CITY OF SURREY
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INTER-OFFICE MEMO

Regular Council - Land Use
B. 5 7922-0173-00
Monday July 24, 2023
Supplemental Information

TO: **City Clerk, Legislative Services Division**

FROM: **Acting Director, Area Planning & Development – South Division**

DATE: **July 24, 2023** FILE: **7922-0173-00**

RE: **Agenda Item B.5. July 24, 2023, Regular Council – Land Use**
Development Application No. 7922-0173-00
Replacement Pages for the Planning Report

Development Application No. 7922-0173-00 is on the agenda for consideration by Council at the July 24th, 2023 Regular Council – Land Use Meeting under Item B.5.

All conditions of approval associated with Development Application No. 7922-0173-00 have been resolved.

Should Council support Development Application No. 7922-0173-00, then it is now in order for Council to consider issuance of Development Variance Permit No 7922-0173-00 and to authorize the Mayor and Clerk to execute the Development Variance Permit.

Should Council support issuance of Development Variance Permit No. 7922-0173-00, then it is now in order for Council to issue attached Development Permit No. 7922-0173-00 and to authorize the Mayor and Clerk to execute the Permit.

Page 3 of the Planning Report detailing these changes is attached to this memorandum.

Shawn Low
Acting Director
Area Planning & Development – South Division

Attachment - 7922-0173-00– Page 3 Replacement Page
- Development Permit 7922-0173-00
- Development Variance Permit 7922-0173-00

c.c. - City Manager

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council ~~authorize staff to draft~~ issue Development Permit No. 7922-0173-00 for Hazard Lands (Steep Slopes).

2. Council ~~approve~~ issue Development Variance Permit No. 7922-0173-00 (Appendix II) varying the following~~, to proceed to Public Notification~~:

    (a) In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of a principal building is reduced from 7.5 metres to 0.5 metres; and

    (b) In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.

3. Council instruct staff to resolve the following issues prior to final adoption:

    (a) submission of a geotechnical report to the satisfaction of the General Manager, Planning & Development;

    (b) registration of a Section 219 Restrictive Covenant that requires the owner to develop the site in accordance with the conditions in the finalized geotechnical report; and

    (c) registration of a Section 219 Restrictive Covenant prohibiting secondary suites due to the lack of a parking pad.

SITE CONTEXT & BACKGROUND

Direction	Existing Use	OCP Designation	Existing Zone
Subject Site	Single family residential dwelling	Urban	RF
North (Across 13 Avenue):	Single family residential dwelling	Urban	RF

CITY OF SURREY

(the "City")

DEVELOPMENT PERMIT

NO.: 7922-0173-00

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: 001-835-211
LOT 2 BLOCK 1 SECTION 8 TOWNSHIP 1 NEW WESTMINSTER DISTRICT PLAN 4828
13130 13 Avenue

(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. Hazard Lands

1. Development shall occur strictly in accordance with the Terran Geotechnical Consultants Ltd. Report dated May 24, 2023 attached and numbered as Schedule B.

2. Geotechnical specifications, including erosion, slope stability and soil detention shall be implemented, monitored and inspected in accordance with the report attached as Schedule B.

3. Erosion and Sediment Control shall be installed, monitored and inspected in conformance with the City's Erosion and Sediment Control By-law, as may be amended or replaced from time to time.

C. Variances

The issuance of a development permit limits activity on the Land to that of strict compliance with all City bylaws, unless a Development Variance Permit has been issued. No implied variances from bylaw provisions shall be granted by virtue of drawing notations or within reports which are inconsistent with City bylaw provisions and which have not been identified as variances below:

1. This development permit supplements Development Variance Permit No. 7922-0173-00, which amends Surrey Zoning By-law, 1993 No 12000, as amended, as follows:

   (a) In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of a principal building is reduced from 7.5 metres to 0.5 metres; and

   (b) In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.

D. 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, restrictive covenants have been registered as charges on the Land for the Geotechnical Report and Prohibition on Secondary Suites.

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 – Brenda Locke

City Clerk – Jennifer Ficocelli

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

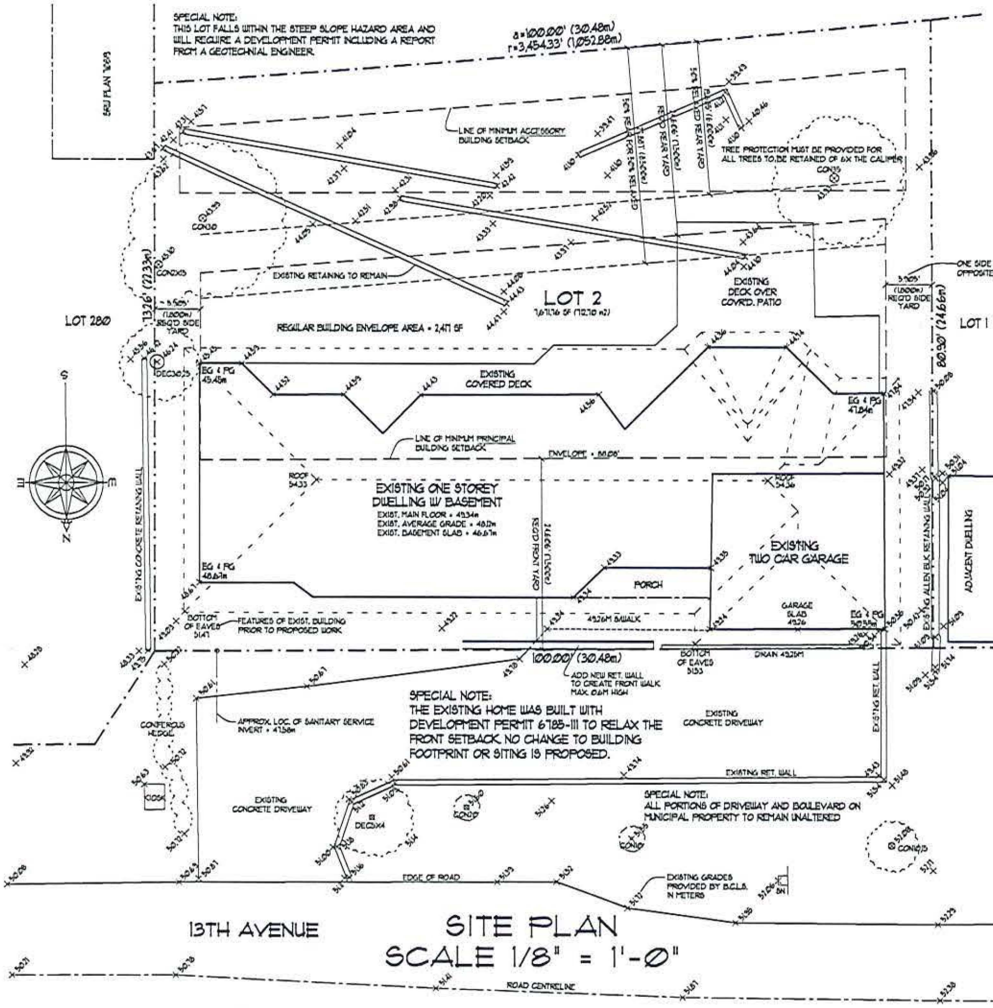
A Scoten

Owner: (Signature)

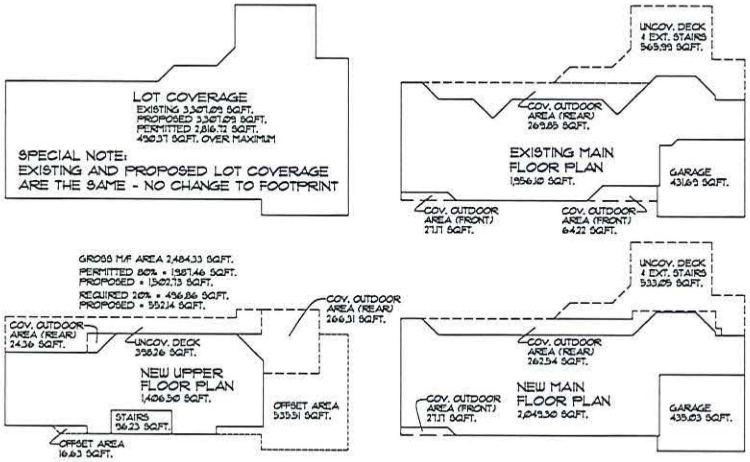
Andrea Scoten

Name: (Please Print)

Schedule A



SITE PLAN
SCALE 1/8" = 1'-0"



AREA SCHEMATICS
SCALE 1/16" = 1'-0"

GENERAL PROJECT NOTES

- DIMENSIONS TO BE TAKEN FROM OUTSIDE FACE OF SHEATHING FOR EXT. WALLS AND CENTRE OR FACE OF STUDS FOR INT. WALLS AS SHOWN.
- ALL HEIGHT DIMENSIONS ON FLOOR PLANS ARE FROM TOP OF FLOOR PLYWOOD
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR BUILDER TO CHECK AND VERIFY ALL DIMENSIONS AND TO ENSURE ALL WORK CONFORMS TO ALL LOCAL BYLAWS AND REGULATIONS, AND TO THE CURRENT EDITION OF THE BRITISH BRITISH COLUMBIA BUILDING CODE.
- THE OWNER AND/OR CONTRACTOR IS TO ENSURE THAT THE LANDSCAPING MEETS THE REQUIREMENTS OF THE APPLICABLE BY-LAWS AND REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. IF NECESSARY, UTILIZE PLANTING BEDS AROUND THE BUILDING(S) TO ENSURE THE FINISHED LOT GRADING BLENDS INTO THE EXISTING LOT GRADING.
- BRING FOOTINGS TO UNDISTURBED, SOUND BEARING SOIL BELOW FROSTLINE (18" MIN. BELOW GRADE)
- APPLY ASPHALT EMULSION TO FOUNDATION WALLS BELOW GRADE
- FOUNDATION CONCRETE STRENGTH TO BE MIN. 20 MPa
- INTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 20 MPa
- EXTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 32 MPa WITH 5-8% AIR ENTRAINMENT
- LUMBER IN CONTACT WITH CONCRETE TO BE DAMPPROOFED, AND ANCHORED WITH 1/2" A.B. @ 6'-0" O.C. MAX
- STRUCTURAL LUMBER TO BE #2 D.FIR-L U.N.O.
- LINTELS TO BE 2-2x10 D.FIR-L U.N.O.
- PROVIDE SOLID LAMINATED STUDDING @ BEARING POINTS
- DOUBLE JOISTS @ PARALLEL PARTITIONS (OPT. 2x10 BLOCKING @ 24" O.C.)
- BEDROOM WINDOWS MUST CONFORM TO B.C.B.C. SEC. 9.7.1.3
- DWELLING MUST MEET CURRENT B.C. VENTILATION CODE
- MIRRORED DOORS ARE NOT PERMITTED @ WALK-IN CLOSETS
- LINO OR EQUAL REQ'D ON BATHROOM FLOORS
- WATERPROOF WALLBOARD REQ'D AT TILE SURROUNDS @ TUBS AND SHOWERS
- PROVIDE A BOND-BREAKING MATERIAL BETWEEN FOUNDATION OR ROCK AND SLABS
- IN SURREY FOLDING PANEL DOORS MUST BE COVERED BY A ROOF OR FLOOR AND ENGINEER'S APPROVAL AND SCHEDULE "B" REQUIRED. CHtoNov03-11AM/JM-Howe

OUTDOOR COVERED AREA CALCULATION:

PROPOSED FOR FRONT	27.17 SQFT.	
RESERVE FOR FRONT	161.46 SQFT.	
RESERVE REMAINING	134.29 SQFT.	
PROPOSED FOR REAR	563.21 SQFT.	
TOTAL PROP. OUTDOOR COVERED AREA		580.38 SQFT.
TOTAL RESERVE REMAINING		134.29 SQFT.
TOTAL COVERED AREA AND RESERVE		714.67 SQFT.
10% OUTDOOR COVERED AREA ALLOWANCE		419.19 SF SQFT.
BALANCE COUNTED TOWARDS F.A.R.		295.48 SQFT.

EXTENDED HEIGHT CEILING CALCULATION:

PROPOSED EXTENDED HEIGHT CEILINGS	96.23 SQFT.
EXTENDED HEIGHT CEILING ALLOWANCE	204.52 SQFT.
BALANCE COUNTED TOWARDS F.A.R.	0.00 SQFT.

GROSS FLOOR AREA CALCULATION:

PROPOSED UPPER FLOOR AREA		1,406.50 SQFT.
PROPOSED MAIN FLOOR AREA		2,049.30 SQFT.
TOTAL FLOOR AREA		3,455.80 SQFT.
PROPOSED GARAGE AREA	435.03 SQFT.	
RESERVE FOR GARAGE	419.80 SQFT.	
RESERVE REMAINING	0.00 SQFT.	
GARAGE AREA COUNTED TOWARDS F.A.R.		435.03 SQFT.
TOTAL FLOOR AREA INCLUDING GARAGE		3,890.83 SQFT.
OUTDOOR COVERED AREA OVERAGE		295.48 SQFT.
EXTENDED HEIGHT CEILING OVERAGE		0.00 SQFT.
TOTAL PROPOSED GROSS FLOOR AREA		4,186.31 SQFT.
MAX. PERMITTED GROSS FLOOR AREA		4,191.33 SQFT.

DATE	DESCRIPTION	INITIALS	DATE	DESCRIPTION	INITIALS
JAN-11-2022	DRAFT W.D.	A.J.M.	MAY-27-2022	FOR PERMIT	A.J.M.
MAY-10-2022	FOR PERMIT	A.J.M.	JULY-22-2022	FOR PERMIT	A.J.M.

PLAN # ADD/RENO

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13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

SITE PLAN, SCHEMATICS, INFO

PROPOSED SCOTEN RESIDENCE RENOVATION / ADDITION

ZONING ANALYSIS

BUILDING SETBACKS

STRUCTURE	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
PRINCIPAL BUILDING	24.606' (7.5m)	24.606' (7.5m)	5.905' (1.8m)	11.81' (3.6m)
ACCESSORY BUILDINGS	59.055' (18.0m)	5.905' (1.8m)	3.280' (1.0m)	24.606' (7.5m)

BUILDING SETBACK NOTES:
- FRONT SETBACK FOR FIRST FLOOR MAY BE 18.045' (5.5m) FOR 50% OF THE FRONT EXCLUDING GARAGE.
- IF 50% OF THE FRONT IS SETBACK 29.527' (9.0m) THEN AN ATTACHED GARAGE WITH FRONT FACING DOORS CAN BE SETBACK 21.982' (6.7m). THE GARAGE IN THIS CASE CAN ONLY BE 50% FORWARD OF THE FRONT OF THE HOUSE. A THIRD PARKING BAY DOOR MUST BE SET BACK 2.95' (0.9m) FROM THE FIRST TWO PARKING BAY DOORS.
- 50% OF THE REAR FACE MAY BE SETBACK 19.685' (6.0m) IF THE REMAINDER IS AT LEAST 27.887' (8.5m).
- ONE SIDE YARD MAY BE REDUCED TO 1.2m IF THE OPPOSITE SIDE IS INCREASED TO 2.4m.
- THE REAR YARD SETBACK FROM A NATURAL GAS TRANSMISSION ROW IS 24.6' (7.5m).
- IN-GROUND SWIMMING POOLS ARE CONSIDERED ACCESSORY BUILDINGS WITH REGARDS TO SETBACKS.

PERMITTED ENCROACHMENTS	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
F/P, CHIMNEYS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
HUTCHES (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BOX WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BAY WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
EAVES	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
VENEER (2)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
DECK / PORCH	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
STAIRS (3)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT

PERMITTED ENCROACHMENT NOTES:
(1) ELEMENT IN REQUIRED YARD TO BE MAX 8'0 WIDE PER WALL FACE PER FLOOR
(2) VENEER SUPPORTED BY FOUNDATION NOT ALLOWED. PolNov22-11AM/JM/Howe
(3) STAIRS IN REQUIRED YARD TO BE NOT MORE THAN 3 TREADS OR 24" ABOVE GRADE.

LOT AREA

LOT AREA	7,671.76 SF	712.70 m2

FLOOR AREA RATIO

GROSS ALLOWABLE PERCENT	60% OF FIRST 560m2, 35% OF BALANCE	
GROSS FLOOR AREA CAP	5,005.38 SF	465.00 m2
GROSS ALLOWABLE FLOOR AREA	4,191.95 SF	389.45 m2
DEDUCT GARAGE RESERVATION	419.80 SF	39.00 m2
GROSS FLOOR AREA N.I.C. GARAGE	3,772.33 SF	350.45 m2
10% OF G.F.A. FOR OUTDOOR AREA	419.19 SF	38.94 m2
PROPOSED GROSS FLOOR AREA	4,186.31 SF	388.91 m2
PROPOSED GARAGE AREA	.	.
PROP. FLOOR AREA N.I.C. GARAGE	.	.
PROPOSED OUTDR. COV. AREA	.	.

INCLUDED: FLOOR AREA; CANT'D FLOORS; ATTIC TRUSS SPACES; OUTDOOR COV. AREA (1); OVER 12'0 CLNGS X2 (2); ALL STAIRWELLS (2)
NOT INCLUDED: CANT'D FIREPLACES; BOXED WINDOWS; IN-GROUND BASEMENTS; CRAWLSPACES < 4'-11"

FLOOR AREA RATIO NOTES:
(1) ALL OUTDOOR COVERED AREA IS COUNTED IN FLOOR AREA RATIO EXCEPT 10% TIMES THE GROSS FLOOR AREA AS CALCULATED ABOVE. 161.46 SF (15.00 m2) OF THE 10% MUST BE RESERVED FOR A FRONT PORCH OR VERANDA. 139.93 SF (13.00 m2) OF THE 10% MUST BE RESERVED FOR COVERED OUTDOOR AREA IN THE REAR OF THE HOME. IF THE 10% IS USED ENTIRELY IN THE FRONT OR THE REAR THE RESERVE AREA MUST BE TAKEN FROM THE GROSS FLOOR AREA.
(2) STAIRWELLS AT ALL FLOOR LEVELS WILL BE INCLUDED IN FLOOR AREA RATIO AND CEILINGS GREATER THAN 12'-0" WILL BE COUNTED TWICE IN FLOOR AREA RATIO EXCEPT FOR AN ALLOWANCE OF 204.52 SF (19.00m2) FOR STAIRWELLS AND CEILINGS OVER 12'-0". ALSO, CEILINGS BETWEEN 12'0 TO 15'0 THAT ARE SLOPING ARE NOT COUNTED AS LONG AS ONE WALL IS 12'0 OR LOWER.
- ACCESSORY BUILDING OVER 107.64 SF TO BE INCLUDED IN F.A.R.
- GARAGE AREA EXCEEDING 419.80 SF RESERVATION TO BE TAKEN OUT OF F.A.R.
- ALL AREAS USED FOR COVERED PARKING ARE TO BE INCLUDED IN THE F.A.R. CALCULATION UNLESS THE COVERED PARKING IS LOCATED IN THE BASEMENT.
- GARAGE IN BASEMENT IS EXCLUDED FROM F.A.R. AND RESERVATION IS USED AS FLOOR AREA.
- THE GROSS AREA CAP OF 5,005.38 SF APPLIES TO ALL LOTS NO MATTER WHAT SIZE.
- AREAS WITHIN ATTIC TRUSSES, WHETHER FINISHED OR UNFINISHED, WILL BE INCLUDED IN THE CALCULATION OF FLOOR AREA RATIO.
- COVERED PATIOS / PORTE COCHERES THAT ARE ACCESSIBLE BY A VEHICLE WILL BE CONSIDERED A CARPORT AND INCLUDED IN FLOOR AREA RATIO
- A BASEMENT HAS AT LEAST 50% OF ITS VOLUME IN GROUND AS MEASURED FROM THE TOP OF THE SLAB TO THE TOP OF THE NEXT FLOOR ABOVE AND IN RELATION TO THE LOWER OF THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENT IN-GROUND PECENT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENTS, AS DEFINED ABOVE, MAY BE EXCLUDED FROM F.A.R. WHETHER THEY ARE LOCATED IN THE PRINCIPAL DWELLING OR AN ACCESSORY BUILDING. BASEMENT AREA BEYOND THE PERIMETER OF THE MAIN FLOOR ABOVE WILL BE COUNTED IN F.A.R.
- COVERED PATIOS AT THE BASEMENT LEVEL WHICH APPEAR TO BE MOSTLY ENCLOSED WILL BE INCLUDED IN FLOOR AREA RATIO. TO EXCLUDE THESE AREAS THEY SHOULD BE OPEN ON TWO SIDES AND HAVE ACCESS FROM THE EXTERIOR. PolNov04-11AM/JM/Howe
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE FLOOR AREA THAN THE PRIN. DWELLING.

80/20 RULE:
- UPPER FLOOR NOT TO EXCEED 80% OF MAIN FLOOR AREA INCLUDING GARAGE BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK. THE 20% REDUCTION SHALL BE ON THE FRONT OR SIDES INCL. PORCH BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK.
- THE 80% UPPER FLOOR INCLUDES ALL OPEN TO BELOW AREAS AND STAIRWELLS. A VAULTED CEILING ON THE MAIN FLOOR MAY BE CONSIDERED AN OPEN TO BELOW AREA OF THE UPPER FLOOR IF THE CEILING STARTS AT A POINT HIGHER THAN 12' ABOVE THE MAIN FLOOR.

LOT COVERAGE

ALLOWABLE PERCENT CALCULATION		40% FOR LOTS 560m2 OR LESS; 40%-2% FOR EACH 93m2 OVER 560m2; THE MINIMUM PERCENT IS 25%	
ALLOWABLE AREA	36.72%	2,816.72 SF	261.68 m2
EXISTING PERCENT		.	
EXISTING AREA		.	.

INCLUDED: FLOOR AREA; CANT'D FLOORS; GARAGE; ACCESSORY BUILDING; CVR'D. DECKS/PORCHES; DECKS 24" ABOVE GRADE; EAVES EXCEEDING 24"; BOXED WINDOWS; POOLS 24" ABOVE GRADE; CANT'D FIREPLACES
NOT INCLUDED: STRUCT. <24" ABOVE E.G.

LOT COVERAGE NOTES:
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE LOT COVERAGE THAN THE PRINCIPAL DWELLING.

BASEMENT ACCESS WELLS
- BASEMENT ACCESS AND BASEMENT WELLS ARE PERMITTED ONLY BETWEEN THE PRINCIPAL BUILDING AND THE REAR LOT LINE AND MUST NOT EXCEED A MAXIMUM AREA OF 28.0 m2 (301.39 SQFT.), INCLUDING THE STAIRS.

BUILDING HEIGHT

PRINCIPLE BLDG ALLOWED	29.53' (9.0m) (1)	PRINCIPLE BLDG PROPOSED	.
ACCESSORY BLDG ALLOWED	16.40' (5.0m)	ACCESSORY BLDG PROPOSED	.

BUILDING HEIGHT NOTES:
(1) MAX HEIGHT FOR ROOF PITCH LESS THAN 3/12 IS 23.95' (7.30m) TO TOP OF ROOF.
- BUILDING HEIGHT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- WHEN DETERMINING THE AVERAGE EXISTING GRADE THE GRADES AT THE FOUR EXTREME CORNERS OF THE PROPOSED BUILDING ARE USED.
- BUILDING HEIGHT IS TO THE TOP OF A FLAT ROOF OR MEAN OF A PITCHED ROOF, THE MEAN BEING THE HALF WAY POINT BETWEEN THE EAVE AND THE RIDGE, THE EAVE BEING THE UNDERSIDE OF A ROOF OVERHANG AND IS TYPICALLY TAKEN AS THE UNDERSIDE OF THE SOFFIT FINISH. DORMERS WHICH OCCUPY MORE THAN 25% OF THE ROOF PLANE THEY SIT ON WILL HAVE THEIR EVES COUNTED AS THE BASIS FOR DETERMINING EAVE TO RIDGE MEAN ROOF HEIGHT. MONOPLANE OR BUTTERFLY ROOFS WILL BE MEASURED TO THE HIGHEST POINT.

GEODETIC ELEVATIONS

ROOF PEAK ELEV	.	GARAGE SLAB @ ENTRY ELEV	.
ROOF MEAN ELEV	.	AVERAGE EXISTING GRADE	.
UPPER FLOOR CEILING ELEV	.	BASEMENT SLAB ELEV	.
UPPER FLOOR PLYWOOD ELEV	.	ALLOWABLE (M.B.E.)	.
MAIN FLOOR PLYWOOD ELEV	.	SEWER INVERT @ P. L.	.

SITE SERVICING AND M.B.E. NOTES:
- ANY LIVING SPACE PROPOSED BELOW GRADE REQUIRES AN M.B.E. TO BE ESTABLISHED. THIS CAN BE CERTIFIED BY AN ENGINEER, WHICH IS TYPICALLY BASED ON STORM SERVICE OR PUMP/PIT DESIGN, OR CAN BE ESTABLISHED BY USING THE LOWEST CENTER OF ROAD ADJACENT TO THE LOT PLUS 0.3m.
- M.B.E. BASED ON STORM SERVICE IS USUALLY INVERT PLUS A MINIMUM OF 0.6m BUT MAY BE HIGHER DUE TO HYDRALIC GRADE CALCULATIONS. M.B.E. BASED ON ROCK PIT OR PUMP IS TYPICALLY OVERFLOW ELEVATINO PLUS 0.3m.
- ROCK PIT OR PUMPING IS NOT ALLOWED UNLESS THE PROPOSED MAIN FLOOR IS LOWER THAN THE STORM SERVICE OR FRONTING DITCH, IN WHICH CASE AND ENG'D SYSTEM IS ALLOWED.
- PERIMETER DRAINAGE MAY NOT BE REQUIRED IF APPROVED BY A PROFESSIONAL ENGINEER.

DRIVEWAY

ALLOWABLE SLOPE	15.0% ON COLLECTOR ROADS AND 10% ON ARTERIAL ROADS
PROPOSED SLOPE	
MAX WIDTH @ P.	6.0m FROM ROAD TO P/L THEN 8.0m FROM P/L TO GARAGE

DRIVEWAY NOTES:
- THE AREA OF THE DRIVEWAY MUST NOT EXCEED 33% OF THE AREA OF THE FRONT YARD.
- DRIVEWAY MUST BE IN THE LOCATION PROVIDED ON THE CIVIL ENGINEERING DRAWINGS.
- DRIVEWAY MUST MEET EXISTING GRADE AT LOT LINE +- 4" (0.1m).

PARKING:
- THREE (3) OFF STREET PARKING SPACES ARE REQUIRED FOR EACH SINGLE FAMILY DWELLING.
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A SINGLE GARAGE = 10.5' (3.2m) x 20.0' (6.1m)
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A DOUBLE GARAGE = 18.7' (5.7m) x 20.0' (6.1m)

THESE DRAWINGS SHOULD BE PRINTED ON 34"x24" PAPER TO BE AT SCALE INDICATED. ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

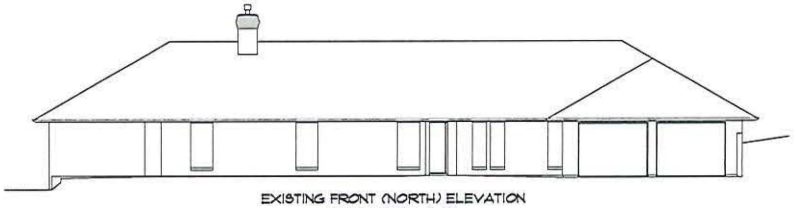
JANUARY 19, 2023
SCALE AS NOTED

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.
#88 - 1959 - 152nd STREET
SOUTH SURREY, B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-4E
E-MAIL: info@raymondbonterdesigner.ca

NEW FRONT (NORTH) ELEVATION

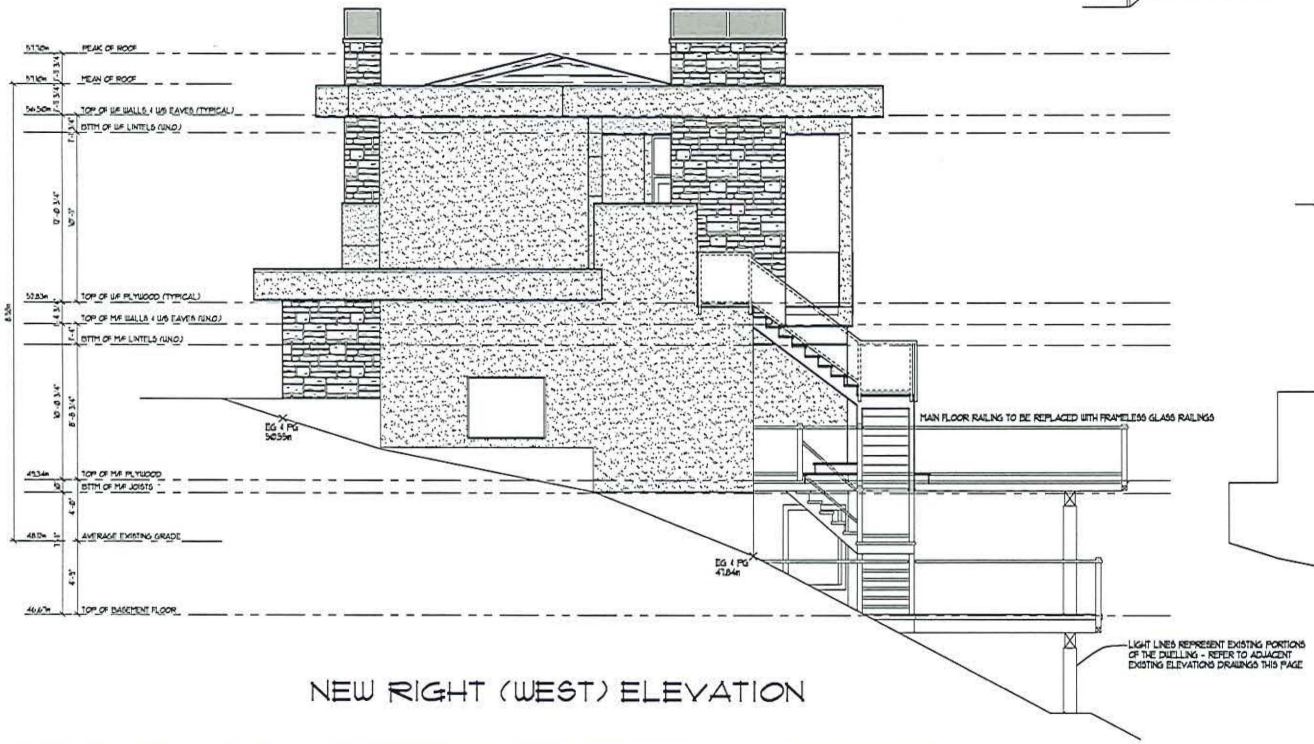
TYPICAL ELEVATION CONSTRUCTION NOTES

- WALL CLADDING TO BE ON RAIN SCREEN (MIN. 10mm STRAPPING) U.N.O.
- CAULK JOINTS BETWEEN DISSIMILAR MATERIALS
- FLASH ALL UNPROTECTED EXTERIOR OPENINGS
- FLASHINGS TO BE MIN. 6% SLOPE AND WAVE END DAMS
- FLASH ALL HORIZONTAL INTERSECTIONS OF DIFFERING WALL FINISHES
- ALL WINDOW OPENERS TO BE CONFIRMED BY THE OWNER
- DOORS TO CONFORM TO SECTION 9.6 OF THE BUILDING CODE
- WINDOWS TO CONFORM TO SECTION 9.7 OF THE BUILDING CODE
- SEE ROOF PLAN FOR ROOF PITCH(ES) AND OVERHANGS
- ALL HANDRAILS & GUARDS TO B.C.B.C. 2018 SEC. 9.8.7 AND 9.8.8.
- ALL ROOF SOFFITS WITHIN 1.2m OF A LOT LINE MUST BE SOLID, UNVENTED, AND PROTECTED AS PER B.C.B.C. 9.10.15.5.
- ALL EXTERIOR WINDOWS AND DOORS TO MEET NORTH AMERICAN FENESTRATION STANDARDS AS PER BCBC 2018 SECTION 9.7.4.2
  A) AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/ SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS" (HARMONIZED STANDARD)
  B) A440S1, "CANADIAN SUPPLEMENT TO AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS"

