

City of Surrey
PLANNING & DEVELOPMENT REPORT

Application No.: 7920-0136-00

Planning Report Date: October 3, 2022

PROPOSAL:

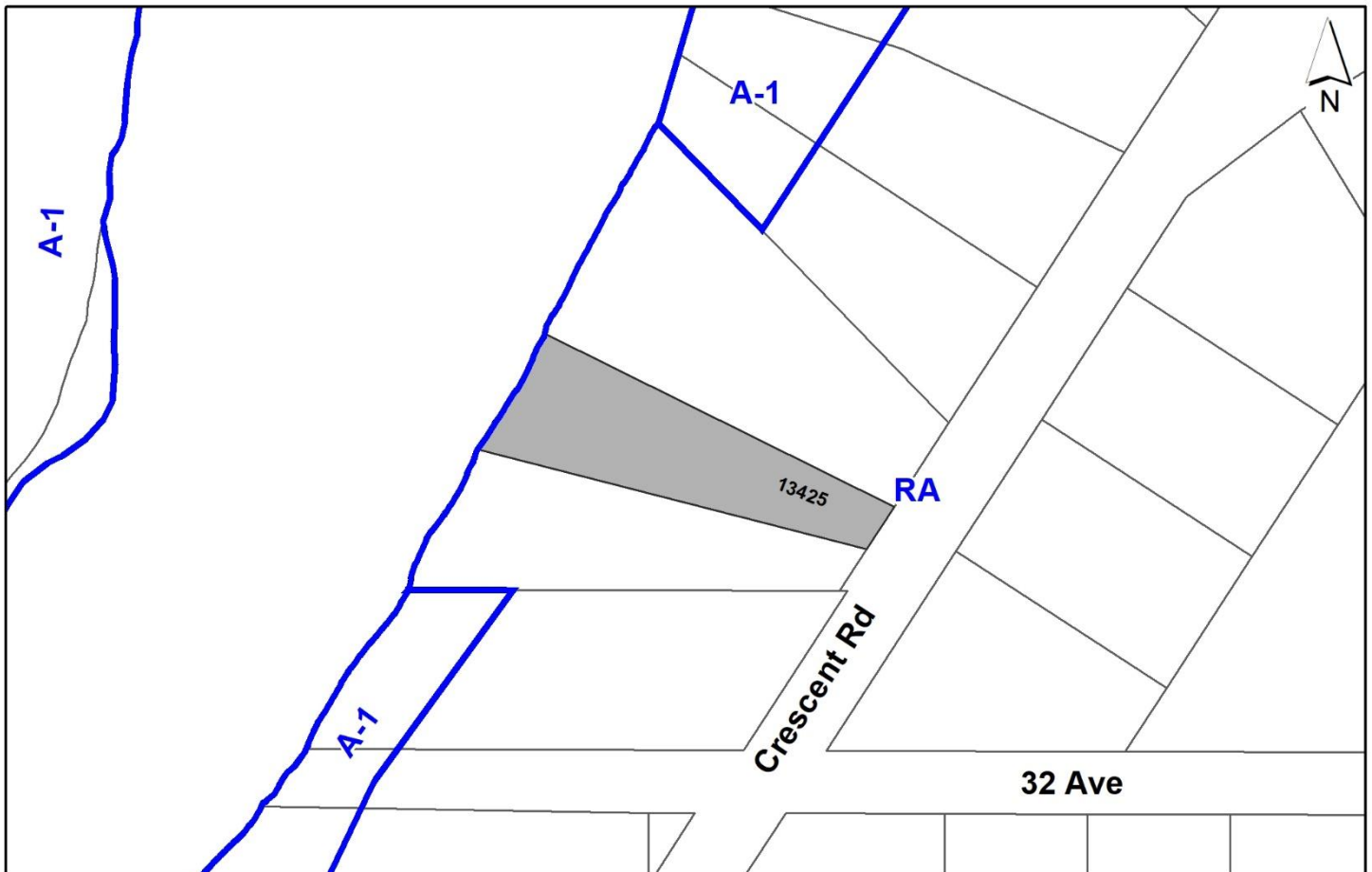
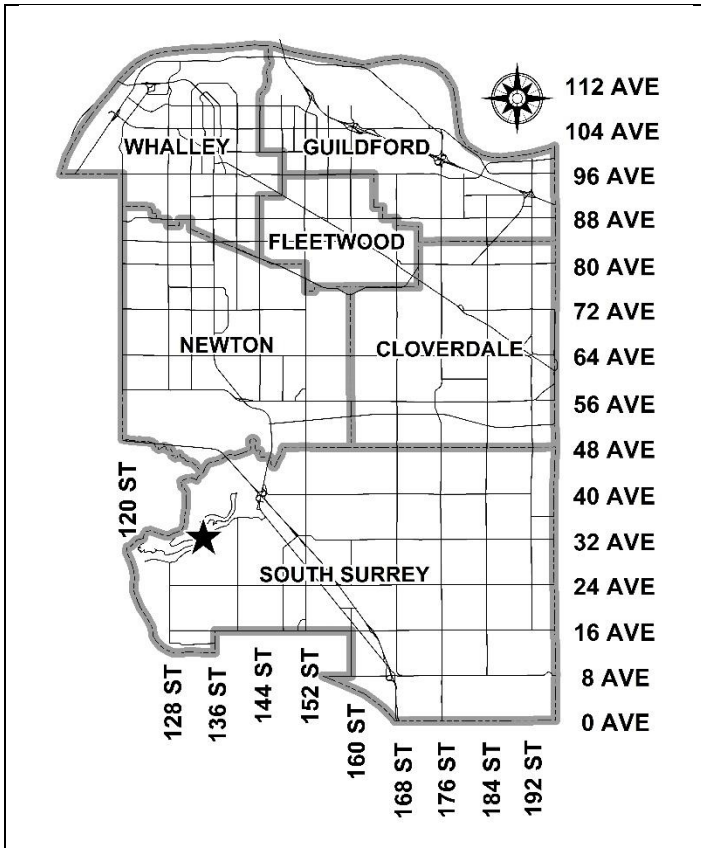
- **Development Permit**
- **Development Variance Permit**

