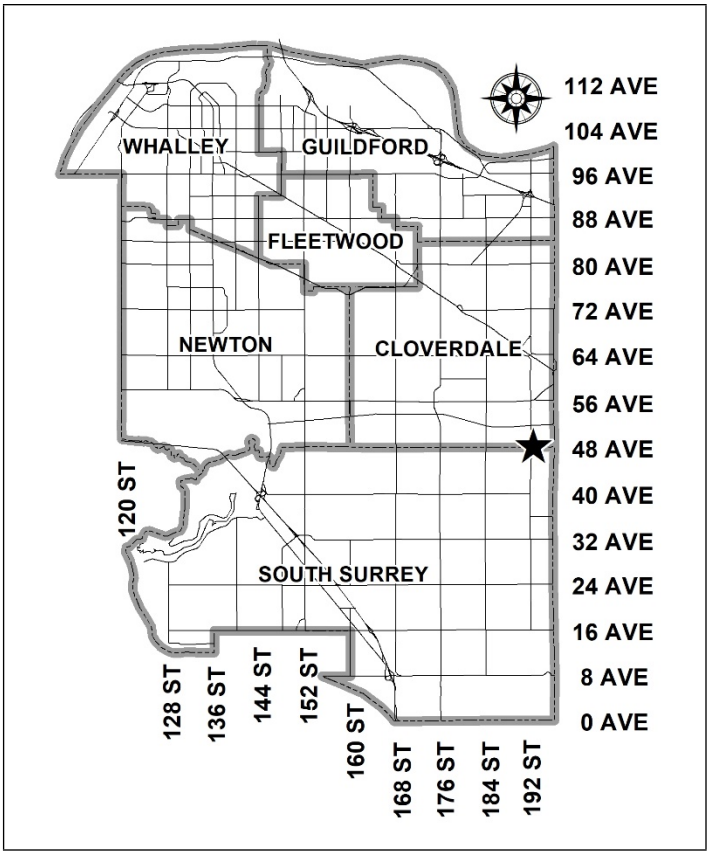


City of Surrey
PLANNING & DEVELOPMENT REPORT
Application No.: 7919-0293-00

Planning Report Date: December 6, 2021

PROPOSAL:

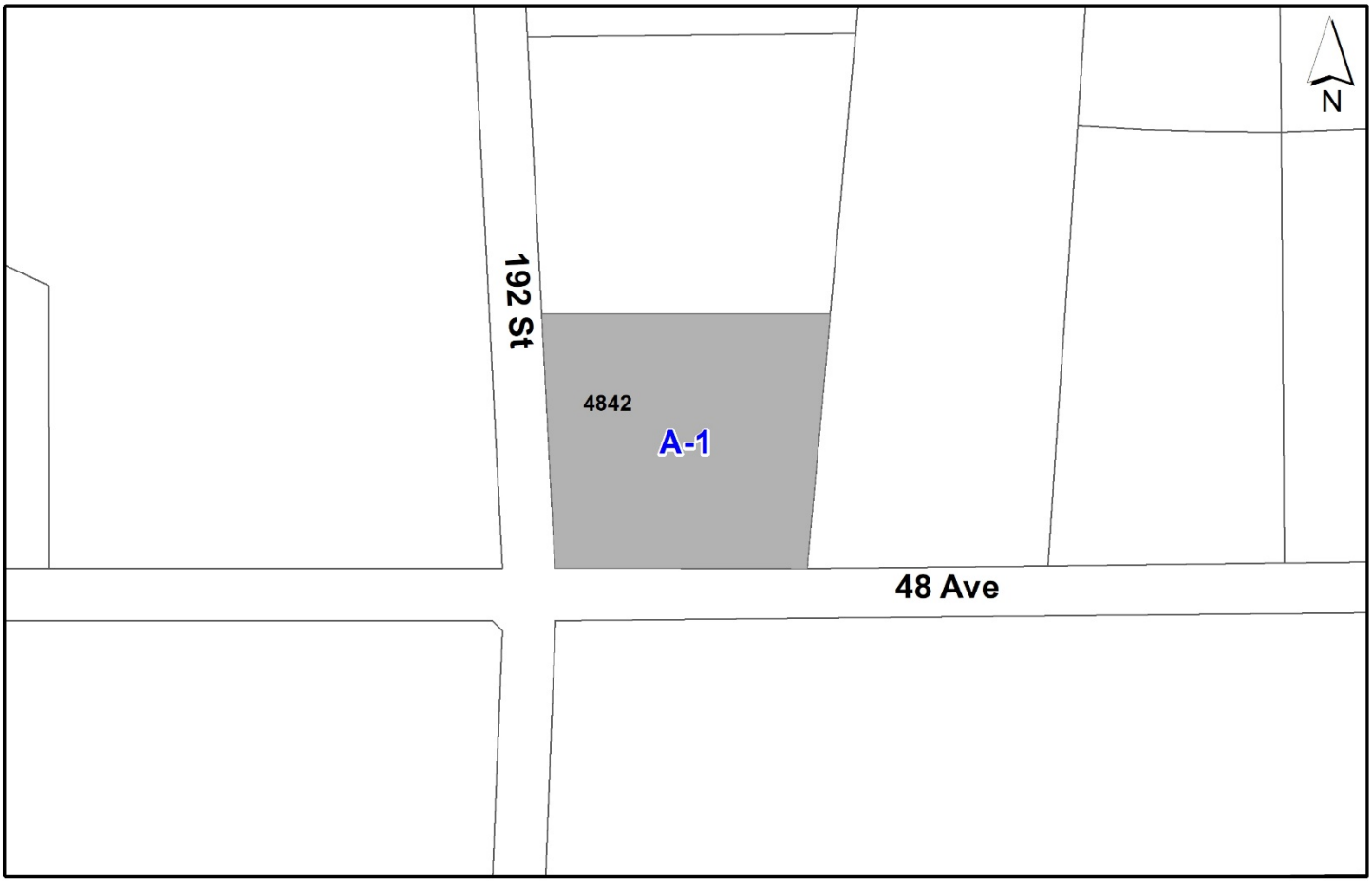
- **Development Permit**
- **Development Variance Permit**

to permit the development of a single-family dwelling.

LOCATION: 4842 - 192 Street

ZONING: A-1

OCP DESIGNATION: Agricultural



RECOMMENDATION SUMMARY

- Execution of Development Permit for Sensitive Ecosystems**.**
- Approval for Development Variance Permit to proceed to Public Notification.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Proposing to vary the rear yard setback requirements of the A-1 Zone.

RATIONALE OF RECOMMENDATION

- The proposal complies with the Agricultural designation in the Official Community Plan (OCP).
- The proposal complies with the Agricultural designation in the Metro Vancouver Regional Growth Strategy (RGS).
- The proposal complies with the Development Permit requirements in the OCP for Sensitive Ecosystems (Streamside Areas).
- A variance is proposed to the rear yard setback requirements of the A-1 Zone. The variance is requested to retain an existing tool and equipment storage shed (accessory building) near the north property line of the subject lot.
- The variance is requested as the accessory building is within the 60 metre buffer of the bald eagle's nest northeast of the site. In order to minimize disruptions to the eagles and maintain a 60 metre no disruption/removals buffer, the accessory building is proposed to remain in its existing location.

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council approve Development Permit No. 7919-0293-00 and authorize the Mayor and Clerk to execute the Permit.

2. Council approve Development Variance Permit No.7919-0293-00 (Appendix III) varying the following, to proceed to Public Notification:

    (a) to reduce the minimum rear yard setback of the A-1 Zone from 12.0 metres to 2.5 metres to the principle building face of an accessory structure.

SITE CONTEXT & BACKGROUND

Direction	Existing Use	OCP Designation	Existing Zone
Subject Site	Single family home, horse pasture and accessory buildings in the ALR.	Agricultural	A-1
North:	Vacant agricultural land under Development Application 19-0239-00 for development of a single-family home in the ALR.	Agricultural	A-1
East:	Single family home and accessory buildings in the ALR.	Agricultural	A-1
South (Across 48 Avenue):	Single family home and accessory buildings in the ALR.	Agricultural	A-1
West (Across 192 Street):	Mini golf course and driving range, and accessory non-farm uses in the ALR.	Agricultural	A-1

Context & Background

- The subject lot is located at 4842 – 192 Street, south of Cloverdale and west of the Surrey – Langley border. The lot is about 2.3 acres in size and is within the Agricultural Land Reserve (ALR).

- The subject lot is designated 'Agricultural' in the Official Community Plan (OCP) and is zoned 'General Agriculture Zone (A-1)'. The site is currently classified as farmland under the BC Assessment Act.

- The site falls within the Sensitive Ecosystem Development Permit area for Streamside Areas given the Class B watercourses within 48 Avenue and 192 Street.

- There is a bald eagle nest located approximately 7 metres north of the subject site, along the east property line of the northerly property, 4880 – 192 Street. No disturbance of vegetation or no new structures are permitted within 60 m of the nest. The 60-metre buffer, and no disturbance within that buffer, is being maintained as part of the subject application.

DEVELOPMENT PROPOSAL

Planning Considerations

- The applicant is proposing a Development Permit for Sensitive Ecosystems (Streamside Areas) to construct a new single-family dwelling on the property. The proposed single-family dwelling is 500 square metres in area, in compliance with the maximum house size in the ALR and in the A-1 zone.

- The proposal complies with the farm Homeplate regulation of the A-1 Zone. The proposed farm home plate area is 2,000 square metres.

- An existing structure at the north portion of the site is proposed to be retained. The building is utilized for storage of tools and equipment and is within the 60-metre eagle nest buffer. The existing structure is a good candidate for retention given its location in relation to the eagle nest, and to uphold the 60 m no disturbance buffer from the nest.

- The proposal complies with the streamside setback requirements for a Class B ditch, along 48 Avenue and 192 Street. The applicant has demonstrated compliance with the 7-metre development setback requirement in accordance with Part 7A of the Zoning Bylaw for both roadside ditches. A combination Statutory Right of Way / Restrictive Covenant (EPP105265) has been registered for the riparian area along 48 Avenue. The riparian area along 192 Street will be protected with a Restrictive Covenant for Sensitive Ecosystem Protection without landscaping.

Referrals

Engineering:	The Engineering Department has no objection to the project subject to the completion of Engineering servicing requirements as outlined in Appendix II.

POLICY & BY-LAW CONSIDERATIONS

Regional Growth Strategy

- The site is designated 'Agricultural' in the RGS. The proposal complies with the RGS designation.

Agricultural Land Commission Act and Regulations

- Section 20.1(1)(a) of the ALCA restricts agricultural land to have no more than one residence per parcel.

- Section 20.1(1)(b) of the ALCA restricts the maximum total floor area of a principal residence to 500 square metres.

Official Community Plan

Land Use Designation

- The site is designated 'Agricultural' in the OCP. The proposal complies with the OCP designation.

Zoning By-law

- The "General Agriculture Zone (A-1)" does not include any restrictions on density or house size. However, the A-1 Zone restricts the location and area of residential uses on agricultural properties through the farm residential footprint.

- The farm residential footprint is restricted to 2,000 square metres in area, and the single-family dwelling on a lot has a maximum setback of 50 metres from the front lot line and any accessory farm residential facility may not be located further than 60 metres from the front lot line.

- The proposal complies with the farm residential footprint requirements of the A-1 Zone.

Setback Variance

- The applicant is requesting the following variance:

  (a) To reduce the minimum rear yard setback to an accessory building or structure from 12.0 metres to 2.5 metres for the north property line.

- The variance is requested to retain the accessory building in its existing location.

- Approval of the variance would maintain the 60 metre no-disturbance buffer from the bald eagle's nest northeast of the site.

- Staff support the requested variance to proceed to Public Notification.

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 existing Class B (yellow-coded) watercourses within the 48 Avenue and 192 Street road allowances. 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, the Class B (yellow-coded) watercourses require a minimum streamside setback of 7 metres, as measured from the top of bank. The proposed setbacks comply with the requirements outlined in the Zoning By-law.

- The Class B stream and riparian area along 48 Avenue has been protected through registration of a combined Restrictive Covenant/Right-of-Way against the property to ensure safeguarding and maintenance of the Protection Area in perpetuity, in compliance with the OCP.

- The Class B stream and riparian area along 192 Street will be protected with a Restrictive Covenant to ensure safeguarding of the Protection Area in perpetuity, in compliance with the OCP.

- An Ecosystem Development Plan, prepared by Libor Michalak *R.P. Bio*., of Keystone Environmental and dated August 12, 2021, was reviewed by staff and found to be generally acceptable.

- A Nest Management Plan, prepared by Libor Michalak, *R.P. Bio*., of Keystone Environmental and dated September 7, 2021, was reviewed by staff and found to be generally acceptable. Staff note that house demolition is to take place after August 31, 2022, as bald eagle nesting is to be complete following that date. House and infrastructure associated with the site redevelopment is to be complete before nesting season in February 2023 before eagle eggs are laid (approximately February 5, 2023).

- The City has collected landscape securities for installation of a 1.2 metre high permanent split-rail fence for riparian protection along 48 Avenue and 192 Street. As the property is within the ALR, riparian protection fencing is only required to the northern limit of the farm home plate along 192 Street.

TREES

- Tim Vandenberg, ISA Certified Arborist of Mike Fadum & Associates prepared an Arborist Assessment for the subject property. The table below provides a summary of the tree retention and removal by tree species:

Table 1: Summary of Tree Preservation by Tree Species:

Tree Species	Existing	Remove	Retain
Alder and Cottonwood Trees			
Alder & Cottonwood	14	1	13
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Trembling Aspen	13	0	13
Paperbark Birch	1	1	0
Bitter Cherry	2	0	2
Mixed native	20	0	20
Coniferous Trees			
Western Redcedar	4	3	1
Norway Spruce	1	0	1

Tree Species	Existing	Remove	Retain
Total (excluding Alder and Cottonwood Trees)	**41**	**4**	**37**

Total Replacement Trees Proposed (excluding Boulevard Street Trees)	**8**
Total Retained and Replacement Trees	**49**
Contribution to the Green City Program	**$0**

- The Arborist Assessment states that there are a total of 41 mature trees on the site, excluding Alder and Cottonwood trees. 14 existing trees, approximately 34% of the total trees on the site, are Alder and Cottonwood trees. It was determined that 37 trees can be retained as part of this development proposal. The proposed tree retention was assessed taking into consideration the location of services, building footprints, road dedication and proposed lot grading.

- No trees within 60 metres of the existing Bald Eagle nest will be removed.

- For those trees that cannot be retained, the applicant will be required to plant trees on a 1 to 1 replacement ratio for Alder and Cottonwood trees, and a 2 to 1 replacement ratio for all other trees. This will require a total of 8 replacement trees on the site. The applicant is proposing 8 replacement trees, meeting City requirements.

- In summary, a total of 49 trees are proposed to be retained or replaced on the site with no contribution to the Green City Program.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

Appendix I. Site Plan
Appendix II. Engineering Summary
Appendix III. Development Permit 7919-0293-00
Appendix IV. Development Variance Permit 7919-0293-00

approved by Ron Gill

Ron Gill
Acting General Manager
Planning and Development

SC/cm

LOT CALCULATIONS

CIVIC ADDRESS:	LOT#1, 19225-48 AVENUE
ZONING:	A1
LOT AREA:	108,855 SQ.FT. [10,113 M^2]
PERMITTED FLOOR AREA RATIO:	500m^2
PROPOSED FLOOR AREA RATIO:	5374.49 SQ.FT. [499.31m^2]
PERMITTED LOT COVERAGE:	N/A
PROPOSED LOT COVERAGE:	= 3432.27 SQ.FT. [318.87 m^2]
PERMITTED BUILDING HEIGHT:	9.00M
PROPOSED BUILDING HEIGHT:	8.69M

PERMITTED TOTAL HOME PLATE AREA = 2000 M^2

PROPOSED SFD STRUCTURAL FILL FOOTPRINT AREA = 3577.87 SQ.FT. [332.4(

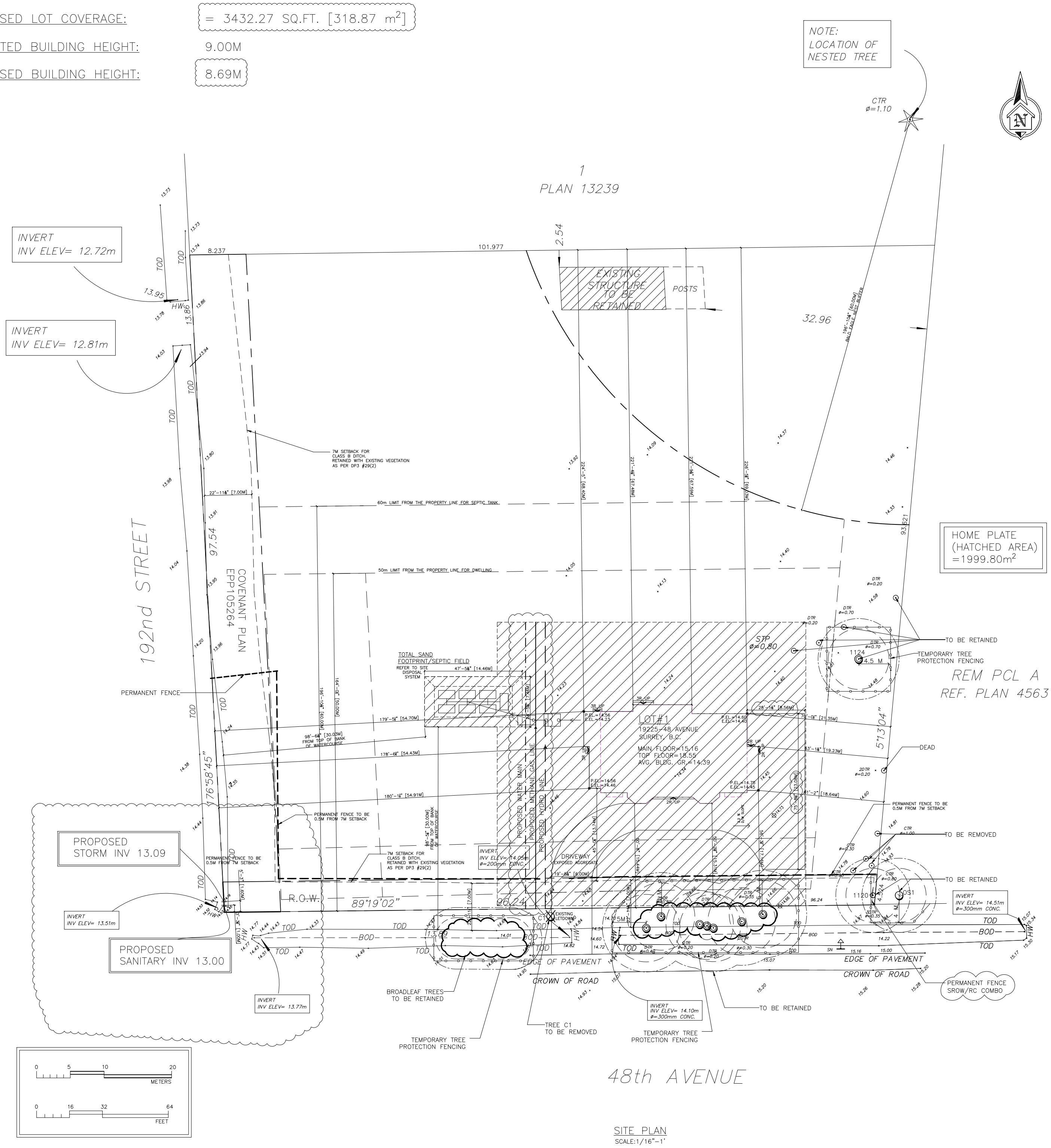
DRIVEWAY AREA = 3930.35 SQ.FT. [365.14 M^2]

SEPTIC FIELD AREA = 1161.14 SQ.FT. [1073.87 M^2]

TOTAL FOOT PRINT AREA = 8669.36 SQ.FT. [805.41M^2]

ACTUAL HOME PLATE AREA (HATCHED AREA) = 1999.80M^2

Appendix I



SITE PLAN
SCALE:1/16"=1'

SANITARY MANHOLE
RIM ELEV= 15.00m
INV. ELEV INACCESSIBLE
SAN MH

THESE PLANS CONFORM TO REQUIREMENTS IN THE B.C. BUILDING CODE 2018.

DRAWING NO.	REFERENCE	NO.	REVISION	BY	DATE

Dhillon Designs Ltd.

TITLE		
PROPOSED RESIDENCE FOR MR. PALWINDER SINGH GILL LOT #1, 19225-48 AVENUE SURREY, B.C.	DWN:	S.P.
	SCALE:	1/16"=1'
	DATE:	APR.11.19
	CHKD:	
	PHONE:	604-781-3648

DHILLON DESIGNS LTD.
UNIT 215-12830-80th AVE.
SURREY, B.C. V3W 3A8
PHONE: (604) 590-2808
FAX: (604) 590-2878
EMAIL:info@dhillondesigns.ca

CITY OF SURREY
the future lives here.

INTER-OFFICE MEMO

TO: **Manager, Area Planning & Development**
- North Surrey Division
Planning and Development Department

FROM: **Development Services Manager, Engineering Department**

DATE: **August 21, 2020** PROJECT FILE: **7819-0293-00**

RE: **Engineering Requirements**
Location: 4842 192 Street

DEVELOPMENT PERMIT – SENSITIVE ECOSYSTEMS

The following issues are to be addressed as a condition of issuance of the Development Permit for Sensitive Ecosystems (Streamside) associated with the proposed construction of a new single-family dwelling on the A-1 property:

- The applicant will be required to provide a combined statutory right-of-way/restrictive covenant (SRW/RC) for the class "B" watercourse located along the north side of 48 Avenue. The SRW/RC is to be registered over the Streamside Protection Area adjacent to the residential home plate.

There are no engineering requirements relative to issuance of the Development Permit.

Tommy Buchmann, P.Eng.
Development Services Manager

M51

CITY OF SURREY

(the "City")

DEVELOPMENT PERMIT

NO.: 7919-0293-00

Issued To:

(the "Owner")

Address of Owner:

A. General Provisions

1. This development 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 permit.

2. This development 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: 000-977-578
Parcel "One" (Explanatory Plan 12474) of the South West Quarter of Section 3 Township 8 New Westminster District

4842 - 192 Street

(the "Land")

3. This development permit applies to only that portion of the buildings and structures on the Land shown on Schedule A which is attached to and forms part of this development permit.

4. The Land has been designated as a development permit area in Surrey Official Community Plan, 2013, No. 18020, as amended.

B. Sensitive Ecosystem

1. Development shall occur strictly in accordance with the Ecosystem Development Plan prepared by Keystone Environmental, dated January 4, 2021, and referenced as Schedule B (the "Ecosystem Development Plan").

