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R-1

DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

COUNCIL REPORT

Date:	April 29, 2019
From:	Erik Wilhelm, Senior Community Planner
Subject:	Development Permit Amendment and Rezoning – Mulgrave School
File:	1010-20-18-024/1610-20-5021

RECOMMENDATION

THAT proposed "Zoning Bylaw No. 4662, 2010, Amendment Bylaw No. 5021, 2019" be read a first time.

RECOMMENDATION

THAT proposed "Zoning Bylaw No. 4662, 2010, Amendment Bylaw No. 5021, 2019" be presented at a public hearing on June 24, 2019 at 6 p.m. in the Municipal Hall Council Chamber, and that statutory notice be given of the scheduled public hearing.

RECOMMENDATION

THAT proposed Development Permit 18-024 regarding 2230 Cypress Bowl Lane to allow two gymnasiums on the east wing of Mulgrave School, as described in the report dated April 29, 2019, regarding Development Permit Amendment and Rezoning – Mulgrave School, be considered at the June 24, 2019 regular Council meeting, and that notice be given of consideration of the proposed development permit.

1.0 Purpose

The purpose of this report is twofold:

1. to consider Development Permit 18-024, which amends Development Permit 16-001 to allow for renovation of the east wing of Mulgrave School which includes two gymnasiums and supplementary uses; and
2. to rezone portions of 2330 Cypress Bowl Lane and the entirety of 2850 Wentworth Avenue (the Mulgrave School site) from RS-8 to PA-1, which would allow school uses on the entire Mulgrave School campus.

2.0 Executive Summary

Mulgrave School proposes to renovate and expand the east wing of the school to facilitate two new gymnasiums and associated facilities. To achieve this, an amendment to the previously approved development permit is required. The amendment does not entail an increase in student enrollment.

Staff recommends support for the proposed development permit and that public notification be provided. The development permit application would allow for the school to deliver sports curriculum to its student population in a modern facility.

A zoning amendment is also proposed to rezone portions of the site from RS-8 to PA-1 to allow school uses on the entire site. The rezoning amendment would also authorize a recently-constructed parking lot, used for overflow and tradesperson parking, on the southern portion of the site.

Staff recommends that the rezoning application be referred to a public hearing on June 24, 2019. Prior to the public hearing, the applicant will be required to host as second public information meeting.

3.0 Legislation/Bylaw/Policy

Zoning Bylaw

The majority of the existing Mulgrave School site campus is zoned PA-1 (Public Assembly Zone 1 (Schools)) while the remainder is zoned RS-8 (Single Family Dwelling Zone 8). The amendment to the zoning bylaw is attached as **Appendix B**.

4.0 Official Community Plan

The Official Community Plan (OCP) designates the subject lands as the Upper Lands Development Permit Area. The objective of this designation is to provide for the protection of the natural environment, its ecosystems and biological diversity, the protection of development from hazardous conditions, and the regulation of the form and character of development. The proposal complies with the development permit guidelines.

5.0 Background

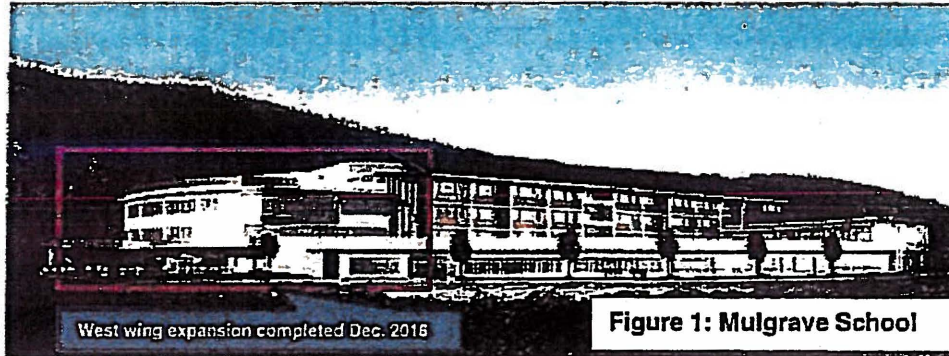
5.1 Previous Decisions

At the July 25, 2016 Council meeting Council passed the following motion:

THAT proposed Development Permit No. 16-001 regarding 2330 Cypress Bowl Lane (Mulgrave School), which would allow for the construction of additions to the existing school building, be approved.

5.2 History

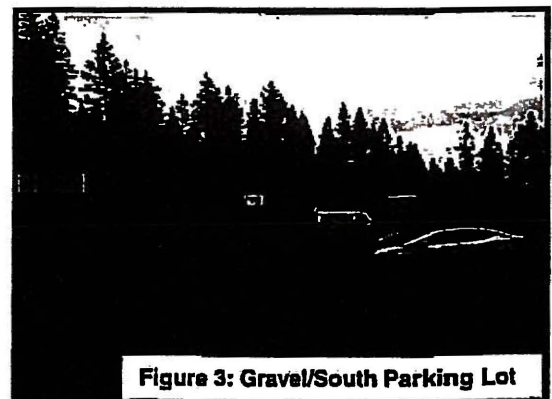
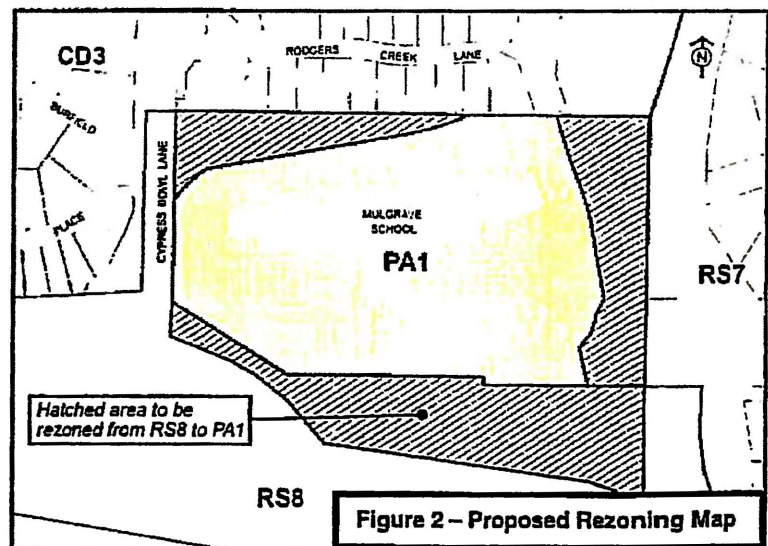
Council approved Development Permit 16-001 enabling an extensive renovation of the west wing and for a renovated gymnasium on the east wing of the school. The west wing improvement completed construction in December 2018 and includes new classrooms, outdoor play area, common areas and early childhood learning facilities (Figure 1).



6.0 Analysis

6.1 Proposed Rezoning

The proposed zoning bylaw amendment, attached as Appendix B, would rezone the RS-8 zoned lands to PA-1 (Figure 2). The rezoning would facilitate future school uses and allow for the constructed gravel parking lot on the southern portion of the lot (Figure 3). The parking lot will allow for tradesperson parking and overflow parking during school events.



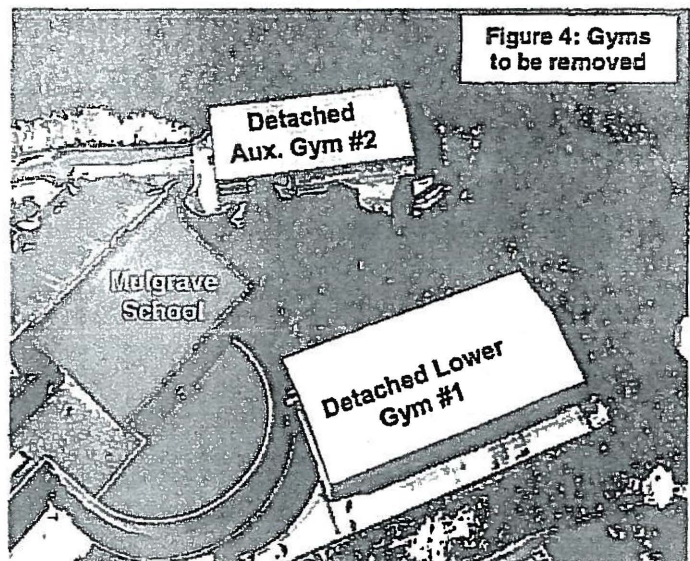
6.2 Proposed Development Permit

The applicant proposes to amend the previously issued development permit for the east wing from one gymnasium to now include two attached gymnasiums and associated facilities. Key features of the development permit include:

- A multi-storey gymnasium complex which includes a primary "competition sized" gym @ 1,175 sq. m. (12,648 sq. ft.) and an upper gym @ 960 sq. m. (10,333 sq. ft.); and
- A multitude of supplementary rooms and areas - fitness room, dance room, choir room, team rooms, change rooms, storage areas, staff rooms, common areas, viewing areas, office space and washrooms.

The proposed development permit is attached as **Appendix A** (with the architectural plans attached as Schedule A). The development permit amendment may be considered independently from the rezoning as the building is located within the PA-1 zone, which allows the proposed use.

The new physical education wing will replace both the existing lower gym and the upper auxiliary gym in order to provide enhanced programmed space (Figure 4). The new facility will serve as the core of the school's athletics curriculum.



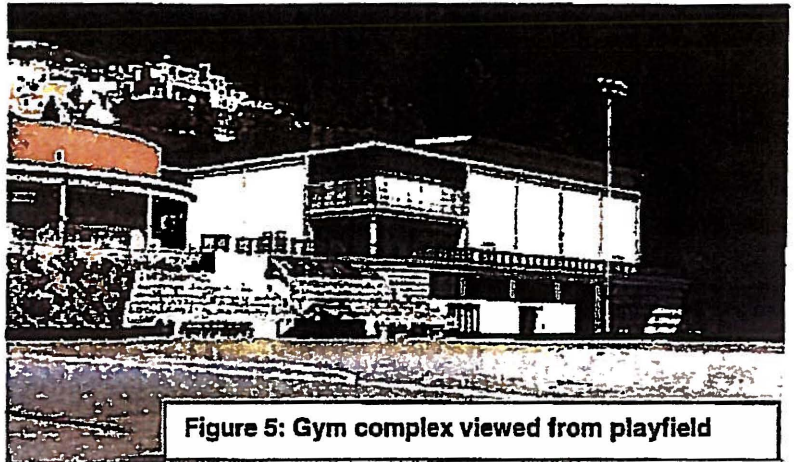
Project Evaluation

1. Overall Design

The gym complex will be terraced into the rising topography and covered with stepped mono-sloped roof forms.

For the most part, the new addition is considered a stand-alone structure albeit attached to the school through a vestibule. A new competition sized gym as well as an upper gym will be provided. These are supported by adjacent storage, central change room and team room facilities. Additional upper level facilities include a gym viewing lounge, dance studio and fitness studio that overlooks the playfield.

The lower level contains covered storage, service space, team change rooms and universal washrooms that assist the operation of the field for field users. These change rooms and washrooms will be available for all field users (i.e. public users may use them when the field has been rented).



2. Massing

The overall massing of the gymnasium complex reflects the internal needs of the lower "completion sized" gym. As viewed from the playfield, the overall volume is decreased and fragmented by the prominently glazed corner feature (Figure 5). The south elevation has two components - the eastern portion is the logical expression of the main gym volume, capped by the roof overhang over a clerestory window and the lower solid wall plane. The solid wall areas are clad in an insulated metal panel system coloured to match the buff tan of the west addition as approved in the previously approved development permit. The smaller western portion reflects the interior functions - the fitness studio over the main gym entrance lobby. The treatment here uses a significant percentage of glazing with a similar design to Mulgrave's new main entrance lobby.

These measures are in keeping with the intent that both the west and east additions form a cohesive group of additions to the original red brick schoolhouse. The new gymnasium complex on the east coupled with the newly completed west wing create strong contemporary "bookend" features which complete the design for the school.

3. Design Review Committee (DRC)

The proposal was initially reviewed by the DRC on November 29, 2018. To address the DRC's initial comments, the application was again considered by the DRC on January 17, 2019. Subsequently, the design was developed to improve accessibility measures (described in the next section), screening of mechanical equipment, improved connectivity (within inclusion of a low-impact trail east of the school) and improved washrooms and change rooms at the field level whose principal use will be for the use of community groups.

The DRC had wished to see larger gym level windows to be installed on the south elevation of the lower gym to take advantage of the prevailing south facing water views. However, staff is supportive of the current design given that increased window glazing on the south elevation would create unwanted glare and would be in conflict with the primary athletics function of the gym. The remainder of the campus has numerous other gathering and learning spaces with expansive vistas which act as alternative social gathering spaces.

4. Accessible Measures

The proposed east wing expansion will improve the integration of the gymnasium complex with the existing school and will facilitate better connectivity to the existing all-weather sports field. In response to feedback provided by the DRC and staff, the proposal was updated to include an elevator which links the field level with the primary gym level; this is complimented with another elevator linking the primary gym level to the upper gym, fitness studio, viewing lounge and dance studio (found on the uppermost storey). In compliance with the BC Building Code, the gymnasium complex will include required accessibility features.

5. Parking and Traffic

Given peak traffic concerns at pick-up and drop-off times, the applicant was requested to provide information related to traffic and parking. The traffic and parking report is attached as **Appendix C**. The report indicates that, on a typical day, there is adequate parking available for the school. To address traffic congestion in the neighbourhood, the school has implemented a number of measures including staggered start and finish times, designated drop/off pick up areas, onsite traffic monitors and controls, carpooling and bus rotations. The school also participates in a number of other initiatives to help further reduce traffic congestion. District staff has considered the report and is satisfied with its findings.

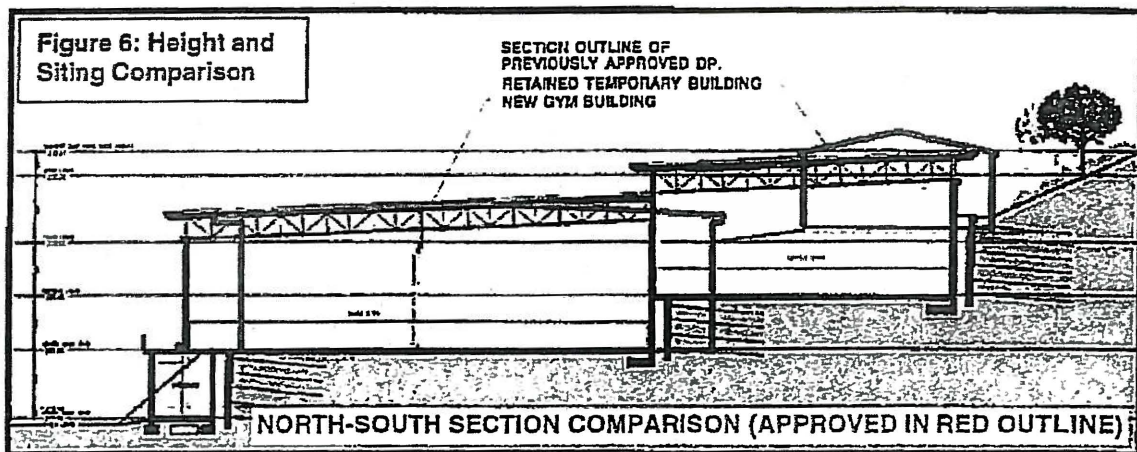
6. Proposed Development Permit Variances

The proposed development permit includes the following two variances:

1. Height: from 9.1 metres to 22.0 metres; and
2. Number of Storeys: from two to three.

Staff recommends support of the variances, as:

1. the proposed gymnasium complex fits with the overall design of the campus and is in alignment with the height of the rest of the school;
2. the proposal does not adversely impact the views of future neighbours north of the school given the slope of the hillside (Figure 6); and
3. the extent of the proposed variances and general design direction are consistent with the previously issued development permit.



7. Development Permit Sustainability

Watercourse Protection

The proposed gymnasium complex is located outside the Rodgers Creek riparian protection area which is located east of the school site. The applicant will be required to provide necessary riparian protection measures (i.e. fencing and siltation controls) prior to development activities to ensure that the riparian area remains undisturbed.

The landscape plan which forms part of proposed development permit requires riparian area plantings and inclusion of a low-impact trail creating an additional connection from the gymnasium area and the existing sports field.

"Green" Building

In compliance with the District's Building Bylaw, the gymnasium complex which is considered a "complex building" according to the BC Building Code will be required to meet or exceed Step 2 of Energy Step Code. The required compliance will provide for sustainable site and material initiatives, the efficient use of energy and water for the entire lifespan of the building and provide for superior passive ventilation, heating and air quality.

Storm Water Management

The applicant will also be required to provide a storm water management plan. The stormwater management plan must ensure that water runoff is contained and managed onsite and that no net increase in the rate and volume of rainwater runoff is created upon redevelopment of the site.

8. Community Amenities

New developments requiring rezoning are typically expected to deliver community amenities related to the impacts of new development. In this instance, the proposed rezoning is effectively reducing the value of the lands by changing allowable uses from residential to public assembly. As such, no community amenities are attributable to the proposed rezoning.

