



Trenchless Excavation

Requirements and Best Practices

Prepared by
Virginia State Corporation Commission
Division of Utility and Railroad Safety

January 2011

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When conducting trenchless excavation take all reasonable steps necessary to protect and support underground utility lines. These steps shall include, but are not limited to the following:

- Verify that all utility lines in the area are marked (See Rule 20VAC5-309-180).
- Ensure that bore equipment stakes are installed at a safe distance from marked utility lines.
- When grounding rods are used, ensure that they are installed at a safe distance (at least 24 inches plus the width of the utility line, if known) away from the marked or staked location of utility lines.

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- Ensure sufficient clearance is maintained between the bore path and any underground utility lines during pullback (See § 56-265.24.A.).
- Give special consideration to water and sewer systems within the area that cannot be located accurately.

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Note: The following may assist in determining the location of water systems that cannot be accurately located:

- Review ticket responses received from the notification center to see if water operators have been notified;
- Attempt to contact the homeowner/developer for water location information;
- Perform a visual site inspection. Look for clear evidence such as old marks, water meters, valve boxes, etc.;
- Try to locate service entrance and exit points at building to determine route;
- Be aware of patches in pavement that could indicate where water utilities had been previously uncovered;

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- Attempt to locate unmarked facility services using available equipment;
- Physically verify the location of the facility service; and
- Consult the operator of unmarked water facility for additional assistance.

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Note: When you can reasonably conclude that a private sewer lateral may be impacted by the use of trenchless technology for the installation or maintenance of gas or electric utility lines based upon visual evidence, knowledge of the proposed excavation site or other available information the following steps must be taken:

- Review information provided by the private sewer lateral owner or sewer system operator;
- Meet with the sewer system operator on-site, if the sewer system operator has additional information to provide about the location of private sewer laterals; or
- Conduct a visual inspection of the proposed excavation site in an effort to determine the probable path of the sewer lateral.

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Additionally, excavators utilizing trenchless technology are encouraged to use the following best practices to prevent or mitigate damage to sewer laterals:

- Prior to excavation, conduct a thorough site inspection of the excavation area checking for unmarked sewer laterals and any sewer cleanouts or sewer lateral tracer wire;
- If any evidence of a sewer lateral, such as a cleanout, is discovered, the excavator shall make a reasonable attempt to determine if a tracer wire for the lateral exists;
- If a tracer wire exists, use the tracer wire to locate the sewer lateral with locating equipment;

