1909988 Ontario Ltd
C/o SupErb Construction
(by email: chris@chriserb.ca)

Attn: Mr. C. Erb

Re: Vancouver Island Motorsport Circuit – Phase 2
   Section 4, Range 1, Land District 61, Except Plan EPP 607666, PID-009-751-297
   North Cowichan, BC

As requested, we attended the referenced site March 27, 2018, to carry out a visual
reconnaissance to assess geotechnical considerations for project development. We provide the
following initial comments for review.

Proposed Development

The proposed 105 Acre development site is shown on the attached Google Earth Extract. The
development will consist of a northerly and easterly expansion of the existing track facility, and
will be located on the north side of the Drinkwater Road extension. To assist in our site review,
we were provided with the attached draft layout of the proposed track alignment overlaid upon a
contoured plan as well as the J.E. Anderson Circuit Drainage Site Plan.

The contour plan indicates that existing grading varies considerably across the site, with overall
relief of around 50 m or so. However, the track alignment appears to have been optimized to
traverse the flatter areas of the site to minimize the requirement to adjust existing grading by cut
and fill, and to accommodate the existing Menzies Creek channel. The channel enters the site
at/near the northwest corner, travels east and then south though the middle of the site, departing
at the approximate midpoint along the southern boundary (see attached Drainage Site Plan).
Despite this optimization, we note the requirements for locally significant cuts and fills,
including potential for some retaining wall construction, and culverting where the creek crosses
the track alignment. The development may also include some smaller buildings located at the
southeast corner of the site, although the configuration of such has yet to be finalized.

The Google Earth Extract indicates that the mid and western portions of the development site are
densely vegetated, while the remaining area to the east has been cleared. At the southeast corner,
more recent construction activities have levelled a gravel pad area that is currently being used for overflow parking of dealership vehicles.

Site Reconnaissance

We commenced our review at the southeast corner of the site, in the area of overflow parking, near Track Turn 6 and 7 (T6 and T7), as noted on the track layout plan. This area has been built up by past sand and gravel fill placement that has raised the grade some 5 to 7 m above that of the Drinkwater Road extension to the south. This has created a steep embankment that slopes from the gravel pad down to Drinkwater Road. Another embankment of similar height and grading wraps around the north of the parking pad, although this has been created by excavation cut. We observed a native dense brown silty sand and gravel with sub rounded cobbles of varying size, some large, exposed in the cut. We observed no indication of large scale instability on either of these embankments. Beyond, towards T5 and T4, grade rises gently to the north and northeast corner where Bings Creek transects the northeast corner of the site, beyond the proposed track footprint.

Grade was noted to be relatively benign as we traversed westwards, along the northern extent of the development site, towards T3 at the northwest corner. We initially observed a flat area developed for off-road training before we headed westward down along on old logging road and into the more densely vegetated area of the site. Grading shots taken with hand held inclinometer indicate that the upland areas to the north rise at around 15° from horizontal. We observed sporadic ditching and culverting in places to intercept and re-direct surface run-off from upland areas to the north, possibly towards the main creek channel to the south.

Grading on either side of the logging road is relatively flat, gently grading down to the south before steepening towards the creek channel below. We continued to traverse westward and came across a collapsed logging bridge that spanned Menzies Creek (north channel) at/near the northwest corner of the site, just east of T3. In an area proximal to the creek, we observed an old borrow pit that was full of standing water. We noted similar native granular mineral soils in the back scarp of the pit.

Moving southwards down the western property line, towards T2, grade rises gently towards the southwest corner. A smaller culverted creek (Menzies Creek south channel) was observed and flows eastwards, connecting to the main creek channel. We anticipate shallow bedrock may be present in this area.

