SOLA ENGINEERING
390 Edgeley Blvd., Units 25 & 26,
Vaughan, Ontario L4K 3Z6
T: 905-760-9501 | F: 905-761-1822
W: www.solaengineering.ca
GEOTECHNICAL ENGINEERING | ENVIRONMENTAL ENGINEERING | MATERIALS TESTING & INSPECTIONS

October 18, 2019

REPORT NO.: 2019-13631
FILE NO.: 10627-S0375-GEO

Mr. Richard Hu
95 Development Inc.
1571 Sandhurst Circle, Unit 218
Toronto, Ontario
M1V 1V2

Email: (18 Pages)
info@wsimgroup.com

Attention: Mr. Richard Hu

RE: DESKTOP GEOTECHNICAL REVIEW
WOODSIDE MIXED USE DEVELOPMENT
1571 Sandhurst Circle
Scarborough, Ontario

As requested by Mr. Richard Hu of 95 Development Inc. (the Client), Sola Engineering Inc. (Sola) has carried out a geotechnical review (desktop study) for the proposed site located at 1571 Sandhurst Circle, in Scarborough, ON (the site or subject site). The geotechnical review was carried out on the basis of the following:

- Available published information for the site area; and,
- Sola's Report (Reference no. 2018-12356) titled, Geotechnical Investigation, Proposed Woodside Square Expansion, 1571 Sandhurst Circle, Scarborough, Ontario, prepared for TAES Architects, dated November 29, 2018;

The site information pertaining to the subsurface conditions, including soil and groundwater, has been examined. The review is based on the public and Client data. Sola has carried out an on-site geotechnical investigation in the vicinity of the development areas, however, the previous investigation was not within the footprint of the proposed high-rise buildings. Therefore, this review should be considered preliminary in nature.

The liability of any third party relying on this report for any legal or purchasing purposes remains with such a party. Sola will not be held responsible for the accuracy of the public data.

It is understood that the Client is contemplating to develop the site with multiple high-rise buildings which may include two (2) levels of underground parking garage.

PUBLISHED GEOLOGY

Based on a review of an existing geological publication for the site area, Ontario Geological Survey (OGS) Map P2204: "*Quaternary Geology, Toronto and Surrounding Area*", the site is underlain by Glacial Ice Deposits; predominantly consisting of Young Tills, clayey silt till to sandy silt till. According to the OGS Map M2544 "*Bedrock Geology of Ontario – Southern Sheet*", the superficial geology is underlain by the bedrock of the Upper Ordovician Georgian Bay Formation, comprising of shale, limestone, dolostone, and siltstone. The OGS Map P0102, "*Metropolitan Toronto Bedrock Contours*", reports bedrock to sub-crop the site at an elevation of approximately 75 m. With a surface elevation at the site of approximately 182 m at its highest, the anticipated depth to bedrock is approximately 107 m below the existing ground level. Information provided by a large number of historical Borehole records from the vicinity of the site, and held by the OGS, generally confirms the anticipated geological conditions beneath the site. Based on the data from records for Borehole ID 653718, the soil profile comprises till (mainly sand).

PREVIOUS INVESTIGATION BY SOLA

Sola has conducted a geotechnical investigation in the vicinity of the site previously. The geotechnical investigation report prepared by Sola dated November 29, 2018, consisted of six (6) boreholes (maximum depth of 17.2 m) at this site. Borehole logs and Borehole Location Plan are referenced in **Appendix A** of this report.

Based on the review of the borehole data, it appears that the subsurface soil profile mainly consists of sandy silt till to silty sand till with occasional sand and gravelly sand layer (Sols's Geotechnical Reports). The soil condition predominately varied from "compact" to "very dense" with occasional loose layers. Bedrock was not encountered.

In the reference Report No. 2018-12356, the competent soils at the design elevation can support the conventional spread and strip footings which may "*be designed on the basis of a geotechnical reaction of 250 kPa at the serviceability limit states (SLS) and for a factored geotechnical resistance of 375 kPa at the ultimate limit states (ULS)*". These values from the vicinity must be verified at the current development areas for design purposes.

Sola's borehole records show that the boreholes are dry upon completion of drilling.

COMMENTS

Based on the desktop review, our preliminary opinions for the site development are as follows:

1. The subsurface soil conditions may be considered suitable to support a medium to high loaded building development with conventional strip or spread foundations (assuming foundation will be placed a depth of 6 m below ground surface for two levels of underground parking garage). However, if the load concentration is extremely high, the boreholes should be drilled at the corresponding locations to determine the site-specific subsurface supporting characteristics;

2. No unusual ground conditions are noted based on available data;
3. Groundwater level should be determined by a separate hydrogeological study;
4. Depending on the footprint of the proposed development, shoring may be required; and,
5. As there appear localized soft layers, it is recommended that borehole investigation should be carried out for the site at a later time.

