PROPOSALS 2a, 2b, 2c, 2d - PROPOSED MODIFICATIONS TO PRACTICES TO ADD/UPDATE REFERENCES TO POTHOLING (Practices included - 5-15, 5-20, 2-3, 2-14)

PROPOSAL 2a – Updates to 5-15

5.15 Facility Avoidance

Practice Statement:

The excavator uses reasonable care such as potholing and other safe excavation practices to avoid damaging underground facilities. The excavator plans the excavation so as to avoid damage or to minimize interference with the underground facilities in or near the work area.

Practice Description:

Foremost on any construction project is safety. Excavators using caution around underground facilities significantly contribute to safe excavation of existing facilities.

Reference:

Existing state laws, including Kansas, Ohio, West Virginia, and others

REDLINE

5.15 Facility Avoidance

Practice Statement:
The excavator uses reasonable care such as potholing and other safe excavation practices to avoid damaging underground facilities. The excavator plans the excavation so as to avoid damage or to minimize interference with the underground facilities in or near the work area.

Practice Description:
Foremost on any construction project is safety. Excavators using caution around underground facilities significantly contribute to safe excavation of existing facilities.

Reference:

- Existing state laws, including Kansas, Ohio, West Virginia, and others

PROPOSAL 2b – Updates to 5-20

5.20 Excavation within Tolerance Zone

Practice Statement:
When excavation is to take place within the specified tolerance zone, the excavator exercises such reasonable care as may be necessary for the protection of any underground facility in or near the excavation area. Methods to consider, based on certain climate or geographical conditions, include pot holing, hand digging when practical, soft digging, vacuum excavation methods, pneumatic hand tools, other mechanical methods with the approval of the facility owner/operator, or other technical methods that may be developed. Hand digging and non-invasive methods are not required for pavement removal.

Practice Description:
Safe, prudent, non-invasive methods that require the excavator to manually determine the actual location of a facility are considered "safe excavation practices" in a majority of state/provincial laws. A majority of states outline safe excavation practices to include hand digging and/or pot holing. Some states specifically allow for the use of power excavating equipment for the removal of pavement. Each state/province must take differing geologic conditions and weather-related factors into consideration when recommending types of excavation within the tolerance zone.

Reference:
Existing state laws, including Arizona, New Hampshire, Pennsylvania, and others

REDLINE

5.20 Excavation within Tolerance Zone

Practice Statement:
When excavation is to take place within the specified tolerance zone, the excavator exercises such reasonable care as may be necessary for the protection of any underground facility in or near the excavation area. Methods to consider, based on certain climate or geographical conditions, include pot holing, hand digging when practical, ~~(pot holing),~~ soft digging, vacuum excavation methods, pneumatic hand tools, other mechanical methods with the approval of the facility owner/operator, or other technical methods that may be developed. Hand digging and non-invasive methods are not required for pavement removal.

Practice Description:
Safe, prudent, non-invasive methods that require the excavator to manually determine the actual location of a facility are considered "safe excavation practices" in a majority of state/provincial laws ~~(38 states)~~. A majority of states outline safe excavation practices to include hand digging and/or pot holing ~~(16 states)~~. Some states specifically allow for the use of power excavating equipment for the removal of pavement. Each state/province must take differing geologic conditions and ~~weather related~~weather-related factors into consideration when recommending types of excavation within the tolerance zone.

Reference: Existing state laws, including Arizona, New Hampshire, Pennsylvania, and others

PROPOSAL 2c – Updates to 2-3

2.3 Identifying Existing Facilities in Planning and Design

Practice Statement:
Designers indicate existing underground facilities on drawings during planning and design.

Practice Description:
During the planning phase of the project, existing facilities are shown on preliminary design plans. The planning documents include possible routes for the project together with known underground facility information. The various facility owners/operators are then given the opportunity to provide appropriate feedback. During the design phase of the project, underground facility information from the planning phase is shown on the plans. If information was gathered from field-located facilities, potholing, underground facility surveys, or subsurface utility engineering, this is noted on the plans. The designer and the contractor both know the quality of the information included on the plans. If an elevation was determined during information gathering, it is shown on the plan. The facilities shown include active, abandoned, out-of-service, and proposed facilities. The design plans include a summary drawing showing the proposed facility route or excavation, including streets and a locally accepted coordinate system. The plans are then distributed to the various facility owners/ operators to provide the opportunity to furnish additional information, clarify information, and identify conflicts.

Benefits:

Providing complete underground facility information and including this information on design drawings reduces hazards, simplifies coordination, and minimizes the cost to produce the final project.

REDLINE

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Benefits:
Providing complete underground facility information and including this information on design drawings reduces hazards, simplifies coordination, and minimizes the cost to produce the final project.

PROPOSAL 2d – Updates to 2-14

2.14 Subsurface Utility Engineering (SUE)

Practice Statement:

When applied properly during the design phase, Subsurface Utility Engineering (SUE) provides significant cost and damage-avoidance benefits and the opportunity to correct inaccuracies in existing facility records.

Practice Description:

In certain cases and environments, it may be difficult or impossible to determine the locations of all utilities and/or impediments with sufficient accuracy to avoid damage or delay during construction. In these cases, SUE is applied during the design phase to locate, identify, and characterize all existing utility infrastructure (and other relevant non-utility features) found within a given project/area. SUE is applied in a structured manner in accordance with practices and quality levels found in ASCE 38-02 "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data." The project owner dictates the required quality levels (QL) as well as the amount of effort expended by the SUE provider on each. Although the standard is more detailed and comprehensive, the following is a brief summary of the quality levels defined therein:

- QL-D involves utility records research and interviews with knowledgeable utility personnel.
- QL-C involves surface survey and identifying and recording aboveground features of subsurface utilities, such as manholes, valves, and hydrants.
- QL-B involves application of "surface geophysical methods," such as EM-based locating instruments, GPR, radar tomography, metal detectors, and optical instruments, to gather and record approximate horizontal (and, in some cases, vertical) positional data.
- QL-A involves physical exposure via potholing and/or other safe excavation practices that provides precise horizontal and vertical positional data.

SUE results are integrated into the design process, in which design engineers use the information to create construction plans that accommodate existing infrastructure, thereby reducing the overall risk of conflicts and/or damage.[1]

References:

- U.S. Department of Transportation—FHWA (12/1999). Cost Savings on projects Utilizing Subsurface Utility Engineering. Pub. No. FHWA-IF-00-014
- U.S. Department of Transportation—FHWA (3/2001). Subsurface Utility Engineering: Enhancing Construction Activities. Pub. No. FHWA-IF-01-011
- ASCE 38-02 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data
- Pennsylvania state law

REDLINE ON NEXT PAGE

REDLINE

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- QL-A involves physical exposure via potholing ~~"soft-digging"~~ and/or other safe excavation practices ~~(vacuum excavation or hand-digging) and~~ that provides precise horizontal and vertical positional data.

SUE results are integrated into the design process, in which design engineers use the information to create construction plans that accommodate existing infrastructure, thereby reducing the overall risk of conflicts and/or damage.[1]

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