to reduce the minimum streamside setback and side yard setback to facilitate construction of retaining walls for house protection.

LOCATION: 13425 - Crescent Road

ZONING: RA

OCP DESIGNATION: Suburban



RECOMMENDATION SUMMARY

- Approval to draft Development Permit for Hazard Lands and Sensitive Ecosystems.
- Approval for Development Variance Permit to proceed to Public Notification.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- The applicant is proposing to reduce the minimum streamside setback area for a Class A (red-coded) Natural Stream (Nicomekl River) from 15.0 metres, as measured from the top-of-bank, to a minimum of 11.0 metres from the high water mark (equivalent to a maximum of approximately 22.4 metres below top-of-bank) and to reduce the side yard (north) setback.

RATIONALE OF RECOMMENDATION

- The proposal partially complies with the Development Permit requirements in the OCP for Sensitive Ecosystems (Streamside Areas/Green Infrastructure Areas).
- The proposal complies with the Development Permit requirements in the OCP for Hazard Lands (Steep Slopes).
- The proposed retaining walls are located below the top of bank to address slope stability concerns due to a landslide which occurred on the subject site on January 31, 2020. The proposed retaining walls have been proposed with the goal of house protection from future slope instability events.
- The applicant has retained a Geotechnical Engineer and Qualified Environmental Professional (QEP) which have advised on mitigation measures to pair with the proposed retaining walls with the goal to revegetate the slope for added slope stability and house protection.
- A Letter of Advice by the Department of Fisheries and Oceans (DFO) has been provided confirming the review and advisement on the recommended protection measures for the proposed works.
- The project QEP has provided an Ecosystem Development Plan (EDP) and Impact Mitigation Plan (IMP), which have been peer-reviewed by an independent, third-party Qualified Environmental Professional and deemed to be acceptable. The EDP and IMP propose the following measures:
 - The proposed 32.0-38.0 metre wide Streamside Protection Area up to the top of bank will be protected through the registration of a Restrictive Covenant to ensure safeguarding and maintenance of the Protection Area in perpetuity;

- There will be a net gain in vegetation coverage following retaining wall construction and planting in the setback area which will aid in overall water absorption and retention on the subject site, limiting the risk of overland flows and flooding. The proposed Streamside Protection Area will be improved through the removal of invasive species and the planting of native trees and shrubs. The proposed works are to be monitored and maintained by the applicant's QEP for a minimum of five (5) years; and
- Securities will be held by the City to ensure that the recommendations of the accepted EDP and IMP are followed.
- The applicant has provided a comprehensive geotechnical report in support of the retaining wall locations. The geotechnical report has been peer-reviewed by an independent, third-party Qualified Professional and deemed to be acceptable. The accepted geotechnical requirements and recommendations, as well as a copy of the accepted site plan and retaining wall plans, will be incorporated into both the Hazard Lands Development Permit and a Section 219 Restrictive Covenant, which will be registered against the subject property.
- The proposed variance to the side yard (north) setback are for the retaining wall locations to ensure the existing dwelling is geotechnically safe following the landslide that occurred. The retaining walls will be located at a minimum of 15 metres from the closest building on the adjacent property while the existing dwelling on the subject site will be setback more than 20 metres from the northern most extent of the proposed walls.

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council authorize staff to draft Development Permit No. 7920-0136-00 for Hazard Lands (Steep Slopes) and Sensitive Ecosystems (Streamside Areas and Green Infrastructure Areas), generally in accordance with the finalized Ecosystem Development Plan and Geotechnical Report.
2. Council approve Development Variance Permit No. 7920-0136-00 (Appendix III) varying the following, to proceed to Public Notification:
 - (a) to reduce the minimum setback distance for a Natural Class A (red-coded) Stream from 15.0 metres as measured from the top-of-bank, to a minimum of 11.0 metres from the high water mark (equivalent to a maximum of approximately 22.4 metres below top-of-bank); and
 - (b) to reduce the minimum side yard (north) setback of the RA Zone from 4.5 metres to 0.0 metres.
3. Council instruct staff to resolve the following issues prior to final approval:
 - (a) registration of a Section 219 Restrictive Covenant for "no-build" and "non-disturbance" over the identified Streamside Protection Area;
 - (b) registration of a Section 219 Restrictive Covenant to ensure that all on-site preparation and construction complies with the recommendations of the accepted geotechnical report; and
 - (c) submission of the Landscape Security in the amount of \$49,903.39, to the satisfaction of the Planning and Development Department.

