Request for Council Decision

District of Lake Country

MEETING TYPE: **Regular Council Meeting**
MEETING DATE: Tuesday, June 21, 2022
AUTHOR: Jason Tran, Planner
DEPARTMENT: **Planning and Development**
ITEM TITLE: Development Permit - DP2021-021-C - Lot 3 Carrs Landing Road
DESCRIPTION: Development Permit (Hillside and GHG Reduction and Resource Conservation) for a new house

QUESTION
Does Council think that the proposal complies with the Development Permit Area Guidelines?

OPTIONS
A. THAT Development Permit DP2021-021-C for property located at Lot 3 Carrs Landing Road, Roll 3011112 for the construction of a house be approved.
B. THAT Development Permit DP2021-021-C for property located at Lot 3 Carrs Landing Road, Roll 3011112 for the construction of a house be denied.
C. THAT Development Permit DP2021-021-C for property located at Lot 3 Carrs Landing Road, Roll 3011112 for the construction of a house be deferred pending receipt of additional information as identified by Council.

EXECUTIVE SUMMARY
The proposed development is for a house on a vacant and steeply sloped property within the Hillside and GHG Reduction and Resource Conservation Development Permit Areas. The property is also within the Natural Environment Development Permit Area, which is being reviewed concurrently as a Technical Development Permit by staff. Staff believes the proposal substantially meets the applicable Development Permit Area Guidelines.

BACKGROUND/HISTORY

PROPERTY INFORMATION			
Civic Address:	N/A		
Roll Number:	3011112		
Legal Description:	Lot 3, Section 32, Township 20, Osoyoos Division of Yale District Plan 21342		
Applicant:	Tom and Niki McWilliam	Agent:	Jenifer Berkhiem (Gibson Contracting)
OCP Designation:	Rural Residential		
Existing Zoning:	RR2 – Rural Residential 2		
Land Use Contract:	None		
ALR:	None		
Parcel Size:	1.9 acres (0.77 ha)		
DP Area(s):	Hillside, Natural Environment, and Greenhouse Gas Reduction and Resource Conservation		
Water Supply:	Lake Pine	Sewer:	N/A
Site Context:	Vacant		
North:	RR2	SDH (Single Dwelling Housing)	
East:	RR2	SDH	
South:	RR2	vacant	
West:	RR2	SDH	

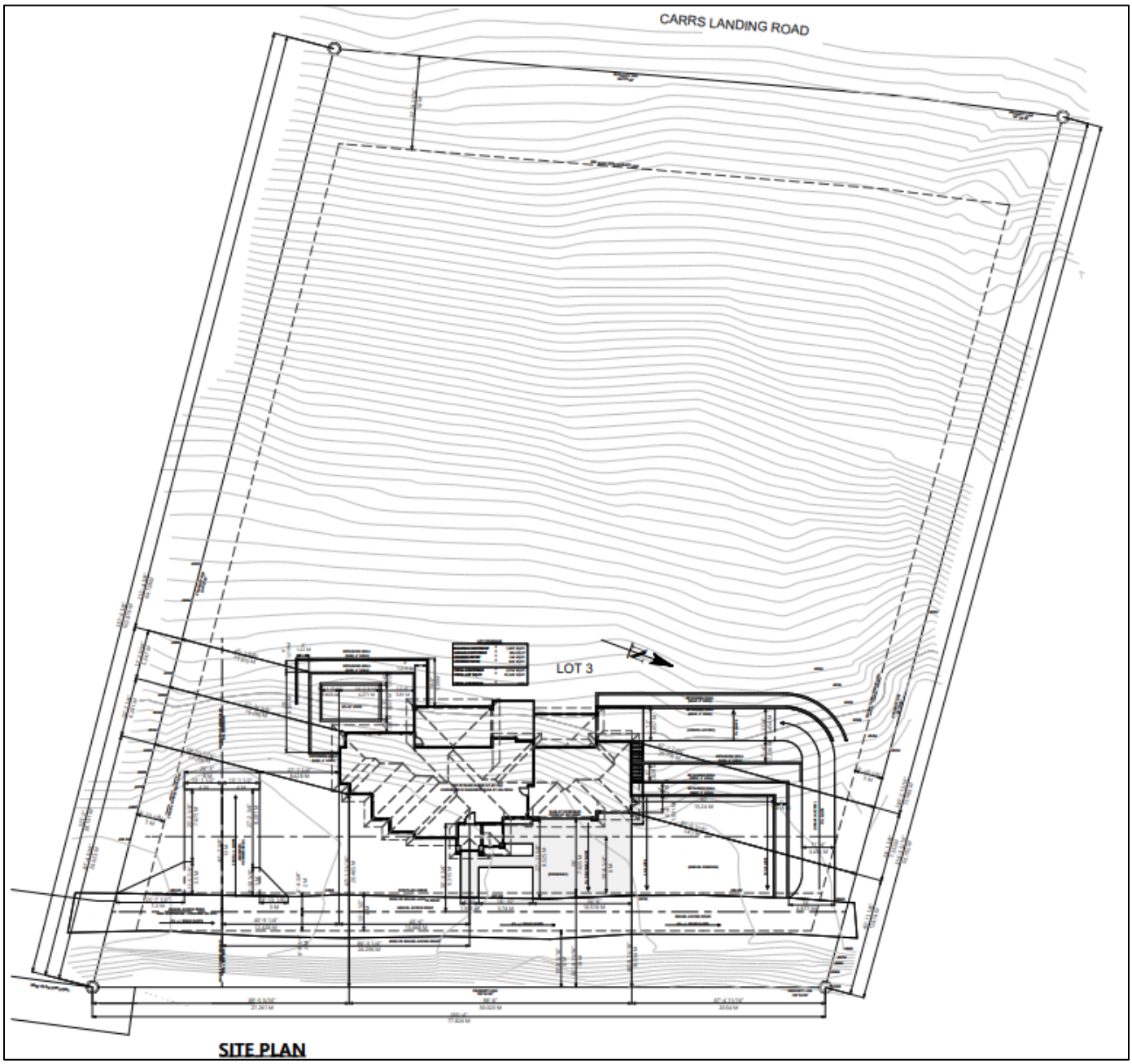
SITE CONTEXT

The property is steeply sloped and is adjacent to Carrs Landing Road. Due to the slope, it is accessed from a private easement which runs parallel to Carrs Landing Road.

MAP 1: LOCATION MAP

MAP 2: ORTHOPHOTO

PROPOSED SITE PLAN



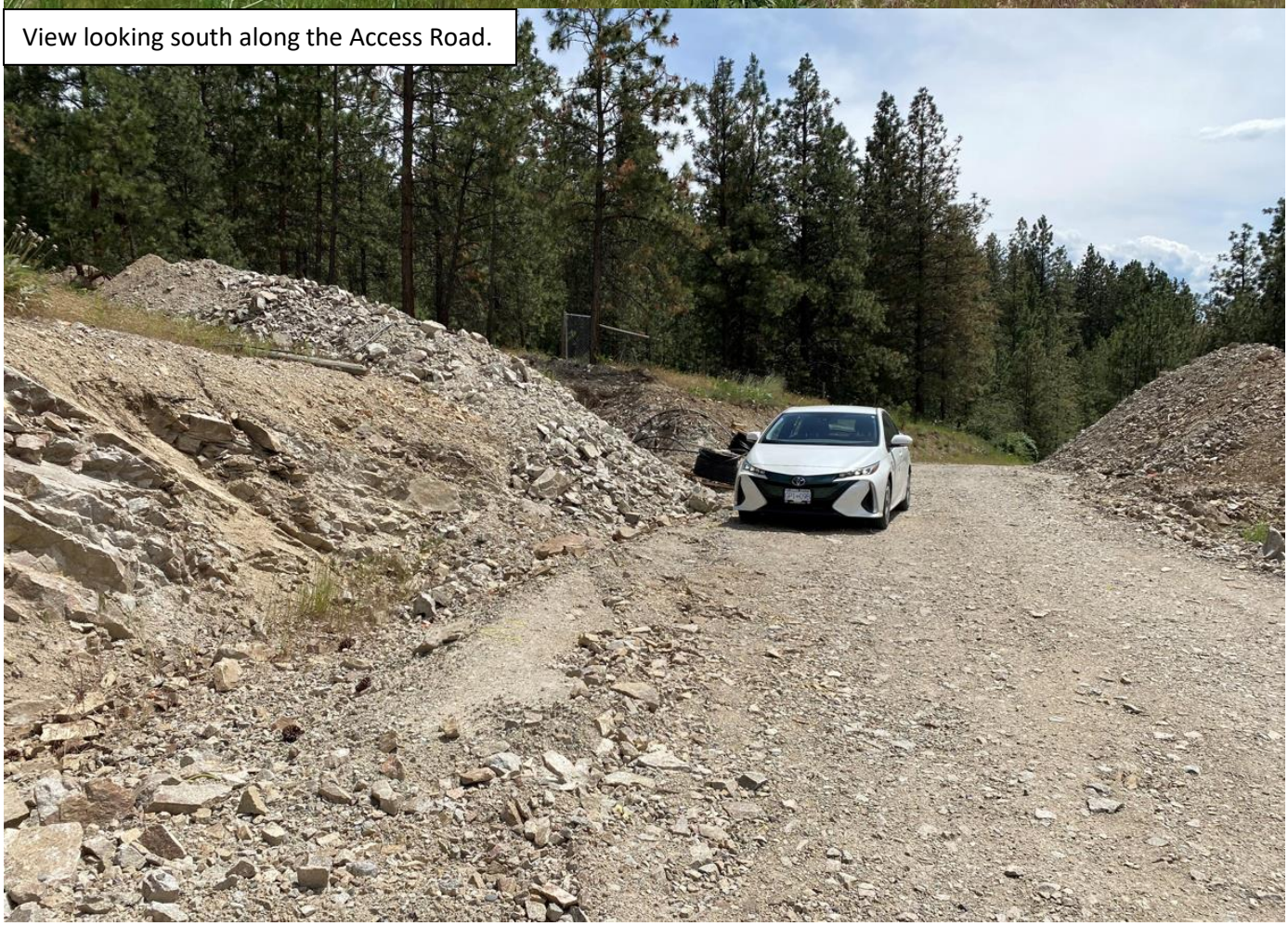
SITE PHOTO

View looking west taken from Access Road.

View looking north of the building footprint and neighboring property.

View looking west of the building footprint.

View looking south along the Access Road.



CHRONOLOGY

Date	Event
2021-05-25	Application submission
2022-03-31	Core Technical Team Meeting
2022-04-05	Internal and external referrals sent
2022-05-19	Comprehensive Letter Sent
2022-05-30	Response to Comprehensive Letter received with updated documents.
2022-06-08	Site Inspection

DISCUSSION/ANALYSIS

Proposed Development

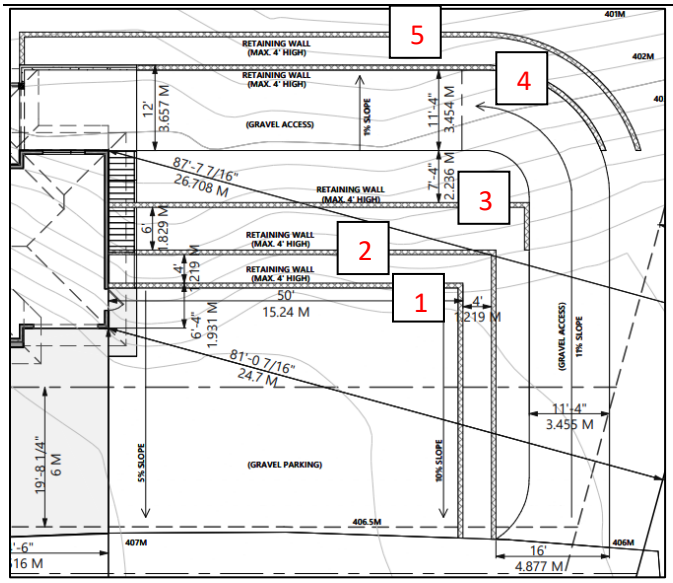
The proposed development is a two-storey, 294m^2 house with a secondary suite. The house is near the top of the property, and the septic tank will be located on the west side of the garage/deck, with the disbursement field situated along the west side of the property adjacent to Carrs Landing Road. A landscape plan has been provided and includes habitat restoration within the Natural Environment Development Permit Area.

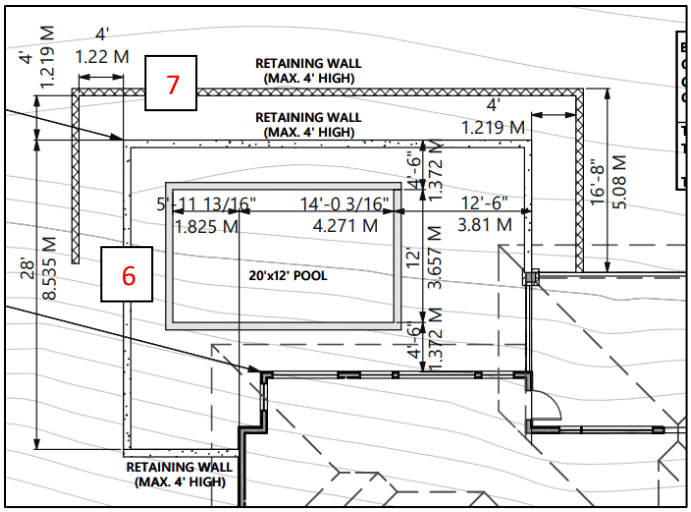
Development Permit Area (DPA) Guidelines

Hillside Development Permit Area

The Hillside DPA applies to 99% of the property (Pink Area). The house has a low profile when viewed from the access easement, maintaining upland sight lines. The house is tiered to follow the existing topography and requires moderate amounts of cut and fill. Over 95% of the property will remain undisturbed by development, and the building and driveway impact about 5% of the lot. Areas disturbed through construction will be restored with indigenous, drought-resistant plant species, including ten replacement trees to replace two ponderosa pine trees that need to be removed.

The Hillside DPA guidelines recommend that the use of retaining walls be minimized or, if necessary, they should be designed to be terraced with landscaping to reduce visual impact and to have a unique surface texture/pattern. The proposed Retaining Walls 1, 2, and 3 that retain the gravel parking are stepped to allow planting areas to screen the walls. Retaining Walls 4 and 5 are used to retain the gravel access to the lower level and the area behind the house.





Retaining walls 6 and 7 will be around the swimming pool. The retaining walls' material is proposed to be Keystone or another decorative rock. Retaining walls 1 to 7 are at a maximum height of 1.2m, and they comply with the zoning regulations, which state a maximum height of 1.5m.

It is staffs' opinion that the proposal substantially meets the applicable Hillside DPA guidelines.

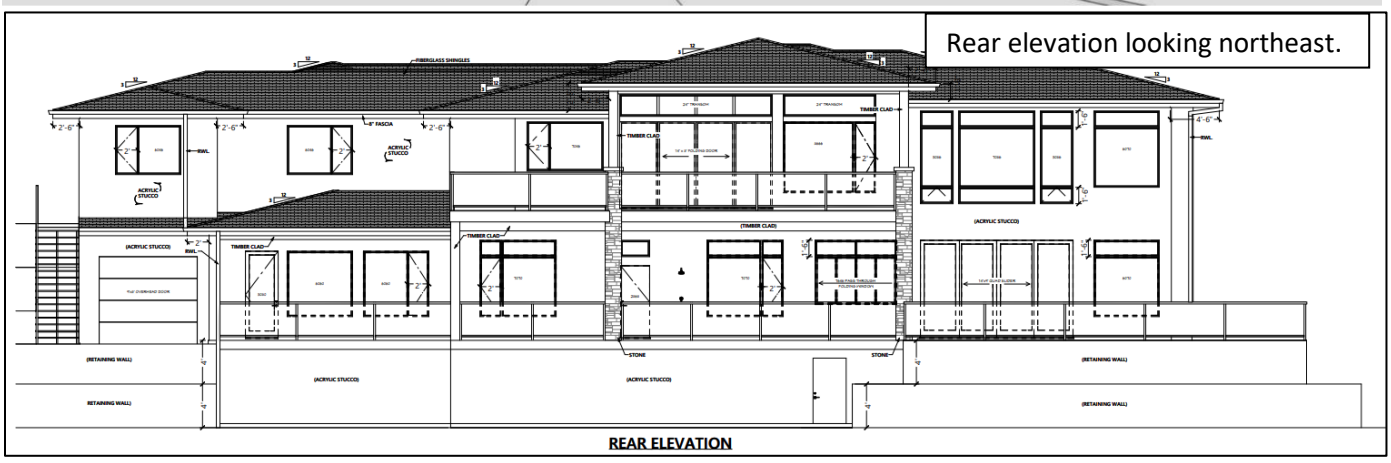
Greenhouse Gas Reduction and Resource Conservation Development Permit Area

The proposal includes large roof overhangs along the west and south elevations to reduce solar heat gain. The proposal will be energy efficient (Step Code Level 3). A dedicated solar array location has been incorporated into the structural elements of the building to allow for the option of solar power for hot water in the future. Landscaping is drought tolerant and uses many indigenous species to reduce the need for irrigation.

It is staffs' opinion that the proposal substantially meets the applicable GHG Reduction DPA guidelines.

Front elevation looking west.

Rear elevation looking northeast.



Another Rear elevation – looking at the pool

APPLICABLE LEGISLATION AND POLICIES

Official Community Plan

Each applicable Development Permit Area includes guidelines, which have been addressed through this Development Permit application.

Zoning Bylaw

The proposed development meets all Zoning Bylaw regulations.

Subdivision and Development Servicing Bylaw:

The development is exempt from servicing requirements per Section B.6.2 of the Subdivision and Development Servicing Bylaw.

Highway and Driveway Access Bylaw

Access Permit A2021-097 has been approved pending a final inspection prior to issuance of the Occupancy Permit.

IMPACT ON INFRASTRUCTURE OR MUNICIPAL SERVICES

A Building Permit will be required for the house, pool, and secondary suite.

IMPACT ON STAFF CAPACITY AND FINANCIAL RESOURCES

Regular staff time has been used to process this application.

COMMENTS FROM EXTERNAL AGENCIES, COMMITTEES AND STAKEHOLDERS

- Interior Health: No objections.
- BC Hydro: There is *"an existing right of way on this customer's property. If the customer plans to build within our right of way we require them to contact us for approval prior to any construction."*

CONSULTATION AND COMMUNICATION

As this application is a Development Permit, there is no statutory requirement to provide notification to neighbouring property owners and tenants.

ANALYSIS OF OPTIONS FOR CONSIDERATION

OPTION A: If Council approves the Development Permit application, the owners will be able to apply for their Building Permit.

OPTION B: If Council denies the Development Permit application, the applicants will need to revise their plans and resubmit a Development Permit application prior to being able to apply for a Building Permit.

OPTION C: If Council defers the application, staff will work with the applicant to ensure the additional information or revisions are provided.

Respectfully Submitted,

Jason Tran
PLANNER
PLANNING AND DEVELOPMENT DEPARTMENT

This report has been prepared in collaboration with:

COLLABORATORS	
TITLE	**NAME**
Engineering Technician	Evan Smith

This report has been prepared on consultation with the following:

Tanya Garost, Chief Administrative Officer	**TG**
Jared Kassel, Director of Planning and Development	**JK**
Tamera Cameron, Manager of Planning	**TC**

Attachments

A.	Draft Development Permit
B.	Applicants Rationale
C.	Development Permit Area Guidelines Checklists

Attachment A: Draft Development Permit

LAKE COUNTRY
Life. The Okanagan Way.

