Builder Tip
Issue No: 98
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Updated to 2024 OBC

Shoring Requirements For Housing

Foundation Walls

The Building Standards Department issues Builder Tips as part of our customer service program. They are designed to provide an improved understanding of the Building Code and to reduce the costs associated with correcting infractions. Please contact your area building inspector for further information or call the Building Standards Department at 905.475.4848 extension 2189

9.12.1.4. Precautions During Excavation
(1) Every excavation shall be undertaken in such a manner to prevent damage to adjacent property, existing structures, utilities, roads and sidewalks at all stages of construction.
(2) Material shall not be placed nor shall equipment be operated or placed in or adjacent to an excavation in a manner that may endanger the integrity of the excavation or its supports.

OCCUPATIONAL HEALTH AND SAFETY ACT (OHSA) 234.

(1) The walls of an excavation shall be supported by a support system that complies with sections 235, 236, 237, 238, 239 and 241. O. Reg. 213/91, s. 234 (1).

(2) Subsection (1) does not apply with respect to an excavation,

(a) that is less than 1.2 metres deep;
(b) that no worker is required to enter;
(c) that is not a trench and with respect to which no worker is required to be closer to a wall than the height of the wall;
(d) that is cut in sound and stable rock;
(e) made in Type 1 or Type 2 soil and whose walls are sloped to 1.2 metres or less from its bottom with a slope having a minimum gradient of one vertical to one horizontal;
(f) made in Type 3 soil and whose walls are sloped from its bottom with a slope having a minimum gradient of one vertical to one horizontal;
(g) made in Type 4 soil and whose walls are sloped from its bottom with a slope having a minimum gradient of one vertical to three horizontal; or

(h) that is not a trench and is not made in Type 4 soil and with respect to which a professional engineer has given a written opinion that the walls of the excavation are sufficiently stable that no worker will be endangered if no support system is used. O. Reg.

(3) The opinion in clause (2) (h) shall include details of

(a) the specific project and the location thereon;
(b) any specific condition for which the opinion applies; and
(c) the frequency of inspections. O. Reg. 213/91, s. 234 (3).

(4) The constructor shall keep on the project a copy of every opinion given by a professional engineer for the purpose of clause (2) (h) while the project is in progress. O. Reg. 213/91, s. 234 (4).

(5) The professional engineer who gives an opinion described in clause (2) (h), or a competent worker designated by him or her, shall inspect the excavation to which the opinion relates as frequently as the opinion specifies. O. Reg. 213/91, s. 234 (5).

“trench” means an excavation where the excavation depth exceeds the excavation width.

OBJECTIVE

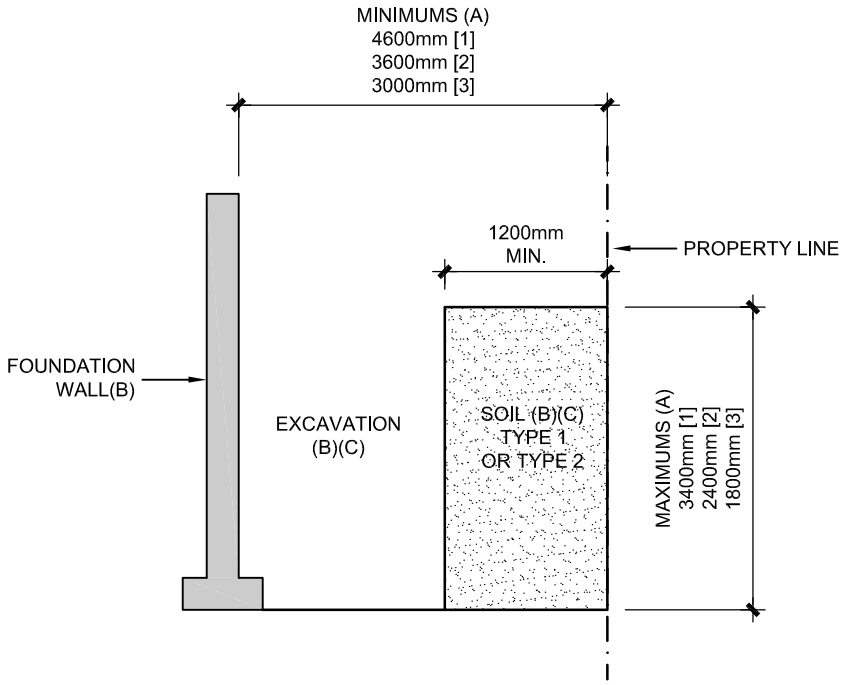
Excavations to facilitate the construction of a building can cause damage to adjacent properties if not properly performed. As part of the excavation process, the designer and builder must consider installing shoring to prevent damage to the adjacent private and public properties. Additionally, shoring may be necessary for compliance with the OHSA.

