



# Badger Contacts

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- Truck consistency: each truck from our 900 series to 1700 series are identical
- Our remote hose capability enables excavation of 400 feet away from the unit

- Tri axel dual 900 gallon water tanks
- Debris tank holds approx. 2,500 gallons or 12 yards
- 5500-6200 CFM.
- Variable water pressure up to 2200 PSI.
- Emergency stops buttons. 1 on each side of truck and 1 on the operators remote.
- Custom engineered spray nozzles E/W neoprene rubber tips





# TOLERANCE TESTING



- Variety of tests in a controlled setting.
- Owner's Engineers assess impact on the material.
- Provide safe operating limits
- All Procedures are updated and followed.
- Limits of any possible damage is documented for material tested.



# Line Jetting Truck/Services

- **CCTV Pipe Inspection**
- **Mainline Pipe Inspection**
- **Pipe Jetting & Cleaning**
- **Emergency Response 24/7/365**
- **Pipe Lining Partner**

- The combination storm and sewer cleaner combines high-pressure water jetting and a high-flow vacuum source to scour pipes clean then vacuum up the material causing blockages to restore and maintain normal flow.
- Uniquely designed for sewer cleaning, the Water Pump provides smooth continuous flows through its entire operating range – ranges available from of 0 to 100 GPM and pressures up to 3000 PSI.
- The hose reel can telescope out up to 15 inches and rotate up to 270 degrees for optimal positioning
- Standard 60 inch high dump enables unloading debris into roll-offs up to 5-feet high without requiring a lift or ramp
- Unique air-routing and filtration system get the work done faster, safer, and more productively



# Flusher Truck



Flusher truck 4000 gallon 120 GPM water tank teamed with a Hydro-Vac unit to clean out drainage structures





# Hi-Rail Truck



- Slot Trenching is used to locate both known and unknown facilities in the ROW.
- Can be completed by both standard and hi-rail hydrovacs.



# Excavation Types



Deep Excavation

Trenching



Potholing



# Gas Main Pit





# Orlando 408 Bridge Deep Excavation Cofferd Dam





# Remote Capabilities





# Hydro-Vac Construction Advantages



- No damages to existing facilities
- Minimal ground disturbance
- Safety and protection of personnel on site
- Excavation footprint much smaller than traditional excavation
- Reduced downtime
- Increased productivity
- Potholing of utilities allows updating of facility maps
- 100% verification allows heavy equipment to be more productive
- Loss of business revenue



# I-4 Ultimate Project

I-4 is Florida's largest transportation project in its history and one of the largest transportation P3s in the US.

\$2.3 Billion Project

The project includes reconstruction of 21 miles of I-4 from west of Kirkman Road in Orange County to east of State Road 434 in Seminole County. The project includes reconstructing 15 major interchanges; constructing more than 145 bridges; adding four variable priced toll Express Lanes in the median; and completely rebuilding general use lanes along the entire corridor.

Work also includes installation of tolling gantries and facilities, lighting, and intelligent transportation system, MSE walls, barriers and fencing. Landscaping the project will include 30,000 trees and 68,000 shrubs.

**Over 5,500 Utility conflict on the conflict matrix for the project**



The FDOT Procurement Office received and logged administrative submittals, technical proposals and financial proposals from four teams – a huge undertaking!



# I-4 Ultimate Project



## Golly Gee Wiz Facts

**591,250 cubic yards** of concrete is enough to fill the Citrus Bowl 1 ½ times.

**1.74 million linear feet** of piles driven into the ground to support bridges, overpasses, ramps and other structures. If placed end to end, they would stretch from Jacksonville to Pensacola.

**2.25 million square feet** of bridge deck will be poured in the downtown Orlando section of the project, enough to cover nearly **30 soccer fields**.

**6.7 million cubic yards** of fill material is needed for the project. This would fill enough dump trucks to line up nose to tail from Miami, Florida to Bangor, Maine on I-95.



