



Guidelines for excavating
around Hydro One equipment

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Where there is a conflict between these guidelines (“Guidelines”) for excavating around Hydro One equipment and any legislation and regulations which may apply, the applicable legislation and regulation prevail.

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In no event shall Hydro One be liable to any person/you or any other party (in relation to or as a consequence of use of these guidelines) under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of contract, cost of capital, loss of business opportunity, delay, loss of goodwill, loss of data, or for any direct, indirect, special, consequential, or incidental damages, and including but not limited to punitive or exemplary damages, whether said liability, loss, or damages arise in contract or tort or any other theory of liability, even if Hydro One was expressly advised of the possibility of such damages. In no event shall Hydro One’s total liability to you (or anyone else claiming through you) for all damages, losses, and causes of action (whether in contract, tort [including, but not limited to negligence] or otherwise) exceed the amount specifically paid by you to Hydro One, if any.

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Amendments

Hydro One may revise these Guidelines from time to time and recommends that any person using these Guidelines confirm it is using the most recent version. Hydro One is not liable for reliance on past versions of these Guidelines.

Introduction

Excavation around Hydro One equipment may need to be performed by members of the public or other parties (i.e. municipalities, contractors, customers, etc.). Hydro One equipment includes above ground installations (e.g. poles, guy wires, etc.) and underground installations (e.g. pad-mounted equipment, power cables, etc.). Excavation may be necessary due to a variety of scenarios such as the planting or removal of vegetation, or infrastructure works related to sewer, watermain or underground cable networks (i.e. communication, power, etc.). All minimum working and installation clearances as per all applicable laws and governmental authorities (i.e. municipalities, etc.) shall be adhered to by any parties carrying out excavation operations.

Purpose

Provision of guidance for minimum excavation clearances to maintain safety around all Hydro One equipment. The Guidelines contained in this brochure are for members of the public and other parties working within excavation zone limits around Hydro One above ground and underground distribution equipment.

Requirements & procedure

Do not approach Hydro One equipment unless you have prior approval from Hydro One. Ontario One Call shall be contacted before beginning any work in order to locate the Hydro One equipment within the excavation project area.

Ontario One Call will provide all the information relating to the locate including the time limit expiration of the locate information. If unexpected underground equipment is discovered which was not identified by the locate, work shall be halted immediately and Ontario One Call shall be contacted before continuing any work.

Who this applies to

This document applies to members of the public and to other parties including municipalities, contractors or customers.

Safety questions & answers

- **Why are there specific excavation zones for different Hydro One equipment?**
All of these excavation zone limits exist for the health and safety of all persons and the security of Hydro One assets.
- **What are the safe work methods to be followed?**
 - Follow all required procedures for excavation, including safety requirements, the Ontario Occupational Health and Safety Act (OHSA), and Electrical Safety Authority (ESA).
 - Follow Hydro One's [Working Safely on Your Home Guidelines](#).
 - Ensure that all heavy equipment does not contact power lines and follow OHSA. Also, follow Hydro One's [Working Safe Around the Lines Guidelines](#).
- **What are the immediate actions if any Hydro One equipment is damaged?**
If any Hydro One equipment is damaged, regardless of the severity or extent, work shall be halted immediately and everyone must move away from the equipment. Contact Hydro One immediately and if a life-threatening situation arises contact 911.

When to contact Hydro One

- For excavation near poles where excavation limits are encroached, Hydro One shall be contacted for a [Hold the Pole request](#). If this is not suitable, a relocation for the excavation will be requested by Hydro One.
- If excavation exceeds the allowable depth indicated by the following diagrams contained within these Guidelines, contact Hydro One prior to beginning any work for approval.
- If at any time the integrity of any Hydro One equipment could become compromised, immediately halt work and contact Hydro One.

Other scenarios?

For trenching details and requirements for secondary cable transitions to and from riser poles, contact Hydro One.

For any planned excavation within the vicinity of a Hydro One station facility, a site meeting with Hydro One is required, prior to commencing any work. This is to determine if any special considerations for Hydro One buried equipment are required.



