PRELIMINARY GEOTECHNICAL ASSESSMENT

Rezoning Application for Multi-Family Residential and Mixed-Use Development

7261 Lantzville Rd, Lantzville, BC

Legal Address:
Lot 1, District Lot 54 Nanoose District and of District Lot 27G, Wellington District, Plan 26758, PID: 001-399-471

Prepared For:
McMann Group Inc.
2752 E Wellington Road
Nanaimo, BC V9R 6W5

Attention:
Russ McMann
russ@mcmanngroup.com

August 1, 2025

File No.: E4771.01
Revision No.: 00
Prepared by: Knut Lokken, EIT, GIT
Reviewed by: Jeff Scott, P.Eng

Lewkowich Engineering Associates Ltd.
1900 Boxwood Road
Nanaimo, BC, V9S 5Y2
250-756-0355 (Office)
250-756-3831 (Fax)
www.lewkowich.com
geotech@lewkowich.com

Permit to Practice Number: 1001802

Lewkowich Engineering Associates Ltd.

DISCLAIMER, ACKNOWLEDGEMENTS, AND LIMITATIONS

1. Lewkowich Engineering Associates Ltd. (LEA) acknowledges that this report, from this point forward referred to as "the Report," may be used and relied upon by the District of Lantzville (DoL) as a precondition to the issuance of a rezoning permit. It is acknowledged that this Report and any conditions contained in the Report may be included in a restrictive covenant under Section 56 of the Community Charter and registered against the title of the property at the discretion of the DoL, with the understanding that this Report is preliminary and further geotechnical investigation and assessment is required.
2. This Report has been prepared in accordance with standard geotechnical engineering practice solely for and at the expense of McMann Group Inc. We have not acted for or as an agent of the DoL in the preparation of this Report.
3. The conclusions and recommendations submitted in this Report are based upon information from relevant publications, a visual site-assessment of the property, observed and inferred subsurface conditions, available coal mine mapping, current construction techniques, and generally accepted engineering practices. No other warrantee, expressed or implied, is made. If unanticipated conditions become known during construction or other information pertinent to the development becomes available, the recommendations may be altered or modified in writing by the undersigned.
4. This Report was authored, to the best of our knowledge at the time of issuance, with considerations for local requirements specific to the Authority Having Jurisdiction (AHJ) and their standards for the preparation of such reports, the 2024 British Columbia Building Code (BCBC), and current engineering standards. Updates to bylaws, policies, or requirements of the AHJ, and updates to the BCBC or professional practice guidelines may impact the validity of this Report.
5. This Report has been prepared by Knut Lokken, EIT, GIT, and reviewed by Jeff Scott, P.Eng. Mr. Lokken and Mr. Scott are both adequately experienced and are also members in good standing with the Engineers and Geoscientists of British Columbia (EGBC).

EXECUTIVE SUMMARY

1. The following is a brief synopsis of the property, assessment methods, and findings presented in the Report. The reader must read the Report in its entirety; the reader shall not rely solely on the information provided in this summary.
2. The subject property, 7261 Lantzville Road, Lantzville, BC, from this point forward referred to as "the Property," is located on eastern Vancouver Island within the jurisdictional boundaries of the DoL. The proposed development for the Property at the time of this Report is a rezoning application for two-storey multi-family residential and mixed-use development with surface parking.
3. A site-specific assessment was conducted to identify any potential geotechnical hazards for the Property and proposed development. Our assessment determined that abandoned coal mine workings are the only geotechnical hazard in proximity to the proposed development.
4. The Report recommends additional foundation reinforcement for the two-storey multi-family residential building to mitigate damage due to potential mine related subsidence.
5. The findings confirm the land is considered safe for the use intended, provided the recommendations in this report are followed.

List of Abbreviations Used in the Report

Abbreviation	Title
AHJ	Authority Having Jurisdiction
BCBC	British Columbia Building Code
DoL	District of Lantzville
DPA	Development Permit Area
EGBC	Engineers and Geoscientists of British Columbia
LEA	Lewkowich Engineering Associates Ltd.
NBC	National Building Code
SLS	Service Limit State
ULS	Ultimate Limit State

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 General

a. As requested, LEA has carried out a preliminary geotechnical assessment of the subject Property with respect to the proposed development. This Report provides a summary of our findings and recommendations.

1.2 Background

a. We understand the proposed development is a rezoning application for two separate buildings, a two-storey multi-family residential building and a two-storey mixed-use building with surface parking. Architectural drawings of the proposed development are attached to this Report.

b. We further understand the proposed development will consist of conventional construction methods, including typical cast-in-place concrete foundations, slab on grade flooring systems, and wood-frame superstructures.

c. The Property is with the jurisdictional limits of the DoL, and within DPA 6 – Potential Historic Underground Mines. Therefore, we understand a geotechnical assessment and report is required to assist in determining what conditions or requirements shall be included in the development and/or building permit so that the proposed development is protected from the identified hazards and no increase in hazard is posed to existing development on or near the Property.

1.3 Assessment Methodology

a. This assessment included a desktop review of relevant background information, including applicable DoL bylaws, registered covenants on title, aerial photographs, and geology, topography, and coal mine mapping. Please refer to the list of references at the end of this Report. A topographic site plan is attached to this Report.

b. A site reconnaissance was conducted on July 29, 2025, to visually assess the current site conditions throughout the Property. The Property was accessed from the existing entrance off Lantzville Road to the northeast. The site reconnaissance included a visual assessment of the proposed development area and current conditions.