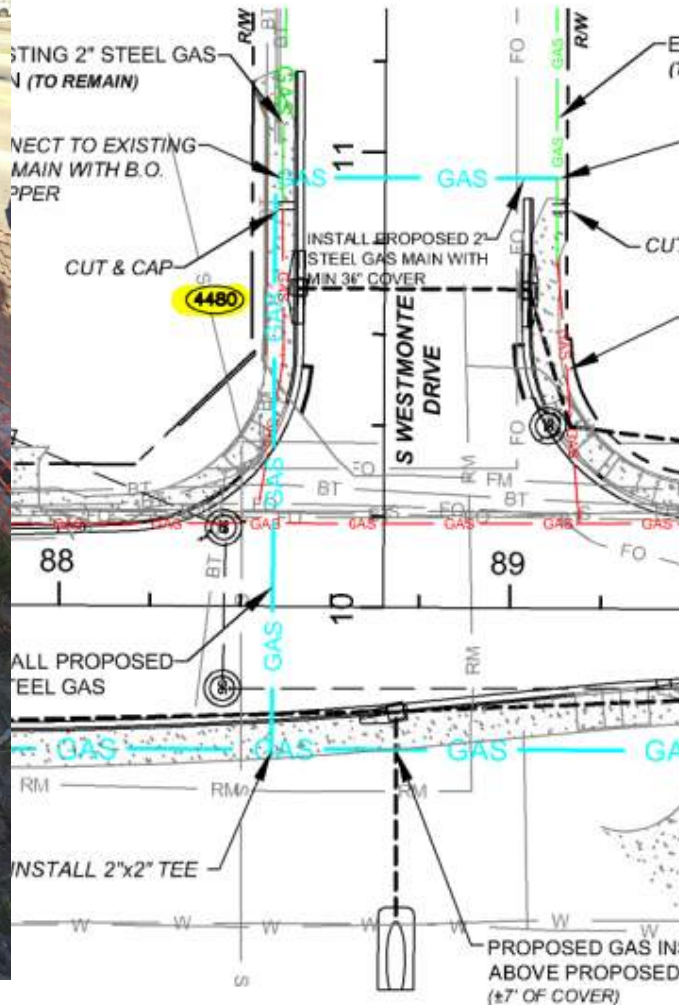


# Westmonte and Wymore Conflicts





# Westmonte and Wymore Gas Main Conflict





# Westmonte and Wymore Gas Main Conflict

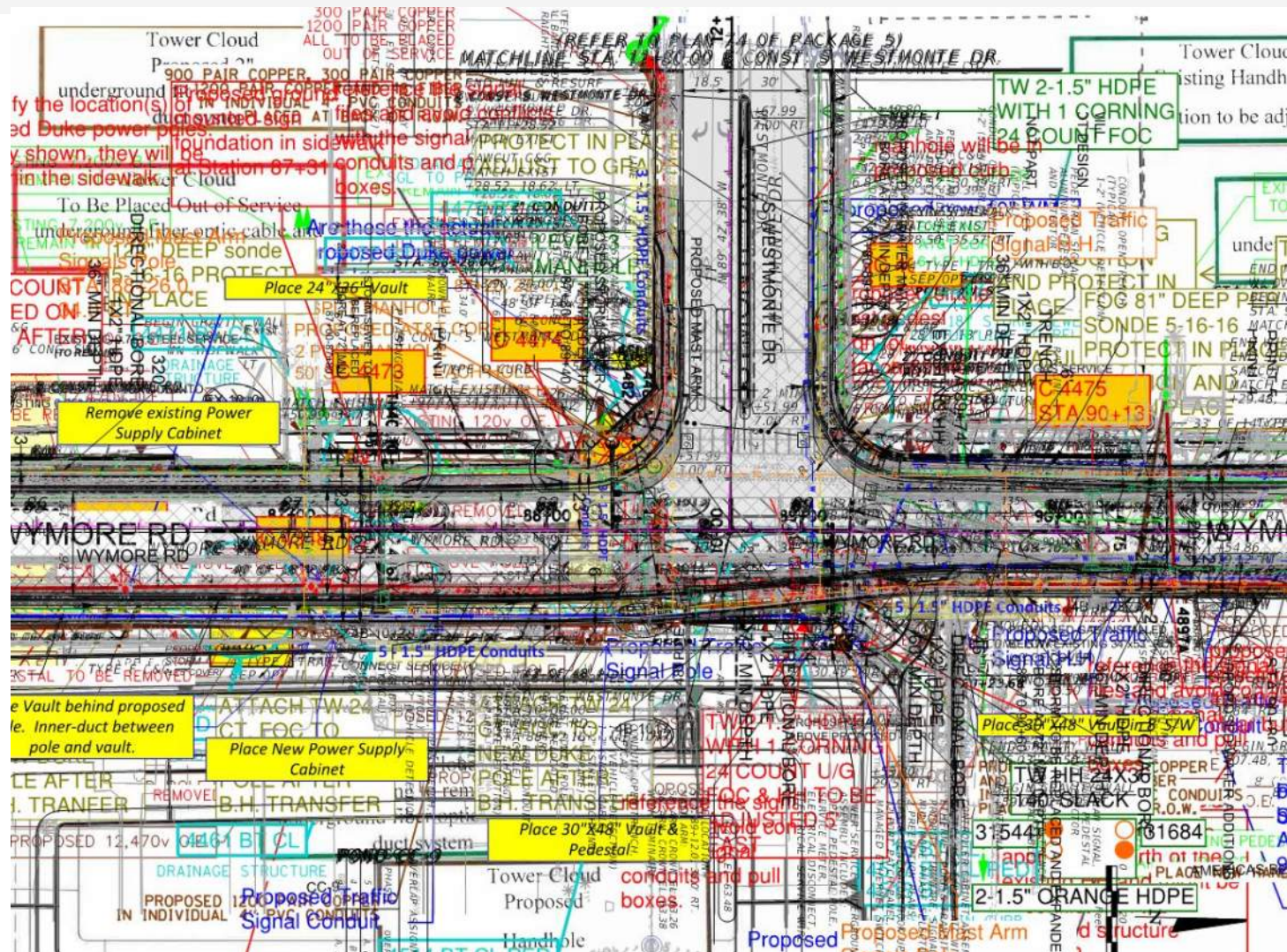


This location was a conflict with an exist 2" gas main and a proposed curb inlet. Vacuum excavation was done to place the other utilities shown. The gas main was able to moved laterally approx. 18" to avoid have to make 2 road bores to relocate. Savings approx. \$65,000.00



