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ON THE COVER

A locator with XTO Energy in Carlsbad, NM takes advantage of expert training by Staking University. Locator training needs span a wide range depending on the particular site and application.

Photo by Bill Mixer

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Planet Underground Media
Publisher

Matt Streets
Editor

Tracy DeMarco
Marketing & Design Director, Asst. Ed.

Connor Gavin / Kevin Dwyer
Video Production Specialists

Angie Parilac
Production Manager

Ray Merewether
Special Projects

EMAIL
info@planetunderground.tv

WEBSITE
www.planetunderground.tv

Business Office:
815.468.7814

Fax:
815.468.7644

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The Need For Change in Excavation Laws: Next Steps in The Planet Underground / Roundtable Position Paper

In the March 2019 issue of *American Locator* (Vol. 33, Issue 1), I outlined plans for Planet Underground's first-ever position paper, based on discussions, debates and conversations had at our annual Roundtable event. This position paper was designed to finally put into action all the recommendations and suggestions made by our Roundtable attendees and industry leaders, to deliver a comprehensive plan to help lower damages, and more importantly, stop fatal disasters and explosions in the underground utility industry.

What follows is the final version of this paper, which has gone through committee and peer review, and multiple edits and drafts. It is by no means a complete list of the necessary steps and mandated law changes that need to happen to bring us to zero damages, but it is a start. A copy of this paper was mailed to the six US Senators that represent the three states where fatal, and 100% avoidable, utility strikes have occurred recently: Illinois, Wisconsin and North Carolina.

Each year, Planet Underground will develop and deliver a new position paper designed to help spread awareness of damage prevention techniques. Ultimately, we would like to help change the laws, regulations and best practices to create that goal of zero damages. If you agree with what we're putting down here, feel free to share this paper with your own companies, local governments and safety councils. If you disagree with these statements or think there's a better or different way to approach this, then please come out to our Roundtable event on December 4th - 5th this winter, and let your voice be heard!

Background:

• On November 16th, 2016 a contractor installing underground fiber-optic cable in Canton, Illinois cut a gas line behind the Opera House Professional Center annex. A few hours later, the annex exploded. The explosion killed one man, a gas company



employee. There were 11 others injured and more than 50 buildings were damaged.

• On July 10th, 2018 a contractor installing fiber optic line struck and ruptured a 4-inch gas main in downtown Sun Prairie, Wisconsin. First responders were able to successfully evacuate all the nearby buildings. However, the amassed amount of natural gas that had poured into the building next to the rupture was triggered, causing a massive explosion that killed one firefighter, severely harmed another, injured nine other people and destroyed multiple buildings.

• On April 10th, 2019 a gas explosion killed two people in downtown Durham, North Carolina. Nearly 25 other people were injured, and 15 buildings were damaged by the explosion.

While the investigation of this event has not been finalized, some facts are already known, most notably that a gas line was punctured by a contractor during a directional drilling operation. The investigation hasn't revealed whether the lines "were or were not marked accurately."

Every single element of the circumstances surrounding these fatal disasters could have been prevented by either simple common-sense law changes, baseline fundamental training and certification programs, or both. Planet Underground is putting forth two urgent recommendations for changes to the laws that regulate and oversee underground construction and utility locating, so that occurrences such as these never happen again.

There Should Be Mandatory Reporting of All Damages to Underground Facilities

One of the major blind spots in the underground construction industry is the lack of truly accurate data as to the prevalence, type and frequency of damages to underground facilities by excavators and contractors. The best guess is the DIRT (Damage Informa-



"Planet Underground is putting forth two urgent recommendations for changes to the laws that regulate and oversee underground construction and utility locating, so that incidents such as [Canton, Sun Prairie and Durham] never happen again." -Ed.



Utility excavation professionals met this spring at Planet Underground to discuss what top positions for legislative action should be included in the paper. Planet Underground President Mike Parilac chaired the discussion.

tion Reporting Tool) Report, published annually by the Common Ground Alliance (a national association of underground facility owners, contractors, and locators). The DIRT Report is a collection of damage statistics submitted voluntarily by those who work in underground construction.