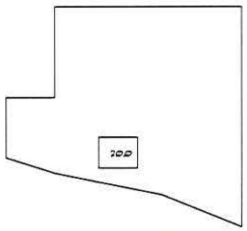


EXISTING FRONT (NORTH) ELEVATION
SCALE 1/8" = 1'-0"

EXISTING RIGHT (WEST) ELEVATION
SCALE 1/8" = 1'-0"



NEW RIGHT (WEST) ELEVATION



RIGHT WALL FACE
SCALE: 1/8" = 1'-0"

LIMITING DISTANCE CALCULATIONS	
EXPOSED BUILDING FACE AREA	638.51 SF
PROPOSED GLAZED AREA	20.00 SF
LIMITING DISTANCE	59' (18m)
PERMITTED GLAZED PERCENT	8.6%
PROPOSED GLAZED PERCENT	3.1%

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

ELEVATIONS - FRONT, RIGHT

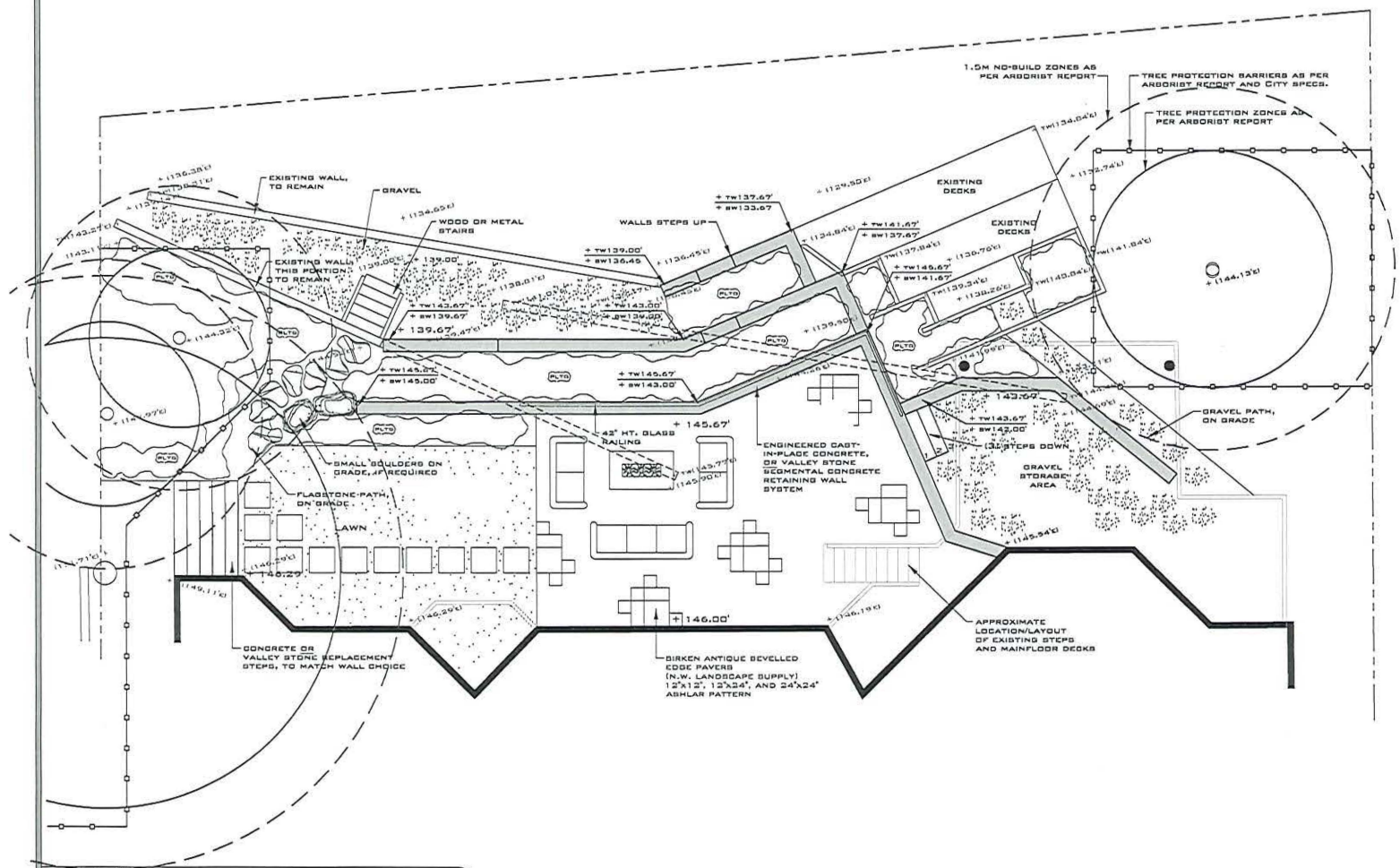
THESE DRAWINGS SHOULD BE PRINTED ON 24"x36" PAPER TO BE AT SCALE INDICATED. ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

MAY 27, 2022
SCALE 1/4" = 1'-0"

SHEET 2 OF 10

#88 - 1959 - 152nd STREET
SOUTH SURREY, B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454-4211
E-MAIL: info@raymondbonterdesigner.ca

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.



NOTE:
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- WRITTEN DIMENSIONS SUPERCEDE ALL SCALED DIMENSIONS.
- THE CONTRACTOR OR HOMEOWNER SHALL BE RESPONSIBLE FOR SECURING ANY PERMITS OR ENGINEERING REQUIRED, AND SHALL ALSO BE RESPONSIBLE FOR REQUESTING ALL REQUIRED INSPECTIONS.
- ANY WALL EXCEEDING 4' IN HEIGHT MUST BE ENGINEERED
- ALL WORK TO BE PERFORMED IN ACCORDANCE WITH BCBLA/BCLNA STANDARDS, CURRENT EDITION
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- SURFACE WATER NOT TO BE DRAINED ONTO ADJACENT PROPERTIES

Marked Grades
+ 100.00' = PROPOSED GRADES
+ (827.30'(E)= EXISTING GRADES FROM BCLS/HOUSE PLANS
+ < 100.00' | > = INTERPOLATED GRADES
TW = TOP OF WALL (WITH CAP, IF A WALL WITH CAPS)
BW = BOTTOM OF WALL AT FINISHED GRADE

ALL GRADES TO BE VERIFIED ON SITE

NOTE
- WALLS TO BE ENGINEERED PRIOR TO INSTALLATION. INSTALLATION OF THE WALLS TO BE SUPERVISED BY ENGINEER
- ON SITE WATER COLLECTION TO BE ENGINEERED

north

client
BOOTEN RESIDENCE
PROJECT ADDRESS:
13130 - 13 AVE.
SURREY, BC

project
OVERALL LANDSCAPE DESIGN
MASTER PLAN

project #
716-21

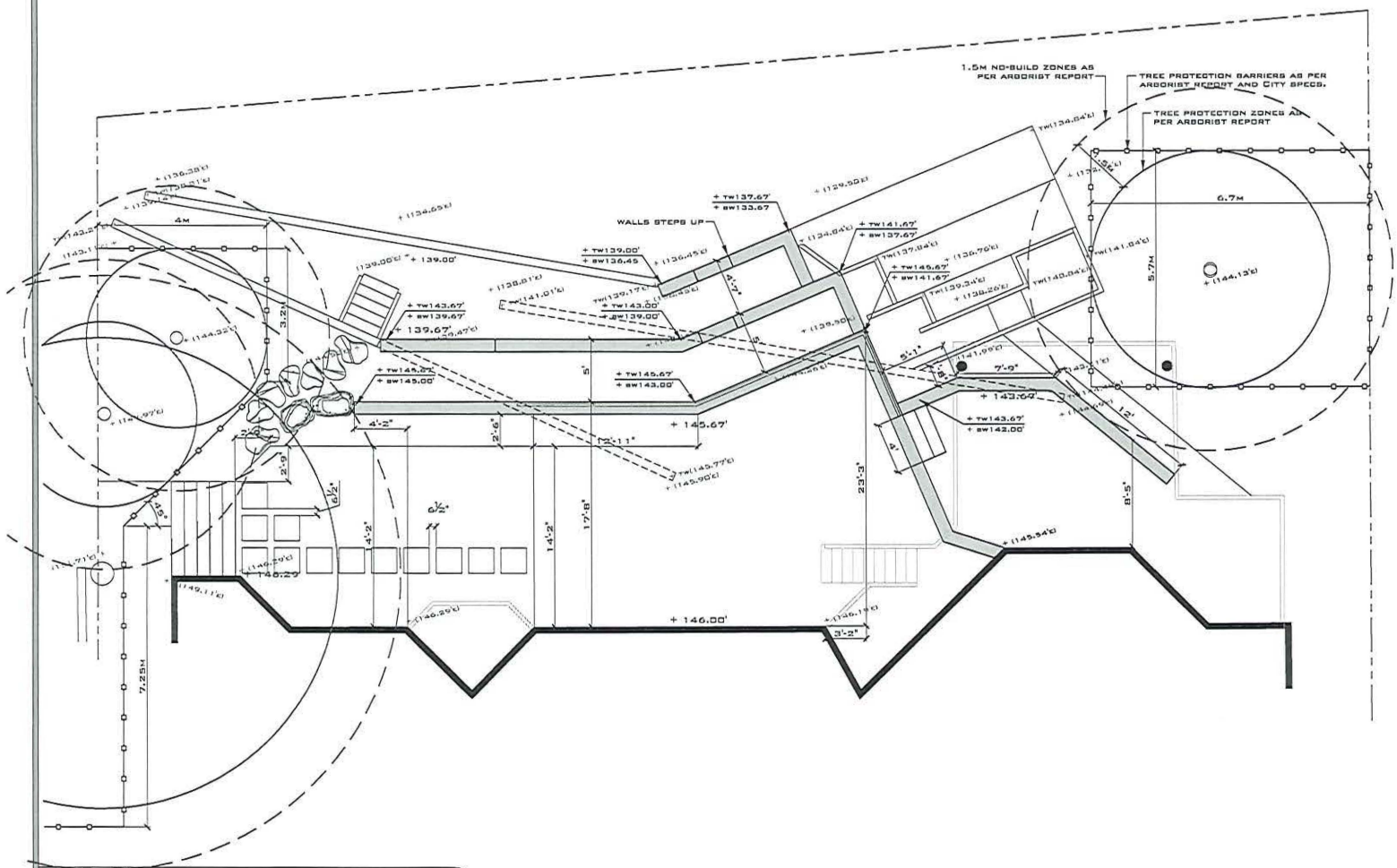
page #
1 of 3

scale
1/4" = 1'-0"

date
Feb 2, 2023

revisions

Samara Landscape Design kyc@samaradesign.com 6043037663



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north

client
SOOTEN RESIDENCE

PROJECT ADDRESS:
13130 - 13 AVE.
SURREY, BC

project
OVERALL LANDSCAPE DESIGN

DIMENSION/GRADING PLAN

project #
716-21

page #
2 of 3

scale
1/4" = 1'-0"

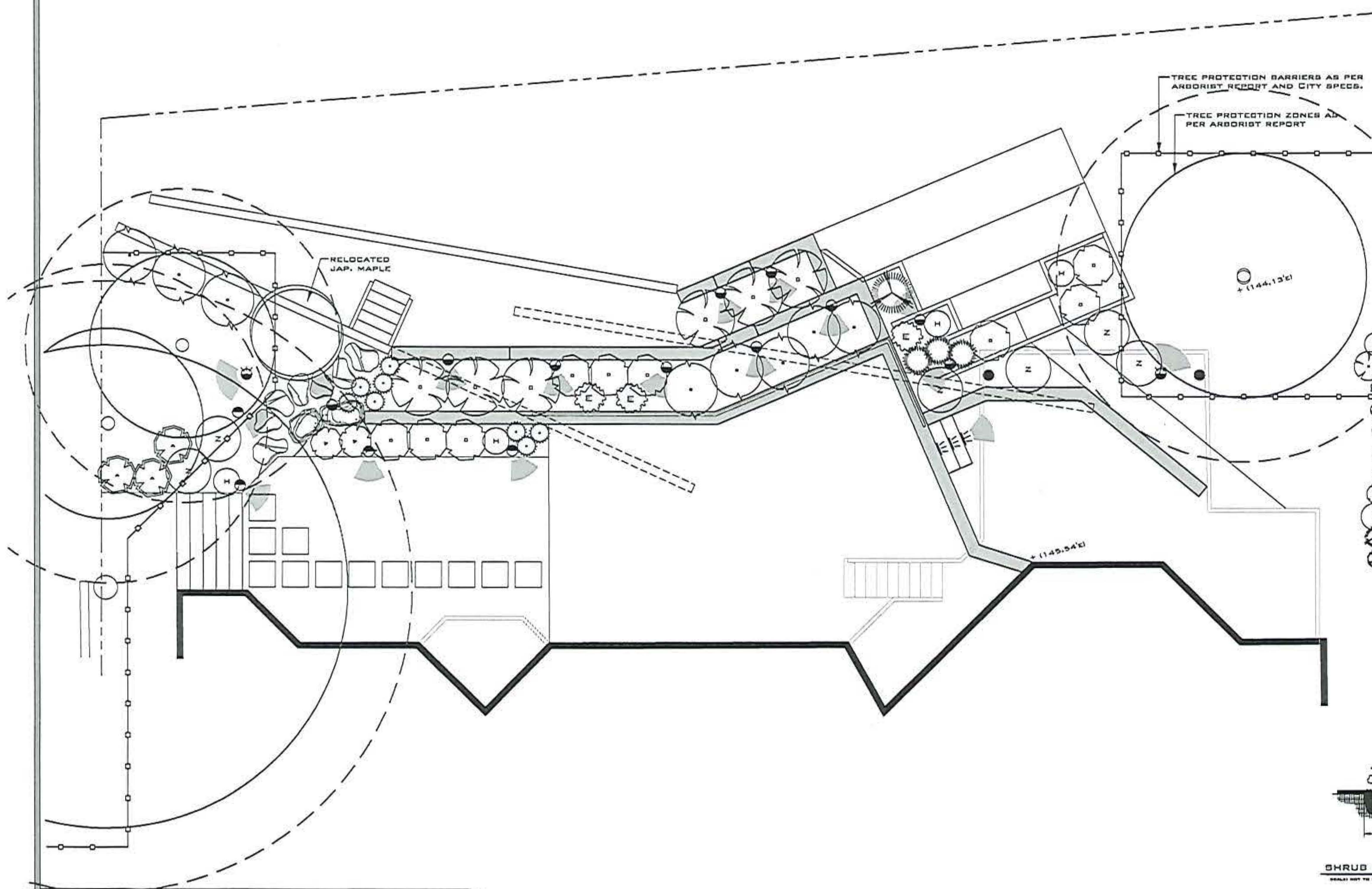
date
Feb 2, 2023

revisions

SLD
Samara Landscape Design kyc@samaradesign.com 6043603983

LIGHTING LEGEND

SYMBOL	FIXTURE	QTY	FINISH	SOURCE	SPREAD	VOLTAGE	COLOR
◓	PATH LIGHT	4	BLACK	LED	N/A	12V	WARM WHITE
⫪	STEP/WALL LIGHT	3	BLACK	LED	N/A	12V	WARM WHITE
◒	UPLIGHT	10	BLACK	LED	35°	12V	WARM WHITE
◒	WIDE ANGLE UPLIGHT	2	BLACK	LED	60°	12V	WARM WHITE
◓	WELL LIGHT	0	BLACK	LED	N/A	12V	WARM WHITE
◓	SUBMERSIBLE LIGHT	0	BLACK	LED	N/A	12V	WARM WHITE



PLANT LIST

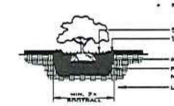
EXPOSURE (EXP.):
S-sun
Sh-shade
PSh-part shade

TYPE:
B-biennial
C-coniferous
D-deciduous
E-evergreen
V-vine
Gr-ornamental grass
P-perennial
S-shrub
T-tree
G-ground cover

Botanical Name	Qty.	Size	Spacing	Type	EXP.	COMMON NAME / REMARKS
Azalea (Encore) 'Autumn Angel'	6	3 gal	4'0"oc	ES	S, PSh	Evergreen Azalea/ white trumpet flwr repeat spring, summer, fall - dwarf form
Choisya x dewitteana 'White Dazzler'	6	3 gal	5'6"oc	ES	S,Sh PSh	Dwarf Mexican Orange Blossom/ white scented flwr-May, glossy lvs
Echinacea purpurea	3	1 gal	2'0"oc	P	S	Purple Coneflower/ tall crimson daisy flwr, brown center, summer to fall
Geranium 'Luscious Linda'	2	1 gal	1'6"oc	P	S, PSh	Dwarf Cranesbill/ bright magenta flwr, dark center-Jun-Sept, bronze/grn lvs
Helictotrichon sempervirens	3	2 gal	2'0"oc	Gr	S	Blue Oat Grass/ blue grass lvs, tan flwr, May-July, dome form
Hemerocallis 'Stella de Oro'	8	1 gal	1'4"oc	P	S, PSh	Daylily/ golden lily flwr with dark center, June-Sept, grassy lvs
Heuchera micrantha 'Palace Purple'	4	1 gal	1'6"oc	P	S, PSh	Coral Bells/ deep purple to bronze lvs, pink summer flwr
Lavendula angustifolia 'Munstead'	9	2 gal	2'6"oc	ES	S	English Lavender/ bright lavender blue flwr spikes-summer, gray lvs
Lonicera pileata	8	3 gal	4'6"oc	ES	S, PSh	Privet Honeysuckle/ small green lvs, small translucent purple berries Aug.
Miscanthus sinensis 'Gracillimus'	1	1 gal	2'6"oc	Gr	S, PSh	Variegated Silver Grass/ grn + white lvs, pink plumes-summer
Sarcococca hookeriana humilis	3	1 gal	3'0"oc	ES	Sh, PSh	Himalayan Sweet Box/ fragrant white flwr, Feb-March, glossy lvs

All supplied plants shall conform to B.C.L.N.A. & B.C.S.L.A. standards
Plant substitutions to be approved by Samara Landscape Design
Plant quantities on plan and plant list to be verified by contractor

NOTE:
- SOIL/MULCH OVER ROOTBALL SHALL NOT EXCEED 1" (25MM)
- PRUNE ALL BROKEN/DAMAGED BRANCHES
- ROOTBALL TO BE 1"-2" (25-50MM) ABOVE FINISHED GRADE
- MULCH TO BE MAINTAINED WEED FREE FOR MIN. OF 2 YEARS
- SHRUB TO BE REGULARLY WATERED FOR MIN. OF 2 YEARS



SHRUB PLANTING DETAIL

SCALE: NOT TO SCALE

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north

client
BOOTEN RESIDENCE

PROJECT ADDRESS:
13130 - 13 AVE.
SURREY, BC

project
OVERALL LANDSCAPE DESIGN

PLANTING AND LIGHTING PLAN

project #
716-21

page #
3 OF 3

scale
1/4" = 1'-0"

date
FEB 2, 2023

revisions

Samara Landscape Design hy@samaradesign.com 604.802.7363

Schedule B

Terran Geotechnical Consultants Ltd.
Permit to Practice: 1002891
1597 E Kent Ave N
Vancouver, BC V5P 4Y7
Phone: (604) 421-3288
Email: info@terrangeo.com

May 24, 2023

Project #: 6242-01

Rev 2

Geotechnical Assessment Report

Proposed House Addition and Retaining Walls Remediation

Project Site:

13130 13 Ave, City of Surrey, BC

Submitted to:
Jeff and Andrea Scoten
13130 13 Ave,
Surrey, BC V4A 1B8

Email 1: jascoten@shaw.ca
Email 2: Jeffrey.Scoten@nbc.ca

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APPENDIX B – Bore Hole Location Plan and Soil Logs

APPENDIX C – Seismic Hazard Values

APPENDIX D – Slope Stability Analyses

APPENDIX E – Landslide Assessment Assurance Statement

APPENDIX F – Use of Report and Limitations

1.0 INTRODUCTION

Terran Geotechnical Consultants Ltd. (TerranGeo) has completed this Geotechnical Assessment Report for the site at 13130 13 Ave, City of Surrey, British Columbia. As per the City of Surrey's COSMOS map, the subject site is located within the Hazard Lands Development Permit Area for Steep Slopes. The objectives of this assessment are to assess the site and its immediate vicinity for geotechnical hazards applicable to the subject site, characterize the subsurface soil and groundwater condition at the property, and provide geotechnical recommendations for the proposed development.

This revision incorporates peer review comments provided by GeoPacific Consultants (May 4, 2023).

Table 1: Civic and Legal Lot Descriptions

Civic Address	Legal Description
13130 13 AVE, CITY OF SURREY, BC	LOT 2 BLOCK 1 SECTION 8 TOWNSHIP 1 PLAN NWP4828 NWD PART

At the time of writing this report, TerranGeo has been furnished with the following documents (attached as **Appendix A**) during the writing of this report:

- Architectural Drawings prepared by Raymond S. Bonter, Designer Ltd, dated January 19, 2023.
- Topographic Survey Plan by Cameron Land Surveying Ltd, dated March 2, 2021.
- Structural Drawings prepared by sec Consulting Inc, dated February 28, 2022.

Based on our review on the provide documents, TerranGeo understands that the proposed development involves a floor addition to the existing house with no increase in building's footprint and remediation of the existing wood crib retaining walls on the south side of the property. This report has been prepared in accordance with standard geotechnical engineering principles and practices for similar developments in the region. The following documents, Standards, Codes, and Guidelines were referenced during the writing of this report:

- Surrey Official Community Plan Bylaw, 1996, No. 12900.
- City of Surrey's Official Community Plan - Bylaw No. 18020 - Development Permit Guidelines for Hazard Lands (DP2).
- Hazard Acceptability Thresholds for Development Approvals by Local Government, P. Cave (November 1993).
- Engineers and Geoscientists BC, Landslide Assessments in British Columbia (March 1, 2023).
- Surficial Geology Map 1484A for New Westminster by Geological Survey of Canada.
- British Columbia Building Code 2018.

In summary, this report finds there are no geotechnical issues that would prevent the development at the subject property. This report does not address environmental or archaeological issues in connection with the development on the subject property.

2.0 SCOPE OF WORK

TerranGeo's scope of work includes:

- studying background information to review surficial geological maps, topographic maps, aerial photography, and other readily available and applicable information for the proposed development,
- conducting geotechnical investigation to confirm soil and groundwater parameters, slope geometry through an intrusive and visual site investigations,
- identifying and assessing possible natural geotechnical hazards to the property, and
- providing recommendations regarding soil bearing capacity, slope stability, and stipulations on stormwater management.

3.0 METHODOLOGY

Based on our scope of work, the following methodology was followed for our desktop study, investigation, design recommendations, and additional field work:

- The background study involving a review of:
  - existing surficial geology maps, topographic maps, aerial photographs,
  - information of geotechnical relevance with the use of the Municipality's on-line GIS mapping application, and
  - relevant permitting documents/guidelines.
- Visual site reconnaissance consisting of traversing the property to assess potential geotechnical hazards, if any,
- Intrusive site investigation to confirm soil condition that consisted of drilling a bore hole using a truck-mounted drill rig to a depth of 9.1m (30ft) below grade and Dynamic Cone Penetration Test, and
- Recommendations for soil bearing capacity, slope stability, and retaining wall design from a geotechnical standpoint based on results from the background study, site investigation, review of the topography, engineering analyses, 2018 BC Building Code and our experience are provided herein.

4.0 SITE DESCRIPTION

The following sections provide relevant information of the site in relation to their geotechnical significance.

4.1 GENERAL TOPOGRAPHY AND SITE CONDITION

The property is located at about 107m south of Marine Drive in the City of Surrey, and is bounded by 13 Avenue to its north, Burl North (crescent) Railway line located at about 85m to its south and residential properties to its east and west. The site is fully developed with an existing house that includes a walkout basement located at the southern portion of the property. The topography of the site is sloping towards its south side with the elevation drop from the north to the south property lines of about 4.5m and the average site grade within the area proposed for the house renovation is at about 45m geodetic. There is a slope of about 37% in gradient located on the south side of the property. The property is trapezoidal in shape with dimensions of about 23m (north-south) and about 30m (west-east) and a total lot area of approximately 700m^2.

There is an existing concrete driveway and a concrete retaining wall with its maximum height of 2.1m located on the north side, while two 1m high wood crib retaining walls are located on the south side of the property. The existing wood crib retaining walls on the south side of the property are in an adequate state with little to no signs of tilt or movement. These walls are proposed to be remediated to increase their visual appeal and replace the existing weathered timber facing. There is an existing creek running downslope at about 75m west of the subject site.

The site slope (from 13 Ave – crest to Railway – toe) varies in gradient from ≈50% at its upper one third (1/3) portion, to ≈20% at its central one third (1/3) portion, to ≈75% at its lower one third (1/3) portion. The slope was reviewed during our site reconnaissance on May 3, 2022. The slope is covered in vegetation such as deciduous trees and bushes in its entirety with some landscaping retaining walls at the north (upper) side and a walkway towards the toe. Little signs of slope instability such as tilted, pistol-butted, leaning, or fallen trees were noted. The majority of the trees on the slope consists of smaller-sized light narrow trees. Oversteepened localized areas have signs of some pistol-butted trees but these are not found to indicate a deep-seated slope instability. Existing retaining walls on the slope confirm this finding with no observed movement, settlement, or deterioration of the walls that may be related to a slope instability.

4.2 Historical Information Review

TerranGeo reviewed several geotechnical or hazard assessment studies conducted in the immediate surrounding area to gather information on historical landslides occurred within the subject site's vicinity. Additionally, we referenced the existing report prepared by the undersigned for a project site nearby to collect information of geotechnical relevance. The following reports were referenced in preparation of this report:

- GeoPacific Consultants, Geotechnical Investigation Report – Proposed Residential Development (January 31, 2022).
- Terran Geotechnical Consultants Ltd. Geotechnical Professional Opinion Letter-13168 13th Avenue, Surrey, BC. June 30, 2020.
- Fraser Valley Engineering Ltd. Geotechnical Investigation-Slope Stability Assessment-13836 Marine Drive, White Rock, BC. January 25, 2021.
- Terran Geotechnical Consultants Ltd. Geotechnical Investigation Report- 12509 27 Ave, City of Surrey, BC. August 8, 2022.
- Western Geotechnical Consultants Ltd. Preliminary Geotechnical Assessment Report-4 Level Single Family Dwelling-15377 Marine Drive, White Rock, BC, November 15, 2016.
- Western Geotechnical Consultants Ltd. Preliminary Geotechnical Investigation Report-2508 Bayview Street, Surrey, BC, January 7, 2016.

Upon TerranGeo's review of the available reports, based on our experience and knowledge of the area, the relevant information pertaining to the subject site and its surroundings is summarized below:

- From the review of GeoPacific's geotechnical report, it is confirmed that groundwater table is likely deep as the investigation was completed during a high precipitation season in January 2016. The GeoPacific's findings indicate that surficial slumps occurred in 2011 and 2014 at the referenced property as well as slump at the

westerly neighbour's property of the referenced property in 2004. Geological information is also found to be consistent.

- The surrounding area witnessed landslides caused by extreme rainfall events in the past, with the most recent landslip having occurred in April 2019 in an area located about 2km east of the site (White Rock vicinity), which led to disruption to train operations between Vancouver and Seattle. However, this landslide area differs from the subject site in terms of surficial geology (to be discussed in subsequent sections), with the former believed to be comprising soils prone to water softening (silt and clay).
- Major instabilities (past or present) were not observed on the steep slopes during the site investigations conducted in the area. Minor sloughing and / or erosion of the surficial material is expected to be a common occurrence on the slopes. Rapid growth of vegetation can mask the evidence of these small events. These small events are not typically catastrophic events.
- Based on the surficial geological maps, the surrounding area has been the subject of historically recorded landslides. The Quadra Sands in lower portion of the slope, near the Burl North Crescent Railway Line, have been the site of several small landslides and slope failures, assumed to have been caused by precipitation events. The current locations of these landslides appear to be beyond the property lines of the subject Property. The likelihood of these failures regressing and encroaching on to the Property itself is low. TerranGeo has provided stormwater recommendations in the following sections to ensure that no water is released to the steep slope in a manner that causes any erosion/failure.

4.3 Historic Aerial Photographs Review

TerranGeo reviewed the available historic aerial photographs of the site and its vicinity in order to determine any potential signs of geological instability and property condition over time from a geotechnical standpoint. The photographs were reviewed from the City of Surrey online mapping system COSMOS from 1949 to 2021 as well as historic aerial photographs from UBC Geography Department from 1940 to 2016.

The following comments regarding the review of the COSMOS photographs are noted:

- The current single family dwelling at the southwest corner of the property has existed since at least 2001.
- Building locations of the surrounding lots, the subject lot have not changed or have not changed significantly over the period from 1949 to 2021.
- There is an existing steep cut of about 100% gradient located at about 45m southwest of the subject site, which is believed to have been historically created for the existing railway construction. No noticeable changes to its gradient were observed between 1949 to 2021.
- With reference to the Lidar Hillshade data between the years 2009 and 2018 from the COSMOS map, TerranGeo identified two nearest gullies/depressions with their crests located at about 58m and 122m southwest of the subject site, possibly created by the surficial erosion from creeks running downslope and/or erosion caused by intense rainfall events.
- No significant changes to vegetation, slope instability or signs of tree fall and/or slope creep were observed from the reviewed historic photographs.

The following comments regarding the review of the UBC Geography Department photographs are noted:

- 1940 (no stereo pair)
  - The area south of the end of 130 St is exposed, possibly recently cleared, with intact trees below. A small narrow area parallel to the slope and adjacent to the train tracks directly below 131 St is exposed.
- 1949
  - The areas with exposed bare earth are located south of the end of 130 St (largest), lot 13026 (smaller), 131 St (smaller), and lot 13108 (smallest). All areas are adjacent to the train tracks with trees below removed.
- 1954 (no stereo pair)
  - The same areas as in 1949 but within smaller footprint with exposed bare earth are located south of the end of 130 St (largest), lot 13026 (smaller), 131 St (smaller), and lot 13108 (smallest). All areas are adjacent to the train tracks with absent trees below.
- 1963
  - A relatively large area of bare earth is present south of 13026 lot. A small patch of exposed earth is located directly south of 131 St towards the bottom of the slope. No other comments are noted.
- 1968
  - Area southwest of the site at the bottom of the slope directly south of the end of 131 St has a sufficiently large round area of exposed soil. Area south of the south end of 130 St below 12996 lot has a visible narrow earth streak path to the train tracks and possible past.
- 1974
  - Area southwest of the site at the bottom of the slope directly south of the end of 131 St has a round area of exposed soil (smaller than in 1968). First appearance of the area to the southeast of the site at the bottom of the slope directly below 13158 adjacent to the train tracks. Two areas directly south of 128 St downslope appear to have soil exposure in an elongated path perpendicular to the slope with the east one connected to the train tracks.
- 1980
  - Soil exposed at the bottom of the slope directly south of the end of 131 St with a possible access path/erosion path to the train tracks. No further changes are noted.
- 1986
  - Subdivision at the cul-de-sac of 132A Street of the site is under construction. No building at the subject property. Soil exposed at the bottom of the slope directly south of the end of 131 St. Construction activities from 128A St to 130 St south of the building areas appears exposed and may be underground construction or regrading. No further changes are noted.

- 1990
  - The site at 13068 began construction with other lots along the south side of the 13th Ave vegetated. No notable slope changes/activities are observed in the vicinity. Area of note southwest of the site appears re-vegetated.
  - 1997 (no stereo pair)
  - Area southwest of the property appears to have bear land exposed (south of 13102). Possible landslip or construction.
- 2002 (no stereo pair)
  - No notable changes are noted.
- 2009
  - The area to the southwest of the property (south of 13102) appears to have a soil exposure likely related to the construction of the walkway access to the shoreline. Area south of 13026 is similarly exposed for the construction of the walkway. South side of 12892 appears to have exposed soil with minor tree/bushes clearing in progress.
- 2016
  - The slope in the vicinity of the site appears intact, vegetated, with no recently fallen trees or slope sloughing.

In summary, we find that the areas south of the south end of 130 St & 131 St as well as lots 13026 & 13108 show repeating bare land exposure with possible clearing, construction, and/or land slippage. From the contour overlay and lidar hillshade, these areas appear to coincide with oversteepened banks of gullies and/or streams. In contrast, the subject site is located at the ridge between the gullies with gentler slopes and no apparent concentrated streams or conditions pertaining to their potential origination. Therefore, it is likely that the subject site is less likely to experience such events based on historical interpretation and our judgment.