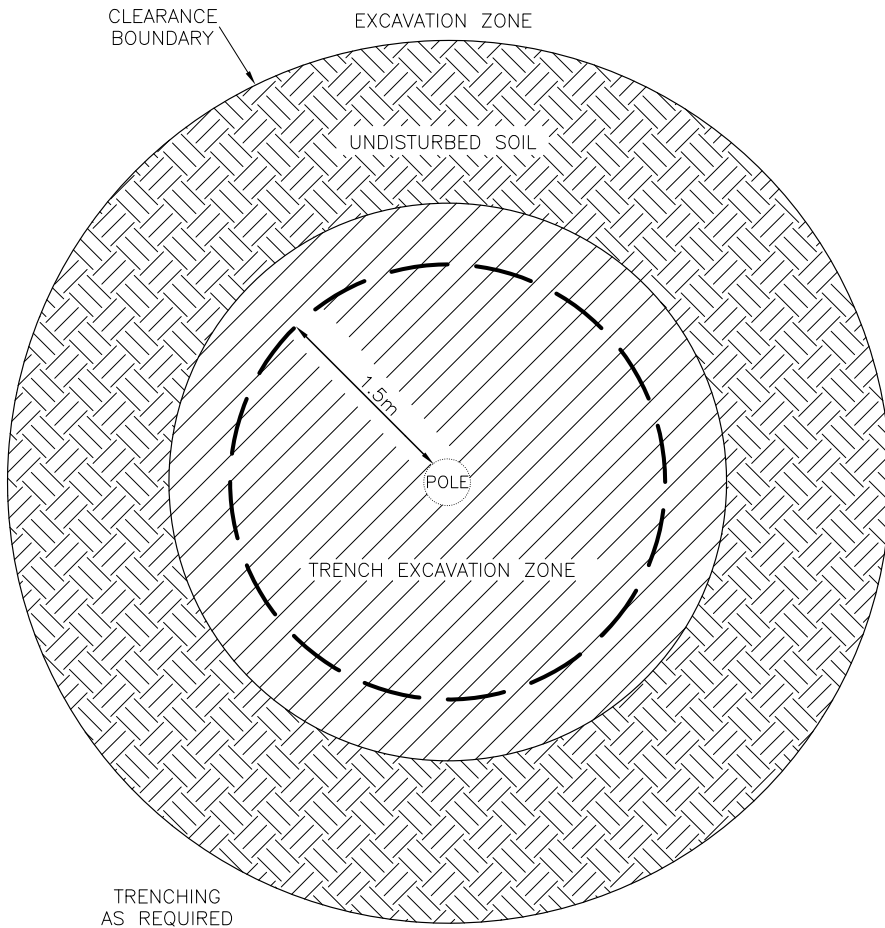


DIAGRAM 1

EXCAVATION ZONE LIMITS AROUND UNGUYED POLE LOCATIONS
TOP VIEW OF POLE

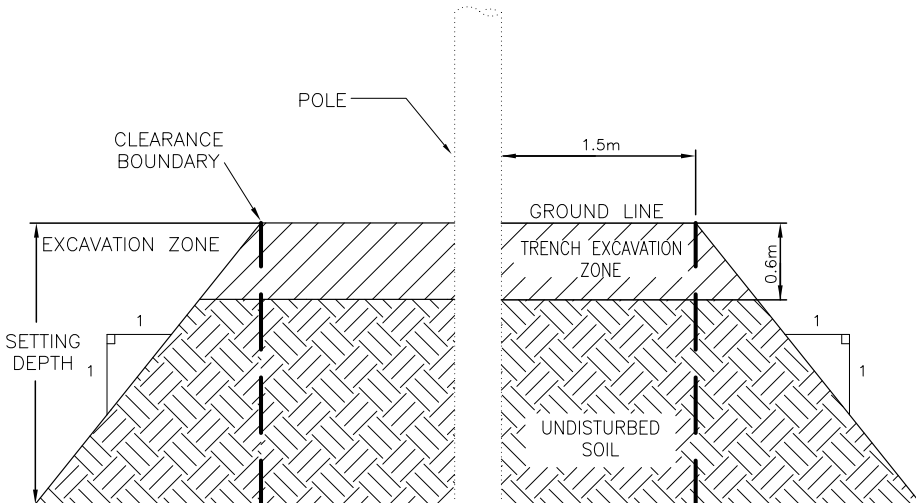


DIAGRAM 2

EXCAVATION ZONE LIMITS AROUND UNGUYED POLE LOCATIONS
SIDE VIEW OF POLE

NOTES:

THE UNIT OF 'm' IS DEFINED AS METRES.

1. ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND ESA GUIDELINES SHALL BE FOLLOWED WHEN EXCAVATING.

2. EXCAVATION ZONE LIMITS ARE ONLY APPLICABLE FOR NORMAL OR BETTER SOIL CONDITIONS. FOR POOR OR SWAMP SOIL CONDITIONS, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.

3. MAXIMUM ALLOWABLE WIND SPEED FOR EXCAVATION IS 40km/h. IF THE WIND SPEED IS GREATER, COVER TRENCHES AND WORK SHALL BE HALTED IMMEDIATELY UNTIL THE SPEED HAS DECREASED.

4. FOR EXCAVATION WITHIN 1.5m OF POLE (UNDISTURBED SOIL ZONE), HYDRO ONE SHALL BE CONTACTED PRIOR TO ANY COMMENCEMENT OF SUCH EXCAVATION TO SUBMIT A 'HOLD THE POLE' REQUEST.

5. THE TRENCH EXCAVATION ZONE AROUND THE POLE BASE IS ONLY ALLOWED WHEN THERE ARE SIX(6) WIRES OR LESS ON THE POLE. IF THE POLE CONTAINS MORE THAN SIX(6) WIRES, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.

