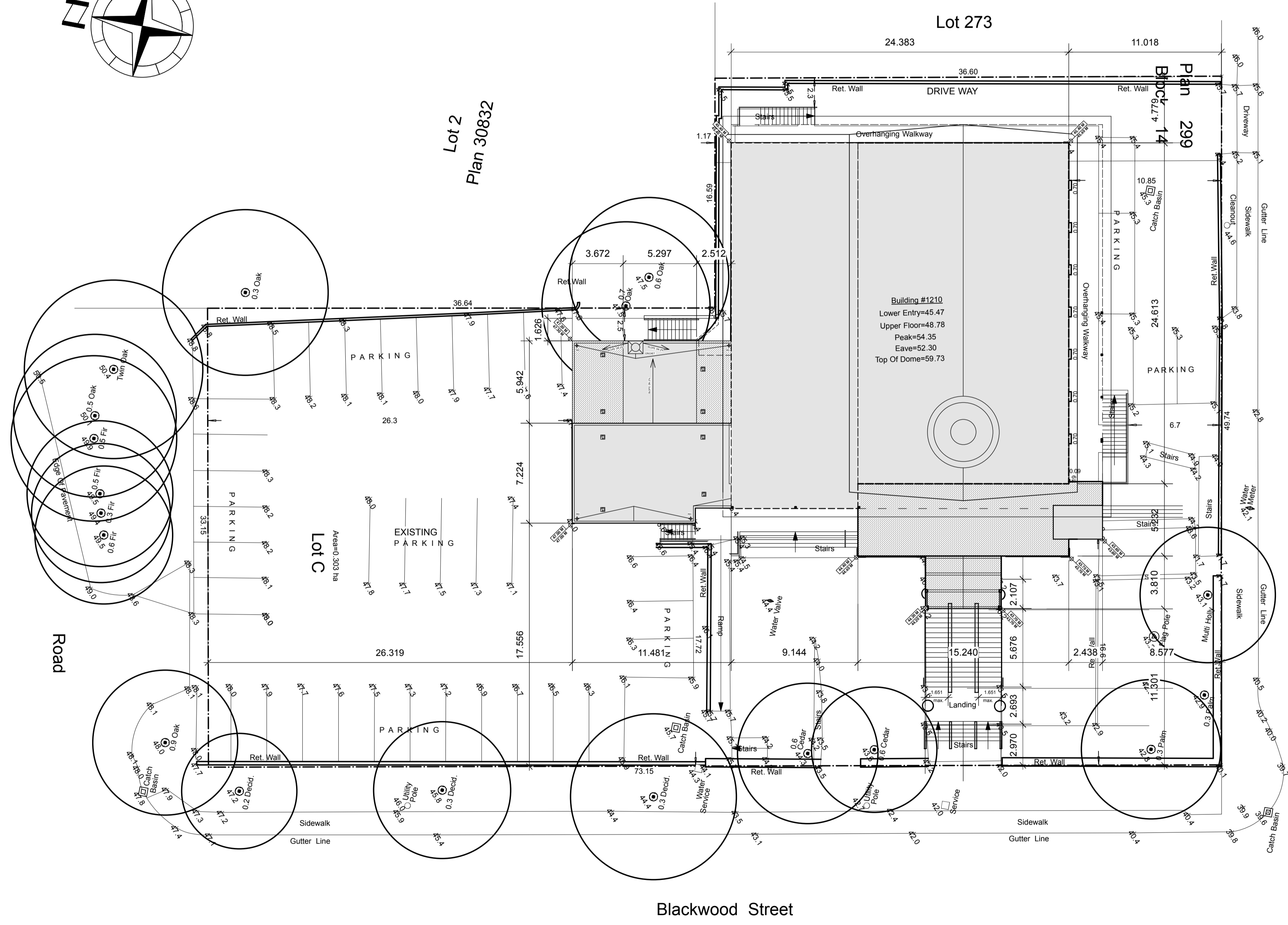
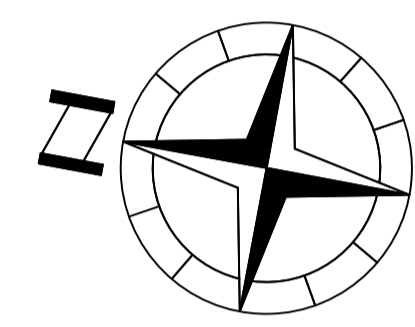
Distances and elevations shown are in metres.