4.4 Soil and Groundwater Conditions

Based on the Geologic Survey of Canada's Map 1484A – Surficial Geology New Westminster, the property is located within the interface between:

- Pre-Vashon Deposits of glacial, nonglacial, and glaciomarine sediments: (PVa) Quadra fluvial channel fill and floodplain deposits, crossbedded sand containing minor silt and gravel lenses and interbeds; and (PVf) Semiahmoo till, glaciofluvial, glaciomarine, and glaciolacustrine deposits, and
- Vashon Drift deposits including till, glaciofluvial, glaciolacustrine, and ice-contact deposits, with the underlying soils consisting of lodgment till (with sandy loam matrix) and minor flow till containing lenses and interbeds of glaciolacustrine laminated stony silt.

It is noted that Quadra sand deposits are known to experience and be the cause of frequent soil slippages in oversteepened areas of South Surrey and White Rock due to no cohesion and water seepage towards the toe of the slopes where such deposits are exposed.

TerranGeo conducted an intrusive investigation on the subject site on August 8, 2022, which involved drilling a solid stem auger borehole and Dynamic Cone Penetration Test (DCPT) to a maximum depth of 9.1m (30ft). Dynamic Cone Penetration Testing indicates that the silty sand layer is firm to stiff. The soil stratigraphy deduced from the geotechnical subsurface investigation is referenced in **Table 2**. Bore Hole Location Plan and Soil Logs are provided in **Appendix B**.

Table 2: General Soil Stratigraphy

Depth (m)	Soil Description
0.0 – 0.9	GRAVEL FILL, sandy, compact, some debris, damp, brown
0.9 – 6.1	SAND, silty, some gravel, stiff, cohesive, dry, light brown
6.1 – 9.1	SAND, silty, firm, damp to moist, grey

During our investigation, no groundwater was encountered to the depth of 9.1m. The investigation was completed in a dry season and fluctuations of groundwater table are expected throughout the year. A geotechnical report completed by GeoPacific for 13048 13 Ave, Surrey is referenced with the investigation completed during a high-precipitation season in January of 2016 with similar findings of no shallow groundwater table. TerranGeo finds that, due to a high permeability of native soils, groundwater table fluctuations are expected to be small and not impactive to the overall slope stability and the completed slope stability analyses by TerranGeo. Perched groundwater from surficial runoff is also not considered to be of sufficient quantities (due to soil permeability) to affect the slope stability analyses.

From the BC Well Map, a nearby well (ID # 2790) located about 200m west of the subject site indicates that the groundwater table is located at a depth of 80ft (≈24.4m) below the ground surface. Although the geodetic difference of about 15m from the well location to the subject site is present, the groundwater table is assumed to follow the slope of the ground surface. Thus, an estimated groundwater level at the site is anticipated to be located at a depth of about 20m below the ground surface from the top of the slope of the subject site or a geodetic elevation of about 30m. Such elevation of the groundwater table is modelled in the slope stability analyses and also provides an estimated depth of the Quadra sands soil stratigraphy layer.

Soils logs for the sites located at 13048 13 Ave, Surrey and 13836 Marine Dr, White Rock are referenced. Based on the data from our investigation, available reports, published soil stratigraphy and experience with previous projects in the area, TerranGeo believes that the underlying soil stratigraphy at the subject site is consistent with the published surficial geology maps and our knowledge of the area.

4.5 Seismicity and Site Classification

The Site Classification for the property is estimated to be 'D' – *Stiff Soil* according to the 2018 B.C. Building Code. As interpolated from the 2015 National Building Code Seismic Hazard Calculation for the coordinates 49.026° N, 122.859° W with a 2% in 50 years probability of exceedance, the Peak Ground Acceleration can be taken as 0.381g. A detailed summary of the spectral acceleration response values is provided in **Appendix C** of this report. Site coefficients Fa and Fv could be taken from the 2018 BC Building Code Division B Part 4.

Given the moderate permeability of underlying silty sand with some gravel and the absence of shallow ground water table, the subject site is believed to be exposed to low-negligible liquefaction risk.

5.0 Discussion and Recommendations

5.1 Geohazards

Based on the review of the available information, geotechnical investigation, and professional experience in the site's vicinity, TerranGeo believes that the only geotechnical hazard that could potentially impact the property under its existing and proposed conditions is a small-scale localized landslip. The property and surrounding area did not exhibit conditions for geotechnical hazards such as catastrophic landslides, mountain stream erosion/avulsion, debris torrents and debris floods, snow avalanche, and rock fall. Therefore, TerranGeo is of the opinion that the Property and its proposed development are not susceptible to these geotechnical hazards, and therefore such hazards are not discussed in this report.

The underlying moderately permeable firm silty sand deposits, absence of shallow groundwater, and gently sloping grade (of about ~37%) on the south side of the property significantly reduce the possibility of exposure to the risk of a global failure of the existing slope.

5.2 Small-Scale Localized Landslip

Localized slope stability hazard pertains to the area proposed for renovation and the remediation of the retaining walls on the south side of the subject property.

A representative section of the overall slope at the property was traced out using the elevation contours of the region obtained through GIS combined with the available topographic map for the subject site. The resulting slope section (shown in **Appendix D**) was analyzed using GeoStudio SLOPE/W 2016 program. Soil parameters used in the analysis were obtained from the information gathered from the geological data of the region, site investigation and our experience with similar soils in the area. TerranGeo analyzed the existing slope under its existing conditions (1 storey house with basement and existing retaining walls on the south and north sides of the property) and proposed conditions (2-storey house with basement, existing retaining wall on the north side of the property, and remediated retaining walls on the south side of the property).

Static and Seismic slope stability analyses were carried out based on the Mohr-Coulomb failure criterion using Morgenstern-Price Method of analysis. In accordance with the Landslide Assessments in British Columbia (2023), seismic slope stability analysis was performed using Method 1 that includes a tolerable median slope displacement along a slip surface of 15cm when the slope is subjected to 1% in 50-year ground motions.

The surcharge loading associated with the proposed 2 storey house has been considered 30kPa. Slope stability analyses were carried out based on the Mohr-Coulomb failure criterion using Morgenstern-Price Method of analysis. The Peak Ground Acceleration (PGA) for the site was approximated to be 0.381g with the probability of exceedance of 2% in 50 years using 2015 National Building Code Seismic Hazard Calculation.

Seismic slope stability analysis was conducted using pseudo-static limit equilibrium method in combination with the following procedure. As per the Landslide Assessments in British Columbia (2023) based on the work of Bray and Macedo (2019) and updated Bray and Travasarou (2007) procedure, the following equation for Flexible Slopes displacement along the slip surface was used:

$$\begin{aligned} ln(D) = {} & -5.981 - 2.482\, ln(k_y) - 0.244 \left(ln(k_y)\right)^2 \\ & + 0.344\, ln(k_y)\, ln(S(T)) + 2.649\, ln(S(T)) \\ & - 0.090 \left(ln(S(T))\right)^2 + 3.152\,(T_s) - 0.945(T_s)^2 \\ & + 0.607\,(M), \end{aligned} \qquad [6]$$

where D is the median displacement, k_y is the seismic yield coefficient, and M is the moment magnitude of the design earthquake, as defined previously (see E.2 Review of Current Practice); and

T is the degraded period of the sliding mass, in seconds(s), adjusted for the effects of strong shaking, and given by $T = 1.3T_s$, where T_s is the initial fundamental period of the potential sliding mass, in seconds (s), prior to the design seismic event.

The resulting k_y of 0.24g was determined from pseudo-static limit equilibrium method. Based on the slope height, fundamental and degraded periods of sliding mass, spectral response acceleration, site class, average projected shear wave velocity approximated from the slope stability analyses, site soil parameters, and available information, the seismic-related slope response results in an approximated displacement of 5.6cm (<15cm) which is considered acceptable.

Based on the available topographic map and review of the background information gathered during our investigation, limit equilibrium slope stability analyses indicate that the existing steep slope has a static factor of safety of ≈1.6 under the proposed condition. Therefore, the slope is stable with adequate static factor of safety and seismic displacement, and is safe under the proposed conditions. Results are shown in **Appendix D**.

Table 3: Slope Stability Analyses Results

Analysis Type	Proposed Condition	EGBC, 2023
Static	Factor of Safety = 1.6	Industry Accepted Minimum = 1.5
Seismic	Displacement ≈ 5.6cm	Industry Accepted Maximum = 15cm

The existing wood crib retaining walls on the south side of the property also do not pose any detrimental effects to the slope, should they locally fail. As stated previously, these walls are proposed to be remediated within the same permit and will be subject to oversight by TerranGeo during construction.

In line with these results, TerranGeo believes that the existing slope in and around the proposed renovation's footprint is stable under both static and seismic factors of safety and estimated displacement. The proposed retaining wall replacement is feasible with improved factors of safety. No new geotechnical setback is proposed for

the site and its proposed development, and the land may safely be used for the use intended, provided the recommendations stated in this report are followed. No detrimental conditions are created as part of the proposed development to adjacent properties, roadways, or downslope infrastructure. Landslide Assessment Assurance Statement is attached to this report as **Appendix E.**

5.3 Site Preparation

TerranGeo recommends that all loose existing fill, below the footprint of the proposed remediation retaining walls construction be removed and excavated to the depth of the native firm silty sand or approved fill base.

Structural Fill may comprise 19 mm (¾") clear crush gravel or 75mm (3") minus gravel and shall be placed along the prepared subgrade. Structural Fill shall be placed and compacted to the material's 95% Standard Proctor Maximum Dry Density (SPMDD) of the material value in lifts no thicker than 300 mm, or as directed by the Geotechnical Engineer.

Good construction practices shall be followed to handle spoiled material and exposed subgrade: the subgrade shall not be exposed directly to rain, there shall be no free-standing ponded water on the subgrade to minimize soil softening and re-handling of the spoiled material. Saturated, water softened material within the building footprint shall be stripped and removed.

5.4 Excavation, Trenching, Shoring, and Construction Staging

WorkSafe B.C. guidelines for stable excavations should be followed where excavation is required and exceeds a depth of 1.2m. Temporary cut slopes deeper than 1.2m may be cut with side slopes of 3H:4V in accordance with WorkSafe BC regulations unless specified otherwise by the Geotechnical Engineer. Should seepage or waterlogged soil conditions be encountered, the slopes should either be flattened, or the water managed via interceptor ditches and dewatering pumps. The Geotechnical Engineer should also be notified in advance in order to review the excavation to verify its stability and safety of workers entering the excavation. Alternatively, the excavation sides can be shored and braced for excavations deeper than 1.2m. During construction, temporary surcharge loads such as equipment and material stockpiles should not be allowed within 1.0m of unsupported excavation faces.

The proposed construction does not involve extensive excavation for the building footprint with the exception of the remediation of the existing wood crib timber walls. The removal of the wood crib wall is to commence from the higher (upslope) to the lower (downslope) section. Removed demolished materials are to be stored away from the slope or be hauled away. The replacement may start from the lower to the upper section of the wall. During the construction, exposed/excavated areas are to be covered with 6mil clear poly. Heavy equipment is to be parked away from the cuts, or at the front of the property, when the work is not being conducted. Stockpiles are to be covered with clear poly and be a maximum of 1.2m in height. TerranGeo is to be retained to perform excavation reviews to confirm that construction staging is adequate and best practices for erosion protection have been implemented. Tree removal may commence at either stage of the construction given that best practices for erosion protection have been implemented. To our knowledge, no large-sized tree removal is proposed. Overall, TerranGeo does not foresee a significant impact during the temporary construction stage in terms of slope stability given that field reviews are conducted and the work is overseen by the geotechnical engineer.

5.5 Foundation Design

The native stiff silty sand is competent to support the associated footing loads of a typical lightly loaded structure. The Ultimate, Ultimate Limit State (ULS) design and Serviceability Limit State (SLS) design bearing capacity values are shown in **Table 4**. TerranGeo determined the ULS design bearing capacity by applying a geotechnical resistance factor of 0.5 to the unfactored ultimate bearing capacity, as recommended in the *Canadian Foundation Engineering Manual 4th Edition* (Canadian Geotechnical Society, 2006).

The subgrade for the existing building foundations is approved for the following values:

Table 4: Bearing Capacity Design Values

Limit Type	Allowable Bearing Capacity	
	kPa	Pounds-square foot
Unfactored Ultimate Bearing Capacity	400	≈ 8354
Factored Ultimate Limit State (ULS)	200	≈ 4177
Serviceability Limit State (SLS)	150	≈ 3133

Footings should be designed for equal contact pressure of nearly equal sizes to minimize potential total settlement. Predicted total settlement is estimated to be less than 25.4 mm (1") while angular distortion of the structure (differential settlement divided by span) is estimated to be 1/800. Adjacent footings placed at different elevations should be constructed no closer than or be stepped at no more than a line projected at 2H:1V (Horizontal:Vertical) from the lower footing.

5.6 Permanent Retaining Walls and Lateral Pressures

Retaining walls may be constructed to support the downslopes within the subject site. Where cuts and fills result in permanent slopes steeper than 2H:1V, retaining walls will be required. Permanent slopes should be properly vegetated and/or hydro-seeded for erosion protection.

Retaining walls must be designed to resist the lateral pressure of the retained earth from seismic and static loading. We recommend that where walls abutting backfill materials, they can be designed to resist the following lateral earth pressures.

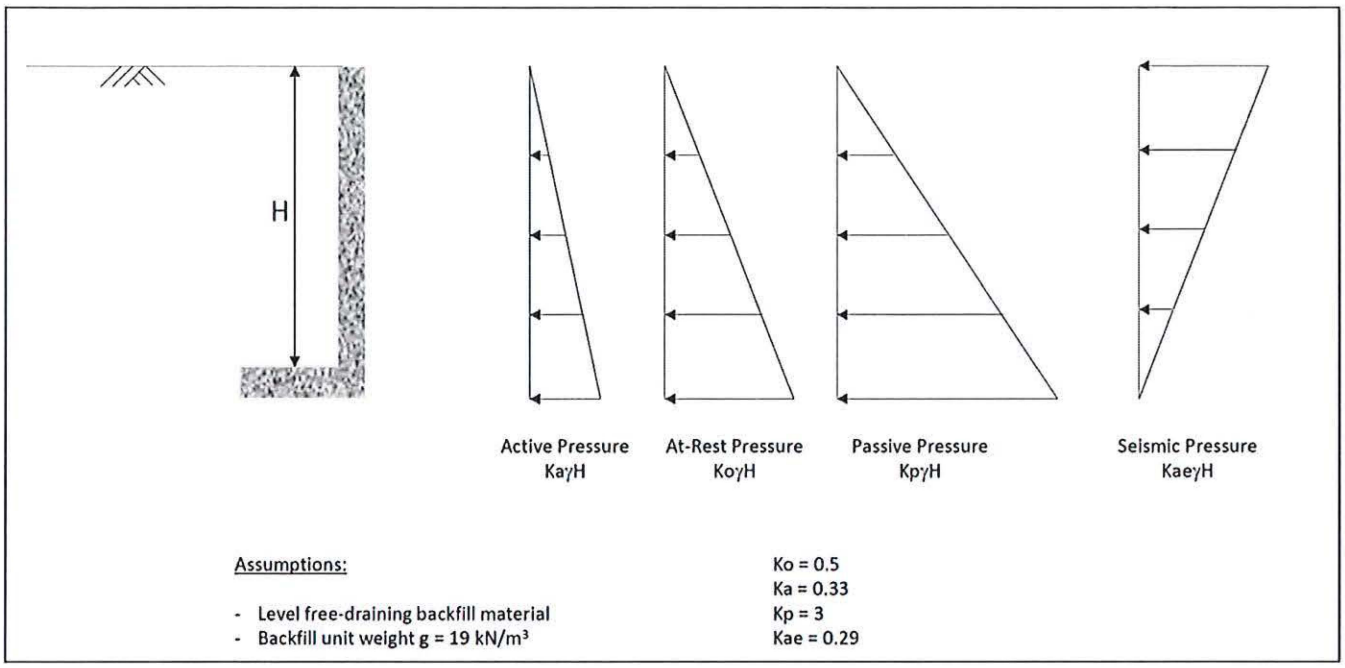


Figure 1: Lateral Earth Pressure Diagram

The preceding loading recommendations assume that the walls will be backfilled with free draining granular fill such that hydrostatic pressures against the walls are eliminated. All pressures recommended above are in unfactored. Retaining walls are recommended to be designed to withstand active earth pressures whereas no-displacement foundation walls are to be designed to resist at-rest earth pressures.

5.7 Re-use of Material

Excavated material shall be set aside, stockpiled and sloped at the maximum of 1H:1V (Horizontal:Vertical) at the less steep east side of the site with the maximum height of 1.2m (4ft). No fills are to be brought to the site without prior removal of the existing wall backfill material off site. Any excavated material composed of the native silty sand is not suitable for use as backfill in structural areas and should be removed for the site.

5.8 Storm Water Management

The area is characterized by good drainage conditions due to the sloping nature of the property and moderate permeability of native silty sand soil. Due to slope stability considerations and topography, stormwater from perimeter drainage and roof drainage are to be discharged into a new City storm connection (pumped system). Alternatively, a gravity line with a solid pipe towards the slope toe and railway crossing may be provided, subject to approval by the City and Railway company. Such systems are common along the subject slope and are preferable due to its greater reliability.

A substantial portion of the rainwater captured by the proposed retaining walls is expected to be percolated into the permeable backfill and subgrade. Toe drainage behind the proposed remediation walls may be facilitated by connecting to the proposed downslope pipe together with roof and perimeter drainage water discharge. Field Review is to be conducted to ensure drainage is adequately placed. As stated previously, TerranGeo will oversee

the construction of the retaining walls to ensure they are in compliance with the geotechnical principles and practices given the slope condition.

It is important to note that any excess runoff resulting from man-made processes such as excessive irrigation, water leakage from broken pipes, and removal of vegetation must be managed properly to mitigate any potential erosion of the slope.

5.9 Slope Stability Preservation Measures

In order to enhance the stability of the slope in the future and protect it from erosion, the following is recommended:

- Permanent vegetation removal along the slope is not recommended. It is suggested that bushes, grasses, and small trees are implemented into a landscaping plan to ensure continued protection from erosion and natural rainwater percolation. Large tree species are not recommended to be planted due to additional weight on the slope in localized areas.

- The proposed development provides no increase in the impermeable areas at the site but rather provides additional reduction in the surficial stormwater runoff by the means of drainage connections bypassing the slope surface. The existing and all disturbed slopes shall be vegetated to prevent erosion of surficial soils. Final grading shall aim to direct surficial runoff towards the drainage pipes of the retaining walls, not be concentrated but rather be dispersed as sheet flows. Final grading and site drainage shall be reviewed and approved by the geotechnical engineer.

- Landscape irrigation is allowed; however, excessive irrigation is not desirable. A fail-safe valve is recommended to be provided to prevent unattended and/or uncontrolled water discharge. Typical daily irrigation use is allowed on the slope within the retaining walls' backfill. Pressurized pipes on the slope for use other than for irrigation are not recommended.

- From our understanding of the project, no pool, hot tub, or other outbuildings are proposed as part of the development. Should they be desired in the future, a geotechnical opinion shall be sought on the feasibility and construction recommendations. It is stipulated that small lightweight structures may be feasible on the slope, subject to confirmation by the geotechnical engineer, and provided their drainage is connected to the overall site drainage system surpassing rainwater infiltration into the slope.

- Additional permanent site fills exceeding 1.2m (4ft) in height shall be reviewed by the geotechnical engineer for slope stability impacts. From the review of the proposed plans, fills outside of the retaining wall backfill are not proposed.

5.10 Field Reviews

TerranGeo is retained as the Engineer of Record and the following field reviews will be required:

- Subgrade review of the proposed remediation retaining walls subgrade and bearing as well as approval of structural fill/compaction, if required;
- Site progress reviews during the course of construction; and

- Final field review once the structures have been constructed.

TerranGeo can neither assume responsibility nor liability for the adequacy of the recommendations in this report should they be implemented without TerranGeo being retained to review and approve the field conditions during construction. Our standard terms and conditions are attached as **Appendix F**.

6.0 CLOSURE

The proposed development's construction activities on this property may be started provided the recommendations in this report are followed and field reviews are conducted by the geotechnical engineer.

This report was completed for the exclusive use of the Client, their agents as well as the authority having Jurisdiction to support the development on the subject site. Any use of the materials contained in this letter for other than the intended purpose must first be verified by TerranGeo.

We trust that this information meets your present requirements. If you require additional information, or if you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Terran Geotechnical Consultants Ltd.

Sergey Makhov
C=CA, O=Terran Geotechnical Consultants Ltd., CN=Sergey Makhov, E=smakhov@terrangeo.com
2023-05-24 16:51:46

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
T. V. LE
37452
2023-05-24

Sergey Makhov, *EIT*

Geotechnical Engineer

Thanh V. Le, *P.Eng.*

Principal | Geotechnical Engineer

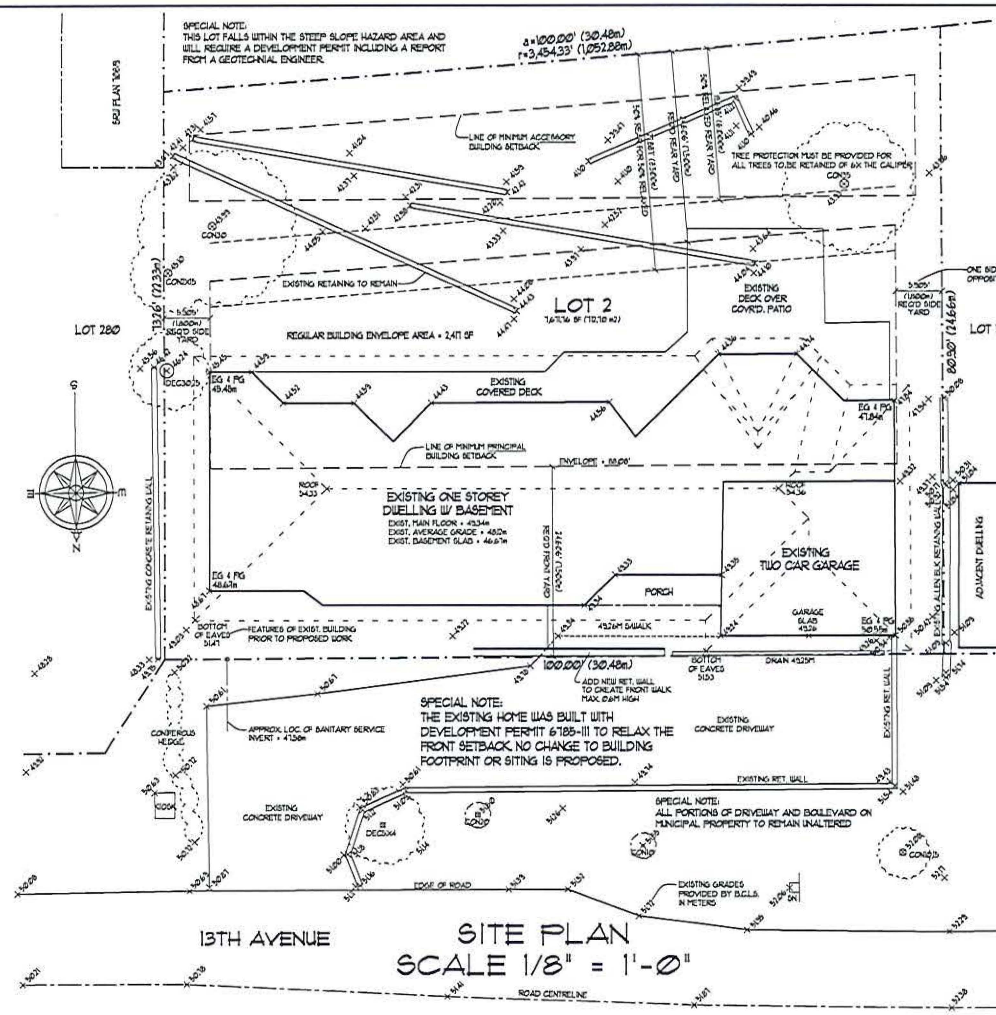
Site Photographs

Fig a) Existing slope on the south side of the property (viewing west)

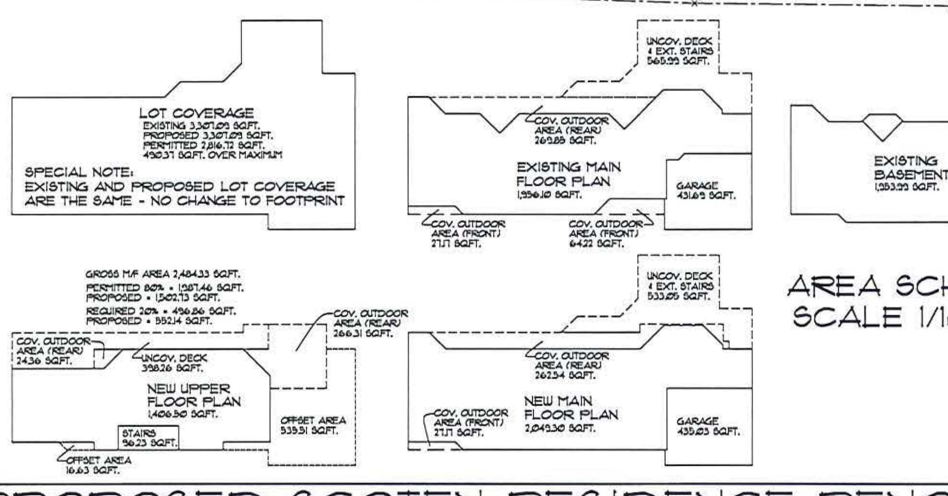
Fig b) View of the existing retaining wall on the south side of the property (viewing east)

APPENDIX A:

Provided Documents



SITE PLAN
SCALE 1/8" = 1'-0"



AREA SCHEMATICS
SCALE 1/16" = 1'-0"

PROJECT INFORMATION

CLIENT NAME	JEFFERY & ANDREA SCOTEN
PROPERTY OWNER	ANDREA SCOTEN
SITE ADDRESS	13130 13 AVENUE, SURREY B.C.
PROJECT TYPE	PROPOSED SECOND STOREY ADDITION
AUTHORITY HAVING JURISDICTION	CITY OF SURREY
LEGAL DESCRIPTION	LOT 2 BLOCK 1 SECTION 8 TOWNSHIP 1 NWD, PLAN 4828 PID 001-835-31
TITLE SEARCH	YES - RESTRICTIONS FOR HOUSE SIZE AND LOCATION
ZONE	RF
SUBDIVISION	INFILL LOT
DESIGN CONTROL CONSULTANT	NOT REQUIRED
BUILDER	KATRIDGE DEVELOPMENTS LTD. c/o TODD PEDERSON

GENERAL PROJECT NOTES

- DIMENSIONS TO BE TAKEN FROM OUTSIDE FACE OF SHEATHING FOR EXT. WALLS AND CENTRE OR FACE OF STUDS FOR INT. WALLS AS SHOWN.
- ALL HEIGHT DIMENSIONS ON FLOOR PLANS ARE FROM TOP OF FLOOR PLYWOOD
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR BUILDER TO CHECK AND VERIFY ALL DIMENSIONS AND TO ENSURE ALL WORK CONFORMS TO ALL LOCAL BYLAWS AND REGULATIONS, AND TO THE CURRENT EDITION OF THE BRITISH BRITISH COLUMBIA BUILDING CODE.
- THE OWNER AND/OR CONTRACTOR IS TO ENSURE THAT THE LANDSCAPING MEETS THE REQUIREMENTS OF THE APPLICABLE BY-LAWS AND REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. IF NECESSARY, UTILIZE PLANTING BEDS AROUND THE BUILDING(S) TO ENSURE THE FINISHED LOT GRADING BLENDS INTO THE EXISTING LOT GRADING.
- BRING FOOTINGS TO UNDISTURBED, SOUND BEARING SOIL BELOW FROSTLINE (18" MIN. BELOW GRADE)
- APPLY ASPHALT EMULSION TO FOUNDATION WALLS BELOW GRADE
- FOUNDATION CONCRETE STRENGTH TO BE MIN. 20 MPa
- INTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 20 MPa
- EXTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 32 MPa WITH 5-8% AIR ENTRAINMENT
- LUMBER IN CONTACT WITH CONCRETE TO BE DAMPPROOFED, AND ANCHORED WITH 1/2" A.B. @ 6'-0" O.C. MAX
- STRUCTURAL LUMBER TO BE #2 D.FIR-L U.N.O.
- LINTELS TO BE 2-2x10 D.FIR-L U.N.O.
- PROVIDE SOLID LAMINATED STUDDING @ BEARING POINTS
- DOUBLE JOISTS @ PARALLEL PARTITIONS (OPT. 2x10 BLOCKING @ 24" O.C.)
- BEDROOM WINDOWS MUST CONFORM TO B.C.B.C. SEC. 9.7.1.3
- DWELLING MUST MEET CURRENT B.C. VENTILATION CODE
- MIRRORED DOORS ARE NOT PERMITTED @ WALK-IN CLOSETS
- LINO OR EQUAL REQ'D ON BATHROOM FLOORS
- WATERPROOF WALLBOARD REQ'D AT TILE SURROUNDS @ TUBS AND SHOWERS
- PROVIDE A BOND-BREAKING MATERIAL BETWEEN FOUNDATION OR ROCK AND SLABS
- IN SURREY FOLDING PANEL DOORS MUST BE COVERED BY A ROOF OR FLOOR AND ENGINEER'S APPROVAL AND SCHEDULE "B" REQUIRED. CifovNov03-11/AM/JM/Hous

OUTDOOR COVERED AREA CALCULATION:

PROPOSED FOR FRONT	27.17 SQFT.	
RESERVE FOR FRONT	161.46 SQFT.	
RESERVE REMAINING	134.29 SQFT.	
PROPOSED FOR REAR	553.21 SQFT.	
TOTAL PROP. OUTDOOR COVERED AREA		580.38 SQFT.
TOTAL RESERVE REMAINING		134.29 SQFT.
TOTAL COVERED AREA AND RESERVE		714.67 SQFT.
10% OUTDOOR COVERED AREA ALLOWANCE		419.19 SF SQFT.
BALANCE COUNTED TOWARDS F.A.R.		295.48 SQFT.

EXTENDED HEIGHT CEILING CALCULATION:

PROPOSED EXTENDED HEIGHT CEILINGS	96.23 SQFT.
EXTENDED HEIGHT CEILING ALLOWANCE	204.52 SQFT.
BALANCE COUNTED TOWARDS F.A.R.	0.00 SQFT.

GROSS FLOOR AREA CALCULATION:

PROPOSED UPPER FLOOR AREA		1,406.50 SQFT.
PROPOSED MAIN FLOOR AREA		2,049.30 SQFT.
TOTAL FLOOR AREA		3,455.80 SQFT.
PROPOSED GARAGE AREA	435.03 SQFT.	
RESERVE FOR GARAGE	473.80 SQFT.	
RESERVE REMAINING	0.00 SQFT.	
GARAGE AREA COUNTED TOWARDS F.A.R.		435.03 SQFT.
TOTAL FLOOR AREA INCLUDING GARAGE		3,890.83 SQFT.
OUTDOOR COVERED AREA OVERAGE		295.48 SQFT.
EXTENDED HEIGHT CEILING OVERAGE		0.00 SQFT.
TOTAL PROPOSED GROSS FLOOR AREA		4,186.31 SQFT.
MAX. PERMITTED GROSS FLOOR AREA		4,191.95 SQFT.

ZONING ANALYSIS

BUILDING SETBACKS

STRUCTURE	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
PRINCIPAL BUILDING	24.606' (7.5m)	24.606' (7.5m)	5.905' (1.8m)	11.811' (3.6m)
ACCESSORY BUILDINGS	59.055' (18.0m)	5.905' (1.8m)	3.280' (1.0m)	24.606' (7.5m)

BUILDING SETBACK NOTES:
- FRONT SETBACK FOR FIRST FLOOR MAY BE 18.045' (5.5m) FOR 50% OF THE FRONT EXCLUDING GARAGE.
- IF 50% OF THE FRONT IS SETBACK 29.527' (9.0m) THEN AN ATTACHED GARAGE WITH FRONT FACING DOORS CAN BE SETBACK 21.982' (6.7m). THE GARAGE IN THIS CASE CAN ONLY BE 50% FORWARD OF THE FRONT OF THE HOUSE. A THIRD PARKING BAY DOOR MUST BE SET BACK 2.95' (0.9m) FROM THE FIRST TWO PARKING BAY DOORS.
- 50% OF THE REAR FACE MAY BE SETBACK 19.685' (6.0m) IF THE REMAINDER IS AT LEAST 27.887' (8.5m).
- ONE SIDE YARD MAY BE REDUCED TO 1.2m IF THE OPPOSITE SIDE IS INCREASED TO 2.4m.
- THE REAR YARD SETBACK FROM A NATURAL GAS TRANSMISSION ROW IS 24.6' (7.5m).
- IN-GROUND SWIMMING POOLS ARE CONSIDERED ACCESSORY BUILDINGS WITH REGARDS TO SETBACKS.

