

Utilities Section Update

DeIDOT Winter Workshop, 2015
February 19, 2015

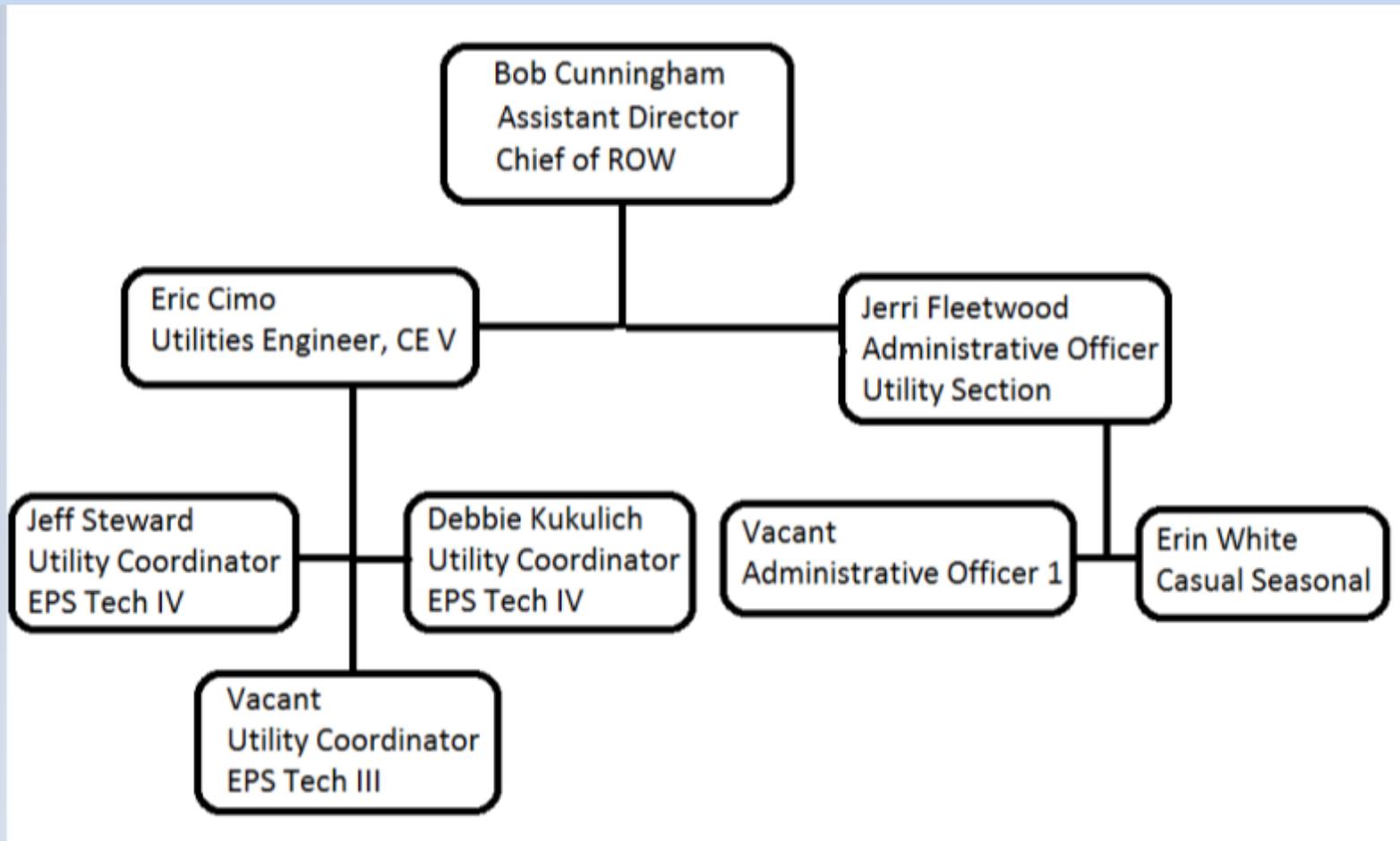
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Agenda

- Overview of section and structure
- Section Updates
 - Utility Relocation Checklist
 - Environmental Permitting
 - Utility Permit Application (UPA)
- Designation/Quality Levels and One-Call
- Design/Coordination Comments

Utility Section Structure



Through open-end contracts with Cardno, SoftDig, and So-Deep will utilize also Cardno, Century and/or RK&K to coordinate projects as necessary.