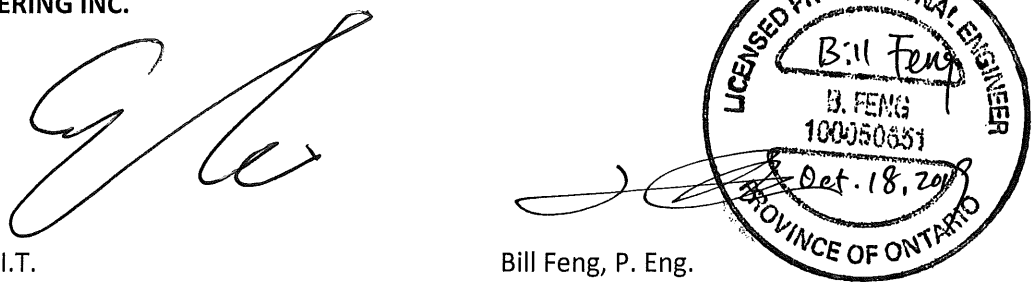
It is important to note that the desktop review is based on available information only. This review is not sufficient to be relied upon for design or construction purposes. A site-specific investigation must be carried out to verify the site subsurface conditions based on the finalized development plan. The design recommendations and construction considerations must be derived from the site-specific investigation.

CLOSURE

This report is subject to the *Statement of Limitations* which forms an integral part of this document. The *Statement of Limitations* is not intended to reduce the level of responsibility accepted by Sola, but rather to ensure that all parties who have been given reliance for this report are aware of the responsibilities each assumes in so doing.

We trust the above meets your needs. Should you have any questions, please contact the Sola office.

Sincerely,
SOLA ENGINEERING INC.



George Hao E.I.T.

Bill Feng, P. Eng.
Chief Engineer

Y:\PROJECTS\10627-(2241)-WSIM Group-GEO-Woodside Square-1571 Sandhurst Circle-Scarborough-Sept\GEO\08 Draft Reports\2019-13631-Desktop Study-Oct.docx

Appendix A

STATEMENT OF LIMITATIONS

Standard of Care and Basis of this Report
Sola Engineering Inc. ("Sola Engineering") has prepared this report in a manner consistent with generally accepted engineering and/or environmental practices in the jurisdiction in which the specified services were provided. The information and conclusions set out in this report reflects Sola Engineering's best professional judgment in light of the information available to Sola Engineering at the time of preparation. Sola Engineering disclaims any and all warranties, express or implied, including without limitation any warranty of merchantability and/or fitness for a particular purpose, and makes no representations concerning the legal effect, interpretation or significance of this report or the information, conclusions or recommendations contained in it.

The conclusions and recommendations provided in this report have been prepared in relation to the specified site (the "Site") and the proposed project (the "Project"), as described by the Client to Sola Engineering. Given the nature of the work undertaken by Sola Engineering as part of this report, the Client acknowledges that ground conditions may vary over distances and may change over time. Should there arise any changes to the conditions of the Site or the Project (as to purpose or design), Sola Engineering is to be notified within a reasonable period of time, and in any event within 24 hours of the Client's learning of such changes, so as to give Sola Engineering an opportunity to review and revise this report in light of such changes. Sola Engineering accepts no liability or responsibility for any use of this report or reliance on this report following any changes to the conditions of the Site or the Project.

The scope of professional services provided by Sola Engineering for the Project are as set out in this report. Should such services be limited to those of a geotechnical nature, Sola Engineering shall not be held liable or responsible for any environmental services that may be required, nor shall this report be interpreted to reflect any environmental aspects of the Project. Alternatively, should such services be limited to those of an environmental nature, Sola Engineering shall not be held liable or responsible for any geotechnical services that may be required, nor shall this report be interpreted to reflect any geotechnical aspects of the Project.

This report is not intended to provide recommendations for possible future conditions or use of the Site or adjoining properties. Should the need arise for such recommendations Sola Engineering may need to conduct further investigations.

Use of this Report
This report is intended to be read and used in its entirety. No reliance may be made upon any individual portion or section of this report without reference to the entire report as a whole. In preparing this report, Sola Engineering has relied on information, instructions and communications given by the Client to Sola Engineering, the applicability, truth and accuracy of which is the sole responsibility of the Client.

This report with the information, sampling data, analysis, conclusions and recommendations contained in it (if any), has been prepared for and may only be used by the Client and only for the specific purpose as specified by the Client to Sola Engineering in connection with the Project. Without prior written consent from Sola Engineering, use of this report or any portion thereof by any person or entity other than the Client, or for any purpose other than as communicated by the Client to Sola Engineering, is strictly prohibited. Sola Engineering accepts no liability or responsibility for the unauthorized use of this report. This report and all documents that form part of it are the sole property of Sola Engineering. Sola Engineering relies on and retains any and all intellectual property rights it has in this report, including any copyright to which it is entitled. The Client shall not give, lend or sell this report, or any portion thereof, to any entity, person or association without the express prior written consent of Sola Engineering. This report and the information contained herein shall be treated as strictly confidential.

The contents of this report, inclusive of Sola Engineering's conclusions and recommendations in relation to the Project, are intended only for the guidance of the Client in carrying out the specified services for the Project, as described by the Client to Sola Engineering. Accordingly, Sola Engineering does not accept any liability or responsibility for any inaccuracy contained in this report arising as a result of or in any way connected with any exclusion, oversight or falsification of the information provided to Sola Engineering by the Client. This report, including the effect of the subsurface conditions as described in this report, is to be interpreted at the risk and discretion of the Client and any contractors or others bidding on or undertaking contractual work to be performed as part of the Project who may come into possession of or learn of this report or its contents. It is exigent that all contractors bidding or undertaking the work are to rely on their own interpretations of the data contained in this report in addition to their own investigations and conclusions. Sola Engineering shall not be held liable or responsible for any interpretation of or conclusions that may be drawn from the data or information contained in this report.

