

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

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| GENERAL SUBJECT: UTILITY CONFLICTS | NUMBER: IIM-LD-140.9 |
| SPECIFIC SUBJECT: PROCEDURE FOR UTILITY FIELD INSPECTION PLANS, UTILITY DESIGNATION, AND UTILITY LOCATION (TEST HOLE) CONTRACT | DATE: MARCH 14, 2011 |
| | SUPERSEDES: IIM-LD-140.8 |
| DIVISION ADMINISTRATOR APPROVAL: Mohammad Mirshahi, P.E. State Location and Design Engineer Approved March 14, 2011 | |

Changes are shaded.

CURRENT REVISION

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- Revised to reflect the processes outlined in Location and Design and Right of Way Division's 2010 Utility In-Plan Work Flow Process Memorandum.
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EFFECTIVE DATE

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- This memorandum is effective upon receipt.
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POLICY

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- The Department has contracts statewide with Subsurface Utility Engineering (SUE) consultants to designate and locate utilities on projects selected by the Department. Utilities are designated by marking the presence of a subsurface utility using a geophysical prospecting technique. Accurate locations of subsurface utilities are obtained horizontally and vertically by digging test holes.

- All projects shall be designated by the Consultant or the survey party as determined by the State Location and Design Engineer. A determination will be made and indicated on Form PM-100 as to the need to secure the underground utility designating service. All projects with buried water, gas or sanitary sewer force mains should be designated. Projects with buried electric, telephone, or television cables should be designated at the discretion of the Regional Utility Coordinator.
 - The letter of authorization will then indicate the manner in which this will be accomplished.
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PROCEDURE

- The following procedure has been developed to identify and resolve utility conflicts at an early stage in plan design. A link is shown on Sheet 4 of 6 which will take you to the Concurrent Engineering Process flow chart indicating the steps to be taken.
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Utility Survey Data

- The project survey will show all visible utility facilities such as water meters, cutoff valves, poles, etc. and all sanitary (except force mains) and storm sewers including top and invert elevations. The next structure (manhole, etc.) outside of survey limits shall be included with elevations.
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Submitting Plans

- The unit preparing the plan base shall submit MicroStation DGN files electronically via the FTP Server of the entire project (including title sheet and/or location map) for the designation of the horizontal location of subsurface utilities. The files should clearly show the survey line that was established in the field along with sufficient references to locate and retrace the original line. Also submit one (1) print of the computer alignment printout of the survey line that was established in the field to the State Survey Program Manager via Form LD-261 (Request for Additional Survey).
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Simultaneous Plotting

- Annotation, property data and any other information can be secured and plotted simultaneously with the designating of the subsurface utilities.

Designating

- The horizontal location of existing subsurface utilities will be designated by the consultant and the information returned to the Department in the format requested.
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Preliminary Road Plan Development

- Upon receipt of the underground utility designation (horizontal) data, preliminary road plans, including hydraulic design, will be developed. The Project Manager will request that the Structure and Bridge and Central Office Location and Design Traffic Engineering Design Program Area submit preliminary bridge, sign, signal and lighting plans, including estimates, for detailed plan development prior to the public hearing.
 - A review is to be made with these divisions by the Project Manager to determine if there are utility conflicts with bridges, signs, signals, etc. based on the horizontal location of the utilities.
 - The design of the project drainage facilities, walls and other features are to avoid horizontal utility conflicts where feasible.
 - An email outlining any changes made is to be resubmitted to Structure and Bridge and/or Central Office Location and Design Traffic Engineering Program Area and any other preliminary engineering sections, including the Regional Utility Coordinator if the design is altered during plan development affecting their preliminary plans.
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UTILITY LOCATING SERVICES

Determination

- Potential vertical utility conflicts shall be determined after all feasible horizontal design adjustments have been incorporated into the design. The Project Manager in consultation, as necessary with the project design team shall, based on the magnitude of the underground utility involvement, determine whether locating services (test holes) provided under the consultant contract should be requested. This determination should be made after discussing the project with the Regional Utility Coordinator.
- When other Divisions need test holes, they are to submit their requests directly to the Project Manager for inclusion in his submission.

Scheduling of Requests for Test Holes

- The Project Manager should request the Underground Utility Location (Test Holes) approximately 6 months prior to the scheduled Field Inspection in order for the evaluation of test hole data and necessary plan changes to be made before Field Inspection.
 - It is expected that the request for test holes will be based upon several factors one of which is hydraulic design. Additional test holes may be required when the hydraulic design is finalized.
 - Please see the CEP (Concurrent Engineering Process) Chart, available at: <http://www.virginiadot.org/business/resources/LocDes/PDCE.pdf> .
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Requesting Locating (Test Hole) Information (when required)

