

**TEO Signal Committee Meeting Minutes**  
**Meeting Date: 10/13/2015**  
**Water's Edge Conference Rm C**  
**Meeting Time: 9:00am – Noon**

**Meeting Attendees:**

Jerry Kotzenmacher	Sue Zarling	Mike Posch	Robin Delage
Peter Skweres	Ed Andrajack	Nicole Flint	
Jim Deans	Mike Gerbensky	Mike Fairbanks	Ben Osemenam
Clint McCullough	Al Espinoza	Mark Korwin-Kuczynski (phone)	
Chris Bosak	Jeff Knofczynski	Tod Becker	

**Old Business-**

**Flashing Yellow Arrow** – A consultant will be offering training on the flashing yellow arrow spread sheet tool. This tool will help assist the flashing yellow arrow programmer to help determine when it may be appropriate to allow the flashing yellow arrow to operate. The training is scheduled for Wednesday November 4<sup>th</sup> at SRF Consulting offices in Plymouth. The training will coincide with the regular NCITE Intersection Traffic control committee meeting. See attached flyer.

There was a fatality at a FYA on a high speed road in Dakota County. A high school student making a left turn failed to yield to an oncoming truck and the passenger in the turning vehicle was killed. This is the first fatality at a FYA in Minnesota that we are aware of.

**Cabinet/Controller Committee** – The committee has not met for some time. The committee was originally set up to better assure a uniform and standard application of controller software upgrades. There are several software upgrades currently in use for the ASC/3. To date, this does not seem to be a problem as it once was in the past. The last statewide uniform software upgrade was several years ago. In the past, OTST kept a “software version letter” that documented the version of the software being used. This document may require updating. It was requested to set up a committee meeting to review current practices. It was discussed that we may want to look at going out on a regular schedule to update all controllers across the state. This can be discussed at the next committee meeting. It was indicated that currently the ET’s are updating the software when doing PM’s. They will also update a controller if there is a “substantial” change.

**Cabinet Wrap** – OTST had begun looking at guidelines for cabinet art wrap/painting. In the meantime, MnDOT management established a “Public Art Accommodation on the Right of Way” team. This team is tasked with creating MnDOT policy for art on all public property including signal and lighting cabinets. OTST will provide guidance to this team in regards to the policy and how it may affect traffic signal and lighting components. Janelle Anderson is the OTST representative.

**Preemption Cards** – Sue and Jim met with CTC and discussed the use of their preemption cards. The benefit of these cards is MnDOT would have an off the shelf preemption card that can be easily replaced rather than our current “homemade” preemption boards. We had tested older versions of the card and provided comments to CTC. They now have a newer version that they said they would send a sample to us for testing all with references of other agencies using the card. Jim will check with Ron C. to see if he has received the card. When the card is ready Ron will need a TE before doing a field install. Two 12 conductor 14 AWG signal control cables should be being installed on new signals where there is railroad preemption. These cables are required to support the future CTC cards.

## **New Business**

**Auto Backup to Data Key** – On the ASC/3 controller, there is a data key that can be pulled from an in use controller and placed into a new controller. In the past, there were issues with the auto download programmable option on the controller. New software has corrected this option. The committee now recommends that all ASC/3 controllers utilize the “auto backup to data key” option. This option will back up any changed data in the controller, after 20 minutes from the change. It is found pressing (MM, 1, 7, 1) on the controller. Data can also be backed up manually but it is preferable to have it programmed to automatically do this. The software version of the controller must be verified before this option is enabled. Older versions of software do not support this feature correctly. Operators may want to turn this feature off if a special traffic control plan is used for an event or detour and then turn back on when the standard timing is resumed.

**Maintenance of existing signals** – It has become unpractical for MnDOT locators to be able to go out on all projects to locate multiple times during the project when the contractor has been making changes to the system during that period. MnDOT locators do not know what the changes are while the contractor is aware of what they have been doing. The sample special provisions currently state that MnDOT will do the initial locate and then contractors are responsible to locate their work up until the project has been completed and MnDOT has accepted the project. MnDOT should typically not be responsible for the locates until the as built plans have been turned in. The standard special provisions posted on the web cannot cover 100% of all the scenarios that may exist, therefore additional language may need to address special situations on specific projects.

Anyone having issues with MnDOT inspections and construction staff not adhering to our contract documents should contact Alex and provide him the information regarding the issue.

If you have suggestions on how the language could be updated send your comments to OTST.

The dispatch office is not always getting the name and telephone number of the person responsible for the contractor to receive the locates. We need to work on getting this information to them.