Utility Checklist (Internal)

- Current checklist can be found on DRC (along with other info related to utils): <http://www.deldot.gov/information/business/drc/utilities.shtml>
- Designed to better help designers and coordinators understand the items needed in order to better coordinate utility work.
- Provides better documentation for files and keeps everyone on the same page
- Required for each utility company associated with project whether work is reimbursable or not.
- Utility coordinator will notify Project Manager to initiate checklist.
- Needs to be completed prior to sending out NTP's.
- Mechanism used to get approval on any advanced utility relocation work.
- Has been in use for approx. 6 to 7 months now.
- Let the Utility Section know if there are questions.

Environmental Permitting

- Permitting is based on construction activities and not LOC/LOD of project.
- The individual utility companies are required to obtain any necessary permits associated with relocation work unless State contractor is performing the work.
- If requested or indicated by company, utility section will send an Environmental NTP to companies with stipulations outlined.
- If timeframe runs out, DeIDOT will be responsible to reimburse utility company for fees associated with obtaining permits even if their relocation is non-reimbursable.
- DeIDOT will not proactively check for permits leaving full responsibility to utility companies.
- Environmental section will document responsibilities of State contractor in documentation to agencies.
- Utility statement will document responsibilities of State contractor vs. utility company.

Utility Permit Application (UPA)

- Originally developed to handle utility permit process.
- Recently created a “project” module to coordinate State projects.
- Coordinators will send out project submissions through this system and companies will provide mark-ups/comments back.
- Creates repository of information associated with projects and provides ability to look back on submissions.
- Holds everyone from internal staff to utility companies more accountable as it documents when the project has been accessed and when information is provided.
- Makes information more accessible to everyone involved in the project providing better coordination, sharing and transparency.
- Have recently been selecting projects to “test” but will now enter all new projects into system moving forward.
- Links in to the Primavera and permitting system to show active permits in project area.

Utility Permit Application (UPA)

- <https://services.deldot.gov/UPAInternal/> (available through intranet)
- <https://services.deldot.gov/UPAExternal/> (link utility companies use)
- Important Notes:
 - Username and log-in required.
 - Must use internet explorer 9 or newer (Mozilla Firefox is another option)
 - Pop-up blocker must be turned off
- Let myself or Jerri Fleetwood know if there are issues or questions.

Utility Permit Application (UPA)

The screenshot displays the DeIDOT Intranet homepage. At the top, the navigation bar includes the DeIDOT logo with the tagline "Transparent Efficient Accountable Measured" and the "INFORM GIS MAPS" logo. A search bar is located on the right side of the header.

The main content area features a central banner for a townhall meeting. The banner includes a video player with a play button and the text "missed the Townhall Meeting? Watch it here." Below the banner is a "Popular Links" section with three columns of links:

Popular Links	Press Releases	How Do I?
Acceptable Use Policy	Donated Leave	State Holidays
Admin Bldg. Zone Captains	Employee Survey	State Mail SLC Codes/Procedures
Citrix Applications Primary Link Alt Link	Find a Notary Public	State Travel Policy (Chap.11)
Classifieds	FOIA Regulations	IT Service Requests
Conference Rooms	Photo/Graphic Requests	Support Services Requests
DelDOT Policy Implements	Lost and Found	Time and Labor
Functional Organizational Chart	Reserve a Fleet Vehicle	View Job Postings
	Occupational Safety	Nominate Someone for "You