Development Permit

District of Lake Country
10150 Bottom Wood Lake Road
Lake Country, BC V4V 2M1
t: 250-766-6674 f: 250-766-0200
lakecountry.bc.ca

APPROVED ISSUANCE OF ❑ DEVELOPMENT PERMIT *(pursuant to Sec. 488 of the Local Government Act)*

PERMIT #	DP2021-021-C
FOLIO #	3011112
ZONING DESIGNATION:	RR2 – Rural Residential 2
ISSUED TO:	Thomas Richard McWilliam and Nicola Jane McWilliam
CIVIC ADDRESS:	Lot 3 Carrs Landing Road
LEGAL DESCRIPTION:	Lot 3, Section 32, Township 20, Osoyoos Division of Yale District Plan 21342
PARCEL IDENTIFIER:	007-517-581

SCOPE OF APPROVAL

This Permit applies to and only to those lands within the Municipality as described above, and any and all buildings, structures and other development thereon.

This Permit is issued subject to compliance with all of the Bylaws of the Municipality applicable thereto, except as specifically varied or supplemented by this Permit, noted in the Terms and Conditions below.

Applicants for Development Permits should be aware that the issuance of a Permit limits the applicant to be in strict compliance with all District bylaws unless specific Variances have been authorized by the Permit. No implied Variances from bylaw provisions shall be granted by virtue of drawing notations which are inconsistent with bylaw provisions and which have not been identified as required Variances by the applicant or Municipal staff.

If any term or condition of this permit is for any reason held to be invalid by a decision of a Court of competent jurisdiction, such decision will not affect the validity of the remaining portions of this permit.

1. TERMS AND CONDITIONS

Development Permit DP2021-021-C for Lot 3 Carrs Landing Road, the lot legally described as Lot 3, Section 32, Township 20, Osoyoos Division of Yale District Plan 21342, Roll 3011112 for a house, pool, secondary suite and septic field subject to the following conditions:

a) The development of the subject property shall be conducted substantially in accordance with the following documents to the satisfaction of the Director of Planning & Development:

(i) **Schedule A**: The Site Plan prepared by R-tistry Home Design dated May 26, 2022;
(ii) **Schedule B:** The Project Summary prepared by R-tistry Home Design dated received June 08, 2022;
(iii) **Schedule C:** The Building Elevations, Sections and Renderings prepared by R-tistry Home Design, dated May 26, 2022;
(iv) **Schedule D:** The Landscape Plan and Cost Estimate prepared by the applicants, dated received May 26, 2022;
(v) **Schedule E:** The Stormwater Management Plan prepared by Horizon Geotechnical Ltd., dated May 30, 2022;
(vi) **Schedule F:** The Septic System prepared by DeansTech Consulting Ltd., dated December 13, 2018;

b) The District has received the Stormwater Management Plan prepared by Horizon Geotechnical Ltd., dated May 30, 2022. The Owner and Owner's Contractor must keep all construction activity completely on site.
c) If any archaeologically significant item is found during construction activities must cease and the Province of British Columbia notified in conformity with the Heritage Conservation Act;
d) Development and use of the subject property be in compliance with the provisions of the Municipality's various bylaws, except as explicitly varied or supplemented by the terms of this permit, subsequent permits, amendment(s) and/or development variance permits;
e) The Development permit is only valid for the development that is described herein. If a change to development is considered, a new development permit or an amendment to this permit is required before starting any work.

2. PERFORMANCE SECURITY

As a condition of the issuance of this Permit, a security deposit is required in the amount of $13,101.86 (125% of the Performance Bond Estimate).

a) Cash in the amount of $
b) A Certified Cheque in the amount of $
c) An irrevocable Letter of Credit in the amount of $

Upon completion of the works, the Permit Holder must provide a statement certified by a qualified professional(s) indicating that the works were completed in compliance with the conditions specified in the Development Permit. Upon acceptance of the works by municipal staff, 85% of the security shall be returned. The Municipality shall retain the remaining 15% for a period of 24 months from the date of acceptance of the works, during which time the Municipality may use the remaining security to replace the required works, if necessary. Upon the expiration of the 24 months warranty period, the Permit Holder must provide a statement certified by a qualified professional(s) indicating that the works have met the requirements of the survival monitoring and reporting along with the conditions specified in the

The PERMIT HOLDER is the current land owner. The Security shall be returned to the PERMIT HOLDER.

Development Permit. The remaining security funds shall be refunded at the expiration of the 24 months warranty period, subject to a final inspection by Municipal staff to confirm the survival of the required works.

3. DEVELOPMENT

The development described herein shall be undertaken strictly in accordance with the terms, conditions and provisions of this Permit and any plans and specifications attached to shall form a part hereof.

The development shall commence within **TWO** YEARS of the date that this permit is issued.

If the Permit Holder does not substantially commence the development permitted by this Permit within **TWO** years of the date of issuance of this permit, this permit shall lapse.

The terms of the permit or any amendment to it are binding on all persons who acquire an interest in the land affected by the permit.

THIS IS NOT A BUILDING PERMIT OR A CERTIFICATE TO COMMENCE CONSTRUCTION

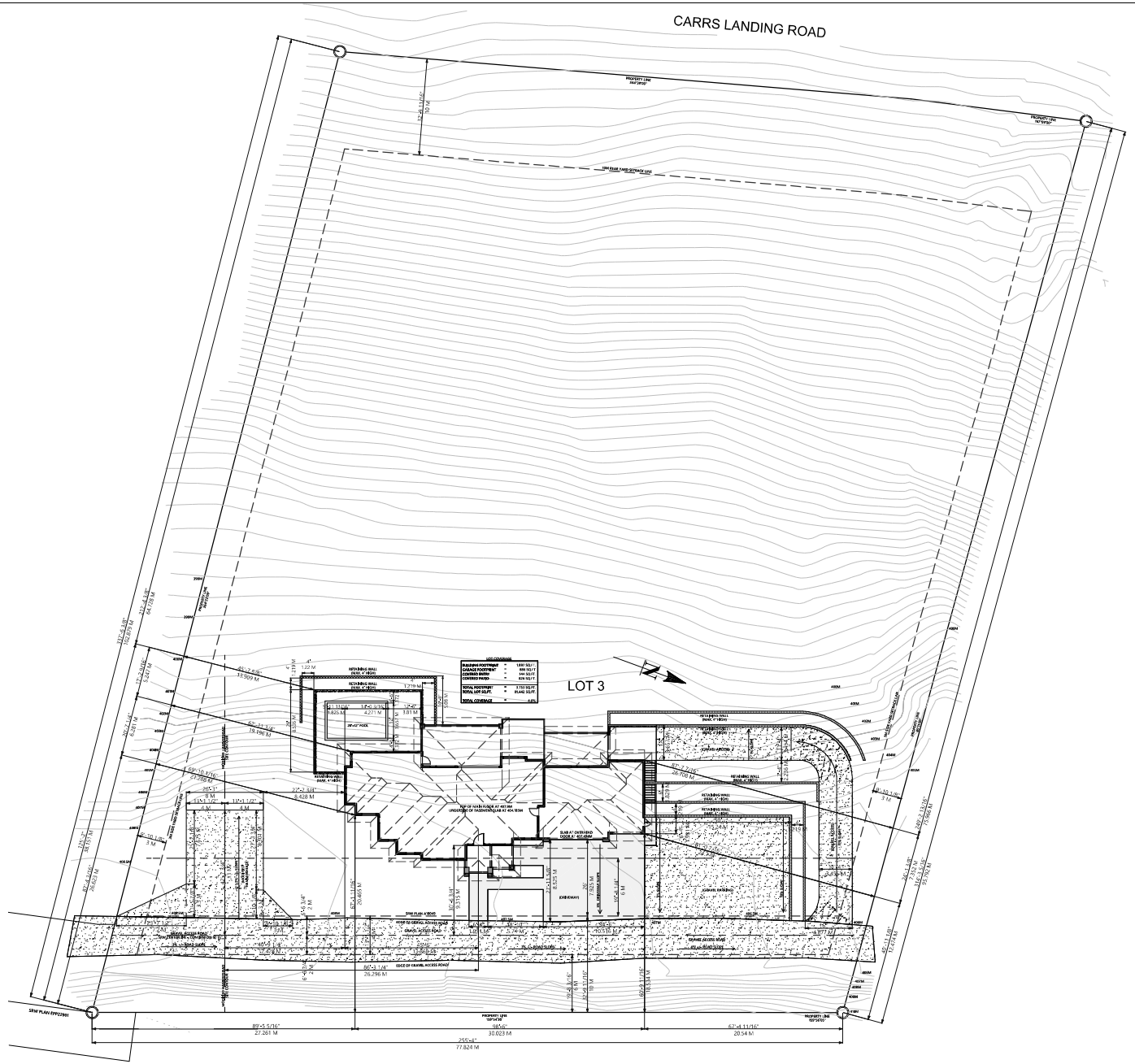
4. APPROVALS

Authorization passed by Council on the_____ day of June 2022.

Issued by the Corporate Officer of the District of Lake Country this ___ day of _____, 2022.

_____
Corporate Officer, Reyna Seabrook

Schedule A: Site Plan



R-tistry Home Design
design@rtistryhomedesign.com
PH: 250-469-1641

ISSUED PLANS:

NO.1	PERMIT DRAWINGS	MARCH 2-2022
NO.2	MODIFIED HAMMERHEAD	MAY 26 2022

PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE:
2022-05-26

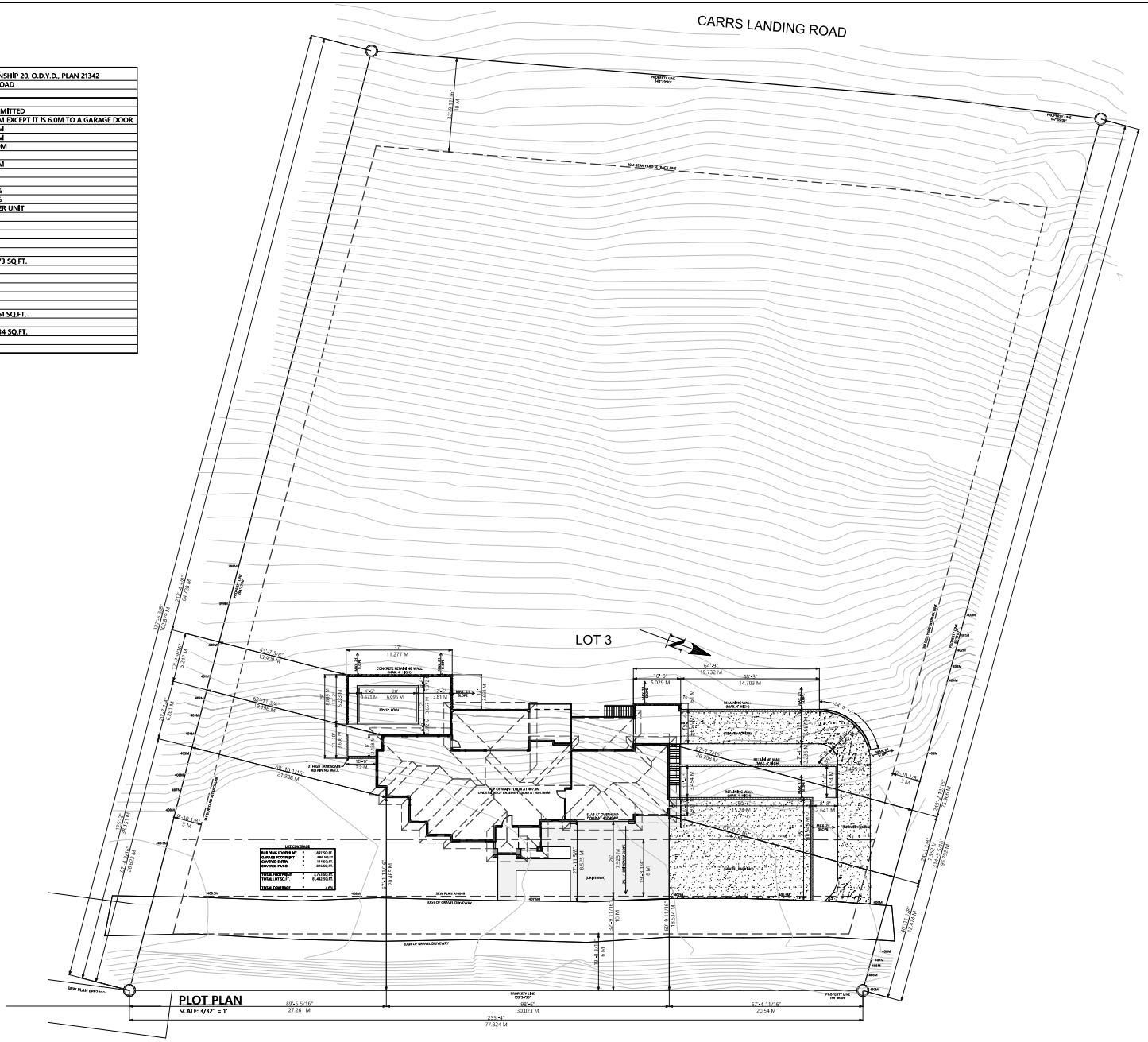
SCALE:
NOT TO SCALE

SHEET:
10/10

Schedule B: Project Summary

PROJECT SUMMARY

LEGAL DESCRIPTION	LOT 2, SECTION 32, TOWNSHIP 20, O.D.Y.D., PLAN 21342	
CIVIC ADDRESS	LOT 3 CARRS LANDING ROAD	
ZONING	RR2	
SETBACKS	PROPOSED	PERMITTED
FRONT YARD	6.0M FROM SRW	4.5M EXCEPT IT IS 6.0M TO A GARAGE DOOR
RIGHT SIDE YARD	3.0M	3.0M
LEFT SIDE YARD	3.0M	3.0M
REAR YARD	10.0M	10.0M
BUILDING HEIGHT	5.153M	9.5M
STOREYS	2	2.5
BUILDING FOOTPRINT	348.67M	
SITE COVERAGE	4.6%	40%
SITE COVERAGE C/W DRIVEWAY	6.16%	50%
PARKING SPACES	4	2 PER UNIT
HOUSE AREA		
FINISHED LOWER	1,266 SQ.FT.	
FINISHED MAIN	1,897 SQ.FT.	
FINISHED SUITE	810 SQ.FT.	
TOTAL FINISHED AREA		3,973 SQ.FT.
UNFINISHED LOWER	409 SQ.FT.	
GARAGE MAIN	886 SQ.FT.	
GARAGE LOWER	312 SQ.FT.	
COVERED DECKS AND PATIOS	954 SQ.FT.	
TOTAL UNLIVABLE AREA		2,561 SQ.FT.
TOTAL BUILDING AREA		6,534 SQ.FT.
STEP CODE	LEVEL 3	



PLOT PLAN
SCALE: 3/32" = 1'

SITE PLAN

R-tistry Home Design
design@rtistryhomedesign.com
PH: 250-469-1641

ISSUED PLANS:

NO.1	PERMIT DRAWINGS	MARCH 2-2022
NO.2	RETAINING WALL REV.	APRIL 28-2022
NO.3	PROJECT SUMMARY	JUNE 8-2022

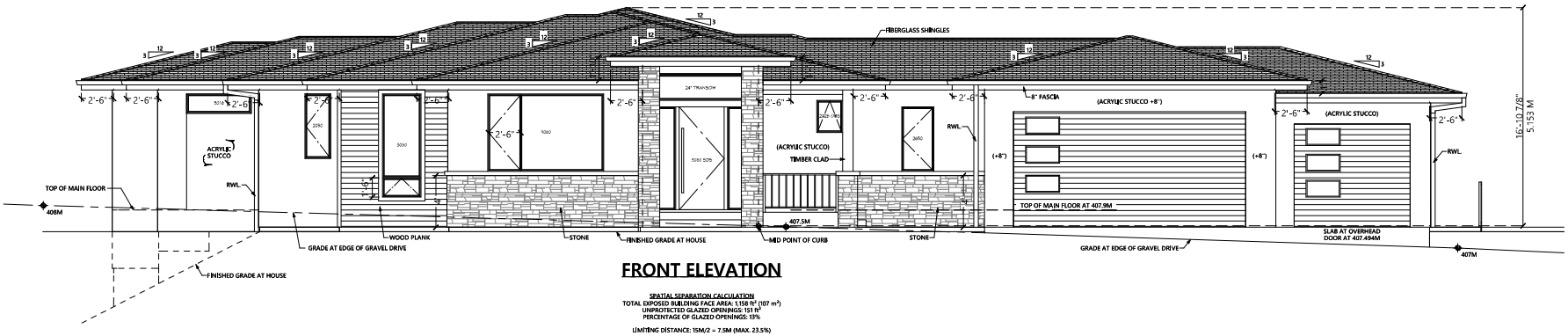
PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE:
2022-06-08

SCALE:
NOT TO SCALE

SHEET:
10/10

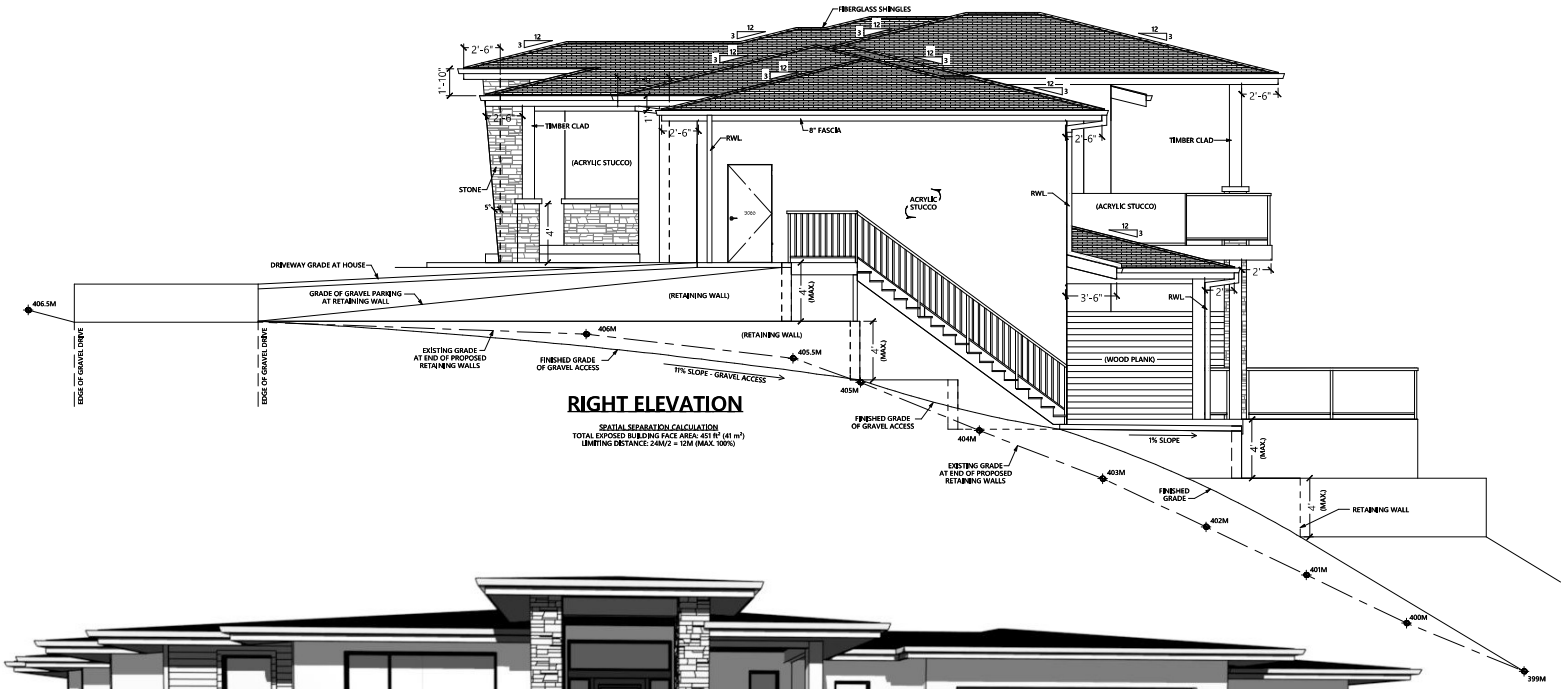
Schedule C: Elevations & Rendering



FRONT ELEVATION

SPATIAL SEPARATION CALCULATION
TOTAL EXPOSED BUILDING FACE AREA: 1,158 ft² (107 m²)
UNPROTECTED GLAZED OPENINGS: 151 ft²
PERCENTAGE OF GLAZED OPENINGS: 13%