PERMITTED ENCROACHMENTS	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
F/P, CHIMNEYS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
HUTCHES (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BOX WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BAY WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
EAVES	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
VENEER (2)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
DECK / PORCH	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
STAIRS (3)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT

PERMITTED ENCROACHMENT NOTES:
(1) ELEMENT IN REQUIRED YARD TO BE MAX 8'0 WIDE PER WALL FACE PER FLOOR
(2) VENEER SUPPORTED BY FOUNDATION NOT ALLOWED. PolNov22-11/AM/JM/Hous
(3) STAIRS IN REQUIRED YARD TO BE NOT MORE THAN 3 TREADS OR 24" ABOVE GRADE.

LOT AREA

LOT AREA	7,671.76 SF	712.70 m2

FLOOR AREA RATIO

GROSS ALLOWABLE PERCENT	60% OF FIRST 560m2, 35% OF BALANCE		INCLUDED FLOOR AREA CANT'D FLOORS ATTIC TRUSS SPACES OUTDOOR COV. AREA (1) OVER 12'0 CLNGS X2 (2) ALL STAIRWELLS (2)
GROSS FLOOR AREA CAP	5,005.38 SF	465.00 m2	
GROSS ALLOWABLE FLOOR AREA	4,191.95 SF	389.45 m2	
DEDUCT GARAGE RESERVATION	473.80 SF	39.00 m2	
GROSS FLOOR AREA N.I.C. GARAGE	3,717.33 SF	350.45 m2	
10% OF G.F.A. FOR OUTDOOR AREA	419.19 SF	38.94 m2	
PROPOSED GROSS FLOOR AREA	4,186.31 SF	388.91 m2	NOT INCLUDED CANT'D FIREPLACES BOXED WINDOWS IN-GROUND BASEMENTS CRAWLSPACES < 4'-11"
PROPOSED GARAGE AREA	.	.	
PROP. FLOOR AREA N.I.C. GARAGE			
PROPOSED OUTDR. COV. AREA	.	.	

FLOOR AREA RATIO NOTES:
(1) ALL OUTDOOR COVERED AREA IS COUNTED IN FLOOR AREA RATIO EXCEPT 10% TIMES THE GROSS FLOOR AREA AS CALCULATED ABOVE. 161.46 SF (15.00 m2) OF THE 10% MUST BE RESERVED FOR A FRONT PORCH OR VERANDA. 139.93 SF (13.00 m2) OF THE 10% MUST BE RESERVED FOR COVERED OUTDOOR AREA IN THE REAR OF THE HOME. IF THE 10% IS USED ENTIRELY IN THE FRONT OR THE REAR THE RESERVE AREA MUST BE TAKEN FROM THE GROSS FLOOR AREA.
(2) STAIRWELLS AT ALL FLOOR LEVELS WILL BE INCLUDED IN FLOOR AREA RATIO AND CEILINGS GREATER THAN 12'-0" WILL BE COUNTED TWICE IN FLOOR AREA RATIO EXCEPT FOR AN ALLOWANCE OF 204.52 SF (19.00m2) FOR STAIRWELLS AND CEILINGS OVER 12'-0". ALSO, CEILINGS BETWEEN 12'0 TO 15'0 THAT ARE SLOPING ARE NOT COUNTED AS LONG AS ONE WALL IS 12'0 OR LOWER.
- ACCESSORY BUILDING OVER 107.64 SF TO BE INCLUDED IN F.A.R.
- GARAGE AREA EXCEEDING 473.80 SF RESERVATION TO BE TAKEN OUT OF F.A.R.
- ALL AREAS USED FOR COVERED PARKING ARE TO BE INCLUDED IN THE F.A.R. CALCULATION UNLESS THE COVERED PARKING IS LOCATED IN THE BASEMENT.
- GARAGE IN BASEMENT IS EXCLUDED FROM F.A.R. AND RESERVATION IS USED AS FLOOR AREA.
- THE GROSS AREA CAP OF 5,005.38 SF APPLIES TO ALL LOTS NO MATTER WHAT SIZE.
- AREAS WITHIN ATTIC TRUSSES, WHETHER FINISHED OR UNFINISHED, WILL BE INCLUDED IN THE CALCULATION OF FLOOR AREA RATIO.
- COVERED PATIOS / PORTE COCHERES THAT ARE ACCESSIBLE BY A VEHICLE WILL BE CONSIDERED A CARPORT AND INCLUDED IN FLOOR AREA RATIO
- A BASEMENT HAS AT LEAST 50% OF ITS VOLUME IN GROUND AS MEASURED FROM THE TOP OF THE SLAB TO THE TOP OF THE NEXT FLOOR ABOVE AND IN RELATION TO THE LOWER OF THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENT IN-GROUND PECENT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENTS, AS DEFINED ABOVE, MAY BE EXCLUDED FROM F.A.R. WHETHER THEY ARE LOCATED IN THE PRINCIPAL DWELLING OR AN ACCESSORY BUILDING. BASEMENT AREA BEYOND THE PERIMITER OF THE MAIN FLOOR ABOVE WILL BE COUNTED IN F.A.R.
- COVERED PATIOS AT THE BASEMENT LEVEL WHICH APPEAR TO BE MOSTLY ENCLOSED WILL BE INCLUDED IN FLOOR AREA RATIO. TO EXCLUDE THESE AREAS THEY SHOULD BE OPEN ON TWO SIDES AND HAVE ACCESS FROM THE EXTERIOR. PolNov04-11/AM/JM/Hous
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE FLOOR AREA THAN THE PRIN. DWELLING.

80/20 RULE:
- UPPER FLOOR NOT TO EXCEED 80% OF MAIN FLOOR AREA INCLUDING GARAGE BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK. THE 20% REDUCTION SHALL BE ON THE FRONT OR SIDES INCL. PORCH BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK.
- THE 80% UPPER FLOOR INCLUDES ALL OPEN TO BELOW AREAS AND STAIRWELLS. A VAULTED CEILING ON THE MAIN FLOOR MAY BE CONSIDERED AN OPEN TO BELOW AREA OF THE UPPER FLOOR IF THE CEILING STARTS AT A POINT HIGHER THAN 12' ABOVE THE MAIN FLOOR.

LOT COVERAGE

ALLOWABLE PERCENT CALCULATION		40% FOR LOTS 560m2 OR LESS 40%-2% FOR EACH 93m2 OVER 560m2 THE MINIMUM PERCENT IS 25%		INCLUDED FLOOR AREA CANT'D FLOORS GARAGE ACCESSORY BUILDING CVR'D. DECKS/PORCHES DECKS 24" ABOVE GRADE EAVES EXCEEDING 24" BOXED WINDOWS POOLS 24" ABOVE GRADE CANT'D FIREPLACES NOT INCLUDED STRUCT. <24" ABOVE E.G.
ALLOWABLE AREA	36.72%	2,816.72 SF	261.68 m2	
EXISTING PERCENT				
EXISTING AREA				

LOT COVERAGE NOTES:
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE LOT COVERAGE THAN THE PRINCIPAL DWELLING.

BASEMENT ACCESS WELLS
- BASEMENT ACCESS AND BASEMENT WELLS ARE PERMITTED ONLY BETWEEN THE PRINCIPAL BUILDING AND THE REAR LOT LINE AND MUST NOT EXCEED A MAXIMUM AREA OF 28.0 m2 (301.39 SQFT.), INCLUDING THE STAIRS.

BUILDING HEIGHT

PRINCIPLE BLDG ALLOWED	29.53' (9.0m) (1)	PRINCIPLE BLDG PROPOSED	
ACCESSORY BLDG ALLOWED	16.40' (5.0m)	ACCESSORY BLDG PROPOSED	.

BUILDING HEIGHT NOTES:
(1) MAX HEIGHT FOR ROOF PITCH LESS THAN 3/12 IS 23.95' (7.30m) TO TOP OF ROOF.
- BUILDING HEIGHT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- WHEN DETERMINING THE AVERAGE EXISTING GRADE THE GRADES AT THE FOUR EXTREME CORNERS OF THE PROPOSED BUILDING ARE USED.
- BUILDING HEIGHT IS TO THE TOP OF A FLAT ROOF OR MEAN OF A PITCHED ROOF. THE MEAN BEING THE HALF WAY POINT BETWEEN THE EAVE AND THE RIDGE. THE EAVE BEING THE UNDERSIDE OF A ROOF OVERHANG AND IS TYPICALLY TAKEN AS THE UNDERSIDE OF THE SOFFIT FINISH. DORMERS WHICH OCCUPY MORE THAN 25% OF THE ROOF PLANE THEY SIT ON WILL HAVE THEIR EVES COUNTED AS THE BASIS FOR DETERMINING EAVE TO RIDGE MEAN ROOF HEIGHT. MONOPLANE OR BUTTERFLY ROOFS WILL BE MEASURED TO THE HIGHEST POINT.

GEODETIC ELEVATIONS			
ROOF PEAK ELEV.		GARAGE SLAB @ ENTRY ELEV.	.
ROOF MEAN ELEV.		AVERAGE EXISTING GRADE	.
UPPER FLOOR CEILING ELEV.	.	BASEMENT SLAB ELEV.	.
UPPER FLOOR PLYWOOD ELEV.		ALLOWABLE (M.B.E.)	.
MAIN FLOOR PLYWOOD ELEV.	.	SEWER INVERT @ P.L.	.

SITE SERVICING AND M.B.E. NOTES:
- ANY LIVING SPACE PROPOSED BELOW GRADE REQUIRES AN M.B.E. TO BE ESTABLISHED. THIS CAN BE CERTIFIED BY AN ENGINEER, WHICH IS TYPICALLY BASED ON STORM SERVICE OR PUMP/PIT DESIGN, OR CAN BE ESTABLISHED BY USING THE LOWEST CENTER OF ROAD ADJACENT TO THE LOT PLUS 0.3m.
- M.B.E. BASED ON STORM SERVICE IS USUALLY INVERT PLUS A MINIMUM OF 0.6m BUT MAY BE HIGHER DUE TO HYDRALIC GRADE CALCULATIONS. M.B.E. BASED ON ROCK PIT OR PUMP IS TYPICALLY OVERFLOW ELEVATNO PLUS 0.3m.
- ROCK PIT OR PUMPING IS NOT ALLOWED UNLESS THE PROPOSED MAIN FLOOR IS LOWER THAN THE STORM SERVICE OR FRONTING DITCH, IN WHICH CASE AND ENG'D SYSTEM IS ALLOWED.
- PERIMETER DRAINAGE MAY NOT BE REQUIRED IF APPROVED BY A PROFESSIONAL ENGINEER.

DRIVEWAY

ALLOWABLE SLOPE	15.0% ON COLLECTOR ROADS AND 10% ON ARTERIAL ROADS
PROPOSED SLOPE	.
MAX WIDTH @ E	6.0m FROM ROAD TO P/L THEN 8.0m FROM P/L TO GARAGE

DRIVEWAY NOTES:
- THE AREA OF THE DRIVEWAY MUST NOT EXCEED 33% OF THE AREA OF THE FRONT YARD.
- DRIVEWAY MUST BE IN THE LOCATION PROVIDED ON THE CIVIL ENGINEERING DRAWINGS.
- DRIVEWAY MUST MEET EXISTING GRADE AT LOT LINE +- 4" (0.1m)

PARKING:
- THREE (3) OFF STREET PARKING SPACES ARE REQUIRED FOR EACH SINGLE FAMILY DWELLING.
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A SINGLE GARAGE = 10.5' (3.2m) x 20.0' (6.1m)
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A DOUBLE GARAGE = 18.7' (5.7m) x 20.0' (6.1m)

DATE	DESCRIPTION	INITIALS	DATE	DESCRIPTION	INITIALS
JAN-11-2022	DRAFT WD.	A.J.M.	MAY-27-2022	FOR PERMIT	A.J.M.
MAY-10-2022	FOR PERMIT	A.J.M.	JULY-22-2022	FOR PERMIT	A.J.M.

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

PLAN # SCOTEN RES. ADD./RENO

SITE PLAN, SCHEMATICS, INFO

PROPOSED SCOTEN RESIDENCE RENOVATION / ADDITION

THESE DRAWINGS SHOULD BE PRINTED ON 34"x36" PAPER TO BE AT SCALE INDICATED. ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

JANUARY 19, 2023
SCALE AS NOTED

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.
#88 - 1959 - 152nd STREET
SOUTH SURREY, B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454-4211
E-MAIL: info@raymondbonterdesigner.ca

TOPOGRAPHIC PLAN OF LOT 2, BLOCK 1, SECTION 8, TOWNSHIP 1, NEW WESTMINSTER DISTRICT, PLAN 4828

CIVIC ADDRESS: 13130 – 13th Avenue, Surrey, B.C.

0 5 10 15 m

SCALE – 1 : 250

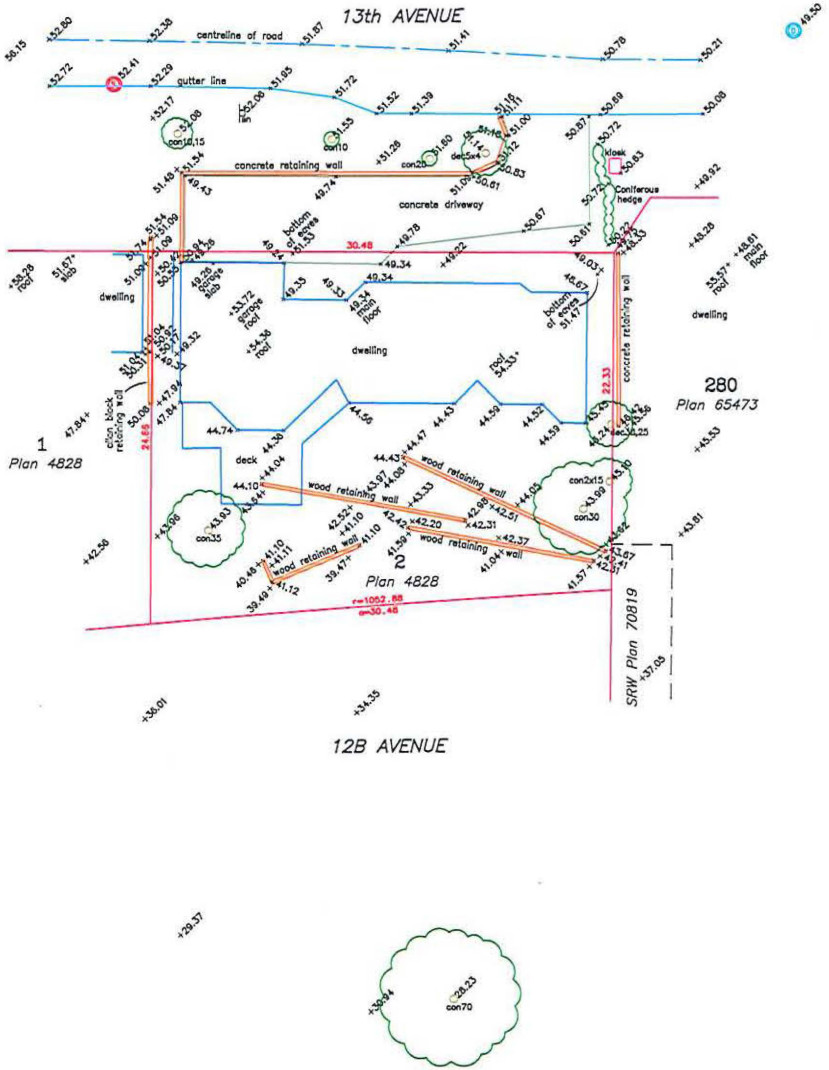
All distances are in metres

SURVEY LEGEND

- Sanitary manhole
- Storm manhole
- Sign
- con20 Denotes 20cm dia Coniferous tree
- dec30.25 Denotes 30cm & 25cm dia Deciduous trees

NOTES:

1) Elevations are in metres and are geodetic.
2) Elevations are derived from Control Monument no. 5664 located at the intersection of 130th Street & Marine Drive Elevation = 69.998 metres
3) This Plan was prepared for architectural design and site servicing purposes, and is for the exclusive use of our client. The signatory accepts no responsibility or liability for any damages that may be suffered by a third party as a result of reproduction, transmission or alteration to this document without consent of the signatory.
4) Prior to any construction, underground services are to be confirmed by the City of Surrey Engineering Dept.
5) If there is any conflict in information between the hard copy of this Plan and the digital data provided, the hard copy shall be taken to be correct. Any information taken from digital data shall be confirmed by information shown on the hard copy of this plan.
6) Property lines derived from Land Titles Office records and field ties.
7) Trees are represented using a standard size symbol. This symbol does not represent the true size of the tree on the site.



Cameron Land Surveying Ltd.
B.C. Land Surveyors
Unit 234 – 18525–53rd Avenue
Surrey, B.C. V3S 7A4
Phone: 604–597–3777
File: 7861–TP2

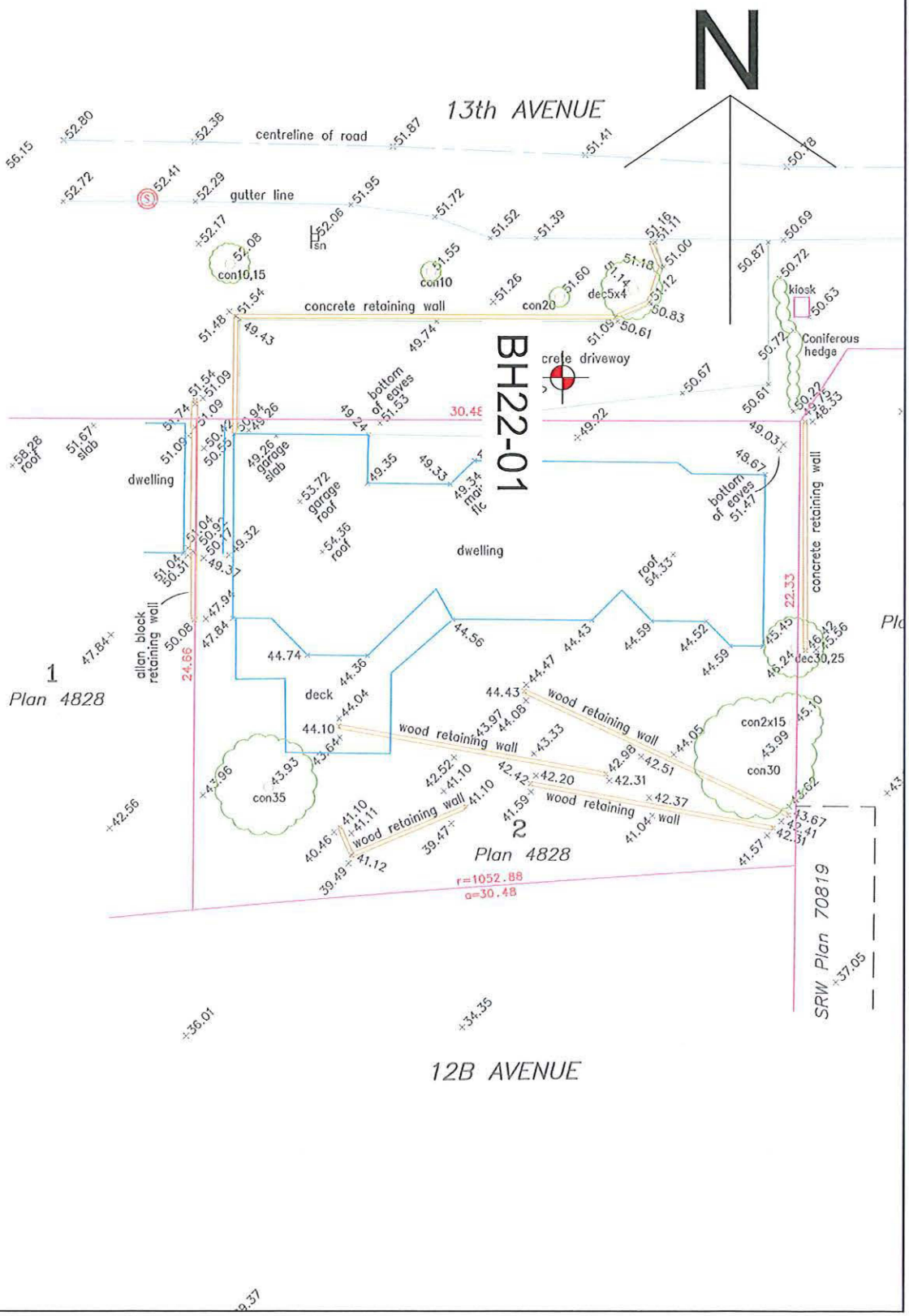
This plan has been prepared in accordance with the Professional Reference Manual with additional specifications from our client and is certified correct this 2nd day of March, 2021.

Sean Costello B.C.L.S. (900)

This plan lies within the Metro Vancouver Regional District

APPENDIX B:

Bore Hole Location Plan and Soils Logs



REVISION NO.: 0	Bore Hole Location Plan	PREPARED FOR	TERRAN GEOTECHNICAL
SHEET 6 / 6	PROJECT NUMBER: 62442-01	JEFF AND ANDREA SCOTEN	Terran Geotechnical Consultants Ltd.
	DATE CREATED: 2022-08-26	PROPOSED HOUSE ADDITION AND RETAINING WALL	Permit to Practice: 1002891
	DATE REVISED:	13130 13 AVE, CITY OF SURREY BC	1597 E Kent Ave North, Vancouver, BC V5P 4Y7
	DRAWN BY: M.KOTHAKONDA		604-421-3288
	REVIEWED BY: T. LE		info@terrangeo.com
	SCALE: 1:200		

SOIL LOG: BH22-01

PROJECT NAME: Retaining Wall & House Addition	GROUND SURFACE ELEVATION AND UTM: Existing Grade
PROJECT #: 6242-01 CLIENT: Jeff and Andrea Scoten	DATE STARTED: 8/8/2022 DATE FINISHED: 8/8/2022
DRILLING CONTRACTOR: Southland Drilling DRILLING METHOD: Solid Stem Auger	END OF TEST HOLE (m): 9.14 MEASURING POINT: Top of Grade
DRILLING EQUIPMENT: Truck-mounted rig	DEPTH TO WATER (m): 0.00
SAMPLING METHOD: Grab	LOGGED BY: MK PROJECT ENGINEER: TL

DEPTH (m)	DEPTH (ft)	Sample	Classification	Lithology	DESCRIPTION	DCPT N (Blows / Foot)	Notes
					Surface Elevation: Existing Grade	10 20 30 40	
0.0	0.0		-		Concrete Slab	5	Concrete approx. 100 mm thick
0.5	2.0		GM		GRAVEL FILL, sandy, compact, some debris, damp, brown	11 11 9 9	T.V. = Torvane (kg/cm2) P.P. = Pocket Penotrometer (kg/cm2)
1.0	4.0					23 23	
1.5	6.0					36	P.P = 4.0, T.V = 3.0
2.0	8.0					40	Moisture content @ 2.13 m = 14%
2.5	10.0					35 30	
3.0	12.0		SM		SAND, silty, some gravel, stiff, cohesive, dry, light brown	28 26 24 23	
3.5	14.0					40 40	
4.0	16.0					39	P.P = 4.0, T.V = 3.5
4.5	18.0					38	Moisture content @ 5.18 m = 15%
5.0	20.0					43 34	
5.5	22.0					38 49	
6.0	24.0					36	P.P = 1.0, T.V = 2.0
6.5	26.0		SM		SAND, silty, firm, damp to moist, grey	40 37 35	Moisture content @ 7.31 m = 18%
7.0	28.0					38	P.P = 1.0, T.V = 1.5
7.5	30.0					41 41	
8.0							No groundwater encountered, End of Hole
8.5							
9.0							

APPENDIX C:

Seismic Hazard Values

2015 National Building Code Seismic Hazard Calculation

INFORMATION: Eastern Canada English (613) 995-5548 français (613) 995-0600 Facsimile (613) 992-8836
Western Canada English (250) 363-6500 Facsimile (250) 363-6565

Site: 49.026N 122.859W

2022-09-09 17:14 UT

Probability of exceedance per annum	0.000404	0.001	0.0021	0.01
Probability of exceedance in 50 years	2 %	5 %	10 %	40 %
Sa (0.05)	0.465	0.328	0.240	0.109
Sa (0.1)	0.707	0.500	0.366	0.168
Sa (0.2)	0.881	0.630	0.462	0.212
Sa (0.3)	0.886	0.636	0.466	0.211
Sa (0.5)	0.783	0.555	0.404	0.174
Sa (1.0)	0.439	0.305	0.215	0.086
Sa (2.0)	0.263	0.178	0.122	0.046
Sa (5.0)	0.082	0.049	0.029	0.010
Sa (10.0)	0.029	0.017	0.010	0.004
PGA (g)	0.381	0.273	0.200	0.091
PGV (m/s)	0.571	0.392	0.274	0.106

Notes: Spectral (Sa(T), where T is the period in seconds) and peak ground acceleration (PGA) values are given in units of g (9.81 m/s^2). Peak ground velocity is given in m/s. Values are for "firm ground" (NBCC2015 Site Class C, average shear wave velocity 450 m/s). NBCC2015 and CSAS6-14 values are highlighted in yellow. Three additional periods are provided - their use is discussed in the NBCC2015 Commentary. Only 2 significant figures are to be used. **These values have been interpolated from a 10-km-spaced grid of points. Depending on the gradient of the nearby points, values at this location calculated directly from the hazard program may vary. More than 95 percent of interpolated values are within 2 percent of the directly calculated values.**

References

National Building Code of Canada 2015 NRCC no. 56190; Appendix C: Table C-3, Seismic Design Data for Selected Locations in Canada

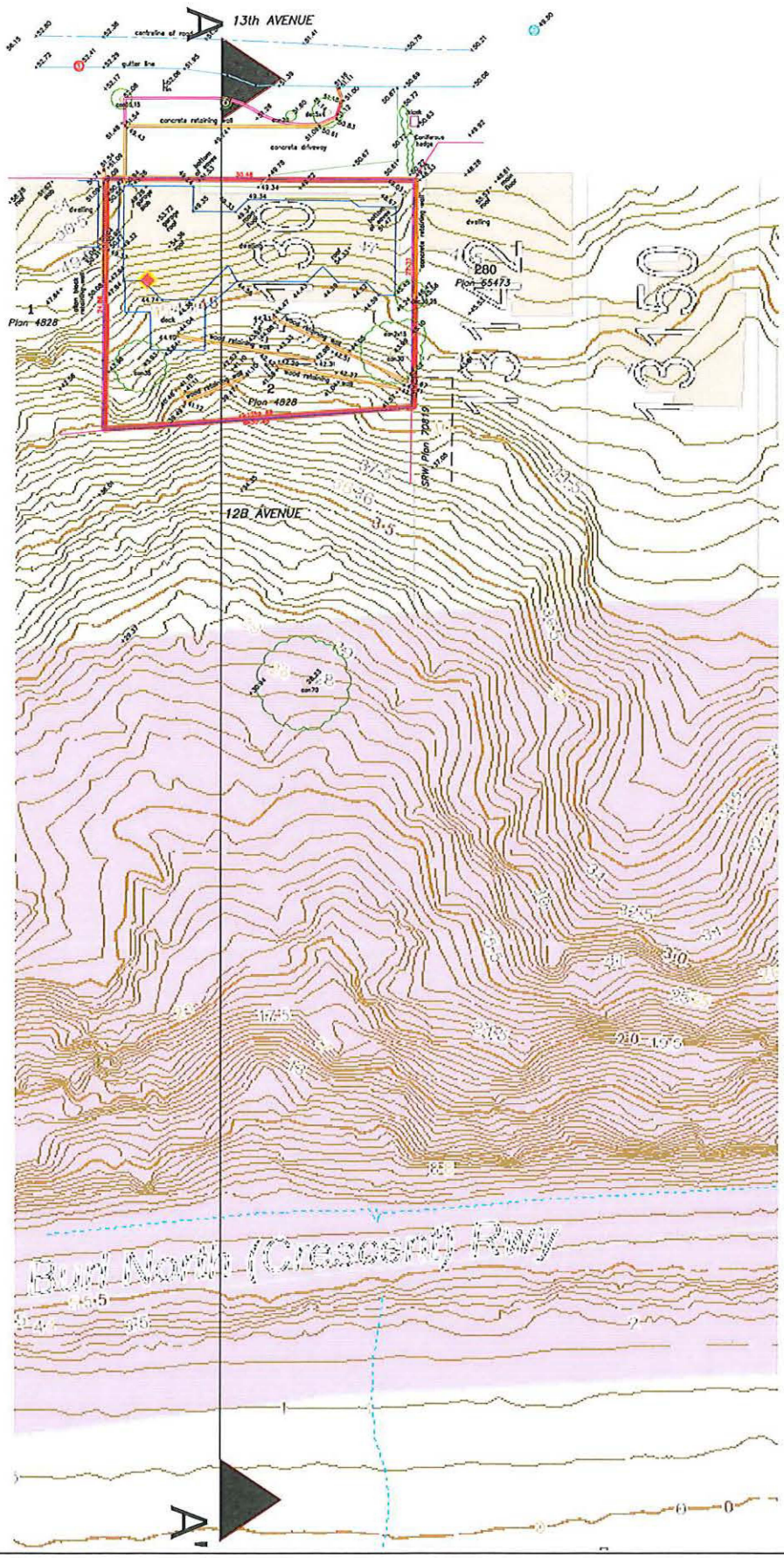
Structural Commentaries (User's Guide - NBC 2015: Part 4 of Division B)
Commentary J: Design for Seismic Effects

Geological Survey of Canada Open File 7893 Fifth Generation Seismic Hazard Model for Canada: Grid values of mean hazard to be used with the 2015 National Building Code of Canada

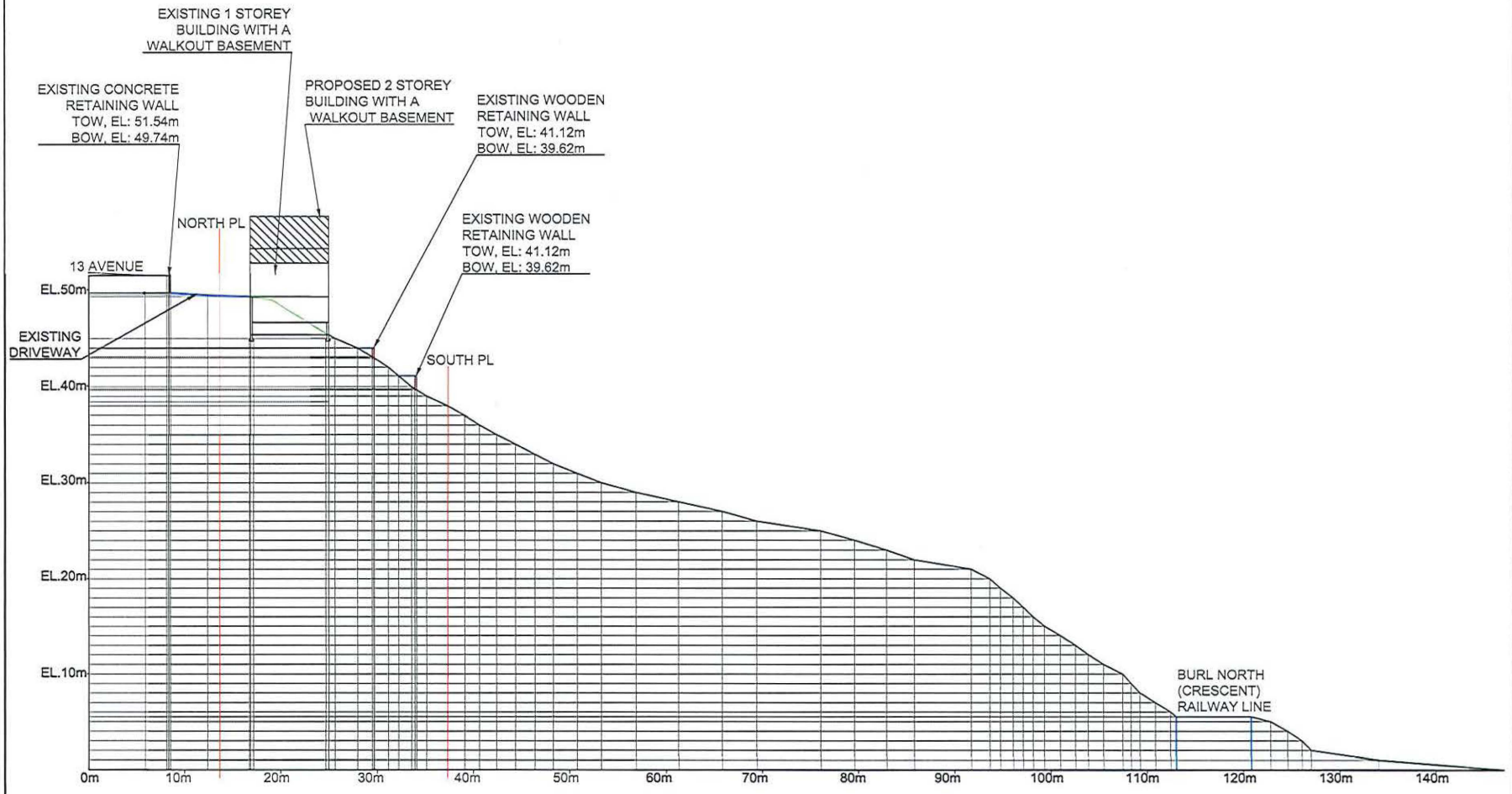
See the websites www.EarthquakesCanada.ca and www.nationalcodes.ca for more information

