



UTILITY-STRIKE PREVENTION

Locate, Verify, Protect and Respond

POLICY STANDARD

No ground disturbance or work capable of contacting an overhead, underground, concealed or submerged utility shall begin until utilities are identified, owners are coordinated, required locate tickets are valid, markings are verified and the crew has reviewed the controls and emergency actions.

PHEIFER BROTHERS CONSTRUCTION CO., INC.

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IMPORTANT

A one-call ticket does not locate every facility. Private lines, temporary power, site lighting, irrigation, owner-installed systems, abandoned lines and utilities inside structures may require separate records review and private locating.

Primary References

- Wis. Stat. § 182.0175 and Wisconsin Public Service Commission Diggers Hotline requirements
- 29 CFR 1926.651(b) - underground installations
- 29 CFR 1926.416(a) - protection from electric circuits
- 29 CFR 1926.1407-1926.1411 - crane power-line safety
- OSHA-recognized utility color code and utility-owner requirements
- Project plans, owner requirements, valid locate ticket and utility-owner instructions

1. Purpose, Scope, Definitions and Responsibilities

Purpose and Scope

- Prevent electrocution, fire, explosion, flooding, release, service disruption, struck-by incidents and collapse caused by contact with utilities during heavy-highway, bridge, marine, yard and shop work.
- Applies to excavation, grading, drilling, augering, pile driving, saw cutting, coring, demolition, anchoring, crane/aerial operations and other work near underground, overhead, concealed, exposed, temporary or submerged facilities.

Key Definitions

- Excavation/ground disturbance: an operation that moves, removes or displaces earth, rock or other material, including grading, drilling, scraping and trenching.
- Tolerance/buffer zone: in Wisconsin, the area 18 inches horizontally on each side of a marked underground facility; the facility depth is not guaranteed by surface marks.
- Positive response: documented status from each notified facility owner indicating marked, clear/no conflict or other response.
- Private utility: a facility not owned/operated by a one-call member or not covered by the public locate request.
- Competent person: person capable of identifying excavation hazards and authorized to take prompt corrective action.

Management / Program Administrator

- Provide procedures, qualified resources, locating/private-locating support, training, emergency planning and incident review.

Project Manager / Superintendent

- Obtain owner records and coordination, define work limits, resolve conflicts, arrange shutdown/protection and verify subcontractor responsibilities.

Foreman / Competent Person

- Confirm valid ticket and responses; compare markings to plans/conditions; conduct the pre-task briefing; direct exposure/support; stop work for discrepancies or changing conditions.

Employees / Operators

- Understand marks and boundaries, use assigned methods, maintain clearance, report evidence of utilities and stop immediately for contact, damage, unexpected obstruction or missing marks.

2. Planning, Records and Utility Coordination

Preconstruction Review

- Review contract plans, as-builts, surveys, utility schedules, bridge/structure plans, owner records, prior tickets, visible appurtenances and site history. Records are planning aids, not proof of exact location.
- Walk the work with project staff, foreman, competent person and affected utility owners where practical. Identify poles, meters, valves, hydrants, pedestals, cabinets, manholes, drains, service entrances, pavement patches and overhead crossings.

Utility Matrix

- List each known/suspected facility, owner/contact, contents/voltage/pressure if known, horizontal/vertical conflict, locate status, exposure method, required support/protection and emergency contact.
- Include electric, gas, petroleum, communication/fiber, water, sanitary/storm, traffic signal, railroad signal, cathodic protection, lighting, temporary systems and private facilities.

Design and Sequencing

- Eliminate conflicts through relocation, deenergization, shutdown, physical protection or work redesign when feasible. Do not rely solely on markings where contact consequences are severe.
- Plan potholes/test holes, excavation sequence, equipment limits, spotter, spoil placement, access, traffic control, trench protection, utility support and backfill.

Owner / Controlling Contractor

- Coordinate permits, shutdown windows, standby requirements, easements, railroad or agency requirements and responsibility for private locating.
- Share utility information and changes among Pheifer Brothers, subcontractors, owner, controlling contractor and utility representatives. Each employer remains responsible for hazards affecting its employees.

Site Emergency Plan

- Identify exact location/access, utility emergency numbers, who calls 911/utility, evacuation/isolation areas, ignition control and who meets responders. Address night, remote, traffic, water and railroad conditions.

