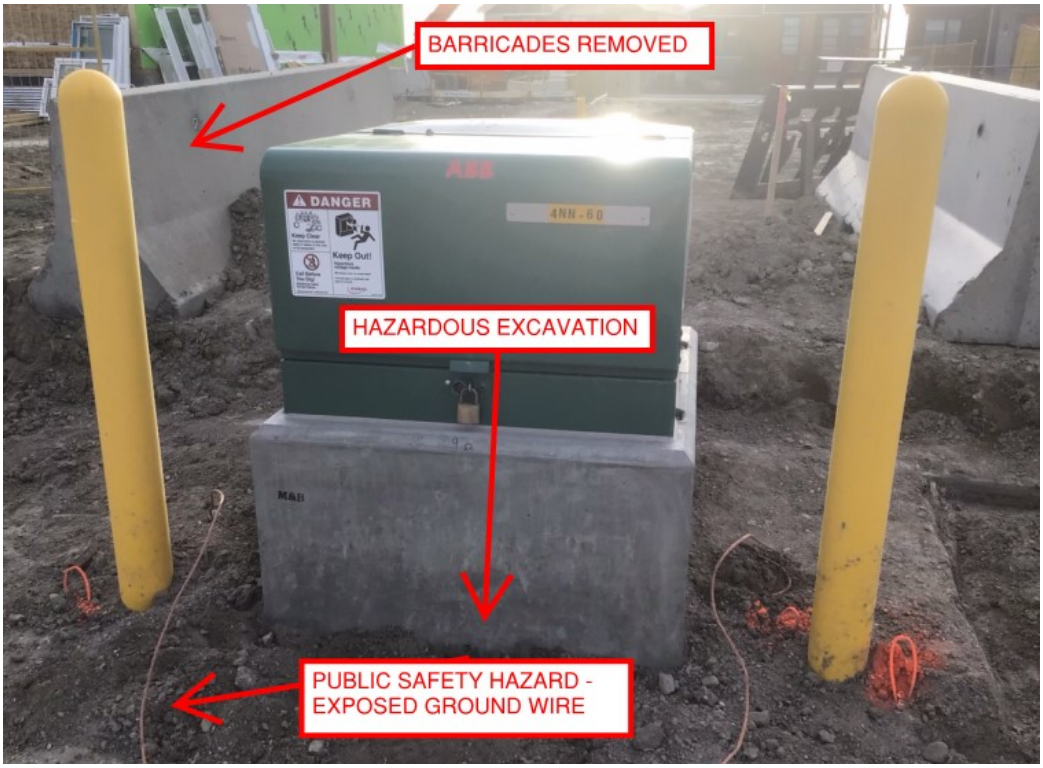
Safety Hazard – Excavation Near Electrical Infrastructure

Overview

ENMAX Power has identified an increasing trend of construction sites failing to follow ENMAX Power's Ground Disturbance Guidelines. Unsafe grading, surface construction and building construction activities have resulted in a **severe public safety hazard** with exposure of energized infrastructure.

Construction fences and barricades protecting transformers have been removed. Excavation activities near energized transformers has resulted in exposed and/or damaged ground wire. **Contact with exposed and/or damaged ground wire can result in injury or death. Only ENMAX approved workers can handle the exposed ground wire for energized equipment. Public and external construction contractors must not handle the exposed and/or damaged ground wire.**

HAZARDOUS EXCAVATION
2NE-221.
round grid damaged
pril/28/21.
ABB
12NE-221
PUBLIC SAFETY HAZARD - EXPOSED
AND DAMAGED GROUND WIRE


BARRICADES REMOVED
ABB
DANGER
Keep Out!
4NN-60
HAZARDOUS EXCAVATION
M&B
PUBLIC SAFETY HAZARD -
EXPOSED GROUND WIRE

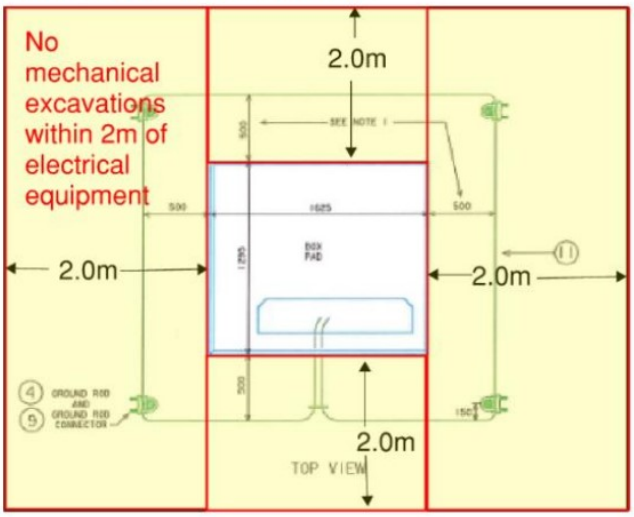
Ground Disturbance Guidelines

Ground disturbance, or excavations, poses significant hazards to workers and the public. In accordance with Alberta Occupational Health and Safety and the Alberta Electrical Utility Code, individuals and companies **MUST** comply with ENMAX Power's Ground Disturbance Guidelines when excavating near ENMAX facilities.