APPENDIX D:

Slope Stability Analyses



REVISION NO.: 1	SITE PLAN	PREPARED FOR	TERRAN GEOTECHNICAL Terran Geotechnical Consultants Ltd. Permit to Practice: 1002091 1597 E Kent Ave North Vancouver, BC V5P 4Y7 604-421-3288 info@terrangeo.com
SHEET 1/4	PROJECT NUMBER: 62-42-01 DATE CREATED: 2022-08-26 DATE REVISED: 2023-05-24 DRAWN BY: S. MAKHOV REVIEWED BY: T. LE SCALE: 1:420	JEFF AND ANDREA SCOTEN PROPOSED HOUSE ADDITION AND RETAINING WALL 13130 13 AVE, CITY OF SURREY BC	



TERRAN GEOTECHNICAL
Terran Geotechnical Consultants Ltd.
Permit to Practice: 1002891
1597 E Kent Ave North,
Vancouver, BC V5P 4Y7
604-421-3288
info@terrangeo.com

PREPARED FOR

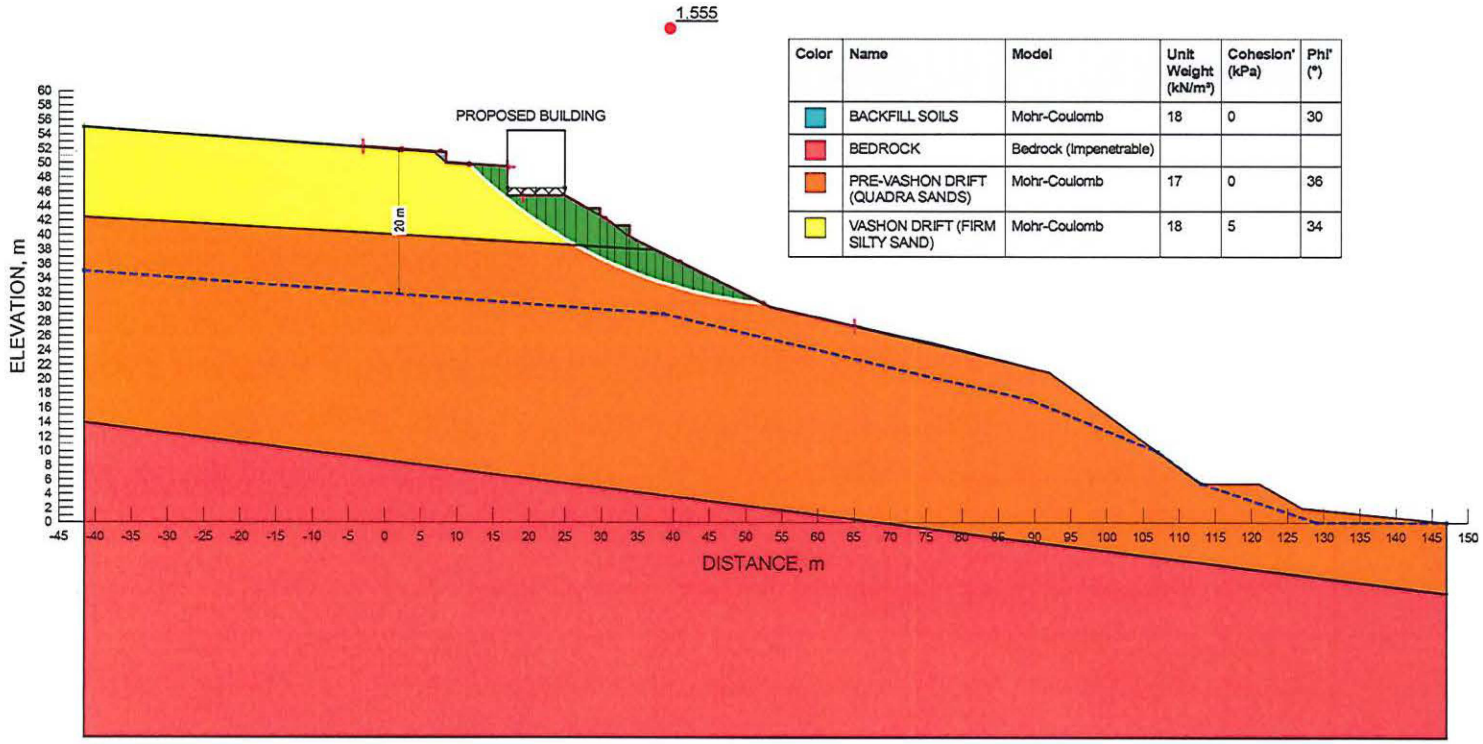
JEFF AND ANDREA SCOTEN

PROPOSED HOUSE ADDITION AND RETAINING WALL

13130 13 AVE, CITY OF SURREY BC

SECTION A-A

PROJECT NUMBER:	6242-01
DATE CREATED:	2022-08-26
DATE REVISED:	2023-05-24
DRAWN BY:	S. MAKHOV
REVIEWED BY:	T. LE
SCALE:	NTS



Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)
	BACKFILL SOILS	Mohr-Coulomb	18	0	30
	BEDROCK	Bedrock (Impenetrable)			
	PRE-VASHON DRIFT (QUADRA SANDS)	Mohr-Coulomb	17	0	36
	VASHON DRIFT (FIRM SILTY SAND)	Mohr-Coulomb	18	5	34

TERRAN GEOTECHNICAL
Terran Geotechnical Consultants Ltd.
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Vancouver, BC V5P 4Y7
604-421-3288
info@terrangeo.com

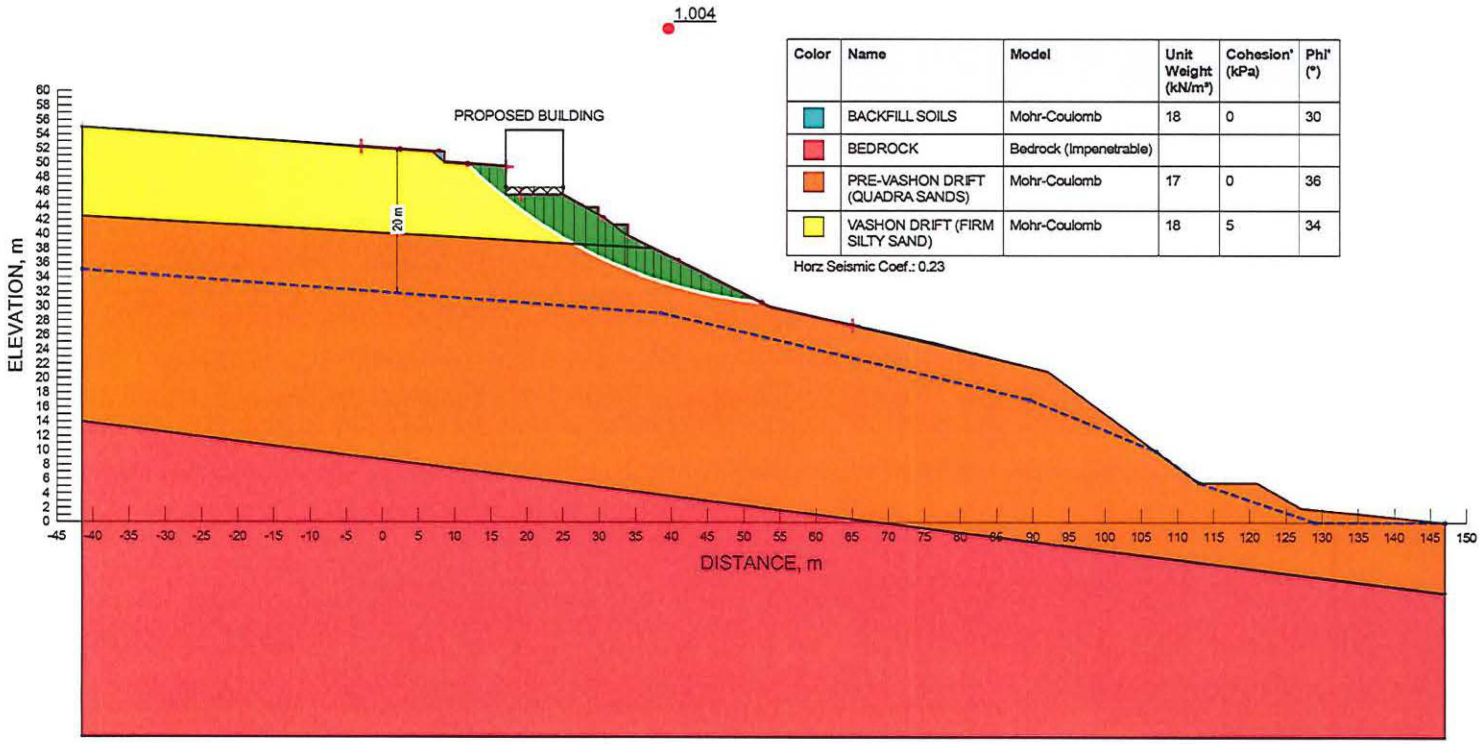
PREPARED FOR
JEFF AND ANDREA SCOTEN

PROPOSED HOUSE ADDITION AND RETAINING WALL

13130 13 AVE, CITY OF SURREY BC

STATIC-PROPOSED

PROJECT NUMBER:	6242-01
DATE CREATED:	2022-08-26
DATE REVISED:	2023-05-24
DRAWN BY:	S. MAKHOV
REVIEWED BY:	T. LE
SCALE:	NTS



Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)
	BACKFILL SOILS	Mohr-Coulomb	18	0	30
	BEDROCK	Bedrock (Impenetrable)			
	PRE-VASHON DRIFT (QUADRA SANDS)	Mohr-Coulomb	17	0	36
	VASHON DRIFT (FIRM SILTY SAND)	Mohr-Coulomb	18	5	34

Horz Seismic Coef.: 0.23

TERRAN GEOTECHNICAL
Terran Geotechnical Consultants Ltd.
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1597 E Kent Ave North,
Vancouver, BC V5P 4Y7
604-421-3288
info@terrangeo.com

PREPARED FOR
JEFF AND ANDREA SCOTEN

PROPOSED HOUSE ADDITION AND RETAINING WALL

13130 13 AVE, CITY OF SURREY BC

SEISMIC-PROPOSED

PROJECT NUMBER:	6242-01
DATE CREATED:	2022-08-26
DATE REVISED:	2023-05-24
DRAWN BY:	S. MAKHOV
REVIEWED BY:	T. LE
SCALE:	NTS

REVISION NO.: 1 | SHEET 4 / 4

APPENDIX E:

Landslide Assessment Assurance Statement

LANDSLIDE ASSESSMENT ASSURANCE STATEMENT

Notes: This statement is to be read and completed in conjunction with the Engineers and Geoscientists BC *Professional Practice Guidelines – Landslide Assessments in British Columbia* ("the guidelines") and the current *BC Building Code* (*BCBC*), and is to be provided for Landslide Assessments (not floods or flood controls), particularly those produced for the purposes of the *Land Title Act*, *Community Charter*, or *Local Government Act*. Some jurisdictions (e.g., the Fraser Valley Regional District or the Cowichan Valley Regional District) have developed more comprehensive assurance statements in collaboration with Engineers and Geoscientists BC. Where those exist, the Qualified Professional is to fill out the local version only. Defined terms are capitalized; see the Defined Terms section of the guidelines for definitions.

To: The Approving Authority (or Client) Date: May 24, 2023

the City of Surrey

13450 104 Ave, City of Surrey, BC

Jurisdiction/name and address

With reference to (CHECK ONE):

- ☐ A. *Land Title Act* (Section 86) – Subdivision Approval
- ☑ B. *Local Government Act* (Sections 919.1 and 920) – Development Permit
- ☑ C. Community Charter (Section 56) – Building Permit
- ☐ D. Non-legislated assessment

For the following property (the "Property"):

13130 13 Ave, City of Surrey, BC

Civic address of the Property

The undersigned hereby gives assurance that they are a Qualified Professional and a professional engineer or professional geoscientist who fulfils the education, training, and experience requirements as outlined in the guidelines.

I have signed, authenticated, and dated, and thereby certified, the attached Landslide Assessment Report on the Property in accordance with the guidelines. That report must be read in conjunction this statement.

In preparing that report I have:

[CHECK TO THE LEFT OF APPLICABLE ITEMS]

- ✓ 1. Collected and reviewed appropriate background information
- ✓ 2. Reviewed the proposed Residential Development or other development on the Property
- ✓ 3. Conducted field work on and, if required, beyond the Property
- ✓ 4. Reported on the results of the field work on and, if required, beyond the Property
- ✓ 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a Landslide Hazard analysis or Landslide Risk analysis, I have:
  - ✓ 6.1 reviewed and characterized, if appropriate, any Landslide that may affect the Property
  - ✓ 6.2 estimated the Landslide Hazard
  - ✓ 6.3 identified existing and anticipated future Elements at Risk on and, if required, beyond the Property
  - ✓ 6.4 estimated the potential Consequences to those Elements at Risk
- 7. Where the Approving Authority has adopted a Level of Landslide Safety, I have:
  - ___ 7.1 compared the Level of Landslide Safety adopted by the Approving Authority with the findings of my investigation
  - ___ 7.2 made a finding on the Level of Landslide Safety on the Property based on the comparison
  - ___ 7.3 made recommendations to reduce Landslide Hazards and/or Landslide Risks

8. Where the Approving Authority has **not** adopted a Level of Landslide Safety, or where the Landslide Assessment is not produced in response to a legislated requirement, I have:

✓ 8.1 described the method of Landslide Hazard analysis or Landslide Risk analysis used

✓ 8.2 referred to an appropriate and identified provincial, national, or international guideline for Level of Landslide Safety

✓ 8.3 compared those guidelines (per item 8.2) with the findings of my investigation

✓ 8.4 made a finding on the Level of Landslide Safety on the Property based on the comparison

✓ 8.5 made recommendations to reduce Landslide Hazards and/or Landslide Risks

✓ 9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections

Based on my comparison between:

[CHECK ONE]

☐ the findings from the investigation and the adopted Level of Landslide Safety (item 7.2 above)

☑ the appropriate and identified provincial, national, or international guideline for Level of Landslide Safety (item 8.4 above)

Where the Landslide Assessment is not produced in response to a legislated requirement, I hereby give my assurance that, based on the conditions[1] contained in the attached Landslide Assessment Report:

A. SUBDIVISION APPROVAL

☐ For subdivision approval, as required by the *Land Title Act* (Section 86), "the land may be used safely for the use intended"

[CHECK ONE]

☐ with one or more recommended additional registered Covenants

☐ without an additional registered Covenant(s)

B. DEVELOPMENT PERMIT

☑ For a development permit, as required by the *Local Government Act* (Sections 488 and 491), my report will "assist the local government in determining what conditions or requirements it will impose under subsection (2) of [Section 491]"

[CHECK ONE]

☑ with one or more recommended additional registered Covenants

☐ without an additional registered Covenant(s)

C. BUILDING PERMIT

☑ For a building permit, as required by the *Community Charter* (Section 56), "the land may be used safely for the use intended"

[CHECK ONE]

☑ with one or more recommended additional registered Covenants

☐ without any additional registered Covenant(s)

---

[1] When seismic slope stability assessments are involved, Level of Landslide Safety is considered to be a "life safety" criteria, as described in Commentary JJJ of the *National Building Code of Canada (NBC) 2015*, Structural Commentaries (User's Guide – NBC 2015: part 4 of division B). This states:

"The primary objective of seismic design is to provide an acceptable level of safety for building occupants and the general public as the building responds to strong ground motion; in other words, to minimize loss of life. This implies that, although there will likely be extensive structural and non-structural damage, during the DGM (design ground motion), there is a reasonable degree of confidence that the building will not collapse, nor will its attachments break off and fall on people near the building. This performance level is termed 'extensive damage' because, although the structure may be heavily damaged and may have lost a substantial amount of its initial strength and stiffness, it retains some margin of resistance against collapse."

LANDSLIDE ASSESSMENT ASSURANCE STATEMENT

Thanh V. Le, P.Eng.
Name (print)

May 24, 2023
Date

1597 E Kent Ave N
Address

Vancouver, BC V5P 4Y7

604-868-6838
Telephone

info@terrangeo.com
Email

(Affix PROFESSIONAL SEAL and signature here)

The Qualified Professional, as a registrant on the roster of a registrant firm, must complete the following:

I am a member of the firm Terran Geotechnical Consultants Ltd.
(Print name of firm)

with Permit to Practice Number 1002891
(Print permit to practice number)

and I sign this letter on behalf of the firm.

APPENDIX F:

Use of Report and Limitations

Use of Report and Limitations

The recommendations in this report are provided on the assumption that the contractor will be suitably qualified and experienced. In the event of report revisions, additional funds may be required. The subsurface conditions may vary between test pits and with time. The interpretation of subsurface conditions provided is an opinion and not a certification. Stratigraphic variations in soil profile can be expected. As such, all explorations involve an inherent risk that some conditions will not be detected.

Samples obtained from site will be retained in our laboratory for 60 days. Should no instruction be received to the contrary, these samples will be discarded. This report has been made in accordance with the generally accepted soil and foundations engineering practices.

No other warranty expressed or guaranteed is made. If the project does not start with 2 years of the report date, the report may become invalid and further review may be required. This report has been prepared for the exclusive use of the Client, Jurisdiction having authority and their "Approved Users" for specific application to the development mentioned in the report. TerranGeo and its employees accept no responsibility to another party for loss or liability incurred as a result of use of this report. Any use of this report for purposes other than the intended, should be approved in writing by TerranGeo. Contractors should rely upon their own explorations for costing purposes.

The above referenced report "the Report" may be relied upon by the Jurisdiction as if the Report was directly issued to the Jurisdiction subject to the following conditions:

- The Jurisdiction will only use the Report for the specific project that is the recipient and subject of the Report.
- To the extent required by law and subject to the Freedom of Information and Protection of Privacy Act, R.S.B.C., 1996, c. 165, as amended, the Jurisdiction agrees not to disclose or distribute the Report furnished hereunder to any third party unless the Jurisdiction places a prominent statement that "THIS REPORT MAY NOT BE RELIED UPON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE AUTHOR OF THE REPORT".
- The Jurisdiction's use of and reliance on the Report is subject to the qualifications and limitations contained within the Report and the Jurisdiction has no greater rights or conditions of use than as specified within the Report.
- Notwithstanding the above, should a third party recover damages from the Jurisdiction through a Court of competent jurisdiction, for loss or damage caused to the third party based upon the third party's reliance on the Report, and, provided that the Jurisdiction gave reasonable notice of the third party claim when it was served on the Jurisdiction to TerranGeo and consented to TerranGeo becoming a party to the lawsuit in order for it to undertake its own defense, if and when requested by the TerranGeo, TerranGeo will indemnify the Jurisdiction if the Court of competent jurisdiction found that TerranGeo committed a negligent act, error, or omission in the preparation of, or conclusions in, the Report, and that this was the proximate cause of the third party's loss or damage.

Electronic media is susceptible to unauthorized modification/alteration, and the Client should not rely on electronic versions of report/documents. All documents should be obtained directly from TerranGeo.

This report is based on the information provided by the client and/or the client's consultant. TerranGeo relied in good faith upon the information. TerranGeo cannot accept responsibility for inaccuracies, misstatements, omissions or deficiencies in this report resulting from the sources of this information. It is assumed in this report that TerranGeo would be retained to review the soil conditions during construction.

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7922-0173-00

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: 001-835-211
LOT 2 BLOCK 1 SECTION 8 TOWNSHIP 1 NEW WESTMINSTER DISTRICT PLAN 4828
13130 13 Avenue

(the "Land")

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

   - In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of the principal building is reduced from 7.5 metres to 0.5 metres.

   - In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.

4. This development variance permit applies to only that portion of the buildings and structures on the Land shown on Schedule A which is attached hereto and forms part of this development variance permit. This development variance permit does not apply to additions to, or replacement of, any of the existing buildings shown on attached Schedule A, which is attached hereto and forms part of this development variance permit.

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

6. This development variance permit shall lapse if the Owner does not substantially start any construction with respect to which this development variance permit is issued, within two (2) years after the date this development variance permit is issued.

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

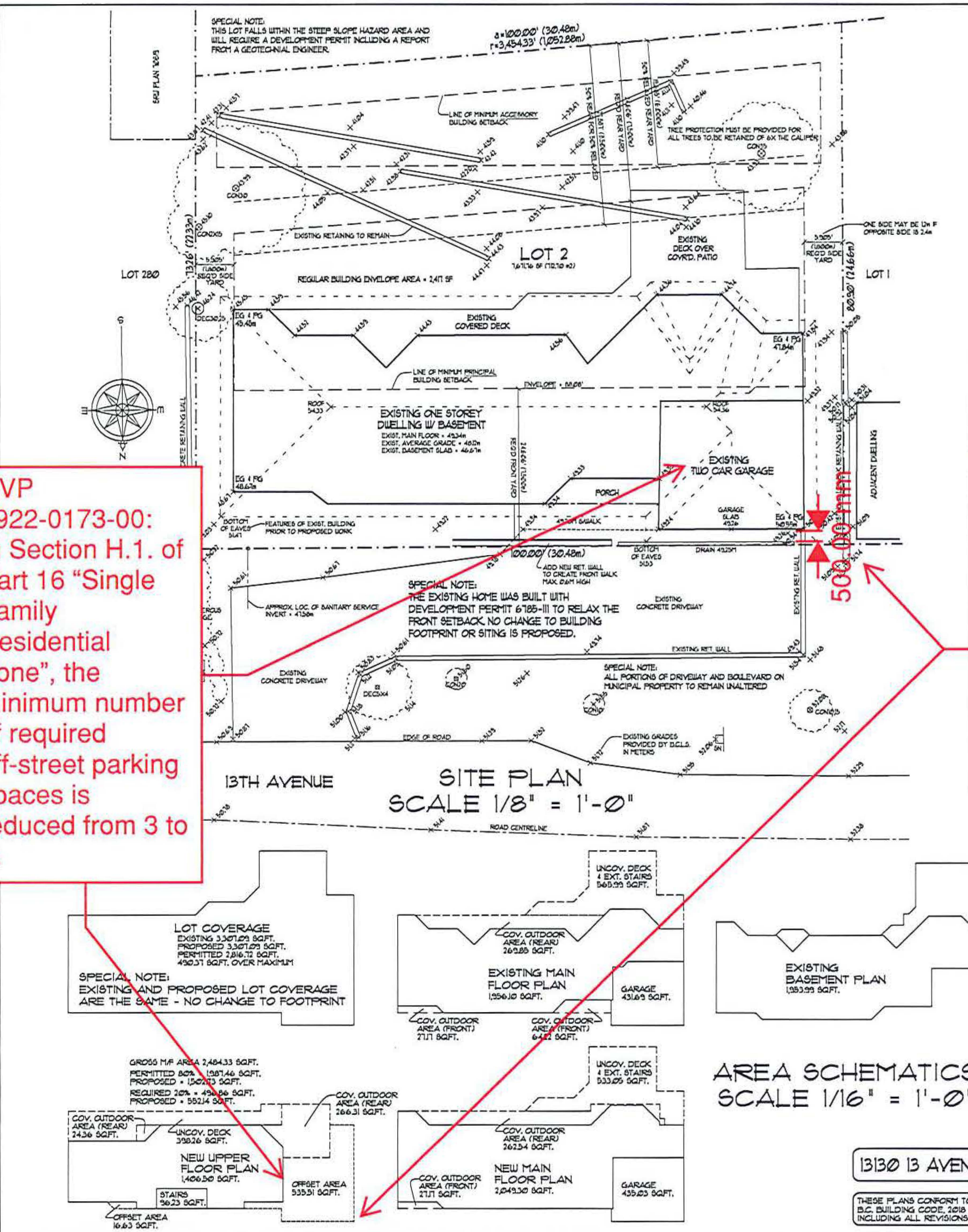
8. This development variance permit is not a building permit.

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

_____
Mayor – Brenda Locke

_____
City Clerk – Jennifer Ficocelli

Appendix I



DVP 7922-0173-00: In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.

DVP 7922-0173-00: In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of a principal building is reduced from 7.5 metres to 0.5 metres

GENERAL PROJECT NOTES

- DIMENSIONS TO BE TAKEN FROM OUTSIDE FACE OF SHEATHING FOR EXT. WALLS AND CENTRE OR FACE OF STUDS FOR INT. WALLS AS SHOWN.
- ALL HEIGHT DIMENSIONS ON FLOOR PLANS ARE FROM TOP OF FLOOR PLYWOOD
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR BUILDER TO CHECK AND VERIFY ALL DIMENSIONS AND TO ENSURE ALL WORK CONFORMS TO ALL LOCAL BYLAWS AND REGULATIONS, AND TO THE CURRENT EDITION OF THE BRITISH COLUMBIA BUILDING CODE.
- THE OWNER AND/OR CONTRACTOR IS TO ENSURE THAT THE LANDSCAPING MEETS THE REQUIREMENTS OF THE APPLICABLE BY-LAWS AND REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. IF NECESSARY, UTILIZE PLANTING BEDS AROUND THE BUILDING(S) TO ENSURE THE FINISHED LOT GRADING BLENDS INTO THE EXISTING LOT GRADING.
- BRING FOOTINGS TO UNDISTURBED, SOUND BEARING SOIL BELOW FROSTLINE (18" MIN. BELOW GRADE)
- APPLY ASPHALT EMULSION TO FOUNDATION WALLS BELOW GRADE
- FOUNDATION CONCRETE STRENGTH TO BE MIN. 20 MPa
- INTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 20 MPa
- EXTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 32 MPa WITH 5-8% AIR ENTRAINMENT
- LUMBER IN CONTACT WITH CONCRETE TO BE DAMPPROOFED, AND ANCHORED WITH 1/2" A.B. @ 6'-0" O.C. MAX
- STRUCTURAL LUMBER TO BE #2 D.FIR-L U.N.O.
- LINTELS TO BE 2-2x10 D.FIR-L U.N.O.
- PROVIDE SOLID LAMINATED STUDDING @ BEARING POINTS
- DOUBLE JOISTS @ PARALLEL PARTITIONS (OPT. 2x10 BLOCKING @ 24" O.C.)
- BEDROOM WINDOWS MUST CONFORM TO B.C.B.C. SEC. 9.7.1.3
- DWELLING MUST MEET CURRENT B.C. VENTILATION CODE
- MIRRORED DOORS ARE NOT PERMITTED @ WALK-IN CLOSETS
- LINO OR EQUAL REQ'D ON BATHROOM FLOORS
- WATERPROOF WALLBOARD REQ'D AT TILE SURROUNDS @ TUBS AND SHOWERS
- PROVIDE A BOND-BREAKING MATERIAL BETWEEN FOUNDATION OR ROCK AND SLABS
- IN SURREY FOLDING PANEL DOORS MUST BE COVERED BY A ROOF OR FLOOR AND ENGINEER'S APPROVAL AND SCHEDULE "B" REQUIRED. CrforNov03-11AM/JMHouse

ZONING ANALYSIS

BUILDING SETBACKS

STRUCTURE	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
PRINCIPAL BUILDING	24.606' (7.5m)	24.606' (7.5m)	5.905' (1.8m)	11.811' (3.6m)
ACCESSORY BUILDINGS	59.055' (18.0m)	5.905' (1.8m)	3.280' (1.0m)	24.606' (7.5m)

BUILDING SETBACK NOTES:
- FRONT SETBACK FOR FIRST FLOOR MAY BE 18.045' (5.5m) FOR 50% OF THE FRONT EXCLUDING GARAGE.
- IF 50% OF THE FRONT IS SETBACK 29.527' (9.0m) THEN AN ATTACHED GARAGE WITH FRONT FACING DOORS CAN BE SETBACK 21.982' (6.7m). THE GARAGE IN THIS CASE CAN ONLY BE 50% FORWARD OF THE FRONT OF THE HOUSE. A THIRD PARKING BAY DOOR MUST BE SET BACK 2.95' (0.9m) FROM THE FIRST TWO PARKING BAY DOORS.
- 50% OF THE REAR FACE MAY BE SETBACK 19.685' (6.0m) IF THE REMAINDER IS AT LEAST 27.887' (8.5m).
- ONE SIDE YARD MAY BE REDUCED TO 1.2m IF THE OPPOSITE SIDE IS INCREASED TO 2.4m.
- THE REAR YARD SETBACK FROM A NATURAL GAS TRANSMISSION ROW IS 24.6' (7.5m).
- IN-GROUND SWIMMING POOLS ARE CONSIDERED ACCESSORY BUILDINGS WITH REGARDS TO SETBACKS.

PERMITTED ENCROACHMENTS	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
F/P, CHIMNEYS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
HUTCHES (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BOX WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BAY WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
EAVES	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
VENEER (2)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
DECK / PORCH	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
STAIRS (3)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT

PERMITTED ENCROACHMENT NOTES:
(1) ELEMENT IN REQUIRED YARD TO BE MAX 8'0 WIDE PER WALL FACE PER FLOOR
(2) VENEER SUPPORTED BY FOUNDATION NOT ALLOWED. PolNov22-11AM/JMHouse
(3) STAIRS IN REQUIRED YARD TO BE NOT MORE THAN 3 TREADS OR 24" ABOVE GRADE.