Other sections on the page include:

- ALL OF DELDOT:** Intranet Home, Telephone Directory, Useful Websites, Geographic Info Systems, Useful Tools, Facilities, IT Support, My Apps, My Benefits.
- PUBLICATIONS:** Press Releases, Document Browser, Media Gallery, Transportation Legislation, DMV Legislation, Kudos, Newsletter.
- COMMITTEES:** Employee Advisory Board, Leadership Academy, Morale Committee Members, Strategic Leadership Team.
- LOCAL WEATHER:** New Castle County (31° Overcast), Kent County (33° Fog/Mist).
- DIVISIONS:** Office of the Secretary, DMV, DTC, Finance, Human Resources, Maintenance & Operations, Planning, Public Relations, Technology & Support Services, Transportation Solutions.
- DELDOT DASHBOARD:** A gauge graphic with a rainbow arc.
- PERFORMANCE MANAGEMENT:** A graphic showing a race car.
- HEADLINES:** A section for news updates.

The browser address bar shows "mydot.dot.state.de.us". The page footer contains the URL "https://services.deldot.gov/UPAInternal".

Utility Permit Application (UPA)

← → ↻ <https://services.deldot.gov/UPAInternal/> 🔍 ☆ ☰



Utility Permit Application - DOT Portal







Transparent Efficient Accountable Measured

PLEASE LOGIN

User ID :
Password :

[Forgot Password](#)
[Contact Support](#)







DELASOFT

Utility Permit Application (UPA)

← → C <https://services.deldot.gov/UPAInternal/mainform.aspx> ☆ ☰

Utility Permit Application Welcome [eric.cimo](#) [My Profile](#) | [Logout](#) | [Contact Support](#) | [Help](#)

My Dashboard [Permits](#) [Projects](#) [Reports](#) [Administration](#)

Sort by Column ▾ Filter on Column ▾ Filter Text

[Add New](#) [View/Edit](#) [Search](#)
[Reset Search](#) [Apply Selection](#) [Clear Selection](#)

Filter: Draft In Progress With Utility Company Archived [Export](#) [Extended Map](#)