2. The Streamside Protection Area, including the Streamside Setback Area as defined in Surrey Zoning By-law, as may be amended, or replaced from time to time, shown outlined in a solid heavy line on the Explanatory Plan EPP105265 and EPP105264 shall be established, inspected, and maintained in accordance with the plans attached and referenced as Schedule C.

3. Tree removal and vegetation disturbance shall be undertaken, monitored, inspected, and maintained in accordance with the reports attached referenced as Schedule D. Tree removal and protective fencing shall be undertaken in accordance with the Arborist Report dated November 9, 2020, and prepared by Mike Fadum and Associates Ltd. attached as Schedule D.

4. Streamside Protection Areas shall remain free of development and left undisturbed.

5. Habitat protection, mitigation, compensation, and rehabilitation works shall be completed in accordance with the "Ecosystem Development Plan".

6. Minor changes to the Drawings that do not affect the Streamside Protection Area or Green Infrastructure Protection Area, as identified and forming part of this development permit, site grading, soil stability, building placement, runoff or vegetation on the Land, may be permitted subject to the approval of the City.

D. Security and Inspections

1. Security must be submitted to the City prior to the installation of any Landscaping.

2. For Hazard Land, Sensitive Ecosystem and Farm Protection development permits, security must be submitted prior to the issuance of any Development Permit, Building Permit or Tree-cutting Permit.

3. For Hazard Land, Sensitive Ecosystem or Farm Protection development permits, or that portion of the development pertaining to the Hazard Land, Sensitive Ecosystem or Farm Protection component, the Security amount is for: $13,948.70

4. Security release will only be considered once installation of the Landscaping has been completed, after final approval of the installation has been given by the City, and after the completion by the Owner of any required maintenance periods identified in this development permit, to the satisfaction of the City.

5. For Hazard Land, Sensitive Ecosystem and Farm Protection development permits, when Landscaping requirements and permit requirements have been substantially completed and approved by the City AND upon successful completion of the MINIMUM ONE YEAR maintenance period, to the satisfaction of the Qualified Environmental Professional and the City, with Landscaping confirmed at the 'free to grow stage' (as confirmed and approved by the City), and without the City having to use the Security, 100 % of the original Security will be returned.

6. If final approval of the Landscaping installation and maintenance is not given by the City, the City has the option of using the Security to compete the Landscaping (or to hire a contractor to complete the work on the City's behalf) with any remaining money returned to the Owner. The Owner authorizes the City or its agent to enter upon the Land to complete the Landscaping.

7. If the City elects not to enter upon the Land to complete the Landscaping and the Owner does not complete the Landscaping, the Security is forfeited to the City five (5) years after the date of the provisional or final inspection of the buildings and structures referred to in the Drawings.

E. Monitoring

1. A Qualified Environmental Professional must be retained by the Owner to ensure completion of the works in accordance with this Development Permit and shall submit monitoring reports and a completion report to the City.

2. Monitoring of the Bald Eagle (BAEA) nest is to be performed by a Qualified Environmental Professional (QEP) in order to assess possible impact of the works to pre-development habitat conditions. For the subject site, the monitoring requirements include:

    a. Bald Eagle courtship and nest establishment can occur as early as the end of December. To assess the presence of eagles at the Site it is recommended that a QEP monitor the area once a week to observe whether the eagles return. Should construction extend into nesting season the QEP will be present to observe the eagles and provide direction at the time based on the eagle's behaviour.

b. Existing vegetation/trees surrounding the nest and within the 60 metre buffer from the nest will remain in their existing condition.

c. Before site vegetation clearing is approved, a QEP will verify that the BAEA or other active bird nests in the area are not occupied by a bird or their eggs and that the vegetation surrounding the nest is not being used by young of or year eaglets.

d. Assuming the City provides the building permit by the end of October 31, 2022, by December 2022 most work on the house will be completed before the return of the BAEAS. This includes work such as farming, roofing, excavation, back fill etc. which may have an effect on the BAEAS. After January 1, 2023, all exterior works will be completed and the remaining house construction will focus on the interior including wall finishing, cabinets, flooring, interior paint, and exterior cladding, finishes, and form work for landscaping and driveways. This should have no effect on the BAEAS if they are in the area. A QEP can visit the site once every two weeks until the courtship and nesting begins and verify there is no negative effect to their nest success from the proposed works.

e. After January 1, 2023, if necessary, a QEP will visit the site weekly to assess the effectiveness of the noise buffer and address any issues if the Bald Eagles return by completing weekly checks over a month to assess the habituation of the bird to the new dwelling and activities.

f. No monitoring of the nest is proposed during land clearing and construction since these works are proposed to take place outside the nesting period of the eagle (November to the end of December 2022).

g. Pre-construction, a QEP will visit the site to verify and sign off that construction fencing has been erected adequately and that it will protect the 60-metre buffer for the nest. No encroachment by machinery or personnel will be allowed into the setback area.

h. Post-construction, a QEP will complete an assessment and sign off that the features in the setback area continue to remain in their original condition immediately after development.

i. The QEP will assess the natural vegetation in the buffer zone around the nesting tree, verify that it has remained undisturbed, and that fencing will realistically and effectively restrict people or beasts from accessing the setback zone for the nest.

j. The QEP will confirm that the permanent riparian setback fencing has been installed correctly.

k. Since Bald Eagles may make more than one nest, if this pair come back in the 2023 breeding season, the QEP will verify if the eagles continue to use the retained habitat features and if they breed successfully.

l. The Bald Eagle Management Plan and recommended subsequent monitoring reporting should be provided to the Ministry of Environment (Ecosystems, Environmental Stewardship Division).

F. Administration

1. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development permit.

2. This development permit shall lapse if the Owner does not substantially start any construction with respect to which this development permit is issued within two (2) years after the date this development permit is issued. The terms and conditions of this development permit, and any amendment to it, are binding on any and all persons who acquire an interest in the Land.

3. This development permit is only valid for the development that is described in this development permit. If a change to development is considered, a new development permit or an amendment to this permit is required before any work is started.

4. All reports, documents and drawings referenced in this development permit shall be attached to and form part of this development permit.

5. In addition to this development permit, and in accordance with the Surrey Building Bylaw, as may be amended or replaced from time to time, a restrictive covenant, as identified on Explanatory Plan EPP105264 for no-build and environmental protection, and a combination Statutory Right of Way/Restrictive Covenant as identified on EPP105265 for no-disturbance and maintenance access have been registered as charges on the Land.

6. This development permit is issued subject to compliance by the Owner and the Owner's employees, contractors, and agents with all applicable City bylaws, including the Tree Protection Bylaw, Erosion and Sediment Control Bylaw and the Soil Removal and Deposition Bylaw, all as may be amended or replaced from time to time.

7. This development permit is NOT A BUILDING PERMIT.

AUTHORIZING RESOLUTION PASSED BY THE COUNCIL/DELEGATED OFFICIAL, THE DAY OF , 20 .

ISSUED THIS DAY OF , 20 .

_____

Mayor

_____

City Clerk

IN CONSIDERATION OF COUNCIL APPROVAL OF THIS DEVELOPMENT PERMIT AND OTHER GOOD AND VALUABLE CONSIDERATION, I/WE THE UNDERSIGNED AGREE TO THE TERMS AND CONDITIONS OF THIS DEVELOPMENT PERMIT AND ACKNOWLEDGE THAT WE HAVE READ AND UNDERSTOOD IT.

_____

Authorized Agent: (Signature)

_____

Name: (Please Print)

Schedule A

LOT CALCULATIONS

CIVIC ADDRESS:	LOT#1, 19225–48 AVENUE
ZONING:	A1
LOT AREA:	108,855 SQ.FT. [10,113 M^2]
PERMITTED FLOOR AREA RATIO:	500m^2
PROPOSED FLOOR AREA RATIO:	5374.49 SQ.FT. [499.31m^2]
PERMITTED LOT COVERAGE:	N/A
PROPOSED LOT COVERAGE:	= 3432.27 SQ.FT. [318.87 m^2]
PERMITTED BUILDING HEIGHT:	9.00M
PROPOSED BUILDING HEIGHT:	8.69M

PERMITTED TOTAL HOME PLATE AREA = 2000 M^2

PROPOSED SFD STRUCTURAL FILL FOOTPRINT AREA = 3577.87 SQ.FT. [332.40 M^2]

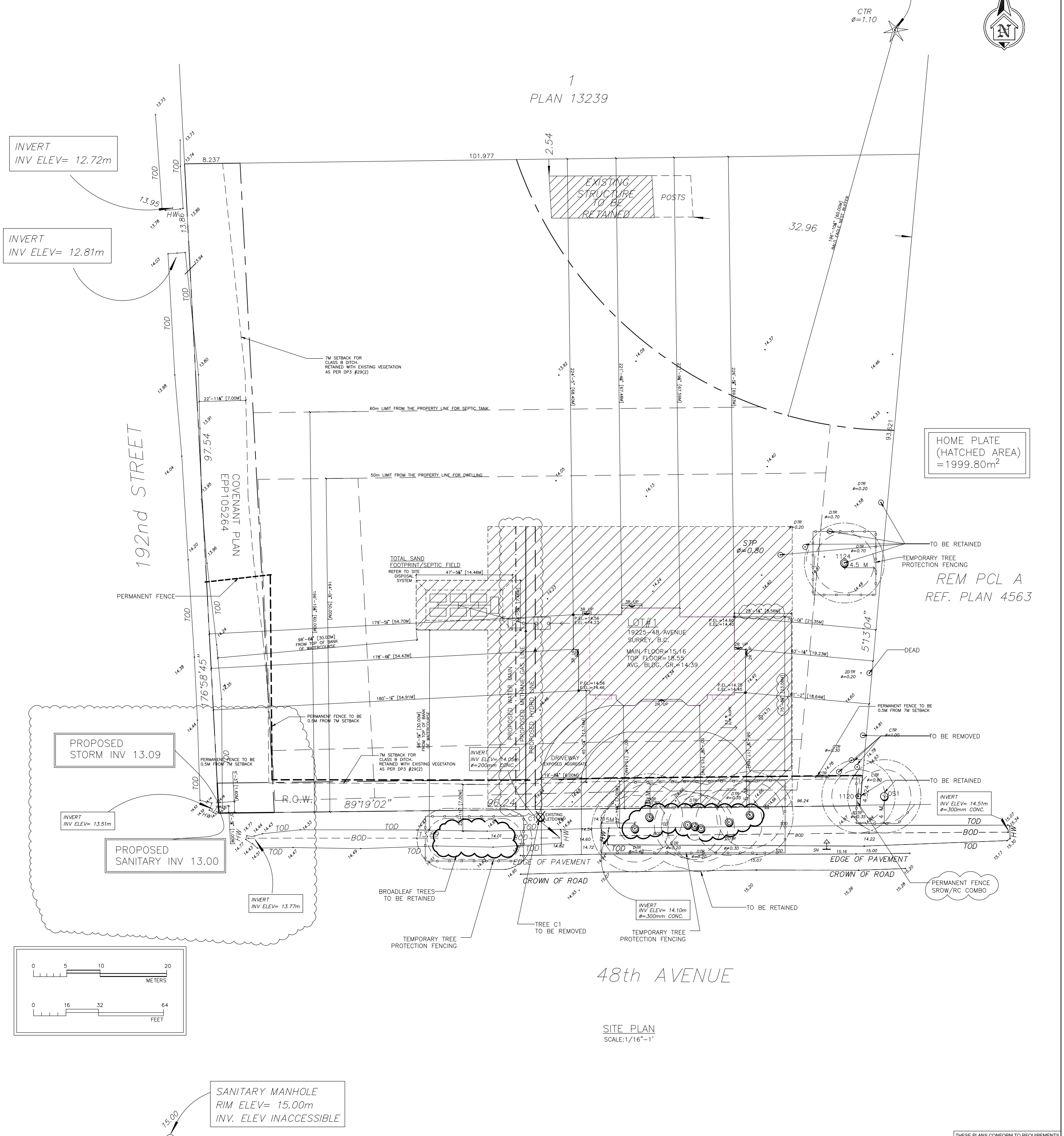
DRIVEWAY AREA = 3930.35 SQ.FT. [365.14 M^2]

SEPTIC FIELD AREA = 1161.14 SQ.FT. [1073.87 M^2]

TOTAL FOOT PRINT AREA = 8669.36 SQ.FT. [805.41M^2]

ACTUAL HOME PLATE AREA (HATCHED AREA) = 1999.80M^2

NOTE: LOCATION OF NESTED TREE



THESE PLANS CONFORM TO REQUIREMENTS IN THE B.C. BUILDING CODE 2018.

DRAWING NO.	REFERENCE			NO.	REVISION	BY	DATE
REV. 11.	DRIVEWAY EXTENDED; F.A.R.	REVISED BY H.B.	DATE MAR.21.2021	1.	REMOVED RIGHT SIDE DRIVEWAY ACCESS	P.K.	FEB.19.2020
REV. 12.	SHOWN PROPOSED SERVICES (STORM, SANITARY, WATER, GAS & ELECTRICAL)	REVISED BY S.P.	DATE: JULY.30.2021	2.	SHOWN DISTANCE FROM RIPARIAN AREA TO THE STRUCTURE AND SEPTIC TANK.	P.K.	FEB.19.2020
				3.	SHOWN TREES TO BE CUT IN THE ARBORIST REPORT; 7m SETBACK FOR CLASS B DITCH	H.B.	APR.14.2020
				4.	REMOVED DECKS AND SIDE CAR PORT AS PER UPDATED A-1 ZONING BYLAW	H.B.	MAY.01.2020
				5.	3M SETBACK FROM THE TOE OF SLOPE TOWARDS THE RIPARIAN AREA	H.B.	JUL.21.2020
				6.	SHOWED TREE 1120 TO BE RETAINED; SHOWED SRW AND ROW AS PER SURVEYOR	H.B.	SEP.30.2020
				7.	STREAMSIDE AREA FENCING; 50m AND 60m LIMIT FROM PROPERTY LINE; EAGLE NEST BUFFER	H.B.	OCT.21.2020
				8.	TEMPORARY TREE PROTECTION FENCING LABELLED	H.B.	OCT.29.2020
				9.	SROW/RC COMBO FENCING LABELLED	H.B.	JAN.12.2021
				10.	RELOCATED REVISED SEPTIC TANK	H.B.	JAN.26.2021

Dhillon Designs Ltd.

TITLE		
PROPOSED RESIDENCE FOR MR. PALWINDER SINGH GILL LOT #1, 19225–48 AVENUE SURREY, B.C.	DWN:	S.P.
	SCALE:	1/16"=1'
	DATE:	APR.11.19
	CHKD:	
	PHONE:	604–781–3648

DHILLON DESIGNS LTD.
UNIT 215–12830–80th AVE.
SURREY, B.C. V3W 3A8
PHONE: (604) 590–2808
FAX: (604) 590–2878
EMAIL:info@dhillondesigns.ca

Keystone Environmental
Knowledge-Driven Results

Updated August 12, 2021

Mr. Survir Dhaliwal
4842 192 Street
Surrey, BC V3Z 0L5

Dear Mr. Dhaliwal:

Re: Sensitive Ecosystems Development Permit Areas Report
4842 192nd Street, Surrey, BC
Project No. 15340

1. INTRODUCTION

It is understood that you propose to construct a single family dwelling to 4842 192nd Street, Surrey, BC (the Site) as presented in Appendix A, Figure 1. The Site currently contains an existing dwelling. Site access is available directly from 192nd Street (Appendix A, COSMOS Figure). The footprint of the proposed development is not anticipated to encroach into a City of Surrey's (the City) regulated Class B (significant food nutrient stream) stream along the west of 192nd Street and south of the Site as well as retain a required setback for a Bald Eagle (*Haliaeetus leucocephalus*) nest northeast of the Site (Appendix A, Figure 1).

Under the City's Bylaw Part 7A, developments within 50 m of identified regulated streams or GIN Corridors require the completion of a Sensitive Ecosystem Development Permit Areas (SEDPA) report to assess a project's effects on the City's regulated streams and GIN Corridors.

The following SEDPA report has been prepared in accordance with the City's DP3 Sensitive Ecosystems Subsection D, Corporate Report R-188. This SEDPA report is to be used in support of the proposed development application. It explains how the project is to protect the Site's natural habitats and sensitive ecosystems as required in City's DP3 Sensitive Ecosystems Subsection D, Corporate Report R-188.

Suite 320
4400 Dominion Street
Burnaby, British Columbia
Canada V5G 4G3

Telephone: 604 430 0671
Facsimile: 604 430 0672
info@KeystoneEnviro.com
KeystoneEnviro.com

Environmental Consulting
Engineering Solutions
Assessment & Protection

2. SENSITIVE ECOSYSTEMS SUBSECTION D – SUBMISSION REQUIREMENTS

2.1 Consultant Qualifications

DP3 #23: ALL registered professionals who will be involved in the development proposal, whether a Biologist, Geoscientist, Engineer, Forester, and/or Agrologist, shall have demonstrated education, expertise, accreditation and knowledge relevant to sensitive environment, ecosystems and/or streamside management.

We confirm that all registered professionals involved in this development proposal have demonstrated education, expertise, accreditation and knowledge relevant to sensitive environment, ecosystems and/or streamside management.

DP3 #24 ALL Arborists who will be involved in the development proposal shall be registered and certified with the International Society of Arboriculture (ISA).

Will be provided at a later date if necessary.

DP3 #25 Supply a list and written statement, including all documentation, verifying the qualifications of all Qualified Environmental Professionals (QEP) and/or ISA Certified Arborist responsible for preparing report submissions or involved in monitoring site conditions for Sensitive Ecosystem Development Permit applications.

The following are the professionals that are involved in the development proposal:

Biologist:

Libor Michalak, R.P.Bio., P.Biol.
Keystone Environmental Ltd.
Suite #320 – 4400 Dominion Street
Burnaby, BC V5G 4G3
Mobile: 604-838-0475
Telephone: 604-430-0671
Email: lmichalak@keystoneenvironmetal.ca

Geotechnical Engineer:

Tegbir Bajwa P.Eng.
Able Geotechnical
15580 79A Avenue
Surrey, BC V3S 8R8
Telephone: 778-995-2404

DP3 #26: Where more than one Qualified Environmental Professional is needed, submit a written statement identifying THE PRIMARY QEP for the entire development and acknowledging their role to ensure: all required reports are prepared by qualified professionals and are coordinated both in content and execution; and that all relevant Development Permit Guidelines and requirements have been met and/or addressed in the application submission.

Biologist:

Libor Michalak, R.P.Bio., P.Biol.
Keystone Environmental Ltd.
Suite #320 – 4400 Dominion Street
Burnaby, BC V5G 4G3
Mobile: 604-838-0475
Telephone: 604-430-0671
Email: lmichalak@keystoneenvironmetal.ca

All consultants working on this project, "ensure: all required reports are prepared by qualified professionals and are coordinated both in content and execution; and that all relevant Development Permit Guidelines and requirements have been met and/or addressed in the application submission."

3. PROTECTION AREAS

3.1 Streamside

DP3 #27a: Zoning Bylaw: Part 7a, Streamside Protection of Surrey's Zoning Bylaw is to be used to determine the Area of Protection required for development adjacent to a stream.

COSMOS City online mapping shows a Class B[1] stream/ditch (significant food and nutrient value, non fish bearing), located along the west of the Site and a Class C[2] (non fish habitat) roadside ditch associated with the south of the Site as presented in Appendix A, COSMOS Figure and in Photographs 1–3. A Site visit to classify the Site's regulated streams and flag the tops of banks was performed on October 1, 2020.

[1] A 'stream' that provides food/nutrient value to downstream fish habitat as defined by the Provincial *Water Sustainability Act* and *Riparian Areas Protection Regulation* and it is considered fish habitat as defined by the Federal *Fisheries Act*.
[2] A water feature that is not considered a 'stream' as defined by the Provincial *Water Sustainability Act* and *Riparian Areas Protection Regulation*. Not considered fish habitat as defined by the Federal *Fisheries Act*. No fish potential present at any time of the year.

Class B Ditch

The Class B Ditch along 192nd Street was confirmed a Class B as it provides food/nutrient value to downstream fish habitat. There is no fish potential present at any time of the year since the culverts it drains to do not allow for upstream fish migration. This feature drains south from a high point of land between the Site and the northern property along the west of the Site terminating into the storm sewer network of the area at the corner of 48th Avenue and 192nd Street (Photographs 1–3).

The instream of this ditch is dominated by fines, leaves and grasses. It has a wetted width of approximately 0.4 m and is dry for most of the year. No groundwater was observed in the Ditch during the November 29, 2019 Site visit. The riparian canopy consists of shrubs and grasses. Dominant shrubs include Himalayan blackberry (*Rubus armeniacus*) and Douglas spirea (*Spirea douglasii*) (Photographs 1-3). It was confirmed Class B in the field (Appendix A, Figure 1).

This west Class B Ditch is to retain a 7 m setback from the top of bank in accordance to Bylaw Part 7A (Figure 1 of Appendix A). It is not to be affected by the proposed redevelopment at the Site.

Class B South Ditch

This southern ditch has been classified as Class C in COSMOS mapping (non fish habitat). It should be upgraded to a Class B as it provides food/nutrient value to downstream fish habitat. There is no fish potential present at any time of the year since the culverts it drains to do not allow for upstream fish migration.

It drains west along the south of the Site under a culvert access drive. It collects overland surface runoff and terminates into the storm sewer network of the area at the corner of 48th Avenue and 192nd Street in a headwall (Photographs 4 and 5).

The instream of this ditch is also dominated by fines, leaves and grasses. It has a wetted width of approximately 0.4 m and is dry for most of the year. No groundwater was observed in the Ditch during the November 29, 2019 Site visit. The riparian canopy consists of shrubs and grasses. Dominant shrubs include Himalayan blackberry (*Rubus armeniacus*) and Douglas spirea (*Spirea douglasii*). Trees also line the central south section of the Ditch (Photograph 4, Appendix A, Figure 1). They consist of consist of dominant red alder (*Alnus rubra*) and water birch (*Betula occidentalis*, Photograph 1).

Under Bylaw Part 7A this ditch will require a 7 m setback from its top of bank as presented in Figure 1 of Appendix A.

DP3 #27b: Biodiversity Conservation Strategy: the Biodiversity Management Areas, Green Infrastructure Network (GIN) and Appendix J of the Biodiversity Conservation Strategy (BCS) are to be used to determine the Area of Protection required for development within a Green Infrastructure Area.

There is no GIN associated with the Site.

4. LEVELS OF SAFEGUARDING

DP3 #28: Maximum Safeguarding: conveyance of the Protection Area to the City of Surrey. Where conveyance is chosen, the applicant is not responsible for the additional ecological restoration or on-going maintenance of the Protection Area as detailed and described below under the Minimum Safeguarding option.