7.0 Implementing the Project

7.1 Separate Consideration of the Rezoning Bylaw and Development Permit

Given that the proposed development permit is not implicated by the proposed rezoning, it may be considered separately from the bylaw. This is because the building is zoned PA-1, which allows for the proposed gym uses, whereas the parking lot is located within an area zoned for residential use and requires a rezoning.

7.2 Public Engagement and Outreach

Public Information Meeting

The applicant held a public meeting on the proposal on November 28, 2018. Neighbours were notified in accordance with District procedures. Numerous display boards were available for viewing and the project architects and District staff were available for questions. Other than a few interested students and parents, the meeting had no attendees. Should the proposal advance, the applicant will be required to advertise and conduct a second information meeting prior to the public hearing and consideration of the development permit.

Signage

The applicant installed an information sign in advance of the information meeting. Should the proposal advance, the applicant will be required to install a development information sign with particulars about the second information meeting and public hearing.

Public Hearing and Notification

A public hearing must be held prior to consideration of the rezoning bylaw. The recommendation herein projects that the public hearing to be held in Council Chamber on June 24, 2019. A concurrent public meeting will be held with the public hearing on the development permit. Notice of the public hearing and consideration of the development permit will be given in accordance with District procedures.

Website

In alignment with current practise, a description of the proposal, applicable dates and architectural drawings were placed on the District website and is updated.

7.3 Conditions Precedent to Adoption

Ministry of Transportation and Infrastructure approval is required on the proposed rezoning bylaw.

7.4 Other Communication, Consultation and Research

Planning staff consulted with District staff from various departments including: Engineering, Land Development, and Permits and Inspections. The applicant has worked to address each departments noted comments and is satisfied with the proposal, subject to further detailed review during the building permit phase, should the proposal be approved.

8.0 Options

8.1 Recommended Option

At the time of consideration of this report, Council may:

- a) set a date for consideration of Development Permit 18-024 and request that public notification occur and/or additional information (to be specified) be provided and available to assist in consideration of the application; and
- b) provide first reading to the amending bylaw and schedule a public hearing (recommended).

7.2 Considered Options

- a) waive development permit notification requirements and approve proposed Development Permit No. 18-024; and
- b) provide first reading to the amending bylaw and schedule a public hearing; or
- c) defer further consideration pending receipt of additional information; or
- d) reject the application.

9.0 Conclusion

Staff assessment of this rezoning and development permit application has concluded that the proposal is appropriate and supportable. Advancing the proposal will enable the applicant to proceed with an essential addition to the school that will facilitate enhanced curricular and extracurricular activities while concluding the design of the school while the parking lot will support overflow parking at the site.

Author:



Erik Wilhelm, Senior Community Planner

Concurrence



Michelle McGuire, Manager of Current Planning and Urban Design

Appendix A - Development Permit 18-024
Appendix B - Bylaw No. 4662, 2010, Amendment Bylaw No. 5021, 2019
Appendix C - Traffic and Parking Review, dated March 21, 2019

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District of West Vancouver
Proposed
Development Permit No. 18-024

CURRENT OWNER: Mulgrave Independent School Society, Inc. No. S32440

THIS DEVELOPMENT PERMIT APPLIES TO:

CIVIC ADDRESS: 2330 Cypress Bowl Lane and 2850 Wentworth Avenue

LEGAL DESCRIPTION: 029-077-842, Lot 1 District Lots 793 and 816 New Westminster District Plan EPP30215; and
029-308-461, Lot 1 District Lot 816 Group 1 New Westminster District Plan EPP40257
(the 'LANDS')

1.0 This Development Permit:

- (a) Imposes requirements and conditions for the development of the Lands, which are designated by the Official Community Plan as the Upper Lands Development Permit Area to provide for the protection of the natural environment, its ecosystems and biological diversity; provide for the protection of development from hazardous conditions; and regulate the form and character of intensive residential, multifamily and commercial development; subject to Guidelines UL8 specified in the Official Community Plan;
- (b) is issued subject to the Owner's compliance with all of the Bylaws of the District applicable to the Lands, except as varied or supplemented by this Permit; and
- (c) Amends Development Permit No. 16-001 approved by Council on July 25th, 2016.

2.0 The following requirements and conditions shall apply to the Lands:

- 2.1 Site development shall take place generally in accordance with the attached Schedule A.
- 2.2 On-site landscaping shall be installed at the cost of the Owner generally in accordance with the attached Schedule A.
- 2.3 Sustainability measures and commitments shall take place generally in accordance with the attached Schedule B.
- 2.4 The Zoning Bylaw No. 4662, 2010, PA1 zone (Public Assembly Zone 1), shall be varied to allow the building addition detailed in the attached Schedule A, as follows:
 - (a) Section 560.08 (2) is varied to increase the building height from 9.1 m maximum to 22 m maximum; and,
 - (b) Section 560.09 (2) is varied to increase the number of storeys from a 2 storey maximum to a 3 storey maximum.

- 2.5 An Environmental/Erosion Control Specialist must be retained by the Registered Owners and must have written and designated responsibility to:
- (a) order the suspension of construction involving soil disturbance on the Lands, based on pending or existing weather conditions;
 - (b) order the suspension of construction involving soil disturbance on the Lands based on unusual, unacceptable or inappropriate construction practices resulting in the introduction of silt or sediment laden waters in a District storm sewer system, stream, watercourse or onto private lands; and
 - (c) instruct the contractor engaged in the works to repair, add, delete or adjust existing or new erosion and sediment control measures as and when necessary.
- 2.6 All disturbed areas must be stabilized in a timely manner so as to avoid erosion.
- 2.7 The Registered Owner shall be responsible for maintaining, repairing, and supplementing sediment control measures, and any other works associated with this Permit, in order to ensure that the objectives of the Upper Lands Development Permit Area are satisfied.
- 3.0 Prior to issuance of a Building Permit for any building or structure on the Lands:**
- 3.1 Engineering civil drawings detailing the storm water management plan must be submitted to and approved by the District's Manager of Land Development Engineering;
- 3.2 Security for the due and proper completion of the on-site landscaping and riparian area protection measures set forth in Section 2.2 and 2.3 of this Development Permit must be provided in the amount of \$115,000 (the "Landscaping Deposit") to the District in the form of cash or an unconditional, irrevocable auto-renewing letter of credit issued by a Canadian chartered bank or credit union and:
- (a) a minimum 20% of the initial value of the Landscaping Deposit shall be retained by the District for one year after installation of the landscaping, as a warranty deposit to ensure successful installation of the landscaping; and
 - (b) the initial value of the Landscaping Deposit may only be reduced to the warranty level and the warranty shall only be released when the registered member of the BCSLA for the project provides a field report to the District confirming successful installation of the on-site landscaping in accordance with Schedule A and riparian area protection measures in accordance with Schedule B to this Development Permit; and
- 3.3 A revised Geotechnical Report to address the retaining walls and drainage previously installed for the gravel parking lot south of the school must be submitted to and approved by the District's Manager of Land Development Engineering and conform to the requirements of covenant CA3645126 registered on title.

4.0 Prior to commencing site work or Building Permit issuance, whichever occurs first, the Owner must:

- 4.1 Provide and implement a plan for traffic management during construction to the satisfaction of the District's Manager of Land Development Engineering.
- 4.2 Install tree, vegetation and Rodgers Creek protection measures as outlined in Schedule B and to the satisfaction of the District's Environmental Protection Officer.
- 4.3 Submit a "Sediment and Erosion Plan" to the District's Environmental Protection Officer for approval, which the Owner shall comply with and be responsible for maintaining, repairing and implementing the sediment control measures.

5.0 Permit Validity:

- 5.1 This Development Permit lapses if the work authorized herein is not commenced within 24 months of the date this permit is issued.
- 5.2 In the event that the on-site landscaping and riparian area protection measures are not completed as provided for in this Permit, the District may, at its option, enter upon, carry out and complete the on-site landscaping and riparian area protection measures so as to satisfy the terms of the Development Permit, and recover the costs of doing so from the security deposited or recover any costs incurred over and above the amount of the security deposited, including the costs of administration and supervision.

THE COUNCIL OF WEST VANCOUVER APPROVED THIS PERMIT BY RESOLUTION
PASSED ON

MAYOR

CORPORATE OFFICER

FOR THE PURPOSES OF SECTION 5.0, THIS PERMIT IS ISSUED ON

Schedules:

- A. Architectural drawings from Cornerstone Architecture and Surf Architecture dated February 14, 2019; and
- B. Environmental Assessment Report" from Sartori Environmental Inc., dated April 13, 2018.

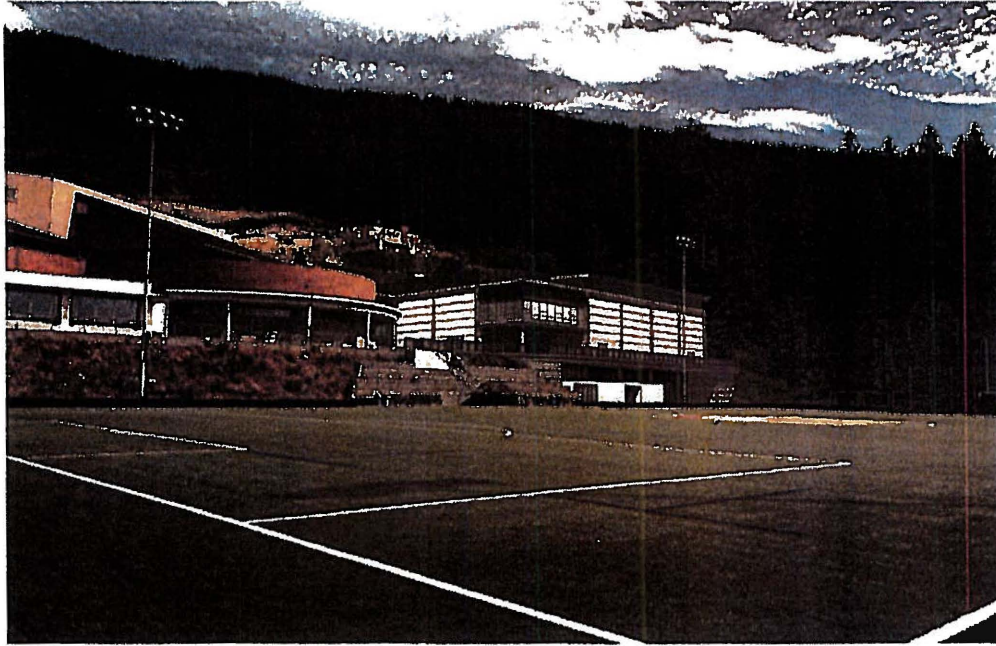
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Schedule A



**MULGRAVE SCHOOL
EAST ADDITION**

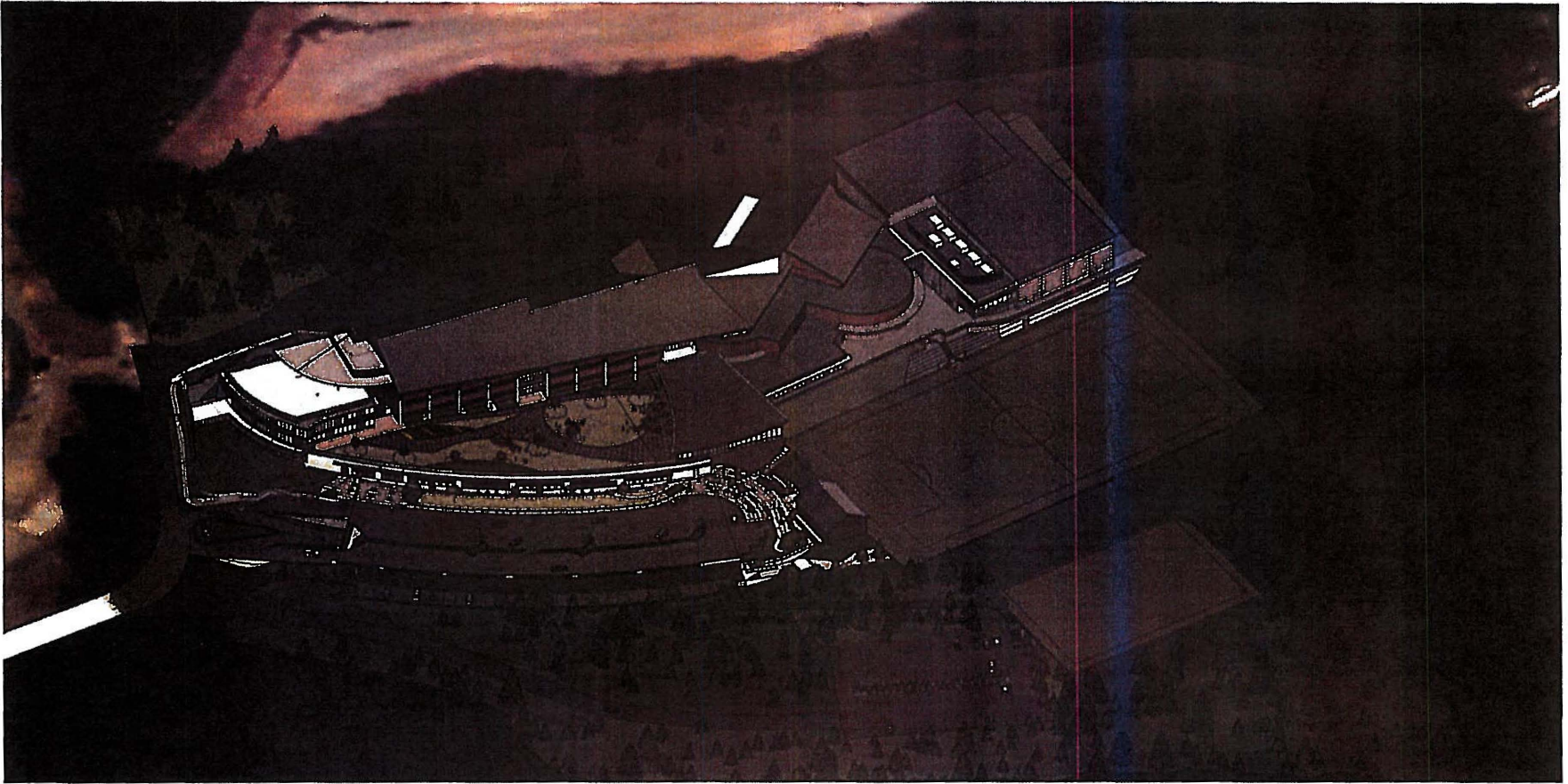
2330 Cypress Bowl Lane,
West Vancouver, BC V7S 3H9

ADDENDUM TO DP AMENDMENT

Reference to: DP 16-001

FEBRUARY 14, 2019

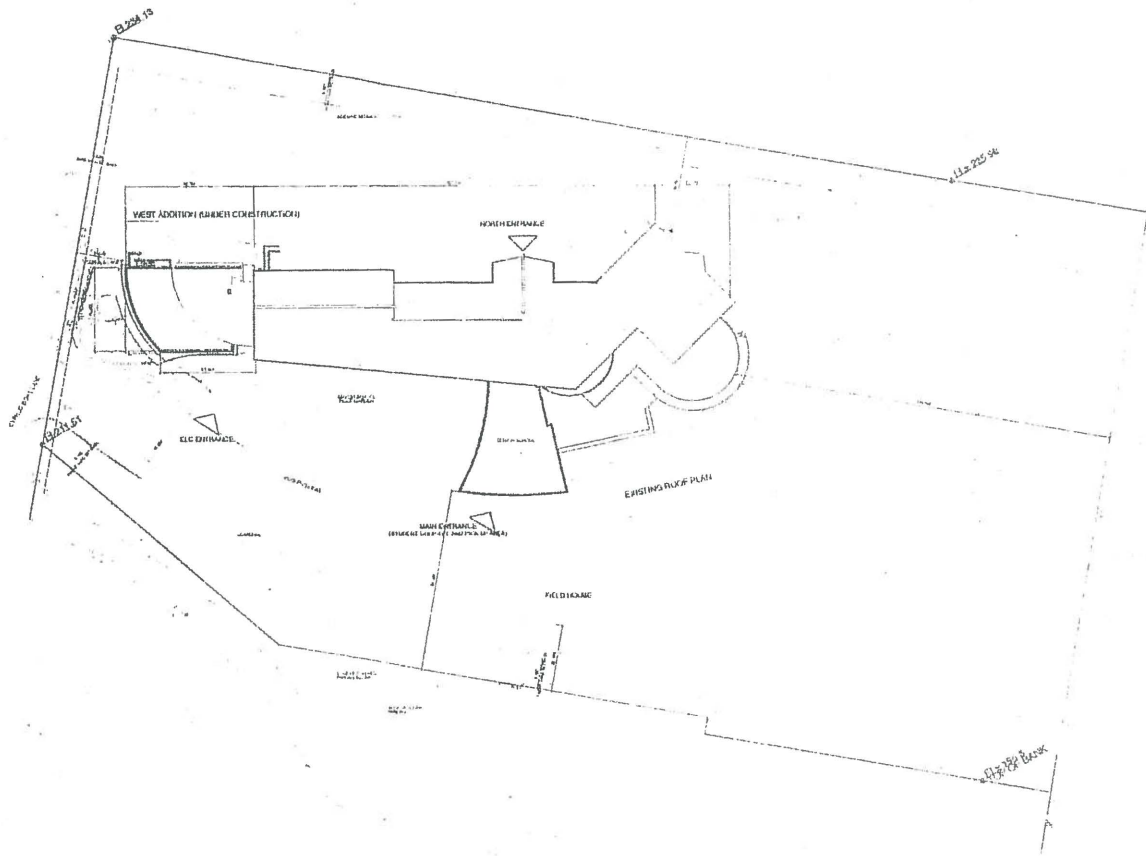
**PREFACE
PROJECT DATA AND STATISTICS
ARCHITECTURAL PLANS
BUILDING SECTIONS
BUILDING ELEVATIONS
LANDSCAPE PLANS**