LIMITING DISTANCE: 15M/2 = 7.5M (MAX. 23.5%)



RIGHT ELEVATION

SPATIAL SEPARATION CALCULATION
TOTAL EXPOSED BUILDING FACE AREA: 451 ft² (41 m²)
LIMITING DISTANCE: 24M/2 = 12M (MAX. 100%)

R-tistry Home Design
design@rtistryhomedesign.com
PH: 250-469-1641

ISSUED PLANS:

MO.1	PERMIT DRAWINGS	MARCH 2-2022
MO.2	MODIFIED HAMMERHEAD	MAY 26 2022

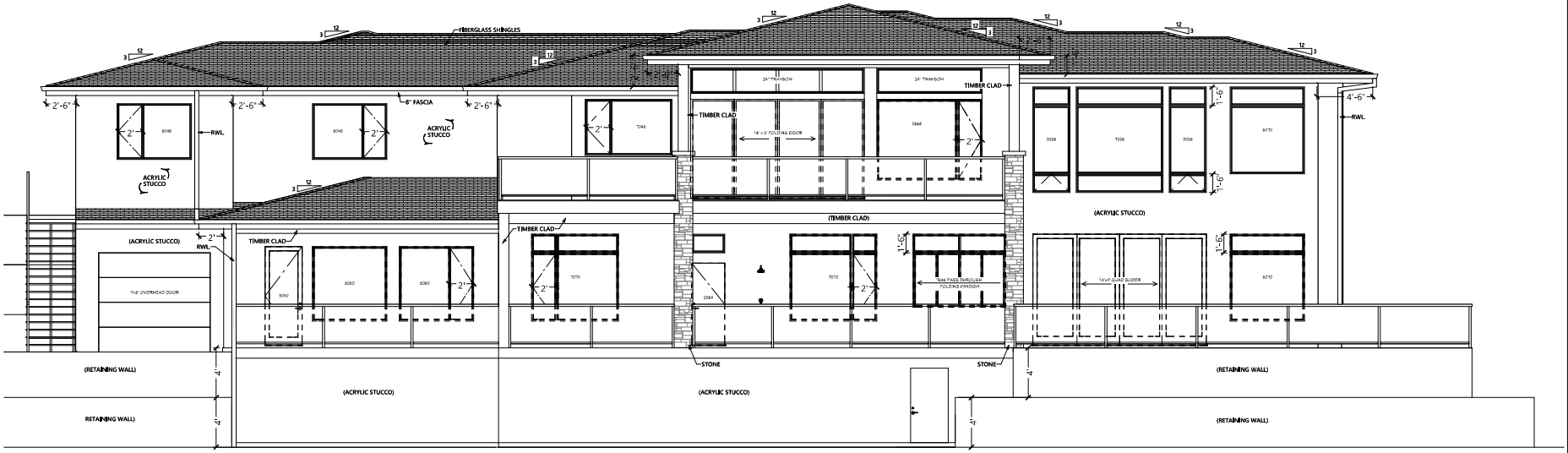
PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE:
2022-05-26

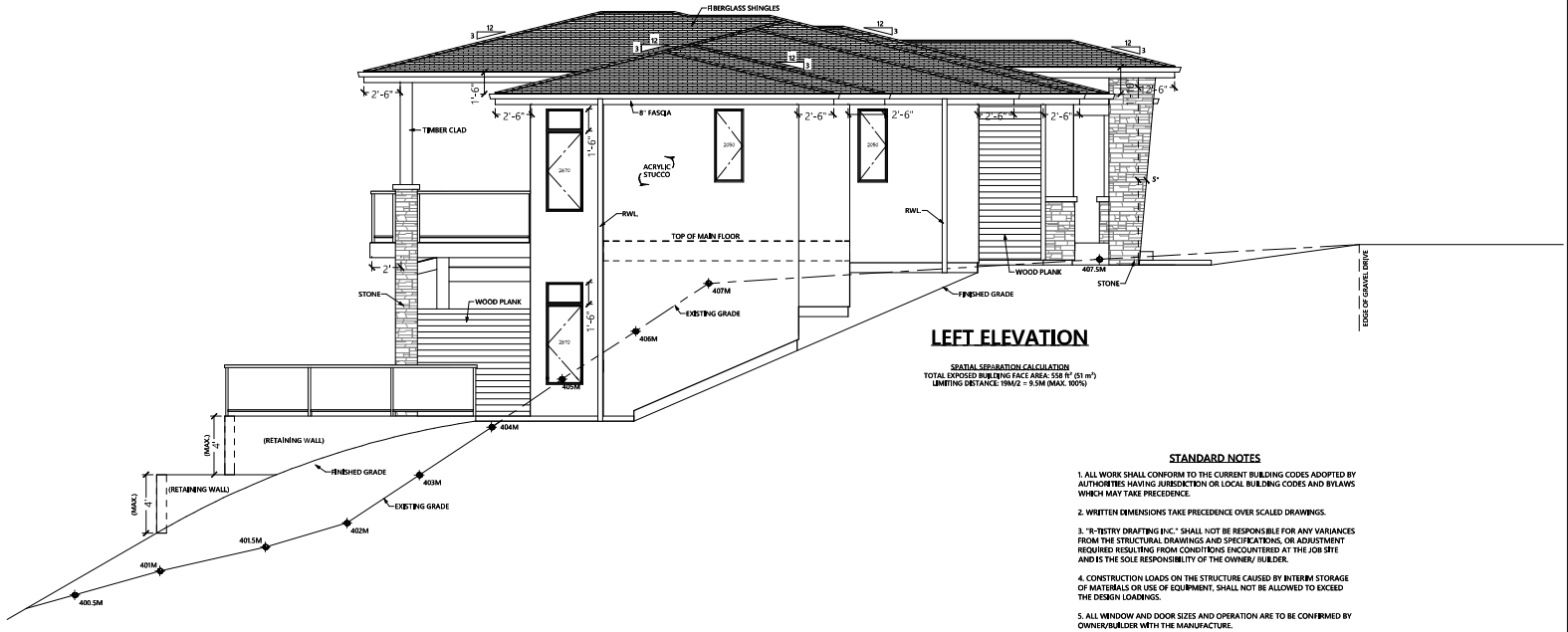
SCALE:
1/4" = 1'

SHEET:
1/10

Schedule C: Elevations



REAR ELEVATION



LEFT ELEVATION

SPATIAL SEPARATION CALCULATION
TOTAL EXPOSED BUILDING FACE AREA: 558 ft² (51 m²)
LIMITING DISTANCE: 19M/2 = 9.5M (MAX. 100%)

STANDARD NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT BUILDING CODES ADOPTED BY AUTHORITIES HAVING JURISDICTION OR LOCAL BUILDING CODES AND BYLAWS WHICH MAY TAKE PRECEDENCE.

2. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS.

3. "R-TISTRY DRAFTING INC." SHALL NOT BE RESPONSIBLE FOR ANY VARIANCES FROM THE STRUCTURAL DRAWINGS AND SPECIFICATIONS, OR ADJUSTMENT REQUIRED RESULTING FROM CONDITIONS ENCOUNTERED AT THE JOB SITE AND IS THE SOLE RESPONSIBILITY OF THE OWNER/ BUILDER.

4. CONSTRUCTION LOADS ON THE STRUCTURE CAUSED BY INTERIM STORAGE OF MATERIALS OR USE OF EQUIPMENT, SHALL NOT BE ALLOWED TO EXCEED THE DESIGN LOADINGS.

5. ALL WINDOW AND DOOR SIZES AND OPERATION ARE TO BE CONFIRMED BY OWNER/BUILDER WITH THE MANUFACTURE.

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NO.2	MODIFIED HAMMERHEAD	MAY 26 2022

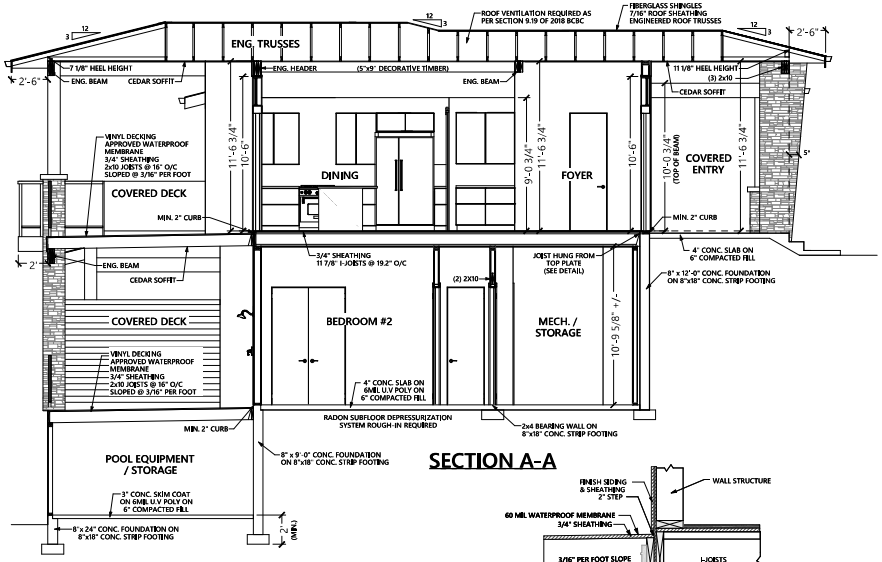
PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE:
2022-05-26

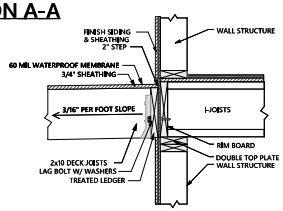
SCALE:
1/4" = 1'

SHEET:
2/10

Schedule C: Sections



SECTION A-A



DECK CONNECTION DETAIL

SCALE: 1" = 1'-0"

SPECIFICATIONS

ROOF CONSTRUCTION
(SBS) TORCH ON FIBERGLASS SHINGLES
7/16" & 5/8" ROOF SHEATHING
ENGINEERED ROOF TRUSSES
11 7/8" I-JOISTS
6 MIL UV POLY
1/2" DRYWALL

EXTERIOR WALLS
ACRYLIC STUCCO
CULTURED STONE
CEDAR PLANK
7/16" WALL SHEATHING
2x6 STUDS 24" O/C
1/2" DRYWALL

STAIR CONSTRUCTION
PRE MANUFACTURED
10" TREAD + 1" NOSING
2X6 @ 16"o/c LANDINGS

DOORS & WINDOWS
WINDOWS & DOORS (REFER TO INSULATION SPECS.)
STYROFOAM BACKER ROD AND CAULKING SEALS

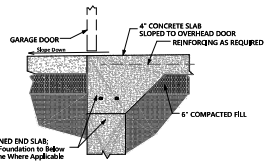
FOUNDATION
8" CONC. FOUNDATION
10MM REBAR
8"x18" CONC. FOOTING

CONCRETE SLAB
4" CONC. SLAB
6 MIL UV POLY
6" COMPACTED GRAVEL

DRAINAGE TILE
PERFORATED PIPE
MINIMUM 6" DRAIN ROCK
4" DRAIN TILE

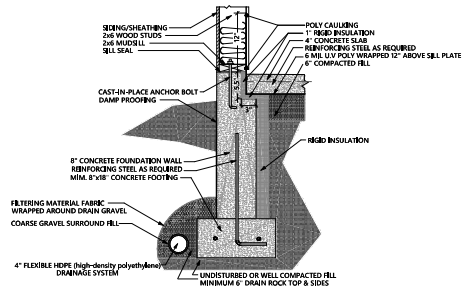
FLOOR SYSTEM
3/4" T&G SHEATHING
ENG. I-JOISTS

SOFFIT & FASCIA
1x10 & 1x12 FASCIA
1x4 SPACERS
2x4 SUB FASCIA
1/2" SHEATHING
VENTED ALUMINUM SOFFIT
CEDAR SOFFIT



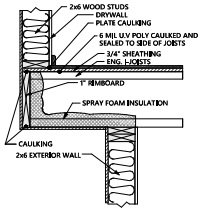
TURNED DOWN SLAB AT GARAGE OPENING

SCALE: 1" = 1'-0"



FOUNDATION FROST WALL: 24" (MIN)

SCALE: 1" = 1'-0"



FLOOR CANTILEVER

SCALE: 1" = 1'-0"

CODES AND STANDARDS

All workmanship is to be of a standard equal in all respects to good building practice.

At the time of preparation, this plan was drawn in accordance with the current edition of the B.C. Building Code. It is the responsibility of the owner/builder to insure that changes made to the code are complied with and all amendments are incorporated in the construction of this plan. All work shall conform to local building codes and bylaws which may take precedence.

Prior to processing with construction, the owner/builder must verify all information, dimensions and specifications of this plan. Written dimensions always take precedence over scale measurements.

Any variance from structural drawings and specifications or from conditions encountered at the job site, shall be resolved by the owner/builder and such solutions shall be their sole responsibility.

CONCRETE & FOOTINGS

All concrete to have a minimum compressive strength of 2,900 PSI (20 MPa) at 28 days.

All foundation walls 24" (600 mm) and higher should have one horizontal 10 mm reinforcing bar 3" (75 mm) from the top. Corner reinforcing to be lapped minimum 24" (600 mm).

All footings are to have two ½" reinforcing bars. The reinforcing bars are to be situated such that one bar is 3" (75 mm) clear of the side and bottom of the footing on both sides of the footing.

Grades shown on elevations are estimated. Adjust on site as required. Retaining walls other than the foundation walls of the residence are beyond the scope of these drawings unless otherwise noted.

INSULATION / VENTILATION/ HVAC

Performance Pathway for BCBC 9.36.6
Energy Step Code Level:

Heat-recovery Ventilator: % SRE
Space Conditioning (Heating & Cooling) – Natural gas forced air: % AFUE/SEER
Service Water Heating – Tankless: EF

Air Barrier System & Location: Poly on the inside
Exterior Walls & Floor Headers – 2x6 studs @ 24" o/c: R24 Batt; Headers R20 Foam: RSI
Roof and Ceiling – Trusses @ 24" o/c with R50 blown-in or I-Joists with R28 Batt: RSI
Suspended Slab – R20 foam: RSI
Foundation Walls Below Grade – 2x4 studs @ 24" o/c with R20 batt: RSI
Foundation Floor Headers – R20 Foam: RSI
Frost Wall Foundation – R10 Vertical to footing with thermal break at slab: RSI
Floors Over Unheated Space – I-Joists with R40 batt: RSI

Windows: U-Value =
Doors: U-Value =
FDWR: %

Walls and ceilings between residence and attached garage shall be insulated.

Insulation requirements may vary with heating systems and with local conditions.

All roof spaces shall be ventilated with soffit, roof or gable vents or a combination of these, equally distributed between the top of the roof space and soffits.

ABOVE GRADE MASONRY

All above grade masonry is to conform to the BC Building Code.

If brick veneer is to be installed, counter flashing shall be installed up to 8" (200 mm) behind the building felt and below the bottom course with vertical joints raked clean. Weep holes 24" (600 mm) o.c.

CARPENTRY

Framing lumber shall be number two (2) or better Spruce unless otherwise specified on the plan. All beam and lintel sizes shown on the drawings to be reviewed & confirmed by truss manufacturer and contractor. Any beam or lintel sizes provided by truss/floor manufacturer take precedence.

Joists are to be doubled under parallel partitions.

Joists shall be placed to accommodate plumbing, in the event of a discrepancy please contact floor supplier before any alterations or cuts are made.

Wood in contact with concrete shall be dampproofed with 45 lb. felt or a sill plate gasket and pressure treated with a waterborne preservative or other approved method on exterior walls.

Interior framing to be 4" (100 mm) clear of back and sides of firebox and 2" (50 mm) clear of brick chimneys. Frame exterior walls 1" (25 mm) clear from exterior fireplaces.

Plates are to be anchored to concrete with ½" anchor bolts, maximum 6 ft. o.c. or other approved method.

Flush framed wood members shall be anchored with 700 lb. joist hangers unless otherwise specified.

MISCELLANEOUS

Caulk over and around all exterior openings using non-hardening caulking compound.

Flash all changes of materials on exterior walls.

Flash over all exterior openings.

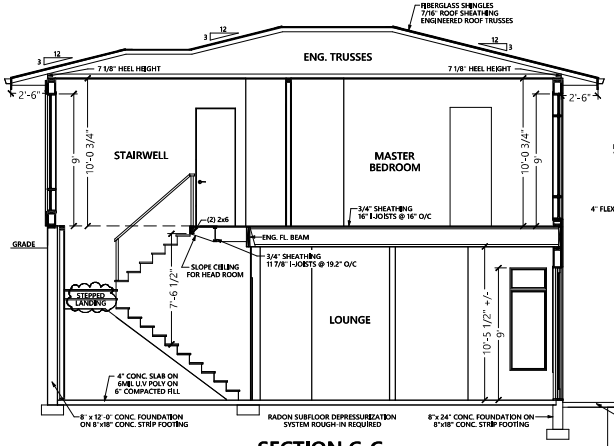
All siding or stucco to be a minimum of 8" (200 mm) above finished grade.

All balcony railings to be 3'6" (1070 mm) in height. Maximum spacing between vertical members is 4" (100 mm). Minimum distance between horizontal rails to be 32" (800 mm). Top rail to sustain outward load of 40 lbs. per lineal foot.

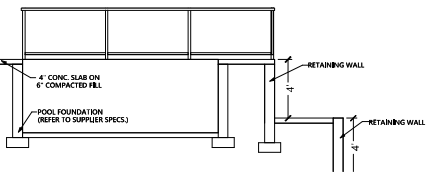
Coat and clothes closets shall have at least one rod and shelf with minimum depth of 24" unless otherwise stated. Linen closet shall have 5 adjustable shelves wherever possible. Broom closets shall have on shelf.

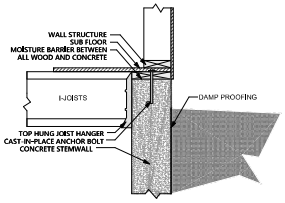
ERRORS AND OMISSIONS

"R-TISTRY DRAFTING INC." MAKES EVERY EFFORT TO PROVIDE COMPLETE AND ACCURATE HOME PLANS, HOWEVER, WE ASSUME NO LIABILITY FOR ANY ERRORS OR OMISSIONS WHICH MAY EFFECT CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE BUILDER TO CHECK AND VERIFY ALL DIMENSIONS AND DETAILS BEFORE PROCEEDING WITH CONSTRUCTION. SHOULD ANY DISCREPANCIES BE FOUND ON THESE PLANS PLEASE ADVISE "R-TISTRY DRAFTING INC." AT YOUR EARLIEST CONVENIENCE. BY DOING SO WE WILL BE ABLE TO MAKE CORRECTIONS TO THE DRAWINGS AND REPLACE ANY PLANS PURCHASED IF NECESSARY. IN THIS WAY WE CAN BETTER SERVE YOU AND PREVENT ERRORS FROM RECURRING.