This section does not apply.

DP3 #29: Minimum Safeguarding: registration of a combined Restrictive Covenant/ Right-of-Way against the property to ensure safeguarding and maintenance of the Protection Area in perpetuity.

Safeguarding being proposed for the Class B Ditches will consist of a combined Restrictive Covenant/Right-of-Way 7 m setbacks from the tops of banks. Both will require 1.2 m high temporary construction orange snow fence that will be erected during construction of the house and after construction a permanent fence (Appendix A, Drawing No. SSD-PK6112, Figure 1) will be placed along the 7 m setbacks.

The Restrictive Covenant/Right-of-Way shall detail the:

1) **Identified "no disturbance" and "maintenance access' areas; (illustr.);**

   This is presented in Figure 1 of Appendix A.

2) **Provisions for post-construction on-going management of the Protection Areas for a minimum of five years, including any required rehabilitation, restoration and/or conservation of any areas identified by the project-managing QEP;**

   The Class B Ditches associated with the Site will retain 7 m setbacks. These setbacks will be retained with the existing vegetation. No rehabilitation or restoration is proposed for the area since it is currently well vegetated. Protected trees and vegetation associated with the trees are presented in the Mike Fadum and Associates Arborist report (March 20, 2020) and Appendix A, Figure 1.

3) **Provisions for yearly monitoring and reporting; and**

Since the Site will not be revegetated along the setback areas no monitoring or reporting will be required.

4) **Identification of the Principal QEP responsible for providing yearly monitoring reports during the mini mum five-year maintenance period.**

   N/A

5) Compensation plan and cost estimate for all items listed in this section. This will also be used to determine landscape bonding and security requirements for installation and maintenance purposes.

Cost estimate for the fencing along the setback area of the house plate is presented in Appendix A.

5. PRE-DEVELOPMENT SITE CONDITIONS

DP3 #30: Building and Construction: Identify all existing on-site buildings, structures and developed areas, including paved and landscaped areas, and any other areas disturbed beyond its original condition.

This information is presented in Appendix A COSMOS Figure and Figure 1. The Site currently contains existing house that is to be demolished in the northwest section of the Site with access driveway from 192nd Street. A Bald Eagle nest is located in the northeast woodlot area on the northern parcel to the Site (Appendix A Figure 1 Photographs 9 and 10). The Site is currently being used as an active horse farm. A driveway access and work shop/barn are located along the northern section of the Site (COSMOS Figure, Appendix A, Figure 1, Photographs 6–10). The southern access driveway will be used to access the house.

DP3 #31: Soils: Perform a slope analysis and identify existing topographic features including geological and hydrogeological soil conditions, particularly areas of unstable or sensitive soils.

This is presented in the Able Geotechnical Ltd. report (May 24, 2019). The report showed stable soils. Slopes are addressed in the Geotechnical Report in Section 2.0. Soils are discussed in Section 3.0.

DP3 #32: Trees and Vegetation: Identify and detail existing vegetation and trees (including trees defined in the Surrey Tree Protection Bylaw, as amended) and submit in an arborist's assessment report.

Only small trees are to be removed from the Site are presented in Figure 1 of Appendix A at the entrance to the Site from 48th Avenue. Trees have been addressed in the Mike Fadum and Associates March 20, 2020 Arborist report. The tree identified at the border to the SPEA for the south Ditch is recommended to be removed by the Arborist since it is in poor condition unhealthy and it becomes exposed and prone to safety hazards when neighbouring trees are removed. Replacement for tree is provided in Arborist report.

DP3 #33: Habitat: Identify Schedule 1, Federally protected *Species-At-Risk Act* or Provincial Red- or Blue-Listed plant or animal species and their critical habitats including shrub and ground cover communities and any species, or habitat feature, identified as requiring year-round protection as identified in the Provincial *Wildlife Act*.

The closest species at risk identified on BC CDC iMap database was identified 800 m from the Site. It was that of the Mountain Beaver (*Aplodontia rufa*). The Mountain Beaver is federally listed in Schedule 1 of the *SARA* as 'Special Concern' and it is Yellow-listed in the province. This species is no longer being tracked by the BC CDC. The information included in the report was accurate up until the last observation. 1969-07-28: museum specimen collected. It is not likely to be present at the Site due the lack of habitat for its life requisites. This species prefer dense, moist forests on ferny slopes and are occasionally found in dam ravines in urban areas. They commonly occur shortly after clearcutting of forests and are likely to colonize soft-soiled tracts of land in drainage areas.

Since the Site habitat is devoid of trees and is dominated by farming practices there are not expected to be any critical habitats including shrub and ground cover communities or any species, or habitat features on-Site requiring year-round protection as identified in the Provincial *Wildlife Act.*

A Bald Eagle nest is located in the northeast corner of the Site (Appendix A, COSMOS Figure and Figure 1). A management plan for the proposed development in association with the Bald Eagle nest is presented in Appendix B and a 60 m setback is proposed.

DP3 #34: Drainage: Identify the Streamside Protection Area and stream locations, including top of bank (illustrated stream classifications (as defined in Surrey's Zoning Bylaw, as amended).

This information is presented in Appendix A, Figure 1.

DP3 #35: Drainage: Identify existing site drainage conditions in accordance with the Integrated Storm water Management Plan (ISMP) relevant to the Site location.

Site runoff currently drains overland and infiltrates to the surrounding area. House development will consider tile drains and bioswales that collect water and discharge flows overland and away from the setback areas for the Ditches to allow for infiltration.

DP3 #36: Drainage: Detail existing site drainage conditions including depth to ground water table, storm water conveyance, infiltration and storage features and storm water channels and overland flow paths.

The Able Geotechnical Ltd. report (May 24, 2019, Appendix B) states that groundwater seepage was encountered in the silt layer 2-3 m depth below the existing grades, indicating a perched water condition. Groundwater fluctuates seasonally.

6. PROPOSED DEVELOPMENT CONDITIONS AND SPECIFICATIONS

DP3 #37a: Overall Site: Identify the Streamside Protection Area and where it is situated with the development.

This information is presented on Appendix A, Figure 1.

DP3 #37b: Overall Site: Identify the Green Infrastructure Protection Area and where it is situated with the development.

There is no Green Infrastructure Protection Area associated with this Site.

DP3 #38: Overall Site: Locate development where it is least sensitive to the objectives of the Biodiversity Management Areas, Green Infrastructure Network (GIN) corresponding conditions and recommendations required for management as identified in Surrey's Biodiversity Conservation Strategy.

There is no Green Infrastructure Protection Area associated with this Site.

DP3 #39: Building and Construction: Detail construction specifications including materials, timing, technologies and techniques proposed as a means to mitigate and reduce the ecological impacts of development on the identified Stream or Green Infrastructure Protection Area.

- This information is presented in Appendix A, Figure 1.
- An Erosion Sediment Control (ESC) Plan in accordance with the City of Surrey ESC Bylaw 2006 No. 16138 for construction should be prepared to protect the SPEAs of the Ponds. The ESC Plan should be prepared by a QEP, and include mitigation measures and Best Management Practices (BMPs) that avoid or minimize adverse impacts to the two Class B ponds (e.g., vegetation removal, sediment deposition, wastes, fish habitat, wildlife and vegetation protection etc.). The ESC plan will be provided to the Contractor selected to perform the construction.
- During construction fencing (e.g., 1.2 m high orange snow fencing with silt fencing and signage) will be erected to protect the setback area for the Class B Ditches (Appendix A, Figure 1) and the house is setback 60 m from the Bald Eagle Nest (Appendix B, Figure 1). Permanent fencing (Parks Standard Drawing SD-PK6112, Appendix A) with appropriate signage will be required along the outside edge of the house plate to prevent encroachment post construction to the ditches (Appendix A, Figure 1). The signage is to be installed at 20 m intervals indicating “No Disturbance associated with Sensitive Fish and Wildlife Habitat.” Coordination with a QEP may be required for installation. A fencing cost estimate is presented in Appendix A.
- The Bald Eagle Management Plan in Appendix B will be implemented as part of this development at the Site.

- Timing schedule of the works of all proposed development activities is proposed to commence as soon as approval is provided by the City of Surrey for this project. In addition, should any vegetation clearing on the Site occur for this project during the bird breeding season (March 1 to August 31 of any year), in accordance with the City's interpreted dates of the federal Migratory Birds Convention Act and the provincial Wildlife Act, an active bird nesting survey will be required prior to vegetation removal in order to identify and protect any active nests associated with the vegetation removal.
- The Site it is not expected to have a significant impact on the water quality of the entire drainage basin. The minimal increase in flow volume is not expected to increase the potential for flooding in this drainage basin. A minimal amount of additional surface water runoff (flow rate and quality) from the proposed house roof leaders contributing to the Class B Ditches is considered insignificant to the total flow expected. Roof leaders will be directed to vegetated areas away from the setback area for the Ditches.
  - Best Management Practices during construction will be required to protect the Ponds at the Site include:
  - City of Surrey Erosion Sediment Control Bylaw No. 16138 (the Bylaw).
  - Ministry of Environment (MOE) and the Department of Fisheries and Oceans Canada (DFO) Land Development Guidelines for the Protection of Aquatic Habitat;
  - Develop with Care 2014 – Environmental Guidelines for Urban and Rural Land Development in British Columbia;
  - BC Ministry of Environment's A Users Guide to Working in and Around Water – Understanding the Regulation under British Columbia's Water Act;
- ISMP recommendations to be considered for the development include:
  - Bring water quality to the forefront through overland drainage that is vegetated;
  - Minimizing property paving by incorporating pervious pavement features into the development; and
  - Maintain current land situation for water discharge as much as possible (i.e., overland and ground infiltration to grass areas outside the setback area for the two Ditches).
- A project kick-off meeting with the contractor and the QEP for this Project is recommended to go over sensitive areas (i.e., setback locations) and Site-specific measures (e.g., fencing) and general notes will be discussed for installation and maintenance of the system through the Project period.
- No construction laydown material will be allowed in the setback areas for the Class B Ditches.
- A monitoring schedule is to include an initial site pre-construction Site visit by the QEP to verify if fencing and protective measures have been installed followed by a letter confirmation that all is in accordance with the protection measures. A development permit will not be awarded until the City receives a pre-construction visit showing orange snow fencing in place and all measures to protect the setback area for the two Ditches. Post-construction a visit will be performed to verify if any negative effects resulted from the construction activities and a final monitoring letter will be provided to the City that explains that works met the satisfaction of the permit.

- Sediment control structures (e.g., sediment control fencing, orange snow fencing) will be installed as the first construction activity along the setback area for the two Ditches (Appendix A, Figure 1) and the Construction Environmental Plan (CEMP) of Appendix C will be implemented.
- All copies of permits, licenses and approvals, where required, will be available for review on-Site. Works must comply with the terms of all permits, licenses and approvals. Changes to proposed works relevant to these permits, licenses and approvals must be approved by the appropriate regulatory agencies.
- All Project activities will be limited to the approved project footprint (Appendix A, Figure 1), which will be clearly delineated in the field by the QEP prior to commencement of the works and no works will occur inside the setback areas of the two Ditches;
- If required any bare soil locations along the Ditches of the Site and in association with road access SRW easements will be revegetated with shrubs and trees and broadcast with native coastal seed mix and hay to prevent erosion and leaching of soil.
- Care will be taken for all construction work for the facilities such that there is no release of any deleterious substances to the setback area for the two Ditches.
- Contact the project QEP in the event that wildlife is found trapped on-Site. The province will be notified and consulted to determine the appropriate mitigation measures.

DP3 #40: Building and Construction: Explain how the proposed development conforms to Surrey's Drainage Regulation and Charges Bylaw, as amended, as well as policies in Secondary Plans, Integrated Stormwater Management Plans and the Zoning Bylaw, as amended.

The ISMP requires on Site mitigation of flows through the use of on-Site landscaping and other low impact strategies.

The proposed Site development includes one residential building (Figure 1, Appendix A). Roof leaders and Site runoff is to be directed to the vegetated areas of the Site where infiltration into the surrounding landscape will carry runoff.

The BC Water Quality Guidelines (BCWQG), aquatic life, fresh water (AW_{FW}) would apply to this site, as storm water is being discharged to the Class B Ditches. The water quality from a single residential home is not expected to have constituents (pH, metals, hydrocarbons, etc.) greater than the BCWQG AW_{FW} or impacts the overall water quality of the drainage basin. Surface runoff will be directed to vegetated areas (grass, landscaping, etc.) where pre-treatment can potentially occur.

The Site it is not expected to have a significant impact on the water quality of the entire drainage basin. The minimal increase in flow volume is not expected to increase the potential for flooding in this drainage basin. A minimal amount of additional surface water runoff (flow rate and quality) from the house contributing to the pond areas is considered insignificant.

DP3 #41: Building and Construction: Detail the locations of all proposed buildings, structures and impervious surfaces.

This is presented on Appendix A Figure 1.

DP3 #42: Building and Construction: Detail the timing and scheduling of all proposed development activities.

Timing schedule of the works of all proposed development activities is proposed to commence as soon as approval is provided by the City of Surrey for this project and Site preparations are presented in the attached Able Geotechnical Ltd. report (May 24, 2019). All ESC measures will be installed first thing before construction commences and monitoring inspections are explained in DP3 #39.

DP3 #43: Soils: Provide site grading plans illustrating the area and extent of proposed soil disturbance including slope grades and any proposed retaining wall heights, locations and materials used. Detail how slope or soil stability will be ensured and how erosion and increased sedimentation risks will be reduced.

The extent of soil or existing asphalt disturbance will be limited to the proposed development as depicted in Appendix A Figure 1. A detailed Site grading plan will be prepared at a later date submitted for review and comment by City staff. Mitigations are presented in DP3 #39.

Access to setback areas for the two Ditches associated with the house will be restricted with fencing as presented in DP3 #39. Slope and soil stability will be protected and erosion and increased sedimentation risks will be reduced through the development of an Erosion Sediment Control Plan (ESC) prepared by a Professional Engineer under the requirements of the City of Surrey ESC Bylaw 2006 No. 16138.

DP3 #44: Trees and Vegetation: Identify how existing trees, shrubs and groundcover will be retained and protected including details and specifications on the replanting, restoration and management of vegetated areas and maintenance of short- and long-term hydraulic regime.

Trees in the north of the property will be fenced so no access into the area is allowed. No access from the existing driveway north of the Site will be allowed. Details and specifications on Site vegetation and tree protection are addressed in Sections DP3 #39. Tree removal and replacement have been addressed in The Mike Fadum and Associates July 23, 2020 Arborist report. Also see DP3# 32.

DP3 #45: Trees and Vegetation: Identify individual tree retention and removal, and areas of structured landscaping including plant species, size and location.

Only small trees are to be removed from the Site are presented in Figure 1 of Appendix A at the entrance to the Site from 48th Avenue. The July 23, 2020 Arborist report addresses tree retention and removal. Also see DP3 #32.

DP3 #46: Trees and Vegetation: Provide details as to how the Streamside or Green Infrastructure Area management or protection objectives will be met and monitored following the official completion of all construction activity. Where restorative work IS NOT required, maintenance and monitoring shall be for a minimum of ONE year; and where restorative work IS required, maintenance and monitoring shall be for a minimum of 5 years.

This Section is not applicable. There is no GIN associated with this Site. However, since the Ditch riparian areas (Appendix A, Figure 1) are to be protected.

DP3 #47: Trees and Vegetation: Provide a restoration, maintenance and cost estimate plan consistent with the development requirements identified in the Ecosystem Management Plan and/or Impact Mitigation Plan to be used to determine landscape bonding and security requirements for installation, monitoring and maintenance purposes.

See DP3 #46. Tree removal and replacement are addressed in the Mike Fadum and Associates July 23, 2020 Arborist report.

DP3 #48: Habitat: Articulate how the proposed development meets the Objectives and Recommendations of the Biodiversity Management Areas and Green Infrastructure Network (GIN) of the Biodiversity Conservation Strategy (BCS).

This Section is not applicable.

DP3 #49: Habitat: Detail how wildlife habitat will be protected and enhanced while taking into consideration wildlife movement and connectivity to adjacent sites. Focus on Schedule 1, Federally-protected Species-At-Risk Actor Provincial Red- or Blue Listed plant or animal species and their critical habitats and how they may be affected by the proposed development and indicate how proposed Best Management Practices may be used for the protection and preservation of that habitat.

Appendix B presents the Bald Eagle Management plan and discusses protection measures for the 60 m setback. The remainder of the Site is to have the 7 m setbacks from the tops of banks for the two ditches protected with fencing along the home plate.

DP3 #50: Drainage: Identify post-development drainage site conditions in accordance with the Integrated Storm-water Management Plan (ISMP) relevant to the site location.

Site mitigation of flows will be coordinated through the use of on Site landscaping and other low impact strategies. Other means are addressed in DP3 #40 and DP3 #39.

DP3 #51: Drainage: Detail how flooding risk and water quality degradation will be mitigated including specific measures that will be taken to prevent channel erosion and prevent the fouling of streams, wetlands or drainage conveyance corridors.

Site preparations are presented in the attached Able Geotechnical Ltd. report (May 24, 2019). The Site will have an ESC plan implemented and mitigation measures for the development are addressed in DP3 #39.

Water quality issues from construction will be addressed through the Construction Environmental Management Plan (Appendix C), that will contain an Erosion Sediment Control Plan to address fouling of the Class B Ditch conveyance from the Site or flows to overland flows away from the setback areas. All works will be performed in accordance to the City's ESC Bylaw 2006 No. 16138.

7. LIMITATIONS

Keystone Environmental Ltd. confirms that this letter report has been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science and engineering profession practising under similar circumstances in the area at the time of the performance of the work.

Report writer and Professional of Record is Libor Michalak R.P.Bio. and demonstrable experience in conducting environmental assessments.

This report has been prepared solely for the internal use of Mr. Survir Dhaliwal pursuant to the agreement between Keystone Environmental Ltd. and Mr. Survir Dhaliwal. By using this letter report Mr. Survir Dhaliwal agrees that he will review and use the report in its entirety. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

Keystone Environmental Ltd. would like to thank Mr. Survir Dhaliwal for this opportunity and trust the information in this report is sufficient for their current needs. If you require clarification of any part of this work plan, please contact the undersigned at 604-430-0671.

Sincerely,

Keystone Environmental Ltd.

Libor Michalak, R.P.Bio.
Senior Biologist

I:\15300-15399\15340\EDP\15340 210330 4842 192 St EDP.docx

ATTACHMENTS:

- Photographs
- Appendix A: Figures
- Appendix B: Bald Eagle Management Plan
- Appendix C: Construction Environmental Management Plan

PHOTOGRAPHS

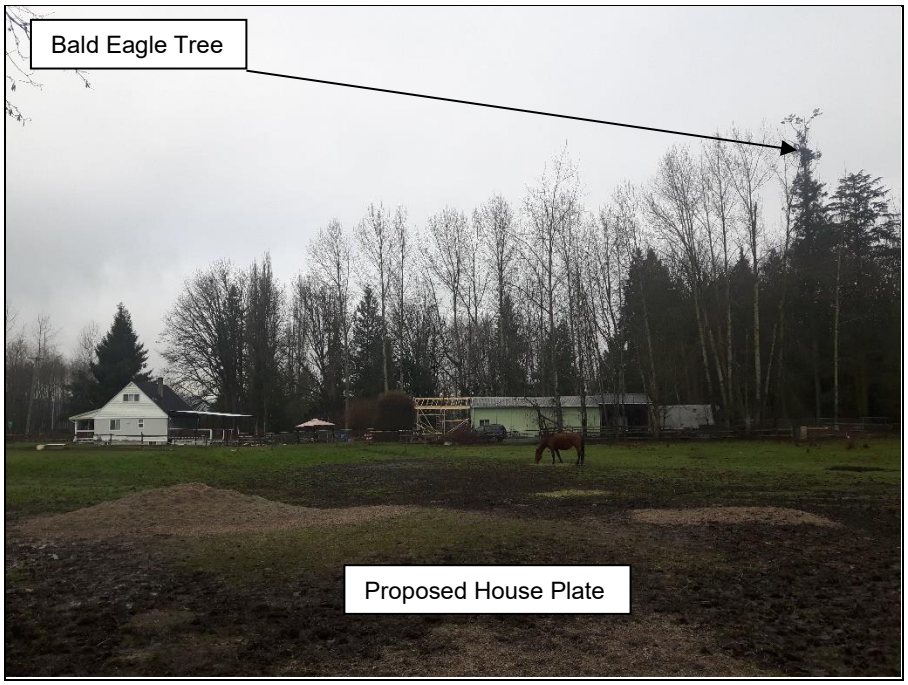
Photograph 1: 192nd St. Ditch instream (upstream view)

Photograph 2: Instream and Riparian Habitat of 192nd Street Ditch

Photograph 3: 192nd St. Ditch at intersection of 192nd St. & 48th Ave.