The most recent DIRT Report was released on September 19th, 2018. Some statistics:

“The report, which analyzes all 2017 data submitted anonymously and voluntarily by facility operators, utility locating companies, one call centers, contractors, regulators and others, used a refined statistical modeling process to estimate that 439,000 excavation-related damages to underground facilities occurred in 2017, up 5.5 percent from a revised 2016 estimate.”

Here is the general breakdown of the 2018 Report:

- 316,442 damage reports
- 66% of reports were submitted by locator stakeholders
- 7% of reports were submitted by excavators

Root causes of these damages:

- 52% insufficient excavating practices
- 17% insufficient locating practices
- 24% no notification

As is clearly obvious by these statistics, excavators and utility operators are NOT reporting damages nearly as often as contract locating companies. Perhaps not surprisingly, far more of the reports blame “insufficient excavating practices” rather than “insufficient locating practices” as the root cause of most damages. This fact, combined with the voluntary nature of the reporting process itself, leads to a skewed and probably inaccurate view of the underground damage picture.

It is very likely that the DIRT Report greatly underestimates the number of annual U.S. damages. This then negatively influences

where training and other damage prevention resources are spent. We believe the real number of damages exceeds 1,000,000 per year in the one-call locating arena, plus many more on the private utility side.

Having a mandatory damage reporting process in place, bolstered by a simple four question reporting form, would immediately provide a more accurate picture of the damage statistics, and thereby give us a clearer picture of where the actual problem areas are, and how we can then properly address those issues. A potential damage reporting form would require the damaging party to answer the following four questions:

1. Was the underground line marked?

As shown with the skewed nature of the damage statistics above, we believe industry attention to insufficient locating practices is insufficient, due to potentially biased reporting by the locator stakeholder group.

2. Was the line hit within the tolerance zone*?

**Definition of Tolerance Zone: Depending on state digging laws, excavators should maintain a minimum horizontal (side to side) clearance of 18 to 30 inches between an unexposed facility and the cutting edge or point of any power-operated excavating or earth-moving equipment.*

Locators often expand the tolerance zone in the way they mark multiple facilities. The abuse of the system in this way often creates unnecessarily inaccurate and vague markings, which ultimately results in an increase of “insufficient excavating practices” in DIRT submissions, 66% of which are submitted by these locator stakeholder groups.

3. Was the underground line potholed and then exposed to allow for visual verification?

All state laws are essentially the same: the excavator is required to dig without the use of powered equipment within the tolerance zone until such a time that:



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- The marked lines are exposed, or potholing has been done to the depth of excavation and the width of the tolerance zone.
- The failure of excavators to comply with this requirement is a major source of inadequate excavation practice cases.

locator in this country. Map-reading, report generation, client relations, and more are important parts of the knowledge base for an effective locator that they would need to be certified on, as well as a complete understanding of the electronic locating equipment necessary to do the job.

4. Who was performing the excavation, and what type of excavation equipment was used?

Two important things need to be verified:

- The “owner” of the job where the damage occurred must be identified as well, be it a facility owner, or a contractor for a facility, or private work and so on.
- The type of equipment used during the excavation, such as a directional bore, open cut, saw-cutting, hand-digging, etc.

All Utility Locators and Excavators Should Be Certified to a Set of National Standards Agreed Upon By All Parties in the Excavation Process

The day-to-day functions of locators and excavators are more closely intertwined than it might appear. Excavators must often resort to doing their own locates to check for unmarked facilities, private utilities, or to verify potentially incorrect marks. Therefore, the skills that are crucial for both industries to learn are remarkably similar:

Minimum skills necessary to avoid damages as both a locator and an excavator:

- A verifiable visual understanding of what above ground utility structures mean in terms of the likely location of underground lines.
- A verifiable understanding of utility operator maps or construction diagrams.
- A verifiable understanding of the state one-call law.

There is currently very little in the way of officially recognized courses or training dealing with basic utility infrastructure systems, and even less covering the necessary skills to become a good

Minimum skills necessary to avoid damages as a locator:

- A verifiable working knowledge of the locating instrument resulting in the establishment of accurate tolerance zones.
- A verifiable working knowledge of how utility systems work.