Assignment: Action Required My Involvement All

ID	State Contract/Primavera ID	FED AID ID	Assign To	Phase	Submission Date	Project Site	Project Status	Local	
181	T201200903	11-03243	ESTP-0024(15)	Jeff Steward	Survey	2015/02/06	Sussex	In Progress	24 at 5/23 Intersection Improvements, Sussex C
161	T201407105	13-01141	EBRN-N009(14)	Deborah Kukulich	Survey	2015/02/05	New Castle	In Progress	Br. 1-090 on 141 (Baas Rd) over 13, New Castl
144	T201220006	12-12008	ESEA-2012(09)	Jon Hemes	Preliminary	2015/02/04	New Castle	With Utility Company	St. Georges Streetscape Ph 2, New Castl
543	T201507201	15-02278	EBROS-R275(02)	Deborah Kukulich	Concept	2015/02/03	Kent	In Progress	Br. 2-275A on Park Brian Rd.
142	T201507302	15-03016	EBROS-S016(04)	Deborah Kukulich	Survey	2015/02/03	Sussex	In Progress	Br. 3-015 on SR 16, Beach Hay.
141	T201407502	14-02126		Deborah Kukulich	Semifinal	2015/02/03	Kent	In Progress	Br. 2-105A on Peachtree Run Rd
123	T201011301	10-03020		Alan Martenay	Final	2015/01/23	New Castle	With Utility Company	301, Contract 2B
121	T201100601	10-00044	STP-S018(11)	Jeff Steward	Preliminary Revision	2015/01/22	Sussex	With Utility Company	US 9 & SR 5 Intersection. See project descriptio
101	T201468008	14-99011	ESTP-2014(15)	Eric Cimo	Survey	2015/01/08	Sussex	With Utility Company	Safe Routes To School, Cape Henlopen Schoo
81	T201220011	12-12011	ESEA-2012(12)	Jon Hemes	Survey	2014/12/30	Sussex	In Progress	Ocean View - Central Avenue from Woodland A
61	T201507301	15-03013	EBROS-S013(04)	Deborah Kukulich	Survey	2014/12/23	Sussex	With Utility Company	replacement of Bridge 3-299 on S013 Bi-State I
48	T201407501	14-03132	EBHOS-S013(02)	Deborah Kukulich	Preliminary	2014/12/10	Sussex	With Utility Company	BR 3-152 on Central Avenue over Broad Creek
44	T201307102	13-01350	EBROS-N350(01)	Deborah Kukulich	Semifinal	2014/12/10	New Castle	With Utility Company	BR 1-264 on I050 Old Newark Road over Coal
43	T201200802	12-14777	ESTP-K356(12)	Jeff Steward	Semifinal	2014/12/10	Kent	With Utility Company	HEP KIC, SR10 & SR15 Intersection Improve
42	T201300302	13-00044	ESTP-S113(19)	Jeff Steward	Survey	2014/12/10	Sussex	With Utility Company	HEP SC, US 113 at Millboro Towne Square/Ta
41	T201400301	13-00045	ESTP-S113(21)	Jeff Steward	Preliminary	2014/12/10	Sussex	With Utility Company	HEP SC, US 113 at Ennis Road/North Street
21	T201500103	14-41414	ESTP-H021(06)	Eric Cimo	Survey	2014/12/09	New Castle	With Utility Company	SR 41 & Faulkland Rd.
1	T201406201	14-06201	ESTP-2013(38)	Eric Cimo	Semifinal	2014/11/25	Kent	Completed	Various Locations in Kent County...see contract

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SUE Designation/Quality Levels

- Information presented is mostly taken from a free online training course titled Introduction to Utility Coordination for Highway Projects (FHWA-NHI-134006A)
- See this training for other relevant references.
- Strongly suggest anyone that hasn't taken the course do so.



What is SUE

- Subsurface Utility Engineering (SUE) is “an engineering process...used primarily by State transportation departments (DOTs), local highway agencies, utility companies, and highway design consultants. The SUE process combines civil engineering, surveying, and geophysics. It utilizes several technologies, including vacuum excavation and surface geophysics.”
- Also defined as a branch of engineering that involves managing certain risks associated with utility mapping at appropriate quality levels... (ASCE 38-02)

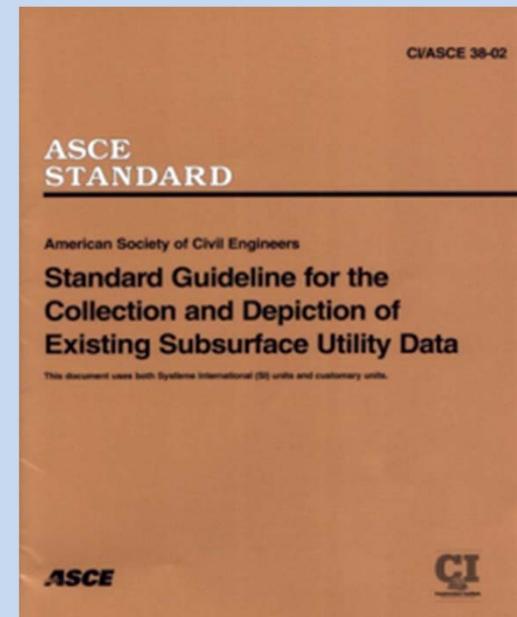
What is SUE

- SUE is:
 - An engineering practice
 - A professional engineering service
 - Deliverables are signed and sealed by a PE
- It is NOT:
 - Survey of One-Call or “Miss Utility” Marks
 - CAD file depiction of record research
- To read more about SUE, visit FHWA’s website:
<http://www.fhwa.dot.gov/programadmin/sueindex.cfm>