It was suggested that we may be getting more utility hits since this went in to place. The question was if there has been confusion and that is causing the hits. Some felt this was not the cause of the hits, but Jim can look at some of the situations surrounding the hits to get a better idea if this is a cause.

**APS Ped Signs** – There is potential for sharp edges on the APS sign mounted to the APS unit if the sign does not fit the bracketing correctly. The size of the brackets and signs changed on the buttons to follow sign standards. On salvaged sign brackets and signs, make sure any new signs are the same size as the salvaged APS button with sign.. MnDOT follows the national standard for new APS signs (R10-3e) which is a 9 inch by 15 inch sign.

**Pole Foundations** – A few pole foundations have been spinning in the ground from high winds. OTST has been working with MnDOT Foundations on a solution to this problem. Foundations stated that we must have cohesion of the concrete with the soil and full length forming tubes do not allow this. Slots cut into the forming tube have been offered as a solution from MnDOT Foundations (see attached detail). Alex previously sent this out for comments. It should be noted that a full length tube should not be used unless absolutely necessary due to soil conditions. The forming tube should only be used on the top 4 feet of the foundation.

You cannot use a full length forming tube on BA foundations.

The committee agreed to go ahead and publish the new requirements for PA 85, 90, and 100 foundations.

For situations when conditions do not allow for this procedure the district soils office must be contacted to work out a solution. They are not comfortable having a “standard” fix to cover all special situations.

**SSB Cabinets** – A full write up on SSB cabinets is presently in the special provisions. The provisions must then be modified to specify whether batteries and the backup system are to be installed. The signal plan will also show if a battery backup system is used or not. The 2016 Standard Specifications support the removal of these special provisions. Any new signal plans need to clearly show if a battery backup system is used or not. The OTST Sample signal plan will be updated to indicate that this must be included in the plan. Once this is complete, the special provisions regarding SSB cabinets can be removed from the samples posted on the web.

**State Furnished ADA Ped Control Unit** – The control units must be turned in by the contractor to ESU 30 days prior to them needing the cabinet on the project. This has not been happening, thus ESU looks bad because it is perceived that they are the cause of the delay. ESU could set up the ped control units prior to the cabinet needed by the contractor, but they must know what brand control unit will be used. The two APS control unit systems currently on the APS are very

different in their wiring needs within the cabinet. It was decided that the district will update the TE with the brand that will be used in the cabinet after it receives the “Materials and Electrical Equipment List” as required by 2565.2A.3 and send it to ESU. At that point ESU can then build the appropriate APS control unit within the cabinet using their own interface board and cable assemblies. They then would receive the new interface board and cable assemblies from the contractor for use in the next cabinet needed. ESU will not release any cabinets unless the contractor supplies the interface board and cable assemblies by the time of cabinet pick up.

**Tab box on plans for poles and hand holes** - D3 surveys has requested a tab box on signal plans to locate all equipment in the field. Mark is coming up with a tab box for poles and cabinets, but not handholes since the plan is just a general location and they can change in the field. Surveys wants coordinate correct or station and offset – if road project coordinates can be added to the plan – if it is a standalone project then you can still stake in the field since the curb is already in. Other districts said they have also had this come up. Pedestrian pushbutton locations should be obtained from the 20 scale drawing in the plan.

**Epoxy Installation temps** – A few bolts on the ped stations have been pulled out. Ambient temperatures at the time of the installation could be a factor, but were not in this particular situation. Typically, temperatures must be above 41° F during and after the install. One comment was the epoxy may not always bond to the drilled anchor rod hole sides of the concrete. In this instance we are not sure the correct epoxy was used. Make sure only APL listed epoxy is used and the drilled anchor rod hole is clean. This may have been an isolated case due to contractor, but it should be watched and let OTST know if there are more issues.

**Cost Participation** – Major re-write for cost participation with cities and counties. Review signal and lighting and get any comments to Sue.

**Signal Statute** – A 2015 state law now requires cities, counties and MnDOT to “optimize” traffic signals on roadways with more than 20,000 vehicles. OTST had a meeting with District Engineers, District Traffic Engineers, and District State Aid Engineers. Each districts State Aid office will gather information on the traffic signals within each district.

**Life span of signal** – The life span of a signal has been estimated around 30 years. Any traffic signal that is older than 30 years should be considered for replacement. There is an asset management group looking at ages of signals and lighting.

**Temporary signal** – District 7 used a screw in base with a pedestal with success for a temporary traffic signal. The cost savings when compared to a temporary span wire system were substantial. A pedestal type temporary system would be an option for smaller intersections. Tod’s example was a ramp.