Photograph 4: 48th St. Ditch Riparian and Instream (east view)

Photograph 5: 48th St. Ditch at Home Plate (east view)



Photograph 6: Proposed house plate location

Photograph 7: Horse field and Bald Eagle nest in tree

Photograph 8: House plate location

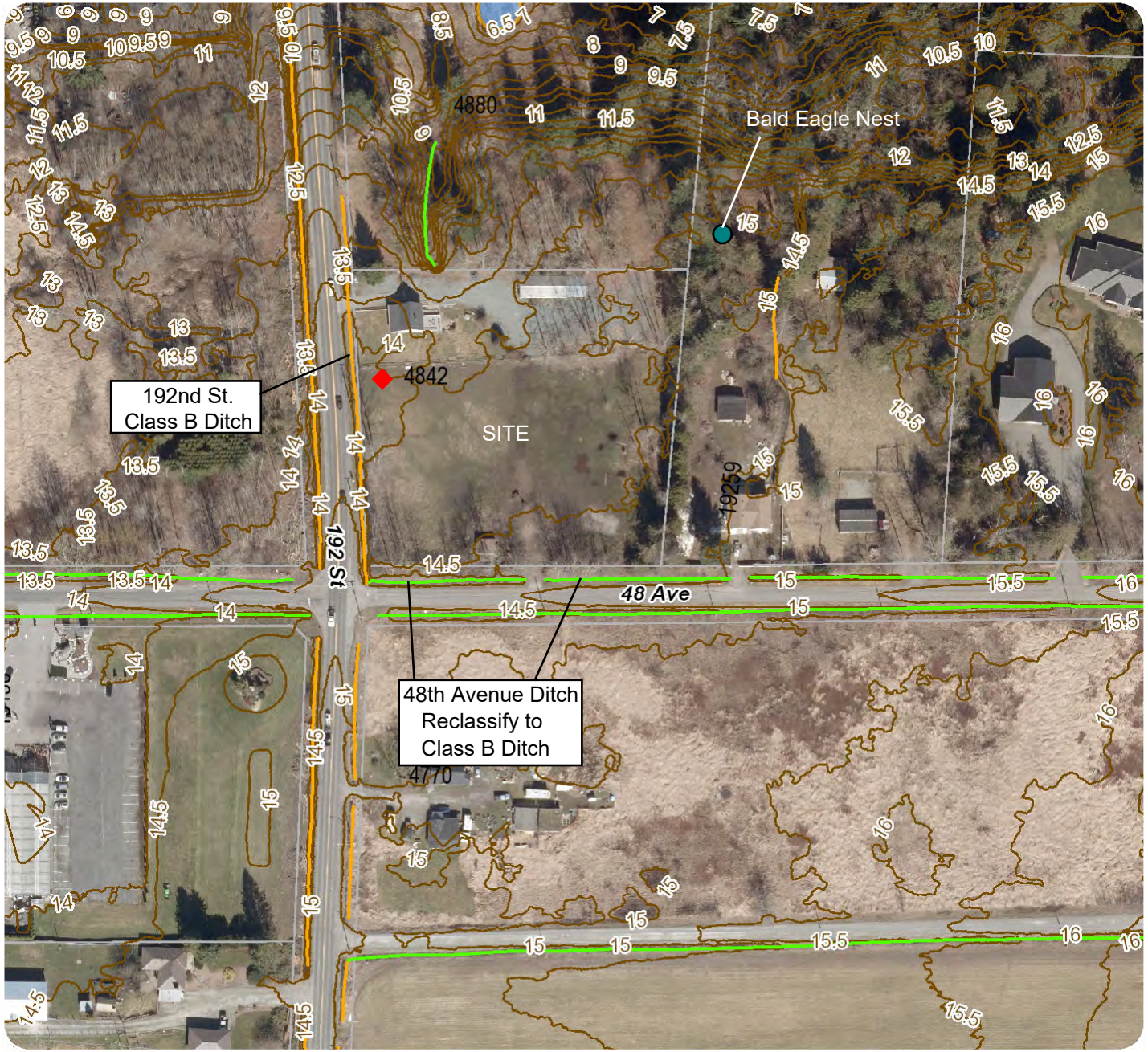
Photograph 9: Existing barn along north with Bald Eagle tree in back

Photograph 10: Field with Bal Eagle Tree

APPENDIX A

FIGURES

City of Surrey Mapping Online System



Legend

- Trails and Paths

Fish Class (Open Channels)

- A
- AO
- B
- C
- Unknown

Scale: 1:2,000

COSMOS Figure

0 0.0125 0.025 0.05 0.075
km

Map created on: 2019-10-29

LOT CALCULATIONS

CIVIC ADDRESS:	LOT#1, 19225-48 AVENUE
ZONING:	A1
LOT AREA:	108,855 SQ.FT. [10,113 M^2]
PERMITTED FLOOR AREA RATIO:	500m^2
PROPOSED FLOOR AREA RATIO:	5374.49 SQ.FT. [499.31m^2]
PERMITTED LOT COVERAGE:	N/A
PROPOSED LOT COVERAGE:	= 3432.27 SQ.FT. [318.87 m^2]
PERMITTED BUILDING HEIGHT:	9.00M
PROPOSED BUILDING HEIGHT:	8.69M

PERMITTED TOTAL HOME PLATE AREA = 2000 M^2

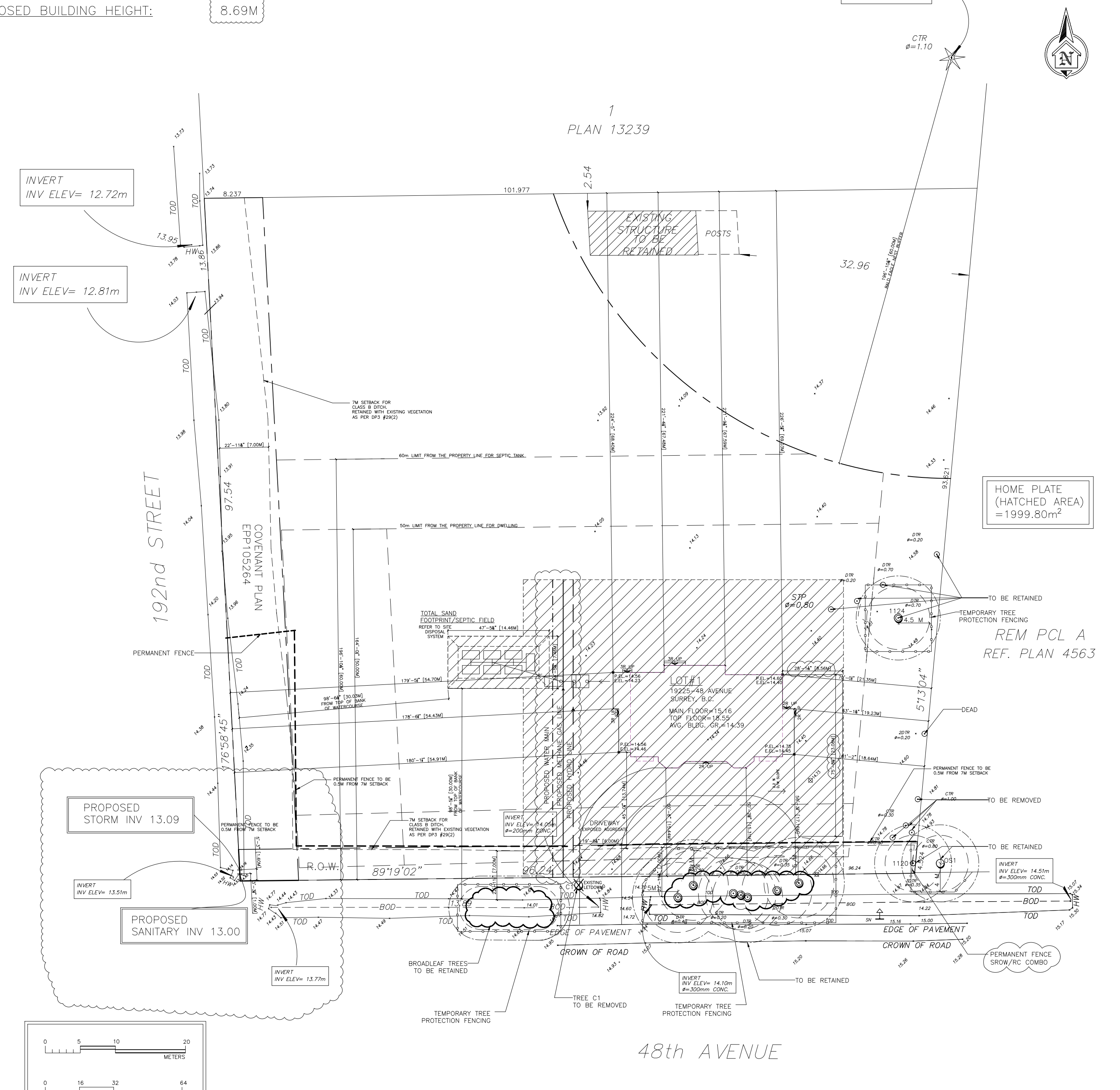
PROPOSED SFD STRUCTURAL FILL FOOTPRINT AREA = 3577.87 SQ.FT. [332.40 M^2]

DRIVEWAY AREA = 3930.35 SQ.FT. [365.14 M^2]

SEPTIC FIELD AREA = 1161.14 SQ.FT. [1073.87 M^2]

TOTAL FOOT PRINT AREA = 8669.36 SQ.FT. [805.41M^2]

ACTUAL HOME PLATE AREA (HATCHED AREA) = 1999.80M^2



SITE PLAN
SCALE:1/16"-1'

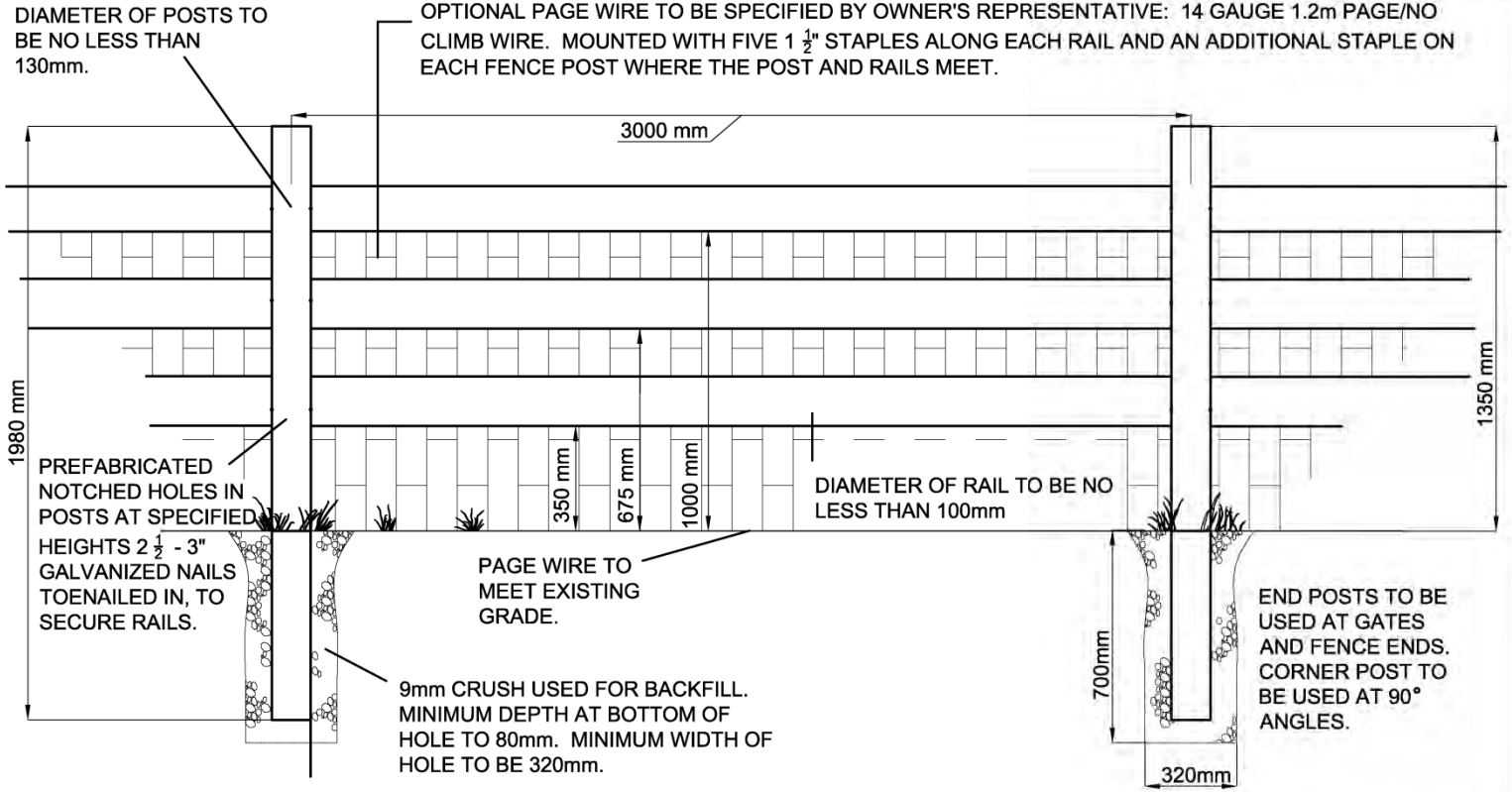
THESE PLANS CONFORM TO REQUIREMENTS IN THE B.C. BUILDING CODE 2018.

DRAWING NO.	REFERENCE	NO.	REVISION	BY	DATE

Dhillon Designs Ltd.

TITLE		
PROPOSED RESIDENCE FOR MR. PALWINDER SINGH GILL LOT #1, 19225-48 AVENUE SURREY, B.C.	DWN:	S.P.
	SCALE:	1/16"=1'
	DATE:	APR.11.19
	CHKD:	
	PHONE:	604-781-3648

DHILLON DESIGNS LTD.
UNIT 215-12830-80th AVE.
SURREY, B.C. V3W 3A8
PHONE: (604) 590-2808
FAX: (604) 590-2878
EMAIL:info@dhillondesigns.ca



LUMBER AVAILABLE FROM RAYBERN ERECTORS LTD. (604-939-4671) OTHER SUPPLIES TO BE APPROVED BY OWNER'S REPRESENTATIVE, ASK FOR JUMBO SIZED RAILS AND POSTS.

	Revision Date	Approved
1		
2		
3		
4		

TITLE
THREE RAIL SPLIT FENCE

ALL DIMENSIONS SHOWN IN MILLIMETRES UNLESS OTHERWISE STATED

SCALE	1:25
DATE	06/02
DRAWN	MEB
REVISION	1
APPROVED	TLU

CITY OF SURREY

DRAWING NUMBER
SSD-PK6112

2021 SEDPA Cost Estimate Table for Securities

Date		12-Aug-21				
City of Surrey Project No.						
Site Address		4842 192nd St.				
Landscape Firm		N/A				
Environmental Consultant (& Company)		Keystone Environmental Ltd.				
Area to be Remediated (m^2)						
	Item	**Quantity**	**Unit Cost[1]**	**Unit**	**Totals**	
1	Fencing (Split rail)	140	$82.40	l.m.	$	11,536.00
	Fencing (Vinyl-coated chain link)		$106.09	l.m.	$	-
2	Invasive Removal (mechanical – initial prep)		$12.73	m^2	$	-
3	Invasive Removal (brushing)		$5.30	m^2 / year	$	-
4	Mulching		$6.90	m^2	$	-
5	2 gal shrub[2]		$10.61	shrub (per 1m^2)	$	-
6	5 gal tree[2]		$21.22	tree (per 3m^2)	$	-
7	Perennials (10 cm pot)[2]		$2.12	forb (per 0.25 m^2)	$	-
8	Riparian grass seed blend (broadcast)[2]		$0.21	m^2	$	-
9	Watering		$0.52	(per m^2) x 24[3]	$	-
10	Planting Installation (labour)		$10.61	m^2	$	-
11	Administration (City of Surrey)[4]		$10.61	m^2	$	-
12	Other: Soil amendment[5]		$31.83	m^3	$	-
	Other: Monitoring Costs (QEP)					
				SUBTOTAL	**$**	**11,536.00**
				10% Contingency	$	1,153.60
				SUBTOTAL	**$**	**12,689.60**
				5% GST	$	634.48
				GRAND TOTAL FOR 5 YEAR RESTORATION PLAN	**$**	**13,324.08**

Notes: 1. Based on costs incurred by the City, should these works not be properly undertaken. 3% inflation increase is required annually.

2. All vegetation species must be 100% native, and selected based on shade, moisture and soil requirements. QEPs are expected to select species that naturally occur within the subject area. Climax species are not usually appropriate for disturbance areas.

3. 24 watering periods was determined from 12 waterings during drought months for the first two years of establishment.

4. Required if the City needs to take on the works due to inaction or poor maintenance.

5. Imported topsoil is not a requirement unless substrate has been completely denuded of all topsoil, and the QEP thinks that addition of topsoil amendment would be required. Topsoil must be tested and meet planting and safety requirements for invasive species, heavy metals, organic content and salinity.

Signs are :

1. Sign is 270mm x 125mm
2. 3mm sign grade aluminum with white reflective background.
3. Font sizes and gaps, as noted.
4. Black lettering
5. Screen print or for small runs of 6 or fewer, premium 7 year 2 mil vinyl.
6. 1cm radius cut corner, and all sharp corner eliminated.
7. Punch holes at all four corners or to suit so that the sign can be secured to the fence.
8. Install one (1) sign every 20m.

APPENDIX B

BALD EAGLE MANAGEMENT PLAN

Keystone Environmental
Knowledge-Driven Results

Keystone Environmental
Knowledge-Driven Results

August 12, 2021

Mr. Survir Dhaliwal
4842 192 Street
Surrey, BC V3Z 0L5

Dear Mr. Dhaliwal:

Re: Bald Eagle Nest Protected Species Management Plan
4842 192nd Street, Surrey, BC
Project No. 15340

It is understood that you wish to redevelop 4842 192nd Street Surrey, BC (the Site) with a new single family home as presented in Appendix A, Figure 1. This will trigger a Development Permit Application (DPA) from the City of Surrey (the City). Since the proposed redevelopment is associated with a Bald Eagle (*Haliaeetus leucocephalus*) nest, a City Protected Species Management Plan is required to be submitted to the City to assess potential project effects on the nest and identify required setbacks from the nest associated with the Site redevelopment.

This Bald Eagle Protected Species Management Plan contains two components; a Nest Survey/Wildlife Tree Assessment and a Management Plan.

NEST SURVEY/WILDLIFE TREE ASSESSMENT

A single Bald Eagle (BAEA) nest has been identified at the Site in the northeast corner (Photographs 1–4, Figure 1). It is located in a Douglas fir (*Pseudotsuga menziesii*) tree that is approximately 50 m tall. The nest is presented in Figure 1 and Photographs 1 and 2. A Wildlife Tree Information Form is attached to this plan.

Within an approximate 300 m radius around the nest tree, habitat consists of farm fields, farm infrastructure, residential units, 192nd Street, other roads and at the Site there is an existing house with driveway (Photographs 3 and 4). No wildlife trees have been identified on the Site in association with the nest tree there are no potential perch sites at the Site. The nest is located in a group of mature trees (Photographs 1–4).

Suite 320
4400 Dominion Street
Burnaby, British Columbia
Canada V5G 4G3

Telephone: 604 430 0671
Facsimile: 604 430 0672
info@KeystoneEnviro.com
KeystoneEnviro.com

Environmental Consulting
Engineering Solutions
Assessment & Protection

SITE MANAGEMENT PLAN

The Site is proposed to be redeveloped with a new family residence as presented in Figure 1 and the proposed building footprint relative to the BAEA nest is presented.

House demolition (Photograph 4) and construction works are to take place after August 31, 2021 since nesting is to be complete after that date[1]. House and infrastructure associated with the Site redevelopment is to be complete before nesting season (i.e., February 2022), before eggs are laid (approximately February 5, 2022[1]).

Since the existing house and tool shed/barn has been there and rented out, it has been an active residence for multiple years. In addition, farm activities (horse farm) immediately south of the nest (Photographs 3 and 4) have contributed to noise and ongoing activity for the nesting of the eagles over multiple years. Since they have been successful nesters historically it appears that they have become habituated to the existing activities and noise of the area's activities.

The provincial best management practices[1] (BMPs) (Table 6), requires that for the BAEA, since it has a "moderate–high" tolerance to co-exist within urban infrastructure like the Site, a minimum 1.5 m tree height setback is required for new development. Under the provincial BMPs, if the buffer zone were to be 1.5 m x the nest tree height this would result in a buffer at the Site of 75 m setback from the nest tree. This would render the Site undevelopable. However, the eagles have been successful in nesting and have come back multiple years. They have been found coexist well with the current land residential activities. This shows that they have become habituated to the existing residence and its uses. There are not expected to be Site use changes from existing conditions. Only a new house and driveway are proposed (Figure 1). The new house and existing facilities are to be erected approximately 60 m from the nest tree (Figure 1, Photograph 4). This is farther than the existing residence (90 m), barn (40 m), parking area and horse farming practices south of the nest (COSMOS Figure and Figure 1).

The new residence is to be farther than the existing residence and building use farm activities. A breeding season – noise disturbance buffer is not required since redevelopment exterior activities are proposed to occur outside the nesting season October 2021 to January 2022[1] when the eagles have vacated the nest. However, a noise buffer is required during BAEA nesting season. It is to be in effect as soon as the eagles have returned to the nest extend from the nest tree to the house if construction extends into January 2022.

No disturbance of vegetation in the 60 m buffer will be permitted except for a few stand alone trees in the middle of the farm field >50 m from the nest (Figure 1). Since they are far from the nest tree, no negative effects to the eagles are expected. The retained setback buffer will provide protection measures for roosting / perching for the eagles during the breeding period. A windthrow assessment should not be required as the proposed tree removals will not affect the integrity of the nest tree since they are located in the middle of the field and far from the woodlot for the nest. The septic field is located in the nest buffer however since this is an open field, and the trees and forested area is >50 m from the nest, if the field is constructed out of the nesting season and revegetated with grasses, this will not affect future nesting at the Site.

[1] Chapter 9 of the Provincial Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013)

During construction a temporary 1.2 m high orange snow fence will be erected to identify the setback buffer and no fence will be required post construction because the field is currently being used as a horse pasture, the eagles have habituated to this and it will remain a horse pasture. (Figure 1). No habitat enhancements are proposed since the area is already sufficiently vegetated. No trees within the vegetation eagle buffer need to be removed or modified.

MONITORING

Monitoring of the nest is to be performed by a Qualified Environmental Professional (QEP) in order to assess possible impact of the works to pre-redevelopment habitat conditions, as described in Chapter 9 of the Provincial Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013). For this Site they include:

- Bald Eagle courtship and nest establishment can occur as early as end of December[2], to assess the presence of eagles at the Site it is recommended that a QEP monitor the area once per week to observe whether the eagles return. Should construction extend into nesting season the QEP will be present to observe the eagles and provide direction at the time based on the eagle's behaviour.
- Existing trees surrounding the nest and in the 60 m buffer to the house will remain in their existing condition (untouched, Figure 1).
- Before Site vegetation clearing is approved, a QEP will verify that the BAEA or other active bird nests in the area are not occupied by a bird or their eggs and that the vegetation surrounding the nest is not being used by young of year eaglets.
- Assuming the City provides the building permit by the end of October 31, 2021, December 2021 most work on the house will be completed before the return of the BAEAs. This includes works such as farming, roofing, excavation, back fill, etc. which may have an effect on the BAEAs. After January 1, 2022 all exterior works will be completed and the remaining house construction will focus on in the interior that includes wall finishing, cabinets, flooring, interior paint and exterior cladding finishes and form work for landscaping and driveways. This should have no effect on the BAEAs if they are in the area. A QEP can visit the Site once every two weeks until the courtship and nesting begins, and verify there is no negative effects to their nesting success from the proposed works.
- After January 1, 2022, if necessary, a QEP will visit the Site weekly to assess the effectiveness of the noise buffer and address any issues if the Bale Eagles return by completing weekly check over a month to assess the habituation of the bird to the new building and activities.
- No monitoring of the nest is proposed during land clearing and construction since these works are proposed to take place outside the nesting period for the eagle (i.e., November to the end of December 2021).
- Pre-construction, a QEP will visit the Site to verify and sign off that construction fencing has been erected adequately and that it will protect the 60 m buffer for the nest. No encroachment by machinery or personnel will be allowed into the setback area (Figure 1).

