DISTRICT 4 DESIGN
NEWSLETTER
June 2016

Why Do We Review Utility Permits?
By: Eugene Khashper

I was recently asked why our office reviews utility permits. It's a good question. When talking about utility permits, there can be even more questions such as:

- Who requests a utility permits?
- When should you request a utility permit?
- What is expected when you receive a utility permit for review?

These questions and more will be addressed in a future article.

So, why does the utility office review utility permits? The short answer – to reduce future utility conflicts.

The following is a brief discussion on how and when the District Utility Office gets utility permits.

Any Utility Agency/Owner (UAO) that wants to place their facility within a FDOT right-of-way, must request a utility permit online via the One-Stop Permitting (OSP) website. All utility permits are managed by the OSP website. If, for any reason, the UAO cannot submit their application online, they must submit a paper copy of the Utility Permit Request (Form 710-010-85) to the appropriate operations center. The operations center's permit coordinator will then enter it online for the UAO. Once their application has been submitted, the permit coordinators receive a notification and looks in GIS for the location of the proposed utility work.

After verifying that the utility work is actually within the FDOT right-of-way and the state road number is correct, the permit office has three initial choices depending on the limits of the project:

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Why Do We Review Utility Permits? continued

1. When the proposed utility work falls within limits of a FDOT project that is currently under construction – the permit coordinator forwards the permit application for review by the construction personnel: construction PM, CEI team, and contractor. Usually, our office does not see these permits unless we are specifically asked to review.
2. When the proposed limits of the utility work fall outside any projects planned in our 5-year work program – the permit coordinator issues a permit. Occasionally our office gets copied on these permits and we have the opportunity to make comments.
3. When the proposed utility work falls within the limits of a future FDOT project, the permit coordinator forwards this permit to our office for review.

Why do we get notified and assigned to review these utility permits?

Firstly, we get notified of the utility permit within the limits of a future project in order for our design team to review and eliminate future conflicts. Our office acts as the point of contact between the operation centers' permit coordinator and you - the design team. Secondly, so that we can review the utility permit as well.

Why do we review utility permits?
Just like you have the Plans Preparation Manual (PPM) our office has the Utility Accommodation Manual (UAM). Most of you know about things such as 4ft offset from the face of curb for Aboveground Fixed Utility (AFU), or a minimum of 3ft for underground installations is standard. However, it is not always that simple.

For example, when an underground line is installed in an open trench within unpaved areas, the allowed depth is 30 inches. However, when a utility is being installed via the Horizontal Directional Drilling (HDD) methods under the pavement with reamer sizes of 8 inches or more, without establishing the depth of the water table or confining layer, the depth of the underground line should be ten (10) times the reamer diameter, measured from the top of the pavement to the top of the reamer.

How about a situation with guardrail? Let's say the UAO requests a utility permit to install their water line via open trench, at 3ft deep under the shoulder. Sounds good? Not if you plan to have a guardrail along that shoulder, as guardrail posts are almost 4ft deep.

Another example, is when a communication company wants to place a new fiber-optic line at the back of the right-of-way. They now think: "For sure, we are out of trouble". According to the 2010 UAM, which states that they have to be at least 3ft away from the back of the right-of-way, as this is where we want to have future utility poles.

As you can see, even though a proposed utility installation may not be in conflict with your project, it could still be in violation of the 2010 UAM. There are many other conditions for utility installations and permit application that require a detailed review against the 2010 UAM that we provide during 'our review'. We hope this helps answer the question of why we review utility permits.

A Comparison of Surveying Methods and Costs
By: Jeff Smith, P.S.M.

Have you ever had the need to determine (or guess) the total cost for surveying and Subsurface Utility Engineering (SUE) for your project, taking into account schedule, safety, and the accuracy of the survey deliverables? If so, this article may be for you.