AERIAL VIEW OF THE CAMPUS ILLUSTRATING THE OVERALL MASSING INCLUDING THE EAST ADDITION

FUTURE PLANNED ASPHALT PARKING AREA, DRIVE AISLE AND NEW SPORTS FIELD SHOWN SOUTH OF EXISTING SCHOOL SITE DO NOT FORM PART OF DEVELOPMENT PERMIT 18-024

CORNERSTONE architecture + SURF architecture



ALL WORK SHALL BE IN ACCORDANCE WITH THE
 BRITISH STANDARD CODES OF PRACTICE AND
 THE CANADIAN NATIONAL STANDARDS FOR
 CONSTRUCTION DOCUMENTS (CONSULT THE
 ARCHITECT FOR THE LATEST EDITIONS)
 ALL DIMENSIONS SHALL BE IN METERS UNLESS
 OTHERWISE SPECIFIED
 ALL FINISHES SHALL BE AS SHOWN ON THE
 FINISH SCHEDULE
 ALL MATERIALS SHALL BE OF THE HIGHEST
 QUALITY AVAILABLE
 ALL WORK SHALL BE SUBJECT TO INSPECTION
 AND APPROVAL BY THE LOCAL AUTHORITY
 ALL WORK SHALL BE COMPLETED WITHIN
 THE SPECIFIED PROGRAMME OF WORK
 ALL WORK SHALL BE COMPLETED WITHIN
 THE SPECIFIED BUDGET
 ALL WORK SHALL BE COMPLETED WITHIN
 THE SPECIFIED TIME FRAME
 ALL WORK SHALL BE COMPLETED WITHIN
 THE SPECIFIED QUALITY FRAME

SCALE
 DRAWN BY
 CHECKED BY
 DATE

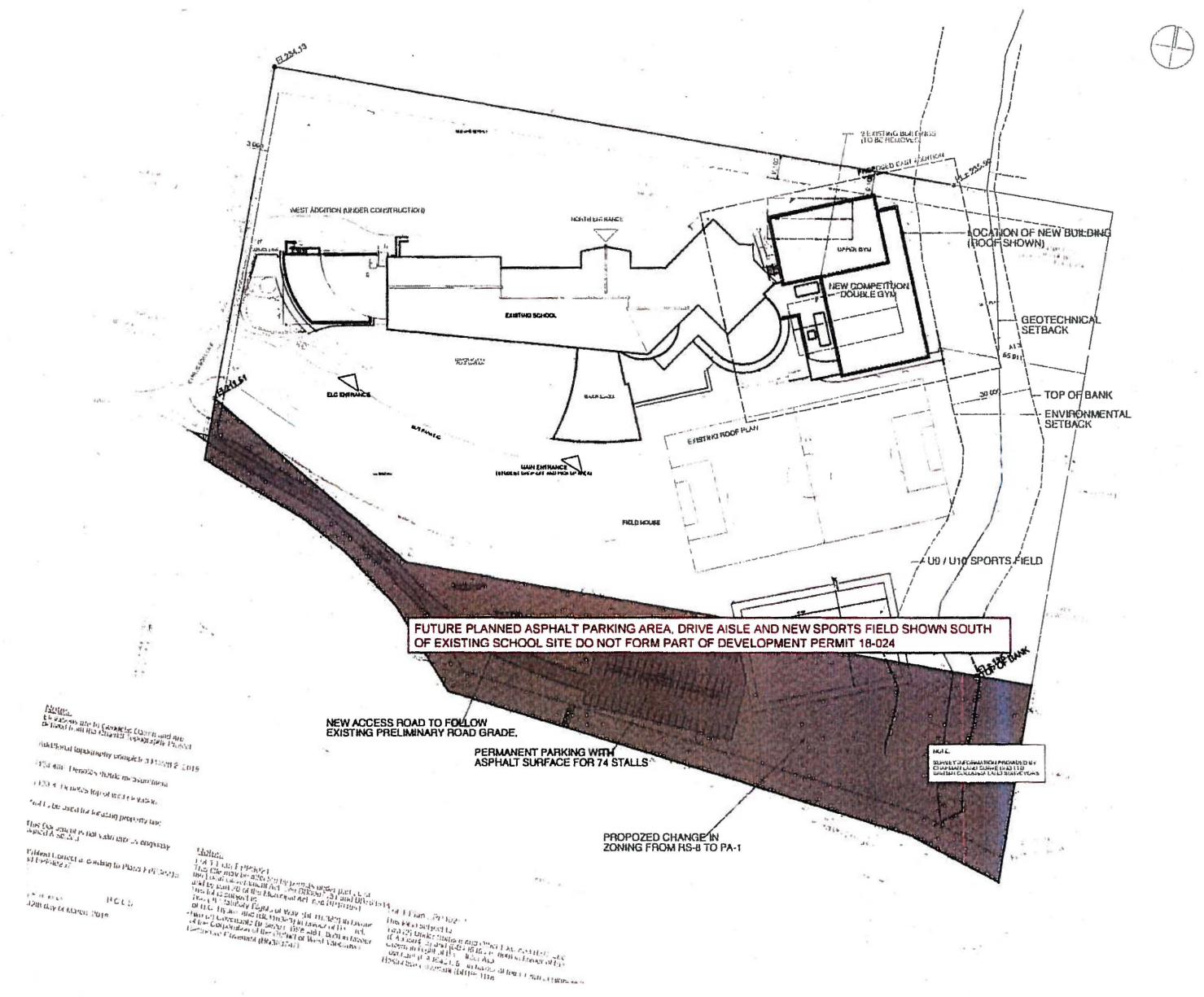
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 architecture
 +
SURF
 ARCHITECTURE

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 Vancouver, BC
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REVISION / ISSUE DATE:
PROJECT:
MULGRAVE SCHOOL
EAST ADDITION
 2030 Cypress Road Lane,
 West Vancouver, BC
DRAWING:
CAMPUS PLAN -
EXISTING

SCALE: 1:500
PLOT DATE: FEB 14, 2019
PROJECT NO.: 1811
DRAWING NO.: A1.1



Notes:
 1. See also the Civil Engineering, Electrical and Mechanical drawings for this project.
 2. All dimensions are in feet and inches.
 3. All dimensions are to the centerline of the road.
 4. All dimensions are to the face of the wall.
 5. All dimensions are to the centerline of the pipe.
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 10. All dimensions are to the centerline of the pipe.

Notes:
 1. The site plan shows the location of the proposed building and parking area.
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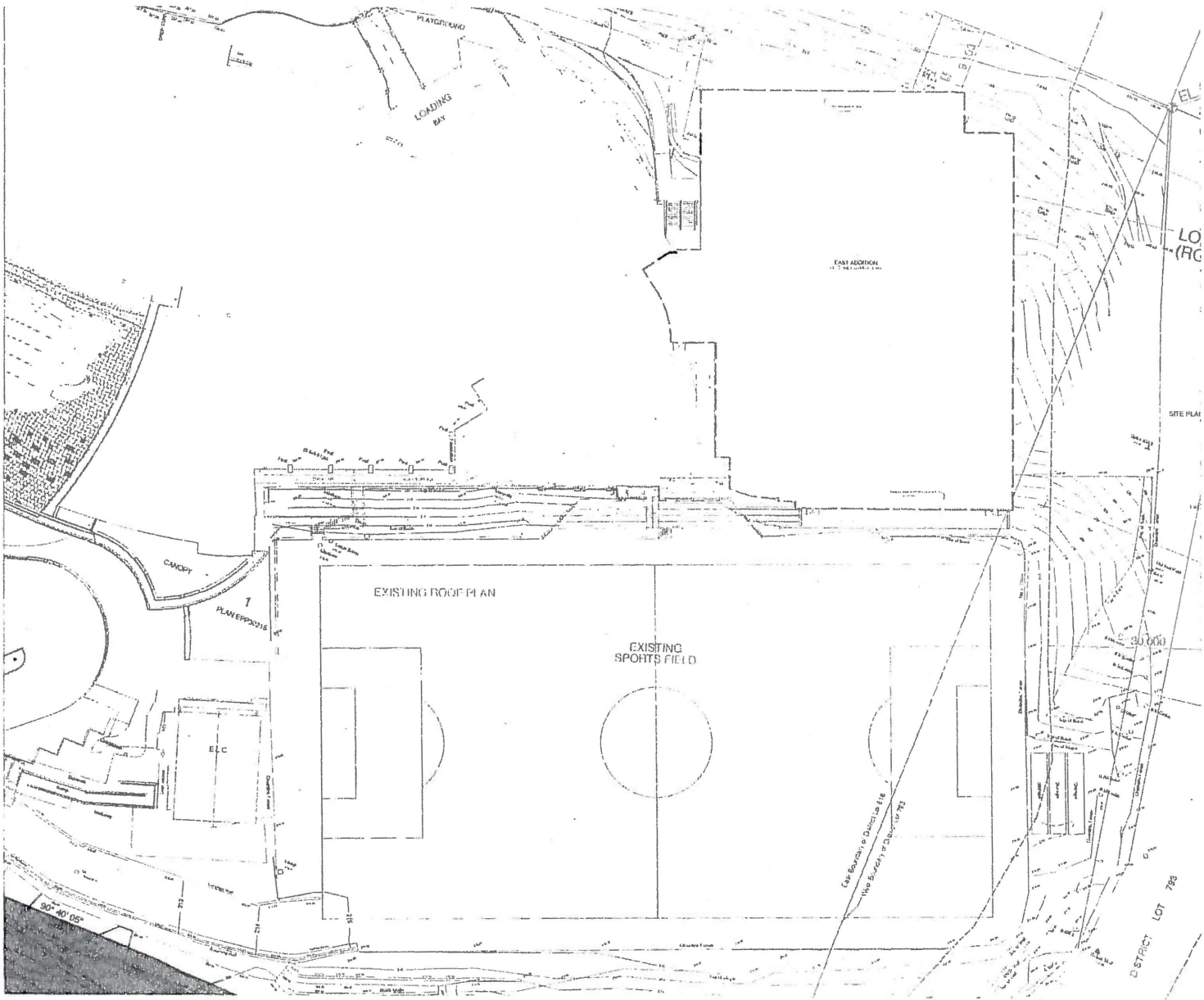
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SURF
 ARCHITECTURE

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REVISION / ISSUE DATE:
 PROJECT:
MULGRAVE SCHOOL EAST ADDITION
 2330 Cypress Bowl Lane, West Vancouver, BC
 DRAWING:
CAMPUS PLAN - PROPOSED

SCALE: 1:500
 PLOT DATE: FEB 14, 2010
 PROJECT NO: 1811
 DRAWING NO: A1.2



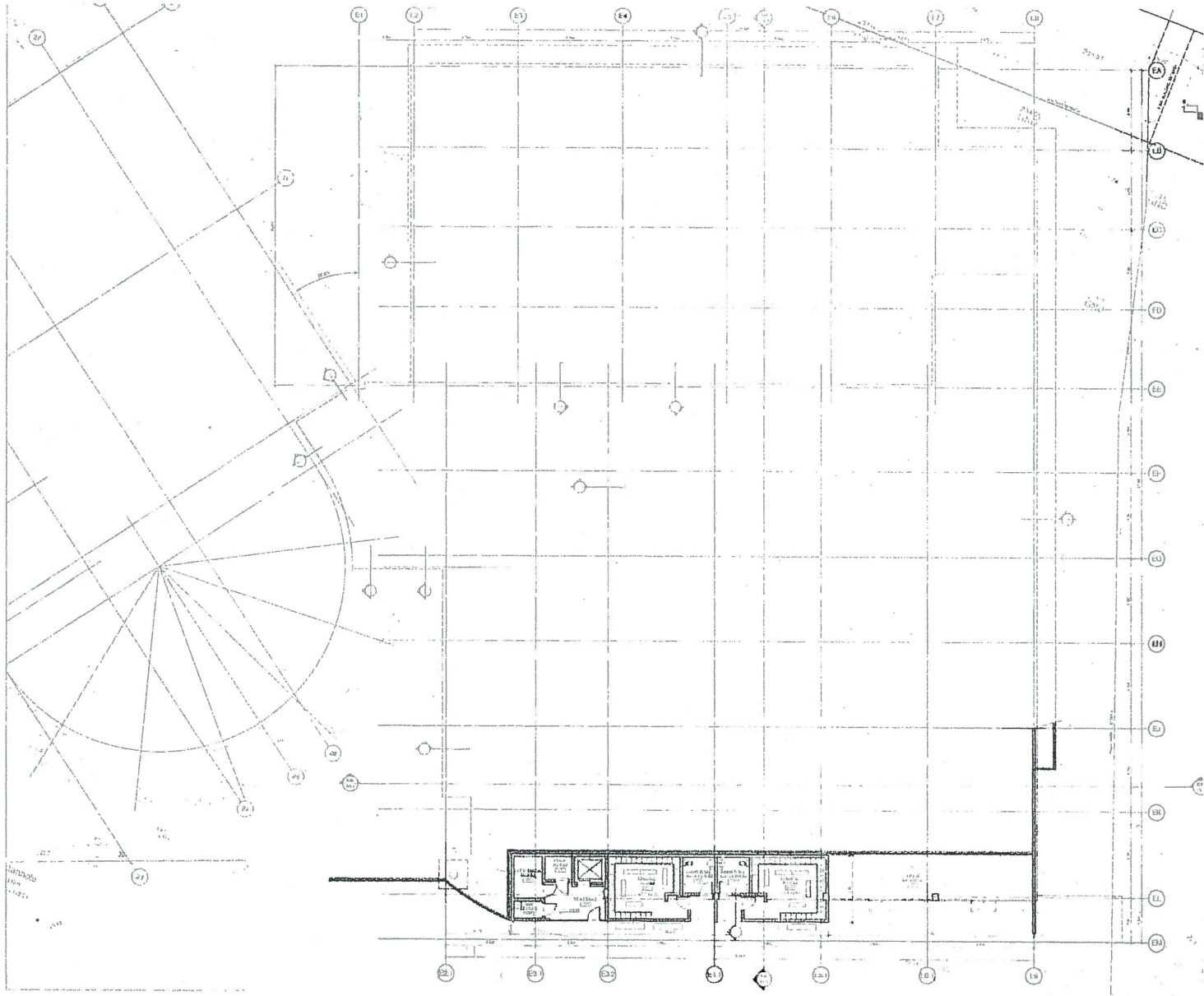
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Associated Architects
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 Mount North
 1111 St Paul
 1111 St Paul
 1111 St Paul

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REVISION/ISSUE DATE: _____
 PROJECT:
**MULGRAVE SCHOOL
 EAST ADDITION**
 2330 Cypress Mount Lane,
 West Vancouver, BC
 DRAWING:
SITE PLAN

SCALE: 1/200 (AS SHOWN OTHERWISE)
 PLOT DATE: FEB 14, 2019
 PROJECT NO. 1811
 SHEET NO. A1.3



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Associated Architects
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This is the responsibility of the Client. It is the Client's responsibility to ensure that the building is constructed in accordance with the drawings and specifications. The architects and associated architects are not responsible for any errors or omissions in the drawings and specifications. The associated architects shall be bound by the terms of the contract and shall not be liable for any damages or costs incurred by the Client as a result of the drawings or specifications prepared and issued by the Client.