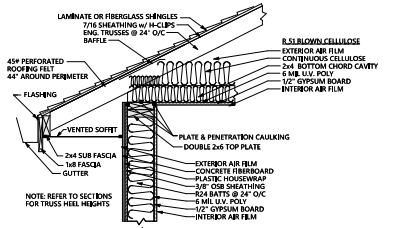
SECTION C-C

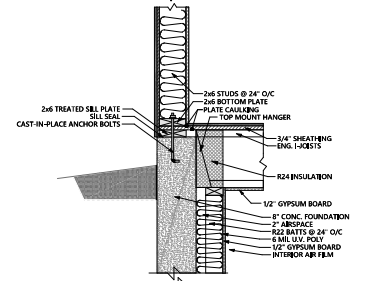


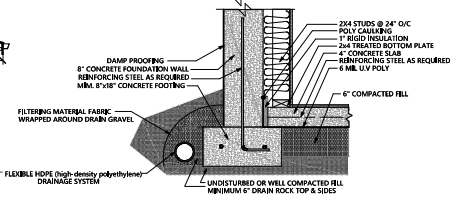


FLOOR HUNG FROM FOUNDATION SILL PLATE

SCALE: 1" = 1'-0"







TYPICAL WALL SECTION

SCALE: 1" = 1'-0"

R-tistry Home Design
design@rtistryhomedesign.com
PH: 250-469-1641

ISSUED PLANS:

M0.1	PERMIT DRAWINGS	MARCH 2-2022
M0.2	MODIFIED HAMMERHEAD	MAY 26 2022

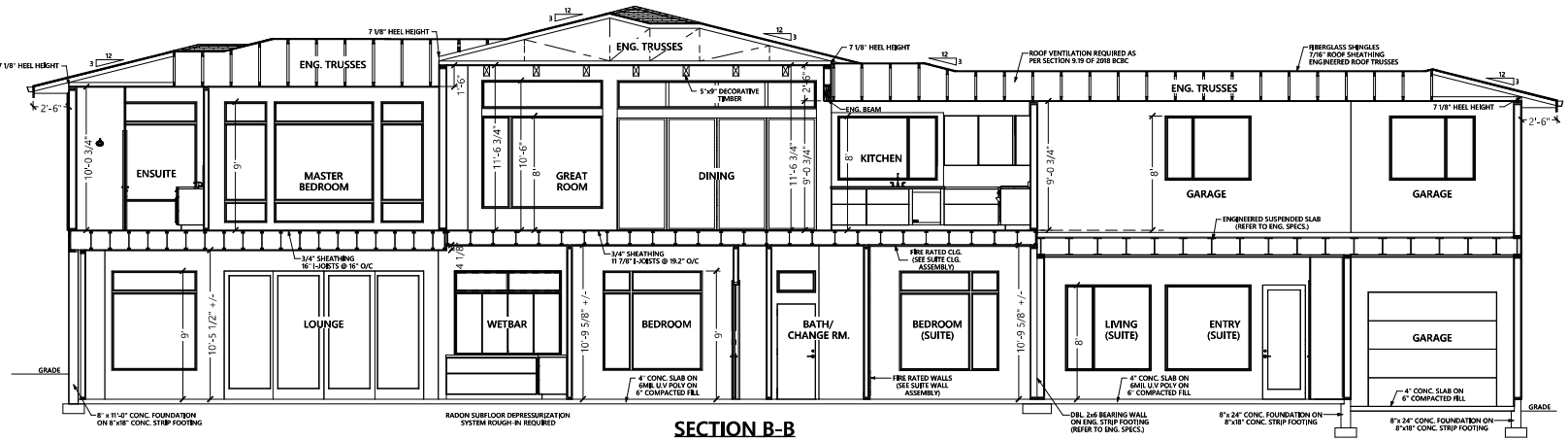
PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE:
2022-05-26

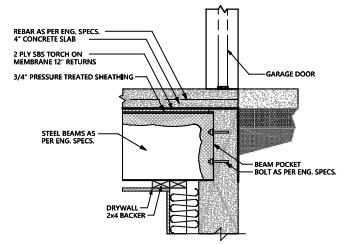
SCALE:
1/4" = 1'

SHEET:
7/10

Schedule C: Sections

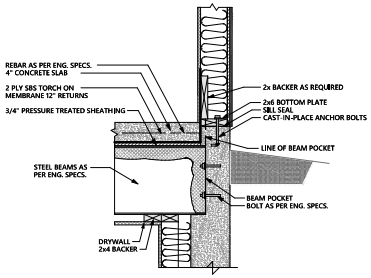


SECTION B-B



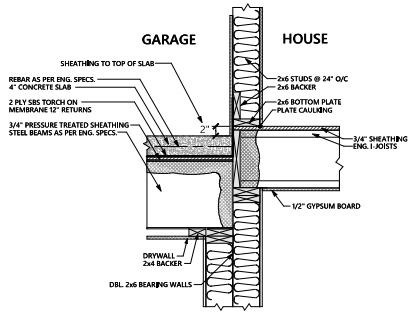
SUSPENDED SLAB AT OVERHEAD DOOR

SCALE: 1" = 1'-0"



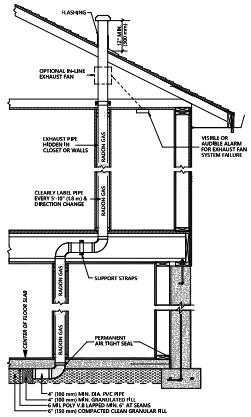
SUSPENDED SLAB AT FOUNDATION

SCALE: 1" = 1'-0"



SUSPENDED SLAB AT DBL. 2x6 WALL

SCALE: 1" = 1'-0"



SOIL GAS DEPRESSURIZATION DETAIL

SCALE: 1/2" = 1'

DEPRESSURIZATION OF SOIL GAS

1) THE ROUGH-IN FOR THE DEPRESSURIZATION OF THE SPACE BETWEEN THE AIR BARRIER AND THE GROUND, THE EXTRACTION OPENING (THE PIPE) SHOULD NOT BE BLOCKED AND SHOULD BE ARRANGED SUCH THAT THE AIR CAN BE EXTRACTED FROM THE ENTIRE SPACE BETWEEN THE AIR BARRIER AND THE GROUND. THIS WILL ENSURE THAT THE EXTRACTION SYSTEM CAN MAINTAIN NEGATIVE PRESSURE UNDERNEATH THE AIR BARRIER OVER THE ENTIRE SURFACE. IN SPACES WHERE THE AIR BARRIER, THE GROUND SURFACE AND CREATION OF THE EXTRACTION SYSTEM MEETS) MAY HAVE DESIGN IMPLICATIONS WHERE THE FOOTING LAYOUT SEPARATES PART OF THE SPACE UNDERNEATH THE FLOOR.

PROVIDING FOR THE ROUGH-IN FOR A SUBFLOOR DEPRESSURIZATION SYSTEM:

3) DOORS-ON-GROUND SHALL BE PROVIDED WITH A ROUGH-IN FOR SUBFLOOR DEPRESSURIZATION CONSISTING OF: A) A GAS-PERMEABLE LAYER, AN INLET AND AN OUTLET AS DESCRIBED IN SENTENCE (2), OR; B) CLEAN GRANULAR MATERIAL AND PIPE AS DESCRIBED IN SENTENCE (2).

2) THE ROUGH-IN REFERRED TO IN (1)(A) SHALL INCLUDE: A) A GAS-PERMEABLE LAYER INSTALLED IN THE SPACE BETWEEN THE AIR BARRIER AND THE GROUND TO ALLOW THE DEPRESSURIZATION OF THAT SPACE, B) AN INLET THAT ALLOWS FOR THE EFFECTIVE DEPRESSURIZATION OF THE GAS-PERMEABLE LAYER, AND, C) AN OUTLET IN A CONDITIONED SPACE THAT TERMINATES CONNECTION TO DEPRESSURIZATION EQUIPMENT AND IS PROVIDED WITH AN AIRTIGHT CAP AND THE CONTINUITY OF THE AIR BARRIER SYSTEM, AND, D) IS CLEARLY LABELED TO INDICATE THAT IT IS INTENDED ONLY FOR THE REMOVAL OF RADON FROM BELOW THE FLOOR-ON-GROUND.

3) THE ROUGH-IN REFERRED TO IN CLAUSE (1)(B) SHALL INCLUDE: A) A CLEAN GRANULAR MATERIAL INSTALLED BELOW THE FLOOR-ON-GROUND, AND; B) A PIPE NOT LESS THAT 100MM IN DIAMETER INSTALLED THROUGH THE FLOOR SUCH THAT: I) IT'S BOTTOM END OPENS INTO EACH CONTINUOUS AREA OF THE GRANULAR LAYER REQUIRED BY CLAUSE (A) AT OR NEAR THE CENTER OF THE AREA SERVED, II) ITS TOP END TERMINATES IN A CONDITIONED SPACE, III) BEYOND THE TERMINATION OF THE PIPE MEASURED ALONG ITS AXIS, II) ITS TOP END PERMITS CONNECTION TO DEPRESSURIZATION EQUIPMENT AND IS PROVIDED WITH AN AIRTIGHT CAP AND, IF APPLICABLE, EVERY 1.8 M AND AT EVERY CHANGE IN DIRECTION TO INDICATE THAT IT IS INTENDED ONLY FOR THE REMOVAL OF RADON FROM BELOW THE FLOOR-ON-GROUND.

R-tistry Home Design
design@rtistryhomedesign.com
PH: 250-469-1641

ISSUED PLANS:

NO.1	PERMIT DRAWINGS	MARCH 2-2022
NO.2	MODIFIED HAMMERHEAD	MAY 26 2022

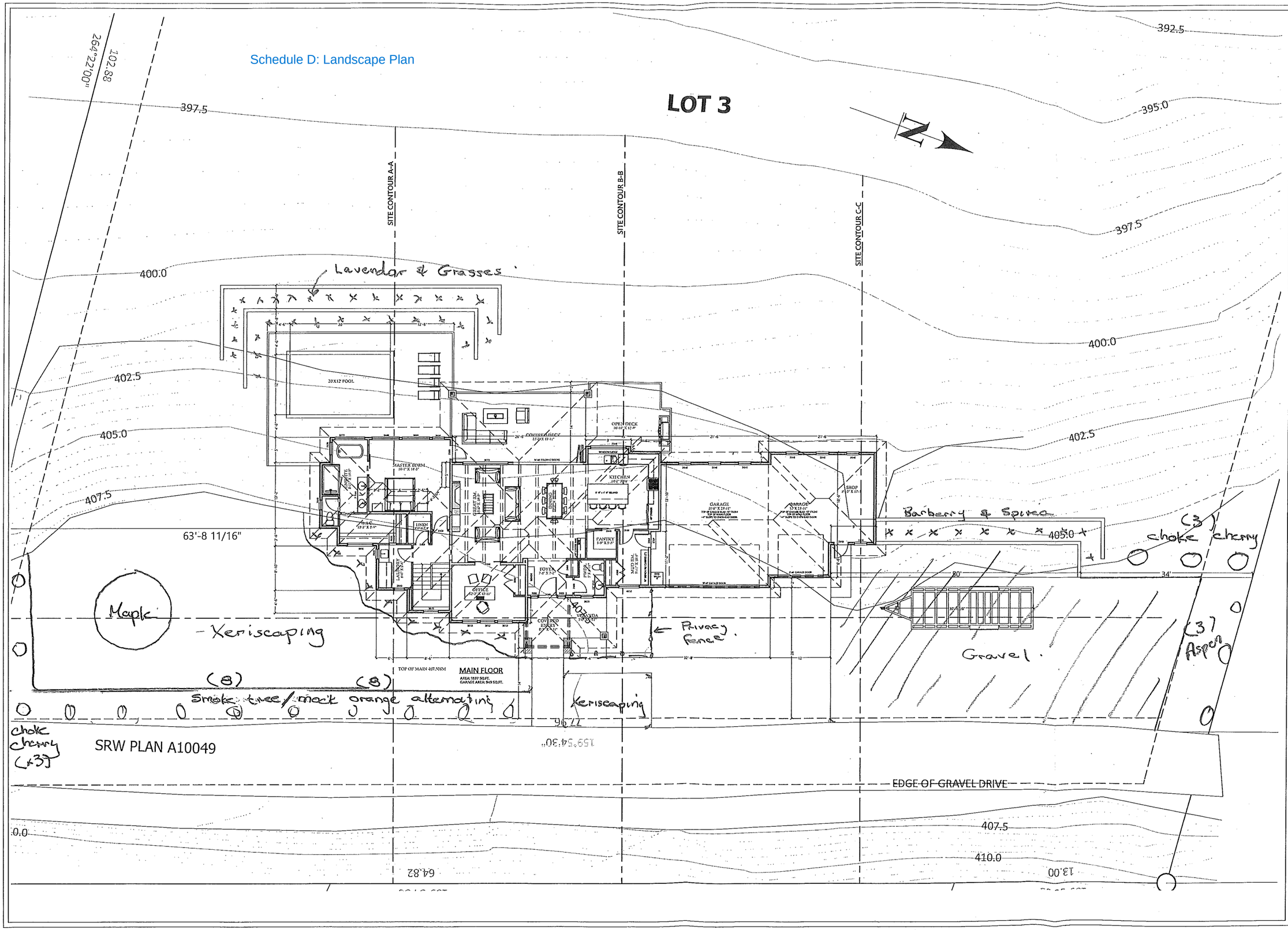
PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE:
2022-05-26

SCALE:
1/4" = 1'

SHEET:
8/10

Schedule D: Landscape Plan



R-tistry Home Design
design@rtistryhomedesign.com
PH: 250-469-1641

ISSUED PLANS:

NO.		
1	PRELIM. SITE CONTOURS	APRIL 20-2021

PROJECT TITLE:
LOT 3 MOBERLY RD.
LAKE COUNTRY BC

DATE: 2019-02-06

SCALE: 1/8" = 1'

SHEET: 2/3

Schedule D: Landscape Estimate

LANDSCAPING PLAN LOT 3 CARRS LANDING ROAD

GRASSES	PRICE EA.	QTY	TOTAL	SPREAD
Blue Wheatgrass	10.99	25	$ 274.75	24 INCHES
Blue Fescue	10.99	10	$ 109.90	24 INCHES
Burgundy Bunny	10.99	10	$ 109.90	24 INCHES
SHRUBS				
Emerald Barberry	12.99	6	$ 77.94	6 FEET
Spirea	24.99	4	$ 99.96	10 FEET
Smoke Tree	32.99	8	$ 263.92	10 FEET
Mock Orange	29.99	8	$ 239.92	10 FEET
PLANTS				
Lavendar	10.99	25	$ 274.75	24 INCHES
Thread Leaf Tickseed	10.99	5	$ 54.95	24 INCHES
Speedwell	10.99	5	$ 54.95	24 INCHES
Milkweed	10.99	5	$ 54.95	24 INCHES
Bee Balm	10.99	5	$ 54.95	24 INCHES
Sea Holly	10.99	5	$ 54.95	24 INCHES
TREES				
Maple	195	1	$ 195.00	25 FEET
Choke Cherry	70.95	6	$ 425.70	
Aspen	45	3	$ 135.00	
Crushed gravel			$ 3,500.00	4000 square feet
Top soil			$ 4,500.00	3000 square feet

TOTAL **$10,481.49**

HORIZON GEOTECHNICAL LTD.

14151 Oyama Road
Lake Country, BC V4V 2B8
Cell: 250-549-0224
Ph./Fax: 250-548-3250
jlay009@gmail.com

Schedule E: Storm water Management Plan

Tom McWilliam
12875 Shoreline Drive
Lake Country, BC
Mcw.tom5@gmail.com

May 30 , 2022

File : 21 - 6631

RE : Geotechnical Assessment for
Stormwater M anagement Plan
Lot 3 , Plan KAP 21341 , ODYD
Lot 3, Carrs Landing Road, Lake Country, BC

* **The native soils consist of angular fractured rock and gravel with gravelly silt and sand**

* **The native granular soils are very porous and permeable And will provide rapid infiltration**

* **Plenty of room on the downhill side of the building site For an infiltration trench as shown on the attached site plans**

* **Drainage Area of entire building site for calculations 77.8 x 51 m**

* **Total Footprint of Building 3753 sq ft or 348.8 m2**

* **Calculations show that an infiltration trench filled with drain rock and covered with filter cloth should be approximately 1.0 m wide x 1.0 m deep x 10 m long OR likewise 2 rock pits 2 m x 2m x 2m full of drain rock and covered with filter cloth**

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. R. LAY
19917

Jerry Lay

Jerry Lay, P. Eng.
Geotechnical Engineer

Phone/Fax: (250) 548-3250
Residence: (250) 548-3251

SITE PLAN

Infiltration Trench
Drainage Area Shown By
Heavy Black Lines
LOT 3
N
51.0 m

SITE PLAN

Gmail

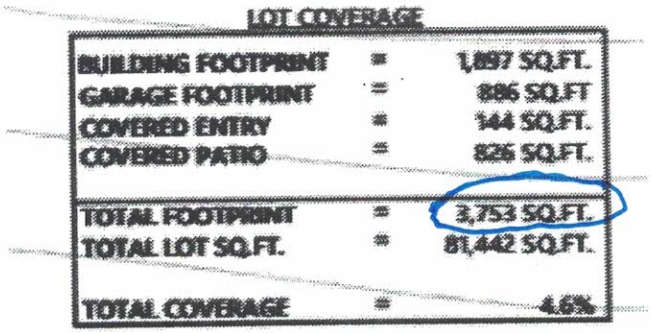
Stormwater Management Plan

1 message

Tom McWilliam <mcw.tom5@gmail.com>
To: Jerry Lay <jlay009@gmail.com>
Cc: Jenifer Berkhiem <jenifer@gibson-contracting.com>

Hi Jerry,

Thanks for the call. This is the building footprint taken off the latest drawings. I w
the latest correspondence with DoLC as well as attach the SDS bylaw of which th



LOT COVERAGE		
BUILDING FOOTPRINT	=	1,897 SQ.FT.
GARAGE FOOTPRINT	=	886 SQ.FT
COVERED ENTRY	=	144 SQ.FT.
COVERED PATIO	=	826 SQ.FT.
TOTAL FOOTPRINT	=	3,753 SQ.FT.
TOTAL LOT SQ.FT.	=	81,442 SQ.FT.
TOTAL COVERAGE	=	4.6%

Comments from DoLC Engineer:

Stormwater Calculations
Lot 3, Plan KAP 21342, Sec 32, Tp 20, ODYD
Lot 3 , Carrs Landing Road, Lake Country, BC

Total Footprint of Building -- 3,753 sq ft or 348.8 m2 or 0.03488 ha

Q = k C I A **k = 0.00278** **C = 0.80 (Roof)**
I =33 mm / hr for 10 year return period
Q = 0.00278 x 0.80 x 33 x 0.03488 = 0.00256 m3 /sec

Detention Required for 15 minute Storm (10 year return period)
V = Q x 60 sec / min x 15 min
V = 0.00256 m3/sec x 60 sec/ min x 15 min = 2.30 m3 for Footprint

Drainage Area Shown by Black Heavy Lines 77.8 m x 51.0 m = 3968 m2

Minus Footprint of 348.8 m2 = 3619.2 m2

Q = k C I A **k = 0.00278** **C = 0.10 Sand**
I =33 mm / hr for 10 year return period
Q = 0.00278 x 0.10 x 33 x 0.36192 = 0.00332 m3 /sec

Detention Required for 15 minute Storm (10 year return period)
V = Q x 60 sec / min x 15 min
V = 0.00332 m3/sec x 60 sec/ min x 15 min = 3.0 m3 for Sand
Gravel very absorptive, porous and permeable Say 3.0 m3 / 2 = 1.5 m3
Or C= 0.05 for Gravel and Sand

Footprint plus Gravel Area 2.30 m3 + 1.5 m 3 = 3.8 m3

Infiltration Trench 1.0 m wide x 1.0 m deep x 10 m Long
10 m3 x 0.40 void space = 4.0 m3

Infiltration Trench 1.2 m wide x 1.2 m deep x 8 m Long
11.5 m3 x 0.40 void space = 4.6 m3

Or 2 rock pits 80 % full of drain rock 2 m x 2m x 2m
2 rock pits 8 m3 x 0.40 void space x 80 % = 5.12 m3

December 13, 2018 DTC File No: J18-01706

Interior Health Authority
1440 – 14th Avenue
Vernon, BC
V1B 2T1

Attention: Healthy Built Environment

Dear Sir: **Re: Sewage Dispersal Filing for**
Lot 3, Moberly Road, Lake Country, B.C.

