

ADVISORY 29.5 IDENTIFICATION OF UNDERGROUND AND CONCEALED UTILITIES

SCOPE

The University of Cincinnati Department of Construction Management has established policies and procedures for the identification of underground and concealed utilities (Appendix A). Construction Management has also implemented a requirement that excavation or digging on any property owned by the University of Cincinnati shall not be performed prior to completion and authorization of a digging permit available from the contact persons listed in Section III C of Appendix A.

PURPOSE

Federal law and University of Cincinnati construction standards require that owners of utilities be contacted before any digging occurs for the protection of underground utility systems, personnel performing the excavation work, and the general public. The purpose of the permit form is to insure the implementation of these requirements.

EXCEPTIONS

There shall be no exceptions to the use of the permit form.

APPENDIX A

University of Cincinnati
Division of the University Architect/Construction Management
Underground and Concealed Utilities
Identification Procedures

- I. Purpose
- A. It is the intent of this document to provide a process by which underground and concealed utilities are identified. This identification must take place in a timely manner such that construction/repairs may proceed without unforeseen interruption of services to University facilities or nearby entities' facilities.
 - B. Utilities exploration shall include identification of not only the services, such as electrical conduit or ductbank, but shall include identification of manholes, tunnels, valve boxes, and other utility-related structures.
 - C. Services for the University are both generated by the University and obtained from commercial suppliers. Utilities which are commonly found within the University limits include the following:
 - 1. Electric (general distribution and/or building feed)
 - 2. Electric (street lights, emergency power)
 - 3. Steam
 - 4. Condensate
 - 5. Chilled Water, supply and return
 - 6. Water (domestic & fire)
 - 7. Detention tanks
 - 8. Storm water
 - 9. Sanitary
 - 10. Combined Sewer
 - 11. Natural Gas
 - 12. Telecommunications (UC & CBT)
 - 13. Fuel Oil/Fuel Tanks
 - 14. Alarm and Signal Circuits
 - 15. Irrigation systems
 - 16. DDC Controls
 - 17. Oxygen
 - D. Within a building, investigation must also include:
 - 1. Additional services:
 - a) Deionized water
 - b) Compressed air
 - c) Acid waste
 - d) Laboratory gases
 - e) Low pressure natural gas
 - f) Diesel Fuel for Generator

2. Assessment of structural elements, such as:
 - a) Post tensioned slab
 - b) Concrete encased conduit
 - c) Radiant floor system or snow melt system

II. Design

- A. The Project Manager and/or Senior Staff Engineer shall work with the Associate Architect and/or Engineer to locate all utilities within or adjacent to the project limits. Exploration shall include, but is not limited to:
 1. Exterior
 - a) Review of Campus Utility Drawings
 - b) Review of site, mechanical, and electrical drawings, including as-builts if available, for nearby structures
 - c) Physical walk-through of the project site to note any manholes, cleanouts, or other physical evidence of utilities in the area.
 - d) Excavation or other physical test of area for utilities
 - e) Interview with Facilities Management personnel directly responsible for the area to determine any changes made by Facilities not noted on the drawings
 2. Interior
 - a) Review of existing building drawings, including any alterations, renovations, and as-builts if available
 - b) Physical walk-through of the project site to note physical evidence of utilities in the area. Exploration shall include removal of ceiling tiles, location and inspection of access panels, review of electrical and mechanical rooms feeding the project site.
 - c) Interview with Facilities Management personnel directly responsible for the area to determine any changes made by Facilities not noted on drawings
 - d) Interview occupants of the area to determine any changes made not noted on drawings
- B. All items discovered during this detailed exploration shall be included on at least one drawing within the project documents detailing existing conditions. All appropriate shut-off valves, disconnect switches, etc., shall also be noted in the project documents.
- C. When the project is designed in-house, the above exploration shall be conducted by the personnel responsible for field coordination of the project, in concert with the appropriate architects and engineers.
- D. Construction Documents shall be forwarded to Facilities Management for review. Facilities shall direct drawings for review to personnel with appropriate knowledge of the area. Facilities shall then note any utilities, which were not identified during the design. Facilities shall also note any pertinent information regarding construction methods and practices which may be required due to the utilities within or around the site. These comments shall be forwarded in writing to Construction Management or Renovations within the time requested. If they cannot respond within the requested time period, Facilities shall notify Construction Management or Renovations that a response is forthcoming and provide a target date. If Facilities has no comments, they shall notify Construction Management or Renovations accordingly.

- E. Should Facilities Management identify utilities previously not noted, the individual responsible for the design identification shall confirm and so note on the project drawings. Any special procedures shall also be incorporated in the project documents. Construction Documents will then include all utilities as identified by Construction Management or Renovations through investigation and Facilities Management's comments.