What is SUE

- The American Society of Civil Engineers' (ASCE) *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, CI/ASCE 38-02* outlines the standard of care for SUE.
- It details many things including:
 - Available technologies
 - How info can be conveyed
 - Responsibilities
 - Quality levels
 - Relative costs and benefits

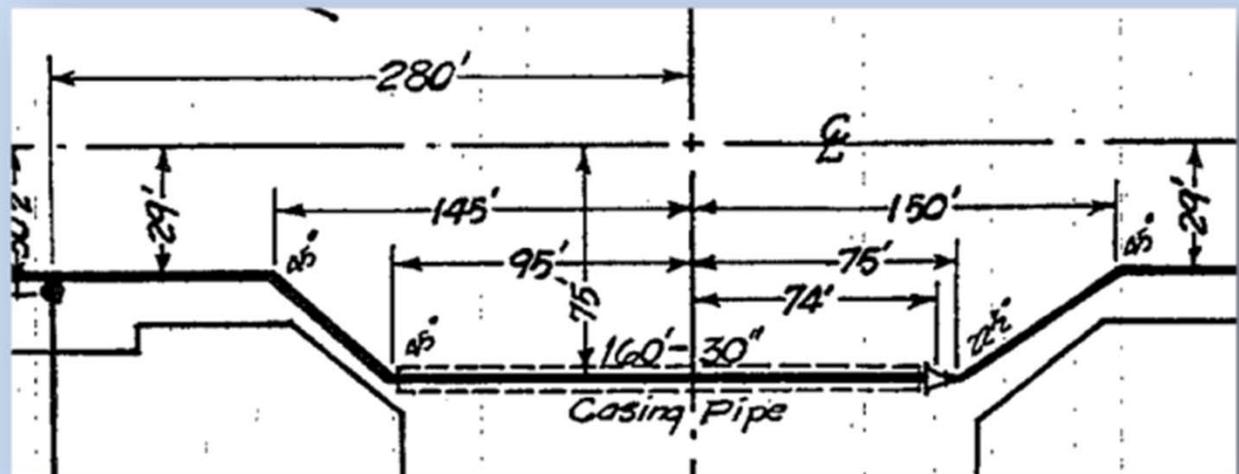


SUE/Quality Levels

- Four Quality Levels – A, B, C, and D.
- Designers should always attempt to avoid utility impacts within project limits. If designers have information obtained through SUE and associated quality levels, this will help.
- Because moving utilities is very costly, both in time and money, it is in everyone's best interest to work around all existing subterranean (and aerial) structures.

Quality Level D Description

- **QL D** is the most basic level. Information is derived from existing records or oral recollections, extensive research of utility records, and pertinent as-built information from utility owners. This information is then plotted on the drawings.
- This is what we get from companies in our standard design process without SUE.



Quality Level C Description

- **QL C** is the next best level of information. It is obtained by going to the field to observe any utilities present, by surveying and plotting all above-ground utilities, and by correlating this level of information to that gained from QL D.
- Since a project survey obtains, or should obtain, all above-ground utility features (utility poles, pedestals, valve covers, MH's, clean outs, etc.), we obtain QL C information through our standard design process.



