September 6, 2023

Halifax Regional Municipality
PO Box 1749
Halifax, Nova Scotia
Attention: [redacted]

Subject: **Geotechnical Summary Report**
Lot 13-1-2, Burnside Business Park Phase 13-1 Burnside, NS
Englobe reference: 00018473.002

[redacted]

On behalf of Halifax Regional Municipality, Englobe Corp. has carried out field inspection of the ongoing lot preparation at the above-mentioned site. The purpose of the work was to provide quality control inspection of select fills placed within the proposed lots and to evaluate existing site native soil for its competency as foundation subgrade material.

Inspection summary

At the commencement of construction, the proposed building lot was underlain with trees/shrubs, organic soils, cobble/boulders with elevated site native soils in select areas. These conditions necessitated clearing, removal of all topsoil/organics, and cut and fill operations to reach the desired lot subgrade elevation(s).

Field inspection commenced in the winter of 2022, during initial site preparation and mass excavation. Cut and fill operations were undertaken to reach proposed lot subgrade elevation(s). Processed site rock and site native till were placed in successive lifts as structural fill. Large vibratory rollers and on-site excavation equipment were utilized to compact the structural fill with good results obtained throughout. The site was prepared to nominal elevations as indicted on the attached site plan.

Summary

Englobe Corp. has been in attendance at the site to provide quality control inspection during lot preparation at Burnside Business Park Phase 13-1 for Lot 13-1-2.

In general, for analysis using Limits States Design, footings placed on glacial till or structural fill can be designed using 200 kPa (SLS) and 325 (ULS). Depending on final selection of design grade, foundations may be considered for placement on bedrock. Footings on overblast bedrock can be designed for 350 kPa (SLS) and 600 kPa (ULS). Footings on intact bedrock can be designed for 1.5 MPa (ULS). These values are based on strip footings with minimum widths of 0.6 metres and square footings with a minimum width of 1.2 metres and a minimum burial depth of 1.2 metres below finished grade. A resistance factor of 0.5 has been applied to the ULS.

Final surface preparation for intact bedrock should include removal of smaller particles and debris by the use of high-pressure air. Final approval of prepared rock surface to be conducted by project geotechnical engineering personnel.

The serviceability limit states are based on a maximum allowable settlement of 25 mm for total settlement and 19 mm for differential settlement. Unfactored loads should be used with the SLS bearing pressures in accordance with the 2015 National Building Code of Canada (NBCC).

The site may be considered as Class C for seismic site response (NBCC 2015 Table 4.1.8.4.A). If all footings are founded on bedrock, Class B can be utilized.

Recommendations

If winter construction is being considered for the lot, it is imperative that the exposed subgrade(s) be protected (prior to and during construction) from frost penetration and the formation of ice lenses at the ground surface or within the prepared fill (or native soils). Any ice or significant frost build-up will require sub-excavation and replacement with approved engineered fill. During building construction, sufficient measures must be implemented to protect foundation/floor subsoil areas from frost penetration. Typical measures would include straw, insulated tarps, heated blankets, heaters, etc.

Englobe recommends that bearing capacity confirmation be carried out prior to construction to ensure bearing capacity meets the requirements for the proposed structures.

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

Yours truly,
Englobe Corp.

[redacted]
Project Manager, Geotechnical Engineering

Attachment (Site Plan)

KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
PT NO	SURVEY CONTROL MARKER	
	WATERVALVE	
	FIRE HYDRANT	
	UTILITY POLE AND GUY WIRE	
	TRAFFIC STREET LIGHT	
	SIGN POST/BASE	
X — X	FENCE	X — X
RW — RW	RETAINING WALL	RW — RW
	CONCRETE CURB	
	STREET LINE	
C	COMBINED MANHOLE & PIPE	C
	SANITARY MANHOLE & PIPE	
	STORM MANHOLE & PIPE	
	CATCHBASIN	
G — G	GAS MAIN	G — G
	CONCRETE SURFACE	
	ASPHALT SURFACE	
	EDGE OF GRAVEL SURFACE	
	WATERMAIN	
	TREE	
	PEDESTRIAN RAMP	
	CONTROLLER BOX	
	TRAFFIC SIGNAL POLE	
	JUNCTION BOX	
	RADAR SYSTEM	
	TRAFFIC SIGNAL HEAD	
	PEDESTRIAN HEAD	
TL — TL	TRAFFIC SIGNAL CONDUIT	TL — TL
ET — ET	ELECTRICAL CONDUIT	ET — ET
SL — SL	STREET LIGHT CONDUIT	SL — SL
TD — TD	TELECOMMUNICATIONS CONDUIT	TD — TD
H — H	HEDGE	

AREAS REQUIRED TO DRAIN TO WETLAND (NOT ACCOUNTED FOR IN STORM SEWER SIZING)

AREAS THAT CAN DRAIN TO STORM SEWER

No.	Date	Revision Description	Appr'd
1	SEP 10/23	AS-BUILT INFORMATION	JFB

ENGLOBE

HALIFAX

LOT INFORMATION PLAN

LOT 13-1-2
BURNSIDE, N.S.

BURNSIDE BUSINESS PARK PHASE 13-1
STREETS AND SERVICES

Date SEPT 2023	Drawn GMG	Tender No.
Scale 1:500	Survey No. T17158	Sheet 1 Of 1
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Drawing No.
Checked JFB		