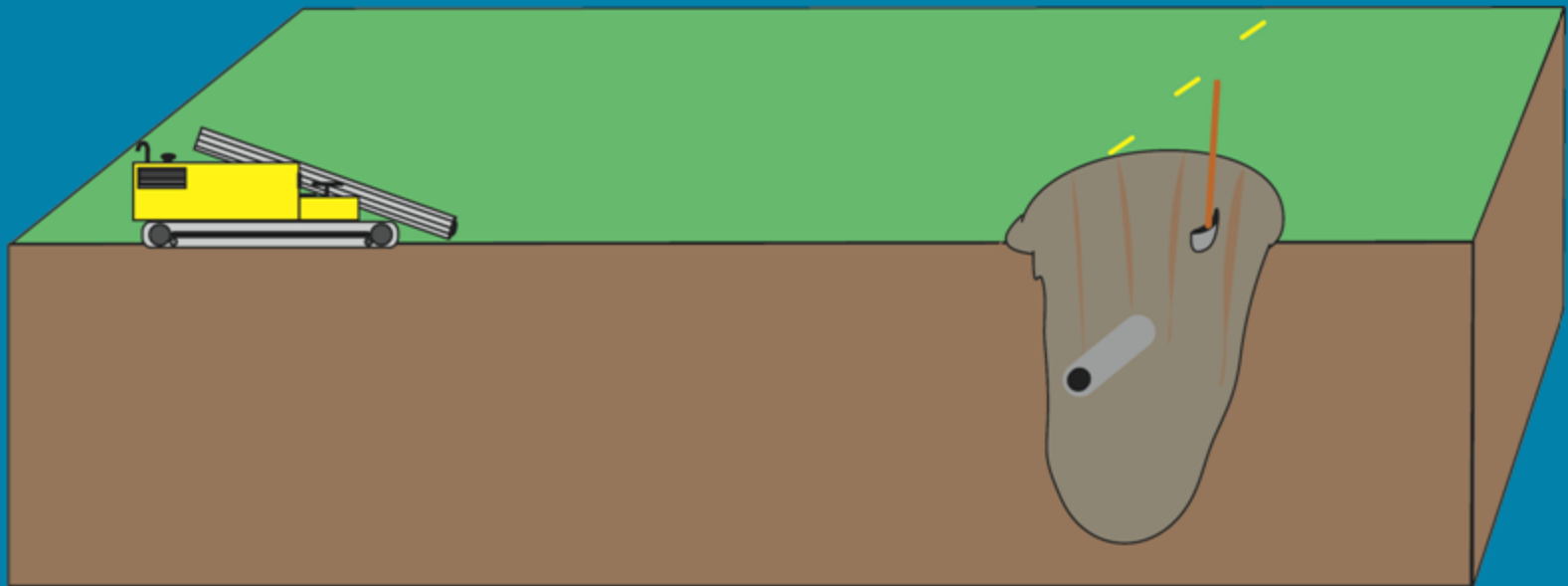
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- If a tracer wire does not exist, use any evidence and other information provided by the private sewer lateral owner and the sewer operator to determine the path of the sewer lateral and plan excavation so as to eliminate or minimize conflict with the lateral;
- In the event a sewer lateral cannot be located, trenchless technologies shall not be used in the excavation area;
- In the event the property is served by a septic or similar private sewer system the excavator shall work with the property owner to determine its location and protect those lines; and
- Other locating methods such as ground penetrating radar, cameras, fish tapes, sondes, or hand digging may be used to locate the lateral.



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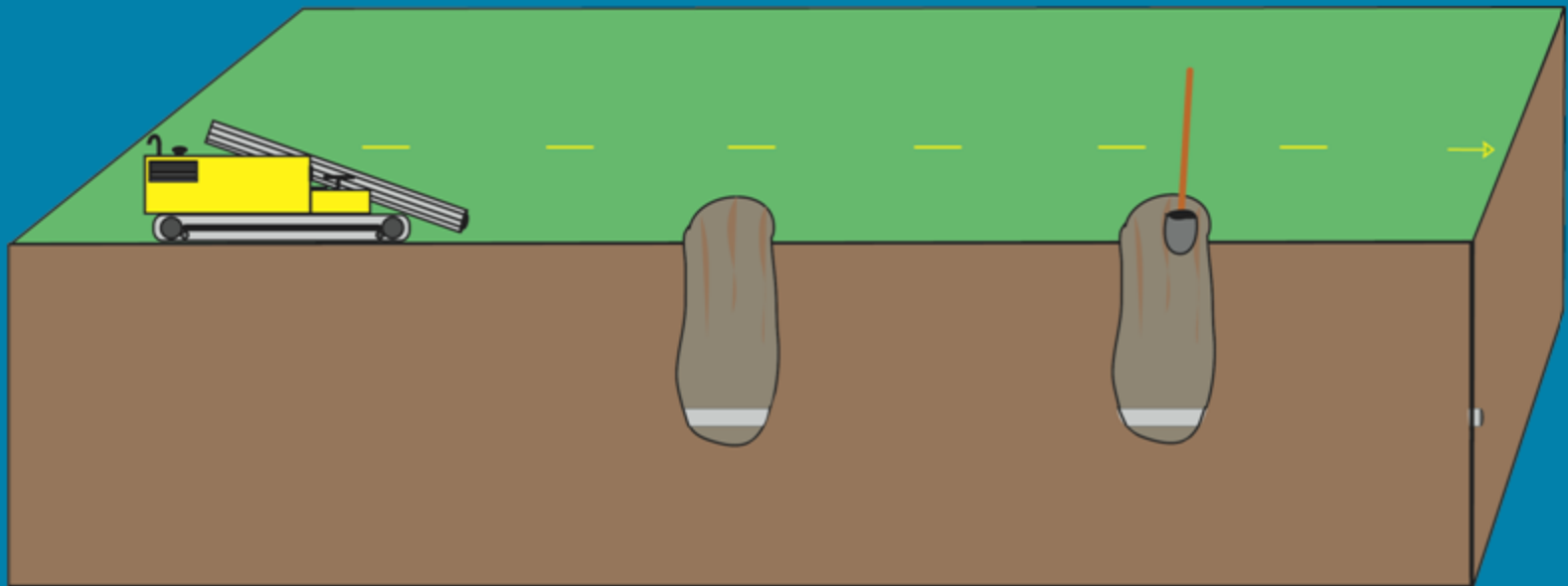
- Unless prohibited by laws, ordinances, regulations, or rules of governmental and regulatory authorities having jurisdiction, expose all utility lines which will be in the bore path by hand digging to establish the underground utility line's location prior to commencing bore.