6. THE TRENCH EXCAVATION ZONE IS ALLOWABLE FOR ONE(1) TRENCH AT A TIME. THE MAXIMUM ALLOWABLE WIDTH WILL BE 0.5m, THE MAXIMUM ALLOWABLE DEPTH WILL BE 0.6m AND BE AT LEAST 0.6m AWAY FROM THE POLE. THE ONLY ALLOWED ALIGNMENT SHALL BE STRAIGHT WITH NO CURVES OR BENDS ACROSS UNDISTURBED SOIL ZONE. THE TRENCH SHALL BE RESTORED TO ORIGINAL CONDITION AFTER EXCAVATION HAS BEEN COMPLETED.

7. EXCAVATION TO BE DONE AT A 45° SLOPE AWAY FROM THE CLEARANCE BOUNDARY. THE HORIZONTAL AND VERTICAL CUTS SHALL NOT BE STEEPER THAN 1:1 RATIO TO PREVENT A CAVE-IN.

8. IF AT ANY TIME IN THE COURSE OF EXCAVATION THE POLE OR ITS SUPPORTING EQUIPMENT APPEARS TO BECOME UNSTABLE TO ANY DEGREE, WORK SHALL BE HALTED IMMEDIATELY AND HYDRO ONE SHALL BE CONTACTED BEFORE PROCEEDING WITH ANY ADDITIONAL EXCAVATION.