- The Project Manager shall submit the applicable plan sheets electronically via FTP Server, (including the title sheet and/or location map and sheets containing bench marks). The plan sheets should clearly show the survey line that was established in the field along with sufficient references to locate and retrace the original line. Also submit one (1) file with the computer alignment printout of the survey line that was established in the field to the State Survey Program Manager via Form LD-261 (Request for Additional Survey). The Project Designer with input from the project design team shall clearly identify the location of test holes to be secured on the plan sheets. Prior to submitting the request for additional survey, the Project Manager shall request that the - Regional Utility Coordinator review the marked plans to assure that all necessary data will be secured with the initial request. The Regional Utility Coordinator should advise the Project Manager of any known utility relocations that are proposed which will negate the need for any test holes.
- Test holes should be secured on all underground facilities, i.e., water and gas lines larger than 3" (75 mm), telecommunications (copper/fiber optics) and electric lines in conduit systems and sanitary sewer force mains when there are potential conflicts. Direct buried telephone or electric cables typically should not require test holes. Service lines to properties should not be secured unless they are 6" (150 mm) or greater in size and test holes should not be requested for facilities where construction will require that the facility be relocated. Test holes should not be requested for gravity sanitary sewer facilities, unless the inverts of the manholes are not obtainable because of physical obstructions. In addition to the potential conflict sites where the utilities are crossed by the proposed storm drainage, consideration should be given to requesting data in locations:
 1. Where potential conflicts may exist with the project design (i.e., retaining walls, bridge footings, signal structures, ditches, entrance cuts, unsuitable material, etc.).
 2. Where cut to the subgrade line is 18" (0.5 m) or less. (Test holes should not be requested in cuts where the excavation would be expected to uncover the utility.)

- Requests from District design units are to be made through the State Survey Program Manager.
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Non-Project Request

- There will be instances where the services furnished under this contract may not be related to a project being designed for construction. In these cases, a request, by memorandum, should be made to the State Survey Program Manager stating the need, an appropriate charge number and the date when the data is needed. A sketch should be furnished showing the location with horizontal and vertical control.
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Data Distribution

- When the test hole data has been secured, it will be transmitted to the Project Manager for his evaluation and incorporation into the roadway plans and for distribution to others as requested. The data should include the test hole data sheets and the Utility Test Hole Information Sheet in electronic format. An original copy of the underground utilities test hole information sheet, a plan sheet showing the location of the test holes, and the test hole certification sheet should be provided to the Regional Utilities Coordinator.
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Evaluating Test Hole Data

- The Regional Utility Coordinator in conjunction with the Project Manager shall review the test hole data secured, and make an evaluation as to whether the facility is vertically in conflict or not. Should there be a conflict between the utility and the proposed structure, ditches, roadway or entrance cuts, etc., or wherever test holes are dug, the Project Manager shall determine if changes can be made to eliminate the utility conflict. If the design is changed, new test hole data may be required. Should such changes significantly increase the cost of the construction items, the Project Manager shall advise the Right of Way Division Utilities Program Manager, the State Utilities Engineer and the Local Project Program Manager, if applicable, of the estimated cost for proper disposition.

If the Regional Utility Coordinator determines that a utility adjustment would be warranted rather than a storm sewer change or if a utility relocation is proposed, the Regional Utility Coordinator shall advise the designer so that the storm drainage design can be finalized.

ROADWAY AND UTILITY FIELD INSPECTIONS

Distribution of Prints

- After Roadway P.F.I. and F.I. evaluation is complete and approval received, the

appropriate changes must be incorporated into the plans. The Project Manager shall distribute notification of where the plans are located in Falcon for the Utility F.I. in accordance with the Utility Field Inspection Form LD-428.

- The computer plotted cross sections are located in Falcon along with the CADD plans.
- The Project Manager/Consultant is to be notified of the Utility Field Inspection on all projects. Check the appropriate data on the Utility Field Inspection Form.
- The Location and Design Division maintains the LD Forms and they are available for applicable projects at: <http://vdotforms.vdot.virginia.gov/>

Utility Test Hole Data

- The underground utilities test hole information shall be shown on the Underground Utilities Test Hole Information Sheet or on a plan summary sheet. The information contained on the test hole information sheet shall include the utility owners, contact name(s) (if available), addresses, phone numbers and the legend for all known utilities.

CONSTRUCTION PLANS

- Required utility adjustments will be determined by the Regional Utility Coordinator.
- The utility test hole information will not be shown on the construction plan sheets, but shall be included on the detail drawings for retaining walls, bridge footings, signal structures, special design items, etc. Include any utility information that may be beneficial to the Contractor, (i.e., 17" (430 mm) between top of waterline and retaining wall footing, top of utility elevation, etc.). Caution must be exercised to ensure that the data being shown applies to facilities that will still be in place during the construction of the highway project.

INSERTABLE SHEET

Current insertable sheets are available on Falcon DMS, under the UPC# eng-ser/Division/minsert or insert, for insertion into applicable plan assemblies.

- UNDERGROUND UTILITY TEST HOLE INFORMATION (A-41 and MA-41).