DeansTech Consulting Ltd. (DTC) was retained by Mr. Tom McWilliam, property owner, to act as the agent for filing the application for a sewage dispersal system on the above noted property. We understand the owners plan to build a 2 bedroom (2706 ft^2) (251 m^2) home with a (1652 ft^2) (154 m^2) 3 bedroom bed & breakfast (B&B) on the property. The anticipated total daily effluent flow for this application based on Table II-8 of the Standard Practice Manual (Version 3) is 220 Igpd (1000 litres per day) for the two bedroom home and an additional daily flow of 265 Igpd (1200 litres per day) for the 3 bedroom B&B. A combined total of 485 Igpd (2200 litres per day) will be used for sizing the system. The field assessment was carried out during the week of November 26, 2018.

Property Size: 0.77 hectares
Legal Description: Lot 3, Plan KAP21342, Sec 32, Twp 20, ODYD
Folio: # 19 331 03011.112
Civic Address: no current civic address

General Property Description

The property is vacant with some grass and tree covered sections and slopes down moderately to steeply from east to west. Based on the proposed building location, the area along the west side of the site has been chosen as a suitable location for the proposed sewage system dispersal field.

Geology

According to the British Columbia Ministry of Energy, Mines, and Petroleum Resources publication, Bulletin 46, "Late Glacial History and Surficial Deposits of the Okanagan Valley", the site is outside the mapping area, however based on DTC's knowledge, the site should consist of "Kettled Outwash Deposits", which mainly include sand & gravel by may include some silt & clay in localized areas.

10553 Okanagan Centre Road West, Lake Country, B.C. V4V 2H8
Phone: (250) 766-0533 þ Fax: (250) 766-0513 þ Cell: (250) 317-6728 þ e-mail: deans1@shaw.ca

Hydrogeology

Based on the topography and location of the lot, the interpreted direction of groundwater flow is likely to the west to Okanagan Lake, which is approximately 80 m west of the proposed dispersal field.

A water well search of the BC Groundwater Data Base was carried out and the nearest well appears to be approximately 200 metres from the proposed dispersal field area. DTC has confirmed that the property will be serviced by municipal water supply. A copy of the well map is attached for reference.

Field Results

- Two testpits were excavated in proposed dispersal area location. The soils were logged by DTC on November 28, 2018. The soil observed in the testpits excavated in the proposed new sewage dispersal area consisted of silt loam to 3.0 feet overlying bedrock. The silt loam was firm, weak blocky, damp and dark brown.
- The slope in the proposed dispersal area was measured to be 19% to 25%.
- Two percolation tests at 2.0 feet below grade produced results of 20 & 25 min/inch. Based on these results and the soil type a soil hydraulic loading rate of 0.61 Ig/ft^2/day (30 litres/m^2/day) for Type 2 effluent has been implemented.

The attached Figure 1 shows the overall lot layout and test locations, Figure 2 outlines the proposed tank nest layout, Figure 3 shows sand mound configuration and Figures 4&5 shows the cross section view of the proposed sand mound and tank nest.

Site Investigation Summary:

- Soil Texture – silt loam over bedrock,
- Soil Structure – weak blocky,
- Percolation Rate – 23 minutes/inch (average),
- Slope down gradient – 25%,
- Depth of porous soil – 36”,
- Coarse gravel content < 20 %

Site Capability and System Type

The results of the field investigation were compared to Tables II-10 to II-21 of the SPM Version 3, Volume II to identify soil type, constraining factor and system solution. Based on the information from these tables, the soil type category is silt loam with a moderate permeability. The slope is greater than 15% therefore pressure distribution is required. The vertical separation to bedrock may vary therefore a sand mound is needed as shallow trenches would be very difficult to install and would disturb a much larger surface area than a sand mound would. Type 2 effluent is proposed for slope and soil depth considerations.

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DTC proposes the installation of a sand mound with pressure distribution using Type 2 effluent with a double flout device as there is approximately 60 feet of available head.

During the design stage for any sewage dispersal system, the determination of a linear hydraulic loading rate (LLR) is necessary in order to determine the minimum system length along a contour. Based on the calculations, a minimum length of 120 feet would be required and will be met.

System Design

DTC proposes the installation of a pressure distribution system with Type 2 effluent to a sand mound.

DDF (Daily design flow):
DDF is selected as per SPM table II- 8 for a 2 bedroom residence with a 3 bedroom bed & breakfast:

1000 L/day + 400 L/day x 3= 2200 L DDF

TANK SIZE
2200 L x 2.5 = 5,500 L (1230 Ig) DTC recommends a 1350 Ig two chamber tank.

LLR (Linear loading rate and calculation of minimum system length):
For this site and soil selected LLR is 60 L/day/metre.
The minimum system length on a contour, based on a LLR of 60 L/m for a > 15% slope, 60 - 90 cm depth of silt loam with poor structure category as per SPM Table II- 27 is,

2200 L DDF ÷ 60 L/m = 36.7 m minimum system length

HLR (sand hydraulic loading rate selected for design):
The bed area infiltrative surface is sized based on a HLR of 40 L/day/m^2 (considered conservative for proposed sand use) for Type 2 effluent to clean coarse sand as per SPM Table II-24.

AIS (Calculation of minimum area of basal infiltrative surface):
2200 L/day ÷ 40 L/day/m^2 = 55 m^2

Calculate minimum bed width of infiltrative surface:
55 m^2 ÷ 36.6 m = 1.5 m

Minimum area of basal infiltrative surface for onsite soils:
For the onsite soils, the infiltrative surface is sized based on a HLR of 30 L/day/m^2 for Type 2 effluent to silt loam as per SPM Table II-22.
2200 L/day ÷ 30 L/day/m^2 = 74 m^2

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Area needed downslope = minimum basal AIS – Bed AIS:
74 m^2 – 63 m^2 = 11 m^2

Minimum area needed downslope of bed = Area ÷ Bed Length
= 11 m^2 ÷ 36.7 m = 0.3 m

Area needed downslope = minimum 7.5 m mantle width

Configuration of Dispersal System:

- DTC proposes the installation of a sand mound measuring 140 feet by 35 feet wide with 2 laterals each 120 feet inside a bed area of 5.0 feet by 120 feet for a total of 240 feet of laterals.

- Total length of laterals for calculation of orifice spacing:
  36.6 m length x 2 lateral sections = 73.2 m

Number of orifices:

Based on SPM standard (Table II- 43) of .56 m^2 effective AIS/ orifice.
56 m^2 AIS ÷ .56 m^2/orifice = 100 orifices to be divisible by two lateral sections with 50 orifices per each of the two lateral sections.

Orifice spacing:

Total length of laterals ÷ total number of orifices
73 ÷ 100 orifices = 0.70 m, will use 62 cm (24 inch) spacing and 30 cm spacing from proximal and distal ends of each lateral section. 60 orifices per lateral are proposed.

Dosing volume: To achieve 60% of pump cycle at full pressurization for even distribution, while keeping the dose as small as possible to minimize soil saturation, a guideline of 3 x the volume of the laterals is used.

(36 m of lateral x 1.3 L/m volume for 1 ½" sch 40) = 47 L system volume
3 times the draining volume is, 47 L x 3 = 140 L/dose (minimum guideline)

Soil dose frequency check, to meet SPM Table II- 11 minimum dose category
2200 L/day DDF ÷ 8 doses per day = 280 L / dose ÷ 2 = 140 L (minimum guideline)

Available head and siphon/flout sizing

Required flow based on 3/16 inch orifices is 0.74 usgpm (from SPM V2 orifice discharge tables) for a minimum 3 feet. squirt height:

120 lateral orifices x 0.74 usgpm/orifice ≈ 90 usgpm

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Available head available ≈ 18 m, 60 feet
Based on a static head pressure worksheet provided by Premier Plastics that utilizes trial data results, the total static head required to pressure 120 lateral orifices with a 3 foot squirt height would be 30 feet plus an additional 12 feet of friction losses through fittings and laterals for a total of 42 feet.

For a minimum 3 feet squirt height with 60 lateral orifices, the required total static head requirement was calculated to be 12 feet plus an additional 4 feet of friction losses through fittings and laterals for a total of 16 feet with an estimated flow rate of 45 usgpm.

There is approximately 60 feet of available head, therefore, DTC has recommended using a double siphon/flout dosing system to achieve the desired residual head. Each flout discharge rate for an open ended pipe is rated for a minimum of 60 usgpm. Set each of the flouts to dose 30 Ig per cycle.

Construction Details

The dispersal field shall be constructed as follows:

- **The owner and installer must confirm that the dispersal area will be a minimum of 3 metres away from property line, underground utilities and any buildings. All septic tanks must be a minimum 1 metre from property line, underground utilities and any buildings.**
- This design does not incorporate the use of a garburator or reverse osmosis water filter.
- No water softener backwash, pool or hot tub drains or roof drains can enter the septic system.
- No condensate from furnaces, appliances, compressors or any other mechanical device can enter the sewage system.
- The effluent will flow by gravity from the house to a 1350 Ig two chamber septic tank with an effluent filter (polylok PL122) on the outlet "T". **Install a polylok high level alarm in the filter of the septic tank outlets.** Maximum tank burial is 24". The effluent filter must be fitted with an extension that comes within 1 foot of the access lid. The access lids for the tank must come up to final landscaping grade and safety screens must be installed.
- The effluent will then flow from the septic tank to a treatment system (Ecoflo EC7-2800 P-G) unit.
- The treated effluent will then flow by gravity to a 380 Ig flout dosing tank with double flouts to be used for pressure distribution of the laterals.
- Set each of the flouts to dose 30 Ig per dose.
- **Effluent will be discharged to the dispersal field in two - 3" force mains that each must be vented at the slope break. The siphon tank must be vented back to the riser of the septic tank**.
- Reduce the discharge pipe to 2" diameter for the last 20 feet of each discharge line.
- **The registered installer is required to confirm the setbacks from the property line**.

10553 Okanagan Centre Road West, Lake Country, B.C. V4V 2H8
Phone: (250) 766-0533 þ Fax: (250) 766-0513 þ Cell: (250) 317-6728 þ e-mail: deans1@shaw.ca

- Set aside the mound area of 35 feet by 140 feet and create a level bed area (5.0 feet by 120 feet). **DTC must inspect the base of the sand mound bed area prior to any backfilling activities**. Scarify the native soil in the bed area and the mantle prior to placing the sand.
- Do not drive or operate equipment in the mound area after scarifying the area.
- Add 18" of **pre-approved** mound sand in the bed area. **Please note that the mound sand must be approved by DTC prior to start of construction.** Mound sand should meet SPM modified mound sand specifications, with less than 4% passing the #100 sieve and less than 1% passing #200 sieve.
- **Place mound sand at the downslope scarified mantle base** and cover with imported loam over the entire area with side slopes not to be steeper than 3 to 1 as presented in Figure 3.
- Install two monitoring wells that extend to the base of the sand as shown on Figure 3.
- The laterals will be a 1 ½" diameter Schedule 40 PVC with **3/16**" holes drilled every 60 **cm or 24 inches** with all holes facing down.
- Place 6" of clean washed drain rock **(1" minus)** on the bed of the sand mound.
- Place orifice shields over all the holes with a zap strap to hold them in place.
- Place the 1 ½" perforated pipe system on the drain rock.
- Flush the system with clean water (end caps removed).
- Replace caps and perform squirt test to achieve a minimum 2 foot head.
- Install risers at the end of each lateral using 2 – 45^0 elbows with an irrigation box for access and some drain rock around it.
- Insulate the top of all tanks with 1.5" of expanded polystyrene.
- Insulate the underside of all lids, risers and irrigation boxes.
- Slope the soil around the sewage system including the tanks with a minimum of 2% grade to promote stormwater runoff.
- We recommend the installation of a water meter to assist with determining the daily flow rates and development of a proper long term maintenance plan.

Use of this report is subject to the attached General Conditions. The reader's attention is specifically drawn to these conditions, as it is essential that they be followed for the proper use and interpretation of this report. We trust this report meets with your approval. Should you have any questions or comments, please contact the undersigned.

Please contact the Planner, Rich Deans, before starting construction, to schedule a preconstruction meeting, and to make arrangements for construction oversight, final inspection and system commissioning.

In order to obtain a letter of certification, DTC is required to carry out inspections during the installation of the system and can be contacted at 766-0533 to arrange for inspection times. Upon completion of inspections and satisfactory installation, DTC will provide a letter of certification which includes as-built plans and a maintenance program.

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This portion of the project is charged at an hourly rate. Furthermore, this sewage system must be installed by a registered onsite wastewater practitioner with their installer's certificate.

Yours truly,
DEANSTECH CONSULTING LTD.

Prepared by,

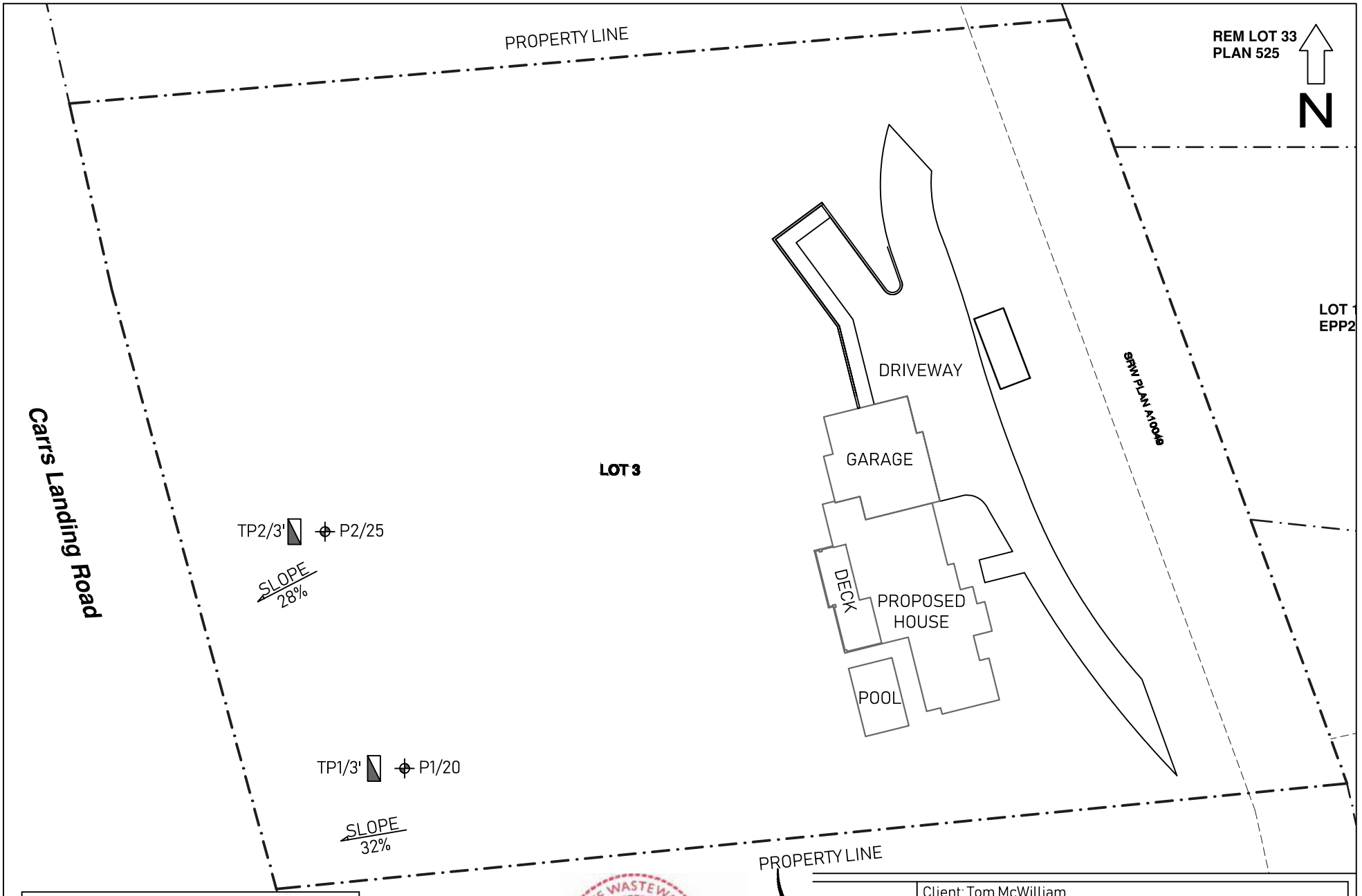
Rich Deans, ROWP # 0340
Groundwater Technician

Attachments: Figure 1, Overall Lot Layout & Testing Location Plan
Figure 2, Tank Nest Layout
Figure 3, Sand Mound Layout
Figure 4, Sand Mound Cross Section
Figure 5, Tank Cross Section Detail
Testpit Table
Copy of Septic Tank Specifications
Copy of Treatment Tank Specifications
Copy of Flout Tank Specifications
Owner Location Report
General Conditions