1.4 Covenant Review

a. As part of our assessment, we have reviewed the documents registered on the legal title of the Property, specifically, any restrictive covenants registered against the Property that may relate to the conclusions and recommendations provided in this Report.

b. At the time of this Report, there were no restrictive covenants registered against the title of the Property.

2.0 SITE CONDITIONS

2.1 Physical Setting

a. The Property is identified with the following civic and legal addresses:

i. 7261 Lantzville School Road, Lantzville.

ii. Lot 1, District Lot 54 Nanoose District and of District Lot 27G, Wellington District, Plan 26758, PID: 001- 399-471.

b. The Property is zoned as a Future Special Area Plan property (F-SAP). The Property is bound by similar F-SAP properties to the northwest and east, Lantzville Road to the northeast, and Community Services (CS) zoned properties to the south and southeast.[1] Refer to Figure 2.1 below.

c. Based on our desktop review, the Property falls within DPA areas including DPA 6 – Potential Historic Underground mines, and DPA 8 – Village Form and Character. This Report addresses the DPA 6 requirements.

Figure 2.1 – Location Plan of Subject Property[1]

2.2 Terrain and Features

a. The Property very gently slopes (inclines) from north to south with an overall average slope angle of less than 5 degrees. Based on available lidar information,[2] elevations within the Property range from

approximately 19.9m geodetic in the north corner, up to 22.7m geodetic in the south corner, for a total vertical relief of approximately 2.8m.

b. The Property is mainly vegetated with lawn cover and sporadic trees. The Property is bordered with blackberry vines and mature trees. An existing single-family residence is present in the northeast area of the Property with multiple accessory buildings along the southwest limits.

c. Refer to photos 2.2.1 and 2.2.2 below.

Photo 2.2.1 – Northeastern property extents, looking northeast.

Photo 2.2.2 – Southwestern property extents, looking southwest.

2.3 Regional Geology

a. Surficial geology for the area is classified as a veneer (up to 1.5m thickness) of marine and glaciomarine sediments including clayey silt deposits and intertidal (littoral) deposits of sand and gravel, overlying ground moraine deposits of till with lenses of gravel, sand, and silt.[3,4]

b. Bedrock geology mapping indicates the Property falls within an area identified as the Nanaimo Group, comprised of undivided sedimentary rock from the Upper Cretaceous period, generally consisting of boulder, cobble, and pebble conglomerate, coarse to fine sandstone, siltstone, shale, and/or coal.[5,6]

2.4 Soil Conditions

a. A subsurface investigation was not completed as part of this preliminary assessment. The inferred subsurface conditions should be verified with a subsurface investigation at the time of building/development permit.

b. Based on previous work and subsurface investigation in the area, we expect the soil conditions within the Property to be consistent with published surficial geology mapping, and consist of compact granular

overburden, overlying stiff to very stiff glacial till at shallow depth (i.e., within 2.0 to 2.5m depth).

c. No bedrock was observed at the time of site reconnaissance.

2.5 Groundwater Conditions

a. No groundwater or seepage was observed during our field review, and there was no ponding water on the Property, or evidence of abnormal groundwater conditions during our visual reconnaissance.

b. A shallow groundwater well was installed approximately 100m northwest of the Property and recorded a static water level of 5.2m below ground surface.[6] Considering the shallow glacial till subgrade, we expect this is a shallow perched groundwater level that is present seasonally. We expect similar groundwater conditions within the Property.

c. Groundwater levels can be expected to fluctuate seasonally with cycles of precipitation. Groundwater conditions at other times can differ from those observed at the time of our assessment.

3.0 ABANDONED COAL MINE WORKINGS

3.1 Review of Available Mine Information

a. There are documented underground coal mine workings within the DoL. Therefore, as part of our assessment, we have reviewed available coal mine abandonment plans as referenced at the end of this Report[7,8,9]. In addition to the referenced materials, a series of untitled/unsigned hand drawn maps were reviewed as part of our assessment.

b. Based on a review of the available coal mine information, the Property is partially undermined within its southwestern corner. These documented workings, known as the Lantzville Mine, mined the Wellington Seam from 1927 to 1943.[10] The Wellington Seam varies from 0.9m to 1.2m in thickness and contains an irregular shale parting 0.6m to 1.5m in thickness, leading to the interpretation of an upper and lower seam. On the assumption that both seams were worked and the shale parting removed; the height of the working could be up to 2m to 3m in thickness. In addition, the Little Wellington Seam, with an average thickness of 0.55m, is located at approximately 11.0m above the main seam, but there is no record of mining within this deposit in vicinity of the Property.

c. The Lantzville Mine was developed by the “longwall” method of operation. The longwall mining method consists of extracting the coal deposit in blocks or panels. Temporary support of heavy timber or dry-pack stone walls hold up the roof near the working area, but as the operation advances, the supports are removed and the roof behind is allowed to collapse (cave) in a controlled manner. Ultimately, all the coal except for support pillars along main haul-ways or a series of narrow pillars between panels would be removed.

d. Based on the available mine abandonment plans and the attached Site Plan, the proposed two-storey multi-family residential building is less than 10m from the mine extents. The extents of the Lantzville Mine in relation to a Google Earth satellite image of the Property is shown in Figure 3.1 below. The Figure shows the approximate location of the excavated tunnels and mine extents (hatched areas). We note the mapping and overlay figure is not exact, and there could be up to 10m of discrepancy.