The information, recommendations and conclusions presented in this report are based on Sola Engineering's interpretation of conditions revealed through the limited investigation conducted within a defined scope of services. In no event will Sola Engineering be held responsible or liable to the Client or any other person or entity for any special, indirect, incidental, punitive or consequential loss or damage (including, loss of use, lost profits or expenses incurred) resulting from or in any way related to the independent interpretations, interpolations, conclusions or decisions of the Client or any other person or entity, based on the information contained in this report. The restriction of liability includes but is not limited to decisions made to develop, purchase or sell land.

Notwithstanding the exclusions of liability contained herein but without in any way limiting their effect or generality, if there is found to be any finding of liability or responsibility whatsoever on the part of Sola Engineering which in any way relates to or arises from this report, or the information, conclusions or recommendations contained in it, such liability and/or responsibility shall cease and forever be extinguished from and after the date which is two (2) years from the date of this report. In no event shall any liability or responsibility of Sola Engineering exceed the fees charged by Sola Engineering to the Client for the preparation of this report (excluding any arms' length disbursements or expenditures made or incurred by Sola Engineering as a result thereof and reimbursed by the Client).

Site Conditions
The material conditions, classifications, conclusions and recommendations contained in this report were based on the site conditions observed or tested by Sola Engineering or otherwise communicated to Sola Engineering by the Client. The description, identification and classification of soils, rocks, chemical contamination and other materials have been made based on limited investigations, sampling and testing of materials performed by Sola Engineering and its qualified representatives in reliance on the use of relevant or applicable equipment, all in accordance with commonly acceptable standards in the geotechnical and/or environmental disciplines. Accordingly, this report may include assumptions of conditions which are based on discrete sample locations and thus some conditions may not have been detected. The Client accepts all liability and risk for the use of this report and the information and data contained in it. Sola Engineering shall not be held liable or responsible for any conditions beyond the scope of tests conducted on samples of the subsurface and soil conditions of the subject property as set out in this report.

For clarity, the Client acknowledges and accepts that unique risks exist whenever engineering or related disciplines are applied to identify subsurface conditions and even a comprehensive sampling and testing program may fail to detect certain conditions. The environmental, geological, geotechnical, geochemical and hydrogeological conditions that Sola Engineering interprets to exist between sampling points may differ from those that actually exist. As a result, the Client acknowledges and accepts that because of the inherent uncertainties in subsurface evaluations, unanticipated underground conditions may occur or become known subsequent to Sola Engineering's investigation that could affect conclusions, recommendations, total Project cost and/or execution.

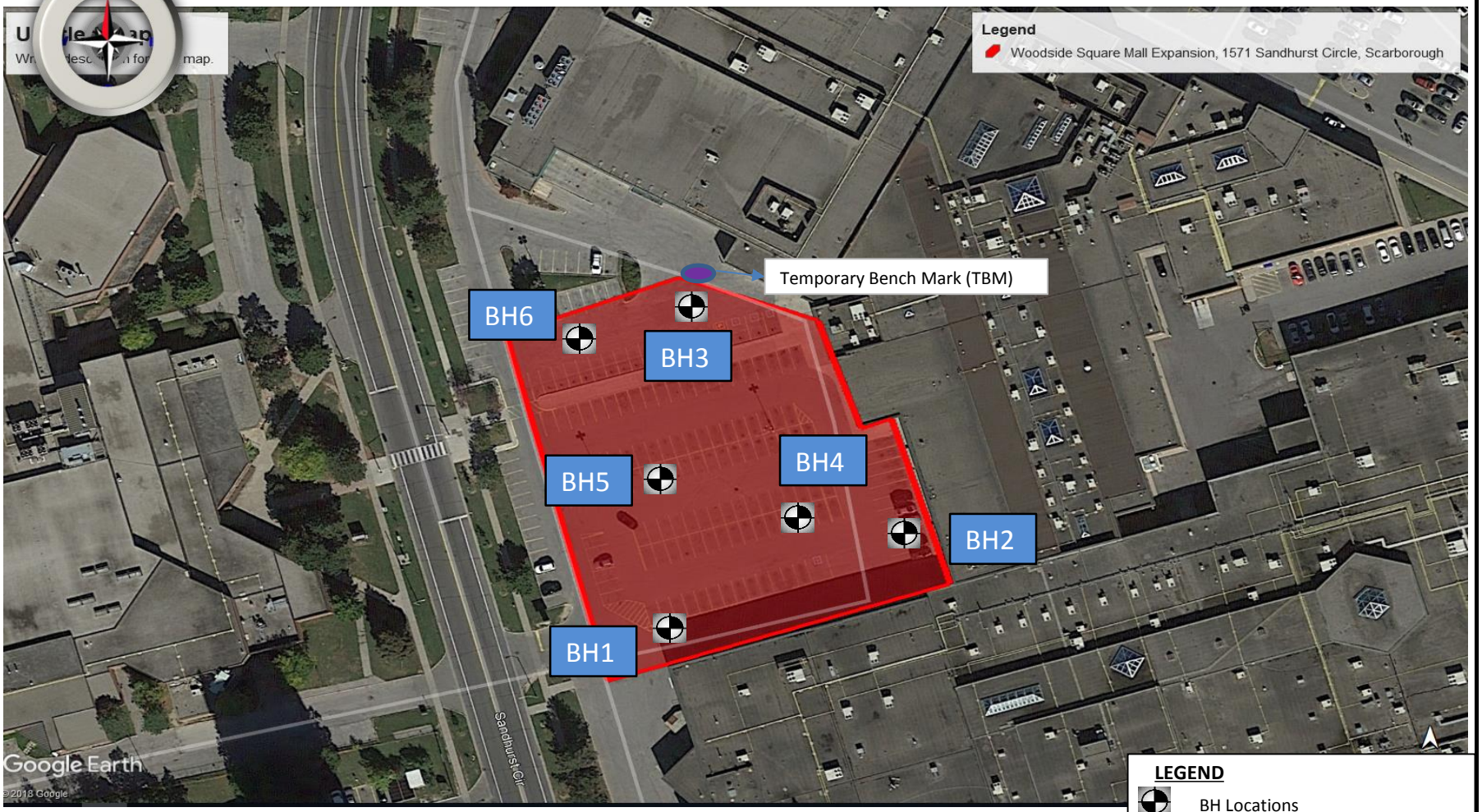
Indemnification of Risk
Though Sola Engineering adheres to the highest degree of integrity and employs due diligence in limiting the potential release of toxins and hazardous substances, the risk of accidental release of such substances is a possibility when providing geotechnical and environmental services.