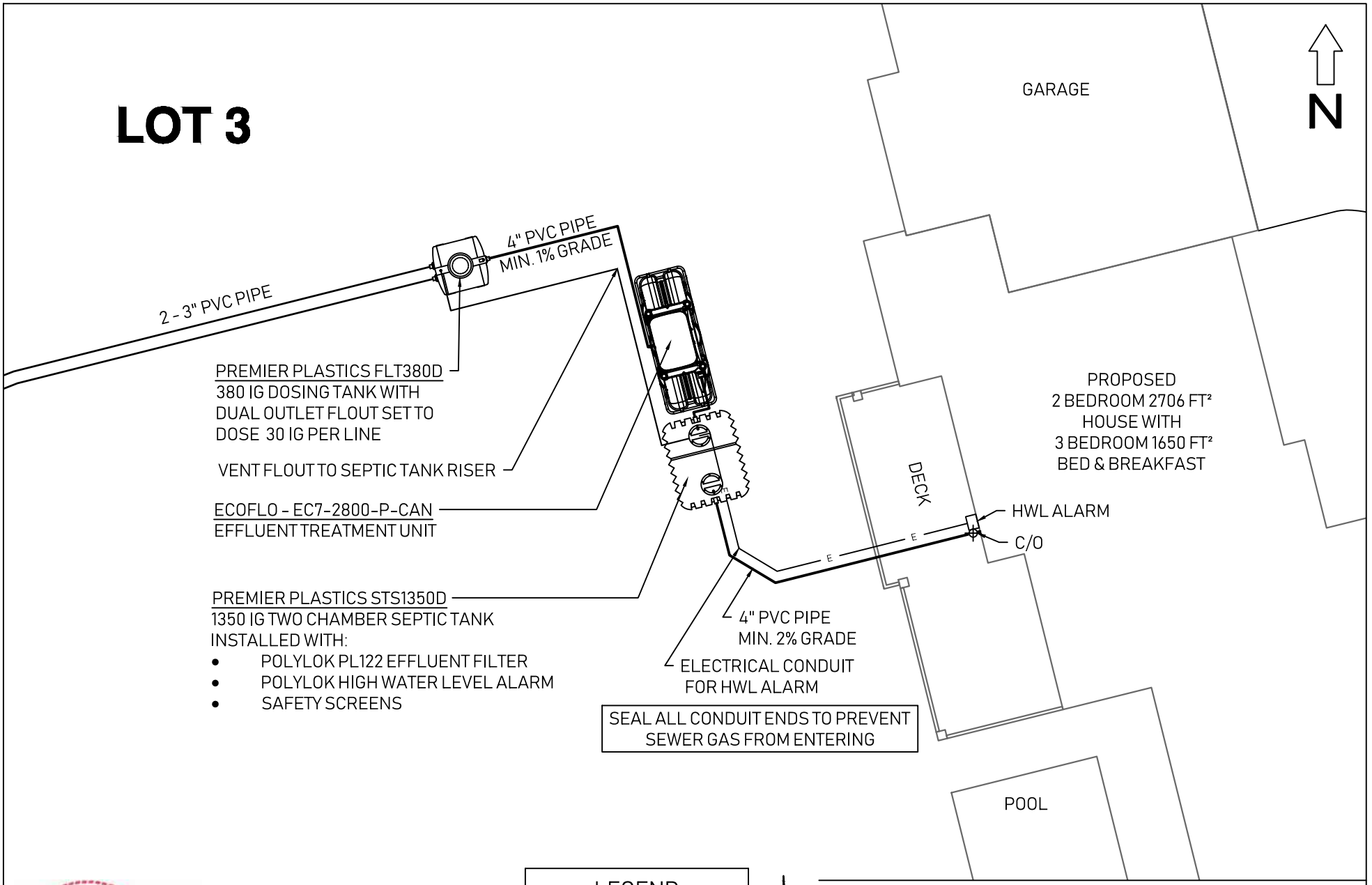
C:
Tom McWilliam
PO Box 20005, RPO Shoppers North
Vernon, BC
V1T 9L4

250-878-2522

10553 Okanagan Centre Road West, Lake Country, B.C. V4V 2H8
Phone: (250) 766-0533 þ Fax: (250) 766-0513 þ Cell: (250) 317-6728 þ e-mail: deans1@shaw.ca


PROPERTY LINE
REM LOT 33
PLAN 525
N
LOT 1
EPP2
SRW PLAN A10049
DRIVEWAY
GARAGE
LOT 3
DECK
PROPOSED
HOUSE
POOL
Carrs Landing Road
TP2/3'
P2/25
SLOPE
28%
TP1/3'
P1/20
SLOPE
32%
PROPERTY LINE
LEGEND
TESTPIT LOCATION / DEPTH FT
PERCOLATION TEST / MIN/INCH
REGISTERED ONSITE WASTEWATER PRACTITIONER
ASTTBC
RICH DEANS
PL
OW0340
DeansTech
consulting
10553 Okanagan Centre Road West
Lake Country, BC V4V 2H8
Client: Tom McWilliam
Address: Lot 3 Moberly Road Lake Country
Drawing Name: Figure 1
Overall Lot Layout And Testing Locations
Project #: J18-01706
Scale: 1:500
Drawn by: JP
Date: Dec 12, 2018

LOT 3



LEGEND	
⊕	CLEANOUT
○	MONITORING WELL
⋈	CONTROL VALVE

REGISTERED ONSITE WASTEWATER PRACTITIONER
AST TBC
RICH DEANS
PL
OW0340

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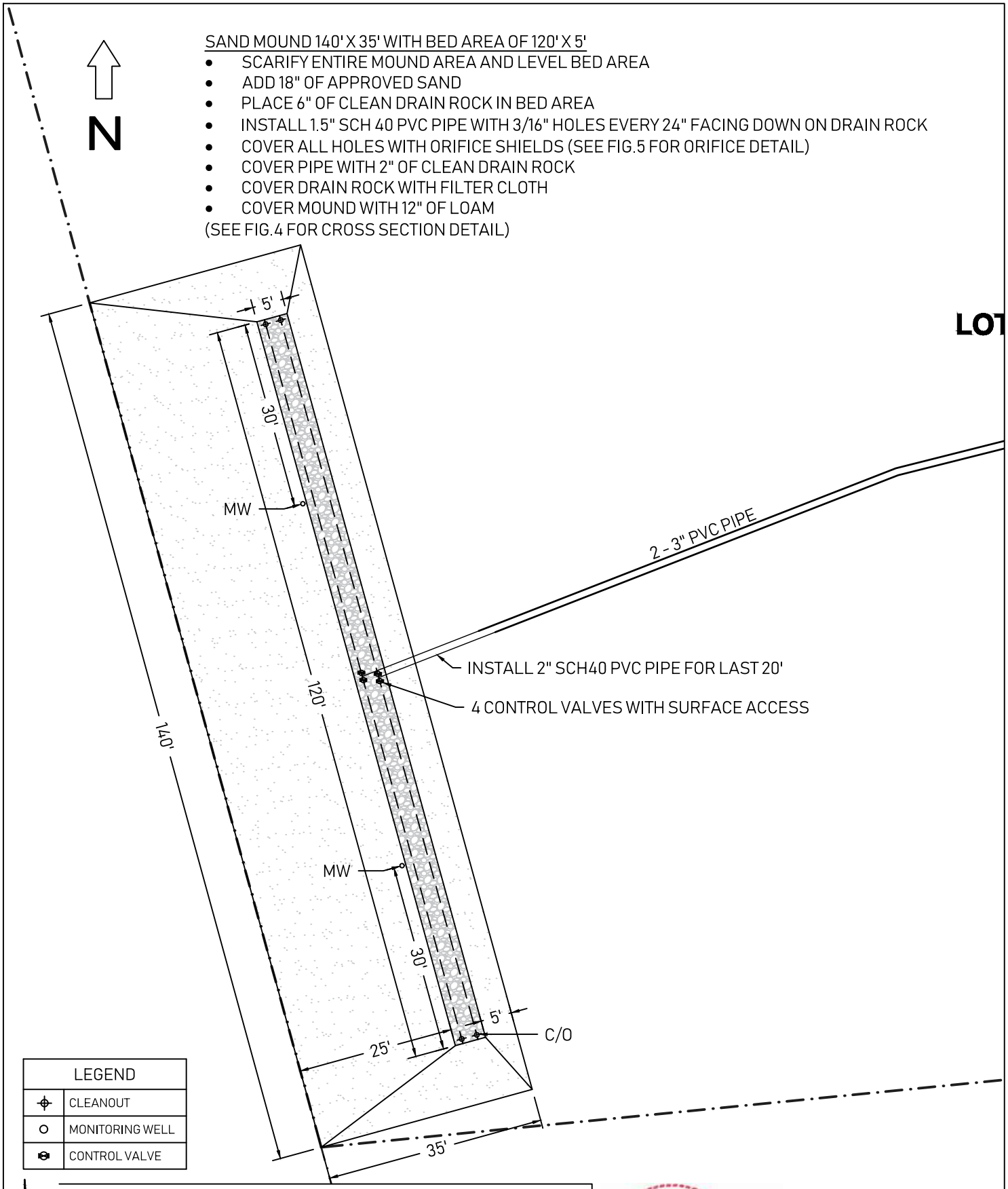
Lake Country, BC V4V 2H8

Client: Tom McWilliam			
Address: Lot 3 Moberly Road Lake Country			
Drawing Name: Figure 2 Tank Nest Layout			
Project #: J18-01706	Scale: 1:150	Drawn by: JP	Date: Dec 12, 2018



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Lake Country, BC V4V 2H8

Client: Tom McWilliam			
Address: Lot 3 Moberly Road Lake Country			
Drawing Name: Figure 3 Sand Mound Layout			
Project #: J18-01706	Scale: 1:250	Drawn by: JP	Date: Dec 12, 2018

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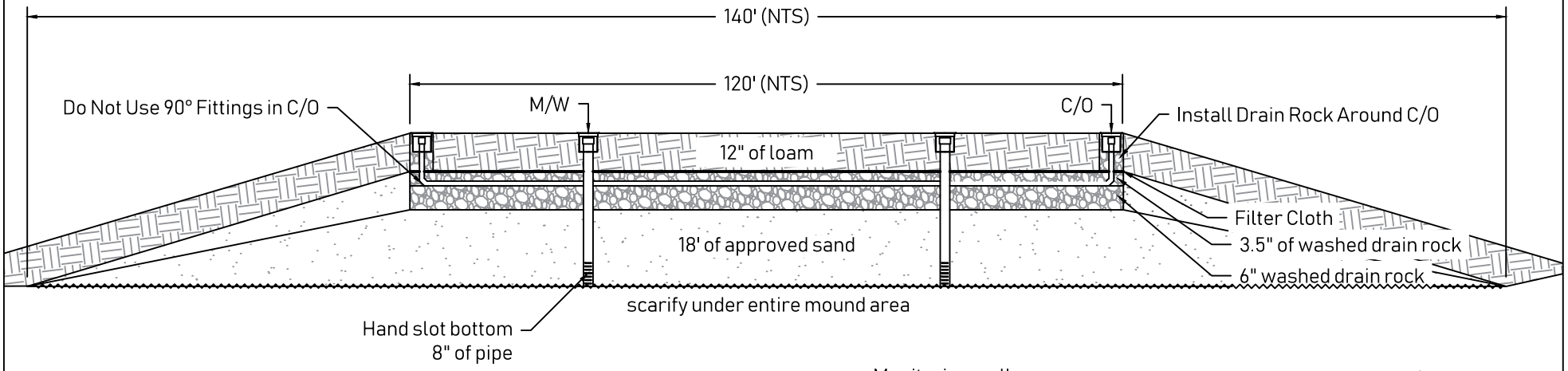
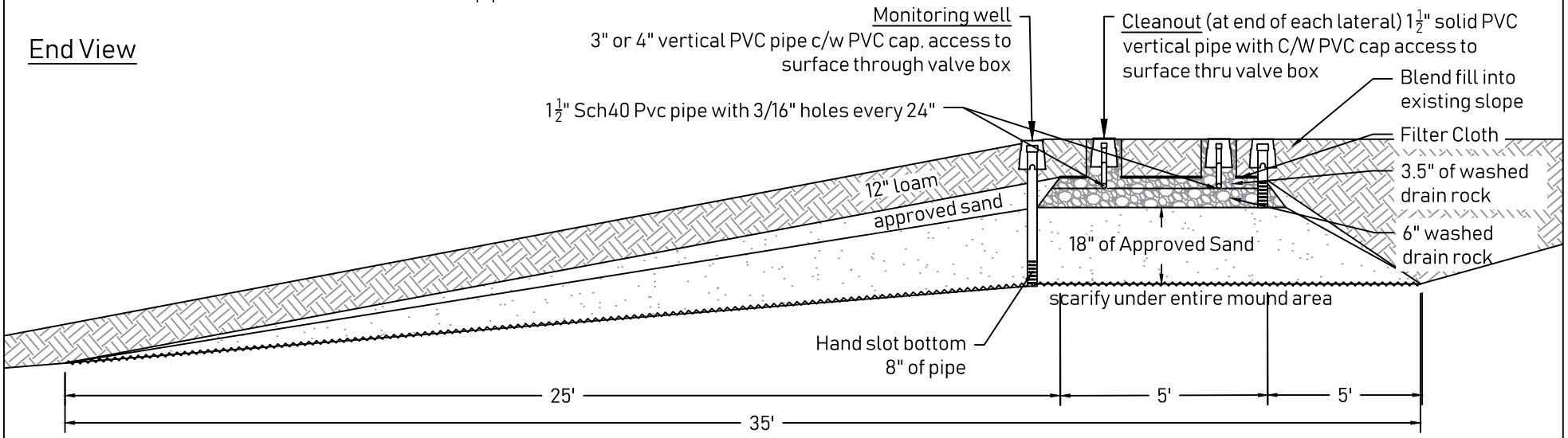
ASTTBC
RICH DEANS
PL
OW0340

Side View



End View



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OW0340

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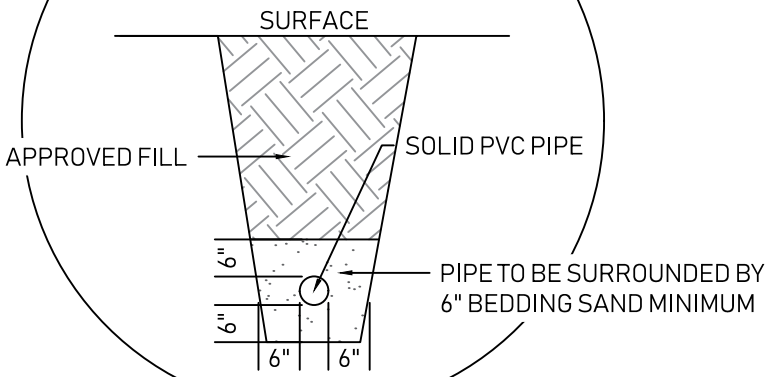
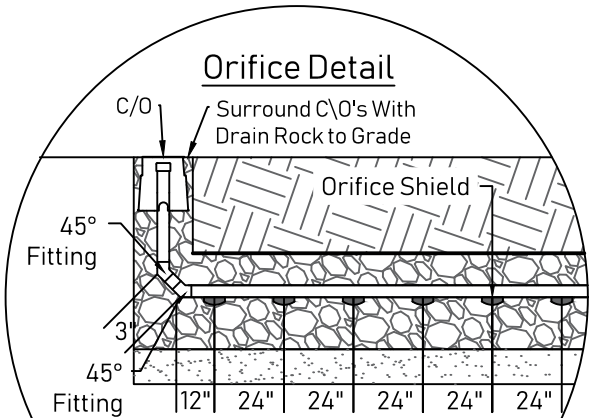
Lake Country, BC V4V 2H8

Client: Tom McWilliam			
Address: Lot 3 Moberly Road Lake Country			
Drawing Name: Figure 4 Sand Mound Cross Section Detail			
Project #: J18-01706	Scale: NTS	Drawn by: JP	Date: Dec 12, 2018

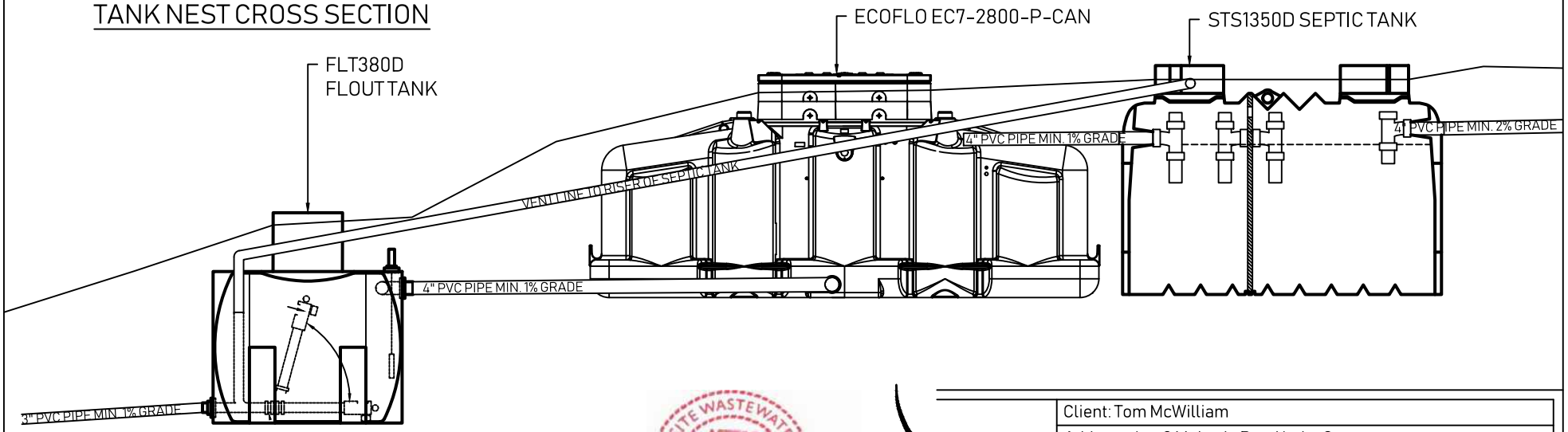
SOLID PVC SEWER PIPE TRENCH DETAIL



Orifice Detail



TANK NEST CROSS SECTION



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RICH DEANS
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10553 Okanagan Centre Road West
Lake Country, BC V4V 2H8

Client: Tom McWilliam			
Address: Lot 3 Moberly Road Lake Country			
Drawing Name: Figure 5 Tank Cross Section Detail			
Project #: J18-01706	Scale: NTS	Drawn by: JP	Date: Dec 12, 2018

TABLE 1
SOIL DESCRIPTION
Lot 3, Moberly Road, Lake Country, BC

Testpit #	Depth (feet)	Location	Percolation Test Result min/inch	Slope Angle (%)	Soil Description, depth in inches
1	3	South end of dispersal area	20	25	0 – 4.0 – TOPSOIL – Organics, silty, damp, loose, medium brownish grey. 4.0 – 34.0 – SILT LOAM – trace gravel, weak blocky structure, firm, damp, dark brown. 34.0 – Bedrock
2	3	North end of dispersal area	25	25	0 – 4.0 – TOPSOIL – Organics, silty, damp, loose, medium brownish grey. 4.0 – 36.0 – SILT LOAM – trace gravel, weak blocky structure, firm, damp, dark brown. 36.0 – Bedrock