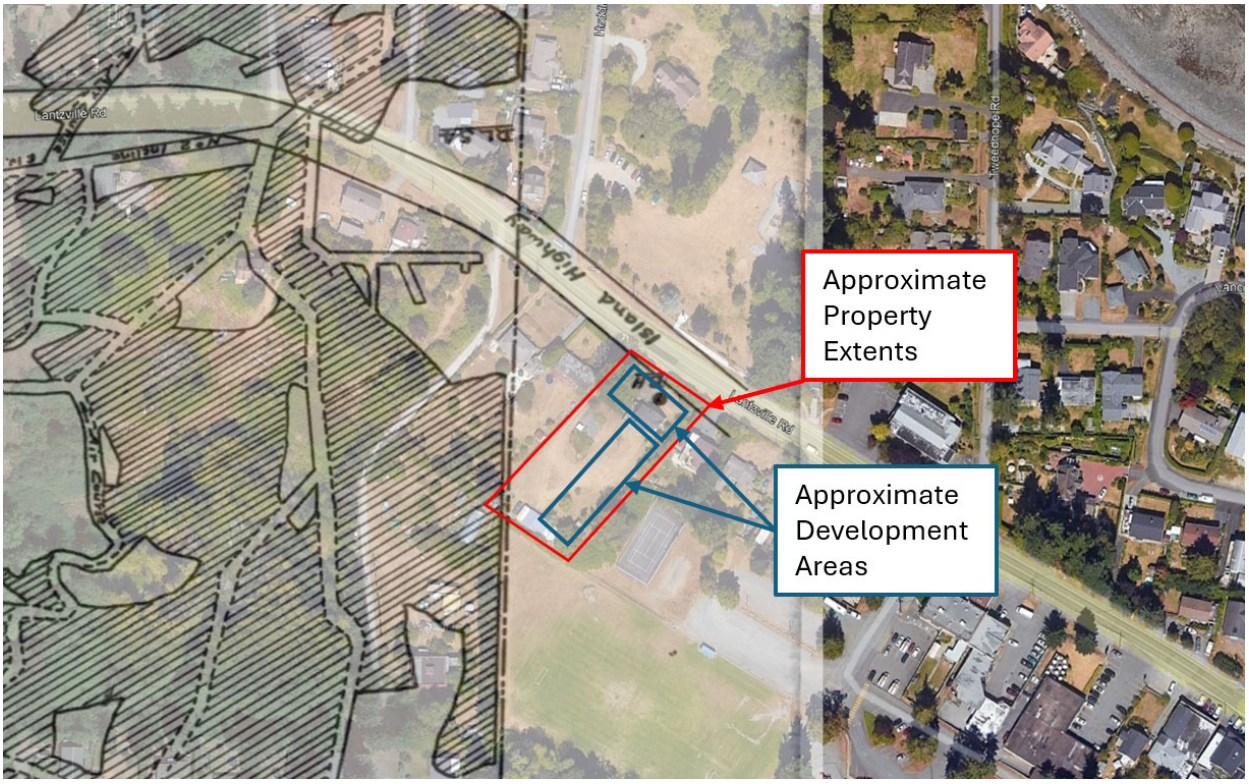


Figure 3.1 – Approximate limits of the Lantzville Mine underground coal workings (hatched areas)

e. The records of workings in proximity to the Property are limited; however, we have inferred, based on available geodetic spot elevations, that the depth to the workings within the Property are approximately 33m below the current ground surface.[7]

f. The workings in this area included a series of mine entrances in the form of sloped entrances. The nearest documented slope entrances to the Property are located approximately 280m to the north near the natural boundary of the Salish Sea.

3.2 Mine Hazard Assessment

a. The depth to bedrock within the Property is unknown. The roof rock above the Lantzville Mine workings is documented as conglomerate[11], and the Little Wellington Seam is documented 11m above the main seam.[10]

b. When using the longwall mining method, subsidence occurs at the same time or shortly after active mining.[12] However, it is plausible the conglomerate roof rock has suppressed the complete upward

propagation of collapsed voids.

c. Considering the nearly complete longwall extraction and the significant thickness of bedrock and till overlying the workings, any potential subsidence would be expected to occur over a very large area. If subsidence were to occur, it would likely only be noticeable adjacent to large unmined pillars or faults.

d. Caving occurs as the roof over a mine fractures and collapses into the space where the extraction has occurred. This process continues until the space is either occupied with bulked fallen debris or the caving propagates to the surface causing subsidence. Therefore, the thickness of the bedrock and/or soil cover over the mine becomes a critical factor in determining the subsidence potential in these areas.

e. Based on a review of the available coal mine information as discussed in Section 3.1 of this Report, we conclude the Lantzville Mine coal workings are approximately 33m below ground surface within the Property.

f. There are several methods used to determine a minimum bedrock cover above a coal seam beyond which caving subsidence would not be expected to reach the surface. Piggott and Eynon[14] provide relations that predict the propagation / height of collapse above a mine (H), based on the geometry of the collapse, extraction thickness (h), and overburden bulking factors (bf). As the depth of bedrock unknown, both granular soil and sedimentary rock overburden are considered possible. Based on bulking factors of 30% for sedimentary rock[11] and 15% for sand and gravel overburden[13], Piggot and Eynon suggest subsidence will not propagate to the ground surface over longwall mine workings (wedge collapse) where the thickness of surficial cover (H) to extraction thickness (h) ratio (H/h) exceeds 6 and 13, for sedimentary rock and granular overburden, respectively. Using this method and conservatively assuming an extraction thickness of 3m as discussed in Section 3.1, the H/h is 33m/3m = 11.