In consideration of the provision of services by Sola Engineering, the Client agrees to defend, indemnify and hold Sola Engineering and its employees and agents harmless from and against any and all claims, liabilities, damages, causes of action, judgments, costs or expenses (including reasonable legal fees and disbursements), resulting from or arising by reason of the death or bodily injury to persons, damage to property, or other loss, whether related to an accidental release of pollutants or hazardous substances occurring as a result of carrying out this Project or otherwise, and whether or not resulting from Sola Engineering's negligent actions or omissions. This indemnification shall include and extend to any and all third party claims brought or threatened against Sola Engineering under any federal or provincial law or statute as a result of Sola Engineering conducting work on the Project. In addition to and notwithstanding the foregoing, the Client further agrees to unconditionally and irrevocably release Sola Engineering from, and not to bring any claims against Sola Engineering in connection with, any of the aforementioned claims or causes.

Subconsultants and Contractor Services
In conjunction with the services provided by Sola Engineering's own employees, external services provided by other persons or entities that are specializing in services other than those offered by Sola Engineering, such as drilling, excavation and laboratory testing, are often employed in order to carry out the defined scope of work. If such external services have been employed for this Project, the Client acknowledges that Sola Engineering is not in any way liable or responsible for any costs, claims or damages in relation to the services rendered by such other persons or entities or payment therefor, nor shall Sola Engineering be liable or responsible for damages for errors, omissions or negligence caused by such other persons or entities while providing such external services.

Work and Job Site Safety
Sola Engineering shall be responsible only for its activities and that of its employees on the Site. Sola Engineering shall not direct any of the fieldwork nor the work of any other person or entity on the Project. The presence of Sola Engineering staff on the Site does not relieve the Client or any contractor on the Site from their responsibilities pertaining to site safety. The Client at all times retains any and all responsibility for the safety of those individuals present on the Site and/or working on the Project, including Sola Engineering's employees.

Appendix A



SOLA ENGINEERING	Report No.: 2018- 10444	**BH Location Plan**	The figure provided is for the intended purpose of presenting the approximate borehole locations. This figure should not be used for any other purposes including construction, architecture or for accuracy of dimensions and orientation of objects.	Enclosure No.: **1**
	Report Number: 2018- 12356	**Proposed Commercial Redevelopment** **Woodside Square Mall, 1571 Sandhurst Circle** **Scarborough, Ontario**		
	Date: October 25, 2018	**TAES Architects Inc.**		Not to Scale

ENCLOSURE 2
PAGE 1 OF 2

BOREHOLE LOG

BOREHOLE NO.: 1

SOLA ENGINEERING

PROJECT NO.: 10444 **DATE:** October 2, 2018
PROJECT: Proposed Woodside Square Expansion

CLIENT: TAES Architects Inc.
LOCATION: 1571, Sandhurst Circle, Scarborough, Ontario
ELEVATION (M): 99.18 Local **CAVED AT DEPTH (M):** Open
WATER LEVEL DEPTH (M): Dry **DRILLING METHOD:** Solid Stem Auger
DRILLER: Strong Soil Search Inc. **DRILL RIG:** Truck- CME 75
LOGGED BY: DK **REVIEWED BY:** JA

LEGEND:

	SS - SPLIT SPOON
	AS - AUGER SAMPLE
	ST - SHELBY TUBE
	CS - CORE SAMPLE
	WATER LEVEL
	CAVED AT
"N"	BLOWS / 0.3 M
M.C.	NATURAL MOISTURE CONTENT (%)
O.V.M	ORGANIC VAPOUR MONITOR
P.L.	PLASTIC LIMIT (%)
L.L.	LIQUID LIMIT (%)

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. M.C. "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
99 / 0		1A	ASPHALTIC CONCRETE- 100 mm thick				99 / 0	
			SUBBASE/BASE- sand and gravel- 205 mm thick	3.4				
		1B		5.8	13-14-10-6	24		
			FILL- silty sand, some gravel, brown, moist					
98 / 1		2	SANDY SILT TILL- trace gravel, trace clay, oxidized, compact, moist	8.5	5-12-17	29	98 / 1	
			- very dense					
		3		7.1	23-43-50**/13 cm	93/28 cm		
97 / 2							97 / 2	
		4	- trace stone pieces	7.7	30-50*/10 cm	50/10 cm		
96 / 3		5		8.3	23-48-47	95	96 / 3	
95 / 4							95 / 4	
		6	- occasional stone pieces, dense	8.6	15-23-24	47		
94 / 5							94 / 5	
93 / 6			No Sample Recovery		50/ 1 cm	50/ 1 cm	93 / 6	
92 / 7							92 / 7	

Notes: 50** / 13 cm denotes 50 plus blows for 13 cm spoon penetration after 1st 30 cm during SPT test.
50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50* / 13 cm denotes 50 plus blows for 13 cm spoon penetration after 1st 15 cm during SPT test.

This information pertains only to this borehole and should not be interpreted as being indicative of the site.

BOREHOLE LOG

ENCLOSURE 2
PAGE 2 **OF** 2

BOREHOLE NO.: 1

PROJECT: Proposed Woodside Square Expansion **PROJECT NO.:** 10444

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)
					BLOW COUNTS	"N" VALUE	
91 – 8		8	SANDY SILT TILL- trace gravel, trace clay, oxidized, very dense, moist	8.5	38-49-50	99	91 – 8
			- auger grinding				
90 – 9		9	- grey, wet	7.6	18-36-29	65	90 – 9
89 – 10		10	GRAVELLY SAND- trace stones, brown, moist	2.1	20-34-34	68	89 – 10
88 – 11		11	SILTY SAND TILL TO SANDY SILT TILL- trace gravel, trace clay, greyish brown, very dense, moist	7.6	48-50*/ 13 cm	98/13 cm	88 – 11
87 – 12		12	SANDY SILT TILL- trace gravel, trace clay, greyish brown, very dense, moist	8.2	27-34-37	71	87 – 12
86 – 13							86 – 13
85 – 14							85 – 14
84 – 15		13	- very dense, wet	9.2	21-32-24	56	84 – 15
83 – 16							83 – 16
82 – 17		14	- loose, wet	9.2	6-3-2	5	82 – 17
81 – 18			End of Borehole at Target Depth of 17.22 m Below Ground Surface. Borehole Open and Dry Upon Completion of Drilling.				81 – 18

P.L.-L.L.
M.C.
"N" Value
20 40 60 80

ENCLOSURE 3
PAGE 1 OF 2

BOREHOLE LOG

BOREHOLE NO.: 2

SOLA ENGINEERING

PROJECT NO.: 10444 **DATE:** October 3, 2018
PROJECT: Proposed Woodside Square Expansion

CLIENT: TAES Architects Inc.
LOCATION: 1571, Sandhurst Circle, Scarborough, Ontario
ELEVATION (M): 99.58 Local **CAVED AT DEPTH (M):** Open
WATER LEVEL DEPTH (M): Dry **DRILLING METHOD:** Solid Stem Auger
DRILLER: Strong Soil Search Inc. **DRILL RIG:** Truck- CME 75
LOGGED BY: DK **REVIEWED BY:** JA

LEGEND:

	SS - SPLIT SPOON
	AS - AUGER SAMPLE
	ST - SHELBY TUBE
	CS - CORE SAMPLE
	WATER LEVEL
	CAVED AT
"N"	BLOWS / 0.3 M
M.C.	NATURAL MOISTURE CONTENT (%)
O.V.M	ORGANIC VAPOUR MONITOR
P.L.	PLASTIC LIMIT (%)
L.L.	LIQUID LIMIT (%)

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)
					BLOW COUNTS	"N" VALUE	
0		1A	ASPHALTIC CONCRETE- 70 mm thick SUBBASE/BASE- sand and gravel	5.4			0
99		1B	FILL- sandy silt, some clay, trace gravel, dark brown to brown, very moist	19.7	8-5-6-8	11	99
1		2	- trace clay, occasional stone pieces, brown, very moist	11.0	6-7-18	25	1
98		3A		8.3			98
2		3B	SANDY SILT TILL- trace gravel, trace clay, oxidized, brown, very dense, moist	6.8	18-24-33	57	2
97		4		7.6	26-39-49	88	97
3		5		7.3	33-50*/ 10 cm	50/ 10 cm	3
96							96
4							4
95		6		8.8	30-40-42	82	95
5							5
94							94
6		7	- occasional stone pieces, very dense, very moist	8.9	28-47-50*/13 cm	97/ 28 cm	6
93							93
7							7
92							92

P.L.-L.L.
M.C.
"N" Value
20 40 60 80

Notes: 50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.