Note: Illustration is not to scale.

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- For a parallel type bore, expose the utility line by hand digging at reasonable distances along the bore path;

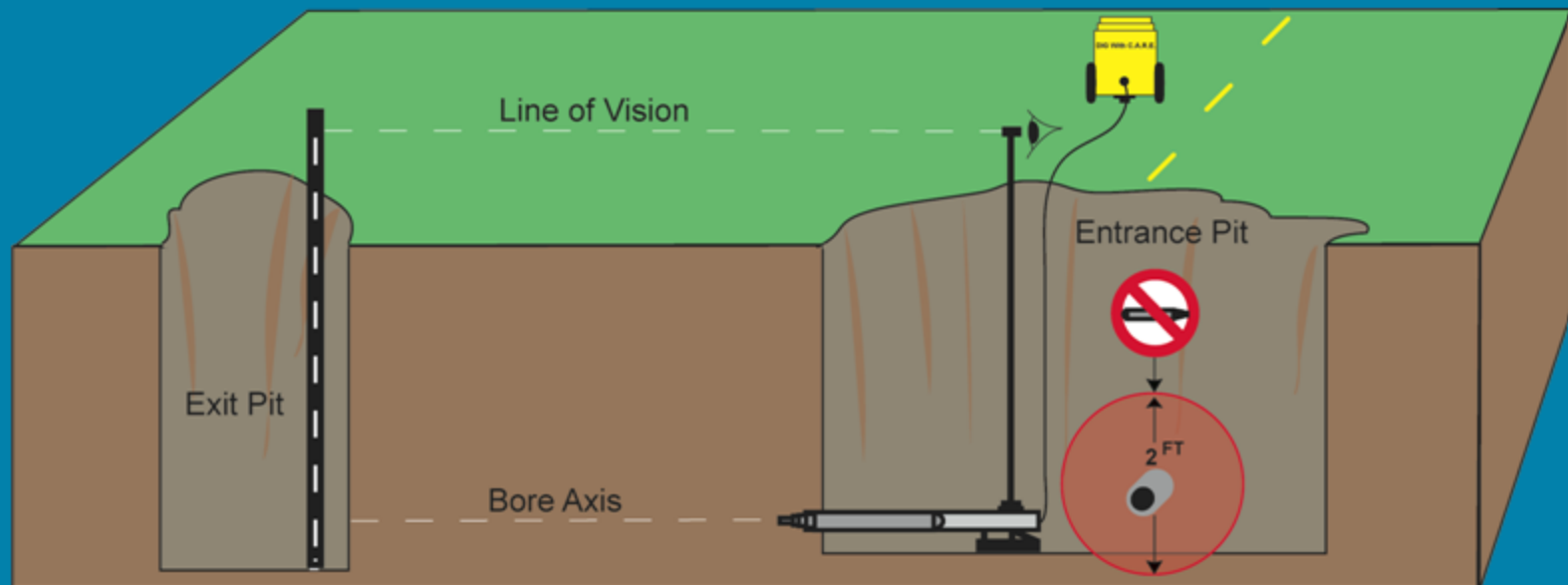


Note: The two pot holes shown are for illustration purposes and not intended to show a relationship in linear distance as compared to the utility line markings.