g. The upper bound in the range of specified H/h ratios is based on a bulking factor for sand and gravel, assuming that soil extends from surface to the depth of the mine workings. As the roof rock of the Lantzville Mine workings is recorded as conglomerate, we know bedrock extends above the workings improving the ground conditions. Back calculating the Piggot and Eynon relationship between bulking factor and H/h ratio for wedge collapse, an average bulking factor of 18% is needed for an H/h ratio of 11 to limit propagation of subsidence to the surface. An average bulking ratio of 18% for the material between ground surface and the mine workings corresponds to a bedrock depth of 26m.

h. Assuming the subsidence from longwall mining did not occur shortly following mining, and bedrock depth is 26m or greater, there is a risk of mine subsidence propagating the surface in the southwest corner of the Property. Based on the calculated H/h ratio and offset of the development location within the accuracy of the mining maps, the risk is considered moderate for mine induced ground subsidence.

i. As a precautionary measure, given the unknown bedrock conditions beneath the Property and the accuracy and extents of the mapped workings, we recommend that foundations for the proposed two-storey multi-family building be structurally connected and/or include longitudinal reinforcement to resist differential movement. As a minimum, we recommend footings are stiffened to span 3.0m and cantilever 1.5m, or as determined by the Structural Engineer.

j. We conclude the two-storey mixed-use building at the northeast end of the Property is at sufficient distance from the workings to negate any impact from coal mines and does not require additional foundation reinforcement.

4.0 DESIGN PHASE

4.1 General

a. The following geotechnical design parameters are provided for preliminary design, based on inferred subsurface conditions, and should be verified with a subsurface investigation as part of building/development permit.

4.2 Foundation Design

a. Prior to construction, the new building areas should be stripped to remove all unsuitable materials to provide an undisturbed natural subgrade for footing support.

b. Foundation loads should be supported on natural undisturbed subgrade or structural fill, approved for use as a bearing stratum by our office, and may be designed using the following values.

   i. For foundations constructed on a compact to dense, naturally deposited, inorganic subgrade, an SLS bearing pressure of 125 kPa and a ULS bearing pressure of 190 kPa may be used for design purposes. These values assume a minimum 0.45m footing embedment depth.

   ii. For foundations constructed on a minimum thickness of 0.65m of structural fill, placed and compacted as outlined in Section 5.2 of this Report, an SLS bearing pressure of 150 kPa and a ULS bearing pressure of 225 kPa may be used for design purposes. These values assume a minimum 0.45m footing embedment depth.

c. Exterior footings should be provided with a minimum 0.45m depth of ground cover for frost protection.

d. The Geotechnical Engineer should evaluate the bearing soils at the time of construction to confirm that subgrade conditions do not materially differ to those inferred part of our investigation and that footings are based on appropriate and properly prepared founding material.

4.3 Seismic Criteria

a. Based on the 2024 BCBC (Division B, Part 4, Section 4.1.8.4.), the observed and inferred subgrade conditions would be designated “Site Class C”.

b. Refer to the attached 2020 NBC Seismic Hazard Values.

5.0 CONSTRUCTION PHASE

5.1 General Excavation – Future Building Sites

a. Prior to construction, all unsuitable materials should be removed within the building envelopes to provide a suitable base of support. Unsuitable materials include any non-mineral material such as vegetation, topsoil, peat, fill, or other materials containing organic matter, as well as any soft, loose, or disturbed soils.

b. Ground water ingressing into any excavations should be controlled with a perimeter ditch located just outside of the building areas, connected to positive drainage.

c. Prior to placement of concrete footings, any bearing soils that have been softened, loosened, or otherwise disturbed during the course of construction, should be removed or else compacted following our recommendations for structural fill. Compaction will only be feasible if the soil has suitable moisture content and if there is access to heavy compaction equipment. If no structural fill is placed, a smooth-bladed clean up bucket should be used to finish the excavation.

d. The Geotechnical Engineer is to confirm the removal of unsuitable materials and approve the exposed competent inorganic subgrade, prior to the placement of any structural fill material.

5.2 Structural Fill

a. Where fill is required to raise areas that will support foundations, slabs, or pavements, structural fill should be used. The Geotechnical Engineer should first approve the exposed subgrade in fill areas, to confirm the removal of all unsuitable materials.

b. Structural fill should be inorganic sand and gravel. If structural fill placement is to be carried out in the wet season, material with a fines content limited to 5% passing the 75µm sieve should be used, as such a material will not be overly sensitive to moisture, allowing compaction during rainy periods of weather.

c. Structural fill should be compacted to a minimum of 95% of Modified Proctor maximum dry density (ASTM D1557) in foundation and slab areas, as well as in pavement areas.

d. Structural fill under foundations, slabs, and pavements should include the zone defined by a plane extending down and outward a minimum 0.5m from the outer edge of the foundation at an angle of 45 degrees from horizontal to ensure adequate subjacent support. This support zone is shown in Figure 5.2.