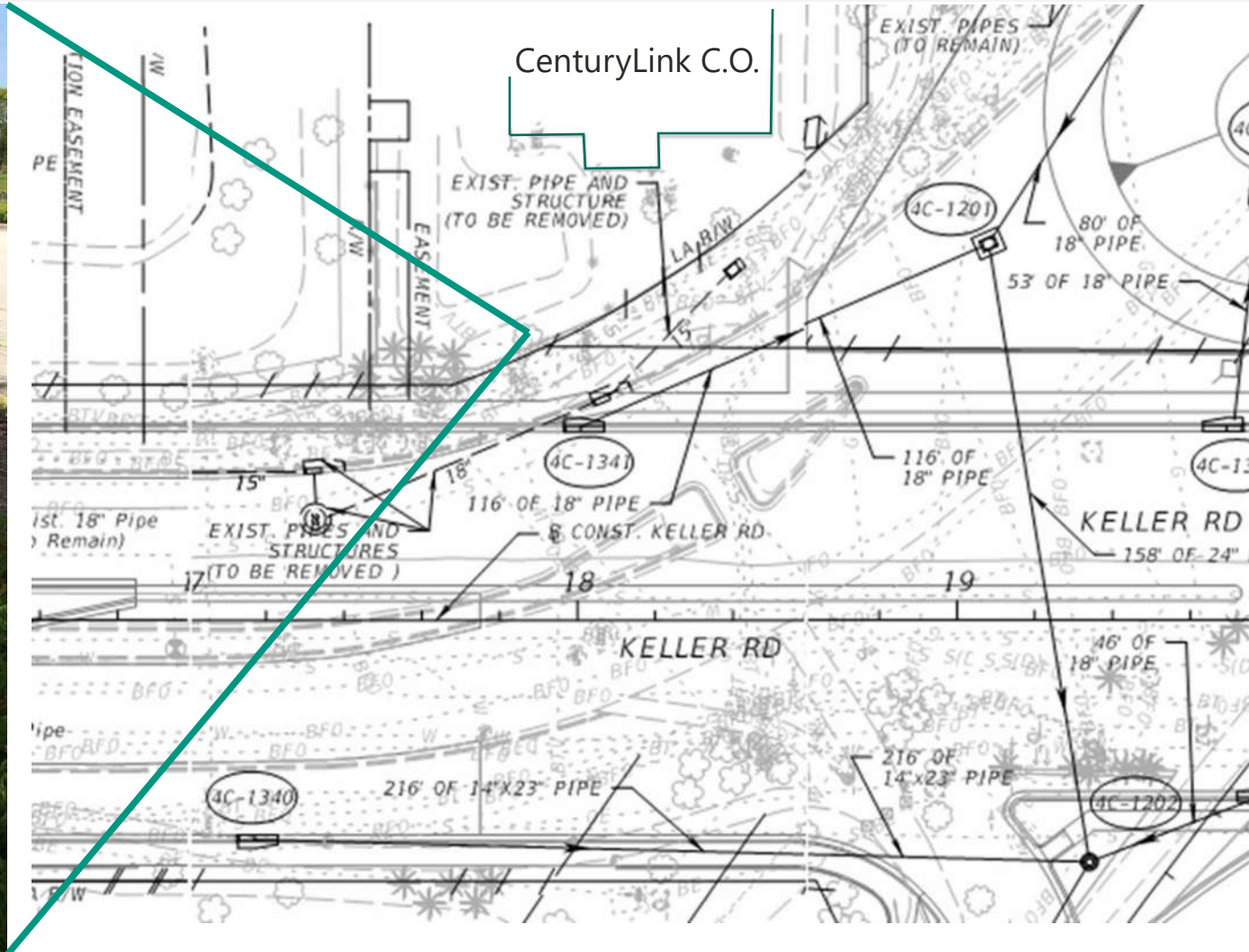
# Westmonte and Wymore

Teco Gas  
At&t Corp  
Spectrum (BrightHouse)  
Level 3 communications  
CenturyLink  
TowerCloud  
TW Telecom  
Duke Power  
Verizon/MCI  
Signalization  
Mast Arm foundations





# Keller Road Project



**Complete road realignment with 9 fiber telecoms going in and out of the CenturyLink central office. That will need to be relocated prior to construction**





