

August 3, 2017

File:1592.0036.01

District of Sechelt
PO Box 129
2nd Floor, 5787 Cowrie Street
Sechelt BC V0N 3A0

Attention: Sanath Bandara, M.Eng., P.Eng.

RE: Seawatch Subdivision- Cost Estimate for the sinkhole remediation - Gale Avenue

We are pleased to respond to your July 20, 2017 email request for the provision of a construction cost estimate for the temporary repair of a sink hole which has developed on Gale Avenue North. Attached to this letter you will find a detailed breakdown of the estimated quantities and costs, as well as a summary page with the total estimated construction value including provisions for 25% contingency, 15% Engineering and 5% GST.

The construction cost estimate was developed based upon recommendations contained within the Thurber Engineering reports dated June 30, 2017 and July 11, 2017, which were attached to your July 20 request. Furthermore, we obtained further clarification and confirmation from Thurber on the guiding principles of the proposed works.

The following is our understanding of the required works and forms the basis for the attached construction cost estimate:

1. The proposed work is considered a temporary fix and does not address the deeper underlying issues of loose soil and groundwater
2. The limits of work are from 2+48 to 2+93 (45 lineal meters)
3. The limits of cut are from 3 meters north of the toe of rock wall (south side) to 1 meter south of property line (north side). Based on a 20 m right of way, this results in a top of cut width of 16 meters.
4. The cut slopes will be 1.5:1 max. No provision for shoring is provided.
5. This work is to be open cut, to a consistent depth of 3 meters. This depth is expected to avoid groundwater. During construction, if groundwater is found at a shallower depth, the excavation will stop.
6. It is recognized that the loose soil zone extends below 3 meters of depth for a portion of the work zone. No addition provisions will be given at the limit of the 3 meter excavation to densify the underlying soils.
7. No geogrid or geofabrics will be used.
8. We will need to include full replacement of all piping infrastructure, however we would not expect to replace electrical ducting. That will be avoided or temporarily supported.
9. Gas main will likely be temporarily supported.
10. It is hoped that existing material can be reused as bulk fill. We have included an allowance to import approximately one third of the overall require volume to account for some unusable existing soils.
11. All pavement structure materials and pipe bedding will be import.
12. Replacing piping will only be done over the 45 m length. It will require temporary bypass pumping or redirection.
13. Restoration will include curb, sidewalk, pavement, boulevards to original standards.

We trust this submission and the assumptions made in development of the cost estimate meets your approval. Please feel free to contact me if you wish to discuss in further detail.

Sincerely,

URBAN SYSTEMS LTD.



Jayson Vadasz, AScT

Project Manager, Principal

/jv

Attachments: Construction Cost Estimate dated August 3, 2017
Emails dated July 20, 2017 and August 1, 2017