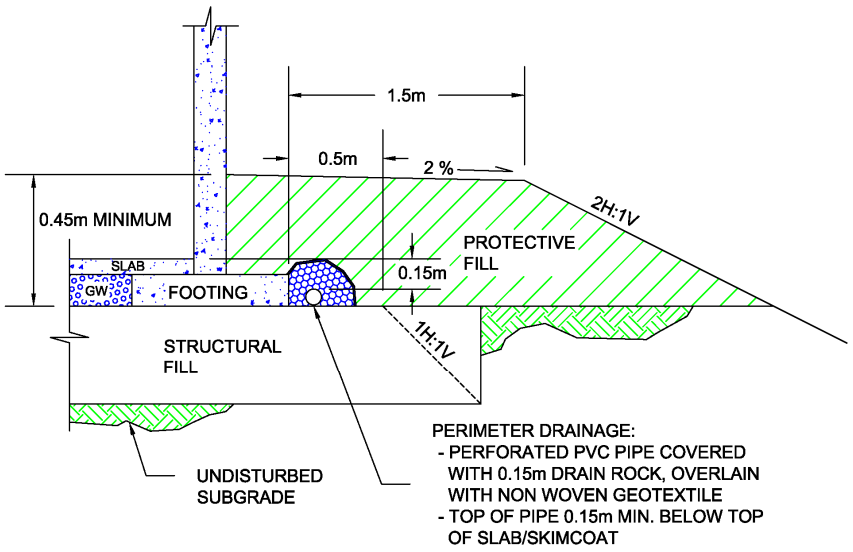


Figure 5.2 – Typical Section, Structural Fill

e. Compaction of fill should include moisture conditioning as needed to bring the fill to the optimum moisture content and compacted using vibratory compaction equipment in lift thicknesses appropriate for the size and type of compaction equipment used.

f. A general guideline for maximum lift thickness is no more than 100mm for light hand equipment such as a "jumping-jack," 200mm for a small roller, and 300mm for a large roller or heavy (>500 kg) vibratory plate compactor or a backhoe mounted hoe-pac or a large excavator mounted hoe-pac, as measured loose.

g. It should be emphasized that the long-term performance of foundations, slabs, and pavements is highly dependent on the correct placement and compaction of underlying structural fills. Consequently, we recommend that structural fill be observed and approved by the Geotechnical Engineer. This would include approval of the proposed fill materials and performing a suitable program of compaction testing during construction.

5.3 Foundation Drainage

a. Our assessment did not identify any abnormal groundwater conditions that would necessitate special foundation drainage measures outside of Part 9 of the 2024 BCBC. Conventional requirements of the 2024 BCBC pertaining to building drainage are considered suitable at this site.

b. In addition to BCBC requirements, a layer of non-woven geotextile with a minimum weight of 140 g/m^2 shall be placed between the 150mm thick drain rock layer and the foundation backfill in order to prevent the migration of fine-grained soil particles into the drainage system.

c. The final site grades shall be sloped to direct surface water away from the building and foundation areas.

d. We assume all site and foundation drainage systems will be designed, inspected, and approved by Others (i.e., the project Civil or Mechanical Consultant).

5.4 Pavement Design – Private Works

a. Any organic or deleterious material should be removed from beneath the designated roadway, driveway, or parking areas prior to subgrade preparation. If fill is required to bring the subgrade up to the desired elevation, structural fill should be used.

b. The subgrade should be proof rolled after final compaction and any areas showing visible deflections should be inspected and repaired. The Geotechnical Engineer shall review the pavement subgrade conditions during the course of excavation.

c. All subgrade and pavement structures should be sloped to provide adequate drainage as per the design and direction of the Civil Consultant.

d. An estimated soaked California Bearing Ratio of 30% and a 20-year design life have been used in calculating pavement designs. See Tables 5.4.1 and 5.4.2 below.

Table 5.4.1 – Pavement Design Recommendations for Light Traffic/Low Volume Areas

Areas Subject to Cars and Small Trucks	
Estimated Equivalent Single-Axle Load: 2×10^4	
Asphaltic Concrete Pavement	50mm
19mm Well-Graded Granular Base Course	100mm
75mm Select Granular Subbase (SGSB)	250mm

Table 5.4.2 – Pavement Design Recommendations for Heavy Traffic/High Volume Areas

Areas Subject to Large Trucks	
Estimated Equivalent Single-Axle Load: 2×10^5	
Asphaltic Concrete Pavement	75mm
19mm Well-Graded Granular Base Course	150mm
75mm Select Granular Subbase (SGSB)	300mm

e. It is recommended that a reinforced concrete slab be utilized where garbage dumpsters are located. The slab should be large enough to contain the disposal unit and front tires of the garbage truck during disposal operations.

F. The above recommendations for subgrade and pavement structure are in accordance with current best practices. If the recommendations provided here prove cost-prohibitive or restrictive, alternative options may be considered, through a balance of reduced preparation efforts with a corresponding reduction in

pavement design life.

6.0 CONCLUSIONS

6.1 Local Government Conformance Statement

a. From a geotechnical point of view, and provided the recommendations in this Report are followed, the land is considered safe for the use intended (defined for the purposes of this Report as a two-storey multi-family residential building and a two-storey mixed-use building), with the probability of a geotechnical failure resulting in property damage of less than:

   i. 2% in 50 years for geotechnical hazards due to seismic events, including slope stability; and,

   ii. 10% in 50 years for all other geotechnical hazards.

6.2 Geotechnical and Quality Assurance Statement

a. The 2024 BCBC requires that a Geotechnical Engineer be retained to provide Geotechnical Assurance services for the construction of buildings that are outside of Part 9 of the BCBC. Geotechnical Assurance services include review of the geotechnical components of the plans and supporting documents, and responsibility for field reviews of these components during construction.

7.0 CLOSURE

a. Lewkowich Engineering Associates Ltd. appreciates the opportunity to be of service on this project. If you have any comments, or additional requirements at this time, please contact us at your convenience.

Respectfully Submitted,
Lewkowich Engineering Associates Ltd.

Knut Lokken, EIT, GIT
Geotechnical Engineer-in-Training
Geoscientist-in-Training

Jeff Scott, P.Eng.
Geotechnical Engineer

8.0 ATTACHMENTS

1. AR Architecture, 7261 Lantzville Road, Drawings A0.1 and A1.1, dated July 7, 2025.
2. E4771-01, Topographic Site Plan, dated July 30, 2025.
3. 2020 NBC Seismic Hazard Values.