SITE CONTEXT & BACKGROUND

Direction	Existing Use	OCP Designation	Existing Zone
Subject Site	Single Family Residential	Suburban, Suburban Density Exception Area	RA
North:	Single Family Residential	Suburban, Suburban Density Exception Area	RA/A-1
East (Across Crescent Rd.):	Single Family Residential	Suburban, Suburban Density Exception Area	RA
South:	Single Family Residential	Suburban, Suburban Density Exception Area	RA/A-1
West:	Nicomekl River	NA	NA

Context & Background

- The subject property is 3,614 square metres in size, designated Suburban and within the Suburban Density Exception Area in the Official Community Plan (OCP) and zoned "One-Acre Residential (RA).
- The property is encumbered by steep slopes on the western half of the property that is encompassed by a Green Infrastructure Corridor (GIN) and stream setbacks associated with the Nicomekl River to the west (Class A Stream).
- A landslide occurred on the western portion of the subject site on January 31, 2020, following a heavy precipitation event.

DEVELOPMENT PROPOSAL

Planning Considerations

- The applicant is proposing to construct two gabion retaining walls below the top of bank, which is subject to a Development Permit for Hazard Lands (Steep Slopes) and Sensitive Ecosystems (Streamside Areas and Green Infrastructure Areas).
- The streamside setback for the Nicomekl River, a Class A (red-corded) watercourse, on the subject site is 15.0 metres measured from the top of bank. The applicant proposes retaining walls below top of bank which requires a variance to reduce the minimum setback as measured from the top-of-bank, to a minimum of 11.0 metres from the high water mark (equivalent to a maximum of approximately 22.4 metres below top-of-bank). The applicant is also proposing to reduce the side yard (north) setback from 4.5 metres to 0 metres for the proposed retaining walls.

Referrals

Engineering:	The Engineering Department has no objection to the project.
Parks, Recreation and Culture:	The Parks Department has no objection to the project and will accept that the land will receive minimum safeguarding with a Restrictive Covenant placed over the portion of the lot designated as GIN Corridor.
Department of Fisheries and Oceans (DFO):	A Letter of Advice from DFO was provided on November 5, 2020, detailing recommendations on mitigation measures to assure further disruption of fish habitat does not occur. DFO has advised that so long as the application adheres to the implementation measures advised in the Letter of Advice, the proposal will not require authorization under the Fisheries Act.

POLICY & BY-LAW CONSIDERATIONS

Official Community Plan

Land Use Designation

- The subject property is designated "Suburban" and is located within the "Suburban Density Exception Area" in the Official Community Plan.

Themes/Policies

- The proposal was prepared and reviewed by Qualified Professionals, and includes a Geotechnical Report, Ecosystem Development Plan, and Arborist Report (*D2.2, 2.4, 2.6, 2.7*).
- The applicant is proposed to plant approximately 148 square metres of native species to preserve and enhance the riparian area (*D1.8, 1.9*).

Zoning By-law

Setback Variance

- The applicant is requesting the following setback variance:
 - to reduce the minimum side yard (north) setback of the RA Zone from 4.5 metres to 0.0 metres for retaining walls.
- Under the Zoning By-law, retaining walls are considered structures and therefore, must comply with the fencing provisions of Part 4. General Provisions of the Zoning By-law, which require such structures comply with the height and yard restrictions of that zone. In this case, the maximum height of the retaining walls is 9 metres and must be setback 4.5 metres from side lot lines.
- The proposed variance to the side yard (north) setback is for retaining walls that will ensure the existing dwelling is geotechnically safe. The retaining walls are to be approximately 4.0 metres in height and will be located at minimum 15.0 metres from the closest building on the adjacent property while the existing dwelling on the subject site will be setback greater than 20 metres from the eastern most extent of the walls.
- Staff support the requested variances to proceed for consideration.

Streamside Variance

- The applicant is requesting the following streamside variance:
 - to reduce the minimum setback distance for a Class A (red-coded) stream from 15.0 metres as measured from the top-of-bank, to a minimum of 11.0 metres from the high water mark (equivalent to a maximum of approximately 22.4 metres below top-of-bank) for retaining walls.
- In order to stabilize the slope and ensure a maximum level of house protecting on the subject property, the proposed retaining walls are required to be placed below top of bank in an area where the previous landslide had occurred. Adhering to the required streamside setback under the Zoning By-law would not allow for proper slope stabilization measures to be

implemented which would leave the subject site vulnerable in the event of another landslide in the future.