3. Wisconsin Diggers Hotline and Locate Tickets

Notification

- Before excavation, submit a Wisconsin Diggers Hotline request by dialing 811 or using the approved online process. Wisconsin law requires notification at least three days before excavation; project staff shall use the current ticket rules and start-date calculation.
- Accurately describe and positively premark/define the excavation area as required. Request a ticket broad enough for the planned work, but do not use vague or excessive boundaries that reduce locate clarity.

Ticket Control

- Record ticket number, request date/time, legal start date/time, work limits, type of work, caller, excavator and expiration/renewal information. Keep the ticket and responses available to the foreman.
- Do not begin until the legal start time and all facility-owner responses are received and resolved. A nonresponse, incomplete response or unclear status is a stop-work condition; contact the one-call system/owner as required.

Validity and Changes

- Work only within the ticket limits and valid dates. Renew/re-notify before expiration and when work scope, location, schedule or conditions require it.
- Request remarking when marks are missing, destroyed, confusing or no longer usable. Preserve marks using offset marks, stakes, photos/GPS and controlled repainting consistent with owner guidance; do not invent or alter utility marks.

Emergency Excavation

- Use emergency-ticket procedures only when conditions meet the legal definition and immediate excavation is necessary. Notify through the one-call system and facility owners as required; emergency status does not eliminate safe locating, exposure or employee protection.

White-Lining / Documentation

- Use white paint, flags, stakes, mapping or electronic premarking as accepted to show proposed excavation. Avoid covering facility-owner marks.
- Photograph the defined work area and utility marks before disturbance, including landmarks and date/location. Retain ticket, positive responses, communications and changes.

4. Marking Review, Private Utilities and Verification

Marking Review

- Before work, compare marks and positive responses with plans, visible features and expected routes. Look for missing owners, dead-end marks, unexplained gaps, multiple facilities, unusual alignment and marks outside the work limits.
- Facility marks indicate approximate horizontal location, not exact position or depth. Do not assume a line is straight, centered under marks or at a constant depth.

Private / Nonmember Facilities

- Determine whether services beyond meters, owner-installed lighting, plant systems, irrigation, temporary power, job trailers, pumps, dewatering, railroad/traffic systems or abandoned lines are excluded from the one-call response.
- Obtain owner information and qualified private locating using records, tracing, ground-penetrating radar or other suitable methods. No-result technology does not prove no utility exists.

Potholing / Positive Verification

- Expose high-risk and conflicting facilities at safe intervals and at crossings, bends or changes before mechanized excavation. Use hand tools or controlled vacuum excavation appropriate to facility/material and owner requirements.
- Confirm horizontal and vertical position, size, material, direction and condition. Mark/record verified points and communicate them to operators.

Vacuum Excavation

- Plan pressure, nozzle, spoil, water, traffic, electrical conductivity, line damage, flying debris and trench hazards. Follow manufacturer/utility limits and competent-person direction.
- Vacuum excavation may be an acceptable safe means when properly used, but it does not remove the duty to protect employees or avoid damaging the facility.

Unexpected Evidence

- Stop for tracer wire, conduit, warning tape, concrete encasement, unusual soil, odor, hissing, arcing, water, void, unknown pipe/cable or facility not matching marks. Treat unknown lines as active until the owner confirms otherwise.

5. Tolerance Zone and Safe Excavation

Wisconsin Buffer Zone

- Maintain the Wisconsin 18-inch horizontal buffer on each side of the marked facility. Mechanized excavation is prohibited within this buffer; use hand digging as required by state law and facility-owner requirements.
- The zone extends vertically and facility depth may vary due to grading, erosion, crossings or prior construction. Expose before crossing beneath/above or operating where the bucket, tooth, auger, drill or attachment could contact it.

Hand Exposure

- Use rounded/blunt excavation tools and careful technique. Dig parallel to the facility when feasible and avoid prying, stabbing or striking toward it.
- Support the excavation, control traffic and keep employees out of bucket swing and cave-in zones. Hand digging does not replace excavation protective-system requirements.