From T2, we traversed eastwards along the southern extent of the property, past T1 and towards T16 and T15. Similar gently sloping/undulating terrain was observed and shallow bedrock may again be encountered. Grade falls to the north down to the creek channel below. We observed several open shallow test pits in this area, all exposing similar native granular soils and many having standing water.
To the east of T15, we observed the creek channel flow leaving the development site, just to the east of the midpoint along the southern property line. We crossed the creek and then walked northward and then westward up the east/north side of the creek, passing T9 and T10. Creek flow was modest at the time of our attendance, but we expect that flow will vary significantly based on seasonal rainfall. That being said, the meandering nature of the observed channel and deposition of finer granular soils in areas proximal to the channel may indicate that flow velocities are generally low. Terrain either side of the channel rises steeply, in places up to at/near 40° from horizontal. However, we did not observe any indication of creek side slope instability. The area is densely vegetated and root structure in combination with the observed dense nature of the native overburden soils, and possible shallow bedrock, are likely resisting shallow and deep seated erosion/instability.

Geotechnical Considerations For Development

Based on our initial site inspection and observations, we consider that the development will be feasible from a geotechnical perspective. More detailed comments/preliminary recommendations follow.

Surface Water Control

At this time, we are unsure of the proposed development scheduling, but based on past experience with the smaller track development to the south, it is likely that the construction may take two years or more to complete. As noted, in many areas we noted existing ditching and culvert ing to intercept and control run off from upland areas to the north. We anticipate that significant surface water flows will be experienced during the wetter winter months. Accordingly, we recommend the civil consultant, in concert with the contractor, put in place a more formalized installation of catchment ditches/swales/culverts to intercept and direct flows around and away from the construction site. It may be desirable to direct flows to the creek. In this regard, we note that exposed mineral soils may exhibit relative impermeability and promote run-off that will create silt laden flows, and treatment will likely be required before discharge. To minimize potential for silt laden run-off, we would recommend stripping/cutting/filling only on localized areas at any one time, covering with clean sub-base gravels as soon as possible. The attached civil drawing indicates areas that will be utilized for treatment and discharge of surface flows to Menzies Creek.

Subgrade Bearing Soils

The native dense mineral soils (and possible bedrock) observed at the site will be suitable to provide stable long term subgrade support for contemplated buildings, retaining walls, engineered fills, and the track construction generally. Subgrade must be flat/level and free of loose/disturbed material prior to placement of foundations, walls and engineered fill.
Excavation Cut and Fill

We expect that excavation at the site using conventional hydraulic excavator or dozer with ripper tooth with be feasible. As noted the material is dense to very dense and will be difficult to excavate. We anticipate that shallow bedrock may be encountered in places. This may require blasting.

For the most part, we expect that excavated material will be suitable for re-use as engineered fill in areas where grade requires to be raised. The material is likely moisture sensitive due to its silt content and placement and adequate compaction will only be achieved with moisture contents at/near optimum. Accordingly, it may be difficult to work with this material during the wetter months of the year. In lower lying areas, where groundwater/seepage is present, it will likely be necessary to commence fill activities with a cleaner blast/crushed rock material and then transition back to site sourced moisture sensitive soils once above the water. The specifics of placement and compaction methodology can be provided once the type of compaction equipment is known.

Native materials stockpiled for later re-use may be vulnerable to drying/wetting and generation of silty run-off and we would recommend that cut materials trucked and be placed as fill in a timely manner. Stockpiled materials left out over winter should be sealed via compaction or tarped.

For long term stability of soil fill embankments, we would recommend no steeper than 2.5 Horizontal to 1.0 Vertical, and that vegetation be established in a timely fashion. Steeper embankment grading will be possible in excavation cuts formed into the native dense soils. For steeper grading in fill zones, construction of retaining walls will be required.