There is also very little in the way of an excavator certification program in the USA either. However, in November of 2018, New York State signed Senate Bill S.6756 that “requires any municipality or operator that engages in excavation work to require its excavators to complete a training and education program from their local One Call Notification Center.” More nationwide programs like this should be required to teach essential excavating skills such as:

Minimum skills necessary to avoid damages as an excavator:

- A verifiable working knowledge of the requirement to use non-destructive excavation within the tolerance zone allowing visual confirmation of marked lines down to the depth of excavation.
- A verifiable understanding of the one-call locating process.

Widespread support of these initiatives would need to be part of a campaign, supported by the utilities industry, one-call centers, and local and state governments, to implement these certification programs. Necessary elements to be agreed upon by all invested parties would include:

- Locating is a profession and can be a career.
- Excavators need to refuse to dig if told not to pothole or expose existing underground utilities.
- Municipalities need to insist on vetting those that locate and excavate in their rights-of-way and realize that public safety is priority number one. ★



Left to Right: Kelley Heinz (ComEd), Johnathan Brock (NPL Construction), Shane Higgins (John Burns Construction), Frank Bedtke (HBK Engineering).



A LEGACY OF EXCELLENCE AND DIVERSITY

Misty Villafania was spending her time managing restaurants with no opportunity for advancement. One day she overheard one of her regulars talking about fiber optic cable and the quest began. She took it upon herself to engage a cable splicing crew and asked if she could watch what they do in their trailers. From there she gathered cable material in her garage, opened and repaired different sizes and eventually started working as an apprentice and received training in electrical work and the fine art of splicing fiber. Misty worked her way up from flagger to ground-man/laborer and finally made it to her goal. As one of our best cable splicers and with safety always top-of-mind, she is constantly perfecting her skills. She is totally dedicated to the cause and even just spent 28 hours straight repairing a critical data circuit during the recent polar vortex. Misty has developed a strong loyalty to ECC and looks forward to embarking on a life of opportunity and success.

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THE ROUNDTABLE Live!

Day of Action!

On August 8, 2019, Planet Underground held its second annual National 811 Day Celebration, now famously known as The Roundtable Live!, an exciting day of live jobsite demonstrations that featured nearly 500 professionals from across the damage prevention industry engaged in safe excavating practices at our headquarters in Manteno, Illinois. Attendees could view, listen, share and learn first-hand from professional, skilled utility contractors, locators, engineers and others actively involved in the process of installing underground utilities.

All phases of underground excavation were part of the day's insightful, outdoor educational event: engineering, pre-planning and site mapping; locating via EM locators, GPR and sondes, horizontal directional drilling, backhoes, trackhoes, coring machines, vacuum excavators, aerial drones, jobsite documentation software, excavation apps, sewer cams, trench shoring and so much more created a real life jobsite environment.

Never a trade show, The Roundtable Live! allows people in the industry to actually see the equipment that they rely on every single day, in use, and network with the people who oversee and operate these important tools for damage prevention. ★



Workers from across the utility excavation industry gathered to showcase their top talents and safe practices at The Roundtable Live! Safety onsite meant hardhats, safety vests, ear plugs, goggles, boots and more...no exceptions!



BOOTS ON THE GROUND

Background: Excavators, locators, public works crews, vac-ex operators and many other professionals network onsite.
Left: NPL Construction offers insights and guidelines on digging around tolerance zones.
Right: Western Utility demonstrated proper horizontal directional drilling, sonde locating and other excavation techniques.



THE ROUNDTABLE
Live!