Construction - Exterior Sitework

- F. When sitework commences, the Project Manager or designee, who is responsible for coordination of the contractor's work, shall ensure the appropriate procedures outlined below are adhered to for location of utilities.
- G. The contractor's schedule shall identify all work in the area of the utilities and provide the Project Manager with a minimum of one week notice prior to excavation. The Contractor shall notify the Ohio Utilities Protection Service (O.U.P.S.) at 1-800-362-2764 a minimum of two working days prior to scheduled excavation.
- H. The University employee shall contact:

UC Central Campus (West & East)	
Electric	Facilities Management Ron Lambers (513) 556-2045
Water, Sewer & Steam	Facilities Management Brian Keinnenger or Mike Mullins (513) 556-2045
Telecommunications Cable	UCit Bennie Lovette or Roger Feick (513) 556-5035
Natural Gas & CBT Phone Lines	O.U.P.S. (Ohio Utilities Protection Service) 1-800-362-2764

Raymond Walters College	
Electric	Facilities Management E.F. Kramer or Doug Heilman (513) 745-5708
Water, Sewer & Steam	same as above
Telecommunications Cable	same as above
Natural Gas & CBT Phone Lines	O.U.P.S. (Ohio Utilities Protection Service) 1-800-362-2764

Clermont College	
Electric	Facilities Management Robert Chaney (513) 732-5230
Water, Sewer & Steam	same as above
Telecommunications Cable	same as above
Natural Gas & CBT Phone Lines	O.U.P.S. (Ohio Utilities Protection Service) 1-800-362-2764

OCAS	
Electric	Facilities Management Vince Moore (513) 556-4862
Water, Sewer & Steam	same as above
Telecommunications Cable	same as above
Natural Gas & CBT Phone Lines	O.U.P.S. (Ohio Utilities Protection Service) 1-800-362-2764

- I. The Project Manager or designee shall meet the above individuals at the site, and shall provide a copy of the project drawing detailing existing conditions. Facilities Management and UCit shall provide markings showing the approximate location of all known utilities in accordance with Utility Location & Coordination Council's (ULCC) Uniform Color Code. A description of the Color Code is attached.
- J. Facilities Management and UCit shall follow the Guidelines for Uniform Temporary Marking of Underground Facilities as established by the aforementioned Council. The University Project Manager or designee coordinating construction shall familiarize him/herself, the prime contractor, and all involved subcontractors of these guidelines. A copy of these Guidelines is attached.
- K. BE ADVISED ALL NATURAL GAS LINES AND CINCINNATI BELL TELEPHONE LINES MUST BE MARKED BY OHIO UTILITY PROTECTION SERVICES (O.U.P.S.) 1-800-362-2764.
- L. Once all known utilities have been appropriately identified, the Project Manager shall give approval for excavation to commence. The Project Manager shall observe excavation to ensure that reasonable care is exercised to maintain services, including hand digging if necessary, particularly in the vicinity of critical services. Should any additional utilities be uncovered during excavation, the contractor shall cease excavation activity in that area until that utility can be identified and appropriate measures taken to ensure no cessation of service.
- M. The contractor shall videotape all utilities to record existing defects and/or wear.

III. Construction - Interior Renovation

- A. When demolition work commences, the Project Manager responsible for coordination of the contractor's work shall ensure the appropriate procedures are adhered to for location of utilities.
- B. The Contractor shall notify the Project Manager a minimum of one week in advance of demolition activities. The University employee shall contact:
- C. The University employee shall meet with the Facilities Management and UCit personnel at the site, and shall provide a copy of the project drawing detailing existing conditions. Facilities Management and UCit shall provide markings showing the approximate location of all known utilities in accordance with Utility Location & Coordination Council's (ULCC) Uniform Color Code. A description of the Color Code is included at the end of this document.

- D. Facilities Management and UCit shall follow the Guidelines for Uniform Temporary Marking of Underground Facilities as established by the aforementioned Council. The Project Manager coordinating construction shall familiarize him/herself, the prime contractor, and all involved subcontractors of these guidelines.
 - E. The contractor shall videotape all utilities to record existing defects and/or wear.
 - F. Once all known utilities have been appropriately identified, demolition can commence. Should any additional utilities be uncovered during demolition, the contractor shall cease work activity in that area until that utility can be identified and appropriate measures taken to ensure no cessation of service.
- IV. Non-construction excavation or demolition projects
- A. When excavation or demolition will be performed but is not part of a construction project within the administration of the Division of the University Architect, Departments of Construction Management or Renovations, the responsibility for utility identification belongs to that University entity performing or contracting for the work. The Department or Division shall designate one individual or a team to perform the required exploration and location of all related utilities.
 - B. Exploration for utilities shall be as described in paragraphs II.A.1 (Exterior) and II.A.2 (Interior) of this document. The Project Manager responsible shall contact Michael Johnson, plan room manager within the Division of the University Architect, to review plans.
 - C. Location of activities shall be as described in sections III and IV of this document.
- V. Additional resources
- A. Due to the age of the University of Cincinnati campus, it is not unforeseen that questions will arise during either exploration or location of utilities. If the available resources above cannot resolve any conflicts, inconsistencies, or ambiguities discovered during this process, the following resources are available and should be contacted:
 - 1. Pete Luken , Project Manager, Construction Management
 - 2. Everett Wolverton, Associate Director, Facilities Management, Director of Utilities.