Elevations are based on geodetic datum CVD28BC and derived from OCM 25-147.

This site plan is for building and design purposes and is for the exclusive use of our client.

This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners.

The subject property is affected by the following registered documents: 233345G.



LEGEND:

- 123 ROOM NO.
- A WINDOW TYPE
- 20 DOOR TYPE
- 108 DETAILS
- 108 SECTION TYPE
- ND NAPKIN DISPOSAL
- TTD TOILET TISSUE DISPENSER
- TDD TOWEL DISPENSER / DISPOSAL
- SD SOAP DISPENSER
- WALL TYPE
- 1 ROOF & FLOOR TYPE
- NV NAPKIN VENDOR
- EXISTING BUILDING
- NEW ADDITION

(IN METERS)
 00.00 M FINISHED GRADE
 00.00 M EXISTING GRADE

FIRERATING LEGEND:
 3/4 HR
 1 HR

E EXIT DIRECTION SIGN

AVERAGE GRADE CALCULATIONS:

$$\frac{(45.40 + 45.40 + 43.60 + 43.70 + 43.70 + 44.20 + 44.40 + 47.00 + 47.30) / 9 = 44.966 \text{ M}}$$

REFER TO DRAWING A-401

DESIGN DATA:

LEGAL : LOT 'C', (DD 337713i) BLOCK 14, SECTION 4, VICTORIA DISTRICT, PLAN 299, P.I.D. 008-618-500

CIVIC ADDRESS: 1210 Topaz Avenue, Victoria, B.C.

ZONING: R 1B

SITE AREA: 32 615.715 sq. ft. (3 030.00 sq. m.)

GROSS FL. AREA : MAIN FL. - EXISTING = 8 196.83 SQ. FT.
 ADDITION = 736.52 SQ. FT.
 2ND FL. - EXISTING = 7 005.29 SQ. FT.
 ADDITION = 750.66 SQ. FT.

TOTAL GFA: EXISTING = 15 202.12 SQ. FT.
 ADDITION = 1 487.18 SQ. FT.

LOT WIDTH: 33 m and 49.4 m (exist.)

HEIGHT: Existing (no change) 11 m, 2 1/2 storeys permitted

PERMITTED USE : Public Building

SITE COVERAGE : Max. 40% Permitted
 Provided = Including decks (958.34 sq. m.) (29.38 %)

SETBACKS: Front yard (Arthur Ave.) = 26.3 m (exist'g no change)
 Rear Yard (Topaz Ave.) 25% of Lot Depth = 18.3 m
 - Exist = 8.1 m (non conforming)
 Interior Side Yard 10% of lot width = 4.94 m
 - Exist = 3.5 m / 2.44 m (non conforming)
 Combined Side Yard = 4.5 m
 - Exist. = 21.2 m/20.14 m (no change)
 Exterior Side Yard (Blackwood Ave.) 10% of Lot Width = 4.94 m
 - New = 11.301 m

EAVES PROJECTION: 0.75 m (Exist. no change)

PARKING : Per Schedule 'C' (No change to occupant load or parking)

CODE ANALYSIS:

REFERENCE : BRITISH COLUMBIA BUILDING CODE 2018
 -3.2.2.25 UP TO 2 STOREYS

USE AND OCCUPANCY : A2 (Single Occupancy)

BUILDING HEIGHT : 2 Storeys

STREET FACING : 2

BUILDING AREA : Max. Building area permitted = 10 764.26 sq. ft. (1 000.00 sq. m.)
 Existing Building Area = 8 209.95 sq. ft. (762.70 sq. m.)
 Additional Building Area = 1 120.00 sq. ft. (104.05 sq. m.)
 Total Building Area = 9 329.95 sq. ft. (866.75 sq. m.)