**Ground wire in RICWS Systems** – Plans do not indicate that a ground is needed with the power. Sue will discuss with Ken H. on the ground wire.

**Signal work** – What level of work on a traffic or lighting system requires the person doing the work to be licensed? Any major work such as head replacement or underground pulling of wire is not considered maintenance and a license is required.

**Round Robin** – Nothing

Next meeting: Thursday, February 4th, 2016  
Waters Edge **Conference Room 176**  
9:00am – 12:00noon  
Send agenda items to Jerry K.

## Attachment's – Detail with slots

- DRAFT***  
A. ***PA 85, 90 and 100 Pole Foundations (Standard Plates 8120 and 8126)***

*Construct PA pole foundations in accordance with 2411, "Minor Concrete Structures" and as specified in the Contract, and in accordance with the following:*

*Construct foundations in drilled shafts. Excavate for concrete foundations by drilling a hole with an auger of sufficient size to the dimensions indicated in the contract documents. Minimize over excavation. Protect the sides of the drilled shaft from collapsing.*

Pour concrete as soon as possible after the excavation to prevent loose or soft materials from accumulating at the bottom of the shaft that would affect the performance of the foundation. Remove loose materials at the bottom of the shaft and groundwater before placement of concrete.

Use a continuous fiber forming tube for the upper portion of the foundation above grade and maximum 4 ft below grade. Pour concrete directly against the soil of the drilled shaft if the sidewalls remain firm and stable.

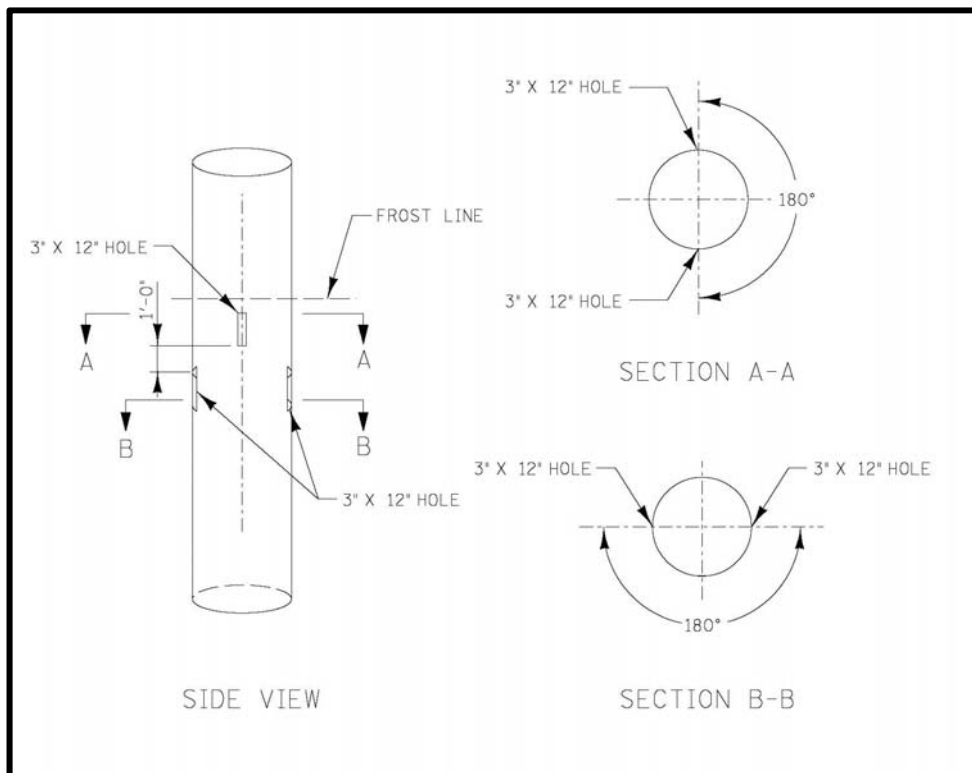
A continuous full length fiber forming tube may be used to prevent the sidewalls of the shaft from collapsing with the approval of the Engineer at no additional cost to the Department. "Full length" means more than half the depth of the drilled shaft.

When a full length fiber forming tube is necessary to prevent the drilled shaft from collapsing, refer to the Frost Depth Zone Table and cut four 3 in x 12 in rectangular holes into the fiber forming tube before installing into the drilled shaft. Cut two rectangular holes approximately 180 degrees apart, 6 ft to 7 ft below grade if the project site is located in Zone 1, and 4 ft to 5 ft below grade if the project site is located in Zone 2. Cut two more rectangular holes approximately 1 ft lower from the first two holes, with the pattern rotated at 90 degrees. See Detail A.