[2] Develop with Care 2014 – Section 5.6 – South Coast Region, page-8 Environmental Guidelines for Urban and Rural Land Development in British Columbia – Fact Sheet #10 – Bald Eagles and Osprey 2014

- Post construction, a QEP will complete an assessment and sign off that the features in the setback area continue to remain in their original condition immediately after development.
- The QEP will assess the natural vegetation in the buffer zone around the nesting tree, verify that it has remained undisturbed, and that fencing will realistically and effectively restrict people or pets from accessing the setback zone for the nest.
- The QEP will confirm that the permanent fencing has been installed correctly.
- Since Bald Eagles may make more than one nest (Palmer 1988[3]), if this pair come back in the 2022 breeding season, the QEP will verify if the eagles continue to use the retained habitat features and if they breed successfully.
- This Bald Eagle Management Plan and recommended subsequent monitoring reporting should be provided to the Ministry of Environment (Ecosystems, Environmental Stewardship Division).

It is the professional opinion of Keystone Environmental Ltd. that if the mitigation measures recommended in this Bald Eagle management plan are implemented for the proposed redevelopment of the Site with a single family home, the BC *Wildlife Act* will not be contravened.

I:\15300-15399\15340\EDP\Appx B BAEA Mgt Plan\15340 2008124 4842 192st BAEA Plan.docx

ATTACHMENTS:
- Photographs
- COSMOS Figure
- Figure 1
- Wildlife Tree Information Form

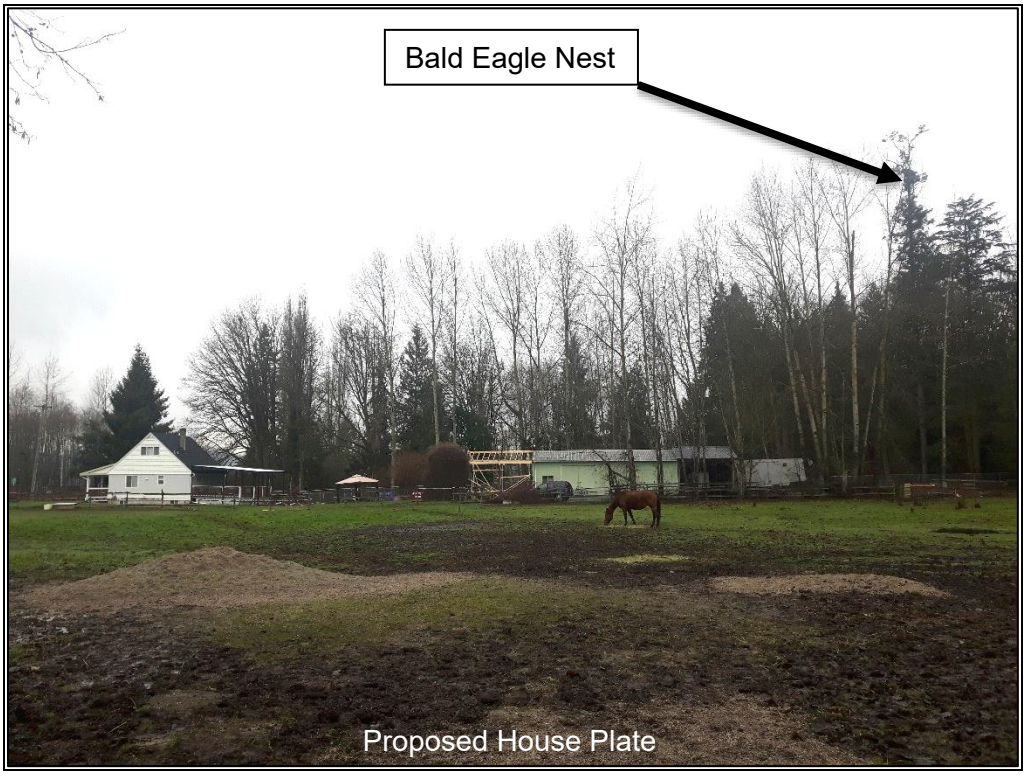
[3] Palmer, Ralph S. 1988. Handbook of North American Birds: Volume 4, Diurnal Raptors (Part 1).

PHOTOGRAPHS

Photograph 1: Bald Eagle Nest in Northeast Corner of Site (south east view)

Photograph 2: Bald Eagle Nest in tree Photo from property 4880 192nd Street Surrey BC (east view)

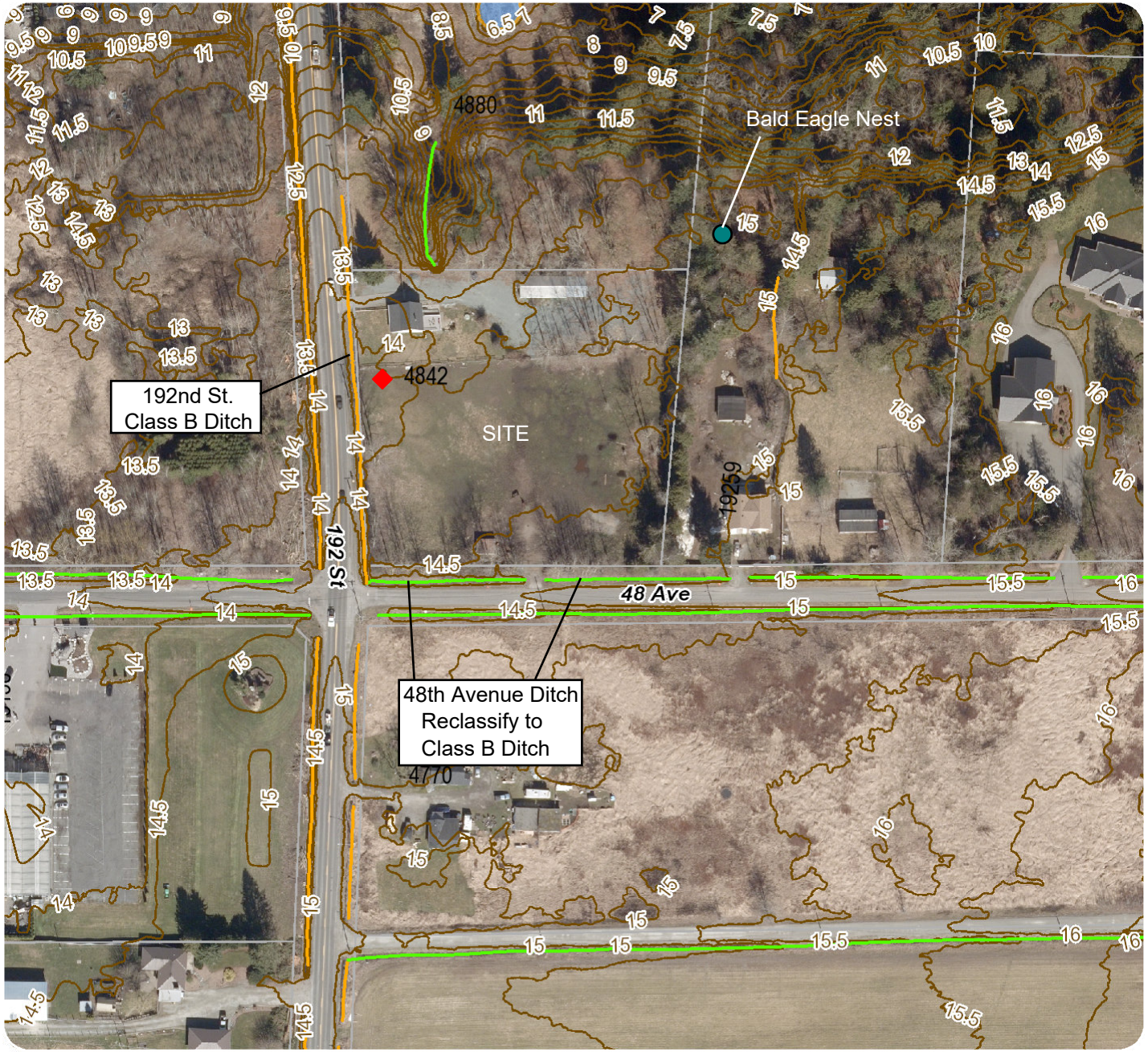
Photograph 3: Habitat around the nest tree (Google Maps, 2018)



Photograph 4: Nest Tree relative to existing Site structures and proposed house plate

FIGURES

City of Surrey Mapping Online System



Legend

- Trails and Paths

Fish Class (Open Channels)

- A
- AO
- B
- C
- Unknown

Scale: 1:2,000

COSMOS Figure

0 0.0125 0.025 0.05 0.075
km

Map created on: 2019-10-29

LOT CALCULATIONS

CIVIC ADDRESS:	LOT#1, 19225–48 AVENUE
ZONING:	A1
LOT AREA:	108,855 SQ.FT. [10,113 M^2]
PERMITTED FLOOR AREA RATIO:	500m^2
PROPOSED FLOOR AREA RATIO:	5374.49 SQ.FT. [499.31m^2]
PERMITTED LOT COVERAGE:	N/A
PROPOSED LOT COVERAGE:	= 3432.27 SQ.FT. [318.87 m^2]
PERMITTED BUILDING HEIGHT:	9.00M
PROPOSED BUILDING HEIGHT:	8.69M

PERMITTED TOTAL HOME PLATE AREA = 2000 M^2

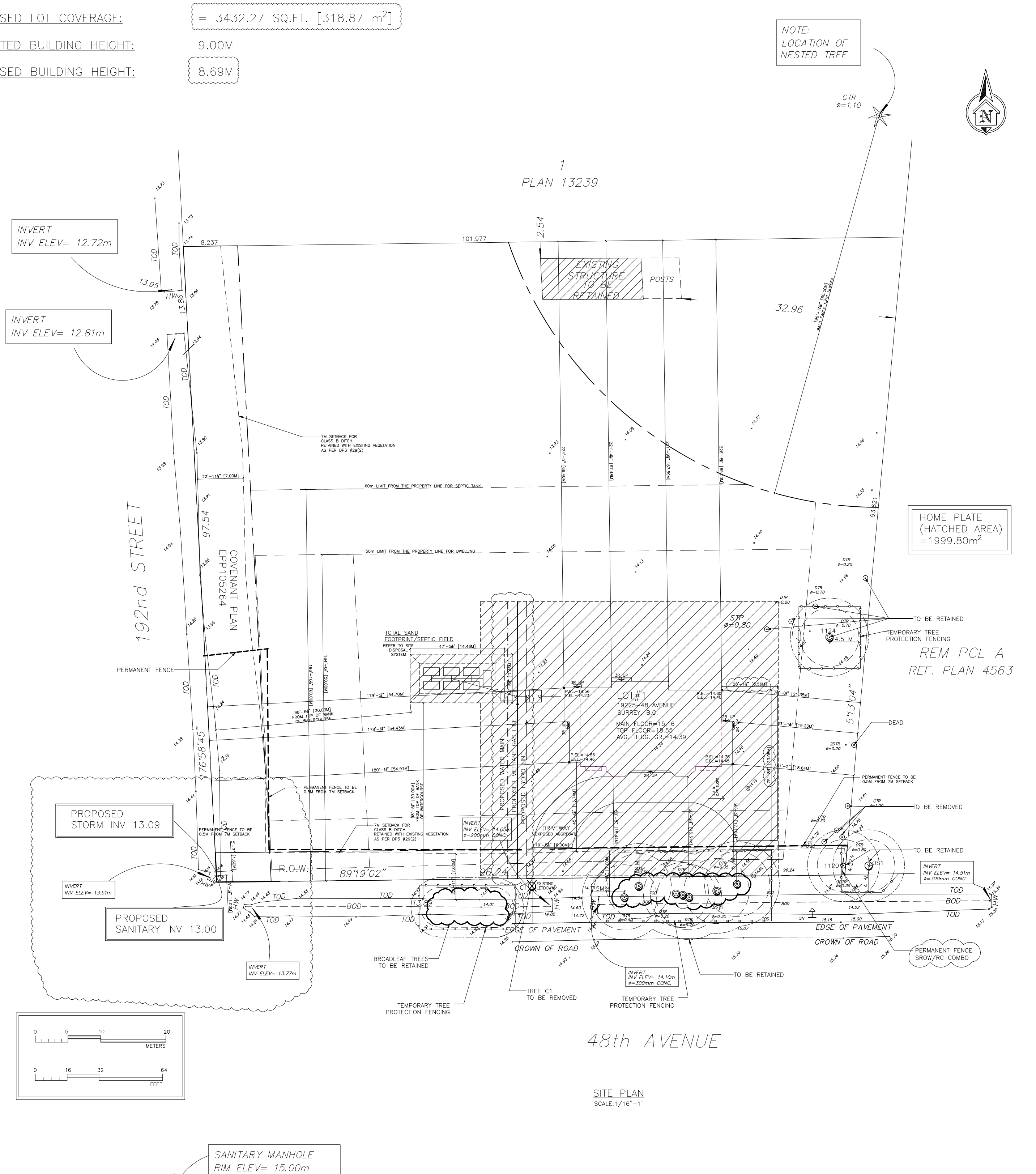
PROPOSED SFD STRUCTURAL FILL FOOTPRINT AREA = 3577.87 SQ.FT. [332.40 M^2]

DRIVEWAY AREA = 3930.35 SQ.FT. [365.14 M^2]

SEPTIC FIELD AREA = 1161.14 SQ.FT. [1073.87 M^2]

TOTAL FOOT PRINT AREA = 8669.36 SQ.FT. [805.41M^2]

ACTUAL HOME PLATE AREA (HATCHED AREA) = 1999.80M^2



SITE PLAN
SCALE:1/16"–1'

THESE PLANS CONFORM TO REQUIREMENTS IN THE B.C. BUILDING CODE 2018.

DRAWING NO.	REFERENCE	NO.	REVISION	BY	DATE

Dhillon Designs Ltd.

TITLE: PROPOSED RESIDENCE FOR MR. PALWINDER SINGH GILL LOT #1, 19225–48 AVENUE SURREY, B.C.

DWN:	S.P.
SCALE:	1/16"=1'
DATE:	APR.11.19
CHKD:	
PHONE:	604–781–3648

DHILLON DESIGNS LTD. UNIT 215–12830–80th AVE. SURREY, B.C. V3W 3A8 PHONE: (604) 590–2808 FAX: (604) 590–2878 EMAIL:info@dhillondesigns.ca

WILDLIFE TREE INFORMATION FORM

Keystone Environmental
Knowledge-Driven Results

WILDLIFE TREE INFORMATION FORM

For Initial Inventory of Wildlife Trees – Provide Copy to WiTS

Inventorying contractor: Keystone Environmental Ltd.

Date and time inventory conducted: January 9, 2019 & May 1, 2019

1. Location

Electoral Area UTM Coordinate: 10U 5437586N, 5437586E

Location notes (include route from main highway, followed by detailed route by foot, including landmarks and map, if possible): Enter access road to Site from 192nd Street and nest is located in the southeast corner of Site in tall Douglas Fir tree.

2. Tree Characteristics

See Photographs 1 and 2. The tree is approximately 50 m tall and devoid of needles in association with the nest.

Species DBH Tree Height: 50m tall approximately 1 m DBH

Est. Age Degree of lean: No lean on tree

Decay Value: No decay

Wildlife use (observations of current use, possibilities of future use, **note each species**): Nest is being used by a pair of Bald Eagles as of May 1, 2019.

Is tree signed? **No**

Is tree protected by Conservation Covenant? **No**

Stewardship/Conservation Agreement? **No**

3. Wildlife Tree Environment

Percent of slope at tree 10%

Landform type at tree (marsh, dry, rocky, developed, etc.): Tree is located as part of a forested area on a higher elevation (approx. 14.7 m) than existing residence (approx.. 13 m), at the highest point of land at Site (see Figure 1).

Landform types in area (100m radius around tree): Undulating terrain that slopes down northwest from the nest (see Figure 1).

Ongoing human activity and other disturbances in area (100m radius around tree): An existing residence with a yard is present west of the tree and has been in place for a number of years. A driveway access is off of 192nd Street.

APPENDIX C

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Keystone Environmental
Knowledge-Driven Results

Keystone Environmental
Knowledge-Driven Results

Construction Environmental Management Plan

4842 192nd Street
Surrey, BC

Prepared for: Mr. Survir Dhaliwal

Project No. 15340
December 2019

Environmental Consulting • Engineering Solutions • Environmental Planning

Suite 320
4400 Dominion Street
Burnaby, British Columbia
Canada V5G 4G3

Telephone: 604 430 0671
Facsimile: 604 430 0672
info@keystoneenvironmental.ca

TABLE OF CONTENTS

1. INTRODUCTION

This Construction Environmental Management Plan (CEMP) should address the proposed construction at the Site and describe how the regulated Ditches along 48th Avenue and 192nd Street will not be affected during construction.

1.1 Objectives of the CEMP

The objectives of this CEMP are to:

- Provide contractors and subcontractors with professional advice for environmental protection planning, recommendations based on environmental legislation and Best Management Practices (BMPs).
- Provide the Environmental Monitor, government agencies, and other stakeholders a guide to measure compliance with environmental protection and mitigation requirements of the Project.
- Identify project elements with potential to affect environmentally valuable resources.
- Describe the work procedures to be undertaken to avoid and mitigate potential environmental effects due to Project activities.
- Describe work procedures to be undertaken to contain and reduce the potential for further effects to the environment in the event of an incident.

Diligent work practices, as outlined in this CEMP, are required to avoid potential effects to environmentally valuable resources at the Site.

Environmental measures outlined in this CEMP apply to all contractors and personnel, including Environmental Monitors that are to be on-Site during construction activities. Therefore, the words "Contractor" or "Operator" used in this document apply to any company or personnel responsible for practices as described within. It is the Contractors' responsibility to ensure their employees and subcontractors are familiar and comply with the contents of this CEMP.

1.2 Regulatory Framework

The following environmental legislation and guidelines were incorporated into the design of mitigations for this CEMP:

Federal Regulations:

- *Fisheries Act*
- *Migratory Bird Conventions Act*
- *Species at Risk Act*

Provincial Regulations:

- *Environmental Management Act*
- Hazardous Waste Regulation
- *Heritage Conservation Act*
- Riparian Areas Regulation
- Spill Reporting Regulation
- *Waste Management Act*
- *Water Sustainability Act*
- *Wildlife Act*
- WorkSafeBC Occupational Health and Safety Regulation

Best Management Practices and Guidelines:

While these are not regulated for the Site, the following Best Management Practices (BMPs) should be applied for the proposed works:

- City of Surrey Erosion Sediment Control Bylaw No. 16138 (the Bylaw).
- Ministry of Environment (MOE) and the Department of Fisheries and Oceans Canada (DFO) *Land Development Guidelines for the Protection of Aquatic Habitat;*
- Develop with Care 2014 – Environmental Guidelines for Urban and Rural Land Development in British Columbia;
- BC Ministry of Environment's A Users Guide to Working In and Around Water - Understanding the Regulation under British Columbia's Water Act; and
- Works shall comply with applicable standards as out lined in Natural Resource Best Management Practices[1].

2. ENVIRONMENTAL PROTECTION MEASURES

Areas of the Site have been defined by the City as important for a variety of aquatic and terrestrial species. Diligent work practices outlined in this CEMP are recommended to avoid or reduce the potential for adverse effects to any fish and fish habitat, environmentally sensitive species or their habitats (identified in the Ecosystems Development Permit (EDP) report setback areas in Appendix A, Figure 1.

[1] https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/best-management-practices

2.1 General Mitigation

The following general measures will be implemented to avoid or reduce potential effects to environmentally valuable resources within or adjacent to the Site:

- During the pre-construction meeting, the CEMP will be reviewed by the Environmental Monitor, Lead Contractor, and employees, as well as any other applicable parties.
- All copies of permits, licenses and approvals, where required, will be available for review on-Site. Works must comply with the terms of all permits, licenses and approvals. Changes to proposed works relevant to these permits, licenses and approvals must be approved by the appropriate regulatory agencies.
- All Project activities will be limited to the approved project footprint, which will be clearly delineated in the field, based on the Project drawings, prior to construction works.
- Construction areas will be covered or otherwise stabilized on a daily basis.
- Work protocols will be undertaken in compliance with the approved construction plans and not outside of what is specified on approval documents.
- Section DP3 #39 of the EDP Report presents construction specifications including materials, timing, technologies and techniques proposed as a means to mitigate and reduce the ecological impacts of development on the identified Ditches from the proposed house and facilities construction.
- The Bald Eagle Management Plan (Appendix C of the EDP) will be adhered to.

The Environmental Monitor will be responsible for inspecting ongoing Project activities, providing guidance where required, facilitating environmental protection, and reporting all potential concerns to the Contractor in a timely manner.

2.2 Aquatic Resources and Fish Habitat

The following additional to DP3 #39 EDP report mitigations will be implemented as BMPs to avoid or reduce potential effects to fish and fish habitat on or adjacent to the Site:

Erosion and Sediment Control

This section contains general and Site-specific mitigation measures to be implemented during Site preparation works to protect the regulated streams on-Site. The following measures are to be provided as a framework and may be modified by the Environmental Monitor to reflect changing conditions during the proposed construction period:

- If necessary, the contractor completing the works will be responsible for retaining a QEP to prepare an Erosion and Sediment Control Plan (ESCP), which will provide Site-specific mitigation measures to reduce the potential for habitat alteration, erosion and sedimentation of Elgin Creek during the proposed works. The ESCP will include but not be limited to the following mitigation measures:

- Sediment control structures (e.g., sediment control fencing, filter cloth, etc.) will be installed as the first construction activity. Silt fences will be installed along the 7 m setback for the Class B Ditch. Orange snow fencing will be placed on the development side of the installed silt fencing during construction. All erosion and sediment control (ESC) structures will be inspected regularly, and repaired/maintained as necessary throughout the project as necessary;
- Ensure machinery works from the road minimize disturbance to vegetated and instream habitat areas of the Class B Ditch 7 m setback;
- All works are to be completed in such a manner as to prevent the release of silt, sediment or sediment laden water or any other deleterious substances into the Class B Ditches;
- A project kick-off meeting with the contractor with a Qualified Environmental Professional (QEP) for this Project is recommended to go over sensitive areas (setback for the Class B Ditch) and Site-specific measures (e.g., silt fencing, wheel wash systems) and general notes will be discussed for installation and maintenance of the system through the Project period;
- Vegetation clearing will be limited to the approved Project footprint as a first step in erosion and sediment control;
- Where feasible, the existing road from 182nd Street will be used to access the Site, by foot or equipment;
- A wheel wash system may need to be installed at the main Site exit at 182nd Street, to prevent sediment tracking onto adjacent roadways;
- Minimize the generation of sediment-laden water on the Site, by staging work and/or undertaking only those portions of work that can reasonably be completed within a work shift;
- No machinery will operate within the setback area for the Class B Ditch. The setback area will be isolated with silt fencing and orange construction fencing and signage (Appendix A, of the EDP report).
- All stockpiles and open excavations must be covered by polyethylene sheeting or tarpaulin when not in use during any construction;
- If necessary, sediment run off from construction will be mitigated prior to discharge using flocculant tanks that will capture run off waters and treat them to conform to water quality discharge criteria as identified in Section (Water Quality Monitoring).
- The existing culvert access to the Site from 48h Avenue is proposed to be retained and a new additional Site access crossing is proposed in the south over the Ditch as depicted in Appendix A, Figure 1 of the EDP report. The addition of the southern culvert crossing will be applied for under the *Water Sustainability Act* (*WSA*) at a later date. All works will conform to the 'Notification' requirements as presented in Appendix C which include:
  - The proposed crossing installation in the south is to be completed during the period of August 1 to September 15, 2020.
  - Prior to the installation of the culvert crossing if flows are present in the stream the works area will be isolated of flows using steel plates that will placed in stream from bank to bank to isolate the area; plates that stretch from bank to bank (above the high water mark) will be inserted to below the stream's channel bed on both the up and downstream sections of the proposed crossing location (upstream and downstream). The stream flows will be diverted around the works area using pumps fitted with fish/aquatic screens during the works as needed using BMPs.