Mechanized Work Outside Zone

- Use a dedicated spotter where visibility, proximity or consequence warrants. Establish physical limits, offset marks and a clear stop signal.
- Remove soil in controlled layers, keep attachments oriented away from the facility and prevent overtravel, swing or collapse into the zone. Operators stop if the spotter is lost or uncertainty develops.

Crossings and Parallel Work

- Expose and verify before crossing. Where working parallel, establish enough verification points to identify bends, sags and depth changes.
- Do not undermine or leave a facility unsupported. Coordinate required clearance, shielding, support and backfill with the owner.

No-Assumption Rule

- A prior exposure, old locate, drawing, depth reading or employee recollection is not sufficient by itself. Conditions must be verified for the current work and ticket.
- Stop work when marks conflict, a facility cannot be found, soil obscures hand exposure or the planned method cannot maintain required control.

6. Protection of Exposed Underground Utilities

Support and Protection

- While excavation is open, protect underground installations by support, bracing, suspension, shielding or other means approved by the owner/qualified person as necessary.
- Prevent loading from equipment, spoil, traffic, trench shields, ladders, rigging and employees. Do not use a utility as a step, handhold, anchor, rigging point or material support.

Temporary Support

- Use materials and spacing suitable for utility weight, contents, temperature, joint condition and span. Maintain flexibility where settlement or movement could overload connections.
- Do not improvise suspension from trench boxes, traffic barriers or structural members without approval. Inspect supports throughout the shift and after rain, vibration, impact or soil movement.

Identification and Access

- Label/protect exposed lines and maintain required clearances. Barricade or cover against employees, equipment and public contact without concealing evidence of distress.
- Keep valves, shutoffs, splices and owner access available. Do not coat, wrap, bend, relocate or repair a facility unless authorized.

Backfill

- Obtain owner inspection when required. Use specified bedding, cover, warning tape/tracer systems, compaction method and lift thickness.
- Do not drop rock, concrete or frozen material onto facilities. Prevent compaction equipment from contacting or overstressing lines; document final position where required.

Monitoring

- Watch for sagging, movement, cracking, coating damage, leakage, vibration, heat, arcing, loss of support or changing excavation conditions. Stop and notify the foreman/owner for any concern.

7. Overhead and Concealed Electrical Utilities

Hazard Identification

- Before work, determine whether energized overhead, exposed or concealed circuits could be contacted directly or indirectly by a person, tool, material or machine. Post warnings and establish controls.
- Assume lines are energized and uninsulated unless the utility owner confirms deenergization and effective grounding or qualified protection. Weather coverings are not reliable employee insulation.

General Work

- Where contact is possible, protect employees by deenergizing and grounding or by effective guarding/insulation and safe work methods meeting 29 CFR 1926.416 and applicable standards.
- Control ladders, rebar, forms, pipe, signs, lighting, aerial lifts, dump bodies, pumps and long-handled tools. Use a trained spotter and visible boundaries when required, but do not treat a spotter as permission to violate clearance.

Cranes and Derricks

- Follow 29 CFR 1926.1407-1926.1411 and the Cranes and Hoisting Policy. Define the work zone and determine whether any part of the equipment, load line, rigging or load could approach within 20 feet.
- If so, use the applicable deenergize/ground, 20-foot or Table A option and all required encroachment precautions. Voltage and minimum approach distance shall be established; guessing voltage is prohibited.

Travel and Assembly

- Plan routes under/near lines, lower booms, use required clearances, spotters and speed controls, and prohibit loads unless the applicable crane rule is satisfied.
- Crane assembly/disassembly has separate planning and clearance requirements. Coordinate with the utility owner before setup.

Concealed Systems

- Scan/review drawings and trace circuits before drilling, coring, sawing, anchoring or demolition. Use lockout/tagout or owner-controlled shutdown where feasible.
- Stop for unexpected conduit, cable, arcing, tingling, tripped protection or energized-metal indication. Do not touch or investigate until electrically safe.

8. Cranes, Equipment, Drilling and Specialty Work

Mobile Equipment

- Plan excavator, loader, dozer, skid-steer, dump-body and attachment movement so no component enters a utility zone or contacts overhead lines.
- Use barricades, height/rotation limiters, goalposts or range controls when appropriate. Maintain operator-spotter communication and stop when view or communication is lost.