9. IF THE SPECIFIED CLEARANCES CANNOT BE MET, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.

TRENCHING AS REQUIRED

EXCAVATION ZONE LIMITS AROUND UNGUYED POLE LOCATIONS

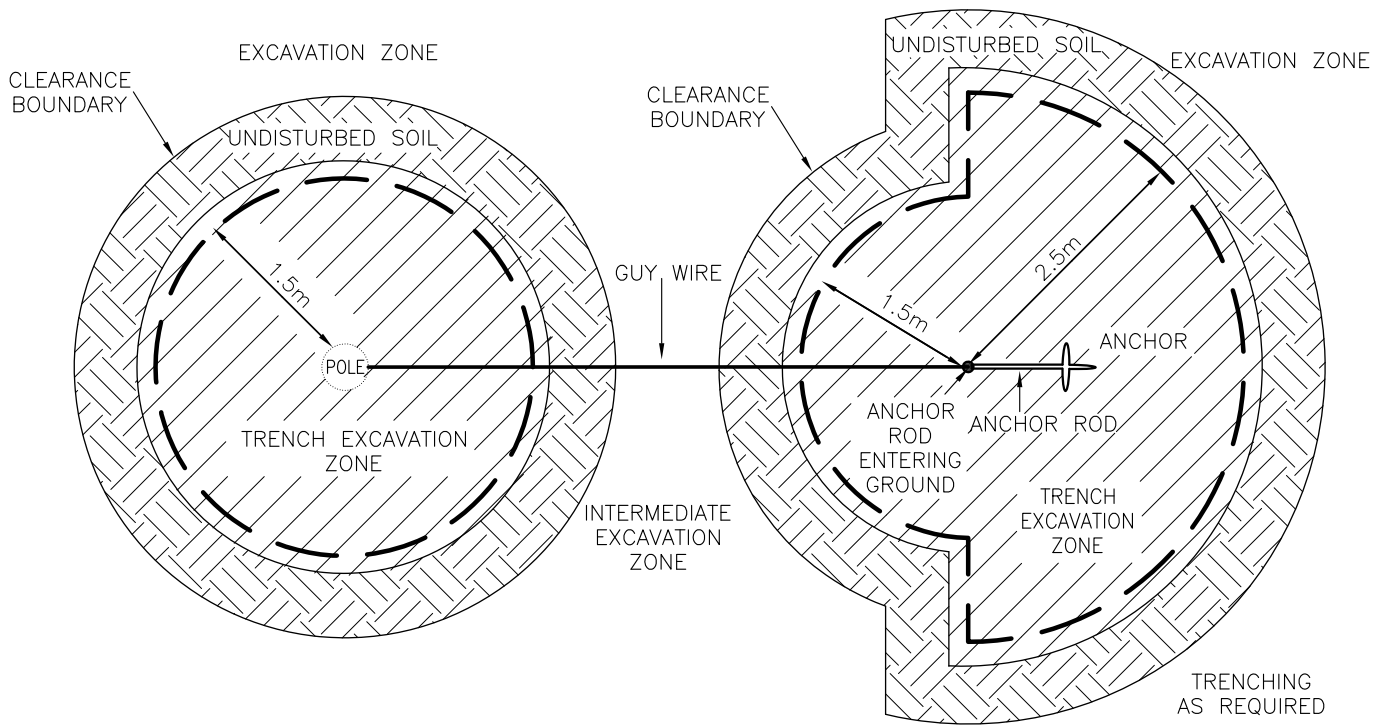


DIAGRAM 3

EXCAVATION ZONE LIMITS AROUND GUYED POLE LOCATIONS WITH A SINGLE ANCHOR
TOP VIEW OF POLE

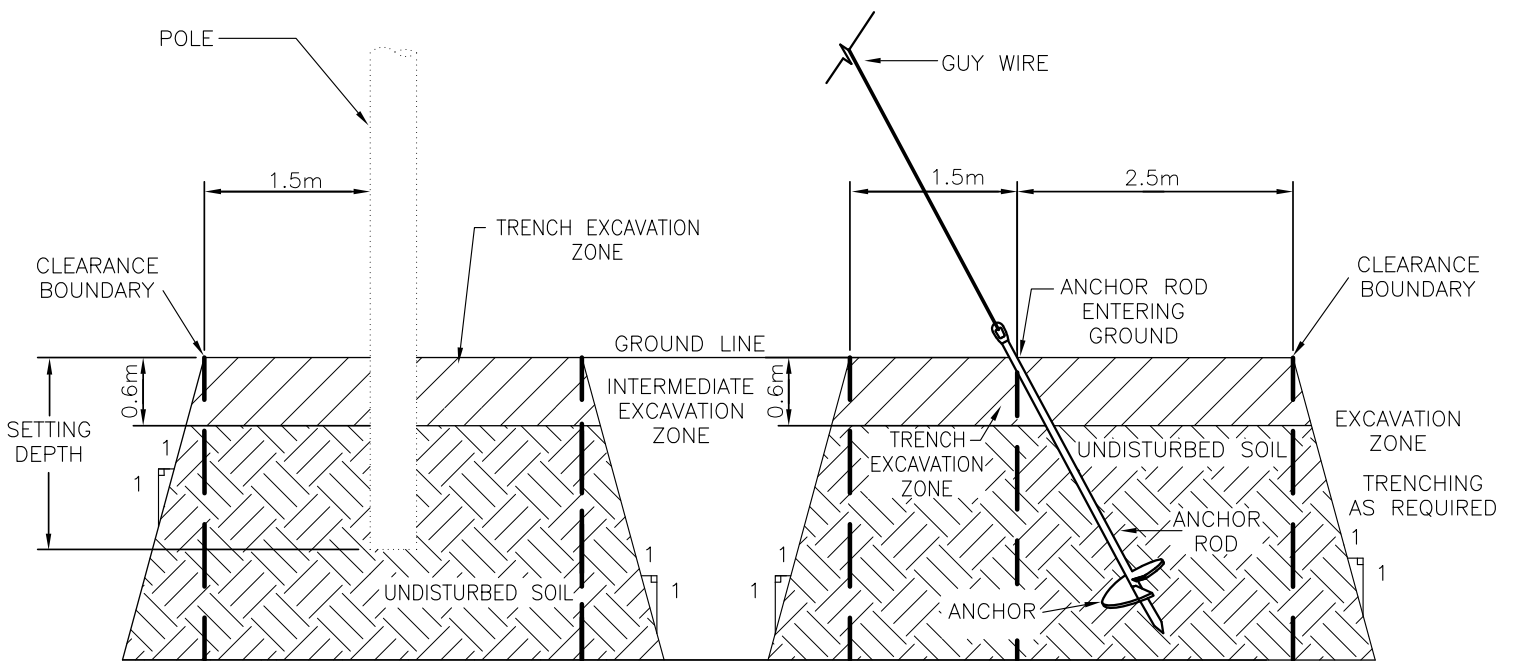


DIAGRAM 4

EXCAVATION ZONE LIMITS AROUND GUYED POLE LOCATIONS WITH A SINGLE ANCHOR
SIDE VIEW OF POLE

NOTES:

THE UNIT OF 'm' IS DEFINED AS METRES.

SEE PG. 2/2 FOR COMPLETE LIST OF NOTES AND MULTIPLE IN-LINE ANCHORS CASE.