LOT AREA

7,671.76 SF | 712.70 m2

FLOOR AREA RATIO

GROSS ALLOWABLE PERCENT	60% OF FIRST 560m2, 35% OF BALANCE		INCLUDED: FLOOR AREA, CANT'D FLOORS, ATTIC TRUSS SPACES, OUTDOOR COV. AREA (1), OVER 12'0 CLNGS X2 (2), ALL STAIRWELLS (2)
GROSS FLOOR AREA CAP	5,005.38 SF	465.00 m2	
GROSS ALLOWABLE FLOOR AREA	4,191.95 SF	389.45 m2	
DEDUCT GARAGE RESERVATION	419.80 SF	39.00 m2	
GROSS FLOOR AREA N.I.C. GARAGE	3,772.33 SF	350.45 m2	
10% OF G.F.A. FOR OUTDOOR AREA	419.19 SF	38.94 m2	
PROPOSED GROSS FLOOR AREA	4,186.31 SF	388.92 m2	NOT INCLUDED: CANT'D FIREPLACES, BOXED WINDOWS, IN-GROUND BASEMENTS, CRAWLSPACES < 4'-11"
PROPOSED GARAGE AREA	-	-	
PROP. FLOOR AREA N.I.C. GARAGE			
PROPOSED OUTDR. COV. AREA	-		

FLOOR AREA RATIO NOTES:
(1) ALL OUTDOOR COVERED AREA IS COUNTED IN FLOOR AREA RATIO EXCEPT 10% TIMES THE GROSS FLOOR AREA AS CALCULATED ABOVE. 161.46 SF (15.00 m2) OF THE 10% MUST BE RESERVED FOR A FRONT PORCH OR VERANDA. 139.93 SF (13.00 m2) OF THE 10% MUST BE RESERVED FOR COVERED OUTDOOR AREA IN THE REAR OF THE HOME. IF THE 10% IS USED ENTIRELY IN THE FRONT OR THE REAR THE RESERVE AREA MUST BE TAKEN FROM THE GROSS FLOOR AREA.
(2) STAIRWELLS AT ALL FLOOR LEVELS WILL BE INCLUDED IN FLOOR AREA RATIO AND CEILINGS GREATER THAN 12'-0" WILL BE COUNTED TWICE IN FLOOR AREA RATIO EXCEPT FOR AN ALLOWANCE OF 204.52 SF (19.00m2) FOR STAIRWELLS AND CEILINGS OVER 12'-0". ALSO, CEILINGS BETWEEN 12'0 TO 15'0 THAT ARE SLOPING ARE NOT COUNTED AS LONG AS ONE WALL IS 12'0 OR LOWER.
- ACCESSORY BUILDING OVER 107.64 SF TO BE INCLUDED IN F.A.R.
- GARAGE AREA EXCEEDING 419.80 SF RESERVATION TO BE TAKEN OUT OF F.A.R.
- ALL AREAS USED FOR COVERED PARKING ARE TO BE INCLUDED IN THE F.A.R. CALCULATION UNLESS THE COVERED PARKING IS LOCATED IN THE BASEMENT.
- GARAGE IN BASEMENT IS EXCLUDED FROM F.A.R. AND RESERVATION IS USED AS FLOOR AREA.
- THE GROSS AREA CAP OF 5,005.38 SF APPLIES TO ALL LOTS NO MATTER WHAT SIZE.
- AREAS WITHIN ATTIC TRUSSES, WHETHER FINISHED OR UNFINISHED, WILL BE INCLUDED IN THE CALCULATION OF FLOOR AREA RATIO.
- COVERED PATIOS / PORTE COCHERES THAT ARE ACCESSIBLE BY A VEHICLE WILL BE CONSIDERED A CARPORT AND INCLUDED IN FLOOR AREA RATIO
- A BASEMENT HAS AT LEAST 50% OF ITS VOLUME IN GROUND AS MEASURED FROM THE TOP OF THE SLAB TO THE TOP OF THE NEXT FLOOR ABOVE AND IN RELATION TO THE LOWER OF THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENT IN-GROUND PECENT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENTS, AS DEFINED ABOVE, MAY BE EXCLUDED FROM F.A.R. WHETHER THEY ARE LOCATED IN THE PRINCIPAL DWELLING OR AN ACCESSORY BUILDING. BASEMENT AREA BEYOND THE PERIMETER OF THE MAIN FLOOR ABOVE WILL BE COUNTED IN F.A.R.
- COVERED PATIOS AT THE BASEMENT LEVEL WHICH APPEAR TO BE MOSTLY ENCLOSED WILL BE INCLUDED IN FLOOR AREA RATIO. TO EXCLUDE THESE AREAS THEY SHOULD BE OPEN ON TWO SIDES AND HAVE ACCESS FROM THE EXTERIOR. PolNov04-11AM/JMHouse
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE FLOOR AREA THAN THE PRIN. DWELLING.

80/20 RULE:
- UPPER FLOOR NOT TO EXCEED 80% OF MAIN FLOOR AREA INCLUDING GARAGE BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK. THE 20% REDUCTION SHALL BE ON THE FRONT OR SIDES INCL. PORCH BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK.
- THE 80% UPPER FLOOR INCLUDES ALL OPEN TO BELOW AREAS AND STAIRWELLS. A VAULTED CEILING ON THE MAIN FLOOR MAY BE CONSIDERED AN OPEN TO BELOW AREA OF THE UPPER FLOOR IF THE CEILING STARTS AT A POINT HIGHER THAN 12' ABOVE THE MAIN FLOOR.

LOT COVERAGE

ALLOWABLE PERCENT CALCULATION		40% FOR LOTS 560m2 OR LESS		INCLUDED: FLOOR AREA, CANT'D FLOORS, GARAGE, ACCESSORY BUILDING, CVR'D. DECKS/PORCHES, DECKS 24" ABOVE GRADE, EAVES EXCEEDING 24", BOXED WINDOWS, POOLS 24" ABOVE GRADE, CANT'D FIREPLACES
		40%-2% FOR EACH 50m2 OVER 560m2		
		THE MINIMUM PERCENT IS 25%		
ALLOWABLE AREA	36.72%	2,816.72 SF	261.68 m2	
EXISTING PERCENT		-		
EXISTING AREA		-	-	NOT INCLUDED: STRUCT. <24" ABOVE E.G.

LOT COVERAGE NOTES:
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE LOT COVERAGE THAN THE PRINCIPAL DWELLING.

BASEMENT ACCESS WELLS

- BASEMENT ACCESS AND BASEMENT WELLS ARE PERMITTED ONLY BETWEEN THE PRINCIPAL BUILDING AND THE REAR LOT LINE AND MUST NOT EXCEED A MAXIMUM AREA OF 28.0 m2 (301.39 SQFT.), INCLUDING THE STAIRS.

BUILDING HEIGHT

PRINCIPLE BLDG ALLOWED	29.53' (9.0m) (1)	PRINCIPLE BLDG PROPOSED	-
ACCESSORY BLDG ALLOWED	16.40' (5.0m)	ACCESSORY BLDG PROPOSED	-

BUILDING HEIGHT NOTES:
(1) MAX HEIGHT FOR ROOF PITCH LESS THAN 3/12 IS 23.95' (7.30m) TO TOP OF ROOF.
- BUILDING HEIGHT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- WHEN DETERMINING THE AVERAGE EXISTING GRADE THE GRADES AT THE FOUR EXTREME CORNERS OF THE PROPOSED BUILDING ARE USED.
- BUILDING HEIGHT IS TO THE TOP OF A FLAT ROOF OR MEAN OF A PITCHED ROOF. THE MEAN BEING THE HALF WAY POINT BETWEEN THE EAVE AND THE RIDGE. THE EAVE BEING THE UNDERSIDE OF A ROOF OVERHANG AND IS TYPICALLY TAKEN AS THE UNDERSIDE OF THE SOFFIT FINISH. DORMERS WHICH OCCUPY MORE THAN 25% OF THE ROOF PLANE THEY SIT ON WILL HAVE THEIR EVES COUNTED AS THE BASIS FOR DETERMINING EAVE TO RIDGE MEAN ROOF HEIGHT. MONOPLANE OR BUTTERFLY ROOFS WILL BE MEASURED TO THE HIGHEST POINT.

GEODETIC ELEVATIONS

ROOF PEAK ELEV	-	GARAGE SLAB @ ENTRY ELEV	-
ROOF MEAN ELEV	-	AVERAGE EXISTING GRADE	-
UPPER FLOOR CEILING ELEV	-	BASEMENT SLAB ELEV	-
UPPER FLOOR PLYWOOD ELEV	-	ALLOWABLE (M.B.E.)	-
MAIN FLOOR PLYWOOD ELEV	-	SEWER INVERT @ P.L.	-

SITE SERVICING AND M.B.E. NOTES:
- ANY LIVING SPACE PROPOSED BELOW GRADE REQUIRES AN M.B.E. TO BE ESTABLISHED. THIS CAN BE CERTIFIED BY AN ENGINEER, WHICH IS TYPICALLY BASED ON STORM SERVICE OR PUMP/PIT DESIGN, OR CAN BE ESTABLISHED BY USING THE LOWEST CENTER OF ROAD ADJACENT TO THE LOT PLUS 0.3m.
- M.B.E. BASED ON STORM SERVICE IS USUALLY INVERT PLUS A MINIMUM OF 0.6m BUT MAY BE HIGHER DUE TO HYDRALIC GRADE CALCULATIONS. M.B.E. BASED ON ROCK PIT OR PUMP IS TYPICALLY OVERFLOW ELEVATINO PLUS 0.3m.
- ROCK PIT OR PUMPING IS NOT ALLOWED UNLESS THE PROPOSED MAIN FLOOR IS LOWER THAN THE STORM SERVICE OR FRONTING DITCH, IN WHICH CASE AND ENG'D SYSTEM IS ALLOWED.
- PERIMETER DRAINAGE MAY NOT BE REQUIRED IF APPROVED BY A PROFESSIONAL ENGINEER.

DRIVEWAY

ALLOWABLE SLOPE	15.0% ON COLLECTOR ROADS AND 10% ON ARTERIAL ROADS
PROPOSED SLOPE	-
MAX WIDTH @ P.L.	6.0m FROM ROAD TO P/L THEN 8.0m FROM P/L TO GARAGE

DRIVEWAY NOTES:
- THE AREA OF THE DRIVEWAY MUST NOT EXCEED 33% OF THE AREA OF THE FRONT YARD.
- DRIVEWAY MUST BE IN THE LOCATION PROVIDED ON THE CIVIL ENGINEERING DRAWINGS.
- DRIVEWAY MUST MEET EXISTING GRADE AT LOT LINE +- 4" (0.1m)

PARKING:
- THREE (3) OFF STREET PARKING SPACES ARE REQUIRED FOR EACH SINGLE FAMILY DWELLING.
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A SINGLE GARAGE = 10.5' (3.2m) x 20.0' (6.1m)
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A DOUBLE GARAGE = 18.7' (5.7m) x 20.0' (6.1m)

DATE	DESCRIPTION	INITIALS	DATE	DESCRIPTION	INITIALS
JAN-11-2022	DRAFT WD.	A.J.M.	MAY-27-2022	FOR PERMIT	A.J.M.
MAY-10-2022	FOR PERMIT	A.J.M.	JULY-22-2022	FOR PERMIT	A.J.M.

PLAN # ADD./RENO

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

SITE PLAN, SCHEMATICS, INFO

PROPOSED SCOTEN RESIDENCE RENOVATION / ADDITION

THESE DRAWINGS SHOULD BE PRINTED ON 34"x24" PAPER TO BE AT SCALE INDICATED. ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

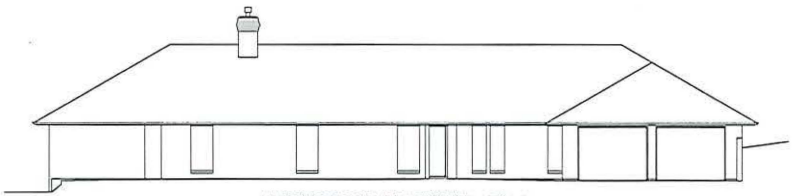
JANUARY 13, 2023
SCALE AS NOTED

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.
#38 - 1959 - 152nd STREET
SOUTH SURREY, B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454
E-MAIL: info@raymondbonterdesigner.ca

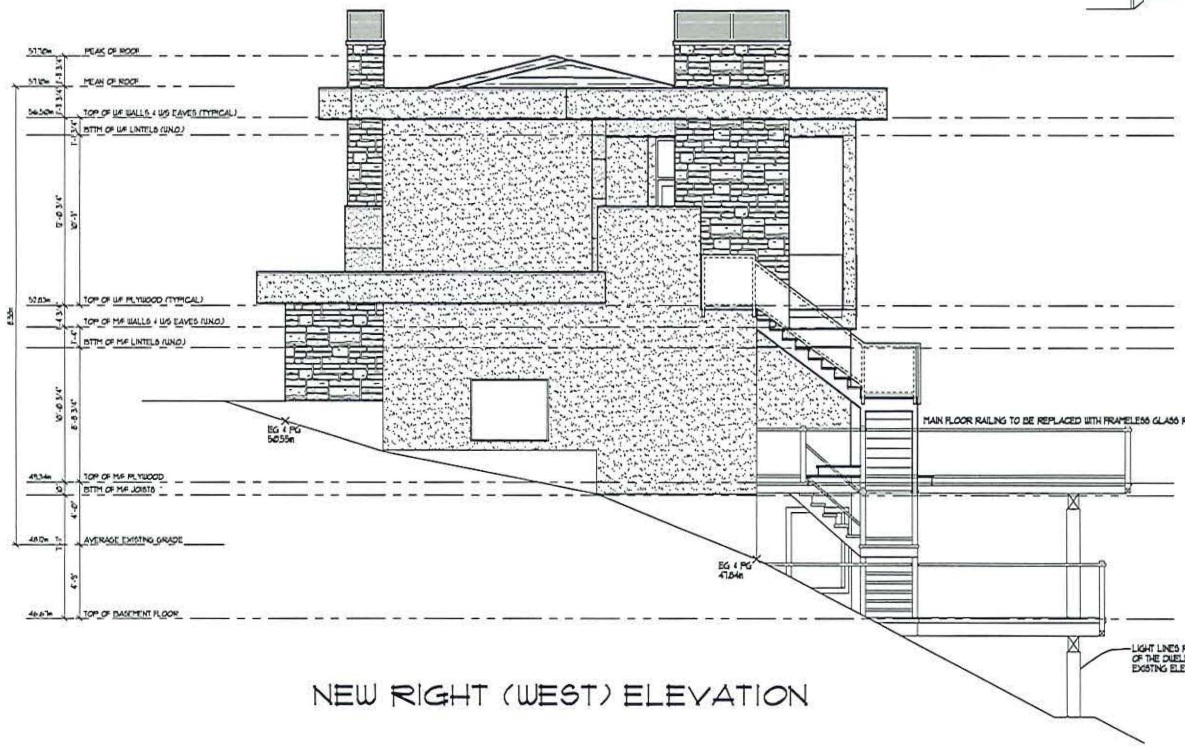
NEW FRONT (NORTH) ELEVATION

TYPICAL ELEVATION CONSTRUCTION NOTES

- WALL CLADDING TO BE ON RAIN SCREEN (MIN. 10mm STRAPPING) U.N.O.
- CAULK JOINTS BETWEEN DISSIMILAR MATERIALS
- FLASH ALL UNPROTECTED EXTERIOR OPENINGS
- FLASHINGS TO BE MIN. 6% SLOPE AND HAVE END DAMS
- FLASH ALL HORIZONTAL INTERSECTIONS OF DIFFERING WALL FINISHES
- ALL WINDOW OPENERS TO BE CONFIRMED BY THE OWNER
- DOORS TO CONFORM TO SECTION 9.6 OF THE BUILDING CODE
- WINDOWS TO CONFORM TO SECTION 9.7 OF THE BUILDING CODE
- SEE ROOF PLAN FOR ROOF PITCHES AND OVERHANGS
- ALL HANDRAILS & GUARDS TO B.C.B.C. 2018 SEC. 9.8.7 AND 9.8.8.
- ALL ROOF SOFFITS WITHIN 12m OF A LOT LINE MUST BE SOLID, UNVENTED, AND PROTECTED AS PER B.C.B.C. 9.10.15.5.
- ALL EXTERIOR WINDOWS AND DOORS TO MEET NORTH AMERICAN FENESTRATION STANDARDS AS PER BCBC 2018 SECTION 9.7.4.2
  A) AAMA/WDMA/CSA 101/I.S.2/A440, 'NAFS - NORTH AMERICAN FENESTRATION STANDARD/ SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS' (HARMONIZED STANDARD)
  B) A440S1, 'CANADIAN SUPPLEMENT TO AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS'

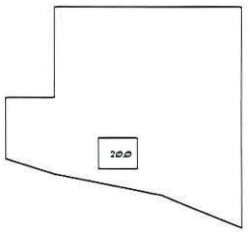


EXISTING FRONT (NORTH) ELEVATION
SCALE 1/8" = 1'-0"



NEW RIGHT (WEST) ELEVATION

EXISTING RIGHT (WEST) ELEVATION
SCALE 1/8" = 1'-0"



RIGHT WALL FACE
SCALE: 1/8" = 1'-0"

LIMITING DISTANCE CALCULATIONS	
EXPOSED BUILDING FACE AREA	630.01 SF
PROPOSED GLAZED AREA	20.00 SF
LIMITING DISTANCE	5.9' (1.8m)
PERMITTED GLAZED PERCENT	86%
PROPOSED GLAZED PERCENT	3.1%

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

ELEVATIONS - FRONT, RIGHT

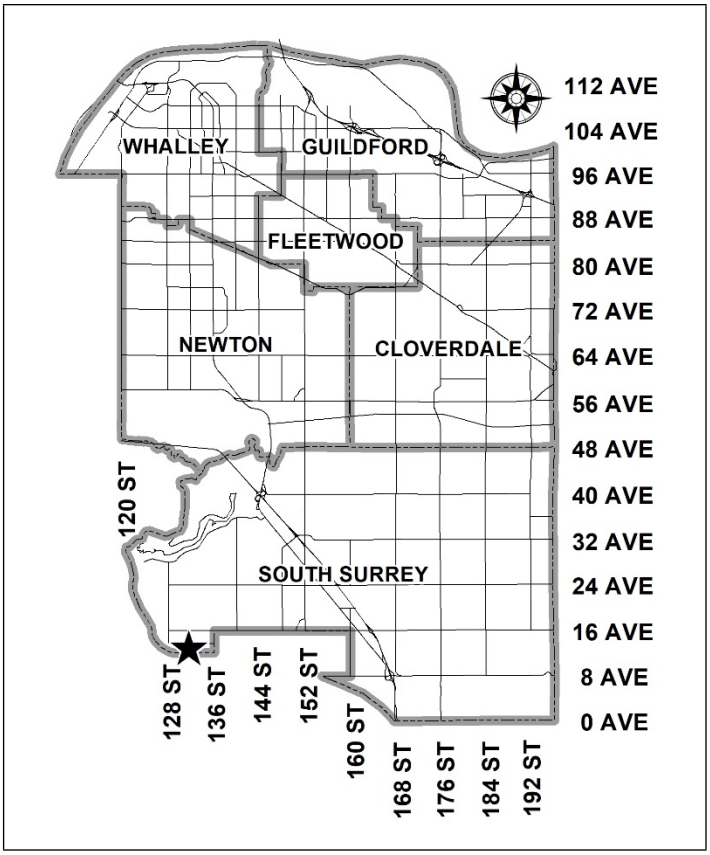
THESE DRAWINGS SHOULD BE PRINTED ON 24"x36" PAPER TO BE AT SCALE INDICATED, ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

MAY 27, 2022
SCALE 1/4" = 1'-0"

SHEET 2 OF 10

#88 - 1359 - 152nd STREET
SOUTH SURREY, B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454-4211
E-MAIL: info@raymondbonterdesigner.ca

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.



City of Surrey
PLANNING & DEVELOPMENT REPORT
Application No.: 7922-0173-00
Planning Report Date: July 24, 2023

PROPOSAL:

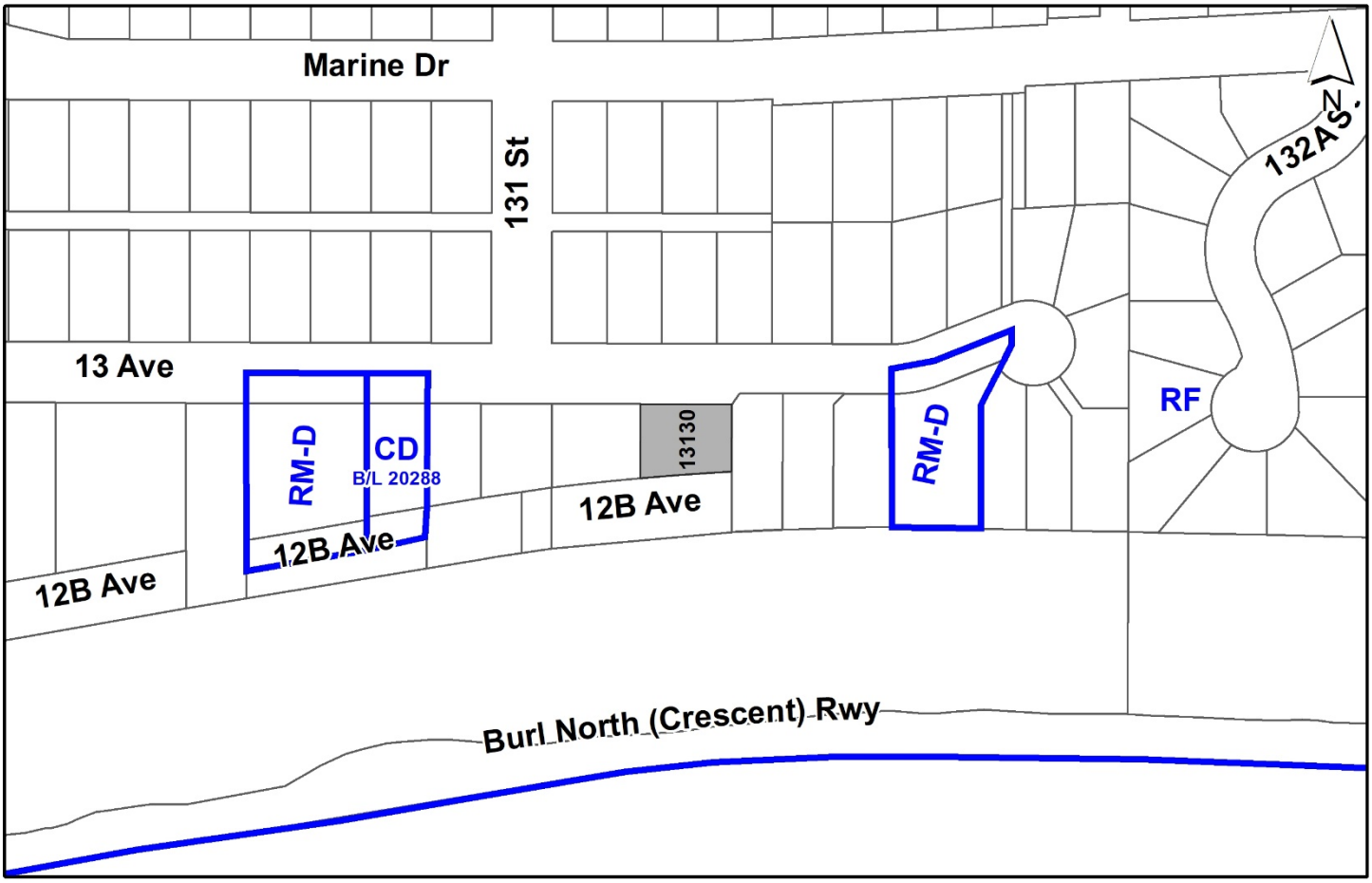
- **Development Permit** for Hazard Lands (Steep Slopes)
- **Development Variance Permit**

to permit the addition of a second storey to an existing single family dwelling.

LOCATION: 13130 - 13 Avenue

ZONING: RF

OCP DESIGNATION: Urban



RECOMMENDATION SUMMARY

- Approval to draft Development Permit for Hazard Lands (Steep Slopes).
- Approval for Development Variance Permit to proceed to Public Notification.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Proposing to reduce the front yard setback and off-street parking requirements of the "Single Family Residential Zone (RF)".

RATIONALE OF RECOMMENDATION

- The subject property was originally created through a subdivision in 1930. An existing one-storey dwelling with a basement level is currently on the property with front setbacks that do not comply with the requirements of the RF Zone.
- Properties on the south side of 13 Avenue in this area face constraints due to the shallow lot depths and steep rear yards backing onto the Semiahmoo Bay bluffs. The subject property is one of several on the block (including 13102, 13108, and 13142 13 Avenue) with a driveway sited within the City Road right of way. Because of this, the property only has two off-street parking spaces, both of which are in the existing dwelling's garage.
- Given the historic condition of the lot, no addition to the existing dwelling would be possible without a variance of the front yard setback and off-street parking. It is likely that construction of an entirely new dwelling would also require a variance to the RF setbacks.
- The proposed second storey addition will not result in a floor area that exceeds the maximum permitted under the RF zone.
- The proposal complies with the Development Permit guidelines in the OCP for Hazard Lands (Steep Slopes) by adding new building density towards the front of the property so that permitted floor area increases are sited away from the steepest portion of the property.

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council authorize staff to draft Development Permit No. 7922-0173-00 for Hazard Lands (Steep Slopes).

2. Council approve Development Variance Permit No. 7922-0173-00 (Appendix II) varying the following, to proceed to Public Notification:

    (a) In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of a principal building is reduced from 7.5 metres to 0.5 metres; and

    (b) In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.

3. Council instruct staff to resolve the following issues prior to final adoption:

    (a) submission of a geotechnical report to the satisfaction of the General Manager, Planning & Development;

    (b) registration of a Section 219 Restrictive Covenant that requires the owner to develop the site in accordance with the conditions in the finalized geotechnical report; and

    (c) registration of a Section 219 Restrictive Covenant prohibiting secondary suites due to the lack of a parking pad.

SITE CONTEXT & BACKGROUND

Direction	Existing Use	OCP Designation	Existing Zone
Subject Site	Single family residential dwelling	Urban	RF
North (Across 13 Avenue):	Single family residential dwelling	Urban	RF

Direction	Existing Use	OCP Designation	Existing Zone
East (Abutting):	Single family residential dwelling	Urban	RF
South (Abutting):	Greenbelt	Urban	RF
West (Abutting):	Single family residential dwelling	Urban	RF

Context & Background

- The subject property is located on the south side of 13 Avenue and backs onto a greenbelt and the Burlington Northern Santa Fe Rail right of way overlooking Semiahmoo Bay in South Surrey. The subject property was originally created through a subdivision in 1930.

- The property is zoned "Single Family Residential Zone (RF)", is 713 square metres in area, 30.48 metres in width, and 22.33 metres in depth. Under the RF zone, the minimum lot depth is 28 metres.

- The property has an existing one-storey dwelling with walk-out basement. The building was constructed under permit close to the front lot line. The front yard setback is approximately 0.5 metres from building face to lot line and does not conform with the current RF zone's minimum front yard setback of 7.5 metres.

- Properties on the south side of 13 Avenue in this area have faced historic constraints due to the shallow lot depths and steep rear yards backing onto the Semiahmoo Bay bluffs. The subject property is one of several on the block (including 13102, 13108, and 13142 13 Avenue) with a driveway sited in the City Road right of way. Due to this layout, the property only has two off-street parking spaces, both of which are in the existing dwelling's garage.

- There is a precedent for variances to address building envelope, steep slopes, and historic non-conforming building issues on adjacent properties on the south side of 13 Avenue.

- The subject property abuts 13108 13 Avenue. Development Variance Permit No. 7914-0179-00 at 13108 13 Avenue was issued at the Regular Council – Public Hearing meeting on September 29, 2014. This variance was for the historic non-conforming dwelling and to shift additional building space towards the northern portion of the site. Under the variance, the lot coverage of the RF Zone was increased from 34% to 40% and the minimum front yard setback was reduced from 7.5 metres to 0.5 metres.

DEVELOPMENT PROPOSAL

Planning Considerations

- The applicant is proposing a Development Permit (Steep Slopes) and Development Variance Permit to reduce the front yard setback and off-street parking requirements to permit the addition of a second storey to the existing dwelling. The second storey is proposed to be sited over the first storey with no change to the lot coverage.

- The proposed variances fall under the criteria for minor development variance permits under the Development Variance Permit Delegation Bylaw, 2023, No. 20620. A public notification was conducted from June 6th to June 20th. Based on comments from the public notification, the Delegated Official has referred the application for Council's consideration.

- Concerns raised through the public notification included impacts from an increase in floor area without an increase in off-street parking and the significance of the front yard setback.

- Under the "Single Family Residential Zone (RF)", the subject property has a maximum permitted floor area of 389.55 square metres. The proposed second storey addition would result in a total floor area of 361.47 square metres and a building height of 8.98 metres, meeting the maximum height of 9 metres under the RF zone.

- The applicant also proposes retaining wall improvements on the rear of the property. These improvements are intended to shore off and stabilize the front portion of the property.

- The subject lot is constrained, having a lot depth that is less than the "Single Family Residential Zone (RF)" minimum of 28 metres and having steep slopes constraints at the rear of the property. The RF setbacks are intended for conforming lots that are not encumbered with additional setbacks.

- Given the shallow lot depth, it is probable that construction of an entirely new dwelling would still require a variance to the front yard setbacks.

- Reduction of the front yard setback is in keeping with the Development Permit guidelines in the OCP for Hazard Lands (Steep Slopes) to consolidate development near the front lot line and away from the steepest portion of the property in the rear.

- The applicants cannot proceed with any addition to the existing driveway without a variance to relax the off-street parking requirements or a successful road closure application and purchase of the City Road right-of-way. Construction of a new driveway and garage on the lot are not practical with retention of the house, as it would require significant demolition of the existing dwelling. The costs for acquisition of the Road right-of-way may be prohibitive. It should also be noted that consolidation of a segment of the Road right-of-way would increase the permitted floor area for the subject property under the RF zone.

- The applicants have advised that they may consider an application for acquisition of the City Road right-of-way containing the driveway for a future renovation, which would bring the property's off-street parking into conformance with the RF zone.

Referrals

Engineering:	The Engineering Department has no objection to the project subject to the registration of a Section 219 Restrictive Covenant prohibiting the addition of a secondary suite as a condition of support for the off-street parking variance.
Parks, Recreation & Culture:	Fun Fun Park is the closest park with active amenities, which includes a playground and bike park. The park is 900 metres walking distance from the development. 131E Greenbelt is the closest parkland with natural area and is 80 metres walking distance from the development.

POLICY & BY-LAW CONSIDERATIONS

Zoning By-law

Setback/Parking

- The applicant is requesting the following variances to the Zoning By-law, 1993, No. 12000:
    - In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of a principal building is reduced from 7.5 metres to 0.5 metres; and
    - In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.
- The proposed second storey addition will not result in a floor area that exceeds the maximum permitted under the "Single Family Residential Zone (RF)".
- No addition to the existing dwelling is possible without relaxation of the front yard setback for the existing dwelling. The proposal does not propose bringing the existing dwelling any closer to the front lot line and does not propose removing any existing parking.
- The addition of a second storey over the existing building footprint conforms with the Development Permit guidelines in the OCP for Hazard Lands (Steep Slopes) by clustering additional building away from the steep portion of the site.
- Staff support the requested variances to proceed for consideration.

PUBLIC ENGAGEMENT

- Public notification letters were sent on June 6, 2023. Staff received three (3) responses from neighbouring residents. One respondent requested more information and two respondents objected to the proposal.
- Residents' comments are summarized below with staff comments in italics.

- One respondent expressed opposition given that the variance would permit a significant floor area increase for the existing dwelling. The respondent noted that the current house has a narrow driveway that is already occupied and that there is already significant street parking on both sides of 13 Avenue for access to the beach access routes. An increase in floor area and subsequent increase in occupants would result in parking from the property spilling out into the street. The respondent noted that a new build conforming with the 7.5 metres front yard setback would have room for a large garage and a wide driveway.

  Removal of the existing dwelling and construction of an entirely new dwelling would be a significant undertaking, whereas the property may seek a variance to build up to the permitted floor area under the existing zoning. The applicant does not propose to remove any existing parking from the site or the driveway. Even under construction of a new house, it is likely that a front yard setback variance would still be required as the lot depth is 22.33 metres, and the RF setbacks are intended for a minimum lot depth of 28 metres.

- One respondent expressed opposition given that the proposed front yard setback reduction would be a major relaxation. The respondent noted that street parking on 13 Avenue is already a major problem. The respondent indicated that they did not have an issue with the addition of floor area so long as they did not exceed the maximum height under the zone.

  It is accurate that the proposed second storey comes as close as 1.3 metres to the front lot line. However, any addition to the existing dwelling would require a front yard setback relaxation and a reduction of the off-street parking requirements. The applicants have provided plans indicating that the additional storey will result in a house that conforms to the maximum building height of 9 metres under the RF zone.

DEVELOPMENT PERMITS

Hazard Lands (Steep Slope) Development Permit Requirement

- The subject property falls within the Hazard Lands (Steep Slope) Development Permit Area (DPA) in the OCP, given that the site contains steep slopes in excess of 20%**.** The Hazard Land (Steep Slope) Development Permit is required to protect developments from hazardous conditions.

- The subject site sits on the Semiahmoo Bay bluffs above the Burlington North Railway line. The rear of the property has a slope of approximately 37% gradient.

- A geotechnical report, prepared by Sergey Makhov, *EIT* and Tranh V. Lee, *P.Eng.* of Terran Geotechnical Consultants Ltd. and dated January 23, 2023, was peer reviewed by Liam Jones, *EIT* and Andreas C.D. Siagris, *P.Eng* of GeoPacific Consultants Ltd. The peer review identified some recommendations for additional information and update of the slope stability analysis. Terran Geotechnical Consultants Ltd. provided these updates via a revised report dated May 24, 2023.