REVISION / ISSUE DATE:
PROJECT:

**MULGRAVE SCHOOL
EAST ADDITION**

2330 Cypress Bowl Lane,
West Vancouver, BC

DRAWING:
**LOWER MAIN
FLOOR PLAN**

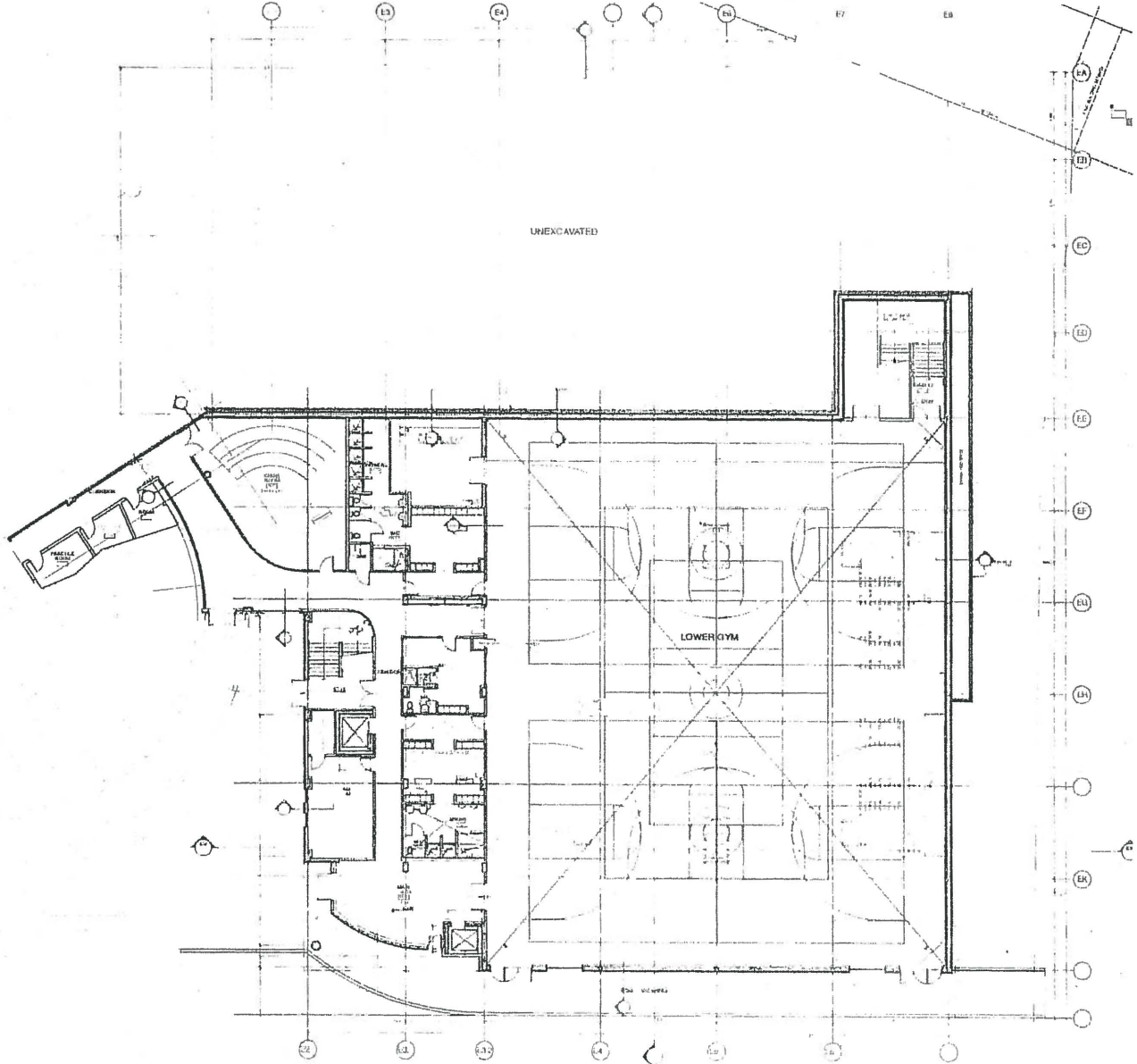
SCALE:

SCALE: 1:100 (unless noted otherwise)

PLOT DATE: FEB 14, 2019

PROJECT NO: 1811
DRAWING NO: A2.1

PROJECT NO: 1811 1:23/02/2019 (A2.1) © 2019 SURF



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REVISION / ISSUE DATE:
PROJECT:

**MULGRAVE SCHOOL
EAST ADDITION**

2330 Cypress Bowl Lane
West Vancouver, BC

DRAWING:

**UPPER MAIN
FLOOR PLAN**

SCALE:

1:100 (SEE NOTE ON DRAWING)

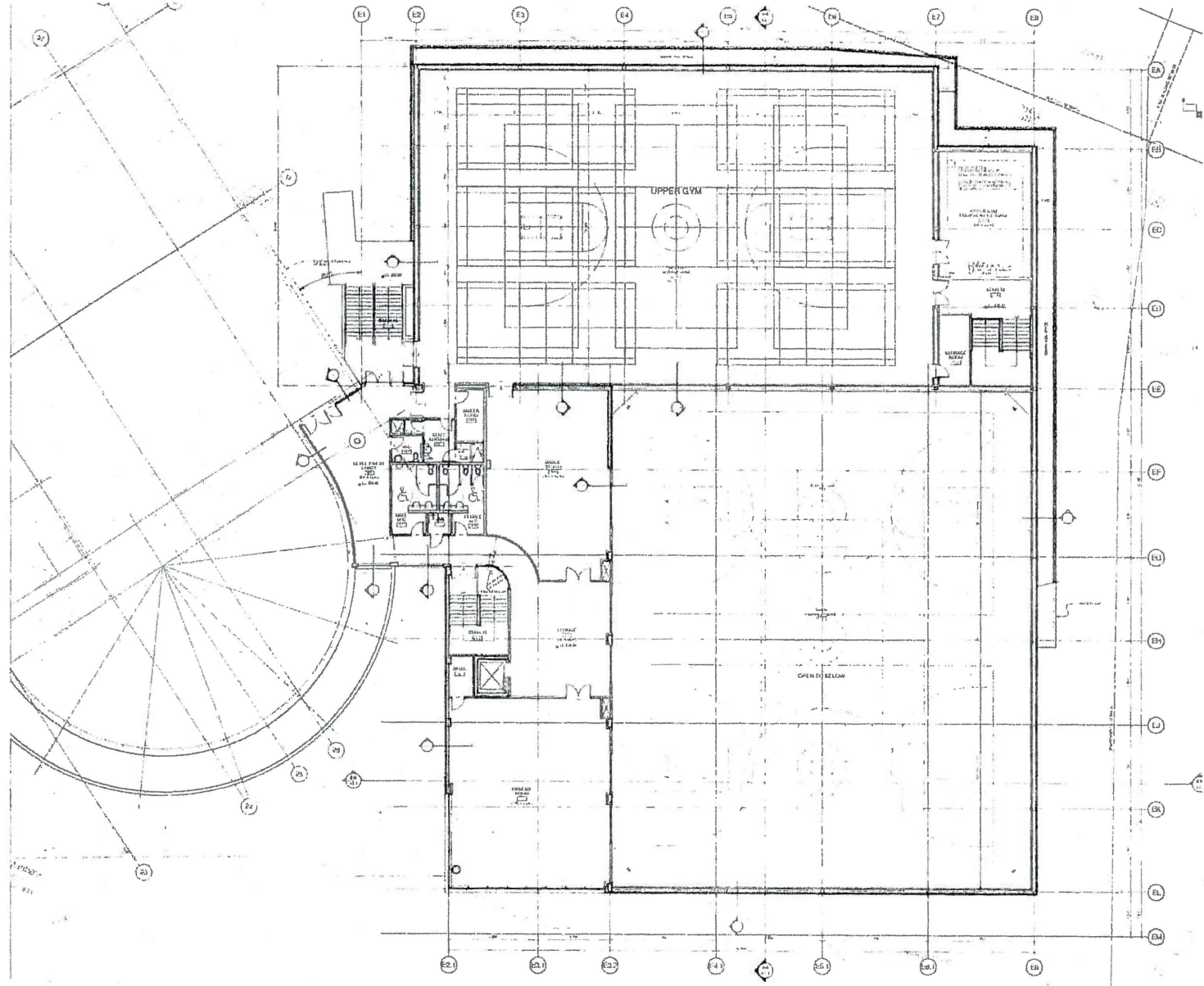
PLOT DATE: FEB 14, 2019

PROJECT NO: 1811

DRAWING NO: A2.2

1811

A2.2



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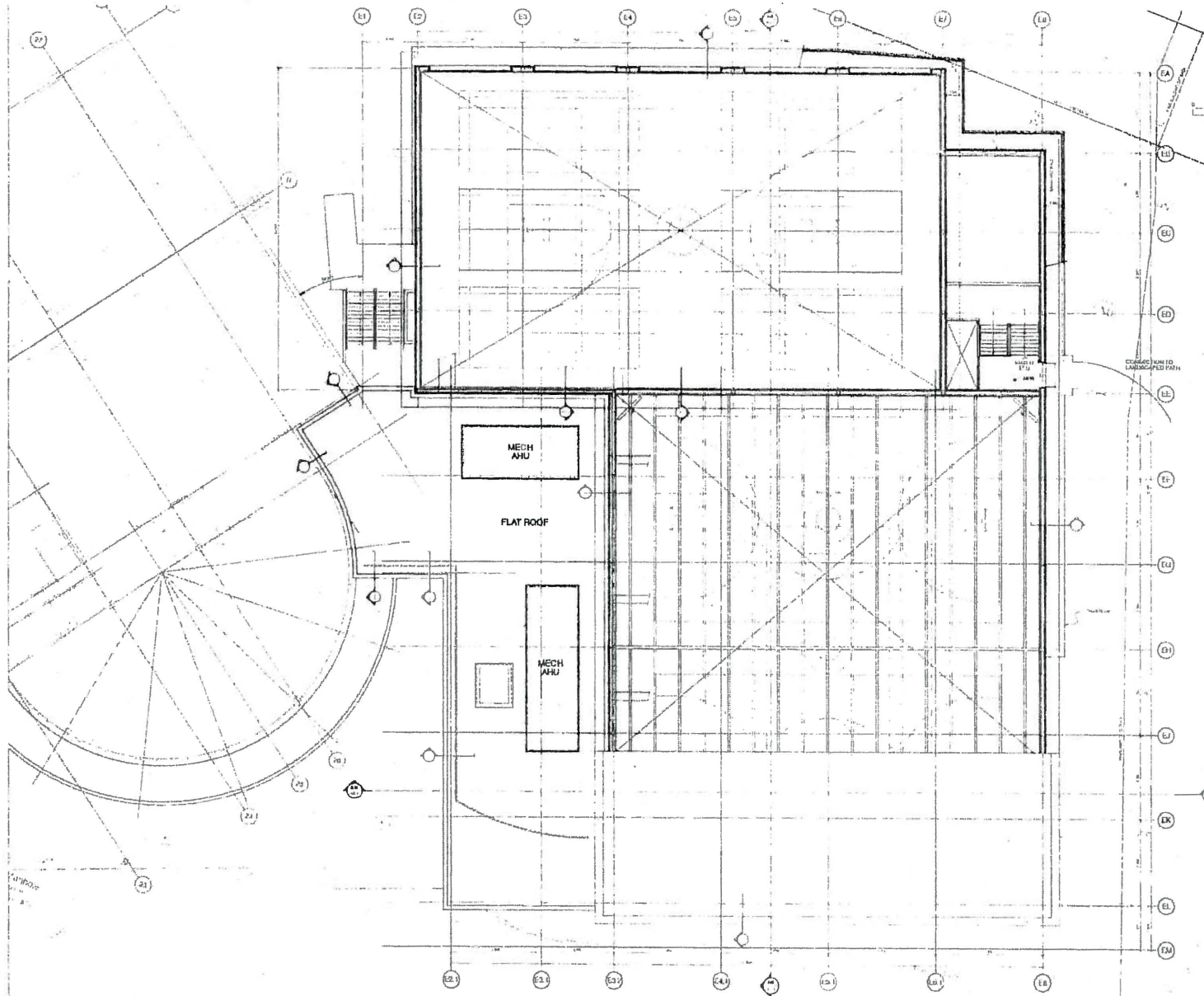
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REVISION / ISSUE DATE:
PROJECT:
**MULGRAVE SCHOOL
EAST ADDITION**
2330 Cypress Bowl Lane,
West Vancouver, BC
DRAWING:
**LEVEL 2
FLOOR PLAN**

DEAL:

SCALE 1:100 (unless noted otherwise)
PLOT DATE FEB 14, 2019
PROJECT NO. 1811
DRAWING NO. A2.3

PROJECT: 1811 - 2330 CYPRESS BOWL LANE, WEST VANCOUVER, BC



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Plan is representative of the Work. All the Contractor is responsible for review and verify all dimensions, dimensions shown. A working size contract documents between the Architect and the Contractor shall be provided as the basis of the Work. The Architect shall be responsible for providing the Work.

REVISION / ISSUE DATE:
PROJECT:

**MULGRAVE SCHOOL
EAST ADDITION**
2330 Cypress Bowl Lane,
West Vancouver, BC

DRAWING:
**LEVEL 3
FLOOR PLAN**

SCALE:

SCALE: 1/100 (unless noted otherwise)

PLOT DATE: FEB 14, 2010

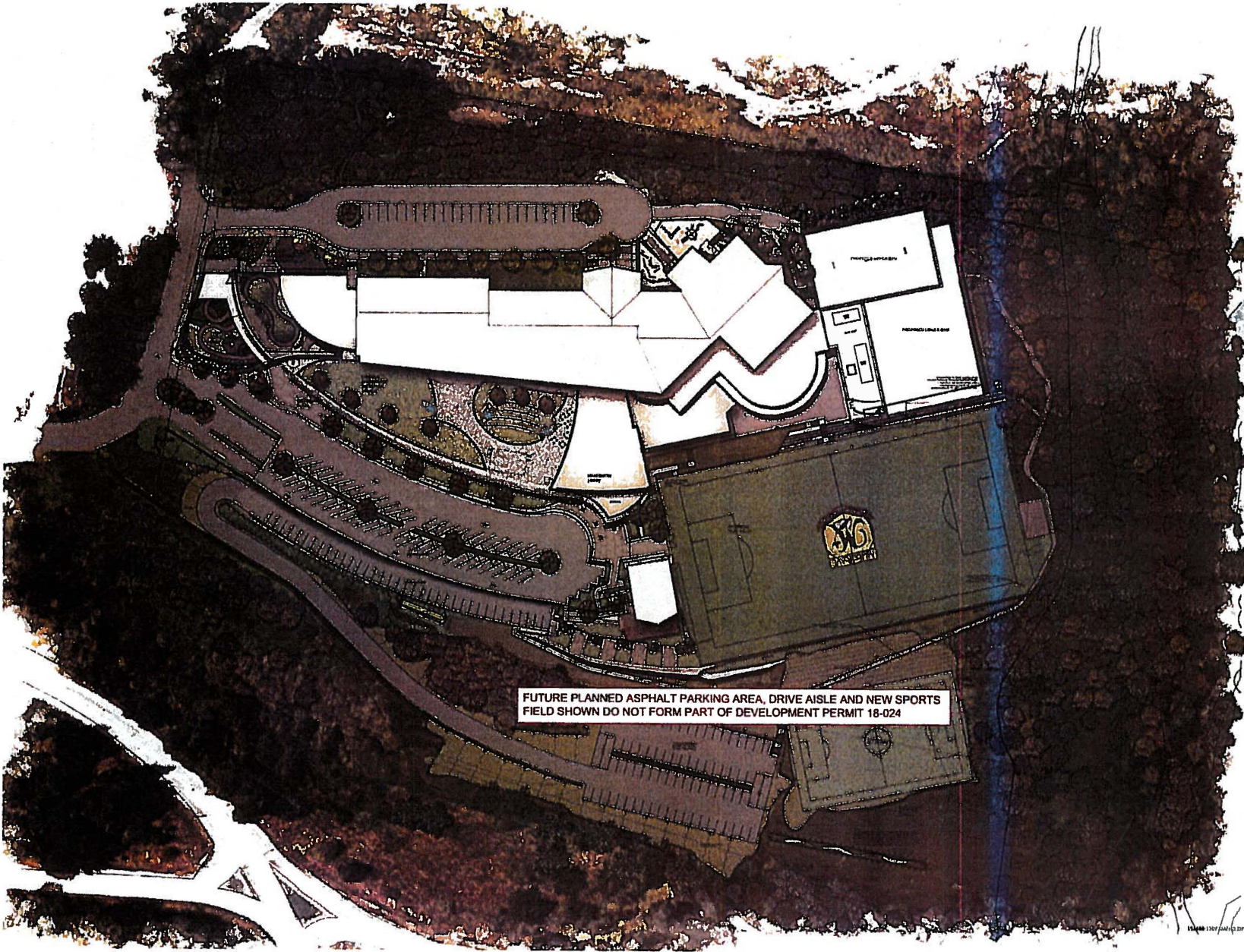
PROJECT NO.

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DRAWING NO.