Quality Level B Description

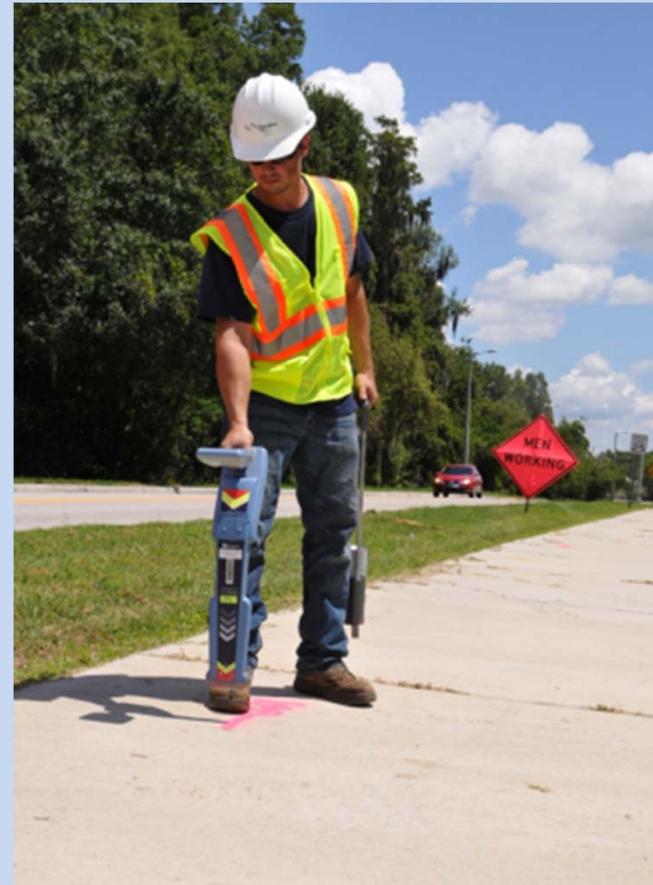
- **QL B** is a significant step up in the quality of information from C & D. B-level information is obtained by examining surface features, such as pipe and cable locators, to determine the existence and approximate position of subsurface utilities.
- This is what we get when we request designation from SUE firms.

GPR



Designation, QL B

- **Designating:** The process of using a geophysical method or methods to interpret the presence of a subsurface utility and to mark its approximate horizontal position (its designation) on the ground surface (from ASCE 38-02).
- Given the constraints of a site, SUE firms will use various methods and types of equipment to obtain subsurface info.



Quality Level A Description

- Lastly, **QL A** provides near certainty about the location of utilities. To obtain this level of information, the SUE provider uses all information gathered in the previous QL's, *creates a matrix showing all possible conflicts (if applicable)*, and then uses that information to conduct minimally invasive excavations to expose and verify the location of selected subsurface utilities.
- The above-referenced responsibilities are shared between our design team and our SUE consultants. *Design should provide the matrix if utilized (info on the Utility Conflict Matrix (UCM) will be provided later)* and determine the location of potential conflicts. Our SUE consultants will utilize that info. and info. from previous QL's to test hole.



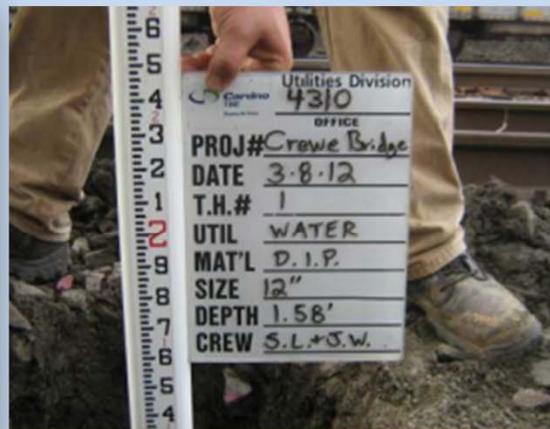
Quality Level A Description

- Obtaining test holes is also referred to as **locating**. From ASCE 38-02, locating is defined as the process of exposing and recording precise vertical and horizontal location of a utility.
- A **minimally intrusive excavation method** is used to perform test holes. From ASCE 38-02, this a method of excavation that minimizes the potential for damage to a structure being uncovered. Typical method for us is vacuum truck excavation.