- A Riparian Areas Protection Regulation (RAPR) Assessment Report is not required in this instance as the section of the Nicomekl River where the subject site is located is considered tidal waters falling under federal jurisdiction. A Letter of Advice from DFO was provided on November 5, 2020, detailing recommendations on mitigation measures to ensure further disruption of fish habitat does not occur. DFO has advised that so long as the application adheres to the implementation measures advised in the Letter of Advice, the proposal will not require additional permitting under the Fisheries Act.
- The applicant has provided a Geotechnical Report, an Ecosystem Development Plan (EDP) and Impact Mitigation Plan in support of the proposed variance to the streamside setback. In conjunction with the two retaining walls, the applicant's Qualified Environmental Professional (QEP) has proposed 148 square metres of restoration planting and seeding to provide additional slope stabilization measures by revegetating the slope.
- Staff support the requested variances to proceed for consideration.

DEVELOPMENT PERMITS

Sensitive Ecosystems (Streamside Areas) Development Permit Requirement

- The subject property falls within the Sensitive Ecosystems Development Permit Area (DPA) for Streamside Areas in the OCP, given the location of an existing Class A (red-coded) watercourse (Nicomekl River) which flows southwest out to Mud Bay. The Sensitive Ecosystems (Streamside Areas) Development Permit is required to protect aquatic and terrestrial ecosystems associated with streams from the impacts of development.
- In accordance with Part 7A Streamside Protection setbacks of the Zoning By-law, a Class A (red-coded) watercourse requires a minimum streamside setback of 15.0 metres, as measured from the top of bank. The proposed setbacks do not comply with the requirements outlined in the Zoning By-law and therefore, a Development Variance permit to reduce the streamside setback is required. See the Development Variance Permit section above for additional information.
- The riparian area will be protected through the registration of a Restrictive Covenant against the property to ensure safeguarding and maintenance of the Protection Area in perpetuity, in compliance with the OCP.
- An Ecosystem Development Plan (EDP), prepared by Mamoud G. Bashi, *P. Eng.*, of CSR Environmental Ltd. and dated August 11, 2021, was reviewed by staff, and found to be generally acceptable, with some modifications to content and format of the report still required. The EDP was peer reviewed by Arin Yeomans-Routeledge, *B.Sc., R.P. Bio*, of Weaver Technical Corp. and found to be generally acceptable by the peer reviewer. The finalized report and recommendations will be incorporated into the Development Permit.

Sensitive Ecosystems (Green Infrastructure Areas) Development Permit Requirement

- The subject property falls within the Sensitive Ecosystems Development Permit Area (DPA) for Streamside Areas in the OCP, given the location of an existing Class A (red-coded) watercourse, the Nicomekl River, which is adjacent to the west property line. The Sensitive Ecosystems (Streamside Areas) Development Permit is required to protect aquatic and terrestrial ecosystems associated with streams from the impacts of development.
- The subject property falls within the Sensitive Ecosystems DPA for Green Infrastructure Areas in the OCP, given the location of a Biodiversity Conservation Strategy (BCS) Green Infrastructure Network (GIN) Corridor located along the rear property line adjacent to the Nicomekl River. The Sensitive Ecosystems (Green Infrastructure Areas) Development Permit is required to protect environmentally sensitive and unique natural areas from the impacts of development.
- The City of Surrey Biodiversity Conservation Strategy (BCS) Green Infrastructure Network (GIN) map, adopted by Council on July 21, 2014 (Corporate Report No. R141; 2014), identifies a Regional BCS Corridor within the subject site, in the Serpentine/Nicomekl BCS management area, with a High ecological value. The retaining walls are located within the GIN corridor on site due to the need for slope stabilization and house protection measures.
- The need for slope stabilization and house protection results in the need for retaining wall construction to occur within the GIN corridor. As a result, the proposal partially confirms to the BCS Guidelines. A planting plan for 148 square metres within the GIN has been proposed to revegetate the slope within the GIN corridor which will enhance the remainder of the GIN corridor adjacent to the proposed retaining walls.
- An Ecosystem Development Plan, prepared by Mamoud G. Bashi, *P. Eng.*, of CSR Environmental Ltd. and dated August 11, 2021, was reviewed by staff and found to be generally acceptable, with some modifications to content and format of the report still required. The EDP was peer reviewed by Arin Yeomans-Routeledge, *B.Sc., R.P. Bio*, of Weaver Technical Corp. and found to be generally acceptable by the peer reviewer. The finalized report and recommendations will be incorporated into the Development Permit.

Hazard Lands (Steep Slope) Development Permit Requirement

- The subject property falls within the Hazard Lands (Steep Slope) Development Permit Area (DPA) in the OCP, given that the site contains steep slopes in excess of 20% gradient. The Hazard Land (Steep Slope) Development Permit is required to protect developments from potentially hazardous conditions.
- The site is located adjacent to a relatively steep slope to the north-west which slopes down to the Nicomekl River. The long-term stability of the slope is highly dependent upon the presence of vegetation and control of groundwater.
- A geotechnical report, prepared by Heqing Jian, *P. Eng.*, of Geocan Engineering Inc. and dated October 18, 2020, was peer reviewed by Jian Zhong Jin, *P. Eng.*, of Summit Geotechnical Services inc. and found to be generally acceptable by the peer reviewer. The report and peer review were reviewed by staff and found to conform to the OCP Development Permit guidelines for Hazard Lands regarding wall construction required for the purpose of slope stabilization and house protection. The Geotechnical Report was updated on March 22, 2021, with a minor language update to align with the submitted arborist report detailing that no

tree removal is to take place. The finalized geotechnical report will be incorporated into the Development Permit.

