

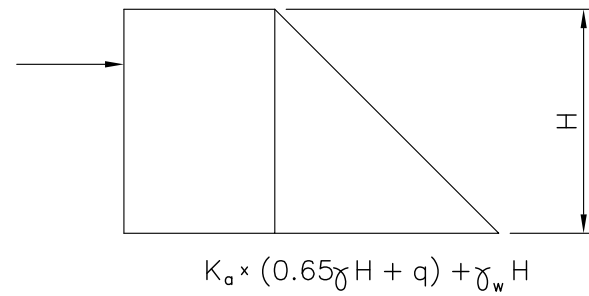
**NOTES:**

1. ANY DEVIATION FROM THE CONDITIONS SHOWN ON THESE DRAWINGS SHALL BE REPORTED TO THE ENGINEER.
2. DIMENSIONS ARE SHOWN IN MILLIMETRES, ELEVATIONS ARE SHOWN IN METRES.
3. CHECK FOR EXISTING SERVICES BEFORE INSTALLING PILES. LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR GENERAL INFORMATION ONLY AND MAY NOT BE RELIED UPON.
4. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL CONTRACT DOCUMENTS AND MATERIALS RELEVANT TO THE PROJECT.
5. DESIGN DONE IN CONFORMANCE WITH:  
ONTARIO BUILDING CODE 2012,  
OPSS.MUNI 539 (NOV. 2014): CONSTRUCTION SPECIFICATION FOR TEMPORARY PROTECTION SYSTEMS,  
CAN/CSA S16-14: DESIGN OF STEEL STRUCTURES,  
CAN/CSA A23.3-14: DESIGN OF CONCRETE STRUCTURES,  
PATERSON GROUP REPORT No. PG2674-2 REVISION 4 DATED OCTOBER 4, 2021  
O.REG 213/91: REGULATIONS FOR CONSTRUCTION PROJECTS.
6. THE PROTECTION SYSTEM IS DESIGNED IN ACCORDANCE WITH OPSS 539 PERFORMANCE LEVEL 2.
7. THE DESIGN GROUND WATER TABLE IS ASSUMED TO BE 5 TO 6 m BELOW THE EXISTING GROUND SURFACE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PROVIDED BY PATERSON GROUP.
8. MATERIALS:  
STEEL ROLLED SECTIONS = CAN/CSA S16-19 G40.21-44W.  
STEEL PLATES = GRADE A36.  
CABLES = HIGH TENSILE WIRE, ROPE 3/8" Ø (16 mm).  
MAX ALLOWABLE TENSION 156 kN.  
LAGGING = 3" THICK MIN. HARDWOOD.  
TIEBACK CABLE GROUT = 40 MPa.
9. EXCAVATE AND INSTALL TIMBER LAGGING IN 4' (1.2 m) INCREMENTS. BACKFILL WITH GRANULAR MATERIAL BEHIND LAGGING AND WEDGE LAGGING TIGHTLY IN PLACE.
10. AS EXCAVATION AND WALER INSTALLATION PROGRESSES, THE EXCAVATED SOIL SHALL NOT BE LESS THAN 500 mm BELOW THE WALER/CORNER BRACE THAT IS TO BE INSTALLED.
11. ALL WELDING SHALL BE DONE IN CONFORMANCE WITH CSA W59-18 AND PERFORMED BY A WELDER CERTIFIED TO CSA W47.1.
12. ALL WALER SPLICES SHALL BE COMPLETE JOINT PENETRATION WELDS ALL AROUND.
13. GUARDRAILS SHALL BE PROVIDED AROUND THE ENTIRETY OF THE SHORING SYSTEM AND WHERE EVER A FALL HAZARD EXISTS.
14. A FIELD REVIEW OF SHORING INSTALLATION AND REMOVAL SHALL BE CARRIED OUT ON A CONTINUOUS BASIS BY THE ENGINEER.

**MONITORING:**

1. RECORD PILE LENGTHS, ELEVATIONS AND TIE-BACK LENGTHS AND REPORT TO THE ENGINEER.
2. MONITOR BOTH HORIZONTAL AND VERTICAL ALIGNMENT OF PILES AT THE EXTERIOR GRADE LEVEL.
3. MEASUREMENTS ARE TO BE TAKEN BEFORE EXCAVATION COMMENCES AND AT WEEKLY INTERVALS THEREAFTER. RECORDED MEASUREMENTS SHALL BE REPORTED TO THE ENGINEER.
4. AN EXACT MONITORING PROGRAM SHALL BE PROPOSED BY THE CONTRACTOR IN ACCORDANCE WITH OPSS 539.07.03.03 AND SUBMITTED TO THE ENGINEER FOR APPROVAL.

**LOADING:**



- $K_a = 0.33$
- $K_a = 0.50$  (AT BUILDING)
- $\gamma = 20 \text{ kN/m}^3$
- $\gamma_s = 13 \text{ kN/m}^3$
- $\gamma_w = 10 \text{ kN/m}^3$
- $q = 16 \text{ kPa}$
- $q = 40 \text{ kPa}$  (AT BUILDING)

**TIE-BACK NOTES:**

**TB6:**  
930 kN: WORKING LOAD  
1,235 kN: TEST LOAD  
1,020 kN: RELEASE LOAD  
6 x Ø16 mm: CABLES  
5.5 m: ROCK EMBEDMENT  
INTO Ø100 mm HOLE

**TB8:**  
1,240 kN: WORKING LOAD  
1,650 kN: TEST LOAD  
1,365 kN: RELEASE LOAD  
8 x Ø16 mm: CABLES  
6.5 m: ROCK EMBEDMENT  
INTO Ø100 mm HOLE

**TB10:**  
1,550 kN: WORKING LOAD  
2,060 kN: TEST LOAD  
1,705 kN: RELEASE LOAD  
10 x Ø16 mm: CABLES  
8.0 m: ROCK EMBEDMENT  
INTO Ø150 mm HOLE c/w SPACERS

**TB12:**  
1,860 kN: WORKING LOAD  
2,475 kN: TEST LOAD  
2,045 kN: RELEASE LOAD  
12 x Ø16 mm: CABLES  
9.5 m: ROCK EMBEDMENT  
INTO Ø150 mm HOLE c/w SPACERS

-CABLES TO BE FULLY GROUTED IN DRILLED HOLE TO ROCK EMBEDMENT AS INDICATED

-GROUT/ROCK BOND 1.0 MPa (ULS)

-EXT. FACTOR 0.0056

-USE 40 MPa GROUT

THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.



4	MAR. 31/22	REVISED AS PER D+M REVIEW	W.R.
3	JUL. 19/21	UPDATED GEOTECH REPORT DATA	R.P.
2	MAY 27/21	REVISED FOR NEW UNDERGROUND	R.P.
1	MAR. 10/21	REVISED FOR SHEET PILES E&W	R.P.
0	FEB. 22/21	PRELIMINARY	R.P.

**REMISZ**  
Consulting Engineers Ltd.  
57 Auriga Dr. Suite 102  
Ottawa, ON, K2E 8B2  
tel.: (613) 225-1162  
fax: (613) 225-4529

Client  
**CLARIDGE HOMES**

Project  
**1040 SOMERSET St. W  
OTTAWA, ONTARIO**

Drawing  
**EXCAVATION PROTECTION SYSTEM  
NOTES**

Designed	R.P. / M.K.	Date	JAN. 2021
Drawn	R.P. / M.K.	Scale	AS SHOWN
Checked	B.U. / W.R.	Sheet	1 OF 10
Project No.	2021-010-3	Dwg. No.	C-01