DTC -
10553 Okanagan Centre Road West, Lake Country, B.C. V4V 2H8
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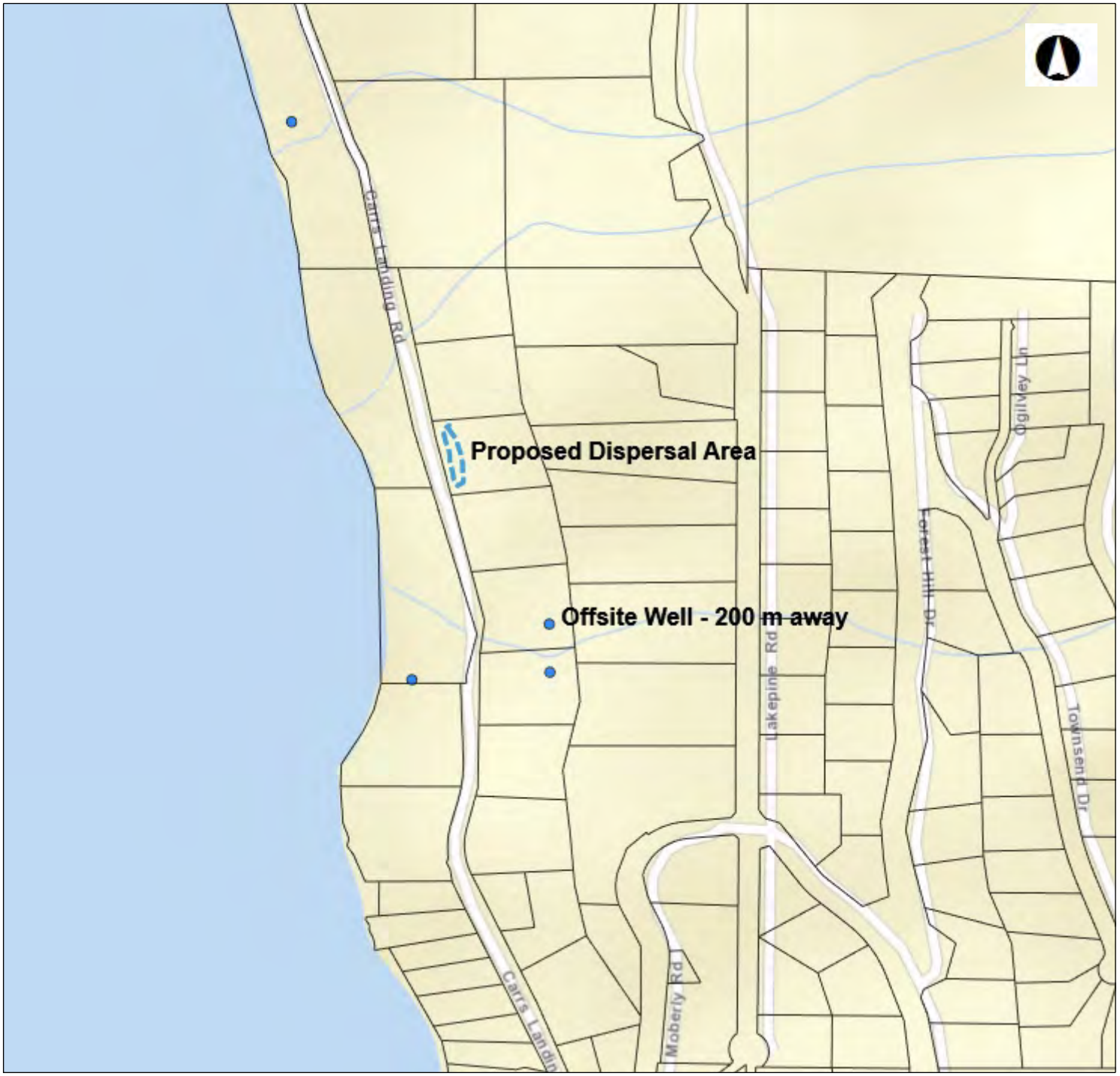
e-mail: deans1@shaw.ca



BRITISH COLUMBIA

Water Resources Atlas

Legend

- Water Wells - All
- Integrated Cadastral Fabric

0 0.18 0.37 km

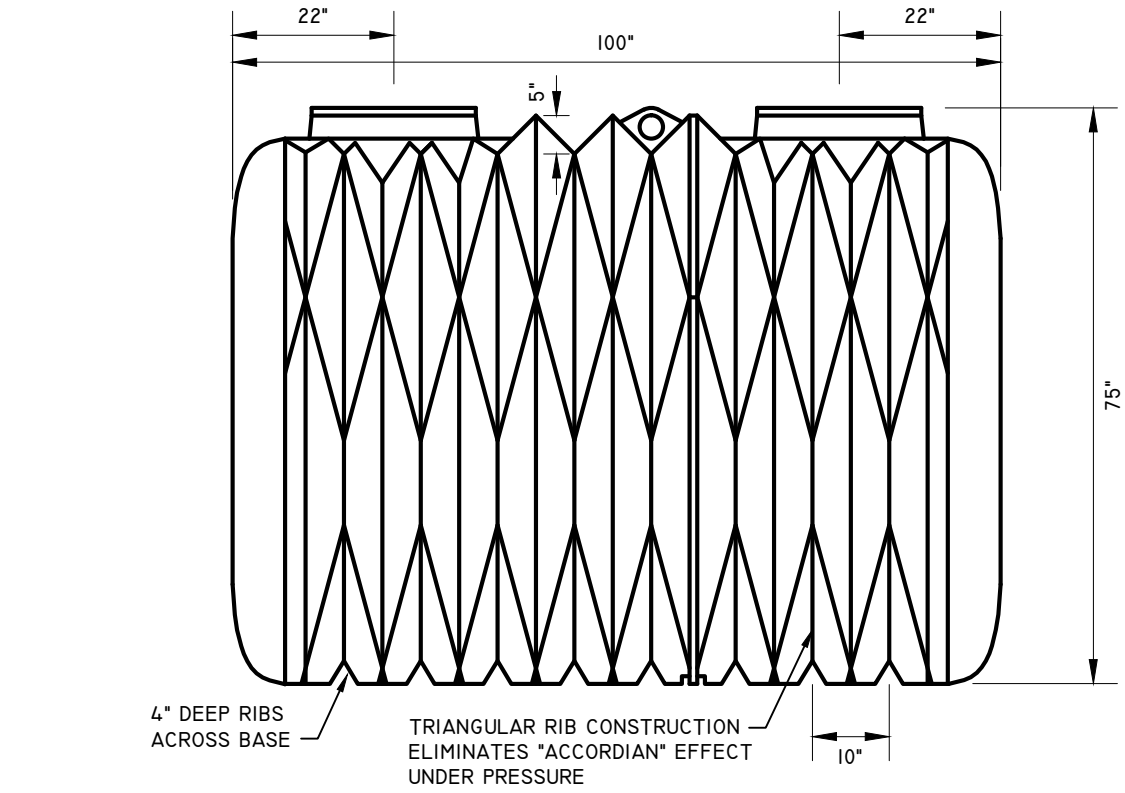
1: 9,028

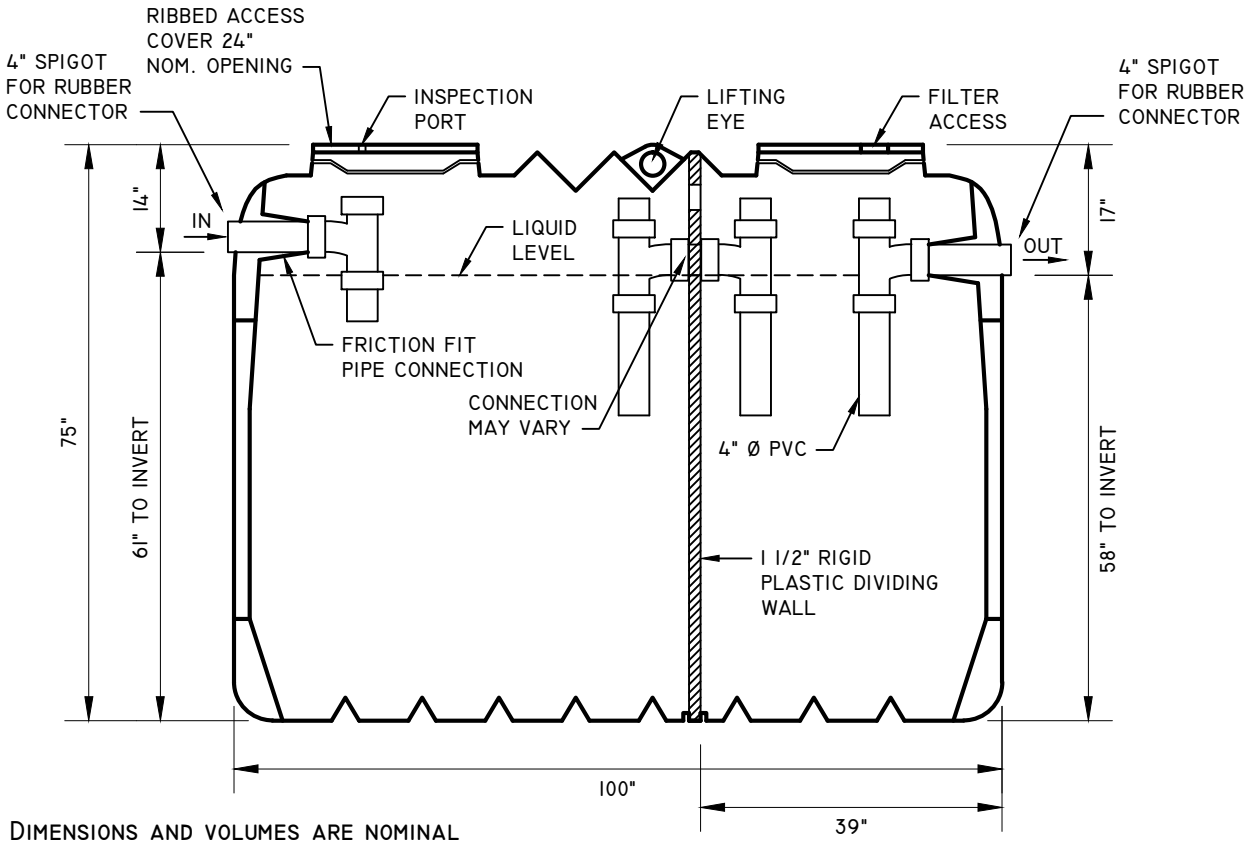
Copyright/Disclaimer

CAUTION: Maps obtained using this site are not designed to assist in navigation. These maps may be generalized and may not reflect current conditions. Uncharted hazards may exist. DO NOT USE THESE MAPS FOR NAVIGATIONAL PURPOSES.

Datum: NAD83
Projection: BC Albers

Key Map of British Columbia





NOTE: DIMENSIONS AND VOLUMES ARE NOMINAL
1" = 25.44MM

PREMIER PLASTICS
www.premierplastics.com 1-800-661-4473

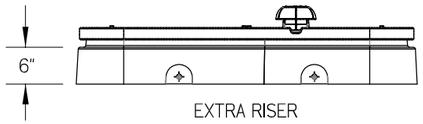
SEPTIC 'SUPERTANK'

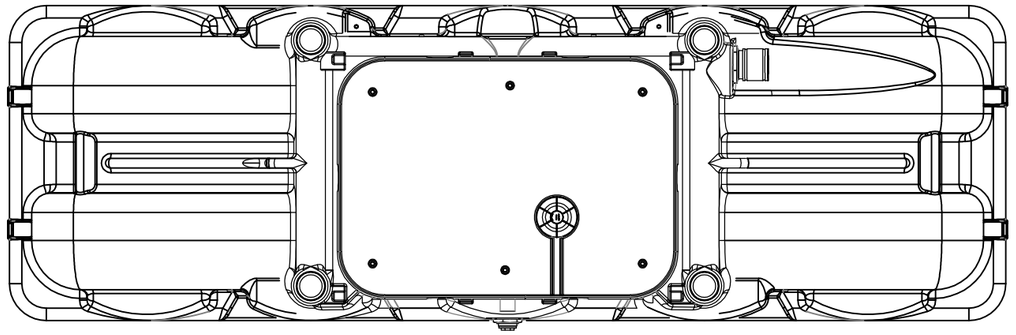
DOUBLE CHAMBER

CAN. MODEL STS1350D - 1375 IMP GAL

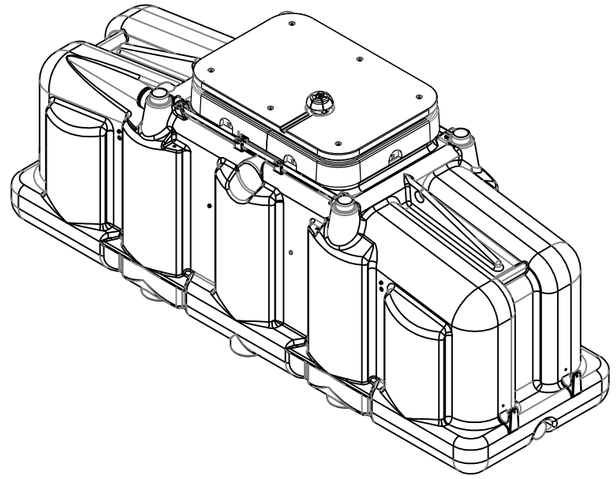
US MODEL STSU1500EH - 1650 US GAL

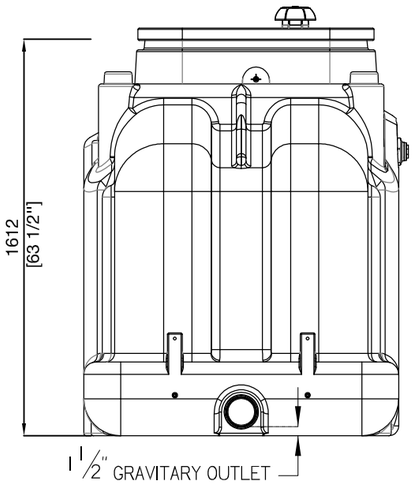
DATE:	JUNE 2010
SCALE:	NTS
DRAWN:	SGM
SHEET. No.	2 OF 2
REV.	MAY 2015

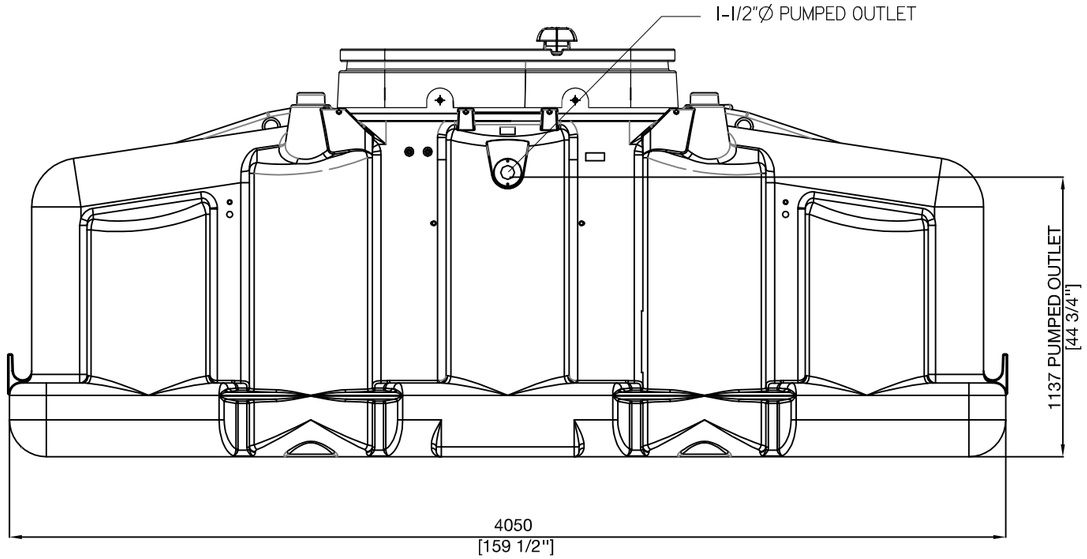


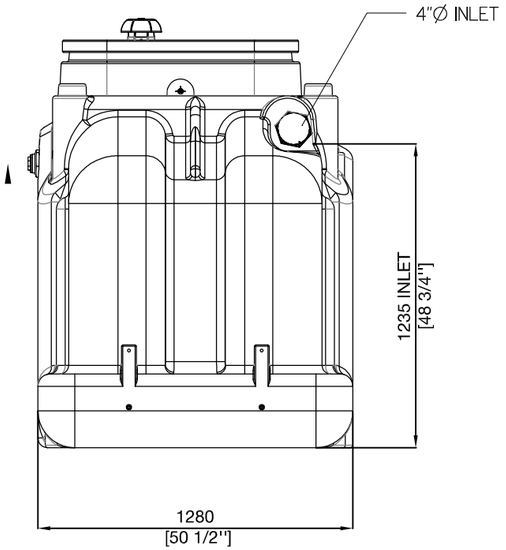


INLET









No	DATE	RÉVISION / REVISION	PAR / BY

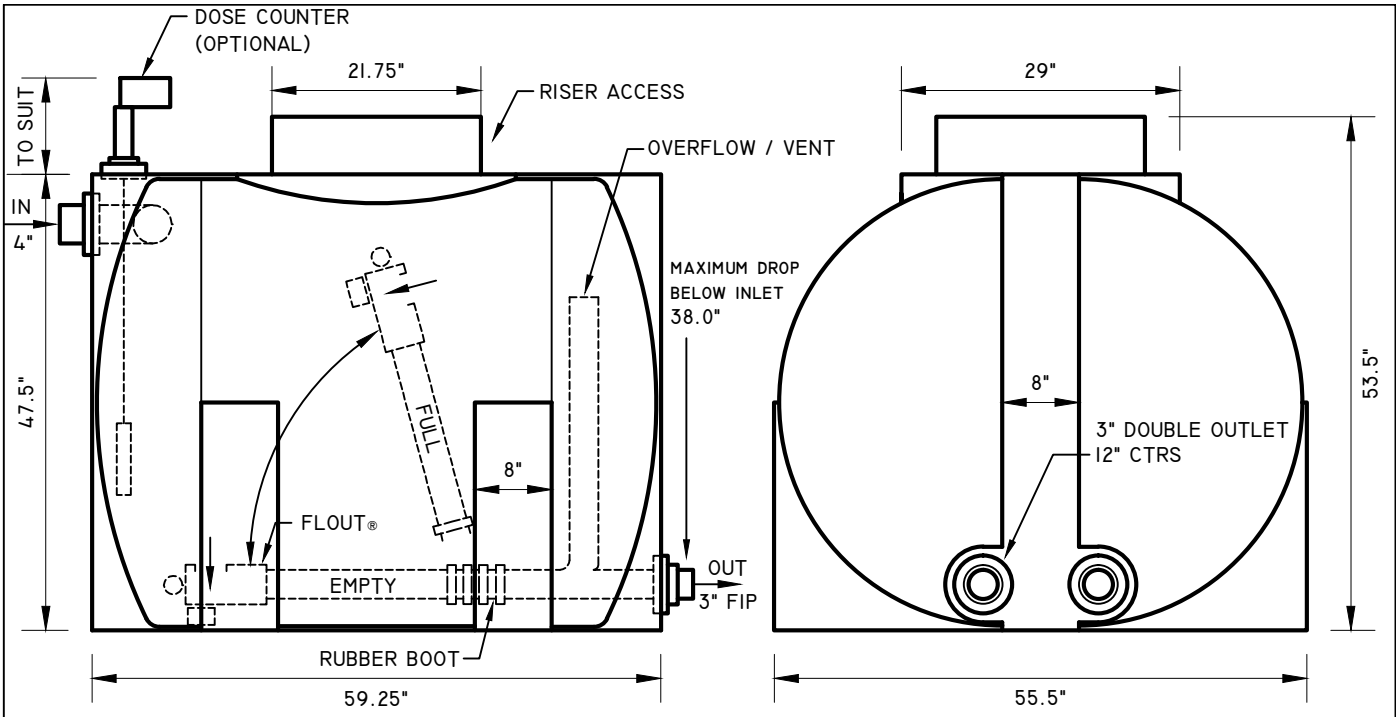
PREMIER TECH AQUA

1-800-632-6356 PREMIERTECHAQUA.COM

ECOFLO COCO 4.I
PUMPED AND GRAVITARY VERSIONS

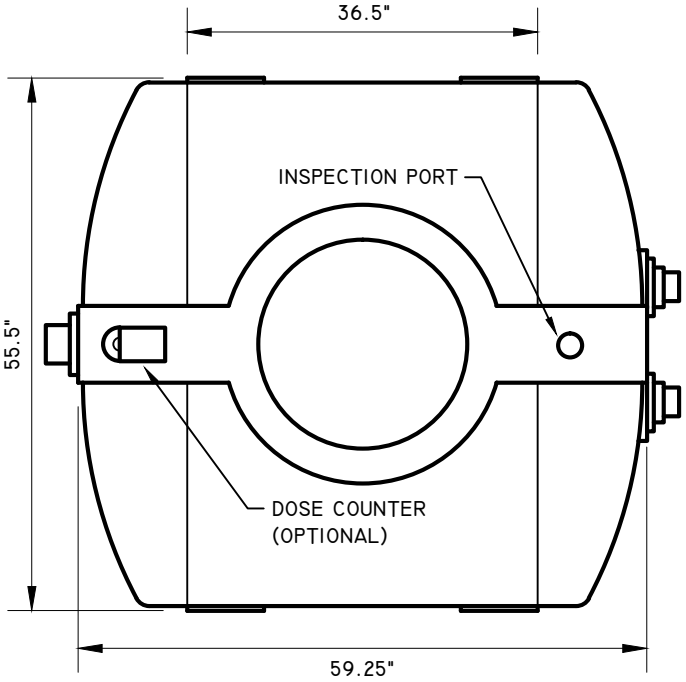
PROJET / PROJECT
OVERALL DIMENSIONS

TOL. X. ± mm .X ± mm .XX ± mm			ÉCH. / SCALE
DESSINÉ / DRAWN: PANB	DATE: 2017/03/01	MATÉRIEL / MATERIAL: N/A	No PROJET / PROJECT No. / REV.: –
VÉRIFIÉ / VERIFIED: –	DATE: –	UNITÉS / UNITS: in	PAGE 1 DE / OF 1
APPROUVÉ / APPROVED: –	DATE: –	CERTIFICATION: N/A	ECOFLO COCO 4.I



SIDE ELEVATION

END ELEVATION



TOP VIEW

48" MAXIMUM BACKFILL

SERVICE

FOR GRAVITY OR PRESSURE SEPTIC DISTRIBUTION FIELDS - SUBJECT TO HEAD AVAILABILITY.
EXPOSES ENTIRE FIELD TO EFFLUENT.
- REJUVENATE EXISTING
INCREASES EFFICIENCY AND LIFE OF FIELD.
LESS COST AND MORE RELIABLE THAN SIPHON SYSTEMS.
DOSAGES CAN BE FACTORY PRE-SET.
NO STANDBY VOLUME REQUIRED FOR DOSING TANK.