9.0 REFERENCES

1. District of Lantzville, Online GIS Mapping System, accessed July 2025.
2. LidarBC, Open Lidar Data Portal, BCGS Time Names: bc_092F030_4_1_1_xyes_8_utm10_202403311_20240331, Data Acquisition: 2024.
3. Ministry of Environment Mapping, Produced by R.H. Guthrie and C.R. Penner, titled “Vancouver Island Surficial Geology.”
4. Geological Survey of Canada, Surficial Geology Nanaimo, British Columbia, Map 27-1963, Sheet 92 G/4 and 92 F/1 East, 1963.
5. British Columbia Geological Survey, Geology of British Columbia, South Sheet, Geoscience Map 2005-3, Massey, N.W.D, MacIntyre, D.G., Desjardins, P.J. and Cooney, R.T., 2005.
6. Province of BC, Interactive Web-Map, iMapBC, accessed July 2025.
7. Pacific Spatial Systems Ltd., Coal Mine Underground Workings Atlas, dated August 2004.
8. Island Geotechnical Services Ltd., prepared for the Ministry of Energy, Mines and Petroleum Resources, Cumberland – Tsable – Lantzville, Coal Fields, Composite Plan, Sheet 6, dated April 1982.
9. William B. Rafter, James Decourcy, and T.A. Princeton, Nanoose Wellington Collieries Ltd., Lantzville Mine, dated October 16, 1926.
10. BC Ministry of Energy, Mines, and Petroleum Resources, MINFILE 092F 324
11. Annual Report of the Minister of Mines, Province of British Columbia, dated December 31, 1927.
12. U.S. Department of the Interior, Subsidence from Underground Mining: Environmental Analysis and Planning Considerations, dated 1983.
13. Ofoegbu, G., Read. R., and Ferrante, F., Bulking Factor of Rock for Underground Openings, U.S. Nuclear Regulatory Commission, dated February 2008.
14. Piggott and Eynon, Ground Movements Arising from the Presence of Shallow Abandoned Mine Workings, 1977.

01 PROJECT DATA
July 7, 2025

Project Description								
Civic Address:	**7261 Lantzville Road, Lantzville, BC V0R 2H0**							
Legal Address:	**Lot 1, District Lot 54, Nanoose District, And Of District Lot 27-G, Wellington District, Plan 26758**							
Current Zoning:	**Future Special Area Plan Zone (F-SAP)**							
OCP:	**Village West Special Planning Area (SPA)**							
DPA:	**DPA VIII - Village Form and Character**							
Property (Lot) Area:	**ft2**		**m2**		**acre**			
	39,337.7		**3654.6**		**0.90**			
Building Areas/Units								
Building Type	**Gross Floor Area (GFA)**							
Commercial	**Number of Units**	**Area**		**Totals**		**GLA**	**Comments**	
		ft2	**m2**	**ft2**	**m2**	**ft2**		
L1 Floor	4	878	82	3512	326	3,512		
Dwelling Units Over Commercial	**Number of Units**	**Unit Area**		**Totals**		**GLA**		
		ft2	**m2**	**ft2**	**m2**	**ft2**		
Single Storey Above Commercial	4	764	71	3,056	284			
Residential Units	**Number of Units**	**Unit Area**		**Totals**		**GLA**		
		ft2	**m2**	**ft2**	**m2**	**ft2**		
Townhomes (2 Storeys)	6	1,700	158	10,200	948	10,200		
Patio Homes (Single Storey)	2	1,550	144	3,100	288	3,100		
Totals	**8**			**13,300**	**1,236**			
Zoning Requirements								
Lot Coverage (%)	50%			34%				
Lot Coverage (Area sqft)	19,669			13,393				
Lot Coverage (Area m2)	1,827			1,244				
Building Setbacks & Height Requirements								
Front Yard Setback	1.5m			>1.5m				
Side Yard Setback (Abuts Residential)	3.0m			>3.0m				
Rear Yard Setback	3.0m			>3.0m				
Building Height (Pitched - to mean height level)	2 Storeys			2 Storeys				
Car Parking Requirements								
Commercial Units (Retail/Personal/Office)	**Required per Unit**		**Unit Area (sq m)**	**Number of Units**	**Total Area (sq m)**	**Parking Required**		**Totals**
	Long Term (Per Emploee)	**Short Term (1 Per sq m)**				**Long Term**	**Short Term**	
Unit 01	1.0	20.00	82	4	326	1	4.1	
Unit 02	1.0	20.00	82			1	4.1	
Unit 03	1.0	20.00	82			1	4.1	
Unit 04	1.0	20.00	82			1	4.1	
Unit 05 / Community Space	0.0	20.00	0			0	0.0	
Totals	-		326	4	326	4	17	**21**
Dwelling Units	**Required per Unit**		**Number of Unit**	**Parking Required**				**Totals**
	Long Term Per Bdrm	**Short Term Per Unit**		**Long Term**		**Short Term**		
1 Bedroom + Den	1.0	0.25	4	4		1		
2 Bedroom	2.0		0	0		0		
Totals	-		4	4		1		**5**
Housing	**Required per Unit**		**Number of Unit**	**Parking Required**				**Totals**
	Long Term Per Unit	**Short Term Per Unit**		**Long Term**		**Short Term**		
Townhomes	2.0	0.15	6	12		0.9		
Patio Homes	2.0		2	4		0.3		
Totals	-		8	16		2		**18**
Grand Total								**44**