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PROJECT NO. 1811 DRAWING NO. A2.4



FUTURE PLANNED ASPHALT PARKING AREA, DRIVE AISLE AND NEW SPORTS FIELD SHOWN DO NOT FORM PART OF DEVELOPMENT PERMIT 18-024

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SCALE

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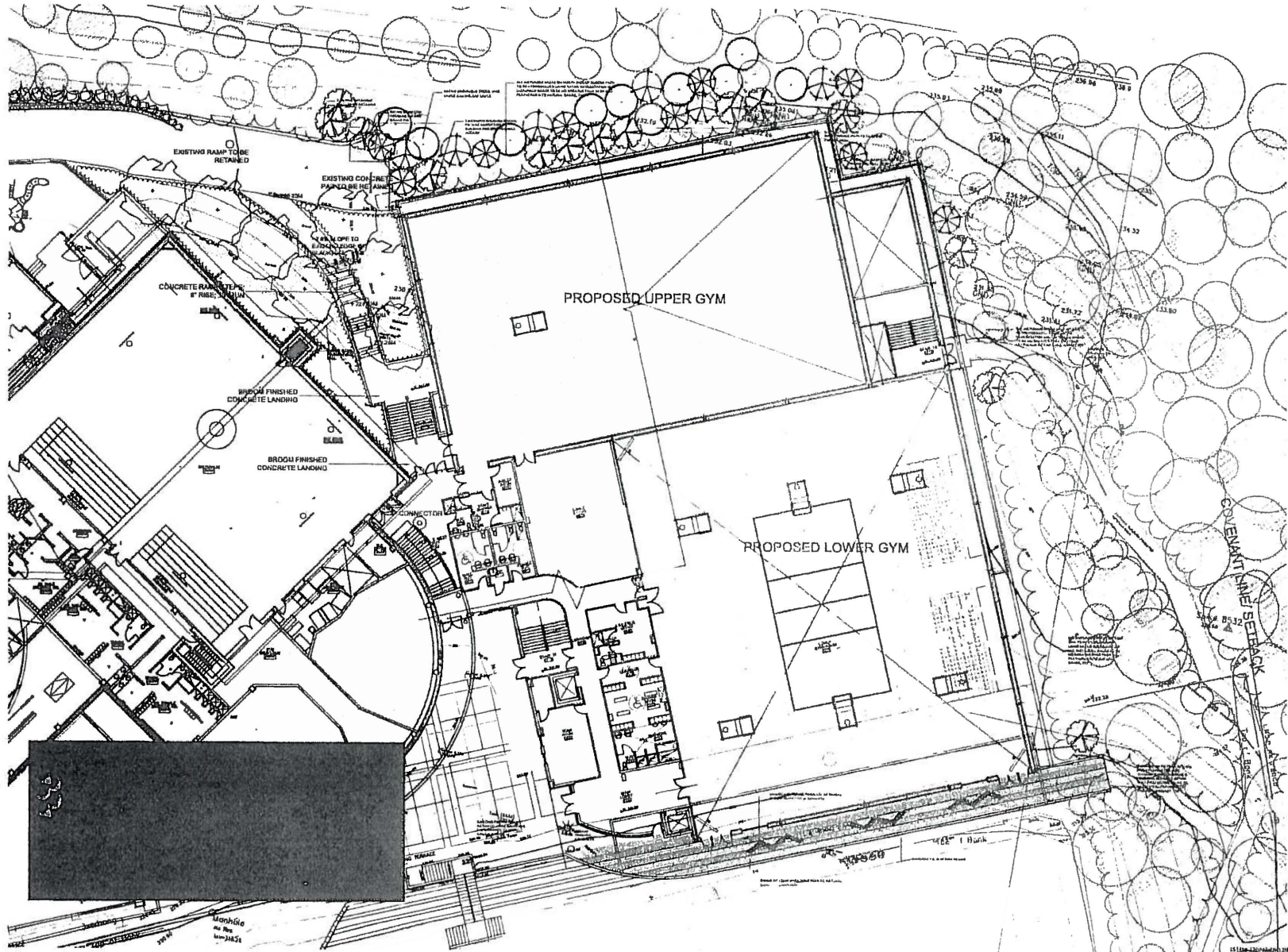
CLIENT

PROJECT
MULGRAVE SCHOOL
 CYPRESS BOWL LANE
 WEST VANCOUVER

DRAWING TITLE
LANDSCAPE PLAN - RENDERED

DATE: 13 NOV 18 DRAWING NUMBER:
 SCALE: 1:500 **LO**
 DRAWN: CW
 DESIGN: CW
 CHECK: PMB **OF 5**

PMB PROJECT NUMBER: 15-148



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SCALE:

NO.	DATE	REVISION DESCRIPTION	BY
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PAGE OF
MULGRAVE SCHOOL
 CYNNESS BOWL LANE
 WEST VANCOUVER

DRAWING TITLE:
**LANDSCAPE PLAN -
 EAST END GYM**

DATE: 12/15/11 DRAWING NUMBER:
 SCALE: 1/8" = 1'-0"
 DRAWN: CW
 DESIGN: CW
 CHECKED: PJM
 OF 5

PMG PROJECT NUMBER: 15-146

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Environmental Development Permit

April 13, 2018

Marie Maddatu
Environmental Protection Officer
District of West Vancouver
750 – 17th St.
West Vancouver, B.C. V7V 3T3

Re: 2850 Wentworth Avenue – PID: 029-308-461

Dear Marie,

Sartori Environmental Inc (SEI) has been retained by the owners of 2850 Wentworth Avenue (the "Subject Property"; Figure 1) to assess the environmental implications of existing temporary and proposed permanent construction works on the Subject Property. The Subject Property is located in the Future Neighbourhood's Development Permit Area (Policy UL8) and zoned Residential Single Family Zone 8 ("RS8 Zone"). The objective of this environmental development permit report (EDP) is to address requirements outlined in the District of West Vancouver (DWV) letter of December 19, 2017 and to conduct an environmental assessment of the Subject Property for future development and rezoning from RS8 Zone to PA1 Public Assembly Zone 1 (Schools).



Figure 1. Subject Property (WestMap 2017; accessed March 1, 2018).

Temporary works currently constructed over the Subject Property consist of vehicle access and a parking area (the "Temporary Works"). Permanent construction works currently proposed for the Subject Property will consist of a

playing field for Mulgrave School. SEI has assessed the existing and proposed development compliance with the UL8 Guidelines based on pre-construction conditions of the Subject Property defined herein, existing site conditions (e.g. Temporary Works), and proposed permanent works. The EDP is organized into the following sections: regulatory conditions and approach, site conditions (pre-existing and existing), proposed permanent development, environmental protection recommendations, and an evaluation of compliance to DWV Guidelines (including UL8 Guidelines).

1. Regulatory Conditions and Approach

As part of this environmental assessment the environmental regulatory framework guiding present and future development of the Subject Property was reviewed. A summary of each of the pertinent environmental regulatory policy guidelines and bylaws are summarized within this section. The approach of this environmental assessment is as follows: to assess the environmental conditions of the Subject Property (pre-existing and existing) and the proposed future Subject Property development in the context of the environmental regulations guiding development in DWV. Where appropriate, SEI has identified environmental recommendations for the Subject Property to ensure Temporary Works and proposed future development meet the intent of the DWV environmental regulations for development.

UL8 Policy Guidelines

Lands are designated under policy UL8 due to special conditions such as difficult terrain, sensitive environmental conditions, numerous watercourses, and the need to coordinate the provision of various public services and facilities, including road and transit. This assessment will identify impacts of development on the site as they relate to sensitive environmental conditions (including watercourses) and provide recommendations regarding how the site's natural features will be protected. Site conditions relating to difficult terrain and the provision of public services and facilities (including road and transit) are not assessed in this report. The assessment consists of the identification of natural features to be retained and protected, recommendations for site development to minimize disturbance, and plans for site restoration of disturbed areas.

Watercourse Protection Bylaw 4364, 2005/ Creeks Bylaw No. 3013, 1982

The DWV Watercourse Protection Bylaw 4364, 2005 applies to all public or privately-owned land and identifies requirements for ensuring that watercourses are protected during development works; whereby, no obstruction, impedance or fouling of a watercourse system is permitted. This bylaw requires that construction projects follow an erosion and sediment control (ESC) process. This assessment identifies ESC measures and/or requirements, where appropriate, for Temporary and Proposed works.

The Creeks Bylaw No. 3013, 1982 regulates development adjacent to streamside protection areas; whereby, creek fouling is not permitted, and construction, removal or deposition of materials within a streamside protection area requires permission from the District. The Subject Property streamside protection area is defined as 30-m from top of watercourse bank under current zoning (Future Neighbourhood's Development Permit Area Policy UL8). This assessment delineates streamside protection setbacks for the Subject Property, identifies development that will interface with the streamside setbacks (existing Temporary or permanent Proposed works), and prescribes streamside protection measures for those works, where appropriate.

Interim Tree Bylaw No. 4892, 2016

The Interim Tree Bylaw regulates the cutting of trees on privately owned land. Under this bylaw trees identified for protection include any tree species located within 15-m of watercourse top of bank, species 75 cm in diameter or larger, or Arbutus and Garry oak trees 20 cm in diameter or larger, measured 1.4 meters from the ground. Any tree removal proposed as part of subject property development must be in adherence of the Interim Tree



Protection Bylaw and will require the retention of appropriate tree cutting permits and a certified arborist to provide a tree assessment.

2. Site Conditions and Works

The Subject Property is located north of the Upper Levels Highway westbound exit 8 turnoff. It is bordered by Chelsea Close Park along its east property line, Mulgrave School along its north property line, and highway right-of-way to the south and west. A tributary to Pipe Creek is located west of the Subject Property and Rodgers Creek is located east of the subject property. Both watercourses are located off-property and flow in a southerly direction. The Subject Property is accessed from Cypress Bowl Lane from the west.

2.1 Pre-Existing Conditions

SEI was unable to determine pre-existing conditions of the Subject Property in the field prior to the installation of the Temporary Works (driveway and parking area). The pre-existing site conditions defined herein are based on available records and consist of: Chapman Land Surveying subject property 2015 survey, District of West Vancouver 2016 Orthophotos, 2016 Orthophotos collected on behalf of the applicant, review of drawing 12124 D-3 and 16502 R-3 from Creus Engineering Ltd and discussions with Creus Engineering Ltd. SEI is of the understanding that works associated with clearing, fill placement, and associated site drainage works along the east side of the Subject Property were completed prior to the Temporary Works installation and represent pre-existing site conditions. The attached Drawing 1 shows pre-existing site conditions of the Subject Property based on 2015 land survey and 2016 orthophoto of the Subject Property.

Pre-existing site conditions consisted of a gravel access road east off-of Cypress Bowl Lane that extends east through the Subject Property and abuts the fill placement area (Road-1). A second road extends onto the Subject Property from Mulgrave School (Road-2). Road-2 is gravel and extends eastwards parallel to the north property line; the Road-2 and its associated structures are located entirely outside of the 30-m riparian setback of Rodgers Creek. Within the Subject Property Road 2 is delineated by lock blocks. Within the fill placement area there is a sediment pond located within the 30-m setback from top of bank of Rodgers Creek. Outflows from the sediment pond were directed westward away from the riparian area through a gravel-lined ditch for discharge along the west side of the fill slope.

Pre-existing site vegetation assessment is limited to review of 2016 DWV orthophotos and is of limited resolution. West of the fill placement area vegetation consists of mixed forest dominated by deciduous trees and low-lying shrubs. East of the fill placement location vegetation consists of second-growth conifer dominated forest associated with Rodgers Creek riparian habitat. Environmental features assessed as part of this EDP for the Subject Property are described below. The fill slope area shows minor recruitment of vegetation; however, appears to be primarily exposed surface fill material.

Rodgers Creek

Rodgers Creek is located east of the Subject Property. Rodgers Creek right top of bank and 30-m riparian setback is located through the east side of the Subject Property. The right bank of Rodgers Creek is steeply sloped and is approximately 40 m from the high water mark of Rodgers Creek. Rodgers Creek (Watershed Code: 900-072300) is a 3.18 km long stream with a stream order of one and stream magnitude of one (MoE HabitatWizard accessed: February 27, 2018). Fish presence documented in Rodgers Creek includes Chum salmon (*Oncorhynchus keta*) and coho salmon (*O. kisutch*) observed near its confluence with Burrard Inlet approximately 1.6 km downstream from the Subject Property. There are two documented barriers to fish movement located downstream of the Subject

Property that are anticipated to limit fish access to upstream habitat. Based on historical fish salvages in the vicinity, no fish presence was observed upstream of Highway 1.

Tributary to Pipe Creek

A tributary to Pipe Creek is located west of the Subject Property. The 30-m riparian setback from top of bank for the tributary to Pipe Creek does not encroach within the Subject Property. Subject Property stormwater drainage along the westernmost sections of the property may discharge into the tributary to Pipe Creek off-property. Riparian setbacks of this watercourse do not extend into the Subject Property boundaries.

Drainage-1

Drainage-1 is located at the northeast corner of the Subject Property and functions to convey site drainage from the Subject Property to Rodgers Creek. Drainage-1 collects stormwater runoff from installed storm infrastructure, underneath of the fill material location, and conveys flow within an approximately 45 m long ditch due east prior to discharging into Rodgers Creek. Pre-existing conditions of Drainage-1 were not completed by SEI.

2.2 Existing Conditions

SEI visited the Subject Property on February 19, 2018 and March 21, 2018. During the site visit SEI conducted field reconnaissance of the entire Subject Property to identify/confirm sensitive environmental features on site and confirm the extent of the existing Temporary Works. Drawing 2 shows the 2018 survey of the Subject Property, including the Temporary Works, and delineates watercourse protection setbacks. With the exception of the Temporary Parking Lot footprint, the remainder of the Subject Property existing conditions remain unchanged from site conditions described in Section 1.1.

A portion of the Temporary Works, associated with the temporary parking lot, encroaches within the 30-m riparian setback of Rodgers Creek (~ 326 m²). The entire Temporary Works footprint is located over surfaces associated with pre-existing earthworks excavation and grading. The Temporary Parking Lot and associated approach road ("Road-2"; enters the Subject Property along its north property boundary) consist of gravel surfaces. The closest structure associated with the Temporary Parking lot is located 19.6 m from Rodgers Creek top of bank. Sections of the Temporary Works fill slope, including slopes adjacent to the Rodgers Creek riparian setback, are exposed and SEI identified active erosion. Within Rodgers Creek streamside protection setback area remnant ESC structures (silt fence) were observed.

Drainage-1 flows discharge from a headwall structure at the base of the east side of the fill slope and conveys stormwater from the Subject Property to Rodgers Creek. At the time of assessment, Drainage-1 was dry. Exposed and deteriorating geotextile fabric was observed within the upstream 30-m of Drainage-1 and substrates largely consisted of cobble and gravels. The bankfull width of the channel is approximately one meter in length and the channel gradient is steep (>25%). Large woody debris was observed throughout the channel. It is anticipated that Drainage-1 flows intermittently throughout the year.

Open-channel stormwater conveyances observed on the Subject Property included: Drainage-1, Storm-1, Storm-2, and Storm-3. Storm-1 conveys stormwater flows from the upslope property through a pipe that outlets to the fill slope and discharges into a west-flowing ditch-line along the southern property perimeter. Storm-2 is a road ditch that collects flow seepage along the upslope side of Road-1 in the center of the Subject Property and flows in a westerly direction off the Subject Property. Storm-3 is a shallow ditch located at the upslope side along the western extent of Road-1. These open-channel conveyances were created by historical development and function primarily as flow conveyance corridors for stormwater from upslope lands and roadways.

Native species identified on and adjacent to the Subject Property include but are not limited to the following species:

- Trailing blackberry (*Rubus ursinus*)
- Salmonberry (*Rubus spectabilis*)
- Bigleaf Maples (*Acer macrophyllum*)
- Red alder (*Alnus rubra*)
- Salal (*Gaultherion shallon*)
- Clover sp. (*Trifolium sp.*)
- Sword fern (*Polystichum munitum*)
- Western red cedar (*Thuja plicata*)
- Douglas Fir (*Pseudotsuga menziesii*)
- Western hemlock (*Tsuga heterophylla*)
- Bracken fern (*Pteridium aquilinum*)

Conifer dominated stands are located within the riparian setback from Rodgers Creek and along the southeast boundary of the Subject Property. West of the fill slope the forest stand becomes dominated by deciduous trees predominantly red alder (*Alnus rubra*). Wildlife trees are present throughout the riparian corridor adjacent to Rodgers Creek and provide suitable habitat to a variety of resident wildlife. The placement of fill material within and adjacent to the 30-m riparian setback of Rodgers Creek has created edge habitat between site development and riparian habitat. The edge habitat boundary has the potential to promote the recruitment of invasive species to the development site and adjacent riparian areas. Non-native and invasive species observed on and adjacent to the Subject Property include the following:

- English Ivy (*Hedera helix*)
- Yellow Archangel (*Lamium galeobdolon*)
- Butterfly Bush (*Buddleja davidii*)
- Scotch Broom (*Cytisus scoparius*)
- Common burdock (*Arctium minus*)
- Broadleaf dock (*Rumex obtusifolius*)
- Himalayan Blackberry (*Rubus armeniacus*)

2.3 Proposed Development

Proposed development on the Subject Property consists of the conversion of the Temporary Parking lot area into a permanent playing field for Mulgrave School. The footprint of the permanent playing field will be over the same footprint extents of the existing Temporary Parking lot (See Drawing 3). The closest structure associated with the permanent playing field is located 19.6 m from Rodgers Creek top of bank. The permanent playing field surfaces/structures will consist of artificial turf surface, lighting for the playing field and parking lot areas, and edging around the field area consisting of hard surfaced material (paving stone or concrete). All proposed future structures within the 30-m riparian setback will be over existing fill placement areas. Playing field installation equipment, materials, and machinery will access the works area from the existing access Road-2 south from Mulgrave School. Minor fill placement works will be required; however, all fill placement is located entirely outside of the 30-m setback from Rodgers Creek top of bank. No equipment or machinery use from within 15-m of Rodgers Creek top of bank will be required to install the permanent playing field.