For a portion of this year's Surveying & Mapping unit's business plan, we thought creating a survey methods comparison table would be useful as a resource tool for assisting Surveying & Mapping staff, Consultant Management Project Managers, Design Section Leaders, or anyone else needing an estimate for surveying and/or SUE to accomplish their project's goals.

Paul Doll from the Surveying & Mapping unit, with assistance from a few of our district-wide consultants, identified 6 different surveying methods for collecting 3-D topographic features and surfaces. The table (see below) identifies each survey method and includes: the total cost per mile for horizontal and vertical control, full design survey, drainage, utility designates, and office support. Also in the table are the cost of utility locates on a per hole basis, the completion time from the Notice to Proceed to the final products delivery, safety factor, cost for field crew time to locate obscured areas, the horizontal and vertical accuracies, and the best type of roadway to use each method for.

The final surveying deliverables include: topography, DTM, baseline and existing R/W lines, utility designates, the PNC sheet(s) and drainage. The utility designates are based on 6 utilities per mile (and should be adjusted on a project's specific scope and needs). Also, the utility locates cost an average of $550 per hole.

Obscured areas (mainly in landscaped areas or under bridges) will vary but to help in estimating, the cost for both a field survey crew and office support time is about $1,500 per day.

In summary, going for the lowest cost or shortest time frame may not be the best method for a project. All of the factors need to be considered and also coordinating with Surveying & Mapping staff is critical in selecting the best method for your project.

SURVEY METHODS COMPARISON TABLE

Survey Method	Total Cost $/mile Includes Control, Full Design Survey, Utility Designates, & Office Support	Start to Finish Duration (work days) NTP - Final Products	Safety Factor (1 - 3) 1 = safest	Possible Obscured Areas (req. addl. ground survey)	Accuracy (Horizontal & Vertical)	Best type of Roadway for Method	Notes
Conventional Survey	$40,000	52	2	N/A	H = +/- 0.03'-0.05' V= +/- 0.03'-0.05'	All types but LA Facility	
Static Scanning	$41,000	44	2	3-man crew + tech support = $1500/day	H= +/- 0.03'-0.05' V= +/- 0.03'-0.05'	All types but LA Facility	
Helicopter LAMP	$55,000 Rural $60,000 Urban & Interstate	40	1	3-man crew + tech support = $1500/day	H= +/- 0.20' V= +/- 0.05' pavement	All types	
Helicopter LIDAR	$55,000 Rural $60,000 Urban & Interstate	40	1	3-man crew + tech support = $1500/day	H= +/-0.50' V= +/- 0.25' pavement	All types	This has not been used in this district
Fixed Wing LIDAR	$55,000 Rural $60,000 Urban & Interstate	40	1	3-man crew + tech support = $1500/day	H= +/-0.50' V= +/- 0.25' pavement	All types	This has not been used in this district
Mobile LIDAR	$49,000 Rural $55,000 Urban / $60,000 Interstate	20	1	3-man crew + tech support = $1500/day	H= +/-0.06' V= +/- 0.05' pavement	All types	Two projects currently underway
	Note: Based on a 1 mile project	Final Products:		Days vary on # of obscured areas		Types of Roadways	
	Note: Utility Locates = $550/Hole	Topo				2 lane undivided	
		DTM				3 lane undivided	
		Baseline & R/W Lines				4 lane undivided	
		SUE Designates	(Utility Designates are based on 6 utilities/mile)			5 lane undivided	
		PNC Sheet				4 lane divided	
		Drainage				6 lane divided	
						Limited Access Facility (LA)	

Low Profile Quandary
By: Tim Brock, D.U.E.