<b>Table Frost Depth Zone</b>	
<b>Zone</b>	<b>Depth of Rectangular Holes Below Grade</b>
1	6 ft- 7 ft
2	4 ft- 5 ft

Refer to The Office of The Revisor of Statutes website for frost depth zone requirements, Minnesota Administrative Rules 1303.1600 Footing Depth for Frost Protection, <https://www.revisor.mn.gov/rules/?id=1303.1600> to determine appropriate frost depth zone.

DETAIL A



*If soil or rock conditions not suitable for standard foundations are present, or if conditions are marginal, contact Jihshya J. Lin (651 366 4490) in MnDOT Bridge Evaluation and Fabrication Methods Unit and Gary Person (651 366 5598) in the MnDOT Foundations Unit for a foundation design that can be used as an alternative to the standard foundation design.*

*Foundation design is based on installing in a drilled shaft. Any variation to the drilled shaft requires an approval by the District Soils Engineer. If a drilled shaft foundation is not possible obtain approval from the District Soils Engineer to conduct open excavation for the foundation before starting the work.*

*Before placement of the concrete;*

- (1) Brace entering conduits, anchor rods, ground rod electrodes, and other equipment in position,*
- (2) Ensure elements of the foundation are positioned at the required projection heights and aligned with the transformer base plate opening and bolt holes by using a rigid metal template, and*
- (3) Tape the threaded portion of the anchor rods projecting above the concrete surface with PVC electrical tape.*

*Ensure concrete fills the shaft area and any void area outside the fiber forming tube that is below grade.*

*After the concrete has been placed;*

- (1) Determine the length of time required for the safe temporary removal of the concrete foundation template to complete an ordinary surface finish on the top of the foundation,*
- (2) Remove template in a manner to avoid damage to, or spalling of the concrete,*
- (3) Ensure removal of the template does not allow the anchor rods and conduits to move,*
- (4) Float foundation with a smooth top and beveled or chamfered edges,*
- (5) Finish the foundation in accordance with 2401.3.F, "Finish of Concrete", and*
- (6) Place back the rigid metal template on the foundation after the concrete finishing work has been completed.*

*After the concrete has cured the template can be permanently removed.*

*The Engineer will reject foundations if anchor rods, conduits, and ground rod electrodes are improperly aligned after the concrete cures. Do not enlarge bolt holes in transformer base plates to allow for shifted anchorages or alter the transformer base plate openings to accommodate misaligned conduits and ground rod electrodes. Do not cut or alter conduits, anchorages, or ground rod electrodes. After the concrete foundation has cured remove the top portion of the fiber forming tube at finished grade level or sidewalk. Backfill and compact the conduit trench and around the foundation.*



**Objective:** A MN Local Road Research Board funded and developed research project titled “Development of Guidelines for Flashing Yellow Arrows for Protected/Permissive Use” was recently completed in July 2015. The objective of this project was to develop guidelines for time-of-day use of permitted left-turn phasing, which can then be implemented using flashing yellow arrows (FYA). Project researcher, Vahid Moshtagh, will be presenting an overview of the project goals, process and outcomes as well as a demonstration of the spreadsheet tool that practitioners can use to determine the timing for their own FYA signals.

This presentation will be part of the regularly scheduled NCITE Intersection Traffic Control Committee meeting. All are welcome!

- 8:00 am Research project process/goals/outcome
- 8:20 am Purpose of Training/Background
- 8:40 am Demo of tool
- 9:30 am Questions

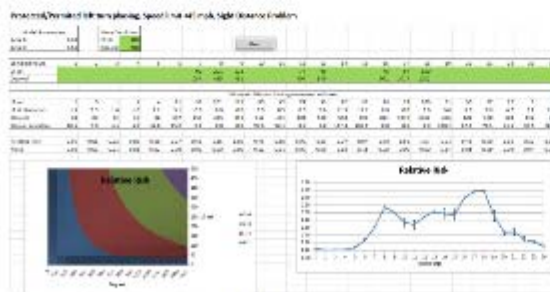
**RSVP:** Not required, but for planning purposes please RSVP to Renae Kuehl at [rkuehl@srfconsulting.com](mailto:rkuehl@srfconsulting.com) or 763-249-6783.

Refreshments will be provided.

**When:**  
 Wednesday,  
 November 4  
 8:00 - 10:00 am



**Location:**  
 SRF Consulting Group  
 Lake Superior Conference Room  
 One Carlson Parkway, Suite 150  
 Plymouth, MN 55447



Screen shot of Time-of-Day Use Tool