BOREHOLE LOG

ENCLOSURE 3
PAGE 2 **OF** 2

BOREHOLE NO.: 2

SOLA ENGINEERING

PROJECT: Proposed Woodside Square Expansion **PROJECT NO.:** 10444

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. M.C. "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
8		8	SANDY SILT TILL- trace gravel, trace clay, oxidized, very dense, moist	6.3	40-50*/ 13 cm	50/13 cm	8	
			- very dense, moist					
9		9	- very dense, very moist	7.5	32-48-50	98	9	
			- auger grinding					
10		10	- grey, loose, very moist	7.7	16-2-5	7	10	
11		11	- brown, very dense, moist	7.2	50 / 8 cm	50 / 8 cm	11	
			- auger grinding					
12		12	- occasional stone pieces, grey, very dense, very moist	6.6	44-50*/ 10 cm	50*/10 cm	12	
13		13		4.1	50 / 5 cm	50 / 5cm	13	
14		14A	- grey, wet	8.1	43-50*/8 cm	50/ 8 cm	14	
15		14B	GRAVELLY SAND- grey, wet	5.2			15	
16			End of Borehole at 16.99 m Due to Spoon Refusal. Borehole Open and Dry Upon Completion of Drilling.				16	
17							17	
18							18	

ENCLOSURE 4
PAGE 1 OF 2

BOREHOLE LOG

BOREHOLE NO.: 3

SOLA ENGINEERING

PROJECT NO.: 10444 **DATE:** October 1, 2018
PROJECT: Proposed Woodside Square Expansion

CLIENT: TAES Architects Inc.
LOCATION: 1571, Sandhurst Circle, Scarborough, Ontario
ELEVATION (M): 100.08 Local **CAVED AT DEPTH (M):** Open
WATER LEVEL DEPTH (M): Dry **DRILLING METHOD:** Solid Stem Auger
DRILLER: Strong Soil Search Inc. **DRILL RIG:** Truck- CME 75
LOGGED BY: DK **REVIEWED BY:** JA

LEGEND:

	SS - SPLIT SPOON
	AS - AUGER SAMPLE
	ST - SHELBY TUBE
	CS - CORE SAMPLE
	WATER LEVEL
	CAVED AT
"N"	BLOWS / 0.3 M
M.C.	NATURAL MOISTURE CONTENT (%)
O.V.M	ORGANIC VAPOUR MONITOR
P.L.	PLASTIC LIMIT (%)
L.L.	LIQUID LIMIT (%)

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)
					BLOW COUNTS	"N" VALUE	
100 – 0		1A	ASPHALTIC CONCRETE- 70 mm thick				100 – 0
			SUBBASE/BASE- sand and gravel- 305 mm thick	9.7			
		1B		6.6	12-8-10-12	18	
			FILL- fine sand, some gravel, brown, moist				
99 – 1		2	- very moist	5.7	7-12-12	24	99 – 1
		3		6.7	5-10-9	19	
98 – 2							98 – 2
		4	- trace gravel	9.1	9-6-9	15	
97 – 3		5	- concrete pieces encountered at 3.15 m below ground surface	7.3	50/ 13 cm	50/ 13 cm	97 – 3
96 – 4							96 – 4
		6A	FILL- fine sand, some gravel, brown, very moist	18.8			
		6B		15.1	2-2-3	5	
95 – 5			PROBABLE FILL- sandy silt, trace gravel, trace clay, brown, very moist				95 – 5
94 – 6		7	SANDY SILT TILL- trace gravel, trace clay, brown, dense, moist	10.0	4-14-20	34	94 – 6
93 – 7							93 – 7

P.L.-L.L. M.C. "N" Value 20 40 60 80

Notes: 50* / 8 cm denotes 50 plus blows for 8 cm spoon penetration after 1st 15 cm during SPT test.

BOREHOLE LOG

BOREHOLE NO.: 3

SOLA ENGINEERING

ENCLOSURE 4
PAGE 2 **OF** 2

PROJECT: Proposed Woodside Square Expansion

PROJECT NO.: 10444

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. M.C. "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
92 – 8		8A		7.9	30-38-38	76	92 – 8	
		8B	- very dense, grey	7.4				
91 – 9		9A	- some clay, grey, dense, wet	9.4	8-20-22	42	91 – 9	
		9B	- trace clay, grey, moist	8.1				
90 – 10		10	- dense	9.1	30-50*/8 cm	50/8 cm	90 – 10	
89 – 11							89 – 11	
88 – 12		11	- occasional stones, very dense	6.7	50/ 8 cm	50/8 cm	88 – 12	
87 – 13							87 – 13	
86 – 14		12	- auger grinding	7.9	39-50*/8 cm	50*/8 cm	86 – 14	
85 – 15							85 – 15	
		13	- some gravel, occasional stones, grey, very dense, very moist to wet	2.7	50/ 5 cm	50/ 5cm		
84 – 16							84 – 16	
83 – 17		14	- trace gravel, very dense, wet	11.0	50/ 13 cm	50/ 13 cm	83 – 17	
			End of Borehole at 16.89 m Due to Spoon Refusal. Borehole Open and Dry Upon Completion of Drilling.					
82 – 18							82 – 18	