Retaining Wall Construction

In areas proximal to the creek, where grade increase is required, it may not be possible to achieve the noted fill embankment grading without encroachment into riparian areas. Accordingly, it may be necessary to create steeper grading using retaining wall construction. Retaining structures could include both structural and cemented gravity boulder solutions. However, it may be desirable to utilize Mechanically Stabilized Earth (MSE) walls. MSE walls utilize a proprietary facing element with a connected layering of geogrid soil reinforcement sandwiched between well compacted lifts of select granular fill. Facing elements, such as Terramesh baskets (or similar), can be seeded to encourage vegetative growth. At this time, we note that it may be necessary to import a select crushed rock as backfill within the geogrid development length as the angular material has better mechanical properties and will be more free draining. Design details for such walls are often provided by in-house design teams directed by the supplier of the wall facing/geogrid.
Closure

In summary, although we note some challenges associated with control of surface water and grading, we consider that development of the site is feasible from a geotechnical perspective. Beneath the surficial organic soils, we anticipate dense stable mineral soils, generally suitable for subgrade support and reuse for fill placement. We observed no indication of past instability at the site, including flooding, erosion, land slip, rockfalls or subsidence.

Experience indicates that the developer should anticipate a requirement for sufficient design and field inspections in order to confirm works are being completed in accordance with good building practice and the project specifications. This may include approval of subgrade and the laboratory/field testing of bulk fill placement, subbase, base, asphalt and concrete. Retaining walls higher than 1.2 m in height, as well as subgrade foundation support buildings, will generally require individual sign-off to satisfy municipal requirements.

We trust that the preceding is suitable for your purposes at present and satisfies our scope at this time. Please don’t hesitate to contact our office if we can be of further assistance.

Yours truly,

Ryzuk Geotechnical

Scott Currie, P. Eng.
Geotechnical Engineer

Attachment – Terms of Engagement
– Google Earth Extract
– Track Extension Layout Plan
– J.E. Anderson Circuit Drainage Site Plan
TERMS OF ENGAGEMENT

GENERAL

Ryzuk Geotechnical (the Consultant) shall render the Services, as specified in the agreed Scope of Services, to the Client for this Project in accordance with the following terms of engagement. The Services, and any other associated documents, records or data, shall be carried out and/or prepared in accordance with generally accepted engineering practices in the location where the Services were performed. No other warranty, expressed or implied is made. The Consultant may, at its discretion and at any stage, engage sub-consultants to perform all or any part of the Services.

Ryzuk Geotechnical is a wholly owned subsidiary of C. N. Ryzuk & Associates Ltd.

COMPENSATION

All charges will be payable in Canadian Dollars. Invoices will be due and payable by the Client on receipt of the invoice without hold back. Interest on overdue accounts is 24% per annum.

REPRESENTATIVES

Each party shall designate a representative who is authorized to act on behalf of that party and receive notices under this Agreement.

TERMINATION

Either party may terminate this engagement without cause upon thirty (30) days’ notice in writing. On termination by either party under this paragraph, the Client shall forthwith pay to the Consultant its Charges for the Services performed, including all expenses and other charges incurred by the Consultant for this Project.

If either party breaches this engagement, the non-defaulting party may terminate this engagement after giving seven (7) days’ notice to remedy the breach. On termination by the Consultant under this paragraph, the Client shall forthwith pay to the Consultant its Charges for the Services performed to the date of termination, including all fees and charges for this Project.

ENVIRONMENTAL

The Consultant’s field investigation, laboratory testing and engineering recommendations will not address or evaluate pollution of soil or pollution of groundwater. The Consultant will cooperate with the Client’s environmental consultant during the field work phase of the investigation.

PROFESSIONAL RESPONSIBILITY

In performing the Services, the Consultant will provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices and procedures normally provided in the performance of the Services contemplated in this engagement at the time when and the location in which the Services were performed.