- The geotechnical report investigated issues related to slope stability and natural storm water drainage, from a geotechnical perspective, to determine the feasibility of wall construction on the site and proposed recommendations to strengthen the stability of the slope and house protection measures for the existing residence on site.
- The consultant has determined that the construction of the gabion retaining walls are feasible provided that the recommendations in their report are incorporated into the overall design of the site, including revegetation of the slope, which has been proposed by the QEP.
- Registration of a Section 219 Restrictive Covenant that requires the owner to construct the retaining walls in accordance with the conditions in the geotechnical report is required as a condition of final approval.

TREES

- Xudong Bao, ISA Certified Arborist of M2 Landscape Architecture prepared an Arborist Assessment for the subject property. The arborist report, which has been accepted by Trees/Landscaping staff, recommends that all onsite and offsite trees be retained.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

Appendix I.	Site Plan
Appendix II.	Retaining Wall Designs
Appendix III.	Development Variance Permit No. 7920-0136-00

approved by Shawn Low

Jeff Arason
Acting General Manager
Planning and Development

WS/cm



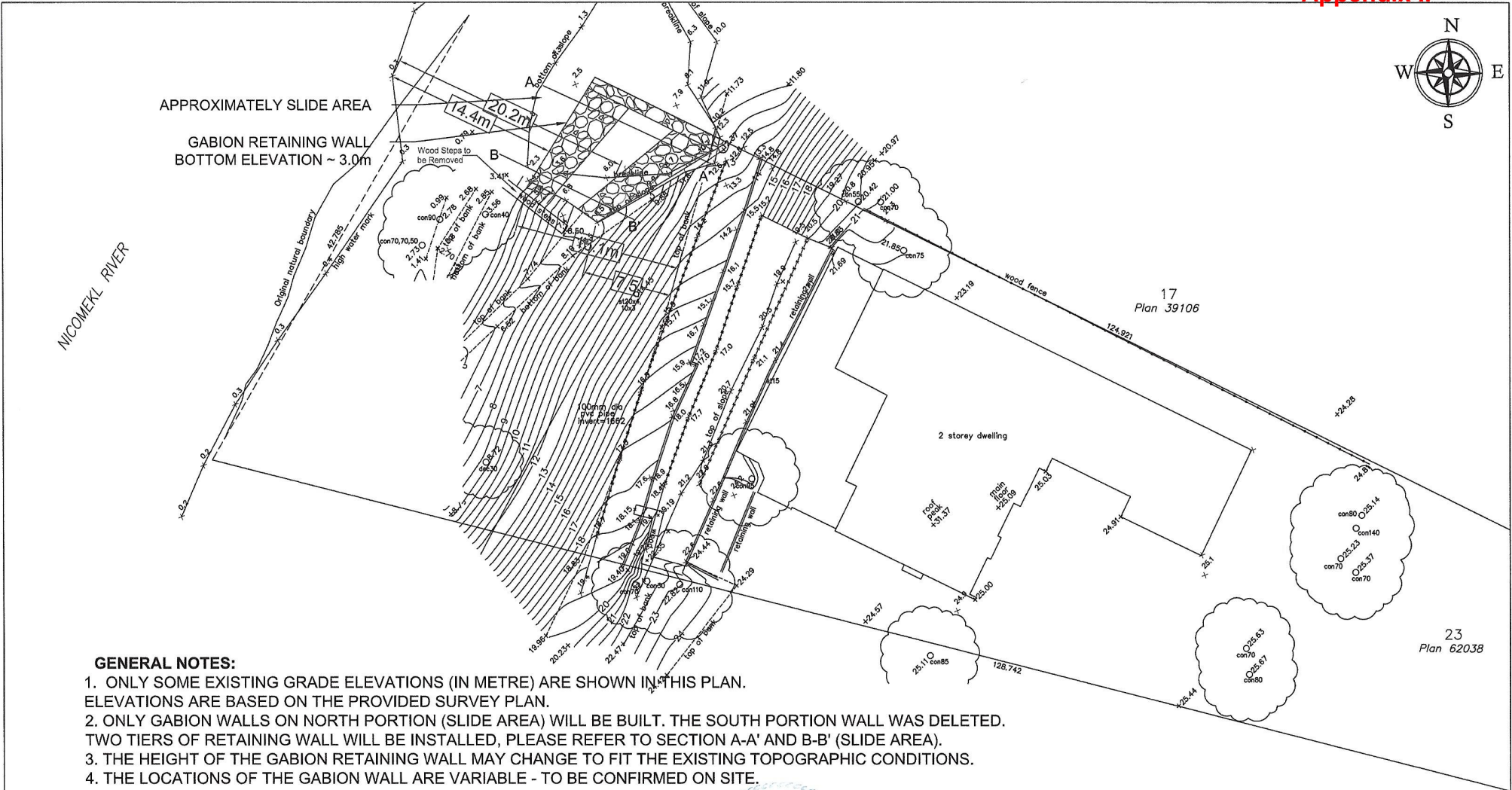
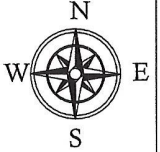
- Green Infrastructure Network (GIN)
- 15 m Stream Setback
- Top of Bank (TOB)
- No Disturbance Zone
- Gabion Wall Seeding Area
- Gabion Retaining Wall
- Wattle Fencing and Hydroseeding Area