ENCLOSURE 5
PAGE 1 OF 2

BOREHOLE LOG

BOREHOLE NO.: 4

SOLA ENGINEERING

PROJECT NO.: 10444 **DATE:** October 3, 2018
PROJECT: Proposed Woodside Square Expansion

CLIENT: TAES Architects Inc.
LOCATION: 1571, Sandhurst Circle, Scarborough, Ontario
ELEVATION (M): 99.56 Local **CAVED AT DEPTH (M):** Open
WATER LEVEL DEPTH (M): Dry **DRILLING METHOD:** Solid Stem Auger
DRILLER: Strong Soil Search Inc. **DRILL RIG:** Truck- CME 75
LOGGED BY: DK **REVIEWED BY:** JA

LEGEND:

	SS - SPLIT SPOON
	AS - AUGER SAMPLE
	ST - SHELBY TUBE
	CS - CORE SAMPLE
	WATER LEVEL
	CAVED AT
"N"	BLOWS / 0.3 M
M.C.	NATURAL MOISTURE CONTENT (%)
O.V.M	ORGANIC VAPOUR MONITOR
P.L.	PLASTIC LIMIT (%)
L.L.	LIQUID LIMIT (%)

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)
					BLOW COUNTS	"N" VALUE	
99		1A	ASPHALTIC CONCRETE- 100 mm thick SUBBASE/BASE- sand and gravel- 300 mm thick	2.6			99
		1B		4.2	12-7-5-5	12	
		2A	FILL- sandy silt, trace gravel, brown, very moist	12.1			
98		2B		10.3	8-17-24	41	98
		3	SANDY SILT TILL- trace gravel, trace clay, oxidized, brown, dense, moist - dense to very dense	8.0	21-24-26	50	
97		4	- occasional stone pieces, very dense	8.4	35-49-44	93	97
96		5	- very moist	6.9	20-32-41	73	96
95		6	- moist	7.8	23-45-43	88	95
93		7	- very moist	8.4	28-48-50**/ 5 cm	98/20 cm	93
92							92

P.L.-L.L.
M.C.
"N" Value
20 40 60 80

Notes: 50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.

ENCLOSURE 5
PAGE 2 OF 2

BOREHOLE LOG

BOREHOLE NO.: 4

SOLA ENGINEERING

PROJECT: Proposed Woodside Square Expansion

PROJECT NO.: 10444

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. △ M.C. ● "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
8		8	- moist	6.4	50/ 13 cm	50/ 13 cm	8	△ ●
91							91	
9			- grey, very moist				9	
90		9		6.9	28-34-23	57	90	△ ●
10							10	
89							89	
11		10	FINE SAND- some gravel, brown, very dense, moist	7.5	28-40-41	81	11	△ ●
88			End of Borehole at Target Depth of 11.13 m Below Ground Surface. Borehole Open and Dry Upon Completion of Drilling.				88	
12							12	
87							87	
13							13	
86							86	
14							14	
85							85	
15							15	
84							84	
16							16	
83							83	
17							17	
82							82	
18							18	
81							81	

ENCLOSURE 6
PAGE 1 OF 2

BOREHOLE LOG

BOREHOLE NO.: 5

SOLA ENGINEERING

PROJECT NO.: 10444 **DATE:** October 3, 2018
PROJECT: Proposed Woodside Square Expansion

CLIENT: TAES Architects Inc.
LOCATION: 1571, Sandhurst Circle, Scarborough, Ontario
ELEVATION (M): 99.68 Local **CAVED AT DEPTH (M):** Open
WATER LEVEL DEPTH (M): Dry **DRILLING METHOD:** Solid Stem Auger
DRILLER: Strong Soil Search Inc. **DRILL RIG:** Truck- CME 75
LOGGED BY: DK **REVIEWED BY:** JA

LEGEND:

	SS - SPLIT SPOON
	AS - AUGER SAMPLE
	ST - SHELBY TUBE
	CS - CORE SAMPLE
	WATER LEVEL
	CAVED AT
"N"	BLOWS / 0.3 M
M.C.	NATURAL MOISTURE CONTENT (%)
O.V.M	ORGANIC VAPOUR MONITOR
P.L.	PLASTIC LIMIT (%)
L.L.	LIQUID LIMIT (%)

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. △ M.C. ● "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
0		1A	ASPHALTIC CONCRETE- 70 mm thick SUBBASE/BASE- sand and gravel- 430 mm thick	2.8			0	
99		1B	FILL- sandy silt, trace gravel, trace clay, brown, very moist	8.8	9-16-8-7	24	99	
1		2	SANDY SILT TILL- trace gravel, trace clay, oxidized, brown, compact, moist	9.3	8-14-13	27	1	
98		3	- very dense	9.1	14-31-35	66	98	
2							2	
		4	- occasional stone pieces	8.3	33-30-45	75		
97							97	
3		5	- occasional stone pieces, oxidized, moist	7.7	22-28-42	70	3	
96							96	
4							4	
95		6		7.2	19-32-43	75	95	
5							5	
94							94	
6		7		8.2	25-49-50**/13 cm	99/28 cm	6	
93							93	
7							7	

Notes: 50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50** / 13 cm denotes 50 plus blows for 13 cm spoon penetration after 1st 30 cm during SPT test.