Car Parking Provided							
Parking Types	**Dimensions (m)**		**Bylaws Requirements**		**Proposed Parking**	**Variance**	**Totals**
	W	**L**	**Ratio**	**Required Parking**			
Regular Car Required (min.) Total Required	2.60	5.80	N/A	44	38	6	Parking Provided
Small Car Allowed (max.)	2.60	5.00	25%	11	3	8	
Accessible Parking Required (11-32)	3.70	5.60	1	1	1	0	
Visitors Parking (Short Term)	-	-	20	20	20	0	
EV Parking Required (Standard/Small)			See Bylaw	4	4	0	
R.I. EV Parking Required (Standard/Small)			N/R	0	0	0	
Loading Space	2.60	5.80	1	1	1	0	
Totals				44	41	-3	**41**
Bicycle Parking Requirements							
Parking Types	**Dimensions (m)**		**Bylaws Requirements**		**Proposed Parking**	**Variance**	**Totals Provided**
	W	**L**	**Ratio**	**Total Required**			
Dwelling/Residential Units (Long Term)	0.60	1.80	Per Unit 1	**12**	12	0	**15**
Dwelling/Residential Units (Short Term)	0.60	1.80	Per 5 Unit 5	**3**	3	0	

02 NORTHWEST PERSPECTIVE

03 NORTHEAST PERSPECTIVE

ARCHITECT:

ar architecture

6-2330 McCullough Road, Nanaimo, BC, V9S 4M8
ar@ar-a.ca | 647 444 1238 | www.ar-a.ca

PROJECT:
CLIENT:

7261 Lantzville Road

7261 Lantzville Road, Lantzville, BC V0R 2H0

Lot 1, District Lot 54, Nanoose District, And Of District Lot 27-G (Otherwise Known As Lot 27), Wellington District, Plan 26758

SEAL:

No.	Date	Issue Notes
01	July 07, 2025	Issued for Internal Discussion with City

No.	Date	Revision Notes

SHEET TITLE:

PROJECT DATA & PERSPECTIVES

DRAWN BY: AR
CHECKED BY: AR
PROJECT NO.: 2506
SCALE: 1/2" = 1'-0"
DATE: July 07, 2025

A0.1

01 CONCEPTUAL SITE LAYOUT
1 : 150

OCP COMPLIANCE POLICIES:

- Provided varied housing types in a one- to two-storey format.
- A continuous, publicly accessible path is provided across the site connecting Lantzville Road to the rear play yard.
- Improvement to the street frontage character, providing more active amenities by adding small commercial units to potential local businesses.
- Maintain a Maximum of 2 storeys of building height.
- A green space/ play area within the lot was provided.
- Appropriate on-site parking space with less cluttered on-street parking and access to EV charging stations.
- Provided an appropriate number and location of accessible parking.

ARCHITECT:
ar architecture
6-2330 McCullough Road, Nanaimo, BC, V9S 4M8
ar@ar-a.ca | 647 444 1238 | www.ar-a.ca

PROJECT:
CLIENT:
7261 Lantzville Road
7261 Lantzville Road, Lantzville, BC V0R 2H0

Lot 1, District Lot 54, Nanoose District, And Of District Lot 27-G (Otherwise Known As Lot 27), Wellington District, Plan 26758

SEAL:

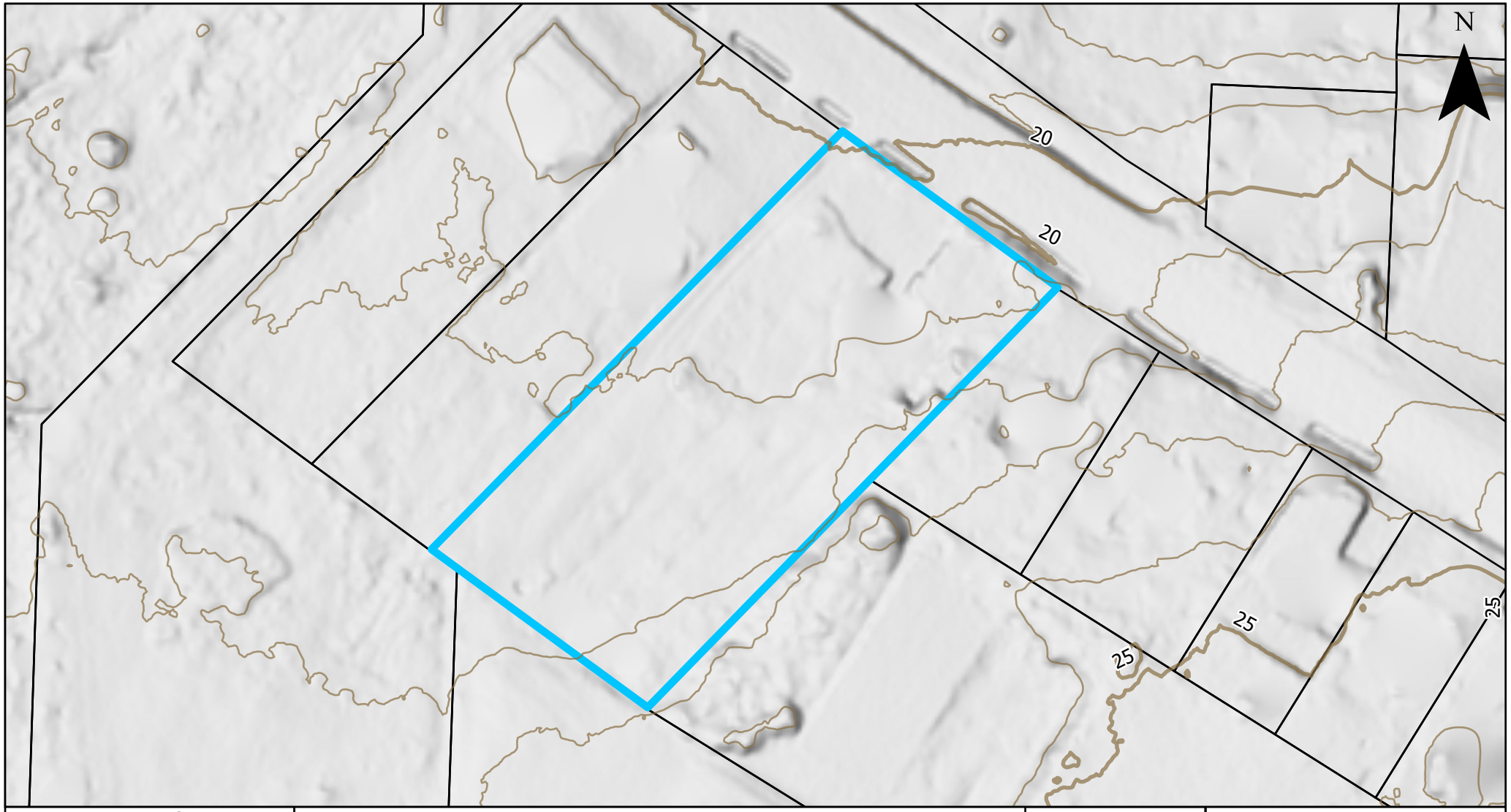
No.	Date	Issue Notes
01	July 07, 2025	Issued for Internal Discussion with City