EXCAVATION ZONE LIMITS AROUND GUYED
POLE LOCATIONS, PG. 1/2

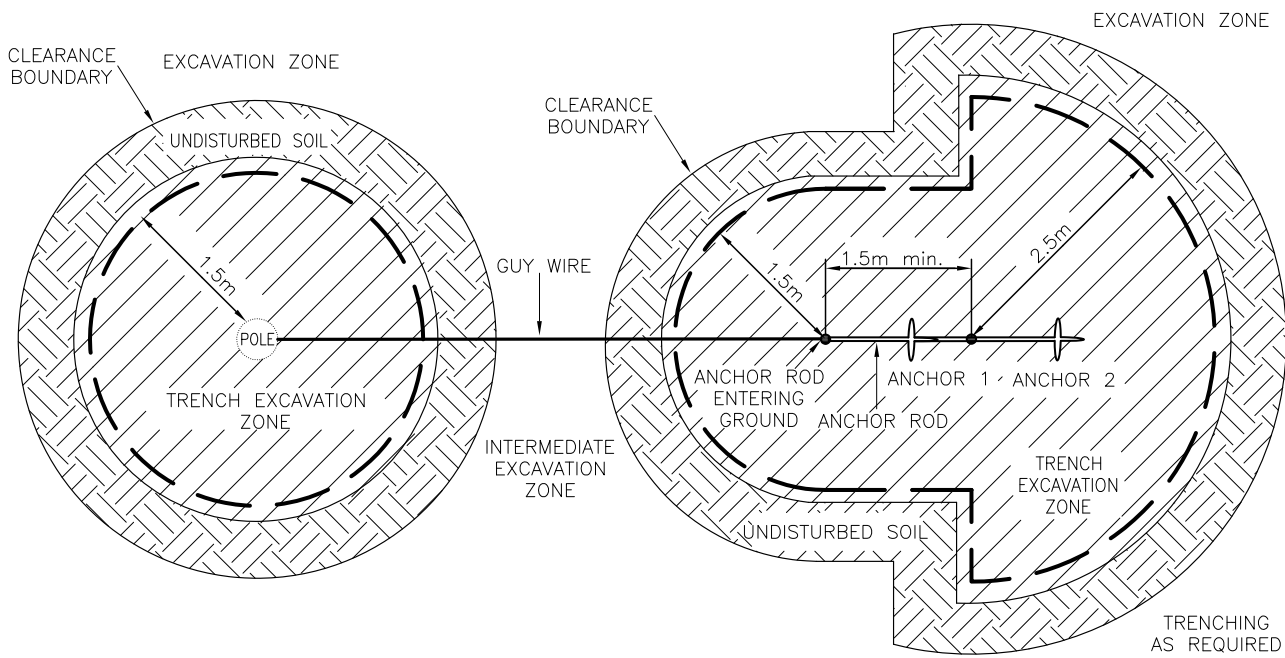


DIAGRAM 5

EXCAVATION ZONE LIMITS AROUND GUYED POLE LOCATIONS WITH MULTIPLE IN-LINE ANCHORS
TOP VIEW OF POLE

NOTES:

THE UNIT OF 'm' IS DEFINED AS METRES.

SEE PG. 1/2 FOR SINGLE ANCHOR CASE.

1. ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND ESA GUIDELINES SHALL BE FOLLOWED WHEN EXCAVATING.
2. EXCAVATION ZONE LIMITS ARE ONLY APPLICABLE FOR NORMAL OR BETTER SOIL CONDITIONS. FOR POOR OR SWAMP SOIL CONDITIONS, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.
3. MAXIMUM ALLOWABLE WIND SPEED FOR EXCAVATION IS 40km/h. IF THE WIND SPEED IS GREATER, COVER TRENCHES AND WORK SHALL BE HALTED IMMEDIATELY UNTIL THE SPEED HAS DECREASED.
4. FOR EXCAVATION WITHIN 1.5m OF POLE AND/OR 1.5m OF ANCHOR ROD AND/ OR 2.5m OF ANCHOR(S) (UNDISTURBED SOIL ZONE), HYDRO ONE SHALL BE CONTACTED PRIOR TO ANY COMMENCEMENT OF SUCH EXCAVATION TO SUBMIT A 'HOLD THE POLE' REQUEST.
5. IF THERE ARE MULTIPLE ANCHORS IN-LINE, ADD ANOTHER 1.5m FOR EACH ADDITIONAL ANCHOR TO THE 1.5m min. DIMENSION.
6. THE POLE AND ANCHOR CLEARANCES MAY OVERLAP SUCH THAT THE INTERMEDIATE EXCAVATION ZONE BETWEEN IS ELIMINATED.
7. THE TRENCH EXCAVATION ZONE AROUND THE POLE BASE IS ONLY ALLOWED WHEN THERE ARE SIX(6) WIRES OR LESS ON THE POLE. IF THE POLE CONTAINS MORE THAN SIX(6) WIRES, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.
8. THE TRENCH EXCAVATION ZONE IS ALLOWABLE FOR ONE(1) TRENCH AT A TIME. THE MAXIMUM ALLOWABLE WIDTH WILL BE 0.5m, THE MAXIMUM ALLOWABLE DEPTH WILL BE 0.6m AND BE AT LEAST 0.6m AWAY FROM THE POLE. THE ONLY ALLOWED ALIGNMENT SHALL BE STRAIGHT WITH NO CURVES OR BENDS ACROSS UNDISTURBED SOIL ZONE. THE TRENCH SHALL BE RESTORED TO ORIGINAL CONDITION AFTER EXCAVATION HAS BEEN COMPLETED.
9. THIS DRAWING SHOWS A HELIX ANCHOR, IT IS APPLICABLE FOR ALL ANCHOR TYPES.
10. EXCAVATION TO BE DONE AT MAXIMUM ANGLE OF 45° SLOPE AWAY FROM THE CLEARANCE BOUNDARY. THE HORIZONTAL AND VERTICAL CUTS SHALL NOT BE STEEPER THAN 1:1 RATIO TO PREVENT CAVE-IN.
11. IF AT ANY TIME IN THE COURSE OF EXCAVATION THE POLE OR ITS SUPPORTING EQUIPMENT APPEARS TO BECOME UNSTABLE TO ANY DEGREE, WORK SHALL BE HALTED IMMEDIATELY AND HYDRO ONE SHALL BE CONTACTED BEFORE PROCEEDING WITH ANY ADDITIONAL EXCAVATION.
12. IF THE SPECIFIED CLEARANCES CANNOT BE MET, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.