Quality Level A Data

- All information is surveyed and accurate to 0.04 ft.
- Size and configuration of the exposed utilities are documented (i.e. pipe diameter; width, height and configuration of duct banks; pipe material; etc).
- Deliverables are signed and sealed with a professional engineer's seal (ASCE 38-02; 4.1.12)



Benefits of SUE

- SUE does have significant costs, but there are numerous benefits to utilizing, including:
 - Avoiding Utility Relocations (should be first goal of any designer/manager)
 - Reducing project delays due to unexpected conflicts.
 - Improving overall safety on projects.
- The potential financial return on investment is one of the major benefits.
 - According to a Purdue University effectiveness study of 71 projects in 4 States (NC, TX, VA, OH), there was an **average savings of \$4.62 for every \$1 spent on SUE**. The cost of reaching QL's B & A was less than **0.5% of the total construction costs**.

When to Consider SUE

- Consider using SUE on projects with:
 - A high level of utility congestion is expected.
 - A high probability of utility conflicts is expected.
 - Locations in urban or suburban areas.
 - Poor previous experience with utility owners who are unable to provide timely or accurate information.



SUE Considerations

- Try to anticipate needs up front.
- When determining QL B or designation needs, it is often times more cost effective to get entire project limits designated as opposed to small pieces here and there as we often need to go back and get additional SUE information later.
- Giving the full project limits should allow the SUE firm to get a better picture of utilities throughout the entire project leading to more accurate data. This can also decrease the need for test holes.
- As an example, one of our SUE firms spent approx. \$32,000 to designate different areas of a project at various times and to obtain test holes. If the whole project limits were designated up front (assuming same amount of TH's would have been needed) estimated costs were \$16,350.

More Information on SUE

- To gain more information also reference:
 - NCHRP 20-05, Synthesis of Information Related to Highway Problems
 - SHRP 2 R15(B), Identification of Utility Conflicts and Solutions...Utility Conflict Matrix (UCM)



One-Call (Miss Utility)

- One Call is a requirement of DE Code. See Title 26, Chapter 8...Underground Utility Damage Prevention and Safety Act.
- The one-call system (known as Miss Utility in DE) plays an integral part in our process during design and prior to construction.
- When tickets are put in with the one-call center, they reach out to any identified co's within the limits of the ticket and requires the co's to respond.



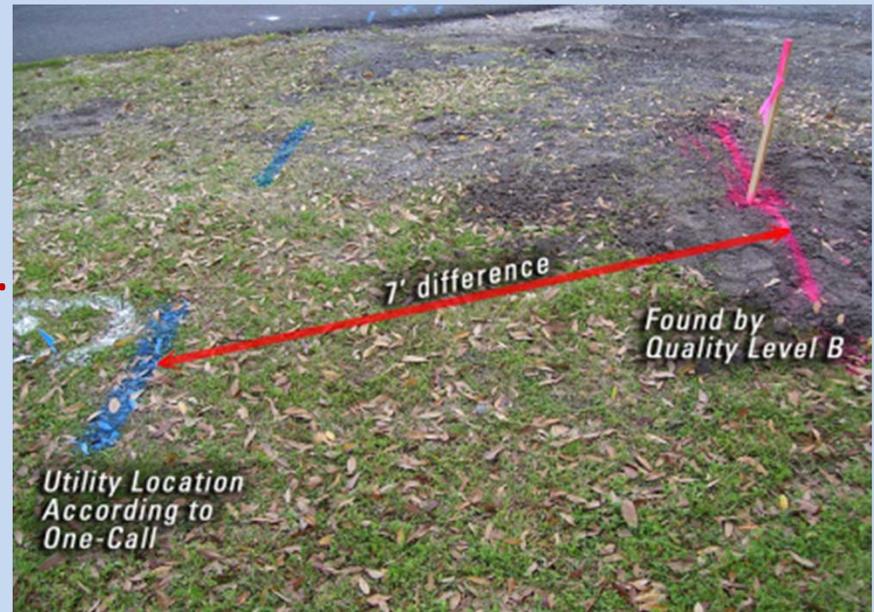
“Miss Utility” of Delmarva
UTILITIES SERVICE PROTECTION
CENTER OF DELMARVA, INC

One-Call (Miss Utility)

- Design tickets are put in early in design to identify which utilities may be within the project limits. This is how we start the coordination process.
- Utilities will send in system maps and/or as-builts in response to the design ticket.
- It is highly unlikely that companies will field marking facilities in response to a design ticket.