See https://www.enmax.com/xSafetySite/Documents/Ground_Disturbance_Guidelines.pdf for more information.

Excavation Near Transformers (excerpts from guidelines):

Mechanical excavation is **NOT** permitted within **2 m (6'-6")** of any ENMAX Equipment; use non-destructive methods ONLY. See ENMAX note located on the back of the Alberta One-Call slip for direction and notification.



At grade facilities

System ground wires and ground rods are not locatable. They are typically buried below the final grade and encompass a **1 m (3'-3")** area around or adjacent to ENMAX facilities.

> **CAUTION:** Contacting the ground system may cause damage to the adjacent structures or equipment and/or personal injury or death. Only Non-destructive excavation in accordance with this Guideline may be performed when disturbing the ground within **2 m (6'-6")** of equipment.

Asphalt removal

Excavators must develop a procedure to ensure ENMAX facilities are not damaged.

> **CAUTION**: Locates do NOT determine depth or dimensions of manholes, vaults, or duct banks, increasing the risk of contact.
> Heavy equipment breakers, hammers and saw cutting asphalt/concrete can damage manhole roofs or shallow duct banks.

Permission Letter

Obtain an ENMAX Permission Letter PRIOR to performing ground disturbance near ENMAX facilities. The Letter MUST remain on site while exposing ENMAX facilities.
Email HotDigs@enmax.com to obtain an ENMAX Permission Letter.

Excavator requirements

Excavators MUST comply with the following requirements:

- Create and adhere to own SWPs for ground disturbance (reference Attachment A – Safe Work Practices for minimum requirements)
- Ensure all personnel involved in any ground disturbance are competent workers
- Ensure SWP and procedures comply with this guideline, legislation, bylaws, codes
- Ensure a cell phone or other means of contacting ENMAX Trouble Dispatch is always available while at the worksite
- Comply with all requirements contained in the ENMAX Permission Letter

Work is within **2 m (6'-6")** of ENMAX equipment	Complete the ENMAX Primary Switch Disconnect Reconnect Form NOTE: The primary switching request must be completed a minimum of 5 days prior to planned excavation.

2.7 BACKFILL

Notifications

Notify the following PRIOR to backfilling the site.

If work is for	Then contact the following PRIOR to backfilling…
ENMAX	Project Inspector to arrange for inspection
Other	During business hours –senior line inspector After hours - Trouble Dispatch at **403-514-6100** to arrange inspection

Specifications

After the work is completed, pad exposed facilities with the following.

Material	Requirements
Bedding sand	Covers the facilities to a minimum depth of 200 mm (8"), and free from: • Snow and ice • Organic material • Loam • Stones larger than 5 mm (1/5") NOTE: Excavators are required to provide compaction test results to ENMAX, if requested.
Common backfill	Placed on top of the bedding sand. Material to be used must be free from: • Snow and ice • Organic material • Loam • Boulders larger than 200 mm (8") NOTE: Common backfill compaction must comply with The City of Calgary specifications to a minimum of 95% proctor dry density.

NOTE: Restore final grade to ensure the burial depth of ENMAX cables has not changed. Contact your ENMAX Inspector if a rise or fall in the final grade exists **PRIOR** to excavation and backfill to record the new grade. For all others, call 403-514-6100

Previous Communication with Developer Community

Working with BILD Calgary, ENMAX Power has communicated requirements multiple times:

- November 2018 – ENMAX Power implemented mandatory requirement to install protective barriers (BILD Bulletin 2018-#50) as a result of safety hazard
- September 2019 – Requirement communicated again (BILD Bulletin 2019-#72) as issue persisted and additional damage to telecommunication equipment occurring

Next Steps

Safety is ENMAX Power's top priority and measures must be taken to ensure standards are followed:

- ENMAX Power is seeking input from industry as we explore new measures and or standards to put in place to ensure standards and safety protocols are adhered to and public safety hazards are mitigated.
- ENMAX Power will provide, free of charge, Hazardous Electrical Awareness Tutorials (HEAT) to all parties, and work with them to go over project and situational specific requirements. Please contact hotdigs@enmax.com to coordinate.
- If the public safety hazard continues to persist, ENMAX Power may be required to issue **STOP WORK ORDERS** to ensure public safety. ENMAX Power may also notify Alberta OH&S.
- Please contact 403-514-6100 to report any hazards as shown above.
- ENMAX Power requests input and feedback from BILD Calgary on the following items:
    - Suggestions and information related to source of issue (ie. education/training, project timing, etc)
    - What ideas might you have to ensure developers and excavators are aware of and adhere to the standards in place (ie. Ground Disturbance Guidelines)?
    - As per the feedback requested above, please respond with information and suggestions to Safety@enmax.com. We request that you respond no later than Friday, May 21, 2021.