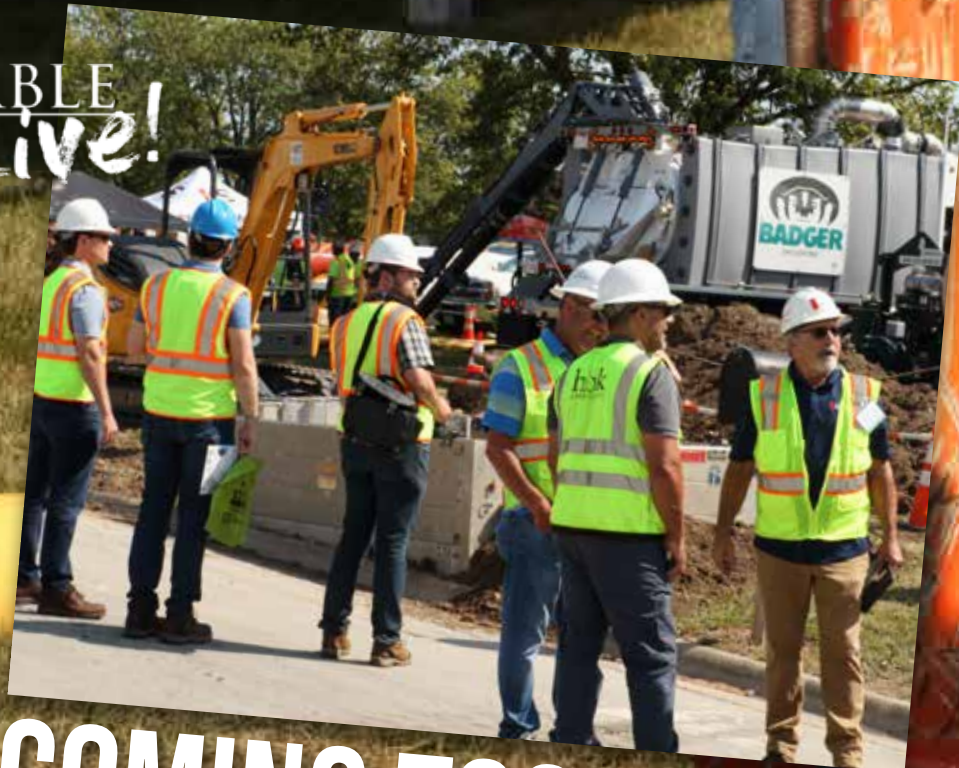
RAISING THE BAR



Background: Crews from Electric Conduit Construction of Elburn, IL work on a utility pole installation.
Top Left: An Electric Conduit crew member uses a Subsite locating instrument to check utility depth at a pothole.
Top Right: Crowds gathered to watch the installation with proper caution signs posted along the nearby street.



THE ROUNDTABLE Live!



COMING TOGETHER!



URG Locator David Neira provided some great guitar playing entertainment for the crowds during lunch!

Background: Both hand digging and backhoes were part of the excavations. A hog roast lunch was enjoyed by all.
Top: Excavators, engineers, locators, vac-ex operators and others shared their knowledge and experience.
Bottom: The entire event provided key opportunities for networking among all involved.

THE ROUNDTABLE Live!

At this year's Roundtable *Live!* in Manteno, Illinois at Planet Underground's headquarters, USIC's Paul Bellis and Gerald Johnson conducted a mock locate audit, and spoke about the overall process when their internal auditors are tasked with going out and locating tickets.

Bellis, a USIC locating auditor, demonstrated and explained in real time what he does when he is on an audit assignment. "We start off looking at the prints—looking at what we need to locate, looking at how many marks are on the ground, and does that match with what should be on the ground? Then at that point, once you see when you have the marks or not, you start hooking up, verifying old paint, correcting as needed." He went on to place his metal ground into the grass in a nice dry area, hooked up to an electric transformer, and adjusted his frequency on his locator accordingly. From there, Bellis started sweeping the area.

Gerald Johnson, USIC's Operations Manager for Illinois, went over the careful steps that their auditors take out in the field. "An auditor will actually take the exact same steps that the locator should have taken to complete the locate. As we did out here today, our auditor came out and reviewed the scope of the locate request to determine the extent of excavation." Seeing USIC demonstrate the locate so similarly to how they would do it out in the field was a very effective, educational visual for the attendees of The Roundtable *Live!* event.

Johnson explained Bellis' next few steps after beginning the sweeping part of the process and identifying all the utilities in the area. "He should be following [the utilities] out and monitoring those marks to check for accuracy and then ensure that those are marked completely and accurately throughout the scope of the locate request. Essentially, we're looking for not only the accuracy of marks, but we also want to challenge all of our auditors to double check to make sure that the locator followed all of those processes and procedures: Did we hook up at the right spot? What is the error rate that we're finding on these locates? Can we narrow that?"