CSR *Your Project Meets the Environment*
ENVIRONMENTAL
 206 - 3855 Henning Drive
 Burnaby, BC, V5C 6N3
 TEL: 604-559-7100
www.csrenviro.com

Project:	Ecosystem Development Plan
Address:	13425 Crescent Road Surrey, BC

Job No.:	2020-186-02
Drawn By:	KS, DS
Checked By:	M. Bashi
Scale:	1:403
Date:	2021/06/23
Client Name:	Jizhou (William) Wang

Drawing No.:	Figure 1
Drawing Title:	



GENERAL NOTES:

1. ONLY SOME EXISTING GRADE ELEVATIONS (IN METRE) ARE SHOWN IN THIS PLAN. ELEVATIONS ARE BASED ON THE PROVIDED SURVEY PLAN.
2. ONLY GABION WALLS ON NORTH PORTION (SLIDE AREA) WILL BE BUILT. THE SOUTH PORTION WALL WAS DELETED. TWO TIERS OF RETAINING WALL WILL BE INSTALLED, PLEASE REFER TO SECTION A-A' AND B-B' (SLIDE AREA).
3. THE HEIGHT OF THE GABION RETAINING WALL MAY CHANGE TO FIT THE EXISTING TOPOGRAPHIC CONDITIONS.
4. THE LOCATIONS OF THE GABION WALL ARE VARIABLE - TO BE CONFIRMED ON SITE.



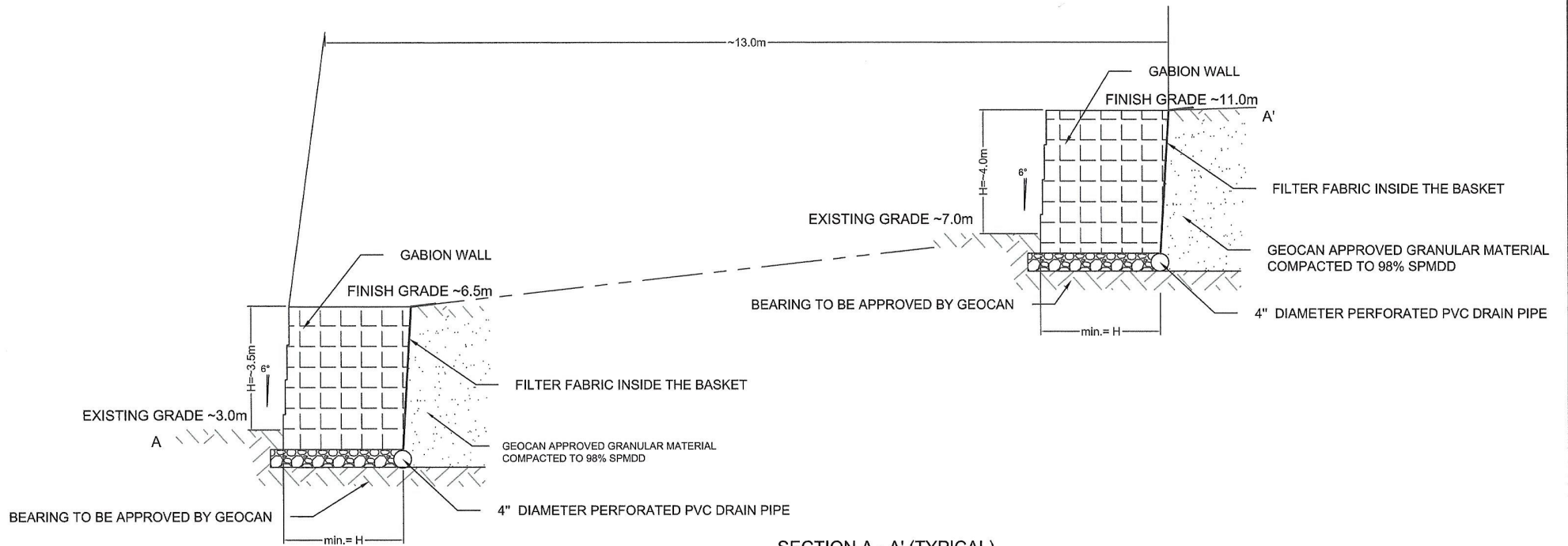
GeoCan Engineering Inc.
765 Foster Avenue
Coquitlam, BC, V3J 2L8
Tel: 778-987-7461
E-mail: info@geocaneng.com