There are two conditions to consider when designing for shoring. A support system or shoring is required when either of the following conditions are present. 1. The ‘line’ of excavation will be 1200 mm or closer to any property line, shoring is required, or 2. The location of the foundation wall is not located at the minimum horizontal distances as indicated in Diagram 1 of this Builder’s Tip, shoring or support system is required.

Note: That shoring must maintain a minimum of 600 mm of undisturbed soil adjacent to property lines.

Diagram 1 has been developed from the applicable requirements of the Building Code and the Occupational Health and Safety Act within this Builder's Tip.

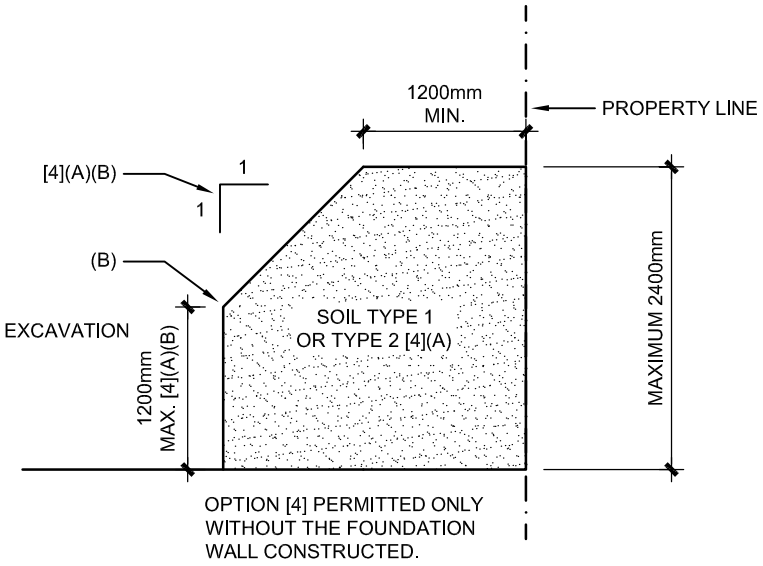
DIAGRAM 1



EXCAVATIONS UTILIZING OPTIONS (1), (2) OR (3) WITHOUT A SUPPORT SYSTEM.

A. OPTIONS CANNOT BE INTERCHANGED
B. REPORT FROM A P.ENG REQUIRED CONFIRMING THE WALLS OF THE EXCAVATION ARE SUFFICIENTLY STABLE TO AVOID SHORING WHEN EXCAVATION EXCEEDS 1200mm IN DEPTH.
C. NOTE: A REPORT FROM A P.ENG STATING THE WALLS OF EXCAVATION ARE SUFFICIENTLY STABLE TO AVOID SHORING IS NOT ACCEPTABLE WHEN THE EXCAVATION IS A TRENCH OR MADE IN TYPE [4] SOIL. A TRENCH IS CREATED ONCE THE FOUNDATION WALL IS CONSTRUCTED. SEE DEFINITION OF TRENCH.

DIAGRAM 2



TYPE 1 OR TYPE 2 SOIL. UTILIZING OPTION [4] WITHOUT A SUPPORT SYSTEM

A. P.ENG TO CONFIRM SOIL TYPE.
B. NOTE: A REPORT FOR THE P.ENG STATING THE WALL OF EXCAVATION ARE SUFFICIENTLY STABLE TO AVOID SHORING IS NOT ACCEPTABLE WHEN THE EXCAVATION IS A TRENCH OR MADE IN TYPE [4] SOIL. A TRENCH IS CREATED ONCE THE FOUNDATION WALL IS CONSTRUCTED. SEE DEFINITION OF TRENCH. SHORING OR A SUPPORT SYSTEM MUST BE INSTALLED BEFORE THE FOUNDATION WALL IS CONSTRUCTED OR UTILIZE OPTIONS (1), (2), OR (3).