3. Environmental Recommendations

The following environmental recommendations are provided for the Subject Property to ensure that existing site conditions and proposed future works are in accordance with the District of West Vancouver UL8 Guidelines and environmental protection bylaws.

3.1 Recommendations for Existing Site Conditions:

- Install permanent riparian protection fencing within the Rodgers Creek streamside protection setback as specified in Drawing 3 to deter human encroachment.
- Plant/seed all exposed fill-slope areas in Spring 2018 with a suitable invasive species free seed mix or native riparian suitable plant species (April – June) to prevent erosion along these slopes and prevent the establishment of invasive vegetation to these areas.
- Remove all non-functional ESC measures located within the Rodgers Creek Streamside Protection setback area and dispose of at an appropriate disposal facility.
- Remove invasive species that have established along the edge habitat created within the Rodgers Creek streamside protection setback area (Drawing 3).
- Implement native riparian planting as per Drawing 3 to offset that portion of the Temporary Parking lot footprint located within the 30-m riparian setback and to provide additional vegetative buffer between edge and riparian habitat.

3.2 Recommendations for Proposed Site Works:

- All future development works should be conducted based on a stormwater management plan developed by a qualified Engineer for the Subject Property.
- Retain a certified arborist to conduct an arborist report of tree health and provide appropriate recommendations for trees located within the streamside protection area of Rodgers Creek prior to any tree removal. All tree removal must be conducted under a DWV tree removal permit and in accordance with recommendations from a certified arborist.
- The applicant should retain a certified arborist to conduct a Hazard Tree assessment of those trees within the Rodgers Creek streamside protection area that pose a safety risk to human safety or infrastructure.

Construction Mitigation Measures - Erosion and Sediment Control

Due to the proximity of proposed works to Rodgers Creek, Drainage-1, and the steep slope gradients of the site, an Erosion and Sediment Control (ESC) Plan should be developed for maintenance of ambient water quality during the proposed work activities. Information pertaining to location and details of silt fencing, site drainage management and treatment, access/egress route armoring, catch basin protection, tree protection, and dewatering should be included, as appropriate. It is anticipated that the proposed works will not require extensive earthworks or concrete works – in the event these works are required additional ESC mitigation measures should be implemented. At a minimum, the following ESC measures should be implemented during the proposed works:

- Machinery access and truck loading should be limited to prepared rock/gravel access and/or existing paved driveway areas only.
- If significant trucking is expected, sweeping should be conducted on affected areas of Cypress Bowl Lane to recover any fines tracked onto the road.
- Catch basin protection (silt sacks) should be installed on adjacent catch basins and maintained regularly to ensure proper functioning.
- All import material must be clean, inert, and free of contamination.

Prior to issuance of a building permit by the DWV, the owner and/or developer will be required to engage an appropriately qualified ESC supervisor to monitor compliance with the approved ESC Plan as well as requirements of the DWV Watercourse Protection Bylaw 4364, 2005. As a requirement, ESC inspections are set based on the following schedule:

- Biweekly inspections 1 June – 30 September (dry season),
- Weekly inspections 1 October – 31 May (wet season), and



- o As required during or immediately following precipitation events exceeding 20 mm within 24 hours.

It is the responsibility of the owner and/or developer to contact their ESC supervisor prior to commencing earthworks, construction, or any other activities of ground disturbance. It is recommended that a preconstruction meeting be held to ensure that the contractors are aware of the ESC requirements.

4. Conclusions

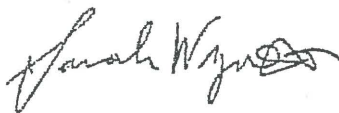
SEI assessed the Subject Property to review the impacts of existing development associated with a Temporary Parking Lot and proposed permanent playing field partially located within a 30-m setback of Rodgers Creek right top of bank and 15-m of Drainage-1. Upon review of habitat impacts associated with existing and proposed development at 2850 Wentworth Avenue, West Vancouver, BC, it is the opinion of SEI that existing and proposed works pose no significant risk of Serious Harm to Commercial, Recreational, or Aboriginal (CRA) fisheries as defined by Sec. 35(1) of the Canada *Fisheries Act* provided that best management practices are implemented as described herein. The following is a summary of Temporary and proposed works as they relate to the Subject Property watercourse setbacks.

- o The existing and proposed development is situated on pre-existing fill placement areas with no new structures proposed within the 15-m setback of watercourse top of bank of Rodgers Creek. Within the 30-m setback of Rodgers Creek, the replanted riparian area (365 m²) will be greater than the area impacted by structures within the 30-m setback (325 m²).
- o The closest structure to Rodgers Creek top of bank associated with the existing Temporary Parking lot and the proposed permanent playing field is located 19.6 m from watercourse top of bank of Rodgers Creek and 8-m from top of bank of Drainage-1.
- o No new buildings, structures, or impervious/semi-impervious surfaces are proposed within the 19.6-m of Rodgers Creek top of bank or within 8-m of the Drainage-1 headwall structure.
- o The implementation of the Riparian Planting Plan will serve to increase the buffering capacity of the riparian area to the watercourse, prevent invasive species encroachment, and provide additional habitat for local flora and fauna suited to native riparian conditions.
- o The implementation of the Riparian Planting Plan surface stabilization planting/seeding will function to mitigate erosion and the potential for invasive species recruitment to fill slope exposed surfaces within the Rodgers Creek 30-m setback from top of bank.

Please contact the undersigned if you require any additional information or clarification of the above.

Sincerely,

Sartori Environmental Inc



Sarah Wyness, R.P.Bio.

(3) Attachments

- Drawing 1 Pre-Existing Conditions
- Drawing 2 Existing Conditions
- Drawing 3 Proposed Works



106-185 Forester Street, North Vancouver, BC V7H 0A6
Tel 604.987.5588 Fax 604.987.7740
Email info@sartorienv.com
www.sartorienv.com

5. Photodocumentation

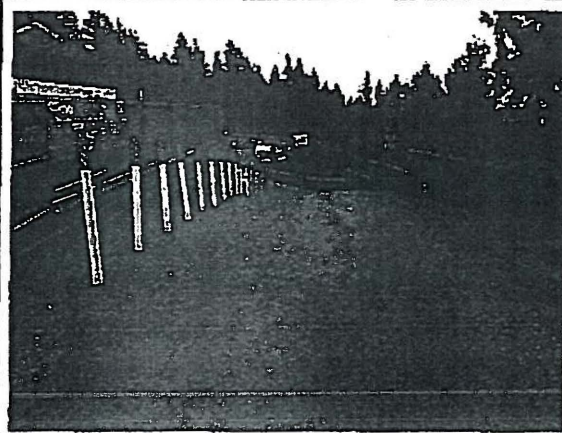


Photo 1. Road-2 approach onto the Subject Property from Mulgrave School; gravel surfaced (2018.03.21).

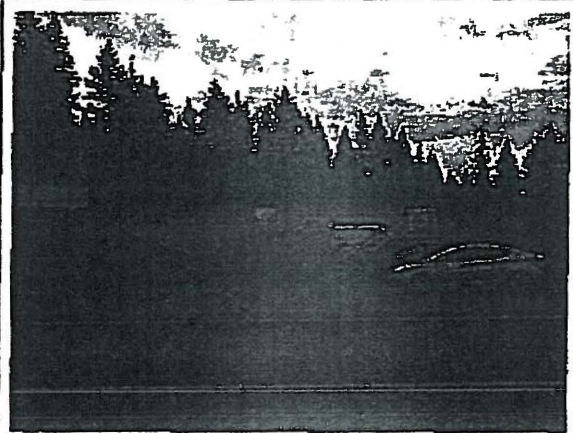


Photo 2. Temporary Works consisting of Temporary Parking lot; gravel surfaced (2018.03.21).



Photo 3. Drainage-1 from the Subject Property; looking downstream (2018.03.21).

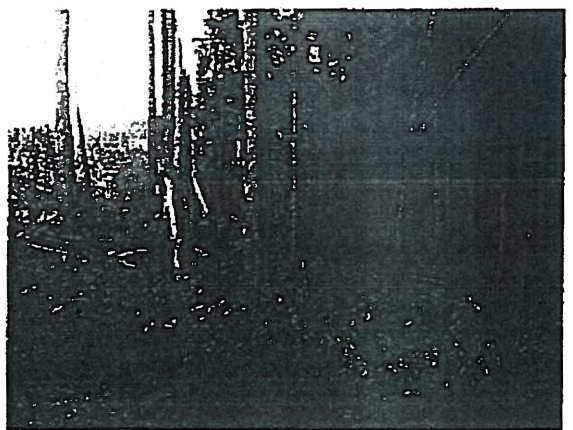


Photo 4. Riparian habitat adjacent to Rodgers Creek right bank above top of bank (2018.03.21).

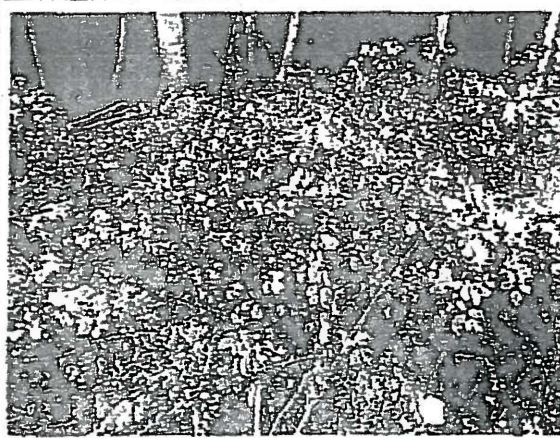


Photo 5. Invasive species recruitment within Rodgers Creek 30-m setback; Himalayan Blackberry. Remnant ESC measures identified and non-functional (2018.03.21).

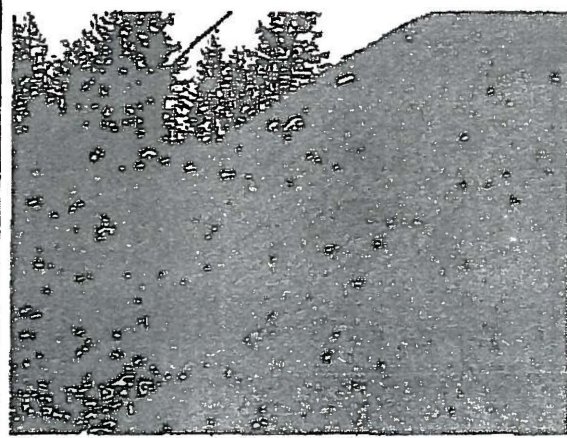


Photo 6. Exposed fill slope adjacent to and within the 30-m setback from Rodgers Creek top of bank; rilling soil erosion identified (2017.06.01).



Photo 7. Looking at existing dwelling located within the 15-m setback; includes paver driveway and surfaces and garage (2018.03.21).

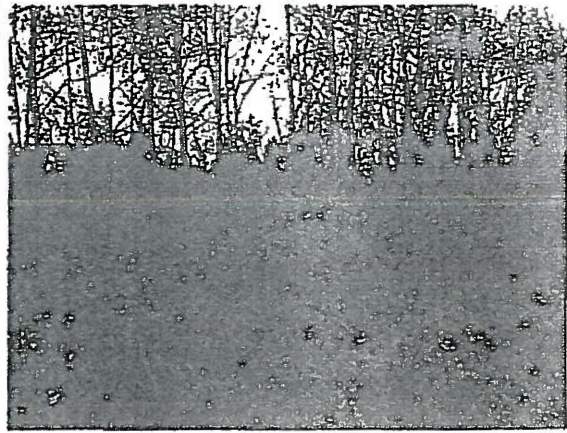
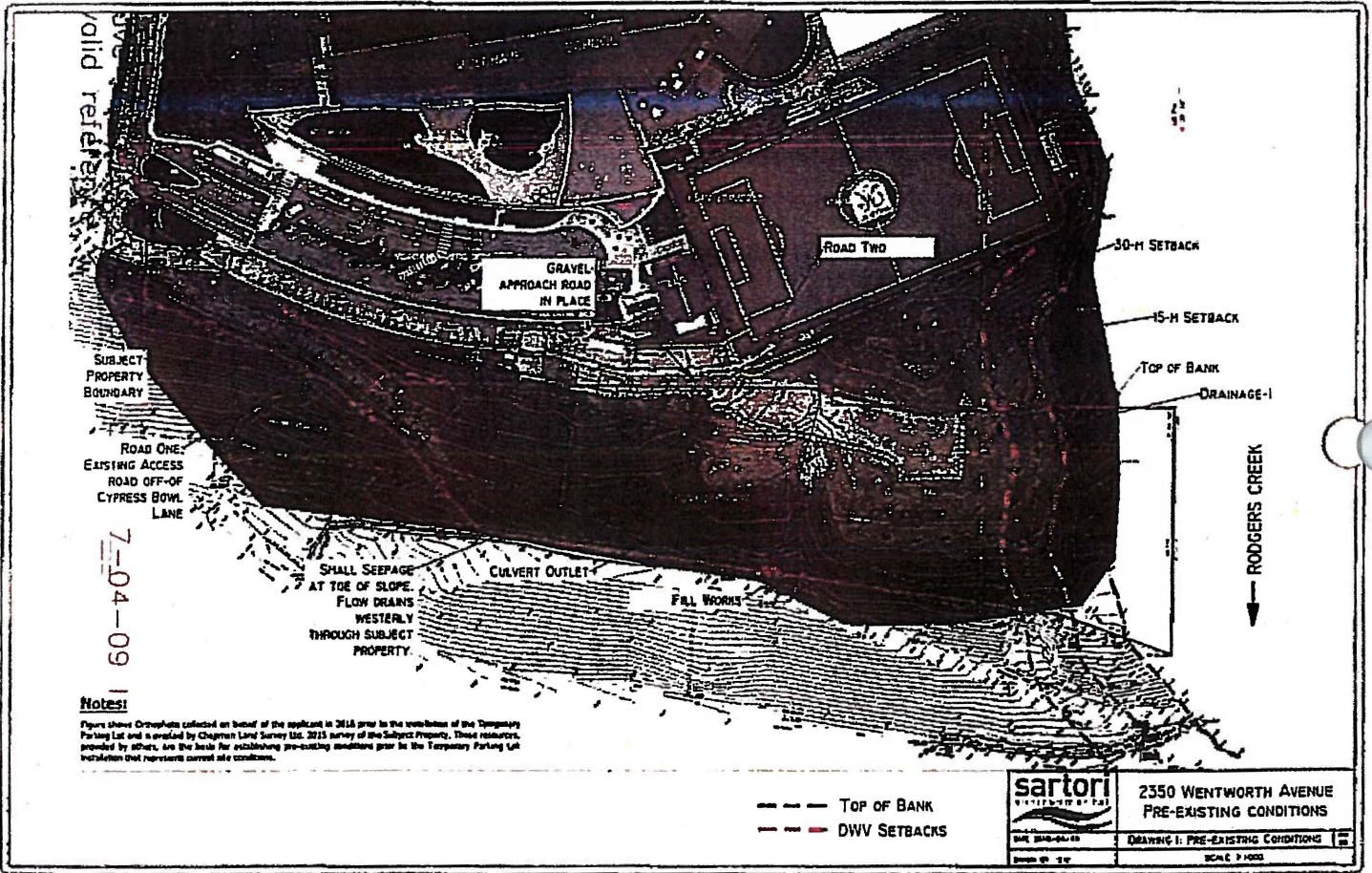
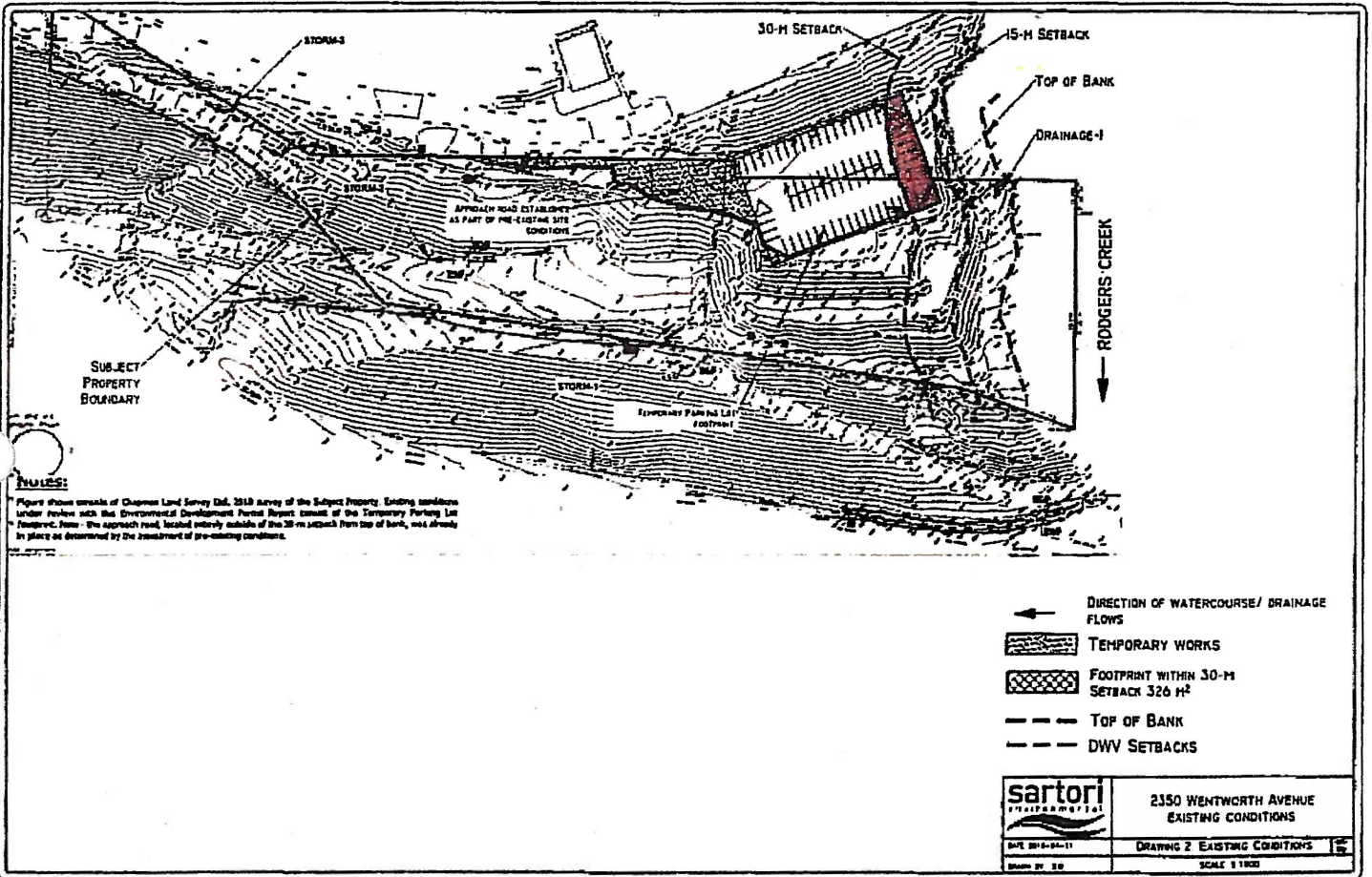