EXCAVATION ZONE LIMITS AROUND GUYED
POLE LOCATIONS, PG. 2/2

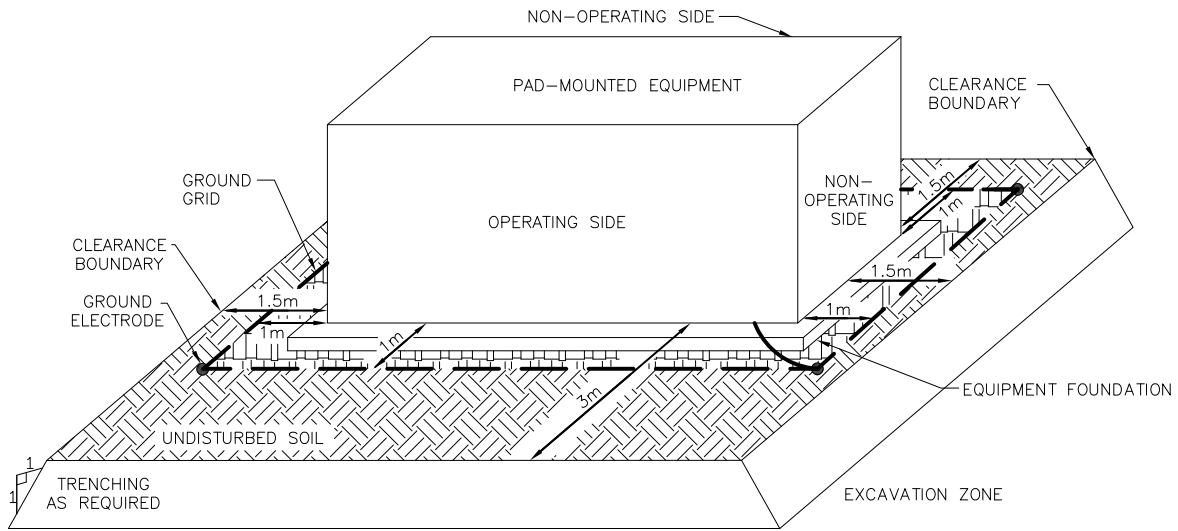


DIAGRAM 6
EXCAVATION ZONE LIMITS AROUND PAD-MOUNTED
EQUIPMENT LOCATIONS
ISOMETRIC VIEW OF PAD-MOUNTED EQUIPMENT

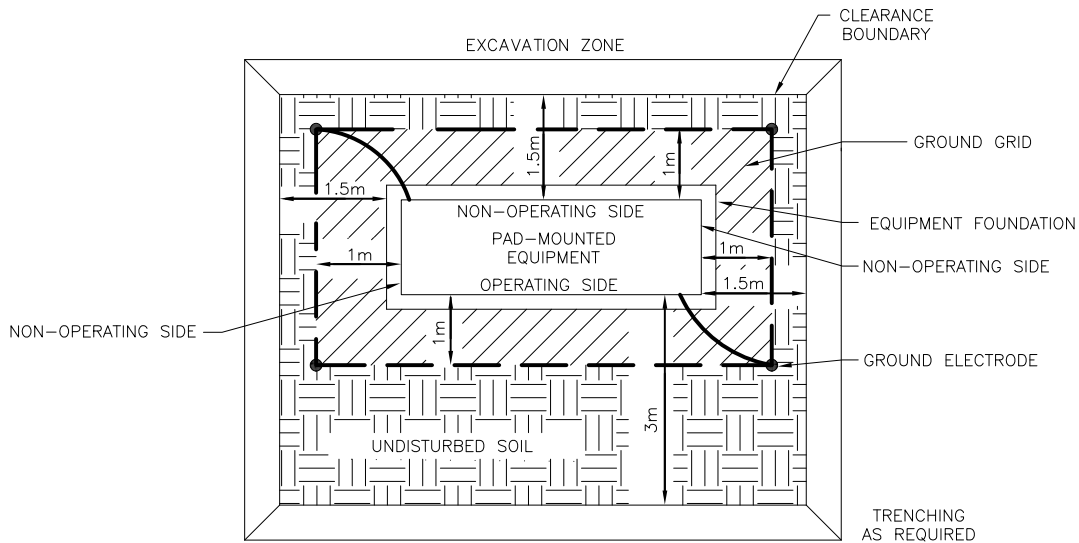


DIAGRAM 7
EXCAVATION ZONE LIMITS AROUND PAD-MOUNTED
EQUIPMENT LOCATIONS
TOP VIEW OF PAD-MOUNTED EQUIPMENT

NOTES:

THE UNIT OF 'm' BE DEFINED AS METERS

1. ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND ESA GUIDELINES SHALL BE FOLLOWED WHEN EXCAVATING.
2. EXCAVATION ZONE LIMITS ARE ONLY APPLICABLE FOR NORMAL OR BETTER SOIL CONDITIONS. FOR POOR OR SWAMP SOIL CONDITIONS, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.
3. FOR EXCAVATION WITHIN 1.5m OF NON-OPERATING SIDES AND/OR 3m OF OPERATING SIDE OF PAD-MOUNTED EQUIPMENT FOUNDATION (UNDISTURBED SOIL ZONE), HYDRO ONE SHALL BE CONTACTED PRIOR TO ANY COMMENCEMENT OF SUCH EXCAVATION FOR APPROVAL.
4. EXCAVATION TO BE DONE AT MAXIMUM ANGLE OF 45° SLOPE AWAY FROM THE CLEARANCE BOUNDARY. THE HORIZONTAL AND VERTICAL CUTS SHALL NOT BE STEEPER THAN 1:1 RATIO TO PREVENT CAVE-IN.
5. EXTRA CARE SHALL BE TAKEN WHEN EXCAVATING WITHIN 2m OF THE PAD-MOUNTED EQUIPMENT, ONLY HAND DIGGING IS ALLOWED IN THIS ZONE.
6. IF AT ANY TIME IN THE COURSE OF EXCAVATION THE PAD-MOUNTED EQUIPMENT OR ITS FOUNDATION APPEARS TO BECOME UNSTABLE TO ANY DEGREE, WORK SHALL BE HALTED IMMEDIATELY AND HYDRO ONE SHALL BE CONTACTED BEFORE PROCEEDING WITH ANY ADDITIONAL EXCAVATION.
7. ALL METAL PARTS THAT FALL WITHIN 3m OF PAD-MOUNTED EQUIPMENT GROUND GRID, CONTACT HYDRO ONE FOR ADDITIONAL INFORMATION ON REQUIREMENTS FOR CONNECTIONS.
8. IF THE SPECIFIED CLEARANCES CANNOT BE MET, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.