- The report and peer review were reviewed by staff and found to conform to the OCP Development Permit guidelines for Hazard Lands, with some modifications to the content of the report still required. The finalized geotechnical report will be incorporated into the Development Permit.

- The geotechnical report investigated issues related to slope stability and natural storm water drainage, from a geotechnical perspective, to determine the feasibility of development the site and proposing recommendations to ensure the ongoing stability of the slope.

- The consultant has determined that the development is feasible provided that the recommendations in their report are incorporated into the overall design of the site, including removal of loose fill and placement of structural fill during site preparation, retention of permanent vegetation, and prohibition of extensive irrigation.

- Registration of a Section 219 Restrictive Covenant that requires the owner to develop the site in accordance with the conditions in the geotechnical report is required as a condition of final adoption.

- At Building Permit stage, the Building Division will require Letters of Assurance from a geotechnical engineer to ensure that the building plans comply with the recommendations in the approved geotechnical report.

TREES

- Freedom Sukenick, ISA Certified Arborist of Freedom Tree Care Ltd 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	1	0	1
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Japanese Maple	1	0	1
Coniferous Trees			
Cedar	1	0	1
Grand Fir	1	0	1
Blue Spruce	1	0	1
Total (excluding Alder and Cottonwood Trees)	**5**	**0**	**5**

Total Replacement Trees Proposed (excluding Boulevard Street Trees)	**N/A**
Total Retained and Replacement Trees	**N/A**

Contribution to the Green City Program	**N/A**

- The Arborist Assessment states that there are a total of five (5) mature trees on the site, excluding Alder and Cottonwood trees. There is one existing Alder tree, representing approximately 16% of the total trees on the site. It was determined that all trees can be retained as part of this development proposal.

- 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, including Alder and Cottonwood that are within a streamside protection area. No replacement trees are required on the site.

- In summary, a total of six (6) trees are proposed to be retained or replaced on the site.

INFORMATION ATTACHED TO THIS REPORT
The following information is attached to this Report:

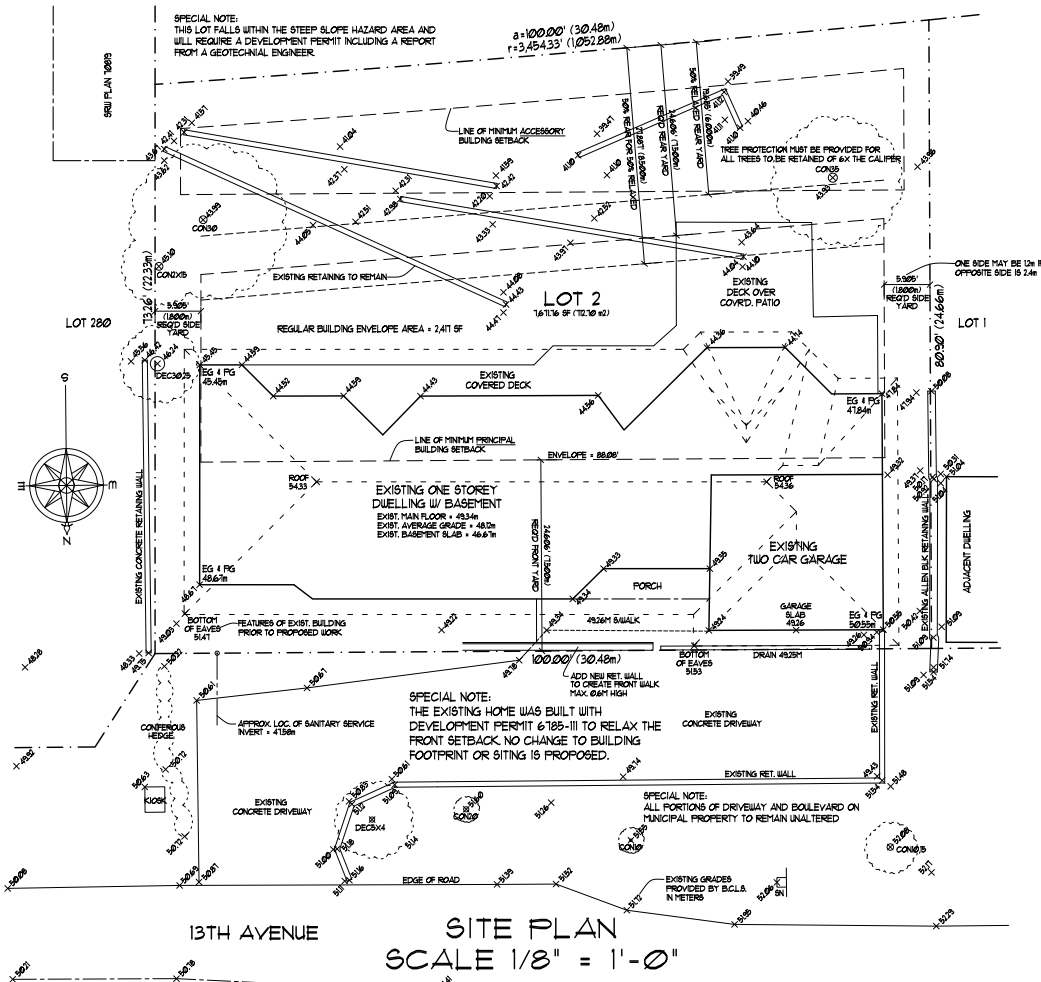
Appendix I. Site Plan and Front Elevation
Appendix II. Development Variance Permit 7922-0173-00
Appendix III. Summary of Tree Survey and Tree Preservation

approved by Shawn Low

Don Luymes
Acting General Manager
Planning and Development

JK/ar

Appendix I



GENERAL PROJECT NOTES

- DIMENSIONS TO BE TAKEN FROM OUTSIDE FACE OF SHEATHING FOR EXT. WALLS AND CENTRE OR FACE OF STUDS FOR INT. WALLS AS SHOWN.
- ALL HEIGHT DIMENSIONS ON FLOOR PLANS ARE FROM TOP OF FLOOR PLYWOOD
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR BUILDER TO CHECK AND VERIFY ALL DIMENSIONS AND TO ENSURE ALL WORK CONFORMS TO ALL LOCAL BYLAWS AND REGULATIONS, AND TO THE CURRENT EDITION OF THE BRITISH COLUMBIA BUILDING CODE.
- THE OWNER AND/OR CONTRACTOR IS TO ENSURE THAT THE LANDSCAPING MEETS THE REQUIREMENTS OF THE APPLICABLE BY-LAWS AND REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. IF NECESSARY, UTILIZE PLANTING BEDS AROUND THE BUILDING(S) TO ENSURE THE FINISHED LOT GRADING BLENDS INTO THE EXISTING LOT GRADING.
- BRING FOOTINGS TO UNDISTURBED, SOUND BEARING SOIL BELOW FROSTLINE (18" MIN. BELOW GRADE)
- APPLY ASPHALT EMULSION TO FOUNDATION WALLS BELOW GRADE
- FOUNDATION CONCRETE STRENGTH TO BE MIN. 20 MPa
- INTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 30 MPa
- EXTERIOR SLAB CONCRETE STRENGTH TO BE MIN. 32 MPa WITH 5-8% AIR ENTRAINMENT
- LUMBER IN CONTACT WITH CONCRETE TO BE DAMPPROOFED, AND ANCHORED WITH 1/2" A.B. @ 6'-0" O.C. MAX.
- STRUCTURAL LUMBER TO BE #2 D.FIR-L UNO.
- LINTELS TO BE 2-2x10 D.FIR-L UNO.
- PROVIDE SOLID LAMINATED STUDDING @ BEARING POINTS
- DOUBLE JOISTS @ PARALLEL PARTITIONS (OPT. 2x10 BLOCKING @ 24" O.C.)
- BEDROOM WINDOWS MUST CONFORM TO B.C.B.C. SEC. 9.7.1.3
- DWELLING MUST MEET CURRENT B.C. VENTILATION CODE
- MIRRORED DOORS ARE NOT PERMITTED @ WALK-IN CLOSETS
- LINO OR EQUAL REQ'D ON BATHROOM FLOORS
- WATERPROOF WALLBOARD REQ'D AT TILE SURROUNDS @ TUBS AND SHOWERS
- PROVIDE A BOND-BREAKING MATERIAL BETWEEN FOUNDATION OR ROCK AND SLABS
- IN SURREY FOLDING PANEL DOORS MUST BE COVERED BY A ROOF OR FLOOR AND ENGINEER'S APPROVAL AND SCHEDULE "B" REQUIRED. CitanNov03-11/AM/MHouse

OUTDOOR COVERED AREA CALCULATION:

PROPOSED FOR FRONT	21.71 SQFT.
RESERVE FOR FRONT	161.46 SQFT.
RESERVE REMAINING	13.429 SQFT.
PROPOSED FOR REAR	553.21 SQFT.
TOTAL PROP. OUTDOOR COVERED AREA	580.38 SQFT.
TOTAL RESERVE REMAINING	134.29 SQFT.
TOTAL COVERED AREA AND RESERVE	714.67 SQFT.
10% OUTDOOR COVERED AREA ALLOWANCE	419.19 SF SQFT.
BALANCE COUNTED TOWARDS F.A.R.	295.48 SQFT.

EXTENDED HEIGHT CEILING CALCULATION:

PROPOSED EXTENDED HEIGHT CEILINGS	96.23 SQFT.
EXTENDED HEIGHT CEILING ALLOWANCE	209.52 SQFT.
BALANCE COUNTED TOWARDS F.A.R.	0.00 SQFT.

GROSS FLOOR AREA CALCULATION:

PROPOSED UPPER FLOOR AREA		1,406.50 SQFT.
PROPOSED MAIN FLOOR AREA		2,049.30 SQFT.
TOTAL FLOOR AREA		3,455.80 SQFT.
PROPOSED GARAGE AREA	435.03 SQFT.	
RESERVE FOR GARAGE	419.80 SQFT.	
RESERVE REMAINING	0.00 SQFT.	
GARAGE AREA COUNTED TOWARDS F.A.R.		435.03 SQFT.
TOTAL FLOOR AREA INCLUDING GARAGE		3,890.83 SQFT.
OUTDOOR COVERED AREA OVERAGE		295.48 SQFT.
EXTENDED HEIGHT CEILING OVERAGE		0.00 SQFT.
TOTAL PROPOSED GROSS FLOOR AREA		4,186.31 SQFT.
MAX. PERMITTED GROSS FLOOR AREA		4,191.95 SQFT.

ZONING ANALYSIS

BUILDING SETBACKS

STRUCTURE	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
PRINCIPAL BUILDING	24.60m' (15m)	24.60m' (15m)	5.90m' (12m)	11.81' (3.6m)
ACCESSORY BUILDINGS	59.05m' (18.0m)	5.90m' (12m)	3.28m' (10m)	24.60m' (15m)

BUILDING SETBACK NOTES:
- FRONT SETBACK FOR FIRST FLOOR MAY BE 11.81' (3.5m) FOR 50% OF THE FRONT EXCLUDING GARAGE
- IF 50% OF THE FRONT IS SETBACK 29.52' (9.0m) THEN AN ATTACHED GARAGE WITH FRONT FACING DOORS CAN BE SETBACK 21.98' (6.7m). THE GARAGE IN THIS CASE CAN ONLY BE 50% FORWARD OF THE MAIN FACE OF THE HOUSE. A THIRD PARKING BAY DOOR MUST BE SET BACK 2.95' (0.9m) FROM THE FIRST TWO PARKING BAY DOORS.
- 50% OF THE REAR FACE MAY BE SETBACK 19.68' (6.0m) IF THE REMAINDER IS AT LEAST 17.68' (5.5m).
- ONE SIDE YARD MAY BE REDUCED TO 12m IF THE OPPOSITE SIDE IS INCREASED TO 2.4m.
- THE REAR YARD SETBACK FROM A NATURAL GAS TRANSMISSION ROW IS 24.6' (7.5m).
- IN-GROUND SWIMMING POOLS ARE CONSIDERED ACCESSORY BUILDINGS WITH REGARDS TO SETBACKS.

PERMITTED ENCROACHMENTS	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
F/P CHIMNEYS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
HUTCHES (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BOX WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
BAY WINDOWS (1)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
EAVES	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
VENEER (2)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
DECK / PORCH	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)	2.0' (0.6m)
STAIRS (3)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT

PERMITTED ENCROACHMENT NOTES:
(1) ELEMENT IN REQUIRED YARD TO BE MAX 8'0 WIDE PER WALL FACE PER FLOOR
(2) VENEER SUPPORTED BY FOUNDATION NOT ALLOWED. PolNov21-11/AM/MHouse
(3) STAIRS IN REQUIRED YARD TO BE NOT MORE THAN 3 TREADS OR 24" ABOVE GRADE.

LOT AREA

	7,611.76 SF	112.710 m2

FLOOR AREA RATIO

GROSS ALLOWABLE PERCENT	60% OF FIRST 560m2, 35% OF BALANCE		INCLUDED
GROSS FLOOR AREA CAP	5,000.38 SF	465.00 m2	FLOOR AREA
GROSS ALLOWABLE FLOOR AREA	4,119.95 SF	389.45 m2	CAN'D FLOORS
DEDUCT GARAGE RESERVATION	419.80 SF	39.00 m2	ATTIC TRUSS SPACES
GROSS FLOOR AREA N.I.C. GARAGE	3,772.33 SF	350.45 m2	OUTDOOR COV. AREA (1)
10% OF G.F.A. FOR OUTDOOR AREA	419.15 SF	38.94 m2	OVER 12'0 CLNGS (2) (3)
			ALL STAIRWELLS (2)
PROPOSED GROSS FLOOR AREA	4,186.31 SF	388.91 m2	NOT INCLUDED
PROPOSED GARAGE AREA			CAN'D FIREPLACES
PROP. FLOOR AREA N.I.C. GARAGE			BOXED WINDOWS
PROPOSED OUTDR. COV. AREA			IN-GROUND BASEMENTS
			CRAWLSPACES < 4'-1"

FLOOR AREA RATIO NOTES:
(1) ALL OUTDOOR COVERED AREA IS COUNTED IN FLOOR AREA RATIO EXCEPT 10% TIMES THE GROSS FLOOR AREA AS CALCULATED ABOVE (419.48 SF (39.00 m2) OF THE 10% MUST BE RESERVED FOR A FRONT PORCH OR VERANDA, 139.83 SF (13.00 m2) OF THE 10% MUST BE RESERVED FOR COVERED OUTDOOR AREA IN THE REAR OF THE HOME. IF THE 10% IS USED ENTIRELY IN THE FRONT OR THE REAR THE RESERVE AREA MUST BE TAKEN FROM THE GROSS FLOOR AREA.
(2) STAIRWELLS AT ALL FLOOR LEVELS WILL BE INCLUDED IN FLOOR AREA RATIO AND CEILINGS GREATER THAN 12'-0" WILL BE COUNTED TWICE IN FLOOR AREA RATIO EXCEPT FOR AN ALLOWANCE OF 209.52 SF (19.00m2) FOR STAIRWELLS AND CEILINGS OVER 12'-0". ALSO, CEILINGS BETWEEN 12'0 TO 16'0 THAT ARE SLOPING ARE NOT COUNTED AS LONG AS ONE WALL IS 12'0 OR LOWER.
- ACCESSORY BUILDING OVER 107.64 SF TO BE INCLUDED IN F.A.R.
- GARAGE AREA EXCEEDING 419.80 SF RESERVATION TO BE TAKEN OUT OF F.A.R.
- ALL AREAS USED FOR COVERED PARKING ARE TO BE INCLUDED IN THE F.A.R. CALCULATION UNLESS THE COVERED PARKING IS LOCATED IN THE BASEMENT.
- GARAGE IN BASEMENT IS EXCLUDED FROM F.A.R. AND RESERVATION IS USED AS FLOOR AREA.
- THE GROSS AREA CAP OF 5,000.38 SF APPLIES TO ALL LOTS NO MATTER WHAT SIZE.
- AREAS WITHIN ATTIC TRUSSES, WHETHER FINISHED OR UNFINISHED, WILL BE INCLUDED IN THE CALCULATION OF FLOOR AREA RATIO.
- COVERED PATIOS / PORTE COCHERES THAT ARE ACCESSIBLE BY A VEHICLE WILL BE CONSIDERED A CARPORT AND INCLUDED IN FLOOR AREA RATIO.
- A BASEMENT HAS AT LEAST 50% OF ITS VOLUME IN GROUND AS MEASURED FROM THE TOP OF THE SLAB TO THE TOP OF THE NEXT FLOOR ABOVE AND IN RELATION TO THE LOWER OF THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENT IN-GROUND PECENT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENTS, AS DEFINED ABOVE, MAY BE EXCLUDED FROM F.A.R. WHETHER THEY ARE LOCATED IN THE PRINCIPAL DWELLING OR AN ACCESSORY BUILDING. BASEMENT AREA BEYOND THE PERIMITER OF THE MAIN FLOOR ABOVE WILL BE COUNTED IN F.A.R.
- COVERED PATIOS AT THE BASEMENT LEVEL, WHICH APPEAR TO BE TOTALLY ENCLOSED WILL BE INCLUDED IN FLOOR AREA RATIO. TO EXCLUDE THESE AREAS THEY SHOULD BE OPEN ON TWO SIDES AND HAVE ACCESS FROM THE EXTERIOR. PolNov04-11/AM/MHouse
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE HOME FLOOR AREA THAN THE PRIN DWELLING.

80/20 RULE:

- UPPER FLOOR NOT TO EXCEED 80% OF MAIN FLOOR AREA INCLUDING GARAGE BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK. THE 20% REDUCTION SHALL BE ON THE FRONT OR SIDES INCL. PORCH BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK.
- THE 80% UPPER FLOOR INCLUDES ALL OPEN TO BELOW AREAS AND STAIRWELLS. A VAULTED CEILING ON THE MAIN FLOOR MAY BE CONSIDERED AN OPEN TO BELOW AREA OF THE UPPER FLOOR IF THE CEILING STARTS AT A POINT HIGHER THAN 0' ABOVE THE MAIN FLOOR.

LOT COVERAGE

ALLOWABLE PERCENT CALCULATION		45% FOR LOTS 560m2 OR LESS	INCLUDED
		40% -7% FOR EACH 93m2 OVER 560m2	FLOOR AREA
		THE MINIMUM PERCENT IS 25%	CAN'D FLOORS
ALLOWABLE AREA	36.72%	2,796.12 SF	261.68 m2	GARAGE
EXISTING PERCENT				ACCESSORY BUILDING
EXISTING AREA				CVRD. DECKS/PORCHES
				DECKS 24" ABOVE GRADE
				EAVES EXCEEDING 24"
				BOXED WINDOWS
				POOLS 24" ABOVE GRADE
				CAN'D FIREPLACES
				NOT INCLUDED
				STRUCT. <24" ABOVE EG.

LOT COVERAGE NOTES:
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE LOT COVERAGE THAN THE PRINCIPAL DWELLING.

BASEMENT ACCESS WELLS

- BASEMENT ACCESS AND BASEMENT WELLS ARE PERMITTED ONLY BETWEEN THE PRINCIPAL BUILDING AND THE REAR LOT LINE AND MUST NOT EXCEED A MAXIMUM AREA OF 28.0 m2 (301.39 SQFT.), INCLUDING THE STAIRS.

BUILDING HEIGHT

PRINCIPLE BLDG ALLOWED	29.53' (9.0m) (1)	PRINCIPLE BLDG PROPOSED	.
ACCESSORY BLDG ALLOWED	16.40' (5.0m)	ACCESSORY BLDG PROPOSED	.

BUILDING HEIGHT NOTES:
(1) MAX HEIGHT FOR ROOF PITCH LESS THAN 3/12 IS 23.95' (7.30m) TO TOP OF ROOF.
- BUILDING HEIGHT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- WHEN DETERMINING THE AVERAGE EXISTING GRADE THE GRADES AT THE FOUR EXTREME CORNERS OF THE PROPOSED BUILDING ARE USED.
- BUILDING HEIGHT IS TO THE TOP OF A FLAT ROOF OR MEAN OF A PITCHED ROOF. THE MEAN BEING THE HALF WAY POINT BETWEEN THE EAVE AND THE RIDGE. THE EAVE BEING THE UNDERSIDE OF A ROOF OVERHANG AND IS TYPICALLY TAKEN AS THE UNDERSIDE OF THE SOFFIT FINISH. DORMERS WHICH OCCUPY MORE THAN 25% OF THE ROOF PLANE THEY SIT ON WILL HAVE THEIR EVES COUNTED AS THE BASIS FOR DETERMINING EAVE TO RIDGE MEAN ROOF HEIGHT. MONOPLANE OR BUTTERFLY ROOFS WILL BE MEASURED TO THE HIGHEST POINT.

GEODETIC ELEVATIONS

ROOF PEAK ELEV.	.	GARAGE SLAB = ENTRY ELEV.	.
ROOF MEAN ELEV.	.	AVERAGE EXISTING GRADE	.
UPPER FLOOR CEILING ELEV.	.	BASEMENT SLAB ELEV.	.
UPPER FLOOR PLYWOOD ELEV.	.	ALLOWABLE (MBE)	.
MAIN FLOOR PLYWOOD ELEV.	.	SEWER INVERT @ P.L.	.

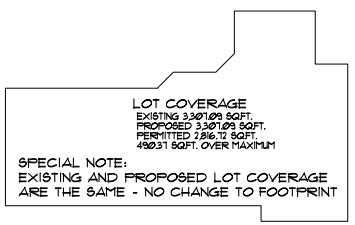
SITE SERVICING AND MBE NOTES:
- ANY LIVING SPACES PROPOSED BELOW GRADE REQUIRES AN MBE. TO BE ESTABLISHED. THIS CAN BE CERTIFIED BY AN ENGINEER, WHICH IS TYPICALLY BASED ON STORM SERVICE OR PUMP/PIT DESIGN, OR CAN BE ESTABLISHED BY USING THE LOWEST CENTER OF ROAD ADJACENT TO THE LOT PLUS 0.3m.
- MBE BASED ON STORM SERVICE IS USUALLY INVERT PLUS A MINIMUM OF 0.6m BUT MAY BE HIGHER DUE TO HYDRALIC GRADE CALCULATIONS. MBE BASED ON ROCK PIT OR PUMP IS TYPICALLY OVERFLOW ELEVATIO PLUS 0.3m.
- ROCK PIT OR PUMPING IS NOT ALLOWED UNLESS THE PROPOSED MAIN FLOOR IS LOWER THAN THE STORM SERVICE OR FRONTING DITCH, IN WHICH CASE AND ENG'D SYSTEM IS ALLOWED.
- PERIMETER DRAINAGE MAY NOT BE REQUIRED IF APPROVED BY A PROFESSIONAL ENGINEER.

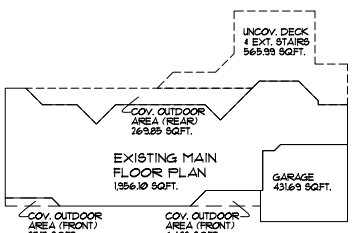
DRIVEWAY

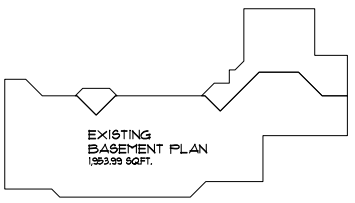
ALLOWABLE SLOPE	5.0% ON COLLECTOR ROADS AND 10% ON ARTERIAL ROADS
PROPOSED SLOPE	.
MAX WIDTH @ ROW	9.0m FROM ROAD TO P/L THEN 8.0m FROM P/L TO GARAGE

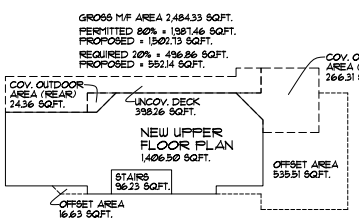
DRIVEWAY NOTES:
- THE AREA OF THE DRIVEWAY MUST NOT EXCEED 50% OF THE AREA OF THE FRONT YARD.
- DRIVEWAY MUST BE IN THE LOCATION PROVIDED ON THE CIVIL ENGINEERING DRAWINGS.
- DRIVEWAY MUST MEET EXISTING GRADE AT LOT LINE +- 4" (0.1m).

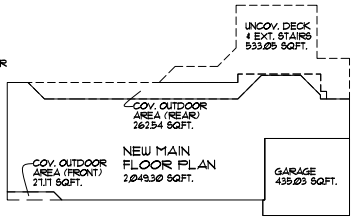
PARKING:
- THREE (3) OFF STREET PARKING SPACES ARE REQUIRED FOR EACH SINGLE FAMILY DWELLING.
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A SINGLE GARAGE = 10'5" (3.2m) x 20'0" (6.1m)
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A DOUBLE GARAGE = 18'1" (5.7m) x 20'0" (6.1m)











AREA SCHEMATICS
SCALE 1/16" = 1'-0"

DATE	DESCRIPTION	INITIALS
JAN-11-2022	DRAFT RD.	AJM.
MAY-10-2022	FOR PERMIT	AJM.

DATE	DESCRIPTION	INITIALS
MAY-27-2022	FOR PERMIT	AJM.
JULY-22-2022	FOR PERMIT	AJM.

PLAN # ADD./RENO

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

SITE PLAN, SCHEMATICS, INFO

PROPOSED SCOTEN RESIDENCE RENOVATION / ADDITION

THESE DRAWINGS SHOULD BE PRINTED ON 34"x24" PAPER TO BE AT SCALE INDICATED, ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

JANUARY 19, 2023
SCALE AS NOTED

SHEET 1 OF 10

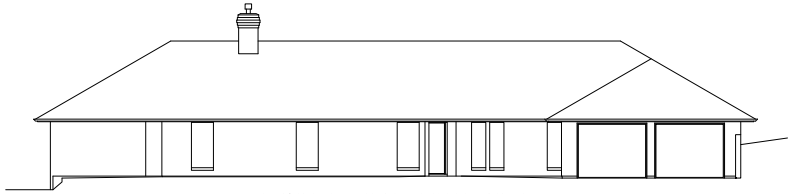
#88 - 1959 - 152nd STREET
SOUTH SURREY B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454
E-MAIL: info@raymondbonterdesigner.ca

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.

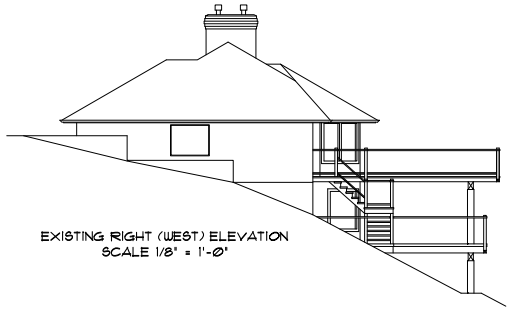
NEW FRONT (NORTH) ELEVATION

TYPICAL ELEVATION CONSTRUCTION NOTES

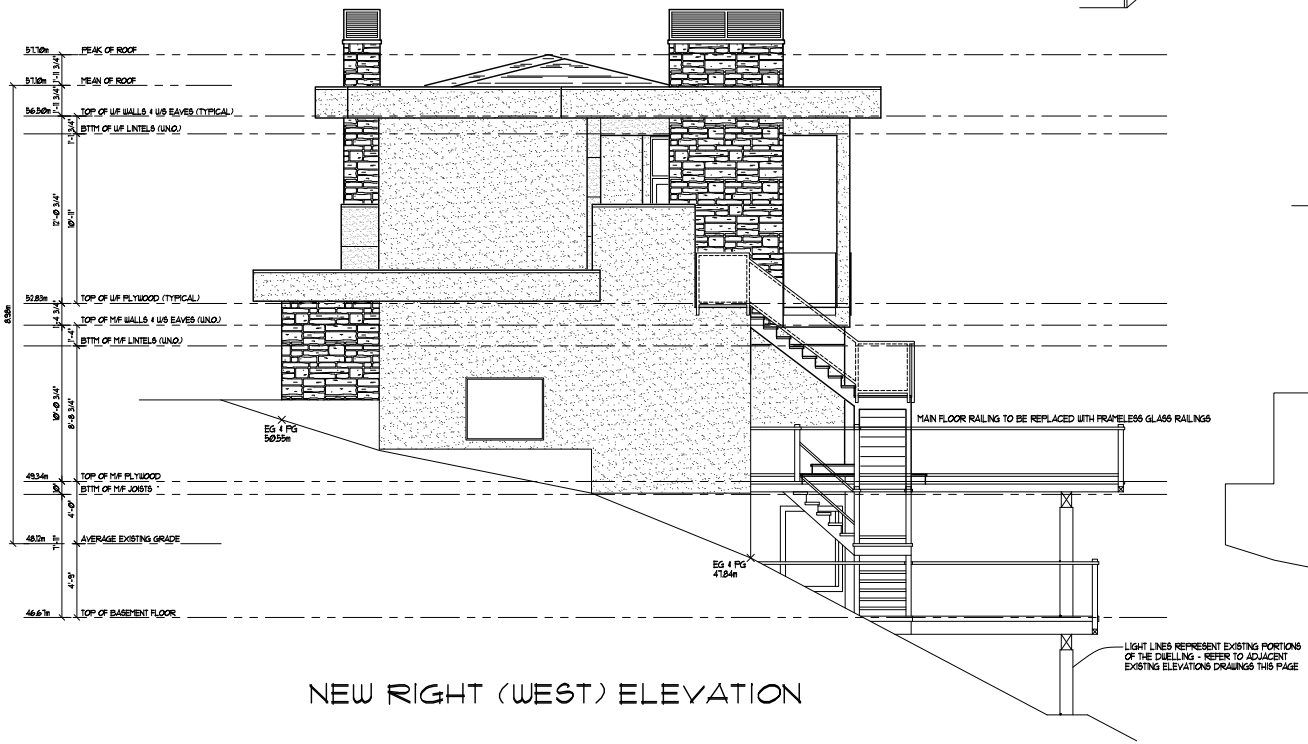
- WALL CLADDING TO BE ON RAIN SCREEN (MIN. 10mm STRAPPING) U.N.O.
- CAULK JOINTS BETWEEN DISSIMILAR MATERIALS
- FLASH ALL UNPROTECTED EXTERIOR OPENINGS
- FLASHINGS TO BE MIN. 6% SLOPE AND HAVE END DAMS
- FLASH ALL HORIZONTAL INTERSECTIONS OF DIFFERING WALL FINISHES
- ALL WINDOW OPENER'S TO BE CONFIRMED BY THE OWNER
- DOORS TO CONFORM TO SECTION 9.6 OF THE BUILDING CODE
- WINDOWS TO CONFORM TO SECTION 9.7 OF THE BUILDING CODE
- SEE ROOF PLAN FOR ROOF PITCH(ES) AND OVERHANGS
- ALL HANDRAILS & GUARDS TO B.C.B.C. 2018 SEC. 9.8.1 AND 9.8.8.
- ALL ROOF SOFFITS WITHIN 1.2m OF A LOT LINE MUST BE SOLID, UNVENTED, AND PROTECTED AS PER B.C.B.C. 9.10.15.5.
- ALL EXTERIOR WINDOWS AND DOORS TO MEET NORTH AMERICAN FENESTRATION STANDARDS AS PER BCBC 2018 SECTION 9.7.4.2
  A) AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/ SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS' (HARMONIZED STANDARD)
  B) A440S1 'CANADIAN SUPPLEMENT TO AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS'



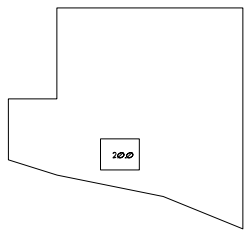
EXISTING FRONT (NORTH) ELEVATION
SCALE 1/8" = 1'-0"



EXISTING RIGHT (WEST) ELEVATION
SCALE 1/8" = 1'-0"



NEW RIGHT (WEST) ELEVATION



RIGHT WALL FACE
SCALE: 1/8" = 1'-0"

LIMITING DISTANCE CALCULATIONS	
EXPOSED BUILDING FACE AREA	638.91 SF
PROPOSED GLAZED AREA	20.00 SF
LIMITING DISTANCE	59' (18m)
PERMITTED GLAZED PERCENT	8.6%
PROPOSED GLAZED PERCENT	3.1%

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

ELEVATIONS - FRONT, RIGHT

THESE DRAWINGS SHOULD BE PRINTED ON 34"x24" PAPER TO BE AT SCALE INDICATED. ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

MAY 27, 2022
SCALE 1/4" = 1'-0"

#88 - 1959 - 152nd STREET
SOUTH SURREY B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454-4271
E-MAIL: info@raymondbonterdesigner.ca

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7922-0173-00

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: 001-835-211
LOT 2 BLOCK 1 SECTION 8 TOWNSHIP 1 NEW WESTMINSTER DISTRICT PLAN 4828
13130 13 Avenue

(the "Land")

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

   - In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of the principal building is reduced from 7.5 metres to 0.5 metres.