OPERATION

1. FLOUT® FLOATS UP WITH RISING EFFLUENT IN TANK.
2. AT MAXIMUM RISE, EFFLUENT SPILLS INTO FLOUT®. FLOUT® LOSES BUOYANCY AND SINKS BACK.
3. EFFLUENT DISCHARGES THROUGH THE FLOUT® UNTIL LEVEL REACHES TOP OF FLOUT®. EFFLUENT IN FLOUT® AND DISCHARGE PIPE THEN DRAINS OUT.
4. FLOUT® RE-FLOATS TO RESTART THE CYCLE.

CALIBRATED DOSES UP TO 275 IMP. GAL.
AVERAGE DISCHARGE RATE 100-120 IMP.GPM

ASSEMBLED PACKAGE INCLUDES: (4 TANK SIZES)

POLY HOLDING TANK; 3"DIA. X 20" LONG FLOUT, FALLBACK STOP AND VENT/OVERFLOW; 4" INLET SEWER PIPE, RUBBER BUSHING AND INTERNAL FLOW DEFLECTOR; 3" DIA. DISCHARGE BULKHEAD FITTING AND 3' SCHED. 40 MALE ADAPTER; 24" DIA. POLYLOK ADAPTER RING, 6" HIGH RISER AND COVER.

PREMIER PLASTICS

www.premierplastics.com 1-800-661-4473

FLOUT® DOSING TANK

380 IMP. GALLON - FLT380D (DOUBLE OUTLET)

POLYETHYLENE

DATE: FEB 2015
SCALE: NTS
DRAWN: SGM
DWG. No. FLT380D
REV. 1

Owner Location Report

Disclaimer

This information is obtained from various sources and is determined as of the specific dates set out in the Assessment Act. As a result, BC Assessment cannot warrant that it is current or accurate, and provides it for your convenience only. Use of this information without verification from original sources is at your own risk.

Report Date:	Dec 12, 2018	**Report Time:**	11:58:37 AM
Folio:		**For:**	PA80303
Roll Year:	2018	**Roll Number:**	03011.112
Area:	19	**Jurisdiction:**	331
School District:	23		
Neighbourhood:	510 - CARRS LANDING		
Property Address:	CARRS LANDING RD LAKE COUNTRY BC		
Owner Name:	THOMAS RICHARD MCWILLIAM/NICOLA JANE MCWILLIAM	**# of Owners:**	2
Owner Address:	PO BOX 20005 RPO SHOPPERS NORTH VERNON BC V1T 9L4		
Document No:	CA7032987		
PID:	007-517-581		
Legal Description:	Lot 3, Plan KAP21342, Section 32, Township 20, Osoyoos Div of Yale Land District		

Additional Owners:

No Additional Owners

Associated PIDs:

This report incorporates and is subject to these "General Conditions".

1. USE OF REPORT AND OWNERSHIP

This sewage dispersal report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary assessment. This report and the recommendations contained in it are intended for the sole use of DeansTech's client. DeansTech does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than DeansTech's client unless otherwise authorized in writing by DeansTech. Any unauthorized use of the report is at the sole risk of the user. This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of DeansTech. Additional copies of the report, if required, may be obtained upon request.

2. NATURE AND EXACTNESS OF DATA

Some data reviewed during this assessment was produced by others and has been relied upon by DeansTech to form opinions of the site. The accuracy of the data reviewed has not been confirmed. Some data was collected from sources readily available to the public. Other data and information was obtained from the client for use in this report.

3. LOGS OF TEST HOLES AND WATER WELL RECORDS

The test hole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples carried out by others. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance, which requires precise definition of soil or rock zone transition elevations, may require further investigation and review.

4. STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from the information reviewed. Stratigraphy is known only at the location of the drill hole/testpit or other drill holes/testpits in the area. Actual geology and stratigraphy between drill holes/testpits and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. DeansTech does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

5. SURFACE WATER AND GROUNDWATER CONDITIONS

Surface and groundwater conditions mentioned in this report are those observed at the times recorded in the report. These conditions vary with geological detail between observation sites; annual, seasonal and special meteorologic conditions; and with development activity. Interpretation of water conditions from observations and records is judgmental and constitutes an evaluation of circumstances as influenced by geology, meteorology and development activity. Deviations from these observations may occur during the course of development activities.

6. WATER QUALITY

Water quality information was based on the results of water samples obtained from the well(s). The chemical analysis results can very from season to season and at different depths within a well.

7. STANDARD OF CARE

Services performed by DeansTech for this report have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practising under similar conditions in the jurisdiction in which the services are provided. Technical judgment has been applied in developing the conclusions and/or recommendations provided in this report. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of this report.

Attachment B: Applicants Rationale

Description of Project in Reference to Development Permit Application

This description of the project of which the development permit is submitted is in reference to Lot 3, plan KAP21342, section 32, township 20, Osoyoos dive of Yale land district, PID 007-517-581, roll 03011.112.

We are planning to build a custom 4/5 bedroom home complete with 3 vehicle attached garage and small in-ground swimming/plunge pool. The construction style will be a walkout rancher to blend in with hillside surroundings and utilize the natural slope of the topography. There will be minimal disruption to the natural vegetation with the placement of the house requiring removal minimum trees. We plan to keep the vegetation at the bottom of the property as a natural buffer from the road below.

The access to the property will be using the existing driveway and we plan on burying the utilities to maximize the panoramic view of the lake.

Lot 3 moberly

LAKE COUNTRY
Life. The Okanagan Way.

DISTRICT OF LAKE COUNTRY

DEVELOPMENT PERMIT AREA GUIDELINES CHECKLIST

HILLSIDE DEVELOPMENT PERMIT AREA

Applicants should insert relevant comments in each section to demonstrate how the proposed development has considered the following issues as identified in Section 21.10 of the Official Community Plan relating to Hillside Development Permit Areas:

Views and Ridgeline Guidelines						
Does the proposal avoid developing on or alteration of ridgelines?	Yes	☑	No	☐	N/A	☐
Are the structures setback a minimum of 10m from ridgelines?	Yes	☐	No	☐	N/A	☑
Is the structure designed so as not to impede the views from upland properties?	Yes	☑	No	☐	N/A	☐
Are lots staggered in order to create offset building envelopes to protect views?	Yes	☐	No	☐	N/A	☑
Does the natural character of the hillside remain, i.e. is the residences and structures not the dominant feature?	Yes	☑	No	☐	N/A	☐
Site Guidelines						
Has the natural topography been incorporated into the project to minimize site disturbance and blasting?	Yes	☑	No	☐	N/A	☐
Do the proposed contours and gradients resemble natural occurring terrain?	Yes	☑	No	☐	N/A	☐
Does the proposal avoid major cut and fills intended to create a buildable lot or flat yards?	Yes	☑	No	☐	N/A	☐
Do the driveway grades follow the natural terrain?	Yes	☐	No	☑	N/A	☐
Are manufactured slopes placed behind buildings and are natural slopes mimicked?	Yes	☐	No	☑	N/A	☐
Have rock cuts been used instead of retaining walls where necessary (i.e. for roads)? Has consideration been given for visual impact of the exposed rock faces?	Yes	☐	No	☑	N/A	☐
Is lot grading provided on a consistent, comprehensive basis throughout the whole of the development?	Yes	☑	No	☐	N/A	☑
Have the manufactured slopes been re-vegetated to reflect natural conditions?	Yes	☑	No	☐	N/A	☐
Site Guidelines - Retaining Walls						
Are retaining walls minimized in order to decrease site disturbance?	Yes	☑	No	☐	N/A	☐
Are the retaining walls designed to fit with the landscape and reduce the visual impact of the wall?	Yes	☑	No	☐	N/A	☐
• Do the materials evoke a sense of permanence and reflect natural qualities in appearance through the use of context-sensitive materials (i.e. stone, masonry, brick, etc.), colours and textures?	Yes	☑	No	☐	N/A	☐
• Have large concrete lock blocks been masked or screened (i.e. through use of landscaping)?	Yes	☐	No	☐	N/A	☑

• Are they curvilinear and follow the natural contours of the land?	Yes	☐	No	☑	N/A	☐
• Have they been terraced to break up apparent mass and to provide planting space for landscaping features?	Yes	☑	No	☐	N/A	☐
• Have systems of smaller terraced walls been used instead of a single large wall?	Yes	☑	No	☐	N/A	☐
• Has landscaping been provided to screen or supplement all retaining features?	Yes	☑	No	☐	N/A	☐
Are retaining wall 1.5 metres or less in height or are retaining walls terraced?	Yes	☑	No	☐	N/A	☐
Site Guidelines - Lot Configuration and Clustering						
Are subdivisions being clustered on a portion of the site in order to protect open space in steeper areas and the natural environment?	Yes	☐	No	☐	N/A	☑
Are higher-density developments (e.g. small lot single detached residential, townhouses) being proposed in areas with less steep slopes that are most easily developable?	Yes	☐	No	☐	N/A	☑
Is the majority of the development in areas with natural slopes of less than 30%? and preserve open space in areas with natural slopes of 30% or more.	Yes	☐	No	☐	N/A	☑
Has the open space in areas with natural slopes of 30% or more been preserved?	Yes	☐	No	☐	N/A	☑
Site Guidelines - Roads						
Have roads been aligned to follow natural site contours, conforming to topographic conditions rather than cutting across contours and reducing the impact on hillsides?	Yes	☐	No	☐	N/A	☑
Has road connectivity been utilized in the road network over long cul-de-sacs and "dead-end" situations where topographic conditions permit? • Allow cul-de-sac length to be increased where connectivity in the road network is not possible due to topographic conditions, provided appropriate emergency access is constructed.	Yes	☐	No	☐	N/A	☑
Have alternative approaches to turnarounds (e.g. hammerhead configurations) been utilized?	Yes	☐	No	☐	N/A	☑
Have split roads and/or one-way roads been utilized to preserve significant natural features, to reduce the amount of slope disturbance or to improve accessibility to individual parcels?	Yes	☐	No	☐	N/A	☑
Have reduced pavement widths and right-of-way widths been utilized where service levels (such as snow plowing) can be maintained, emergency vehicle access can be maintained, the reduced widths provide demonstrably less slope disturbance and the reduced widths contribute to the overall neighbourhood character?	Yes	☐	No	☐	N/A	☑
Has reduced roadway cross sections in width been considered if parking is to be located on private lots or if special pull-out parking areas are established in strategic positions?	Yes	☐	No	☐	N/A	☑
Have meandering sidewalks adjacent to the road been provided as a means of eliminating long, sustained grades, preserving natural features, or reducing grading requirements within the right-of-way? Varied offsets between the road and sidewalk will be considered for these purposes.	Yes	☐	No	☐	N/A	☑

Landscaping Guidelines - Preserving Vegetation						
Has existing vegetation been retained?	Yes	☑	No	☐	N/A	☐
Have building envelopes been sited outside areas of established vegetation?	Yes	☑	No	☐	N/A	☐
Landscaping Guidelines - Restoration of Vegetation						
Have native plant materials been used to the greatest extent possible?	Yes	☑	No	☐	N/A	☐
Have dry slopes been replanted with drought and fire-resistant species?	Yes	☐	No	☐	N/A	☑
Have trees, shrubs and grasses been planted in masses and patterns characteristic of a natural setting and with the intent of encouraging biodiversity?	Yes	☑	No	☑	N/A	☐
Does the landscaping pay particular attention to areas adjacent to street frontages and areas adjacent to retaining features?	Yes	☑	No	☐	N/A	☐
Have trees and vegetation been replaced in a manner that replicates the characteristics and performance of the natural setting, including the provision of a sufficient density of trees, sufficient ground cover and intensity of vegetation?	Yes	☑	No	☐	N/A	☐
Have trees been planted in organic clusters rather than in lines or formal arrangements?	Yes	☑	No	☐	N/A	☐
Do manufactured slopes blend in with existing slope conditions?	Yes	☐	No	☐	N/A	☑
Have water-conserving principles and practices in the choice of plant material (xeriscaping) and in the irrigation design and watering been followed? (i.e. temporary drip irrigation systems, hand watering, and/or automatic shut-off valves).	Yes	☑	No	☐	N/A	☐
Has landscaping been used to minimize the impact to viewscapes by screening building, landscape cuts and retaining walls?	Yes	☑	No	☐	N/A	☐
Building and Structure Guidelines						
Are buildings located to minimize site grading?	Yes	☑	No	☐	N/A	☐
Has the building foundation been stepped back to reduce site grading and retaining requirements? (i.e. buildings should be set into the hillside and integrated with the natural slope conditions).	Yes	☑	No	☐	N/A	☐
Have stories been stepped back above second levels to avoid single vertical planes?	Yes	☐	No	☐	N/A	☑
Have varying rooflines been provided?	Yes	☑	No	☐	N/A	☐
Have buildings been articulated to reduce mass and vary rooflines?	Yes	☑	No	☐	N/A	☐
Have unbroken expanses of wall been avoided?	Yes	☑	No	☐	N/A	☐
Have buildings been designed in smaller components that appear to fit with the natural topography of the site?	Yes	☑	No	☐	N/A	☐
Have roof pitches been designed to reflect the slope of the natural terrain? (i.e. angling roof pitches at slopes that are similar to those of the natural terrain).	Yes	☑	No	☐	N/A	☐
Have natural color tones for housing, fences, retaining walls and outbuildings been used to help the development blend in to the setting?	Yes	☑	No	☐	N/A	☐
Have natural building and retaining wall materials been used wherever possible?	Yes	☑	No	☐	N/A	☐
Have buildings been articulated to reduce mass and vary rooflines?	Yes	☑	No	☐	N/A	☐
Have retaining walls within the front yard been discouraged?	Yes	☑	No	☐	N/A	☐
Building and Structure Guidelines- Siting and Orientation						

Have buildings been oriented so they run parallel with the natural site contours to reduce the need for site grading works and to avoid high wall façades on the downhill elevation.	Yes	☑	No	☐	N/A	☐
Have buildings been sited to minimize interference with the views from nearby (uphill) buildings.	Yes	☑	No	☐	N/A	☐
Building and Structure Guidelines- Setbacks						
Have building setbacks been adjusted to allow greater flexibility locating a building and reduce the visual massing effect?	Yes	☑	No	☐	N/A	☐
Do the setbacks enable off-street parking and utilize the road right-of-way behind the curb or sidewalk to accommodate parking?	Yes	☑	No	☐	N/A	☐
Have side-facing or setback garages been utilized as a means to reduce excessive cut/fill, help to avoid hazardous slopes or sensitive areas and enhance the neighbourhood?	Yes	☑	No	☐	N/A	☐

LAKE COUNTRY
Life. The Okanagan Way.

Municipal Hall
Development Services Department
10150 Bottom Wood Lake Road
Lake Country, BC V4V 2M1
t: 250-766-6674
f: 250-766-0200
development@lakecountry.bc.ca

Greenhouse Gas Reduction and Resource Conservation

Consideration has been given to the following issues as identified in Section 22.12 of the Official Community Plan relating to the Greenhouse Gas Reduction and Resource Conservation Development Permit Areas:

Has site density been maximized for subdivisions?	Yes	☐	No	☐	N/A	☒
Has the building footprint been minimized in order to allow for maximum green space?	Yes	☒	No	☐	N/A	☐
Have lots been oriented to maximize solar orientation of building envelopes? Have buildings been oriented to maximize solar gain?	Yes	☐	No	☐	N/A	☒
Is the subdivision laid out to minimize the length and amount of infrastructure (such as sewer & water lines and roads)?	Yes	☐	No	☐	N/A	☒
Does the layout allow for alternative transportation options and transit?	Yes	☐	No	☐	N/A	☒
Is the subdivision laid out to maximize site connectivity to nearby amenities and services?	Yes	☐	No	☐	N/A	☒
Do the materials and colors used in building construction minimize heat absorption? Is the roof not a dark color? Materials and colors will be light, roof shingles will be brown or grey	Yes	☒	No	☐	N/A	☐
Are large windows sheltered by overhangs which maximize solar input during winter months?	Yes	☒	No	☐	N/A	☐
Do proposed buildings incorporate green roofs, living walls or other measures to reduce heat gains caused by hard surfaces?	Yes	☐	No	☒	N/A	☐
Are alternative energy sources being proposed in large scale structures?	Yes	☐	No	☐	N/A	☒
Do buildings have a south oriented roof to allow for future use of solar panels?	Yes	☒	No	☐	N/A	☐
Are there opportunities for natural ventilation and airflow incorporated into the building?	Yes	☒	No	☐	N/A	☐
Do building materials encourage thermal massing and seasonal thermal energy storage?	Yes	☒	No	☐	N/A	☐
Are building envelopes well sealed and energy efficient?	Yes	☒	No	☐	N/A	☐
Is vegetation low maintenance and require minimal irrigation?	Yes	☒	No	☐	N/A	☐
Is the enhanced landscaping located along the south and west facing parcel boundaries to create shade?	Yes	☒	No	☐	N/A	☐
Is rainwater recycling included in landscape designs?	Yes	☐	No	☒	N/A	☐
Have porous material been maximized throughout the landscaping?	Yes	☒	No	☐	N/A	☐
Do water features use recirculation systems as opposed to once through systems?	Yes	☒	No	☐	N/A	☐
Are opportunities for local food production and public food gardens incorporated into larger developments and subdivisions?	Yes	☐	No	☐	N/A	☒