EXCAVATION ZONE LIMITS AROUND
PAD-MOUNTED EQUIPMENT LOCATIONS

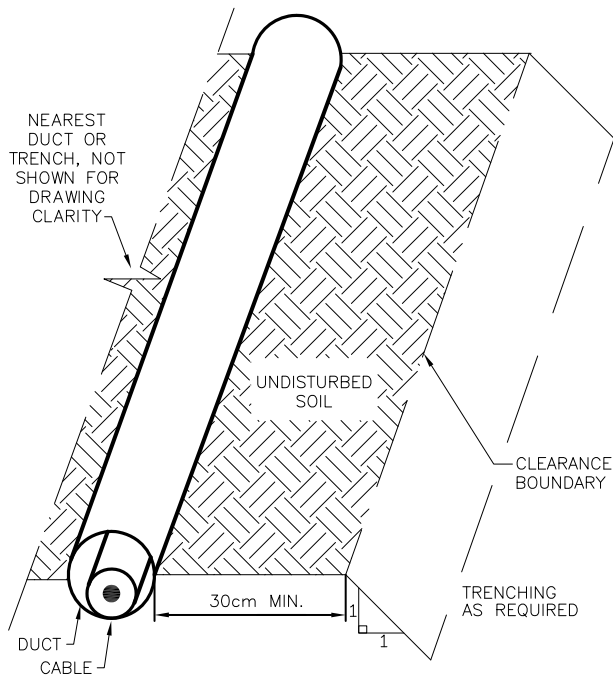


DIAGRAM 8

CASE 1, CABLE(S) IN-DUCT(S)
EXCAVATION ZONE LIMITS AROUND UNDERGROUND
POWER CABLE LOCATIONS
ISOMETRIC VIEW OF CABLE

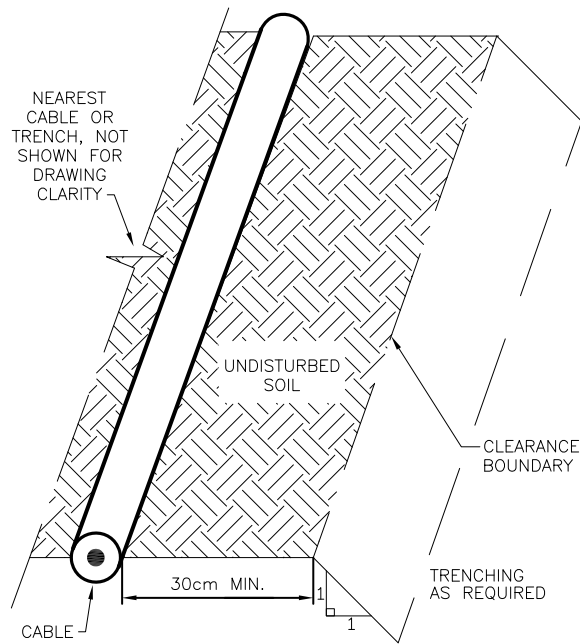


DIAGRAM 9

CASE 2, DIRECT BURIED CABLE(S)
EXCAVATION ZONE LIMITS AROUND UNDERGROUND
POWER CABLE LOCATIONS
ISOMETRIC VIEW OF CABLE

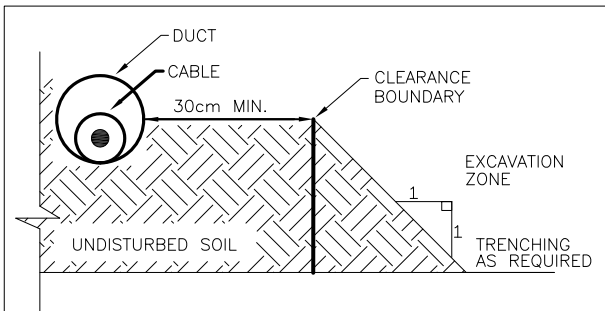


DIAGRAM 10

CASE 1, CABLE(S) IN-DUCT(S)
EXCAVATION ZONE LIMITS AROUND UNDERGROUND
POWER CABLE LOCATIONS
SIDE VIEW OF CABLE

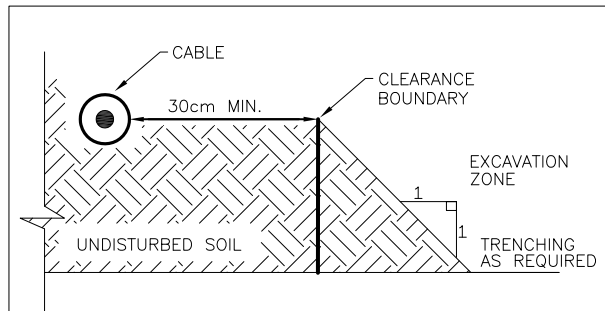


DIAGRAM 11

CASE 2, DIRECT BURIED CABLE(S)
EXCAVATION ZONE LIMITS AROUND UNDERGROUND
POWER CABLE LOCATIONS
SIDE VIEW OF CABLE

NOTES:

THE UNIT OF 'cm' IS DEFINED AS CENTIMETERS.

1. ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND ESA GUIDELINES SHALL BE FOLLOWED WHEN EXCAVATING.
2. EXCAVATION ZONE LIMITS ARE ONLY APPLICABLE FOR NORMAL OR BETTER SOIL CONDITIONS. FOR POOR OR SWAMP SOIL CONDITIONS, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.
3. THE FINAL CLEARANCE FROM THE CABLE OR DUCT, BASED ON THE LOCATE, TO THE NEAREST TRENCHES SHOULD BE 30cm MINIMUM. IF MULTIPLE CABLES OR DUCTS EXIST, THE CLEARANCES BOUNDARY SHOULD BE MEASURED FROM THE NEAREST CABLE OR DUCT.
4. EXCAVATION TO BE DONE AT MAXIMUM OF 45° SLOPE AWAY FROM THE CLEARANCE BOUNDARY. THE HORIZONTAL AND VERTICAL CUTS SHALL NOT BE STEEPER THAN 1:1 RATIO TO PREVENT CAVE-IN.
5. SINCE THE EXACT LOCATION OF THE CABLE IS NOT KNOWN, THE GIVEN LOCATION WILL BE THE GENERAL VICINITY OF THE CABLE. EXTRA CARE SHALL BE TAKEN WHEN EXCAVATING WITHIN 100cm OF THE CABLE, ONLY HAND DIGGING IS ALLOWED IN THIS ZONE. THE CABLE SHALL NOT BE EXPOSED AT ANY TIME. IF IT IS, WORK SHALL BE HALTED IMMEDIATELY AND HYDRO ONE SHALL BE CONTACTED BEFORE PROCEEDING ANY ADDITIONAL EXCAVATION.
6. IF SAND IS ENCOUNTERED, DO NOT REMOVE AS THE CABLE IS IN THE NEARBY VICINITY. ADD TO AND BACKFILL WITH CLEAN MASONRY SAND IF ANY SAND IS DISPLACED.
7. IF AT ANY TIME IN THE COURSE OF EXCAVATION THE CABLE APPEARS TO BECOME UNSTABLE TO ANY DEGREE, WORK SHALL BE HALTED IMMEDIATELY AND HYDRO ONE SHALL BE CONTACTED BEFORE PROCEEDING WITH ANY ADDITIONAL EXCAVATION.
8. IF THE SPECIFIED CLEARANCES CANNOT BE MET, OR IF EXCAVATION IS WITHIN VICINITY OF A HYDRO ONE STATION FACILITY OR EGRESS CABLES, CONTACT HYDRO ONE BEFORE BEGINNING ANY WORK.

**EXCAVATION ZONE LIMITS AROUND UNDERGROUND
POWER CABLE LOCATIONS**