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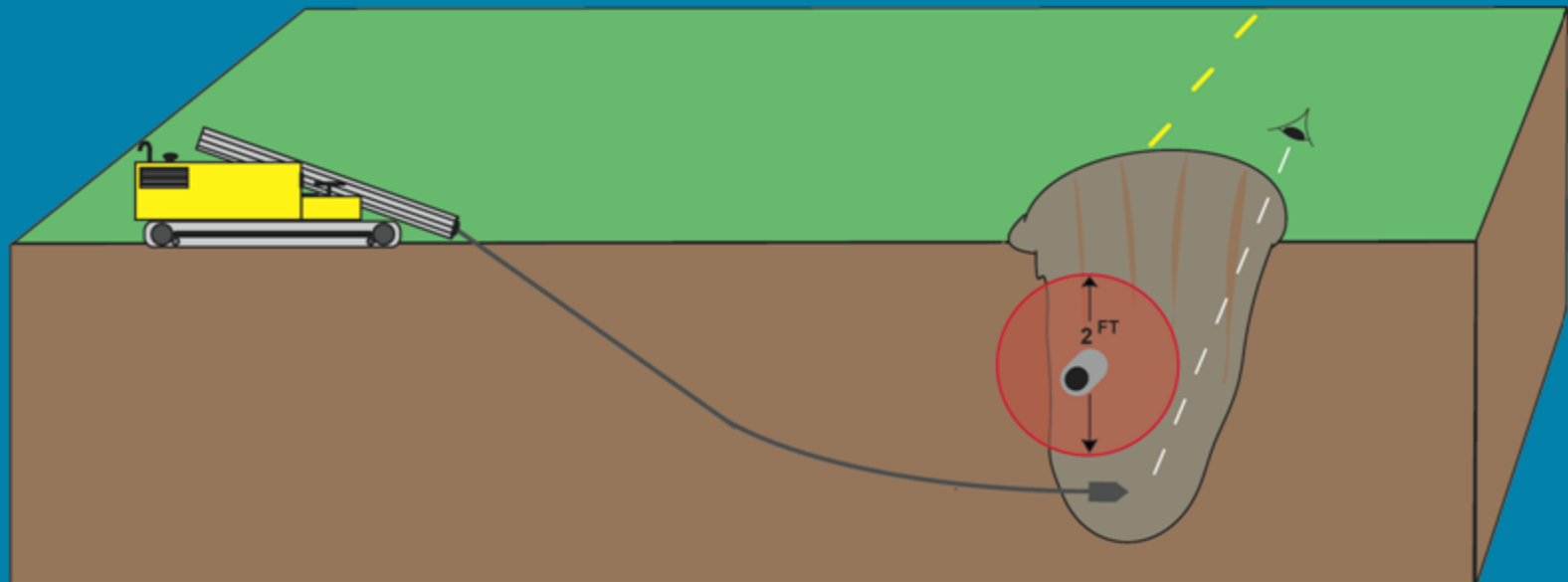
Note: In an effort to further reduce damages, excavators are encouraged to bore away from rather than cross underground utility lines whenever possible, especially when boring with "Impact Moles."



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- Ensure the drill head locating device is functioning properly and within its specification.
- Visually check the drill head as it passes through potholes, entrances, and exit pits.



- If the depth indicated by the locating device is lower than the bottom of the pothole or pit, cease boring until the hole/pit can be hand excavated further to maintain a visual inspection of the drill head.

Note: Illustration is not to scale.



The End