Safety and damage prevention are both paramount in the USIC culture. The very first statement on their website reads "This year, USIC will perform over 70 million locates annually for telecommunications, gas, electric, sewer, and water utility providers as

Scope of the Locate



Gerald Johnson, USIC

DEMO SPOTLIGHT

well as many municipalities across North America. The most important part of Damage Prevention is ensuring we protect our customers' infrastructures in addition to those who live and work around them." It's clear from their demonstration at The Roundtable *Live!*, as well as the USIC personnel we spoke with at the event, that effective safety measures and efficient services are a major focus. It makes sense. It's not an understatement to say that a proper locate and proper audit process can potentially be the difference between life and death.

Johnson talked about high-risk excavations. Though every locate deserves the utmost care, it's important to know when some situations may require a bit more attention than others based on a variety of factors: type of excavation, location, population and infrastructure density, soil types and other critical situations.

Coaching and teaching locators are other aspects of the job that USIC prides themselves on. "We will try to find coaching opportunities in order to improve folks, because we don't want someone working out of the system. We'd rather bring them up through the system. It's painful to have to bring someone else in to replace someone, so we'd rather keep the folks we have and make them better," Johnson stated. Several USIC workers attended The Roundtable *Live!* event, which is really meant to be a showcase for all of these companies to learn from each other and also teach each other the steps that they take to ensure safety on the jobs that they do. Communication is a key part of underground utility construction, and this unique event surely does its part in bringing so many different companies together to experience first-hand how they all operate safely and efficiently.

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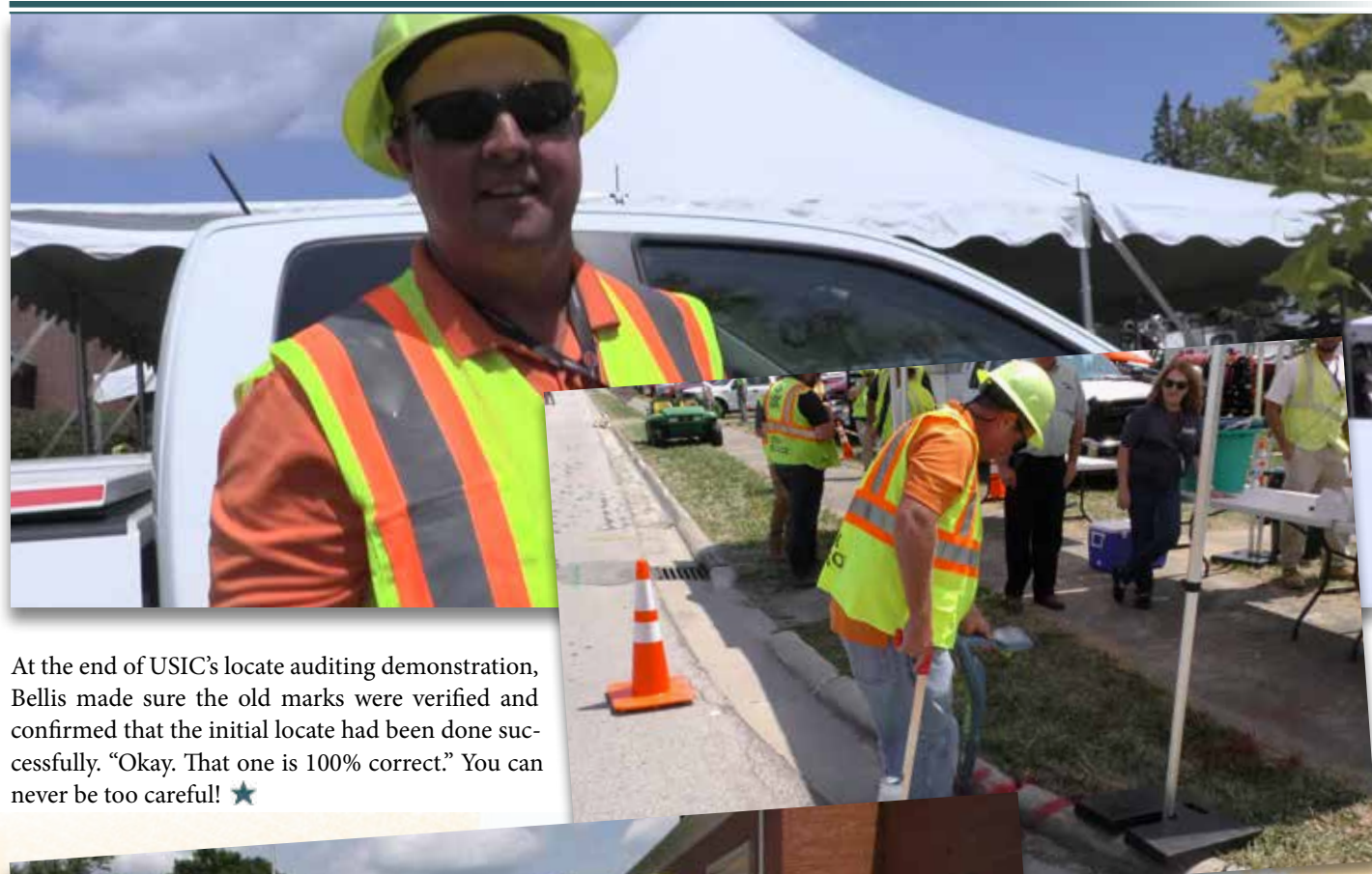