- Once the works area for the culvert placement is isolated using steel plates under the guidance of a QEP, aquatic life salvages will be conducted within the closed off works area. This work will be performed by a QEP. Any aquatic life will be placed downstream of the works area.
- The Ditch is expected to be dry so no aquatic life salvage will be required.
- The culvert crossing (600 mm culvert) will be placed into the ditch and a natural bottom will be maintained.
- The sides of the culvert crossing locations will be protected with erosion control measures and stabilized with broadcast Native Coastal Seed Mix.
- All works will be performed in an acceptable manner to the QEP.

Water Quality Monitoring

It is anticipated that a filtration system for water quality will be implemented at the Site. The Environmental Monitor will conduct routine water quality monitoring during project activities. If considered necessary by the Environmental Monitor, water quality will be tested for potential contaminants and the results compared to the British Columbia Water Quality Guidelines (BCWQG). Based on these guidelines and the City ESC Bylaw, a discharge value of 25 mg/L Total Suspended Solids (TSS) during dry weather, 75 mg/L TSS during storm events, and a pH range of 6.5–9.0, will be the allowable discharge conditions.

Field evaluations of aquatic turbidity will be used as a surrogate for TSS to provide contractors with real-time information on the quality of discharge water. The relationship between turbidity and TSS can vary depending on the conditions of the Site, and confirmatory TSS samples may be collected for laboratory analysis to ensure compliance with the BCWQG freshwater turbidity criteria for sustained aquatic life:

- Change of 8 Nephelometric Turbidity Units (NTU) from any one background measure for a period of 24 h in all waters during clear flows or in clear waters
- Change of 2 NTU from any one background measure for a duration of 30 days in all waters during clear flows or in clear waters
- Change of 5 NTU at any time when background ranges from 8 NTU to 50 NTU during high flows or in turbid waters
- Change of 10% when background is >50 NTU at any time during high flows or in turbid waters

Further information regarding environmental monitoring is provided in Section Environmental Monitoring Program.

2.3 Vegetation

The following mitigations will be implemented to avoid or reduce potential effects to vegetation (i.e., riparian habitat of the Ditches):

- A QEP will clearly delineate the extent of vegetation to be removed. Setback areas for the Class B Ditches will be demarcated with orange snow fencing and silt fencing prior to construction and protected during construction.

- Install exclusion silt fencing and temporary 1.2 m high orange construction fencing along the 7 m setback area for the Class B Ditches from the top of bank to prevent damage to riparian vegetation.
- Equipment will be kept clean and free of soils and plant materials to avoid the spread or introduction of invasive plant species.
- Any identified invasive plants by the Environmental Monitor removed during construction activities, including soils in affected areas, will be bagged and disposed of at an appropriate facility in accordance to regulatory standards.

2.4 Wildlife

The following mitigations will be implemented to avoid or reduce potential effects to wildlife within or adjacent to the Site:

- The Bald Eagle Management Plan (Appendix C of the EDP Report) will be implemented.
- Timing schedule of the works of all proposed development activities is proposed to commence as soon as approval is provided by the City of Surrey for this project. In addition, should any vegetation clearing on the Site occur for this project during the bird breeding season (March 1 to August 31 of any year), in accordance with the City's interpreted dates of the federal *Migratory Birds Convention Act* and the provincial *Wildlife Act*, an active bird nesting survey will be required prior to vegetation removal in order to identify and protect any active nests associated with the vegetation removal.
- If a bird nest is detected during the bird nest survey, an appropriate species-specific setback will be implemented until the nest is considered inactive by the QEP.
- The Contractor will inform the Environmental Monitor or QEP if nests are detected during project activities. The nest must not be disturbed until assessed by the QEP.
- Limit the use of machinery/loud noises if wildlife is present within or near the work area.
- Dispose of garbage in secure bins and keep staging areas clean and free of food items to avoid attracting wildlife on-Site.
- Contact the Environmental Monitor in the event that wildlife is found trapped on-Site. The province will be notified and consulted to determine the appropriate mitigation measures.

2.5 Storage and Handling Practices for Soils/Contaminated Soil

If required, Soil and/or Deposit Permit will be required and issued prior any work proposed. The regulations allow only "clean fill" to be deposited on-Site. Clean fill is defined as fill that:

- Contains only mineral soil or topsoil and does not contain wood waste, construction waste, refuse, or any other material that may adversely affect the geotechnical quality of the soil;
- Meets the BC Contaminated Sites Regulation, 2016 (CSR) for the intended use of the land on which it is deposited; and
- Is free of any substance or liquid likely to cause contamination, hazard, or injury when in place.

The Contractor must be able to produce documentation that any imported soils meet applicable provincial and environmental regulations and standards of the BC CSR. The following mitigation measures are included to avoid or reduce potential effects to soils during construction activities:

- If soil is to be removed or transported off-Site, soil quality must be sampled appropriately to characterize soil and water for potential contaminants, as per the BC CSR.
- Excavated soil suspected or identified to contain contaminants must be immediately removed from the Site and disposed of at appropriate disposal facilities, following appropriate classification.
- During grading or excavation and/or loading of haul trucks, if excavated soils are suspected to be contaminated, equipment operators must minimize movements, swing paths, and distances travelled to avoid spreading contamination. Equipment must be swept off prior to moving it out of the immediate work zone or be left parked at the same location. Sides, bumpers, wheels, etc., must be swept off and any soils spilled around the truck by the loader swept back into the stockpile.
- Equipment or machinery used in contact with soil from the Site must be pressure-washed (paying particular attention to tracks and wheels) to remove any adhering soils. Wash-down must occur in an area that can be isolated, such that all wash-water can be collected and discharged to a detention pond or holding tank for treatment and settling of suspended particulates.
- All haul trucks must be equipped with load covers prior to leaving the Site.
- If soils encountered on-Site are suspected to be contaminated, soils may be temporarily stockpiled on an impermeable surface (i.e., tarpaulin or paved/concrete surfaces, without cracking or deterioration) prior to off-Site disposal. A containment cell must be created using berms (e.g., poly-wrapped sandbags or straw bales, no-posts) to prevent the spread of materials.
- Stockpiles of contaminated soil must be covered with poly-sheeting or other impermeable material that extends over the containment cell walls or berms to prevent precipitation from contacting the stockpiled soil. Surface run-off must be directed away from the stockpile to avoid contact with the contaminated soil. Polyethylene sheeting must be weighted down to prevent being blown away by wind.

2.6 Waste Management

For the house construction, the Contractor will comply with all applicable laws, regulations, permit conditions and requirements of the contract when disposing of waste including, but not limited to, concrete, sewage disposal, non-hazardous wastes, hazardous wastes (e.g., used paint, epoxies or waste batteries), or other materials not authorized for on-Site disposal. At no time will any waste material be allowed to enter the Class B Ditches and the City's storm sewer system. The Contractor will be responsible for making all efforts to eliminate or minimize waste production. In addition, only facilities approved by authorities having jurisdiction may be used for disposal or recycling of waste.

2.6.1 Concrete Management

Site preparation works and the interaction of overland surface water with concrete migration, e.g., from house foundation pouring, has a potential to cause negative environmental impacts to the Class B Ditches and the City's storm sewer system. The two main environmental concerns associated with concrete work are:

- Toxicity from the high alkaline pH of concrete; and
- Physical effects of smothering through the release of solids.

The pH level of concrete and wash-off water is 12 (very alkaline) and is not permitted to enter the Class B Ditches and the City's storm sewer system. The BCWQG have specified an acceptable pH range of 6.5 to 9.0, understanding that deviations will likely be small, short-term in nature and not harmful. If a large concrete spill occurs, applicable treatment and mitigations must be initiated by the Environmental Monitor to reduce the pH to an acceptable level. Mitigation to be applied by the Contractor includes the following measures:

- Concrete work must be conducted so that wash water and excess concrete slurry from concrete works and equipment do not enter or contaminate the Class B Ditches or the City's storm sewer. Silt fencing erection (keyed into the ground) is recommended during concrete pouring to reduce the chance of concrete entering the Class B Ditches or the City's storm sewer system.
- Excess concrete, grout, drilling wastes and other liquid waste products must be directed to secure containment facilities for subsequent removal and disposal at an appropriate facility. If concrete enters the Ditch or the City's storm sewer system, it must be removed as it will continue to contribute alkaline pH to the surrounding water.
- Fresh concrete pours will follow BMPs, and be conducted during dry weather and protected from rainfall with an impermeable cover (i.e., polyethylene sheeting or tarpaulin) until the concrete cures.
- No washing of concrete trucks or equipment shall be permitted on-Site or adjacent to the Class B Ditches and the City's storm sewer system.
- No discharge of concrete wash water will occur on-Site.
- Any water that has come in contact with concrete will be tested and must meet the BCWQG for pH between 6.5 and 9.0.

2.6.2 Sewage Disposal

The Contractor is required to provide sanitary facilities throughout project activities. To manage sewage and sanitary disposal for the duration of the Project the sanitary facilities must be:

- Fastened to the ground within the work zone and at the staging area.
- Serviced on a regular basis, with waste disposed of at permitted treatment facilities.
- Located a minimum 15 m away from the Class B Ditches and the City's storm sewer system, outside the setback zones as presented in Figure 1, Appendix A of the EDP report.
- Removed from the Site upon project completion.

2.6.3 Solid Waste

It is anticipated that solid waste will primarily be comprised of construction debris, garbage, recyclables, and non-hazardous materials. The Contractor, with assistance from the Environmental Monitor, will determine the appropriate measures to dispose of general solid wastes throughout project activities as follows:

- Non-hazardous paper, paper products, wood, plastic, glass, and discarded food items, will be stored in closed, leak-proof storage bins that are secure from access by wildlife. The Contractor is responsible for the proper collection and transportation of garbage and recyclable waste to disposal facilities (e.g., sanitary landfill or appropriate recycling facilities, where available).
- Used oil filters and antifreeze must be drained into a waste oil container and drained filters placed in an appropriate trash container before disposal at a recycling or other approved facility.

2.6.4 Hazardous Wastes

While it is not anticipated for this project, it is the Contractor's responsibility to determine whether any waste generated by the Project has hazardous or toxic characteristics, or is considered "Hazardous Waste" by the MOE, or other authority having jurisdiction, and to manage it accordingly. If an item cannot be located in published Hazardous Waste guidelines, the Contractor will determine if a particular characteristic of the waste makes it hazardous. Subsequently, the Contractor will comply with the "*Standards Applicable to Transporters of Hazardous Waste*" as defined by the MOE. The proper handling of hazardous wastes will also be included in the Contractor's own Occupational Health & Safety Program.

2.7 Noise and Dust Abatement

The following dust control measures will be implemented to avoid dispersal onto adjacent vegetation, into the Ditch:

- Construction vehicles entering and leaving the Site must be clean and free of excess materials.
- Roads must be kept clean through regular sweeping or the conservative application of water.
- Chemicals are not to be utilized as a dust suppression mechanism.

The Project is located in a farming use area and is not expected to create noise levels greater than that of highway traffic. Noise is not expected to be an environmental concern.

2.8 Fire Prevention

The following measures will be implemented to avoid or respond to fires within or adjacent to the Site:

- Open fires or burning are not permitted.
- Fire extinguishers and other emergency response equipment and supplies must be kept in known, visible, and accessible locations. Gas- or diesel-powered equipment must have a fire extinguisher attached or inside the cab. Fire extinguishers are to be routinely inspected and certified, as are other fire-suppressant equipment and materials.

2.9 Fuel Spill Prevention

Equipment and vehicles will be kept to the minimum required for project activities to limit on-Site traffic and the potential for spills or leaks. Fuelling of equipment should occur off-Site at an approved facility, when possible, to prevent fuel spills on-Site. The following mitigation measures will be implemented to avoid or reduce the potential for adverse effects to the Site and surrounding area in the event of a fuel spill:

- Fuelling is not permitted within 15 m of the Class B Ditches.
- Fuel storage enclosures are to be sufficient to contain the required volume plus an allowance for precipitation products (minimum 120%).
- Spill response kits will be available within the construction lay-down area and will be stocked with sufficient materials including spill pads, sorbent booms, and spill trays, for the potential volume of spill anticipated for the works. Personnel trained in spill response will be available on-Site during all Project activities.
- Drip pans and fuel containment areas will be used to avoid spills and/or leaks during fuelling.
- All machinery, particularly when operating in the vicinity of a municipal drainage system, regulated stream will be free of excess oil and grease, and will be in good mechanical order to avoid leaks.
- Refuelling vehicles will be equipped with automatic back-pressure shut-off valves, and nozzles will be kept locked at all times, except during re-fuelling. Spigots will be metal to prevent them from being accidentally or intentionally damaged. An appropriately trained crew member is to remain in attendance at all times during re-fuelling.
- All grease and oil required for maintenance will be carefully applied so that excesses are cleaned up and disposed of in a prompt and environmentally appropriate manner.
- Refuelling procedures and handling of flammable liquids must also be covered within the Contractor's own Occupational Health & Safety Program.

2.10 Environmental Spill Response

The Contractor will develop and implement a Site-specific environmental spill response plan based on the type and amount of equipment, and the activities using potentially deleterious substances. The purpose of the spill response plan is to identify potential risks at, or in proximity to the Site, provide procedures to facilitate rapid deployment of resources in the event of a spill, and to minimize the impact and risk to the environment, the public and personnel on-Site. The Contractor will be familiar with regulatory requirements and be adequately prepared to respond within the shortest possible time. A Spill Response Team will be assembled from suitably qualified

members of the workforce. Equipment operators and spill responders will review the Spill Response Plan regularly to ensure it is up to date and all required materials are accessible on-Site. Emergency preparedness must also be covered under the Contractor's own Occupational Health & Safety Program.

All personnel will be made aware of the content of the Spill Response Plan and the location of response materials, emergency contact names and numbers. Emergency spill response equipment and supplies must be kept in accessible and visible locations. The locations of such equipment are to be made known during Site safety orientations, as locations may vary or change as the Project progresses.

Under Section 1 of the BC *Spill Reporting Regulation*, a "spill" is defined as a release or discharge of a substance in an amount equal or greater than that specified in the *Reportable Levels for Certain Substances* Schedule. The reportable quantities vary according to class of substance, ranging from any amount to 200 kg, depending on the nature of the material that has been spilled. Any spill will be reported to the Environmental Monitor, regardless of its location within the construction zone. In the event of a spill greater than 100 L (oil), the incident must immediately be reported to the provincial Emergency Management BC (EMBC) at 1-800-663-3456 (24-hour emergency line). Spill response advice can also be obtained from EMBC.

The Contractor will implement the following mitigation measures to ensure adequate response in the event of a spill.

- Oil spill response materials and equipment, (e.g., absorbent pads, booms, leak-proof containers) will be in sufficient quantities to contain and clean up the amount of fuel, oil or other petroleum hydrocarbons stored on-Site.
- Used spill response materials will be bagged in heavy-duty polyethylene bags and any waste oil or other spill materials will be removed from Site, as soon as possible, in accordance with Transportation of Dangerous Goods requirements and the BC Hazardous Waste Regulation.
- Waste containers will be appropriately labelled, stored in a secure location, and protected from weather until removal and disposal can be arranged.

A Spill Response Plan Template has been provided (Attachment A). Contacts must be updated prior to the commencement of Project works and distributed to contractors/subcontractors and posted in visible locations on-Site.

2.10.1 Environmental Incident Reporting

An environmental incident is defined as one that has caused, or has the potential to cause, one or more of the following:

- Environmental damage;
- An adverse effect on fish, wildlife, or other environmental resources;
- Heightened publicity associated with a negative effect on the environment; or
- Legal action with respect to environmental noncompliance and/or damage.

The following actions are important when preparing an Environmental Incident Report (EIR):

- Take immediate action to avoid further environmental consequences and manage resolution of the incident.
- Gather information on the causes to facilitate avoidance of future incidents.
- Prepare a written EIR to describe the occurrence and summarize events, actions and recommendations for future avoidance.
- The EIR must be submitted within 24 hours of the incident to the appropriate environmental representative and the Environmental Monitor.
- Prepare updates to the EIR, as necessary, and submit them to representative parties.

2.11 Heritage or Archaeology

Excavation works for the Project will be limited to that required for the construction of the building. While it is not anticipated, if cultural artifacts are uncovered during the earth works (e.g., human bones, stone tools, or other items of interest), they will be protected from disturbance or harm under the *BC Heritage Conservation Act.* In the event that sites or artifacts of heritage or archaeological importance are encountered, the Contractor will suspend work, protect the Site from disturbance, and contact the Environmental Monitor.

3. ENVIRONMENTAL MONITORING PROGRAM

A qualified environmental professional (QEP) will be retained for the project to act as the Environmental Monitor during the project activities as described above. The responsibilities of the Environmental Monitor may consist of, but are not limited to, the following:

- Before start-up of the project a meeting with all organizations involved will be completed to discuss this CEMP, the Ditches and the sensitive areas for protection, erosion sediment control (ESC) measures and review safety measures.
- Conducting regular weekly Site visits during active construction to monitor and adapt the implementation of mitigation measures as necessary.
- If necessary, conduct routine water quality monitoring for stormwater runoff to the Class B Ditches and the City's storm sewer system or if necessary, surface water to avoid the introduction of harmful substances or sediment-laden water into the Class B Ditches.
- Preparation of environmental monitoring reports describing Site conditions, construction observations, recommendations, and photographic documentation.

3.1 Environmental Monitoring and Compliance Tracking

The Environmental Monitor will keep field notes and logs, document compliance with a checklist prepared for Site-specific conditions and activities, and will keep a photographic record as work progresses. These records will form the basis of the formal monitoring reports, as well as facilitate quality management control. During the Site visits, the Environmental Monitor will:

- Monitor in accordance to the City's ESC Bylaw.
- Meet with the Contractor's on-Site supervisor to discuss recent and pending work, as well as potential environmental issues and appropriate mitigation measures.
- Confirm that Site personnel are aware of the relevant environmental policies and BMPs and will advise on environmentally sound approaches and practices.
- Provide technical assistance on Site-specific environmental matters to construction staff and regulatory personnel.
- Inspect the Site, documenting construction activities and the potential for adverse environmental effects.
- Take representative photographs of Project activities and the implementation of environmental protection measures, as well as any other notable features or incidents.
- Inspect erosion and sediment control structures for effectiveness and make recommendations for maintenance or improvements as needed.
- Collect samples and report water quality data collected during Site visits, as well as laboratory analyses if required.
- Stop work if it appears that permit or approval conditions are not being followed and work with the contractor and/or regulators to implement appropriate mitigations before works proceed.

The Environmental Monitor will work together with the Contractor in matters related to the protection of the environment and the Class B Ditches. The Environmental Monitor will be on-Site during identified environmentally sensitive work including, but not limited, to:

- Vegetation clearing.
- Water management/discharge from the flocculant tanks (if necessary).
- Following significant rainfall events (>25 mm / 24 hours).

Monitoring reports will be submitted by the Environmental Monitor to the City's on-line database in accordance with the City's ESC Bylaw, the Client and the Contractor on a weekly basis for submission to designated representatives. Reports will include a list of construction activities, results of water quality monitoring (if necessary), and a summary of environmental protection measures implemented and recommendations for maintenance or improvement to increase their effectiveness. Non-compliance will also be documented and tracked, including recommendations for corrective measures.

ATTACHMENT A

SPILL RESPONSE PLAN

Keystone Environmental
Knowledge-Driven Results

GENERIC EMERGENCY SPILL RESPONSE PLAN

INCIDENT

If a spill of fuel, oils, lubricants or other harmful substances occurs at the site, the following procedures will be implemented. ALL spills must be reported internally immediately regardless of the amount, and especially if released to a municipal storm sewer or water body.

SPILL RESPONSE STEPS

1. ENSURE SAFETY
2. STOP THE FLOW (when possible)
3. SECURE THE AREA
4. CONTAIN THE SPILL
5. NOTIFY/REPORT (EMBC 1-800-663-3456)
6. CLEAN-UP

(Circumstances may dictate another sequence of events)

ENSURE SAFETY

- Ensure Personal, Public and Environmental Safety
- Wear appropriate Personal Protective Equipment (PPE)
- Never rush in, always determine the product spilled before taking action
- Warn people in immediate vicinity
- Ensure no ignition sources if spill is of a flammable material

STOP THE FLOW (when possible)

- Act quickly to reduce the risk of environmental impacts
- Close valves, shut off pumps or plug holes/leaks, set containers upright
- Stop the flow of the spill at its source

SECURE THE AREA

- Limit access to spill area
- Prevent unauthorized entry onto site

CONTAIN THE SPILL

- Block off and protect drains and culverts
- Prevent spilled material from entering drainage structures (ditches, culverts, drains)
- Use spill sorbent material to contain spill
- If necessary, use a dike, berm or any other method to prevent any discharge off site
- Make every effort to minimize contamination
- Contain as close to the source as possible

NOTIFY/REPORT

- Notify the Environmental Manager/QEP or Owner of incident for any volume (provide spill details) When necessary the first external call should be made to (see spill reporting requirements): EMBC 1-800-663-3456 (24 hours)
- Provide necessary spill details to other external agencies (see spill reporting requirements)

SPILL REPORTING REQUIREMENTS
EMBC 1-800-663-3456

SUBSTANCE:	AMOUNT	REPORTABLE TO:
Oils	> 100 litres	EMBC
	Any spill amount into water	EMBC, DFO & MoE
Special Wastes:		
PCB Oil	any amount > 2 ppm PCB	EMBC
Corrosive	> 5 kilograms	EMBC
Hazardous, e.g., pesticides/Herbicides	> 5 litres	EMBC

Note: If in doubt regarding spill size, affected environment, materials involved and whether reportable, err on the side of caution and report the spill to the external body (i.e., EMBC).