BOREHOLE LOG

BOREHOLE NO.: 5

SOLA ENGINEERING

ENCLOSURE 6
PAGE 2 **OF** 2

PROJECT: Proposed Woodside Square Expansion

PROJECT NO.: 10444

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. M.C. "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
92 / 8		8	- very moist	7.6	41-50*/ 14 cm	50/14 cm	92 / 8	
91 / 9		9	- grey, very moist	7.6	50/ 14 cm	50/ 14 cm	91 / 9	
90 / 10		10	- moist	7.4	45-50*/ 13 cm	50/ 13cm	90 / 10	
89 / 11			End of Borehole at 10.95 m Due to Spoon Refusal. Borehole Open and Dry Upon Completion of Drilling.				89 / 11	
88 / 12							88 / 12	
87 / 13							87 / 13	
86 / 14							86 / 14	
85 / 15							85 / 15	
84 / 16							84 / 16	
83 / 17							83 / 17	
82 / 18							82 / 18	
81							81	

ENCLOSURE 7
PAGE 1 OF 2

BOREHOLE LOG

BOREHOLE NO.: 6

SOLA ENGINEERING

PROJECT NO.: 10444 **DATE:** October 1, 2018
PROJECT: Proposed Woodside Square Expansion

CLIENT: TAES Architects Inc.
LOCATION: 1571, Sandhurst Circle, Scarborough, Ontario
ELEVATION (M): 99.72 Local **CAVED AT DEPTH (M):** Open
WATER LEVEL DEPTH (M): Dry **DRILLING METHOD:** Solid Stem Auger
DRILLER: Strong Soil Search Inc. **DRILL RIG:** Truck- CME 75
LOGGED BY: DK **REVIEWED BY:** JA

LEGEND:

	SS - SPLIT SPOON
	AS - AUGER SAMPLE
	ST - SHELBY TUBE
	CS - CORE SAMPLE
	WATER LEVEL
	CAVED AT
"N"	BLOWS / 0.3 M
M.C.	NATURAL MOISTURE CONTENT (%)
O.V.M	ORGANIC VAPOUR MONITOR
P.L.	PLASTIC LIMIT (%)
L.L.	LIQUID LIMIT (%)

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS BLOW COUNTS	STANDARD PENETRATION TESTS "N" VALUE
99.72			ASPHALTIC CONCRETE- 70 mm thick			
99.65		1A	SUBBASE/BASE- sand and gravel- 530 mm thick	5.6	13-8-6-8	14
99.19		1B	FILL- sandy silt, some clay, trace gravel, brown, very moist	17.5		
98.72		2		8.5	9-19-22	41
98.19			SANDY SILT TILL- trace gravel, trace clay, oxidized, brown, dense, very moist			
97.72		3	- occasional stones, brown, very dense, very moist	8.2	21-25-35	60
97.19		4	- moist	7.4	32-50*/ 13 cm	50/ 13 cm
96.72		5		8.2	28-37-39	76
95.72		6		7.3	39-50*/ 10 cm	50/ 10 cm
94.72		7	- occasional stone pieces	9.3	49-50*/ 13 cm	50/ 13 cm

P.L.-L.L. △ M.C. ● "N" Value 20 40 60 80

Notes: 50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50* / 10 cm denotes 50 plus blows for 10 cm spoon penetration after 1st 15 cm during SPT test.
50** / 13 cm denotes 50 plus blows for 13 cm spoon penetration after 1st 30 cm during SPT test.

This information pertains only to this borehole and should not be interpreted as being indicative of the site.

BOREHOLE LOG

BOREHOLE NO.: 6

SOLA ENGINEERING

ENCLOSURE 7
PAGE 2 **OF** 2

PROJECT: Proposed Woodside Square Expansion **PROJECT NO.:** 10444

ELEV./ DEPTH (m)	WELL/ PIEZO. DETAIL	SYMBOLS, SAMPLERS TEST DATA	DESCRIPTION	Moisture Content	STANDARD PENETRATION TESTS		ELEV./ DEPTH (m)	P.L.-L.L. △ M.C. ● "N" Value 20 40 60 80
					BLOW COUNTS	"N" VALUE		
92 – 8		8		7.3	37-49-50**/13 cm	99/28 cm	92 – 8	△
91 – 9		9		7.9	50-50*/ 10 cm	50/10 cm	91 – 9	△ ●
90 – 10		10					90 – 10	
89 – 11			End of Borehole at 10.80 m Due to Spoon Refusal. Borehole Open and Dry Upon Completion of Drilling.	6.3	50/ 13 cm	50/ 13cm	89 – 11	△ ●
88 – 12							88 – 12	
87 – 13							87 – 13	
86 – 14							86 – 14	
85 – 15							85 – 15	
84 – 16							84 – 16	
83 – 17							83 – 17	
82 – 18							82 – 18	
81							81	