Drilling, Augering and Pile Driving

- Treat bore paths, augers, shafts, casings, piles, leads and templates as capable of striking utilities beyond the visible excavation. Verify the full vertical/horizontal influence zone before work.
- Use test holes and qualified review for directional drilling. Account for bore deviation, reaming diameter, drilling fluid migration, abandoned utilities and bridge/rail systems.

Saw Cutting, Coring and Anchors

- Verify slab/deck/pavement thickness and hidden electric, communication, post-tensioning, conduit, water and other systems before cutting or drilling.
- Set depth limits and use scanning/test openings as appropriate. Do not cut unexplained embedded metal or conduit.

Blasting / Demolition

- Identify, isolate and protect utilities before structural removal or blasting. Account for vibration, flyrock/debris, settlement, fire and loss of emergency systems.
- Utility shutdown requires owner confirmation and verification; a closed valve or open switch alone does not prove safe isolation.

Marine / Submerged

- Review permits, sonar/dive information and owner records before dredging, spud/pile placement, anchors or underwater cutting. Mark routes and coordinate shutdown/standby.
- Unknown submerged cable/pipe is treated as active. Divers shall receive the utility information and emergency actions.

9. Damage, Contact and Emergency Response

Universal First Actions

- STOP. Warn everyone, keep people/equipment away, shut down only if safe, call 911 when life safety may be affected and notify the facility owner and foreman immediately.
- Do not touch, move, cover, repair or backfill a damaged facility. A scrape, dent, gouge, coating damage, pulled tracer wire or suspected contact is reportable even without visible release.

Electrical Contact

- Operator stays on equipment unless fire or another immediate danger requires exit. Warn others to remain away; equipment and ground may be energized. Call 911 and utility owner.
- If emergency exit is unavoidable, jump clear without touching equipment and ground at the same time, land with feet together and shuffle/hop away. Do not return until the utility declares the area safe.

Gas / Fuel / Hazardous Release

- Eliminate ignition only from a safe location; do not start/stop engines, use phones or operate switches in the suspected gas/vapor area. Evacuate upwind and call 911/owner from a safe location.
- Do not attempt to pinch, clamp or extinguish a gas flame unless directed by emergency/utility personnel; burning gas may prevent an unignited vapor cloud.

Water / Sewer / Communication

- For water, flooding or undermining: evacuate unstable excavation/structures and control traffic. For sewer/unknown release: avoid exposure and use hazardous-atmosphere/biohazard controls.
- Fiber-optic cable fragments can penetrate skin/eyes; do not handle damaged fiber. Report communications damage because emergency or traffic systems may be affected.

Scene Control and Reporting

- Barricade, account for personnel, preserve evidence and provide ticket/utility information to responders. Only the utility/authority and company management may release the scene.
- Complete incident/near-miss reporting and OSHA notification when applicable. Work resumes only after owner confirmation, hazard correction and documented authorization.

10. Training, Communication, Records and Review

Training

- Employees exposed to utility hazards receive training on one-call/markings, color code, ticket limits, tolerance-zone rules, hand/vacuum exposure, equipment/spotter controls, overhead power hazards and emergency actions.
- Operators, spotters, competent persons and employees performing specialized locating/exposure receive role-specific instruction and demonstration of proficiency.

Daily Briefing

- Before ground disturbance, review ticket/response status, marks, verified locations, private utilities, excavation limits, method, equipment boundaries, spotter signals, changes and emergency contacts.
- Repeat when crews, scope, shifts, markings, weather, access or utility conditions change. Include subcontractors and affected adjacent operations.

Stop-Work Authority

- Every employee shall stop work for missing/expired ticket, incomplete positive response, missing or conflicting marks, unexpected facility evidence, inability to maintain the buffer, damaged support, overhead encroachment or utility contact.
- No retaliation is permitted for good-faith stop work. Only the foreman/competent person may authorize restart after the issue is resolved.

Records

- Maintain tickets, positive responses, maps/as-builts, photographs, owner/private-locate communications, utility matrix, test-hole records, permits, shutdown confirmation, training, JHAs, incidents and corrective actions.
- Document renewed/remark tickets and final utility position when required by contract or owner.

Program Review

- Review annually and after a strike, near miss, regulatory change or significant new work method. Correct recurring marking, planning, communication or field-control weaknesses.
- This policy does not replace utility-owner instructions, permits or task-specific programs; apply the most protective requirement.