CONSTRUCTION : COMBUSTIBLE

SPRINKLERS : no

OCCUPANT LOAD : 470 persons (no change)

FIRE SEPARATIONS: ROOF - 3/4 hr
 FLOORS - 3/4 hr
 WALLS - 3/4 hr. Loadbearing walls & columns = 3/4 hr

WASHROOM FACILITIES: As per 3.7.2.2.(8) (no change)

GENERAL NOTES

1. ALL SURVEY INFORMATION AND EXISTING CONDITIONS ARE TAKEN FROM SITE SERVICES DRAWING PROVIDED BY WEY MAYENBURG LAND SURVEYING INC. DATED MAR. 5, 2020.
2. REFER TO SOIL REPORT FROM GEOTECH CONSULTANT.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS AND GRADE ELEVATIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND CO-ORDINATE THE WORK OF ALL SUBTRADES. FOR INCONSISTENCIES CONTACT THE CONSULTANTS.
4. ALL WORK IS REQUIRED TO BE DONE AS PER PRESENT B.C. BUILDING CODE 2018, CITY OF VICTORIA BY-LAWS AND AUTHORITIES HAVING JURISDICTION.
5. ALL EXPOSED CONCRETE SURFACES TO BE PAINTED
6. ALL COLORS FOR CONCRETE SIDING, CONCRETE, EXPOSED STEEL AND INTERIOR WALLS ARE TO BE AS SELECTED BY THE CONSULTANT.
7. CONTRACTORS TO COORDINATE WITH ALL CONSULTANT'S DRAWINGS BEFORE CONSTRUCTION.
8. ALL STAIRS HANDRAILS & GUARDRAILS TO COMPLY WITH CBC 3.4.6.5.(9).
9. ALL COLD JOINTS IN CONCRETE SHALL BE WATERPROOFED AND TREATED WITH WATER STOPS (KRYTON OR EQUIVALENT).
10. PROVIDE SHOP DRAWINGS FOR WINDOWS, DOORS, HANDRAILS, MISCELLANEOUS METAL AND ELECTRICAL/MECHANICAL SYSTEMS FOR CONSULTANT'S REVIEW.
11. ALL GYPSUM BOARD SHALL BE TYPE 'X'.

ISSUED FOR	BUILDING PERMIT APPLICATION
AUG. 21, 2020	
REVISIONS	

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MISRA ARCHITECT LTD.
 Tel (250) 477 2584 Fax (250) 477 3063
 2335 ARBUTUS ROAD, VICTORIA BC V8N 1V6

PROPOSED ADDITIONS AND ALTERATIONS TO EXISTING SIKH TEMPLE

ON 1210 TOPAZ AVENUE, VICTORIA .B.C.

FOR KHALSA DIWAN SOCIETY OF VICTORIA

SITE PLAN & DESIGN DATA

SCALE : AS NOTED

APR. 23, 2019 DRAWN PKM

PROJECT NO. 19:04

A-101

1 SITE PLAN
 A201 Scale: 1 : 200

Wey Mayenburg Land Surveying Inc.
 www.weysurveys.com
 #4-2227 James White Boulevard
 Sidney, BC V8L 1Z5
 Telephone (250) 656-5155
 File: 200069/SIT/IGH



Talbot Mackenzie & Associates

Consulting Arborists

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6

Ph: (250) 479-8733

Fax: (250) 479-7050

Email: tmtreehelp@gmail.com

Tree Resource Spreadsheet Methodology and Definitions

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

NT: No tag due to inaccessibility or ownership by municipality or neighbour.

DBH: Diameter at breast height – diameter of trunk, measured in centimetres at 1.4m above ground level. 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

Crown Spread: Indicates the diameter of the crown spread measured in metres 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 take into account individual tree characteristics, such as health and vigour. 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 metres 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

Retention Status:

- X - 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**
- Retain * - See report for more information regarding potential impacts
- TBD (To Be Determined) - The impacts on the tree could be significant. However, in the absence of exploratory excavations and in an effort to retain as many trees as possible, we recommend that the final determination be made by the supervising project arborist at the time of excavation. The tree might be possible to retain depending on the location of roots and the resulting impacts, but concerned parties should be aware that the tree may require removal.
- NS - Not suitable to retain due to health or structural concerns