Client: Mr. Jizhou Wang	
Location: 13425 Crescent Road Surrey, BC	
FILE No. 201110	DATE March 23, 2020

REV.	DATE	DESCRIPTION
5	Mar. 22, 2021	No tree to be removed due to the barge for transportation
4	Oct. 18, 2020	revising upon peer review
3	Sept. 22, 2020	pushed the lower wall up towards the residence
2	June 25, 2020	added dimensions to top of the bank
1	June 5, 2020	Change to Gabion Retaining Wall

Retaining Wall Design
Plan View

DRAWN:	XH	DWG No. 1 of 3
CHECKED:	HJ	
SCALE:	1:300	



SECTION A - A' (TYPICAL)

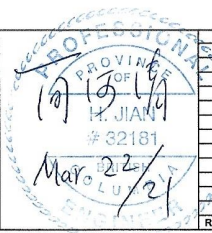
NOTES:

1. SUBGRADE FOR WALL TO BE INSPECTED AND APPROVED BY GEOCAN PRIOR TO WALL CONSTRUCTION.
2. SLOPED SUB-GRADE TO BE STEPPED TO SUIT.
3. WALL TO BE GABION WALL AT 6°.
4. MIN. 4" THICK, 3/4" CLEAR CRUSH BASE.
5. WALL BACKFILL TO CONSIST OF GEOCAN APPROVED STRUCTURAL FILL COMPACTED TO 98% SPMD.
6. EMBEDMENT AS SHOWN ON DRAWING.



GeoCan Engineering Inc.
 765 Foster Avenue
 Coquitlam, BC, V3J 2L8
 Tel: 778-987-7461
 E-mail: info@geocaneng.com

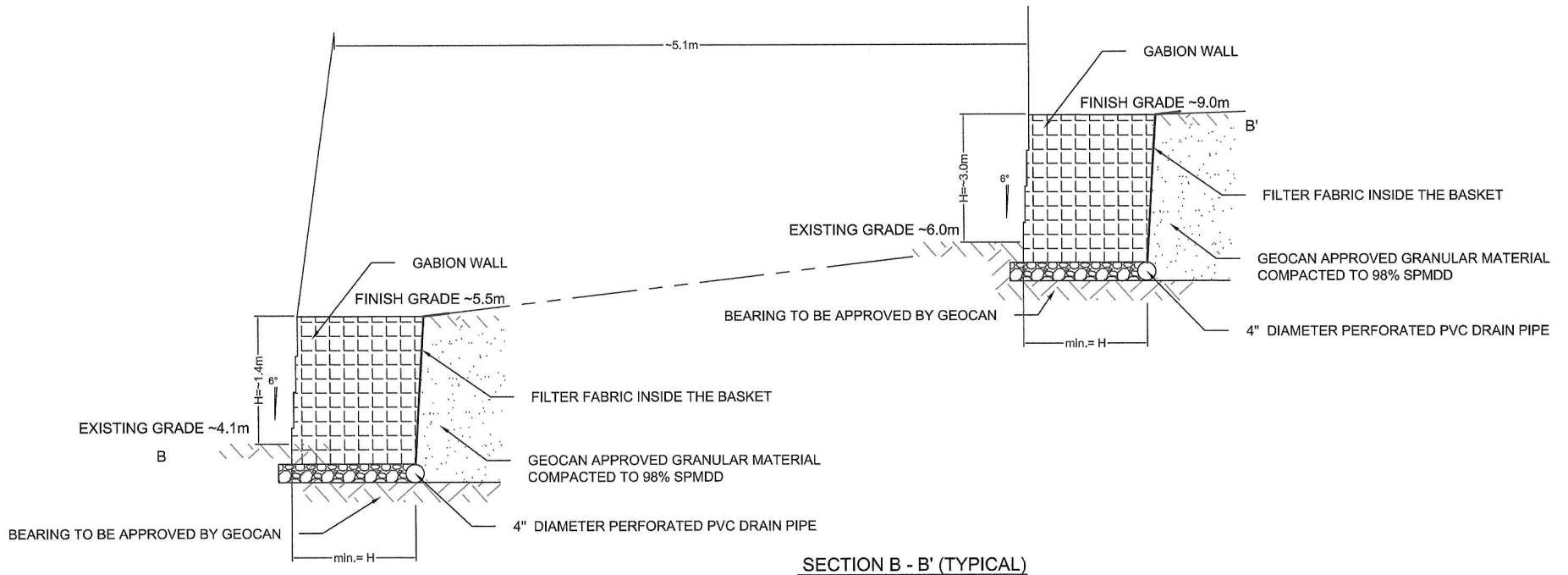
Client: Mr. Jizhou Wang	
Location: 13425 Crescent Road Surrey, BC	
FILE No. 201110	DATE March 23, 2020