11. Utility Color Code and Field Controls

COLOR	TYPICAL MEANING
WHITE	Proposed excavation / premark
PINK	Temporary survey markings
RED	Electric power, lighting cables and conduit
YELLOW	Gas, oil, steam, petroleum or gaseous materials
ORANGE	Communication, alarm/signal, cable or conduit
BLUE	Potable water
PURPLE	Reclaimed water, irrigation and slurry
GREEN	Sewer and drain lines

Field Control Rules

- Color identifies facility type, not voltage, pressure, depth, exact location or safe-to-touch status.
- Preserve and photograph marks; use offsets when work will destroy them. Request re-marking rather than guessing.
- Confirm public and private facilities, expose conflicts and communicate verified positions to operators.
- Use physical limits and a dedicated spotter for equipment where appropriate; maintain a clear stop signal.
- Treat unknown or abandoned-looking facilities as active until the owner confirms status.

Emergency Contacts - Complete for Each Project

911 / PROJECT LOCATION:	DIGGERS HOTLINE TICKET:
ELECTRIC UTILITY:	GAS / PIPELINE:
WATER / SEWER:	COMMUNICATION:
OWNER / CONTROLLING CONTRACTOR:	COMPANY CONTACT:

12. Field Utility-Strike Prevention Checklist

VERIFY	EXPECTATION
Ticket	Valid ticket; work area and legal start confirmed; all positive responses resolved
Premark / marks	Excavation limits clear; utility marks preserved, legible and photographed
Records	Plans, as-builts, visible evidence and owner information reviewed
Private facilities	Private/temporary/owner systems identified and separately located
Verification	Conflicts exposed; horizontal/depth/direction communicated to operator
Buffer zone	Wisconsin 18-inch zone established; hand exposure method assigned
Equipment	Limits, attachment reach, spotter, travel and overhead clearance controlled
Protection	Exposed utilities supported, shielded, labeled and inspected
Work area	Traffic, trench, public, water, railroad and adjacent work coordinated
Emergency	911/location, utility contacts, evacuation and electrical/gas actions reviewed
Crew briefing	Operators, spotters, laborers and subcontractors understand the plan
Changes	Weather, scope, mark damage and unexpected evidence trigger re-evaluation

PROJECT / LOCATION:	DATE / SHIFT:
TICKET / EXPIRATION:	FOREMAN / COMPETENT PERSON:
WORK LIMITS / METHOD:	UTILITY / OWNER:
VERIFIED LOCATIONS / RESTRICTIONS:	SPOTTER / SIGNAL:
ISSUES / CORRECTIVE ACTION:	AUTHORIZED TO PROCEED:

13. Test Your Knowledge

Circle the best answer. Review missed questions with your foreman.

1. When may excavation begin? A. When equipment arrives B. After the legal start and all responses/controls are resolved C. When old marks are visible	2. What is Wisconsin's marked-facility buffer? A. 18 inches horizontally on each side B. 6 inches total C. A depth shown by paint
3. What does a surface mark guarantee? A. Exact depth B. The line is deenergized C. Approximate horizontal location only	4. What if marks conflict with site evidence? A. Follow the plan only B. Stop and resolve the discrepancy C. Dig faster
5. Who locates private site utilities? A. They require owner/private locating when not covered by one-call B. Diggers Hotline always marks every private line C. No one if not on plans	6. What should happen before crossing a marked utility? A. Assume standard depth B. Use the largest bucket C. Safely expose and verify its position
7. After electrical equipment contact, the operator should normally: A. Step down immediately B. Stay on equipment and warn others away C. Touch the ground to test it	8. What must be reported as utility damage? A. Any scrape, dent, gouge, coating/tracer damage or suspected contact B. Only a complete break C. Only damage causing outage
9. What is a stop-work trigger? A. A valid ticket B. A completed briefing C. Missing response, marks or ability to maintain controls	10. May an unknown line be treated as abandoned? A. If rusty B. No, not until the owner confirms status C. If no one remembers it

EMPLOYEE: _____

DATE: _____

ANSWER KEY: 1-B | 2-A | 3-C | 4-B | 5-A | 6-C | 7-B | 8-A | 9-C | 10-B