No.	Date	Revision Notes

SHEET TITLE:
SITE PLAN

DRAWN BY: AR
CHECKED BY: AR
PROJECT NO.: 2506
SCALE: As indicated
DATE: July 07, 2025

A1.1



Legend

Subject Property
Property Lines
Contour
1m
5m

PROJECT NAME
7261 Lantzville Road, Lantzville, BC

Drawing No.
E4771-01

DRAWING TITLE
Topographic Site Plan

Date:
2025-07-30

Drawn By:
KL

LEGAL DESCRIPTION
Lot 1, District Lot 54 Nanoose District and of
District Lot 27G, Wellington District, Plan 26758, PID: 001-399-471

Lidar Aquisition Date: 2024
Coordinate System: NAD 1983 CSRS
UTM Zone 10N
Vertical Datum: CGVD 2013

Lewkowich Engineering Associates Ltd.

0 10 20 30 Meters

Government of Canada Gouvernement du Canada

Canada.ca › Natural Resources Canada › Earthquakes Canada

2020 National Building Code of Canada Seismic Hazard Tool

This application provides seismic values for the design of buildings in Canada under Part 4 of the National Building Code of Canada (NBC) 2020 as prescribed in Article 1.1.3.1. of Division B of the NBC 2020.

Seismic Hazard Values

User requested values

Code edition	NBC 2020
Site designation X_S	X_C
Latitude (°)	49.253
Longitude (°)	-124.09

Please select one of the tabs below.

NBC 2020 | Additional Values | Plots | API | Background Information

The NBC 5% damped spectral acceleration values can be viewed in the NBC tab. Additional hazard values for your site can be found below.

The 5%-damped spectral acceleration (S_a(T), where T is the period, in s) and peak ground acceleration (PGA) values are given in units of acceleration due to gravity (g, 9.81 m/s^2). Peak ground velocity (PGV) is given in m/s. Probability is expressed in terms of percent (%) exceedance in 50 years.

By default, all probabilities for the user-specified site designation are shown. Other site designations can be selected from the respective drop-down menu in the table. In low hazard regions, a minimum value of 0.001g for T ≤ 2.0s and of 0.0001g for T > 2.0s is assigned. Further information on the calculation of seismic hazard is provided in the *Background Information* tab.

Site Designation XC	Probability All	S_a(0.05)	S_a(0.1)	S_a(0.2)	S_a(0.3)	S_a(0.5)	S_a(1.0)	S_a(2.0)	S_a(5.0)	S_a(10.0)	PGA	PGV
X_C	2	0.726	1.06	1.26	1.32	1.11	0.661	0.416	0.113	0.0455	0.539	0.662
X_C	2.5	0.667	0.97	1.16	1.21	1.01	0.6	0.371	0.0976	0.038	0.496	0.596
X_C	3.5	0.583	0.85	1.01	1.05	0.871	0.511	0.306	0.0776	0.0291	0.436	0.507
X_C	5	0.5	0.731	0.871	0.896	0.735	0.424	0.244	0.06	0.0221	0.376	0.42
X_C	7	0.429	0.627	0.748	0.762	0.618	0.349	0.192	0.0464	0.017	0.323	0.346
X_C	10	0.359	0.526	0.626	0.631	0.504	0.278	0.145	0.0346	0.0127	0.271	0.278
X_C	14	0.299	0.439	0.521	0.519	0.407	0.219	0.108	0.0257	0.00942	0.226	0.221
X_C	20	0.24	0.353	0.419	0.412	0.316	0.165	0.0778	0.0184	0.00662	0.182	0.169
X_C	30	0.179	0.263	0.313	0.304	0.228	0.116	0.0528	0.0123	0.00425	0.135	0.12
X_C	40	0.139	0.205	0.245	0.236	0.174	0.0878	0.0394	0.00902	0.00302	0.105	0.0912

Download CSV

← Go back to the seismic hazard calculator form

Date modified: 2021-04-06