REV.	DATE	DESCRIPTION
3	Oct. 18, 2020	revising upon peer review
2	Sept. 22, 2020	pushed the lower wall towards to the residence
1	June 5, 2020	Change to Gabion Retaining Wall

Retaining Wall Design
Section A - A'

DRAWN:	XH	DWG No. 2 of 3
CHECKED:	HJ	
SCALE:	NTS	



SECTION B - B' (TYPICAL)

NOTES:

1. SUBGRADE FOR WALL TO BE INSPECTED AND APPROVED BY GEOCAN PRIOR TO WALL CONSTRUCTION.
2. SLOPED SUB-GRADE TO BE STEPPED TO SUIT.
3. WALL TO BE GABION WALL AT 6°.
4. MIN. 4" THICK, 3/4" CLEAR CRUSH BASE.
5. WALL BACKFILL TO CONSIST OF GEOCAN APPROVED STRUCTURAL FILL COMPACTED TO 98% SPMD.
6. EMBEDMENT AS SHOWN ON DRAWING.



GeoCan Engineering Inc.

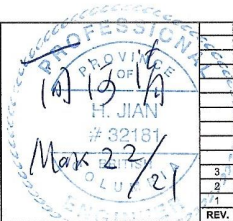
765 Foster Avenue
Coquitlam, BC, V3J 2L8
Tel: 778-987-7461
E-mail: info@geocaneng.com

Client: Mr. Jizhou Wang

Location: 13425 Crescent Road
Surrey, BC

FILE No.
201110

DATE
March 23, 2020



REV.	DATE	DESCRIPTION
3	Oct. 18, 2020	revising upon peer review
2	Sept. 22, 2020	pushed the lower wall towards to the residence
1	June 5, 2020	Change to Gabion Retaining Wall

Retaining Wall Design
Section B - B'

DRAWN: XH
CHECKED: HJ
SCALE: NTS

DWG No.
3 of 3

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7920-0136-00

Issued To:

(the "Owner")

Address of Owner:

1. This development variance permit is issued subject to compliance by the Owner with all statutes, by-laws, orders, regulations or agreements, except as specifically varied by this development variance permit.
2. This development variance permit applies to that real property including land with or without improvements located within the City of Surrey, with the legal description and civic address as follows:

Parcel Identifier: 003-022-056
Lot 23 Section 29 Township 1 New Westminster District Plan 62038
13425 – Crescent Road

(the "Land")

3. Surrey Zoning By-law, 1993, No. 12000, as amended is varied as follows:
 - (a) In the table in Section B.2 of Part 7A "Streamside Protection", the minimum distance from top of bank for a "Natural Class A (red-coded) Stream" is reduced from 15.0 metres, as measured from the top-of-bank, to a minimum of 11.0 metres from the high water mark (equivalent to a maximum of approximately 22.4 metres below top-of-bank) to permit two gabion retaining walls; and
 - (b) In Section F. Yard and Setbacks of Part 12 "One-Acre Residential Zone (RA)", the minimum side yard (north) setback for buildings and structures is reduced from 4.5 metres to 0.0 metres.
4. This development variance permit applies to only that portion of the buildings and structures on the Land shown on Schedule A which is attached hereto and forms part of this development variance permit. This development variance permit does not apply to additions to, or replacement of, any of the existing buildings shown on attached Schedule A, which is attached hereto and forms part of this development variance permit.

5. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development variance permit.
6. This development variance permit shall lapse if the Owner does not substantially start any construction with respect to which this development variance permit is issued, within two (2) years after the date this development variance permit is issued.
7. The terms of this development variance permit or any amendment to it, are binding on all persons who acquire an interest in the Land.
8. This development variance permit is not a building permit.

AUTHORIZING RESOLUTION PASSED BY THE COUNCIL, THE DAY OF , 20 .
ISSUED THIS DAY OF , 20 .








Mayor – Doug McCallum


City Clerk – Jennifer Ficocelli



Proposed variance to reduce the side yard (north) setback from 4.5 metres to 0 metres for the retaining walls.

Proposed variance to reduce the minimum streamside setback from a Natural Class A Stream on a lot of record from 15 metres, as measured from top of bank, to a minimum of 11.0 metres from the high water mark (equivalent to 22.4 metres below the top of bank).

-  Green Infrastructure Network (GIN)
-  15 m Stream Setback
-  Top of Bank (TOB)
-  No Disturbance Zone
-  Gabion Wall Seeding Area
-  Gabion Retaining Wall
-  Wattle Fencing and Hydroseeding Area

 <p>CSR ENVIRONMENTAL 206 - 3855 Henning Drive Burnaby, BC, V5C 6N3 TEL: 604-559-7100 www.csrenviro.com</p>	Project: Ecosystem Development Plan	Job No.: 2020-186-02 Drawn By: KS, DS Checked By: M. Bashi	Drawing No.: <h1 style="text-align: center;">Figure 1</h1>
	Address: 13425 Crescent Road Surrey, BC	Scale: 1:403 Date: 2021/06/23 Client Name: Jizhou (William) Wang	Drawing Title: <h1 style="text-align: center;">Site Plan</h1>