INSURANCE

Ryzuk Geotechnical is covered by Professional Indemnity Insurance as follows:

1. $ 2,000,000 each and every claim
2. $ 4,000,000 aggregate
3. $ 5,000,000 commercial/general liability coverage

LIMITATION OF LIABILITY

The Consultant shall not be responsible for:

1. the failure of a contractor, retained by the Client, to perform the work required for the Project in accordance with the applicable contract documents;
2. the design of or defects in equipment supplied or provided by the Client for incorporation into the Project;
3. any cross-contamination resulting from subsurface investigations;
4. any Project decisions made by the Client if the decisions were made without the advice of the Consultant or contrary to or inconsistent with the Consultant’s advice;
5. any consequential loss, injury or damages suffered by the Client, including but not limited to loss of use, earnings and business interruption;
6. the unauthorized distribution of any confidential document or report prepared by or on behalf of the consultant for the exclusive use of the Client
7. Subsurface structures and utilities
The Consultant will make all reasonable efforts prior to and during subsurface site investigations to minimize the risk of damaging any subsurface utilities/mains. If, in the unlikely event that damage is incurred where utilities were unmarked and/or undetected, the Consultant will not be held responsible for damages to the site or surrounding areas, utilities/mains or drilling equipment or the cost of any repairs.

The total amount of all claims the Client may have against the Consultant or any present or former partner, executive officer, director, stockholder or employee thereof under this engagement, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, shall be strictly limited to the amount of any professional liability insurance the Consultant may have available for such claims.

No claim may be brought against the Consultant in contract or tort more than two (2) years after the date of discovery of such defect.

DOCUMENTS AND REPORTING

All of the documents prepared by the Consultant or on behalf of the Consultant in connection with the Project are instruments of service for the execution of the Project. The Consultant retains the property and copyright in these documents, whether the Project is executed or not. These documents may not be used on any other project without the prior written agreement of the Consultant.

The documents have been prepared specifically for the Project, and are applicable only in the case where there has been no physical alteration to, or deviation from any of the information provided to the Consultant by the Client or agents of the Client. The Client may, in light of such alterations or deviations, request that the Consultant review and revise these documents.

The identification and classification as to the extent, properties or type of soils or other materials at the Project site has been based upon investigation and interpretation consistent with the accepted standard of care in the engineering consulting practice in the location where the Services were performed. Due to the nature of geotechnical engineering, there is an inherent risk that some conditions will not be detected at the Project site, and that actual subsurface conditions may vary considerably from investigation points. The Client must be aware of, and accept this risk, as must any other party making use of any documents prepared by the Consultant regarding the Project.

Any conclusions and recommendations provided within any document prepared by the Consultant for the Client has been based on the investigative information undertaken by the Consultant, and any additional information provided to the Consultant by the Client or agents of the Client. The Consultant accepts no responsibility for any associated deficiency or inaccuracy as the result of a mis-statement or receipt of fraudulent information.

JOBSITE SAFETY AND CONTROL

The Client acknowledges that control of the jobsite lies solely with the Client, his agents or contractors. The presence of the Consultant’s personnel on the site does not relieve the Client, his agents or contractors from their responsibilities for site safety. Accordingly, the Client must endeavor to inform the Consultant of all hazardous or otherwise dangerous conditions at the Project site of which the Client is aware.

The client must acknowledge that during the course of a geotechnical investigation, it is possible that a previously unknown hazard may be discovered. In this event, the Client recognizes that such a hazard may result in the necessity to undertake procedures which ensure the safety and protection of personnel and/or the environment. The Client shall be responsible for payment of any additional expenses incurred as a result of such discoveries, and recognizes that under certain circumstances, discovery of hazardous conditions or elements requires that regulatory agencies must be informed. The Client shall not bring about any action or dispute against the Consultant as a result of such notification.

FIELD SERVICES

Where applicable, field services recommended for the Project are the minimum necessary, in the sole discretion of the Consultant, to observe whether the work or a contractor retained by the Client is being carried out in general conformity with the intent of the Services. Any reduction from the level of services recommended will result in the Consultant providing qualified certifications for the work.

DISPUTE RESOLUTION

If requested in writing by either the Client or the Consultant, the Client and the Consultant shall attempt to resolve any dispute between them arising out of or in connection with this Agreement by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a dispute cannot be settled within a period of thirty (30) calendar days with the mediator, the dispute shall be referred to and finally resolved by arbitration under the rules of the arbitrator appointed by agreement of the parties or by reference to a Judge of the British Columbia Court.