The list of emergency contacts will be posted in strategic locations, on land and on each marine rig along with the Spill Response Plan (contacts will be updated as required for each site-specific location).

CLEAN-UP

- Technical assistance is available from the Environmental Monitor on clean-up procedures and residue sampling
- All equipment and material used in clean-up (*e.g.*, used sorbents, oil containment materials, etc.) must be disposed of in accordance with MoE requirements in approved locations. The Environmental Monitor will assist in compliance with MoE regulations
- Accidental spills may produce special wastes (*e.g.*, material with > 3% oil) and contaminated soil. All waste disposals must comply with the BC Hazardous Waste Regulations and the *Waste Management Act.* The Environmental Monitor will assist in compliance with MoE regulations.
- Waste sorbent material may not be disposed of in a landfill without prior approval from MoE
- If contaminated soil is encountered it must be treated and dealt with as required on a site-specific basis, and must comply with the requirements of the BC Contaminated Sites Regulations.

SPILL REPORT

The spill report should include the following information:

- Name and phone number of person reporting the spill
- Name and phone number of person involved with the spill
- Location and time of the spill
- Type and quantity of material spilled
- Cause and effect of spill
- Details of action taken or proposed to contain the spill and minimize its effect
- Names of other persons or agencies advised

SCHEDULE A

EXPLANATORY PLAN OF PART OF PARCEL "ONE" (EXPLANATORY PLAN 12474) OF THE SOUTH WEST QUARTER OF SECTION 3 TOWNSHIP 8 NEW WESTMINSTER DISTRICT

PLAN EPP105265

FOR STATUTORY RIGHT OF WAY PURPOSES
PURSUANT TO SECTION 99 (1)(e) OF THE LAND TITLE ACT

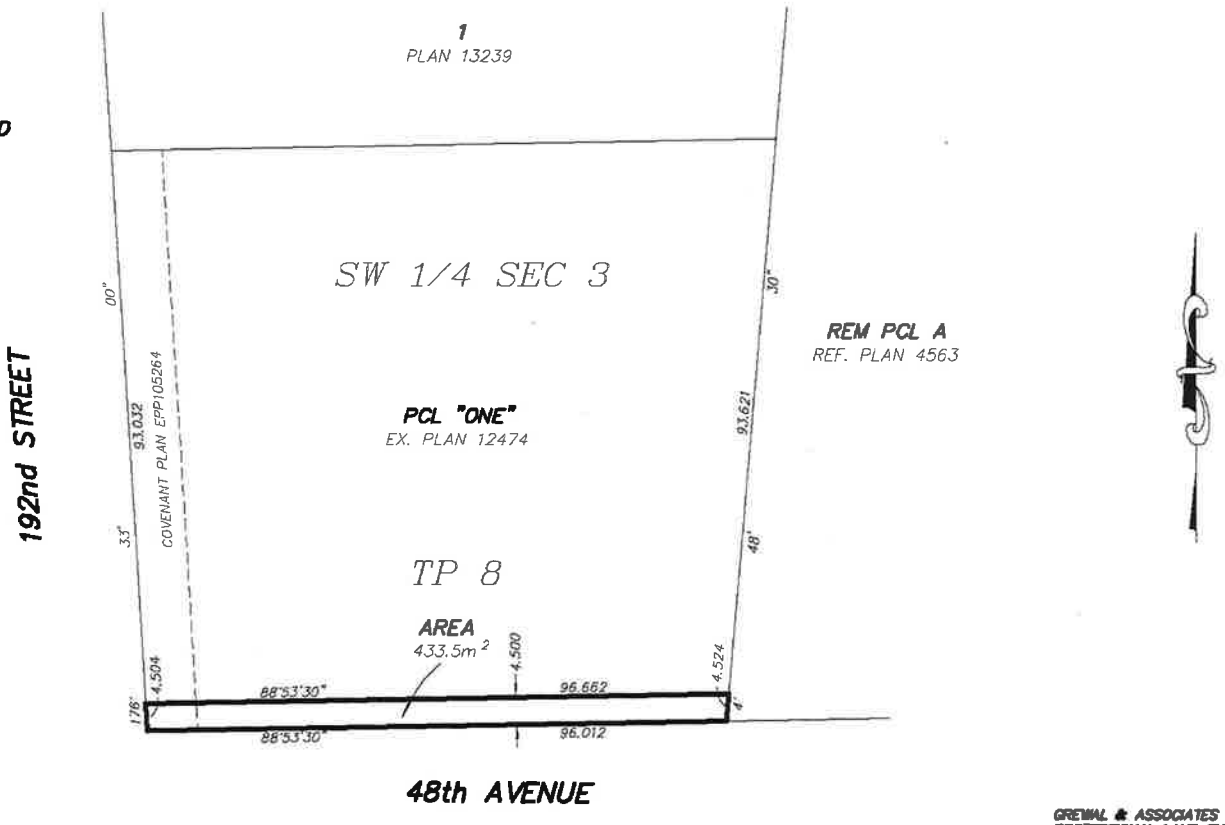
BCGS 92G.007

INTEGRATED SURVEY AREA NO. 1
CITY OF SURREY, NAD83(CSRS) 4.0.0.BC.1.MVRD

0 10 50

SCALE 1 : 750 DISTANCES ARE IN METRES

THE INTENDED PLOT SIZE OF THIS PLAN IS 432mm IN WIDTH BY 280mm IN HEIGHT (B SIZE) WHEN PLOTTED AT A SCALE OF 1:750



LEGEND

m^2	DENOTES SQUARE METERS
REF	DENOTES REFERENCE
EX	DENOTES EXPLANATORY

GRID BEARINGS ARE DERIVED FROM PLAN NWP13239.

THIS PLAN SHOWS HORIZONTAL GROUND-LEVEL DISTANCES EXCEPT WHERE OTHERWISE NOTED.

THIS PLAN IS BASED ON THE FOLLOWING LAND TITLE AND SURVEY AUTHORITY OF BC RECORDS: PLAN NWP13239.

LAKHJOT S. GREWAL B.C.L.S. #809
ON THE 10th DAY OF SEPTEMBER, 2020.

THIS PLAN LIES WITHIN THE METRO VANCOUVER REGIONAL DISTRICT

GREWAL & ASSOCIATES
PROFESSIONAL LAND SURVEYORS
UNIT 204, 15299-68th AVENUE
SURREY, B.C. V3S 2C1
TEL: 604-597-8567
EMAIL: Office@GrewalSurveys.com
FILE : 1812-017
DWG : 1812-017 E2

EXPLANATORY PLAN OF PART OF PARCEL "ONE" (EXPLANATORY PLAN 12474) OF THE SOUTH WEST QUARTER OF SECTION 3 TOWNSHIP 8 NEW WESTMINSTER DISTRICT

PLAN EPP105264

FOR RESTRICTIVE COVENANT PURPOSES
PURSUANT TO SECTION 99 (1)(e) OF THE LAND TITLE ACT

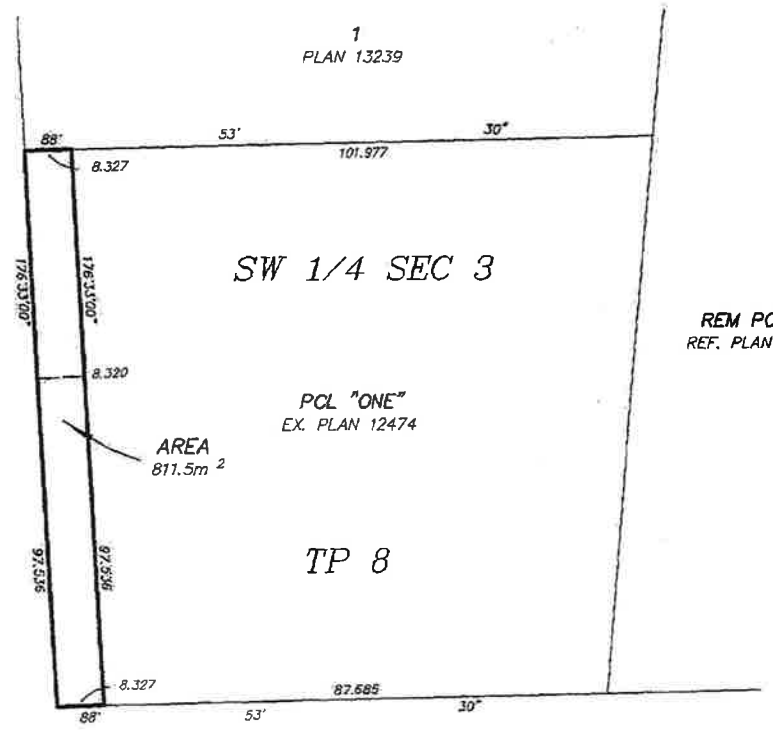
BCGS 92G.007

INTEGRATED SURVEY AREA NO. 1
CITY OF SURREY, NAD83(CSRS) 4.0.0.BC.1.MVRD

0 10 50

SCALE 1 : 750 DISTANCES ARE IN METRES

THE INTENDED PLOT SIZE OF THIS PLAN IS 432mm IN WIDTH BY 280mm IN HEIGHT (B SIZE) WHEN PLOTTED AT A SCALE OF 1:750



LEGEND

m^2	DENOTES SQUARE METERS
REF	DENOTES REFERENCE
EX	DENOTES EXPLANATORY

GRID BEARINGS ARE DERIVED FROM PLAN NWP13239.

THIS PLAN SHOWS HORIZONTAL GROUND-LEVEL DISTANCES EXCEPT WHERE OTHERWISE NOTED.

THIS PLAN IS BASED ON THE FOLLOWING LAND TITLE AND SURVEY AUTHORITY OF BC RECORDS: PLAN NWP13239.

LAKHJOT S. GREWAL B.C.L.S. #809
ON THE 10th DAY OF SEPTEMBER, 2020.

THIS PLAN LIES WITHIN THE METRO VANCOUVER REGIONAL DISTRICT

GREWAL & ASSOCIATES
PROFESSIONAL LAND SURVEYORS
UNIT 204, 15299-68th AVENUE
SURREY, B.C. V3S 2C1
TEL: 604-597-8567
EMAIL: Office@GrewalSurveys.com
FILE : 1812-017
DWG : 1812-017 E1

Tree Evaluation Report for:
19225 - 48 Avenue
(Old Address: 4842 - 192 Street)
Surrey, BC

Prepared by:

Mike Fadum and Associates Ltd.
#105, 8277-129 Street
Surrey, BC
Phone 778-593-0300
Fax 778-593-0302

Date: March 20, 2020
Revised: July 23, 2020
Revised: September 11, 2020
Revised: November 9, 2020
Revised: July 30, 2021
Revised: November 5, 2021
Revised: November 29, 2021

1.0 INTRODUCTION

We attended the site on March 13, 2020 and October 26, 2021 for the purpose of evaluating the tree resource and to make recommendations for removal and preservation for the building application proposed for 19225 - 48 Avenue, Surrey, BC. The building plans include the construction of a new home on a lot north of 48 Avenue with a 7m setback along the COSMOS Class B roadside ditch. A plan showing the proposed building footprint, topographical survey, setback and lot lines was provided for our use and used as a resource for making recommendations pertaining to tree removal and retention. *The July 23, 2020 revision reflects the current plans. The September 11, 2020 revision reflects additional comments supporting the removal of tree #1120 as requested by the City in the email dated August 14, 2020. The November 9, 2002 revision reflects the current plans. The July 30, 2021 revision reflects the current plans. The November 5, 2021 revision reflects additional surveyed trees. The November 29, 2021 revision reflects the city comments in the email dated November 29, 2021.*

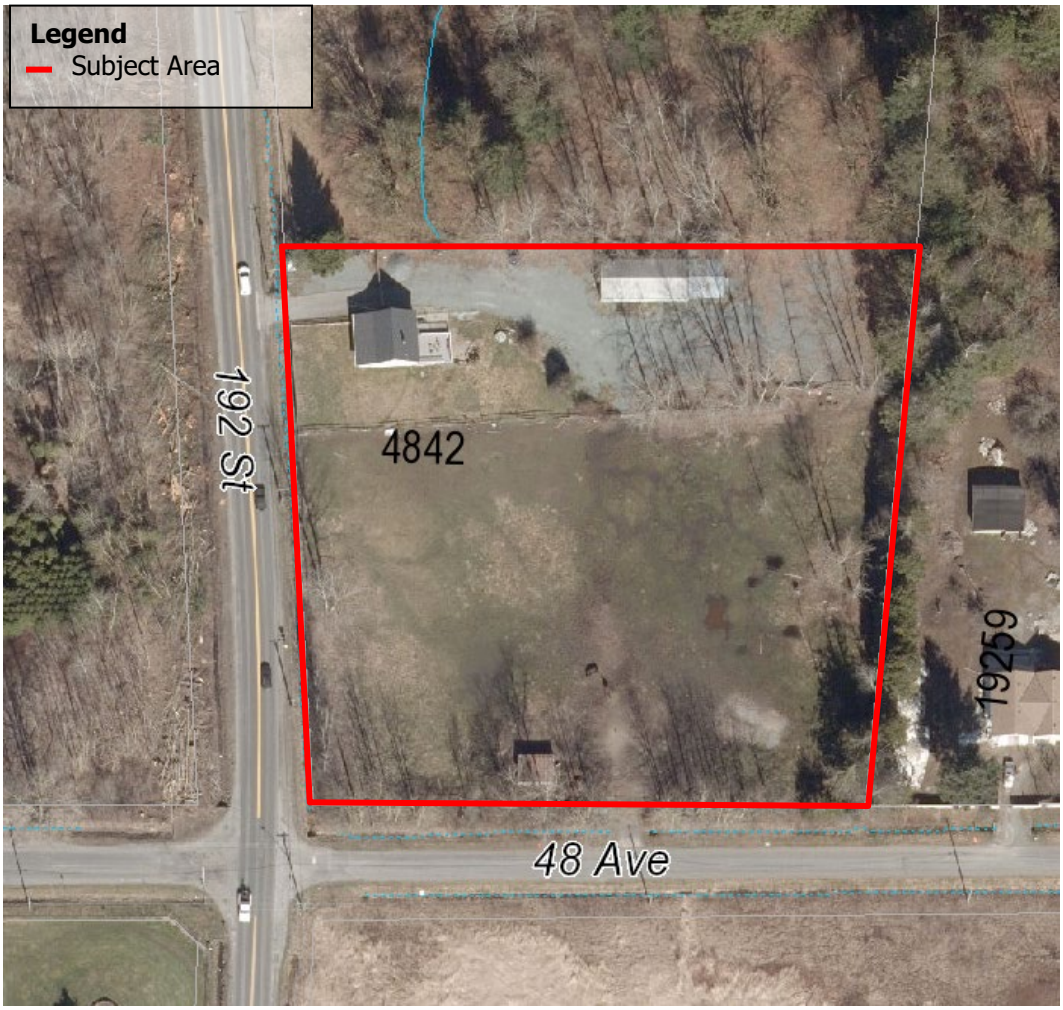


Figure 1. Aerial photograph of subject property (Cosmos – March 2019).

2.0 FINDINGS

The tree resource includes a mix of native species located around the property perimeter. Ponding was occurring near the eastern boundary and may be contributing to decline in the area.

Table 1 provides individual tree data. Specific information includes tree type, diameter at breast height (DBH), structure and health rating (poor (P), moderate (M), good (G) or a combination of two), live crown ratio (LCR) and structural observations. Health refers to the tree's overall health and vigor, while structure is a qualitative rating of a tree's shape and structure when compared to ideal trees of the same species and age class. Trees were evaluated for their preservation potential based on health, structure, location and species factors. Trees expected to be unsafe, conflicting with the proposed building plans, of poor health or of little long-term retentive value are recommended for removal and are shown on the attached Tree Preservation and Removal Plan.

3.0 TREE PROTECTION

Tree protection fencing is to be installed as per municipal standards prior to construction with no excavation, grade alterations or materials storage within the tree protection zone. The consulting Arborist should be contacted prior to and be onsite for any construction within the recommended no disturbance zone which is approximately 6x the tree diameter. Grade alterations and other construction works required to provide drainage are not to occur within the tree protection zone.

4.0 TREE PRESERVATION SUMMARY

Our plans have been provided to the design team and it is expected that all consultants and contractors adhere to the recommendations in this report and ensure there is no conflict with Tree Protection Zones. No ground disturbance or grade alterations are permitted within the Tree Protection Zones unless preapproved by the project arborist. Mechanical injuries caused to trees below or above ground cannot be repaired. All parties must be aware that long-term success in tree preservation efforts depends greatly on minimizing the impact caused during and post construction. Best efforts must be made to ensure that soils remain undisturbed within the tree protection zones. Ongoing monitoring and implementation of mitigating works, such as watering, mulching, etc., is essential for success.

5.0 LIMITATIONS

This Arboricultural field review report is based on site observations on the dates noted. Effort has been made to ensure that the opinions expressed are a reasonable and accurate representation of the condition of the trees reviewed.

All trees or groups of trees have the potential to fail. No guarantees are offered or implied by Mike Fadum and Associates Ltd. or its employees that the trees are safe given all conditions. The inspection is limited to visual examination of accessible items without dissection, excavation, probing, coring or climbing. Trees can be managed, but they cannot be controlled. To live, work or play near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

The findings and opinions expressed in this report are representative of the conditions found on the day of the review only. Any trees retained should be reviewed on a regular basis. The root crowns, and overall structure, of all of the trees to be retained must be reviewed immediately following land clearing, grade disturbance, significant weather events and prior to site usage changes.

Please contact the undersigned if you have any questions or concerns regarding this report.

Mike Fadum and Associates Ltd.

Tim Vandenberg
ISA Certified Arborist: PN–8565A
ITA: Arborist Technician
TRAQ

Table 1- Tree Evaluation: 19225 - 48 Avenue, Surrey, BC

Tree #	Type	DBH (cm)	Dripline (m)	LCR (%)	Condition (Structure, Health)	Comments	TPZ (m)	Recommendation
1120	Paperbark Birch *(Betula papyrifera)*	47/38	~5.0	NA	MP, MP	Phototropic. Some injuries to surficial roots, likely from animals. *Dieback noted likely due to bronze birch borer infestation. Tree not suitable for long term preservation due to current condition and is not expected to recover from the added stress caused due to hydrological changes associated with the proposed construction.*	**4.5**	**Remove –** poor condition/health and exposure when neighbouring trees are removed or modify to wildlife snag.
1121	Western Redcedar *(Thuja plicata)*	~80	~6.0	NA	P, P	In decline. Woodpecker damage. Top half is dead. Cavity near the base.	**5.5**	**Remove –** poor health.
1122	Western Redcedar *(Thuja plicata)*	70	~5.0	NA	P, P	In decline. Top half is dead. Cavity near the base.	**5.0**	**Remove –** poor health.
1123	Western Redcedar *(Thuja plicata)*	~75	~5.5	NA	MP, MP	Declining top. Slight pistol-butt base.	**5.0**	**Remove –** poor health.
1124	Black Cottonwood *(Populus balsamifera* ssp. trichocarpa)	60	~6.5	NA	MG, MG	Open grown. Stem has a few bends.	**4.5**	**Retain.**
2208	Trembling Aspen *(Populus tremuloides)*	10/15 /15	3.0	NA	M, MG	Multiple stems from the base. Growing in a group. Foliage appears healthy. Not included in initial survey.	**2.0**	**Retain.**

Table 1- Tree Evaluation: 19225 - 48 Avenue, Surrey, BC

Tree #	Type	DBH (cm)	Dripline (m)	LCR (%)	Condition (Structure, Health)	Comments	TPZ (m)	Recommendation
2209	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	93	6.0	NA	MP, M	Co-dominance occurring near the base with inclusion. Possible isolated dieback – may be leaf senescence.	**6.5**	**Retain. Adjust permanent fence to limit impact on tree.**
2210	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	51	7.0	NA	M, MP	May have some isolated dieback. Slightly asymmetrical crown. Leaf senescence limits health assessment.	**3.5**	**Retain.**
2211	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	25/22	2.0	NA	MP, M	Co-dominance occurred at base with inclusion. Leaf senescence limits health assessment.	**2.5**	**Retain.**
2212	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	34	5.0	NA	M, M	Slight sweep. Somewhat high crown.	**2.5**	**Retain.**
2213	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	32	4.0	NA	M, M	Sweep. Typical of species.	**2.5**	**Retain.**
2214	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	37/43	5.0	NA	M, M	Slightly phototrophic. Some die back. Leaf senescence. Attached fence.	**4.5**	**Retain.**
2215	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~35	~4.5	NA	MG, M	Fairly straight stem. Leaf senescence. Difficult to assess area. Attached fence.	**2.5**	**Retain.**

Table 1- Tree Evaluation: 19225 - 48 Avenue, Surrey, BC

Tree #	Type	DBH (cm)	Dripline (m)	LCR (%)	Condition (Structure, Health)	Comments	TPZ (m)	Recommendation
2216	Norway Spruce *(Picea abies)*	54	4.5	80	M, G	High foliage density. Some previous snapped out branches. Some sap exudation. Sap sucker damage.	**4.0**	**Retain.**
S100	Western Redcedar *(Thuja plicata)*	~90	~6.0	NA	MP, MP	Dead top. Some dieback throughout.	**6.0**	**Retain.**
TG1	Black Cottonwood *(Populus balsamifera* ssp. trichocarpa) x5	~30-50/30	~5.5	NA	M, MG	All have asymmetrical crowns away from one another. Shared canopy. Some phototropic sweeps. Leaf senescence.	**4.5**	**Retain.**
C1	Red alder *(Alnus rubra)*	~45		NA	M, M	Typical of species. Not surveyed	**3.5**	**Remove –** conflicts with driveway construction.
C2	Trembling Aspen *(Populus tremuloides)*	35/33 /25	6.0	NA	MG, MG	Three stems joined at the base. Healthy foliage. Fairly symmetrical canopy. Barriers should only be built on site.	**4.0**	**Retain.**
CTR1	Mixed Native Broadleaf Species X15	8-35		NA	MP-MG, MP-MG	Dripline of 5.3m See photo in Figure 1.	**5.0**	**Retain.**
CTR2	Mixed Native Broadleaf Species X5	8-20		NA	M, M	Typical of species. Not Surveyed.	**3.0**	**Remove** as necessary to accommodate services.
CTR3	Trembling Aspen x11 Bitter Cherry x 2	8-32	3.5	NA	M, M	Growing in a group	**3.0**	**Retain.**

Table 1- Tree Evaluation: 19225 - 48 Avenue, Surrey, BC

Tree #	Type	DBH (cm)	Dripline (m)	LCR (%)	Condition (Structure, Health)	Comments	TPZ (m)	Recommendation
OS1	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~50	~6.0	NA	M, MG	Slightly phototrophic.	**3.5**	**Retain.**
OS2	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~45	~6.0	NA	MG, MG	Fairly straight stem.	**3.0**	**Retain.**
OS3	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~35	~6.0	NA	M, MG	Slightly phototrophic.	**2.5**	**Retain.**
OS4	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~50	~6.0	NA	M, M	Co-dominance occurs mid-stem. Asymmetrical crown. Some deadwood.	**3.5**	**Retain.**
OS5	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~60	~6.0	NA	MP, M	Dog leg at approximately 3 m	**4.0**	**Retain.**
OS6	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~50	~6.0	NA	MP, M	Dog leg mid-stem. Trees may have been previously topped.	**3.5**	**Retain.**
OS7	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~50	~6.0	NA	M, M	Slightly phototrophic.	**3.5**	**Retain.**
OS8	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~50	~6.0	NA	MP, M	Moderate-highly phototrophic.	**3.5**	**Retain.**
OS9	Black Cottonwood (*Populus balsamifera* ssp. trichocarpa)	~40	~6.0	NA	P, M	Extremely phototrophic	**3.0**	**Retain –** inform owner of condition, tree may cause property damage should it fail.