Design is charged with developing a quality set of construction plans that are biddable and constructible. The Design team must identify all utility conflicts with their proposed design and work with the utility agencies to resolve each conflict. The utility resolutions can be found in what we call a Utility Work Schedule (UWS) that is prepared by the Utility Agency/Owner (UAO) with the overview and assistance of the Design team. Once executed, it becomes part of the construction contract documents. This effort to clear the utilities is part of the commitment and cooperation we seek in developing a quality plan set. One critical issue that should never be overlooked is communication. We are a production company and as such, timing is critical for the successful project delivery. The UWS should already be in the works as we determine the constructability aspects of the project. The UAO and the Design team attend many meetings to identify solutions and to ensure that we have no utility conflicts with the final construction plans. This means Design, as well as the UAO, can make changes in order to get to a point where both parties can accommodate each other and document it in the UWS (during design phase). If we short change this tried and true coordination approach, by simply placing a plan note into the set of construction plans, this would not be a quality solution.

One utility coordination issue is with mast arm installation and overhead utility line conflicts. One solution that has been discussed over the years is to simply put a plan note that states the contractor shall use “low profile” equipment. The issue with “low profile” drilling rigs as well as other types of “low profile” construction equipment has been debated for several years (even before the OSHA rule change for Derricks and Cranes back in November 8, 2010). The fundamental issue has been: can we dictate means and methods to the contractor? We have been told no. So we try to perform (during the development stage) a good construction review of the contract plan set that addresses one point: Can we build this project with no utility conflicts following our normal and customary construction means and methods? If not, we must then identify why we can’t and have the utility provider develop a UWS to ensure that once we get the contractor on board we are ready to construct. Our goal remains the same: design to avoid utility conflicts, regardless of who pays. If the service provider is in FDOT’s R/W by permit, they pay if we can’t avoid them. If they are within FDOT’s R/W in a different ‘legal position’, then the utility office gets involved to create agreements in order to reimburse the UAO (once the Office of General Council approves).

If we simply have a note in the plans that tells the contractor that they must pay if this or that happens, or put all costs associated with a particular pay item in the plans, then that translates to us (the taxpayer) paying which may be illegal. We must have all utility conflicts identified and cleared during design, which is why we spend so much time and money addressing this issue. So for any mast arm installation, you need to have all utility conflicts addressed for overhead obstructions. There are at least four separate construction operations that must take place for every mast arm installation. They are: drilling the shaft hole, erection and placement of the steel cage, erection of the mast arm upright (and arms) and finally the placement of the concrete. These four operations can have different strategies to reduce or eliminate utility conflicts, however, each of these four operations must be addressed during design. The associated UWS must explain each solution as it is tied to the project traffic control plans and sequence of construction. Each quality set of construction plans will have specific situations that demands coordination, cooperation and specific commitments between FDOT and the utility industry, all during the design phase.

New/Relocated Employee Introductions

Gaverio Dixon - Surveying and Mapping

Please welcome Gaverio Dixon, the newest member of the Surveying and Mapping Unit. He is in Section 1 in the position of Survey and Mapping Specialist II. He has seven years of surveying and mapping experience, having worked in private practice for 5 years prior to joining the Department of Transportation (District 6) in 2014. He is a Certified Survey Technician (CST), and is currently studying Geomatics Engineering. He plans to use his education, coupled with his surveying experience, to continue pursuing his goal of becoming a Professional Surveyor and Mapper. Mr. Dixon has a son that is two years old whom he adores more than anything in the world. He loves sports, and spending quality time with his family.

Erika Ventura-Garcia - Surveying and Mapping

I was born and raised in San Juan, Puerto Rico. I hold a Bachelor's Degree in Labor Relations from the University of Puerto Rico, Rio Piedras Campus, a Master Degree in Labor Relation from the Inter-American University, Metropolitan Campus, and a Law Degree from the Pontifical Catholic University of Puerto Rico. I am admitted to practice law in the Federal and State Court in Puerto Rico. I worked at District 6 in the Surveying & Mapping unit for 2 1/2 years before coming to District 4 as the Title and Documents Supervisor. I am a single mom of an adorable 8 year old boy, so he keeps me active. On my weekends, I drive back and forth to Bartow to visit my grandmother, since I don't have family nearby.

Upcoming Events

- Service Pin Ceremony - July 13th
- D4 Annual Awards Ceremony - September 13th

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