   - In Section H.1. of Part 16 "Single Family Residential Zone", the minimum number of required off-street parking spaces is reduced from 3 to 2.

4. This development variance permit applies to only that portion of the buildings and structures on the Land shown on Schedule A which is attached hereto and forms part of this development variance permit. This development variance permit does not apply to additions to, or replacement of, any of the existing buildings shown on attached Schedule A, which is attached hereto and forms part of this development variance permit.

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

6. This development variance permit shall lapse if the Owner does not substantially start any construction with respect to which this development variance permit is issued, within two (2) years after the date this development variance permit is issued.

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

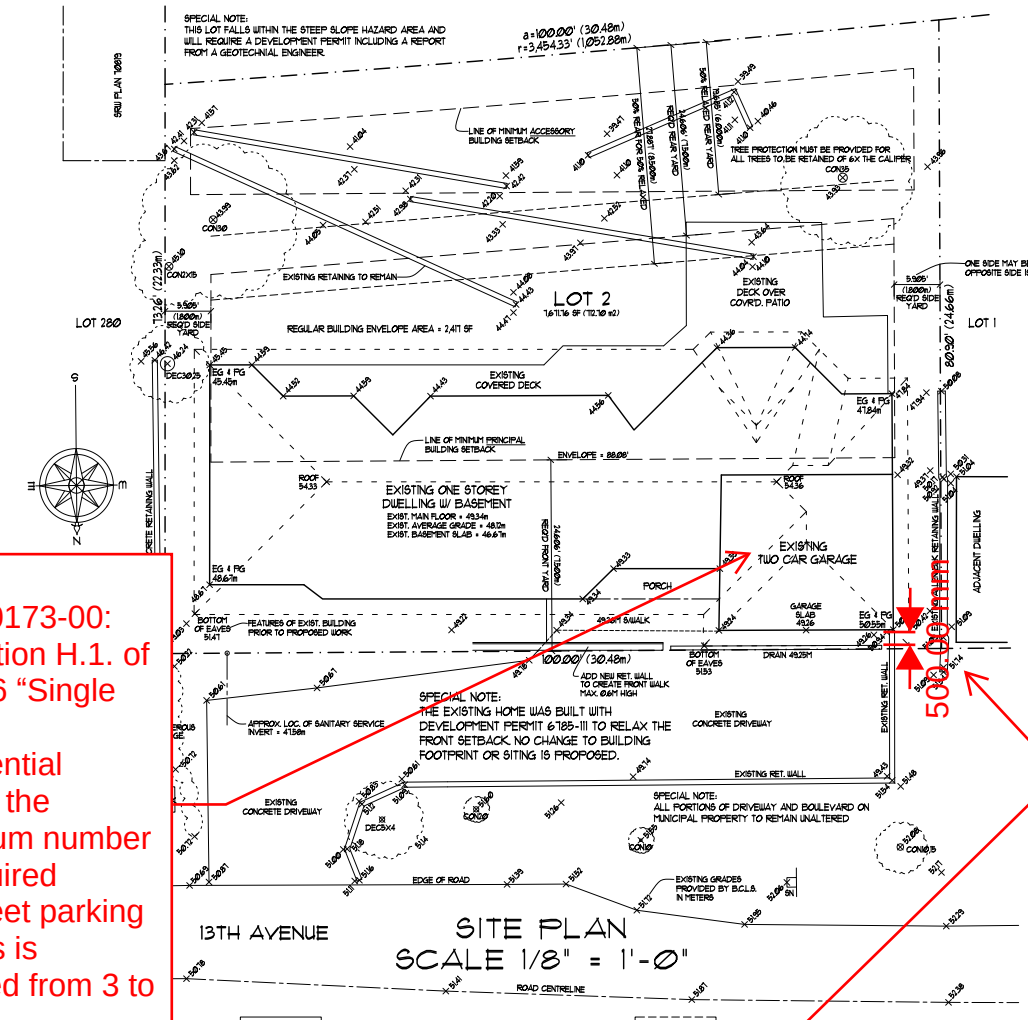
8. This development variance permit is not a building permit.

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

_____
Mayor – Brenda Locke

_____
City Clerk – Jennifer Ficocelli

Appendix I



DVP 7922-0173-00: In Section H.1. of Part 16 “Single Family Residential Zone”, the minimum number of required off-street parking spaces is reduced from 3 to 2.

DVP 7922-0173-00: In Section F. of Part 16 "Single Family Residential Zone", the minimum front yard setback as measured from the face of a principal building is reduced from 7.5 metres to 0.5 metres

ZONING ANALYSIS

BUILDING SETBACKS

STRUCTURE	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
PRINCIPAL BUILDING	24.60m² (15m)	24.60m² (15m)	5.905' (1.8m)	11.81' (3.6m)
ACCESSORY BUILDINGS	59.055' (18.0m)	5.905' (1.8m)	3.280' (1.0m)	24.60m² (15m)

BUILDING SETBACK NOTES:
- FRONT SETBACK FOR FIRST FLOOR MAY BE 19.685' (6.0m) FOR 50% OF THE FRONT EXCLUDING GARAGE
- IF 50% OF THE FRONT IS SETBACK 29.527' (9.0m) THEN AN ATTACHED GARAGE WITH FRONT FACING DOORS CAN BE SETBACK 21.982' (6.7m). THE GARAGE IN THIS CASE CAN ONLY BE 50% FORWARD OF THE FRONT OF THE HOUSE. A TWO CAR PARKING BAY DOOR MUST BE SET BACK 7.218' (2.2m) FROM THE FIRST TWO PARKING BAY DOORS.
- 50% OF THE REAR FACE MAY BE SETBACK 19.685' (6.0m) IF THE REMAINDER IS AT LEAST 17.585' (5.36m).
- ONE SIDE YARD MAY BE REDUCED TO 1.2m IF THE OPPOSITE SIDE IS INCREASED TO 2.4m.
- THE REAR YARD SETBACK FROM A NATURAL GAS TRANSMISSION ROW IS 24.6' (7.5m).
- IN-GROUND SWIMMING POOLS ARE CONSIDERED ACCESSORY BUILDINGS WITH REGARDS TO SETBACKS.

PERMITTED ENCROACHMENTS	FRONT YARD	REAR YARD	SIDE YARD	FLANKING ST.
F/P, CHIMNEYS (1)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)
HUTCHES (1)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)
BOX WINDOWS (1)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)
BAY WINDOWS (1)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)
EAVES	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)
VENEER (2)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
DECK / PORCH	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)	2.0' (0.61m)
STAIRS (3)	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT

PERMITTED ENCROACHMENT NOTES:
(1) ELEMENT IN REQUIRED YARD TO BE MAX 8'0 WIDE PER WALL FACE PER FLOOR
(2) VENEER SUPPORTED BY FOUNDATION NOT ALLOWED, PolNov22-11AM\M\House
(3) STAIRS IN REQUIRED YARD TO BE NOT MORE THAN 3 TREADS OR 24" ABOVE GRADE.

LOT AREA

LOT AREA	7,611.76 SF	112.70 m2

FLOOR AREA RATIO

GROSS ALLOWABLE PERCENT	60% OF FIRST 560m2, 35% OF BALANCE		INCLUDED
GROSS FLOOR AREA CAP	5,000.38 SF	465.00 m2	FLOOR AREA
GROSS ALLOWABLE FLOOR AREA	4,181.95 SF	388.45 m2	CANTD FLOORS
DEDUCT GARAGE RESERVATION	419.80 SF	39.00 m2	ATTIC TRUSS SPACES
GROSS FLOOR AREA N.I.C. GARAGE	3,762.33 SF	350.45 m2	OUTDOOR COV. AREA (1)
10% OF G.F.A. FOR OUTDOOR AREA	419.75 SF	38.94 m2	OVER 12'0 CLNGS (2)
			ALL STAIRWELLS (2)
PROPOSED GROSS FLOOR AREA	4,186.31 SF	388.51 m2	NOT INCLUDED
PROPOSED GARAGE AREA			CANTD FIREPLACES
PROP. FLOOR AREA N.I.C. GARAGE			BOXED WINDOWS
PROPOSED OUTDR. COV. AREA			IN-GROUND BASEMENTS
			CRAWLSPACES 1'-4"-I"

FLOOR AREA RATIO NOTES:
(1) ALL OUTDOOR COVERED AREA IS COUNTED IN FLOOR AREA RATIO EXCEPT 10% TIMES THE GROSS FLOOR AREA AS CALCULATED ABOVE, 18.46 SF (10.00 m2) OF THE 10% MUST BE RESERVED FOR A FRONT PORCH OR VERANDA, 139.93 SF (13.00 m2) OF THE 10% MUST BE RESERVED FOR COVERED OUTDOOR AREA IN THE REAR OF THE HOME. IF THE 10% IS USED ENTIRELY IN THE FRONT OR THE REAR THE RESERVE AREA MUST BE TAKEN FROM THE GROSS FLOOR AREA.
(2) STAIRWELLS AT ALL FLOOR LEVELS WILL BE INCLUDED IN FLOOR AREA RATIO AND CEILINGS GREATER THAN 12'-0" WILL BE COUNTED TWICE IN FLOOR AREA RATIO EXCEPT FOR AN ALLOWANCE OF 209.32 SF (19.00m2) FOR STAIRWELLS AND CEILINGS OVER 12'-0". ALSO, CEILINGS BETWEEN 12'0 TO 19'0 THAT ARE SLOPING ARE NOT COUNTED AS LONG AS ONE WALL IS 12'0 OR LOWER.

- ACCESSORY BUILDING OVER 107.64 SF TO BE INCLUDED IN F.A.R.
- GARAGE AREA EXCEEDING 419.80 SF RESERVATION TO BE TAKEN OUT OF F.A.R.
- ALL AREAS USED FOR COVERED PARKING ARE TO BE INCLUDED IN THE F.A.R. CALCULATION UNLESS THE COVERED PARKING IS LOCATED IN THE BASEMENT.
- GARAGE IN BASEMENT IS EXCLUDED FROM F.A.R. AND RESERVATION IS USED AS FLOOR AREA.
- THE GROSS AREA CAP OF 5,000.38 SF APPLIES TO ALL LOTS NO MATTER WHAT SIZE.
- AREAS WITHIN ATTIC TRUSSES, WHETHER FINISHED OR UNFINISHED, WILL BE INCLUDED IN THE CALCULATION OF FLOOR AREA RATIO.
- COVERED PATIOS / PORTE COCHERES THAT ARE ACCESSIBLE BY A VEHICLE WILL BE CONSIDERED A CARPORT AND INCLUDED IN FLOOR AREA RATIO
- A BASEMENT HAS AT LEAST 80% OF ITS VOLUME IN GROUND AS MEASURED FROM THE TOP OF THE SLAB TO THE TOP OF THE NEXT FLOOR ABOVE AND IN RELATION TO THE LOWER OF THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENT IN-GROUND PECENT IS MEASURED FROM THE AVERAGE EXISTING GRADE (FINISHED GRADE AS INDICATED ON A LOT GRADING PLAN).
- BASEMENTS AS DEFINED ABOVE, MAY BE EXCLUDED FROM F.A.R. WHETHER THEY ARE LOCATED IN THE PRINCIPAL DWELLING OR AN ACCESSORY BUILDING. BASEMENT AREA BEYOND THE PERIMITER OF THE MAIN FLOOR ABOVE WILL BE COUNTED IN F.A.R.
- COVERED PATIOS AT THE BASEMENT LEVEL, WHICH APPEAR TO BE FULLY ENCLOSED WILL BE INCLUDED IN FLOOR AREA RATIO, TO EXCLUDE THESE AREAS THEY SHOULD BE OPEN ON TWO SIDES AND HAVE ACCESS FROM THE EXTERIOR, PolNov04-11AM\M\House
- ACCESSORY BUILDINGS (TOTAL COMB.) MAY NOT HAVE MORE FLOOR AREA THAN THE PRIN DWELLING.

80/20 RULE:

- UPPER FLOOR NOT TO EXCEED 80% OF MAIN FLOOR AREA INCLUDING GARAGE BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK. THE 20% REDUCTION SHALL BE ON THE FRONT OR SIDES INCL. PORCH BUT NO PART IN THE 24.6' (7.5m) FRONT SETBACK.
- THE 80% UPPER FLOOR INCLUDES ALL OPEN TO BELOW AREAS AND STAIRWELLS. A VAULTED CEILING ON THE MAIN FLOOR MAY BE CONSIDERED AN OPEN TO BELOW AREA OF THE UPPER FLOOR IF THE CEILING STARTS AT A POINT HIGHER THAN 0' ABOVE THE MAIN FLOOR.

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		40% -7% FOR EACH 93m2 OVER 560m2	FLOOR AREA
		THE MINIMUM PERCENT IS 25%	CANTD FLOORS
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				EAVES EXCEEDING 24"
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				NOT INCLUDED
				STRUCT. <24" ABOVE EG.

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GEODETIC ELEVATIONS

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ROOF MEAN ELEV.	.	AVERAGE EXISTING GRADE	.
UPPER FLOOR CEILING ELEV.	.	BASEMENT SLAB ELEV.	.
UPPER FLOOR PLYWOOD ELEV.	.	ALLOWABLE (MBE)	.
MAIN FLOOR PLYWOOD ELEV.	.	SEWER INVERT @ P.L.	.

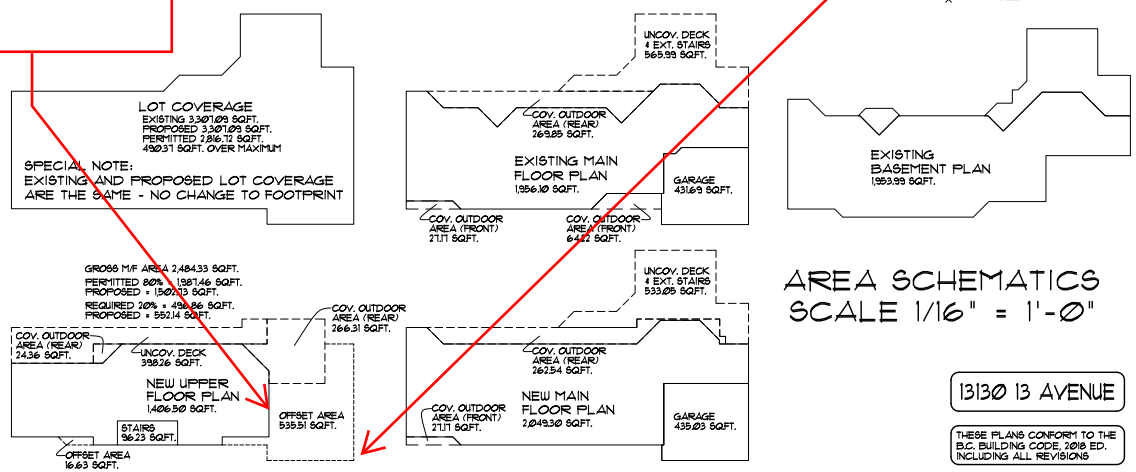
SITE SERVICING AND MBE NOTES:
- ANY LIVING SPACE PROPOSED BELOW GRADE REQUIRES AN MBE. TO BE ESTABLISHED. THIS CAN BE CERTIFIED BY AN ENGINEER, WHICH IS TYPICALLY BASED ON STORM SERVICE OR PUMP/PIT DESIGN, OR CAN BE ESTABLISHED BY USING THE LOWEST CENTER OF ROAD ADJACENT TO THE LOT PLUS 0.3m.
- MBE BASED ON STORM SERVICE IS USUALLY INVERT PLUS A MINIMUM OF 0.6m BUT MAY BE HIGHER DUE TO HYDRAULIC GRADE CALCULATIONS. MBE BASED ON ROCK PIT OR PUMP IS TYPICALLY OVERFLOW ELEVATION PLUS 0.3m.
- ROCK PIT OR PUMPING IS NOT ALLOWED UNLESS THE PROPOSED MAIN FLOOR IS LOWER THAN THE STORM SERVICE OR FRONTING DITCH, IN WHICH CASE AND ENGD SYSTEM IS ALLOWED.
- PERIMETER DRAINAGE MAY NOT BE REQUIRED IF APPROVED BY A PROFESSIONAL ENGINEER.

DRIVEWAY

ALLOWABLE SLOPE	5.0% ON COLLECTOR ROADS AND 10% ON ARTERIAL ROADS	
PROPOSED SLOPE	.	
MAX WIDTH @ ⊕	9.0m FROM ROAD TO P/L THEN 8.0m FROM P/L TO GARAGE	

DRIVEWAY NOTES:
- THE AREA OF THE DRIVEWAY MUST NOT EXCEED 50% OF THE AREA OF THE FRONT YARD.
- DRIVEWAY MUST BE IN THE LOCATION PROVIDED ON THE CIVIL ENGINEERING DRAWINGS.
- DRIVEWAY MUST MEET EXISTING GRADE AT LOT LINE +- 4" (0.1m).

PARKING:
- THREE (3) OFF STREET PARKING SPACES ARE REQUIRED FOR EACH SINGLE FAMILY DWELLING.
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A SINGLE GARAGE = 10'5" (3.2m) x 20'0" (6.1m)
- MINIMUM CLEAR INSIDE DIMENSIONS FOR A DOUBLE GARAGE = 18'1" (5.7m) x 20'0" (6.1m)



AREA SCHEMATICS
SCALE 1/16" = 1'-0"

DATE	DESCRIPTION	INITIALS	DATE	DESCRIPTION	INITIALS
JAN-11-2022	DRAFT REV.	AJM.	MAY-27-2022	FOR PERMIT	AJM.
MAY-10-2022	FOR PERMIT	AJM.	JULY-22-2022	FOR PERMIT	AJM.

PLAN # ADD./RENO

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

SITE PLAN, SCHEMATICS, INFO

PROPOSED SCOTEN RESIDENCE RENOVATION / ADDITION

THESE DRAWINGS SHOULD BE PRINTED ON 34"x24" PAPER TO BE AT SCALE INDICATED, ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

JANUARY 19, 2023
SCALE AS NOTED

SHEET 1 OF 10

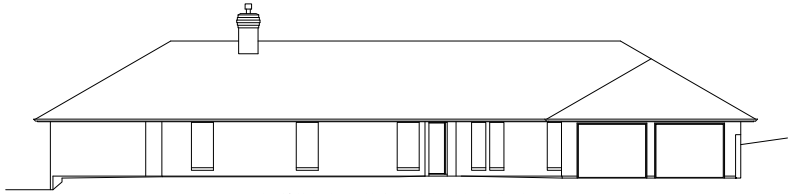
#88 - 1959 - 152nd STREET
SOUTH SURREY B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454
E-MAIL: info@raymondbonterdesigner.ca

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.

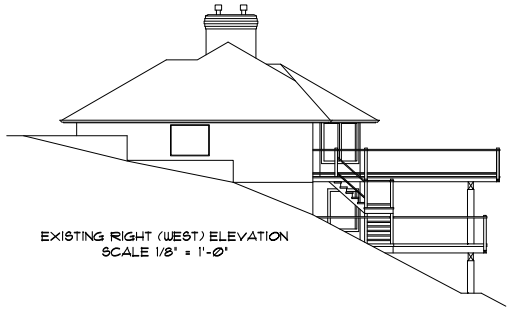
NEW FRONT (NORTH) ELEVATION

TYPICAL ELEVATION CONSTRUCTION NOTES

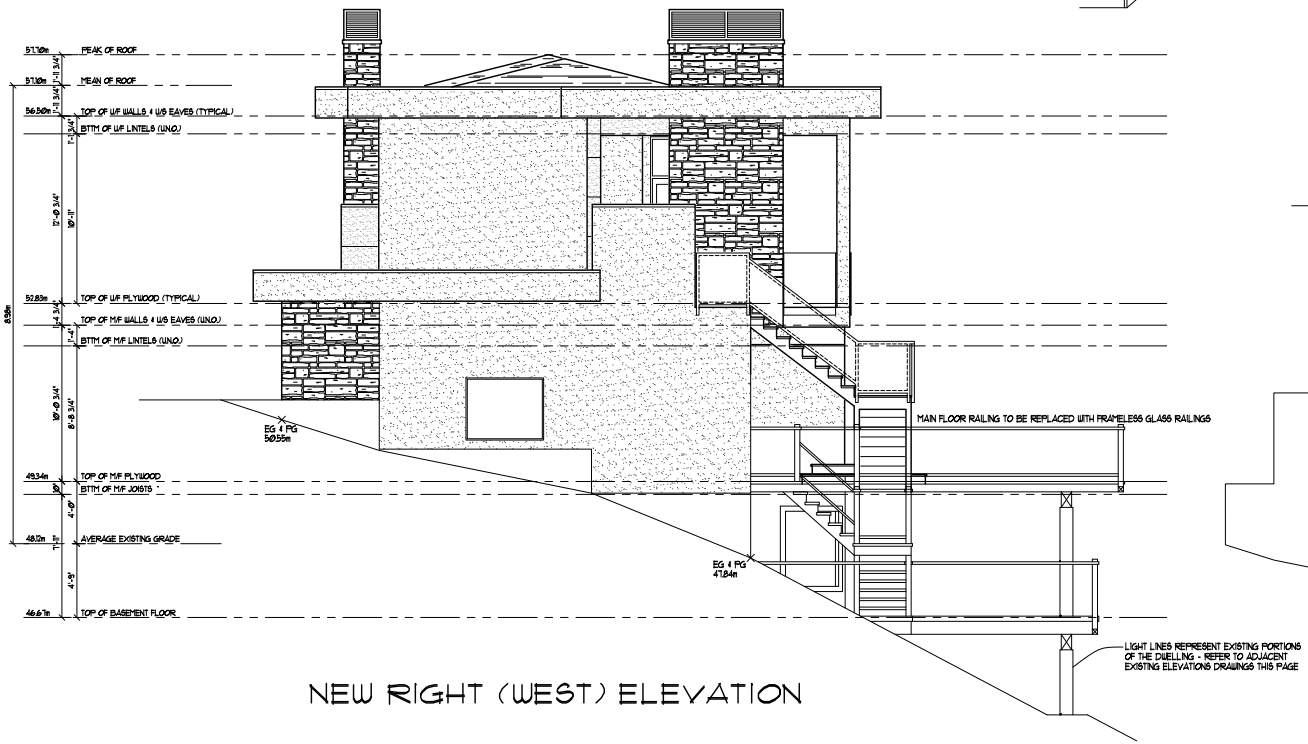
- WALL CLADDING TO BE ON RAIN SCREEN (MIN. 10mm STRAPPING) U.N.O.
- CAULK JOINTS BETWEEN DISSIMILAR MATERIALS
- FLASH ALL UNPROTECTED EXTERIOR OPENINGS
- FLASHINGS TO BE MIN. 6% SLOPE AND HAVE END DAMS
- FLASH ALL HORIZONTAL INTERSECTIONS OF DIFFERING WALL FINISHES
- ALL WINDOW OPENER'S TO BE CONFIRMED BY THE OWNER
- DOORS TO CONFORM TO SECTION 9.6 OF THE BUILDING CODE
- WINDOWS TO CONFORM TO SECTION 9.7 OF THE BUILDING CODE
- SEE ROOF PLAN FOR ROOF PITCH(ES) AND OVERHANGS
- ALL HANDRAILS & GUARDS TO B.C.B.C. 2018 SEC. 9.8.1 AND 9.8.8.
- ALL ROOF SOFFITS WITHIN 1.2m OF A LOT LINE MUST BE SOLID, UNVENTED, AND PROTECTED AS PER B.C.B.C. 9.10.15.5.
- ALL EXTERIOR WINDOWS AND DOORS TO MEET NORTH AMERICAN FENESTRATION STANDARDS AS PER BCBC 2018 SECTION 9.7.4.2
  A) AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/ SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS' (HARMONIZED STANDARD)
  B) A440S1 'CANADIAN SUPPLEMENT TO AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - NORTH AMERICAN FENESTRATION STANDARD/SPECIFICATION FOR WINDOWS, DOORS, AND SKYLIGHTS'



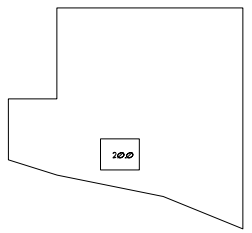
EXISTING FRONT (NORTH) ELEVATION
SCALE 1/8" = 1'-0"



EXISTING RIGHT (WEST) ELEVATION
SCALE 1/8" = 1'-0"



NEW RIGHT (WEST) ELEVATION



RIGHT WALL FACE
SCALE: 1/8" = 1'-0"

LIMITING DISTANCE CALCULATIONS	
EXPOSED BUILDING FACE AREA	638.91 SF
PROPOSED GLAZED AREA	20.00 SF
LIMITING DISTANCE	59' (18m)
PERMITTED GLAZED PERCENT	8.6%
PROPOSED GLAZED PERCENT	3.1%

13130 13 AVENUE

THESE PLANS CONFORM TO THE B.C. BUILDING CODE, 2018 ED. INCLUDING ALL REVISIONS

ELEVATIONS - FRONT, RIGHT

THESE DRAWINGS SHOULD BE PRINTED ON 34"x24" PAPER TO BE AT SCALE INDICATED. ON REDUCED SIZE THEY WILL NOT BE TO SCALE.

MAY 27, 2022
SCALE 1/4" = 1'-0"

#88 - 1959 - 152nd STREET
SOUTH SURREY B.C. V4A 9E3
PHONE: 604-535-3322 FAX: 1-866-454-4271
E-MAIL: info@raymondbonterdesigner.ca

DESIGN BY RAYMOND S. BONTER, DESIGNER LTD.

Table 2 - Summary of Tree Preservation by Tree Species:

Tree Species	Existing	Remove	Retain
Alder and Cottonwood Trees			
Alder	1	0	1
Cottonwood			
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Japanese maple	1	0	1
Coniferous Trees			
Cedar	1	0	1
Blue Spruce	1	0	1
Grand Fir	1	0	1
Weeping Giant Sequoia	1	0	1
Total (excluding Alder and Cottonwood Trees)	**5**	**0**	**5**
Additional Trees in the proposed Open Space / Riparian Area			
Total Replacement Trees Proposed (excluding Boulevard Street Trees)		**0**	
Total Retained and Replacement Trees		**6**	

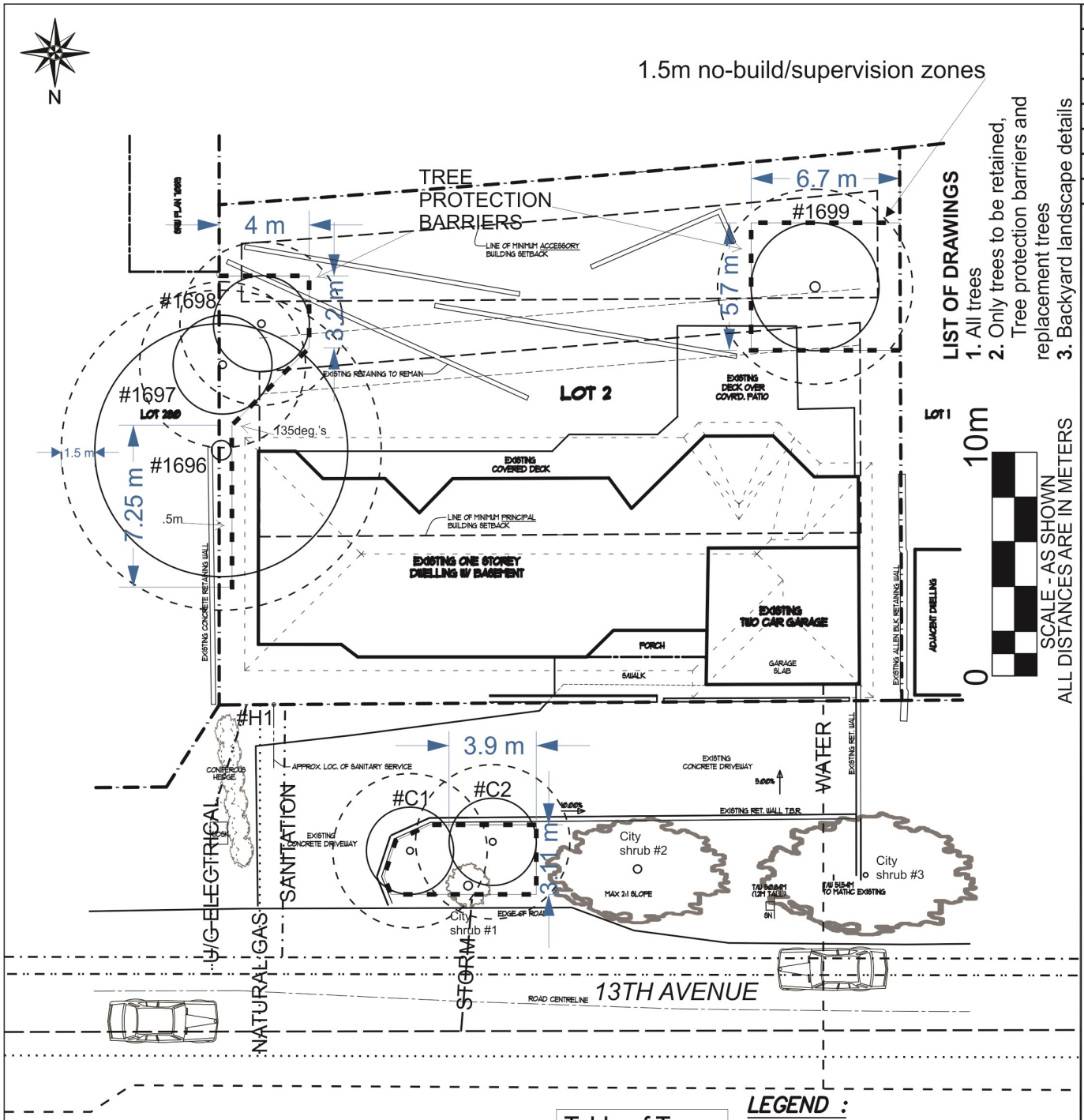


Table of Trees		
Tree No.	DBH (cm)	TPZ (m)
C1	13,9,7	1.8
C2	26	1.8
1696	29,29,29	5.22
1697	16,18	2.04
1698	33	1.98
1699	44	2.64

GENERAL NOTES:

1. Tree protection barriers shall be constructed as per City of Surrey **Tree Protection Bylaw, 2006 No. 16100**
2. Tree protection barriers are measured from the trunk to the edge of the tree barrier
3. Barriers have been modified along gutter line
4. Contact project arborist prior to commencing any work within the tree protection barriers
5. [ ] denotes tree protection barrier
6. Replacement trees must meet the plant condition and structure requirements set out in the latest edition of the BCSLA/BCLNA "B.C. Landscape Standard" and the CNTA "Canadian Standards for Nursery Stock
7. Replacement trees must be located, planted and maintained in accordance with the BCSLA/BCLNA and "Surrey Tree Protection Bylaw, 2006 No. 16100"
8. Replacement trees must be a minimum size of 3.0m ht. coniferous / 5 cm cal. deciduous

LEGEND :

#xxxx	Denotes tree and protection zone (TPZ)
#xxxx	Denotes tree proposed for removal
#xx	Denotes replacement tree
#xxxx	Denotes tree with "1.5m No Build Zone"
× 0.00	Denotes spot elevation
PP	Denotes power pole
SAN MH	Denotes sanitary manhole
STM MH	Denotes storm manhole
WM	Denotes water meter
PP	Denotes power pole
GW	Denotes guy wire
CB	Denotes rectangular catch basin
RCB	Denotes round catch basin
WV	Denotes water valve
FH	Denotes fire hydrant
SN	Denotes traffic sign
STP	Denotes stump
#Hxxx	Denotes hedge or shrub

REVISIONS	BY
Nov. 28, 2022	FS
Jan. 21, 2023	FS

SCOTEN RESIDENCE
13130 13 Ave. Surrey, BC
TREE MANAGEMENT PLAN

Date July 16, 2022
Scale 1 : 257
Drawn Freedom
Job Jeff
Sheet 2 of 3 Sheets