Photo 8. Typical vegetation within the western portion of the Subject Property (2018.03.21).

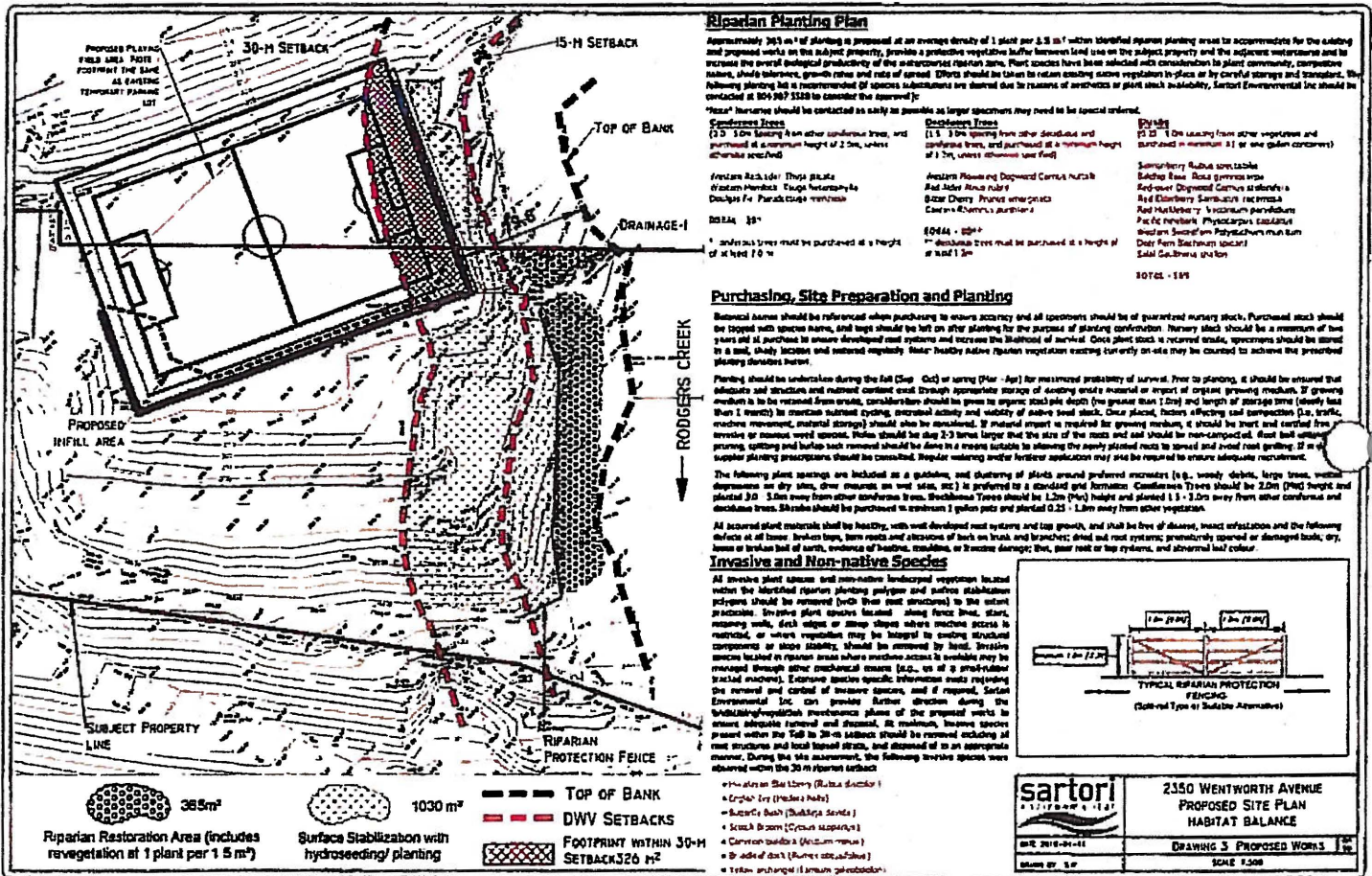




NOTES:
 Figure shows results of Chasman Land Survey Ltd. 2010 survey of the Subject Property. Existing conditions under review with the Environmental Development Permit Report consist of the Temporary Parking Lot footprint. Note: The approach road, located entirely outside of the 30-m setback from top of bank, was already in place as determined by the treatment of pre-existing conditions.

- ← DIRECTION OF WATERCOURSE/ DRAINAGE FLOWS
- TEMPORARY WORKS
- FOOTPRINT WITHIN 30-M SETBACK 326 M²
- TOP OF BANK
- DWV SETBACKS

 2350 WENTWORTH AVENUE EXISTING CONDITIONS	DRAWING 2 EXISTING CONDITIONS
	SCALE 1:1000



Riparian Planting Plan

Approximately 365 m² of planting is proposed at an average density of 1 plant per 1.5 m². Riparian planting must be accommodated for the existing and proposed works on the subject property, provide a protective vegetative buffer between land use on the subject property and the adjacent watercourse and to increase the overall ecological productivity of the riparian zone. Plant species have been selected with consideration to plant community, competitive nature, shade tolerance, growth rates and rate of spread. Efforts should be taken to retain existing native vegetation in-place or by careful storage and transport. The following planting list is recommended if species substitutions are desired due to reasons of availability or plant stock availability. Sartori Environmental Inc should be contacted at 804-867-5153 to consider the approved list:

*Note: Invasive should be contacted as early as possible as larger specimens may need to be special ordered.

Species Trees	Deciduous Trees	Palms
(1) 10m Spacing 4 on other confined trees, and purchased at a minimum height of 2.0m, unless otherwise specified.	(1) 10m Spacing from other deciduous and coniferous trees, and purchased at a minimum height of 1.7m, unless otherwise specified.	(1) 2.0m Spacing from other vegetation and purchased in minimum 1:1 or one palm canopy.
Western Red Cedar, Thuja plicata Western Hemlock, Tsuga heterophylla Douglas Fir, Pseudotsuga menziesii	Western Flowering Dogwood, Cornus nuttallii Red Alder, Alnus rubra Black Cherry, Prunus virginiana Cascara, Rhamnus purshiana	Summitary Rubber tree, Ficus sp. Redwood, Sequoia sempervirens Red-tailed Dogwood, Cornus alternifolia Red Mulberry, Morus rubra Pacific Yew, Taxus canadensis Sweet gum, Liquidambar styraciflua Dwarf Fern, Blechnum spicatum Salt Cedar, Tamarix sp.
1. 10m trees must be purchased at a height of at least 1.0 m	1. 10m trees must be purchased at a height of at least 1.0 m	

Purchasing, Site Preparation and Planting

Material sources should be referenced when purchasing to ensure accuracy and all specimens should be guaranteed nursery stock. Purchased stock should be tagged with species name, and tags should be left on after planting for the purpose of planting confirmation. Nursery stock should be a minimum of two years old at purchase to ensure developed root systems and increase the likelihood of survival. Once plant stock is received, specimens should be stored in a cool, shady location and watered regularly. Healthy native riparian vegetation existing currently on-site may be retained to achieve the prescribed planting densities herein.

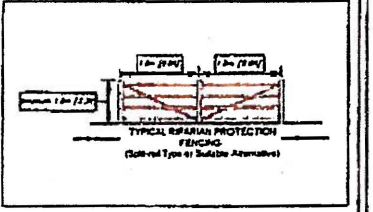
Planting should be undertaken during the fall (Sep - Oct) or spring (Mar - Apr) for maximum probability of survival. Prior to planting, it should be ensured that adequate soil structure and nutrient content exist. Through appropriate mixing of existing soils, removal or import of organic growing medium. If growing medium is to be retained from areas, considerations should be given to organic stock pile depth (no greater than 1.0m) and length of storage time (ideally less than 1 month) to maintain nutrient cycling, microbial activity and stability of above soil stock. Once placed, factors affecting soil compaction (i.e. traffic, machine movement, material storage) should be minimized. If material import is required for growing medium, it should be kept and stored free of rocks or stones, weed control. Fertilizer should be done 2-3 times larger than the size of the stock and soil should be re-aerated. Final soil surface grading, setting and backup rock removal should be done in a means suitable to allowing the newly placed roots to spread and avoid root grafting. 22 m of topsoil planting prescriptions should be considered. Regular watering and/or fertilizer application may also be required to ensure adequate germination.

The following plant spacings are included as a guideline, and clustering of plants around preferred microsites (e.g. woody debris, large trees, vertical depression on dry sites, clear microsites on wet sites, etc.) is preferred to a standard grid formation. Coniferous Trees should be 2.0m (Plant height and planted 0.5 - 1.0m away from other coniferous trees. Deciduous Trees should be 1.2m (Plant height and planted 0.25 - 1.0m away from other vegetation).

All imported plant materials should be healthy, with well developed root systems and top growth, and shall be free of disease, insect infestation and the following defects or signs: broken tops, bare roots and alterations of bark on trunk and branches; dried and root systems; prematurely opened or damaged buds; dry, brown or broken leaf of earth, evidence of heating, moldiness, or freeze damage; Wet, poor root or top systems, and abnormal leaf colour.

Invasive and Non-native Species

All invasive plant species and non-native herbaceous vegetation listed within the identified riparian planting guidelines and surface stabilization projects should be removed (with their root structures) to the extent practicable. Invasive plant species located along fence lines, stairs, retaining walls, deck edges or steep slopes where machine access is restricted, or where vegetation may be integral to existing structural components or slope stability, should be removed by hand. Invasive species located in riparian areas where machine access is available may be removed through other mechanical means (e.g., use of a mulch-till or brush-clearing machine). Extensive species specific information regarding the removal and control of invasive species, and if required, Sartori Environmental Inc. can provide further direction during the field/landscape/planting implementation phase of the project work to ensure adequate removal and disposal. If maximum, invasive species present within the 30-m setback should be removed including all root structures and local forest strata, and disposed of in an appropriate manner. During the site assessment, the following invasive species were observed within the 30 m riparian setback:



- Invasive Site Trees (Black locust)
- English Ivy (Hedera helix)
- Smooth Bush (Salix serotina)
- Scotch Broom (Cytisus scoparius)
- Common buckler (Ailanthus altissima)
- St. John's Wort (Hypericum perforatum)
- Yellow Archway (Lonicera xylosteum)

sartori
ENVIRONMENTAL INC.

2350 WENTWORTH AVENUE
PROPOSED SITE PLAN
HABITAT BALANCE

DATE: 2010-04-14
DRAWING NO. 3-03
SCALE: 1:500

APPENDIX B



District of West Vancouver

**Zoning Bylaw No. 4662, 2010,
Amendment Bylaw No. 5021, 2019**
(Mulgrave School)

Effective Date:

3896732v1

District of West Vancouver

**Zoning Bylaw No. 4662, 2010,
Amendment Bylaw No. 5021, 2019**

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District of West Vancouver

Zoning Bylaw No. 4662, 2010, Amendment Bylaw No. 5021, 2019

A bylaw to rezone portions of 2330 Cypress Bowl Lane and the entirety of 2850 Wentworth Avenue (Mulgrave School site) from RS8 to PA1

Previous amendments: Amendment bylaws 4672, 4677, 4678, 4679, 4689, 4701, 4680, 4710, 4697, 4716, 4712, 4737, 4726, 4736, 4757, 4752, 4767, 4787, 4788, 4784, 4772, 4791, 4805, 4809, 4828, 4854, 4873, 4866, 4895, 4839, 4898, 4927, 4944, 4905, 4974, 4967, 4982, 4962, 4928, 4992 and 5001.

WHEREAS the Council of The Corporation of the District of West Vancouver deems it expedient to provide for an amendment of the Zoning Bylaw;

NOW THEREFORE, the Council of The Corporation of the District of West Vancouver enacts as follows:

Part 1 Citation

- 1.1 This bylaw may be cited as Zoning Bylaw No. 4662, 2010, Amendment Bylaw No. 5021, 2019.

Part 2 Severability

- 2.1 If a portion of this bylaw is held invalid by a Court of competent jurisdiction, then the invalid portion must be severed and the remainder of this bylaw is deemed to have been adopted without the severed section, subsection, paragraph, subparagraph, clause or phrase.