Table 1- Tree Evaluation: 19225 - 48 Avenue, Surrey, BC

Tree #	Type	DBH (cm)	Dripline (m)	LCR (%)	Condition (Structure, Health)	Comments	TPZ (m)	Recommendation
OS10	Black Cottonwood *(Populus balsamifera* ssp. trichocarpa)	~45	~6.0	NA	MP, MG	Slight dogleg. Fairly phototrophic. Full canopy.	**3.0**	**Retain.**
OS11	Bigleaf Maple *(Acer macrophyllum)*	70/60 /55	~10.0	NA	M, M	Some dead wood. Leaf senescence.	**6.5**	**Retain.**
OS12	Bigleaf Maple *(Acer macrophyllum)*	~50	~8.0	NA	M, MG	Slightly phototrophic.	**3.5**	**Retain.**
OS13	Western Redcedar *(Thuja plicata)*	~55	~6.0	70	MP, MP	Medium foliage density. Dead top.	**4.0**	**Retain.**
OS14	Bigleaf Maple *(Acer macrophyllum)*	~35	~6.0	NA	M, M	Phototrophic. Leaf senescence makes tree assessment difficult.	**2.5**	**Retain.**
OS15	Western Redcedar *(Thuja plicata)*	~35/2 5	~5.0	NA	P, P	Large sections of die back. Top half is dead.	**4.0**	**Retain.**
OS16	Western Redcedar *(Thuja plicata)*	~65	~6.0	NA	MP, MP	Multiple dead tops.	**4.5**	**Retain.**
OS17	Western Redcedar *(Thuja plicata)*	~35	~6.0	NA	MP, MP	Dead top	**2.5**	**Retain.**
OS18	Western Redcedar *(Thuja plicata)*	~25/2 5	~4.0	100	M, MG	Medium foliage density. Stems joined at the base.	**3.5**	**Retain.**
OS19	Western Redcedar *(Thuja plicata)*	50/30	~5.0	75	MP, MG	Multiple other stems. Healthy foliage. Some included attachments.	**5.0**	**Retain.**
OS20	Sawara Falsecypress *(Chamaecyparis pisifera)*	~20/2 0/25	~3.0	50	M, M	Medium foliage density.	**3.0**	**Retain.**

Tree #	Type	DBH (cm)	Dripline (m)	LCR (%)	Condition (Structure, Health)	Comments	TPZ (m)	Recommendation
OS21	Western Redcedar *(Thuja plicata)*	~50	~5.0	75	M, M	Medium foliage density. Not surveyed.	**4.0**	**Retain**
OSTR	Western Redcedar *(Thuja plicata)* X6	10-~25/25/20	~3.5	70	M, MG	Estimated 6 bylaw sized stems. Healthy foliage. North half TPZ – 2.5, South half TPZ – 3.0	**2.5, 3.0**	**Retain.**

ADDITIONAL RECOMMENDATIONS

- **In order to prevent root damage, which may adversely affect the health and or stability of the retained trees, any ground disturbance or grade alteration within the recommended Tree Protection Zone provided in the table above shall be under the direction of the project arborist.**
- **Location is approximate for all non-surveyed trees.**
- **Permission from the registered owner(s)/city is required prior to the removal of all city, offsite, and shared trees regardless of their size.**

Note: 'OS' refers to Offsite trees and due to restricted access their diameters are approximate. An assessment of offsite trees does not imply they are safe as the restricted access prevented a thorough review. Shared trees/hedges have been assessed as onsite trees in the summary. 'C' refers to trees on City property.

Figure 1. View of southern boundary with CTR 1

Figure 2. View of southern boundary with CTR 2 and C1 (red)

Figure 3. Declining cedars and tree 1120 from left to right.

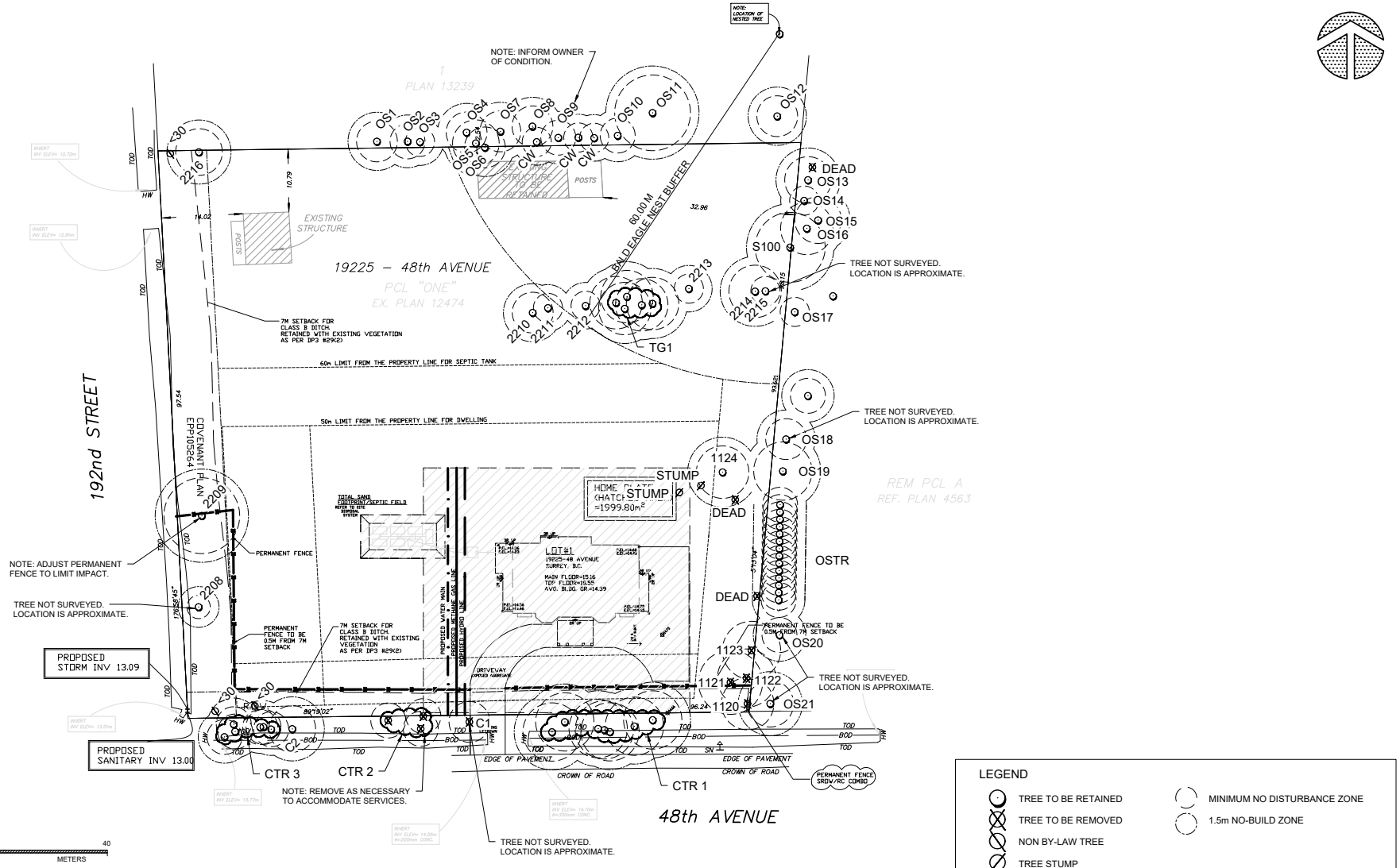
Figure 4. Declining cedars

Figure 5. View of subject area.

Figure 6. North end of subject property

Table 1: Summary of Tree Preservation by Tree Species:

Tree Species	Existing	Remove	Retain
Alder and Cottonwood Trees			
Alder/ Cottonwood	14	1	13
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Aspen, Trembling	13	0	13
Birch, Paperbark	1	1	0
Cherry, bitter	2	0	2
Native, Mixed	20	0	20
Coniferous Trees			
Redcedar, Western	4	3	1
Spruce, Norway	1	0	1
Total	55	5	50
Additional Trees in the proposed Open Space / Riparian Area	NA	NA	NA
Total Replacement Trees Proposed (excluding Boulevard Street Trees)		8	
Total Retained and Replacement Trees		58	



NO.	DATE	BY	REVISION
1	JUN08/20	MK	SITE PLAN
2	JUL23/20	MK	SITE PLAN
3	NOV03/20	MK	SITE PLAN
4	APR21/21	MK	SITE PLAN
5	AUG06/21	MK	SITE PLAN W/ SERVICES

NO.	DATE	BY	REVISION
6	OCT25/21	MK	UPDATED SURVEY

MIKE FADUM AND ASSOCIATES LTD.
VEGETATION CONSULTANTS

#105, 8277 129 St.
Surrey, British Columbia
V3W 0A6
Ph: (778) 593-0300
Fax: (778) 593-0302
Email: mfadum@fadum.ca

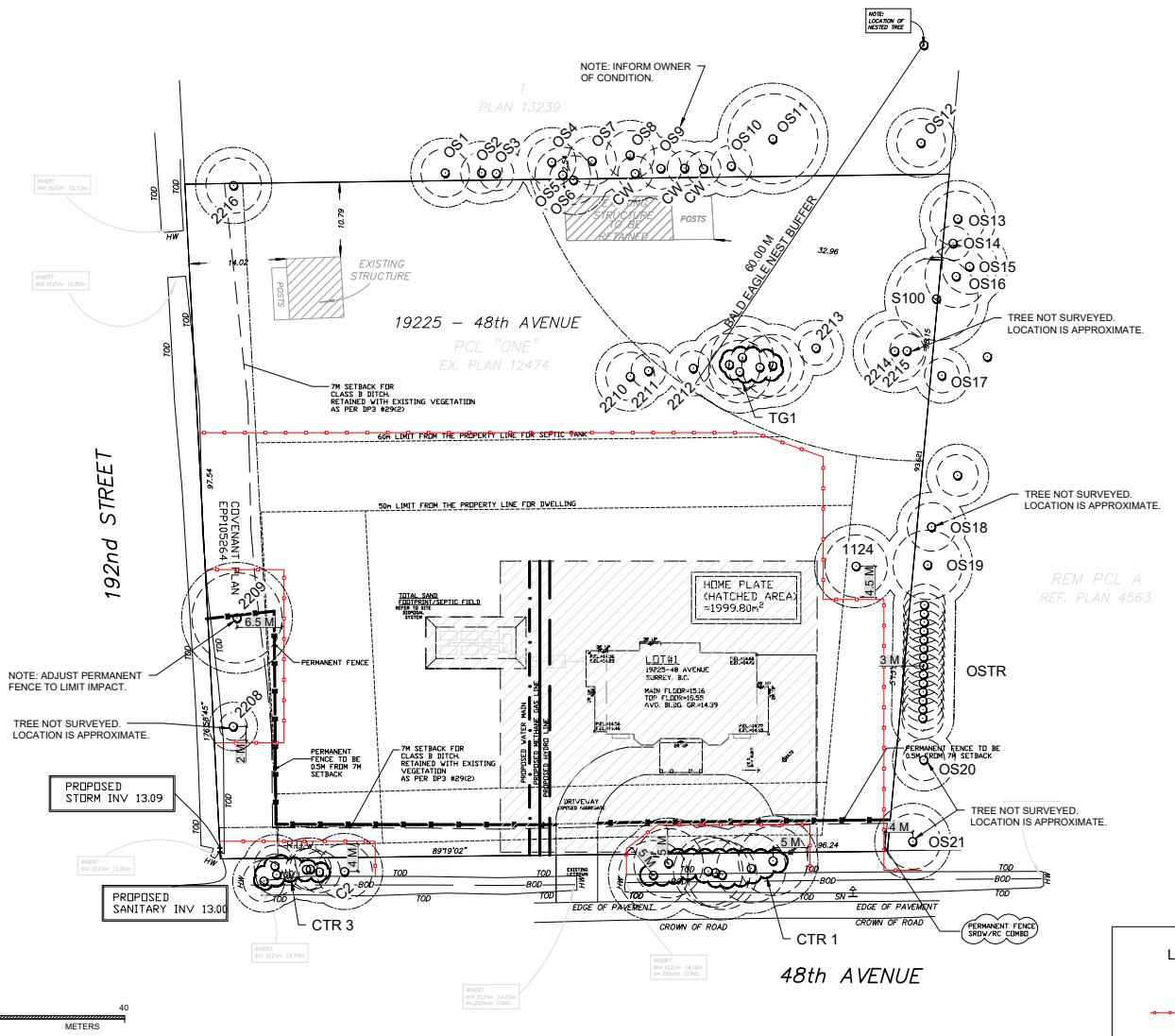
PROJECT TITLE
19225 - 48 AVENUE
SURREY, B.C.

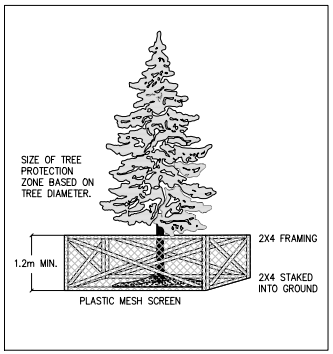
SHEET TITLE
T1 - TREE REMOVAL AND PRESERVATION PLAN

CLIENT

DRAWN MK
SCALE AS SHOWN
DATE MARCH 20, 2020

T-1
SHEET 1 OF 2





GENERAL NOTES:
- NON BY-LAW TREES HAVE BEEN REMOVED FROM THE PLANS.
- TREE PROTECTION FENCING SHALL BE CONSTRUCTED TO MUNICIPAL STANDARDS.
- REASSESS TREES WITH LOT GRADING PLANS.
- REPLACEMENT TREES SHALL CONFORM TO BCSLA/BCLNA LANDSCAPE STANDARDS. SPECIES AND LOCATIONS TO BE DETERMINED AT LANDSCAPE STAGE.

LEGEND
- TREE TO BE RETAINED
- TREE PROTECTION FENCING
- MINIMUM NO DISTURBANCE ZONE
- 1.5m NO-BUILD ZONE

NO.	DATE	BY	REVISION
1	JUN08/20	MK	SITE PLAN
2	JUL23/20	MK	SITE PLAN
3	NOV03/20	MK	SITE PLAN
4	APR21/21	MK	SITE PLAN
5	AUG06/21	MK	SITE PLAN W/ SERVICES
6	OCT25/21	MK	UPDATED SURVEY

MIKE FADUM AND ASSOCIATES LTD.
VEGETATION CONSULTANTS

#105, 8277 129 St.
Surrey, British Columbia
V3W 0A6
Ph: (778) 593-0300
Fax: (778) 593-0302
Email: mfadum@fadum.ca

PROJECT TITLE: 19225 - 48 AVENUE
SURREY, B.C.

SHEET TITLE: T2 - TREE PROTECTION PLAN

CLIENT:

DRAWN: MK
SCALE: AS SHOWN
DATE: MARCH 20, 2020

T-2
SHEET 2 OF 2

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7919-0293-00

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: 000-977-578
Parcel "One" (Explanatory Plan 12474) of the South West Quarter of Section 3 Township 8 New Westminster District

4842 - 192 Street

(the "Land")

3. If the civic address(es) change(s), the City Clerk is directed to insert the new civic address(es) for the Land, as follows:

_____

4. Surrey Zoning By-law, 1993, No. 12000, as amended is varied as follows:

   (a) In Section F Yards and Setbacks of Part 10 “General Agriculture Zone (A-1)”, the rear (north) yard setback is decreased from 12.0 metres to 2.5 metres to the principal building face of an accessory structure.

5. 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.

6. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development variance permit.

7. 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.

8. The terms of this development variance permit or any amendment to it, are binding on all persons who acquire an interest in the Land.

9. 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

Schedule A

LOT CALCULATIONS

CIVIC ADDRESS:	LOT#1, 19225–48 AVENUE
ZONING:	A1
LOT AREA:	108,855 SQ.FT. [10,113 M²]
PERMITTED FLOOR AREA RATIO:	500m²
PROPOSED FLOOR AREA RATIO:	5374.49 SQ.FT. [499.31m²]
PERMITTED LOT COVERAGE:	N/A
PROPOSED LOT COVERAGE:	= 3432.27 SQ.FT. [318.87 m²]
PERMITTED BUILDING HEIGHT:	9.00M
PROPOSED BUILDING HEIGHT:	8.69M

PERMITTED TOTAL HOME PLATE AREA = 2000 M²

PROPOSED SFD STRUCTURAL FILL FOOTPRINT AREA = 3577.87 SQ.FT. [332.40 M²]

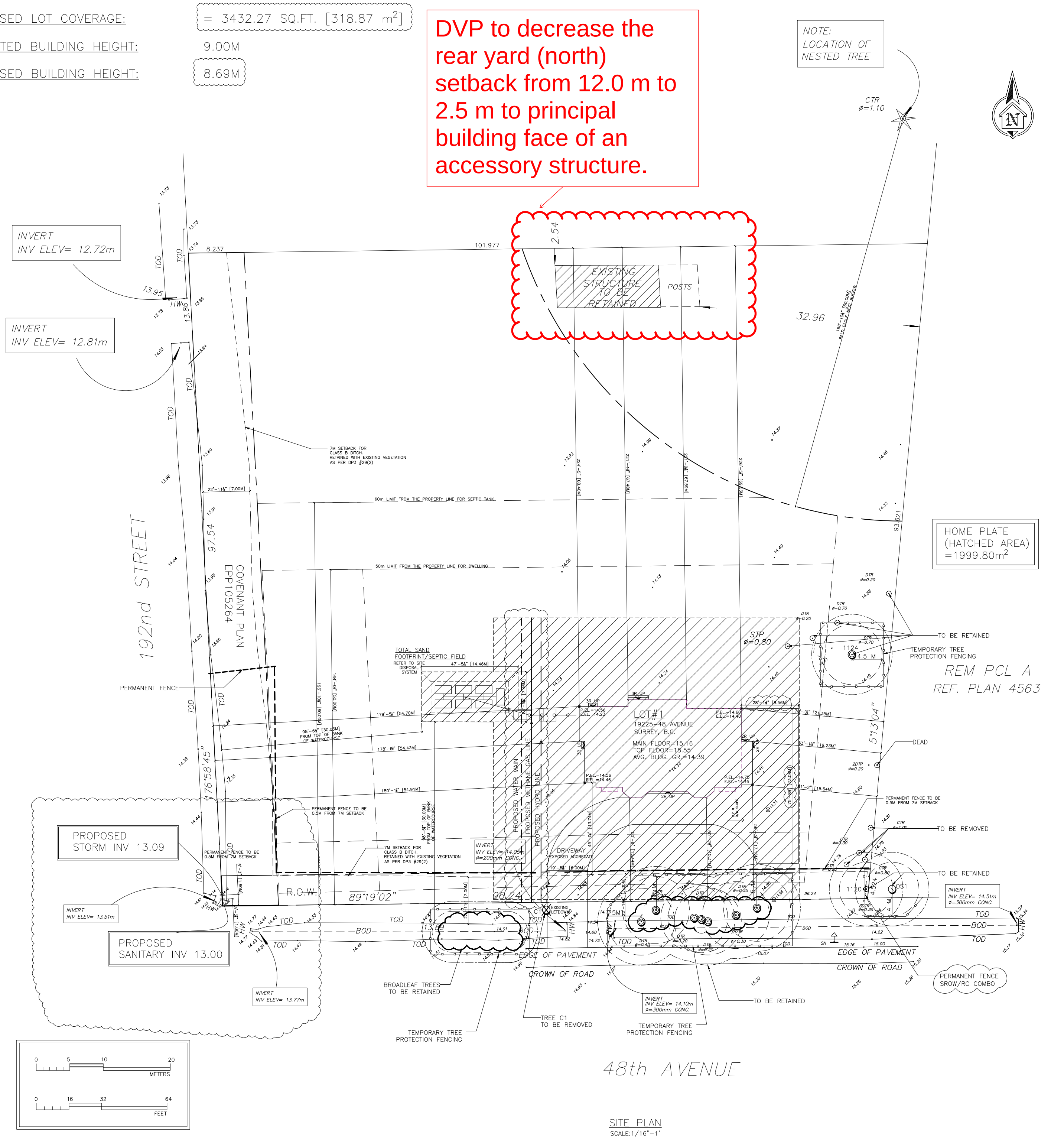
DRIVEWAY AREA = 3930.35 SQ.FT. [365.14 M²]

SEPTIC FIELD AREA = 1161.14 SQ.FT. [1073.87 M²]

TOTAL FOOT PRINT AREA = 8669.36 SQ.FT. [805.41M²]

ACTUAL HOME PLATE AREA (HATCHED AREA) = 1999.80M²

DVP to decrease the rear yard (north) setback from 12.0 m to 2.5 m to principal building face of an accessory structure.



SITE PLAN

SCALE:1/16"–1'

SANITARY MANHOLE
RIM ELEV= 15.00m
INV. ELEV INACCESSIBLE

SAN MH

THESE PLANS CONFORM TO REQUIREMENTS IN THE B.C. BUILDING CODE 2018.

DRAWING NO.	REFERENCE	NO.	REVISION	BY	DATE

Dhillon Designs Ltd.

TITLE	
PROPOSED RESIDENCE FOR MR. PALWINDER SINGH GILL LOT #1, 19225–48 AVENUE SURREY, B.C.	DWN: S.P.
	SCALE: 1/16"=1'
	DATE: APR.11.19
	CHKD:
	PHONE: 604–781–3648

DHILLON DESIGNS LTD. UNIT 215–12830–80th AVE. SURREY, B.C. V3W 3A8 PHONE: (604) 590–2808 FAX: (604) 590–2878 EMAIL:info@dhillondesigns.ca