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At the end of USIC's locate auditing demonstration, Bellis made sure the old marks were verified and confirmed that the initial locate had been done successfully. "Okay. That one is 100% correct." You can never be too careful! ★



Top: Paul Bellis, USIC locate auditor, explains the audit process from start to finish for event participants.
Middle: Proper locating and marking of facilities is at the core of damage prevention.
Bottom: Good communication between one-call centers like JULIE Illinois and contract locators is essential to safety.



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Keeping it Real: Second Chances

An interview with excavator Greg Preisch, Electric Conduit Construction

We had a project going on last year on the south side of the city. One day the foreman and the superintendent called me over to say they were approached by a group that wanted us to hire some people from their neighborhood to work with our crews

for as long as we were there. So I asked the superintendent to arrange a meeting the next morning with the director of this group, and we met with everyone there and introduced ourselves. And they brought in a very respectful young man. The whole time I was talking to him he just reminded me of a deer caught in the headlights, but he was very respectful and to everything I asked him he'd respond, "Yes sir. No sir."

It brought me back to my career in construction and how I got in. I grew up on a beef farm in upstate New York. I hated high school. I didn't go to college. I went right into the Air Force and after I graduated—barely graduated—I spent eight years in active duty. I met my wife over in Germany, and when we moved back to the Joliet, Illinois area, I was able to get a hold of a friend of my wife that was associated with a construction company, but he didn't have any work at that time. And it's tough, you know, you live on military pay for years and it's not much.

But I needed to get something going to support my family. Our friend brought me down to the contractor and introduced me. They didn't know me at all, but they were willing to give me an opportunity.

I think back on my story and how I got to where I am now. The young man at the meeting reminded me of myself back then, because he came from basically nothing. He was in an environment where he'd probably get nowhere in life without a chance to get out.

The goal of the group was to basically force our company to hire him for as long as we were at that jobsite. But I felt it necessary—I wanted to give him an opportunity like I had been given an opportunity. I talked to the director, and I said,



"But I felt it necessary—I wanted to give him an opportunity like I had been given an opportunity."

-Greg Preisch

you know what, I don't want to give this kid a day's pay or two day's pay. What I'd like to give him is a career, something that could change his life, something to look forward to every day.

Because of my affiliation with the union, I was able to make a call. We got this young man on an apprentice program. We assisted him with getting a CDL. And to this day he still works with us. And when I asked the superintendent for his division how he was doing, every time he'd say, "He's one of our best guys we have. He shows up every day. He asks questions. He wants to learn, and he wants to make something of himself." So I'm really happy for him and what we were able to do with him.

We work with some other groups in the city too with the same intentions, as long as these young men and these young ladies can meet the requirements—pass a drug screening, have a CDL, show up for work. We've been very fortunate Electric Conduit is able to sponsor them. I think there's about a dozen people now that we've been able to bring in and give jobs—a good union job—and change their lives. Without that, who knows where they would wind up. So, it's really heartwarming. ★

Center photo: Tony Green, "the young man at the meeting" still at work with Electric Conduit Construction today.