Part 3 Amends Zoning Maps

3.1 Zoning Bylaw No. 4662, 2010, Schedule A, Section 852, Schedule 2, Zoning Map 11 is hereby amended by changing the zoning of the hatched lands as shown on Schedule A:

From: RS8 (Single Family Dwelling Zone 8)

To: PA1 (Public Assembly Zone 1 (Schools))

Schedules

Schedule A: Amendment to Zoning Bylaw No. 4662, 2010, Schedule A, Section 852, Zoning Map 11

READ A FIRST TIME on

PUBLICATION OF NOTICE OF PUBLIC HEARING on

PUBLIC HEARING HELD on

READ A SECOND TIME on

READ A THIRD TIME on

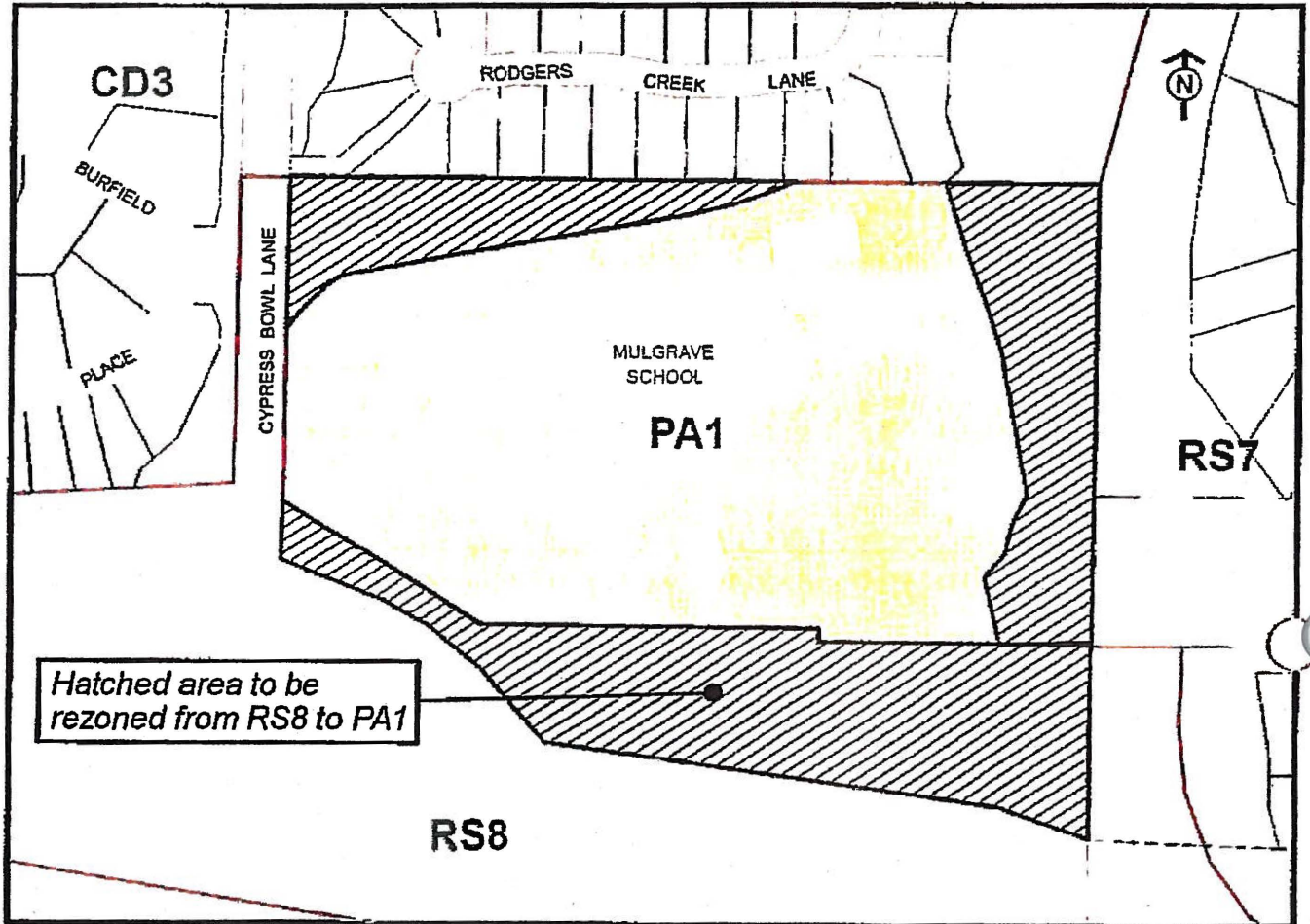
APPROVED by the Minister of Transportation and Infrastructure on

ADOPTED by the Council on

Mayor

Corporate Officer

**Schedule A – Amendment to Zoning Bylaw No. 4662,
2010, Schedule A, Section 852, Zoning Map 11**



Donna Howes, P.Eng., FEC
 Howes Technical Advantage Ltd.
 927 Beaconsfield Road
 North Vancouver, BC V7R 1S7

March 21, 2019

Mr. Kelly Chow, CPA, CA
 Chief Financial Officer & Business Manager
 Mulgrave School
 2330 Cypress Bowl Lane
 West Vancouver, BC V7S 3H9

Dear Kelly

Re: Mulgrave School – High Level Traffic Review for East Addition

Howes Technical Advantage Ltd. was retained by Mulgrave School (the School) to provide a high level traffic review of the proposed east addition for Mulgrave School located at 2330 Cypress Bowl Lane in West Vancouver, BC.

Project Understanding

Mulgrave School has previously received a development permit (DP) for the east extension of the School to include new gymnasium space. At that time, the work did not proceed. The School now wishes to proceed with the construction of this east extension and the District of West Vancouver (the District) has requested a traffic review at the same time.

The scope of the high level review includes what has changed since the last DP approval from a traffic perspective as well as an update on parking, bus service, car-pooling, on-site traffic operation and the current traffic control procedure at Cypress Bowl Road.

Proposed Development

The design and metrics for the proposed extension are exactly the same as that approved by Council on July 25, 2016. The School population remains the same and is summarized in Table 1. The proposed architectural layout is shown in Appendix A.

Table 1: Development Data

Characteristic	Number
Student Enrollment	915
Teachers / Admin	143
Part-time support staff	38

Parking

The parking supply remains the same as for the Senior School addition which was approved on April 8, 2013. However a new gravel lot was added in 2017 to provide overflow parking. The parking supply is summarized in Table 2. There are only 10 spaces on site for students to park. This is decided by lottery every year.

Table 2: Parking Supply

Location	Number
Middle lot – Senior School	49 stalls + 1 disabled stall
Lower lot – Senior School	144 stalls + 1 disabled stall
Gravel Lot	80 -100 stalls

For events, additional parking (50 stalls) is available in the Elementary School parking lot.

Buses

The School provides a number of bus services for students. There are 6 buses that provide service for the School every day. There is a fee for student using the bus to ensure commitment. The fee is ~\$1,000/year per student for the full service. A yearly pass with TransLink is ~\$650 (\$54/month). However, the last stop on the morning route and the first stop in the afternoon drop off route are both free stops, to encourage traffic away from the School. There are 120 families signed up for the bus service. The ridership varies between 100-150 students a day which is 11 to 16% ridership. A last bus runs from the School at 5:30pm is also free for all riders and stops at key destinations.

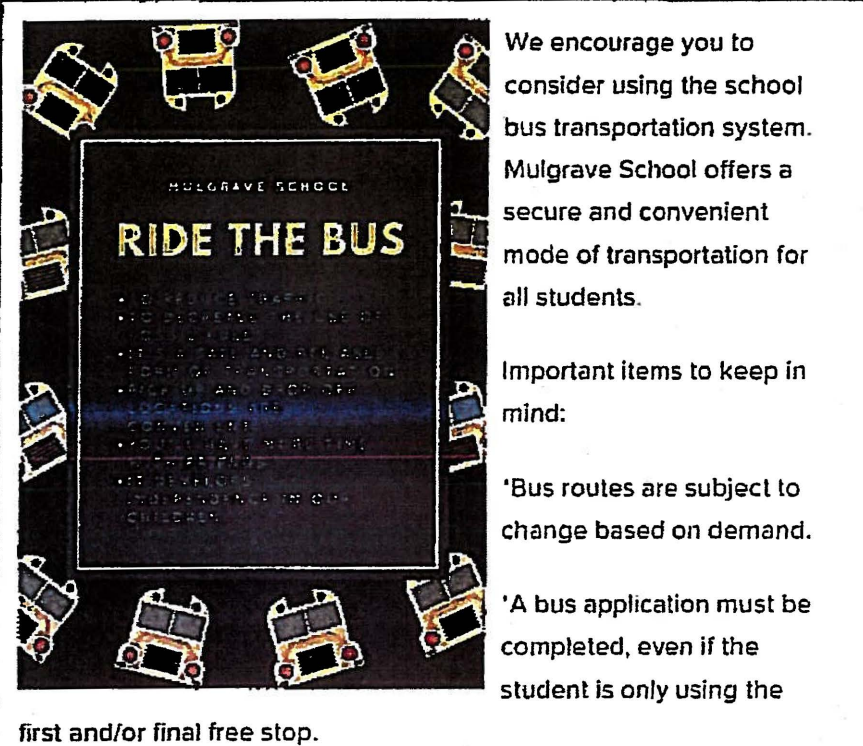
Buses are also free to use for all staff.

The routes are summarized in Table 2.

Table 3: Bus Routes

Bus Route	Description	Route
Route 1 – AM and PM	Deep Cove	Gallant, Mt Seymour Pkwy, Hollyburn CC.
Route 2 – AM and PM	Lynn Valley/Capilano	Upper Lonsdale, Montroyal, Highland, Capilano
Route 3 – AM and PM	Lower Lonsdale/West Vancouver	Esplanade, Pemberton Heights, Taylor Way
Route 4 – AM and PM	Caulfeild	Caulfeild Mall, Marine Dr, Thompson
Route 5 – AM and PM	Downtown	63 rd St/Granville, Yaletown, Georgia St
Route 6 – PM only	Late Bus	Mulgrave School, Park Royal, Seabus, Superstore

The School promotes bus use through the website, newsletters and parent meetings throughout the School year. A screen shot is shown in Figure 1.



We encourage you to consider using the school bus transportation system. Mulgrave School offers a secure and convenient mode of transportation for all students.

Important items to keep in mind:

- 'Bus routes are subject to change based on demand.
- 'A bus application must be completed, even if the student is only using the first and/or final free stop.

Figure 1: Mulgrave School Website – Transportation Page

Carpooling

The School has devised a carpool app for parents, students and teachers to communicate for possible rideshare.

Drop off / Pick Up Operation

The School has improved the drop off and pick up procedures over the years which have mitigated the impact of traffic delay on Cypress Bowl Road. These initiatives are described below:

1. **Staggered start and finish times:** The School has staggered the start and finish times between the elementary and high school sections. The times are shown below.

Table 4: Drop off and Pick Up times

AM Drop off					
Grades	Monday	Tuesday	Wed	Thursday	Friday
Preschool	8.45	9.10	8.45	8.45	8.45
K-6	8.15	9.10	8.15	8.15	8.15
7 to 12	8.30	9.15	8.30	8.30	8.30

Mulgrave School – High Level Traffic Review

PM Pick up					
Grades	Monday	Tuesday	Wed	Thursday	Friday
Preschool	3.15	3.15	3.15	3.15	2.05
K-6	3.15	3.15	3.15	3.15	2.05
7 to 12	3.45	3.45	3.45	3.45	1.15

2. Drop off/pick up areas: With the development of the Senior School, well designated drop off and pick up areas were established on the middle and lower levels of parking. The Elementary School drop off and pick up has not changed.
3. Monitors: The School has trained Traffic Control Persons (TCPs) on staff to operate as traffic monitors for traffic management on site and on the road. There are 6 trained staff members. 5 of the staff are on duty every day.
4. Traffic Control at Cypress Bowl Road and Cypress Bowl Lane: Two staff members provide daily traffic control at this intersection for the AM and PM peak hours. The set up includes the use of traffic cones and delineators as well as advance warning signage and a van with flashing warning lights. This operation regulates the queue on Cypress Bowl Road and on Cypress Bowl Lane.

Observations

The site was visited on March 13, 2019 which was a normal day for School operations. The AM and PM peak were observed.

1. Parking: The parking utilization was counted before the pick up in the afternoon to establish the maximum use. As can be seen, there is sufficient parking on-site.

Table 5: Parking Demand

Location	Stalls	Utilization	% Vacancy	Comment
Middle lot	49	36	26%	No issues
Lower lot	144	144	0%	Additional cars parked - 2 cars double parking; 12 cars parking in bypass lane
Gravel Lot	80 -100	6	93%	Access to the lot is awkward.
Total	273	186	31%	There is sufficient parking on site.

These data indicates that, on a typical day, there is adequate parking in the middle and lower lots.

2. Lower Lot – Parking in the bypass lane has a direct impact on the pick up operation. It is suggested that warning tickets be placed on vehicles for a period of time. Following this, vehicles should be towed. This is a safety concern and should be treated as a high priority.

3. Traffic Control – The traffic control at the intersection with Cypress Bowl Road worked well. The queue was managed effectively on Cypress Bowl Road and on Cypress Bowl Lane.
4. Monitors – Only one monitor was observed on site. The Elementary School pick up needs some additional help with monitors to move traffic along. It is recommended that there should be one monitor on each lot.

Outreach

There are a number of initiatives that the School is engaged in. These include:

1. Membership on the West Vancouver Traffic Advisory Committee where the School keeps up to date with new plans, policies and initiatives in West Vancouver.
2. The School is currently in talks with local bicycle shops regarding group purchase discounts for electric assist bicycles for the Mulgrave community, both staff and students, to promote cycling to school.
3. The School is working with British Pacific Properties (BPP) on the development of Cypress Village. The School views the Village as an opportunity for future students to live relatively close to the School and for possible future transit service.

Conclusions

The School has worked diligently over the years to aim to reduce trips to the School and to adequately accommodate parking, drop off/pick up on site, and manage the traffic at the key access point on Cypress Bowl Road. The Traffic Management System is working well. It is recommended that the School continue to pursue the benefits of transit with their existing bus service and possible partnership with BPP for a future transit service for the Cypress Village. The use of electric bicycles and carpooling will also reduce traffic to and from the School. Continuous monitoring of the operation of the intersection of Cypress Bowl Road and Cypress Bowl Lane is recommended, together with the District of West Vancouver and the Ministry of Transportation and Infrastructure.

Regards

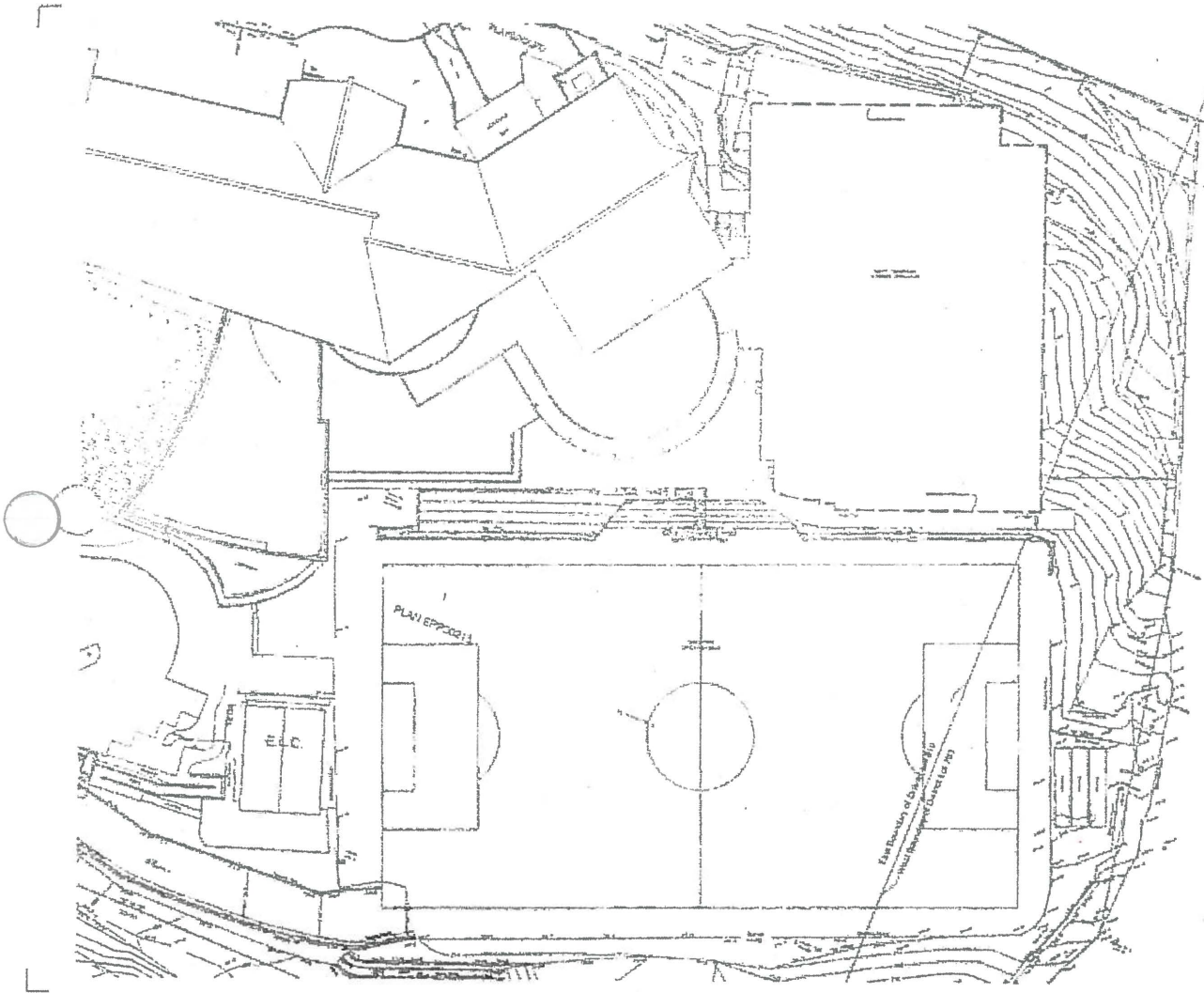
Donna Howes, P.Eng., FEC



Certified by Engineers and Geoscientists of BC

APPENDIX A

APPENDIX A



ECORNERSTONE
 SERVICES
 +
SURF
 ARCHITECTURE

18111 18111
 18111 18111
 18111 18111

Professional Services Provided: The design and development of architectural and engineering drawings for the construction of a building. The design and development of architectural and engineering drawings for the construction of a building. The design and development of architectural and engineering drawings for the construction of a building.

APPROVAL NUMBER: 18111
 PROJECT: MULGRAVE SCHOOL EAST ADDITION
 18111 18111
 18111 18111
 18111 18111

SITE PLAN

SCALE: 1:500 (subject to approval)
 DATE: MAR 1, 2015
 PROJECT NO: 18111 A1.3

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