One-Call (Miss Utility)

- Prior to anyone breaking ground, an excavation ticket must be placed with Miss Utility and all companies must provide marks or otherwise clear the ticket. If a company does not clear, the excavator needs to make contact with the company prior to performing any excavation.
- It is not unusual for there to be conflicts with info. shown in our const. plans and the info. marked in the field by co's as part of the ticket. By law, the excavator has to abide by the field marks, but they should hold info. provided in the plans in addition to the marks to ensure there are no conflicts.



One-Call (Miss Utility)

- It is always important to provide detailed information in the ticket submission, and provide construction paint in the field if necessary, to ensure accurate information is provided by companies and to help limit the amount of time they have to dedicate to the response as they are under strict time constraints to respond to the many tickets that come in.
- There are timelines associated with the ticket request and for how long the marks are valid for.
- Marks and information from companies is only valid for the specific description provided in the ticket submission.
- Visit the Miss Utility of Delmarva website for more info:
<http://www.missutilitydelmarva.com/>

One-Call (Miss Utility) vs. SUE

- Miss Utility is a risk based system used for excavation that is also useful during design as previously mentioned
- Typical Miss Utility locator uses one piece of equipment
- The information received through Miss Utility has no guarantee of accuracy
- Miss Utility locator has a narrow focus and limited by time associated with clearing a large number of tickets within the required response time outlined by law.
- Survey of Miss Utility paint marks is NOT QL-B.
- SUE provides much more accurate depictions of utilities within project limits.

Design/Coordination Comments

- Everyone should have general knowledge of the Utility Design Manual (can be found on DRC). Generally speaking, it provides details for design, the permitting process and the coordination process associated with State projects.
- Companies are generally given 30 days to review and respond to project submissions.
- It is imperative that information obtained from utility companies and/or SUE is shown within the plan set prior to the next plan submission (internally and to companies). If coordinators notice information is not shown, we will notify the designer and will not send plans out until corrected.

Design/Coordination Comments

- Many utility companies are interested in obtaining .dgn or .dwg files on projects. In some cases, the company will provide their existing facilities and proposed relocation back in the same format. In other cases, it will help them work with their existing systems to provide more accurate feedback even though not a CAD file.
- It is important that coordinators know what and when something has changed in the plan set between plan submissions during design. This will enable the utility companies to be notified of the change so they can evaluate potential conflicts and the need for redesign. The UCM could aid in tracking/resolving potential conflict that result from various design changes.

Design/Coordination Comments

- Be sure lighting, signals, ITMS and aerial facilities are reviewed as part of the design to ensure there aren't unanticipated conflicts in the field. Just because a pole is not in conflict in the plan view does not mean there is not an aerial conflict between the cables and the proposed features and/or construction practices associated with building the project.



Design/Coordination Comments

- Stakeout:
 - The Department and/or State contractor is expected to provide stakeout for utility companies including proposed cuts, fills and other proposed construction that could affect how the utility is relocated.
 - We will provide stakeout of utility poles or other utility structures if the utility company provides stations and offsets or confirms a list generated by design in writing. We should not stake out proposed location of u.g. lines.
 - Stakeout is important and helps lessen potential for conflicts during construction of the project while ensuring companies have information needed to perform work.
 - Timing and responsibility of stakeout will depend on when the relocation work is to be performed. Advanced relocation work will likely require stakeout to be provided by the Department.



Conclusion

- Best practice is to obtain the most accurate information on facilities during design and to not impact utilities on projects.
- Ultimate goal is to have determined, evaluated and planned for all utility conflicts so there aren't unexpected conflicts that arise in the field.
- Questions??