# Keller Road Project





# Keller Road Project





# Keller Road Project





# Keller Road Project

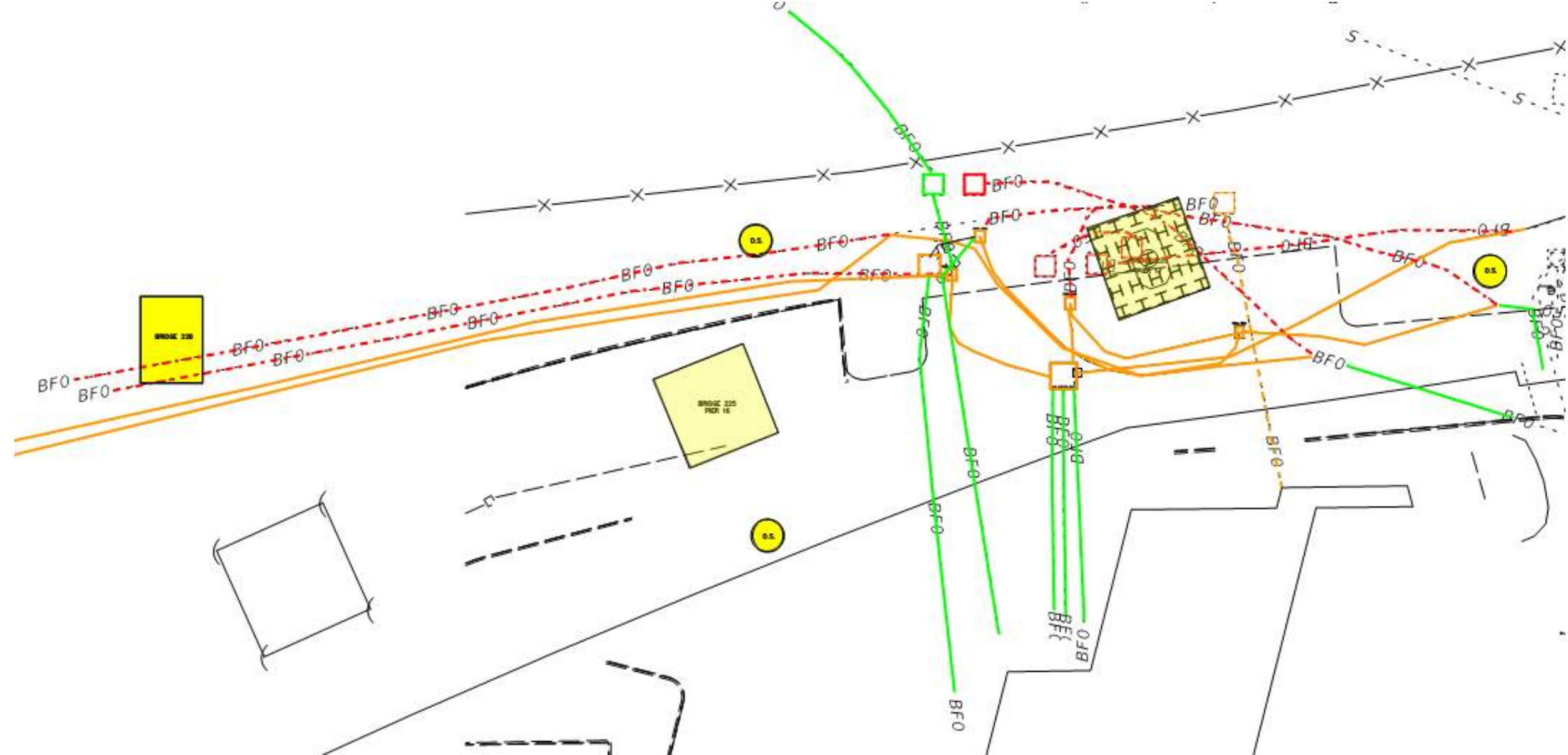






- **APPROXIMATELY 43 DAYS TO COMPLETE IN THE FIELD**
- **RELOCATED 9 HANDHOLES AND FIBER CABLES**
- **SPLICES = 0**
- **SERVICE OUTAGE = 0**
- **MONTHS PRIOR TO ROAD CONSTRUCTION**
- **TOTAL COST OF RELOCATION BY EACH UAO APPROX. \$3.7 MILLION**
- **COST TO RELOCATE WITH HYDRO-EXCAVATION APPROX. \$120,000**





# 100 Lake Lucerne Project





*Communication, Coordination, Cooperation, Commitment*





# 100 Lake Lucerne Project













# 100 Lake Lucerne Project



The effects of a 100 year old oak  
tree and telecommunications  
conduit





# "The Kraken"



## 100 Lake Lucerne Project





# 100 Lake Lucerne Project





# 100 Lake Lucerne Project



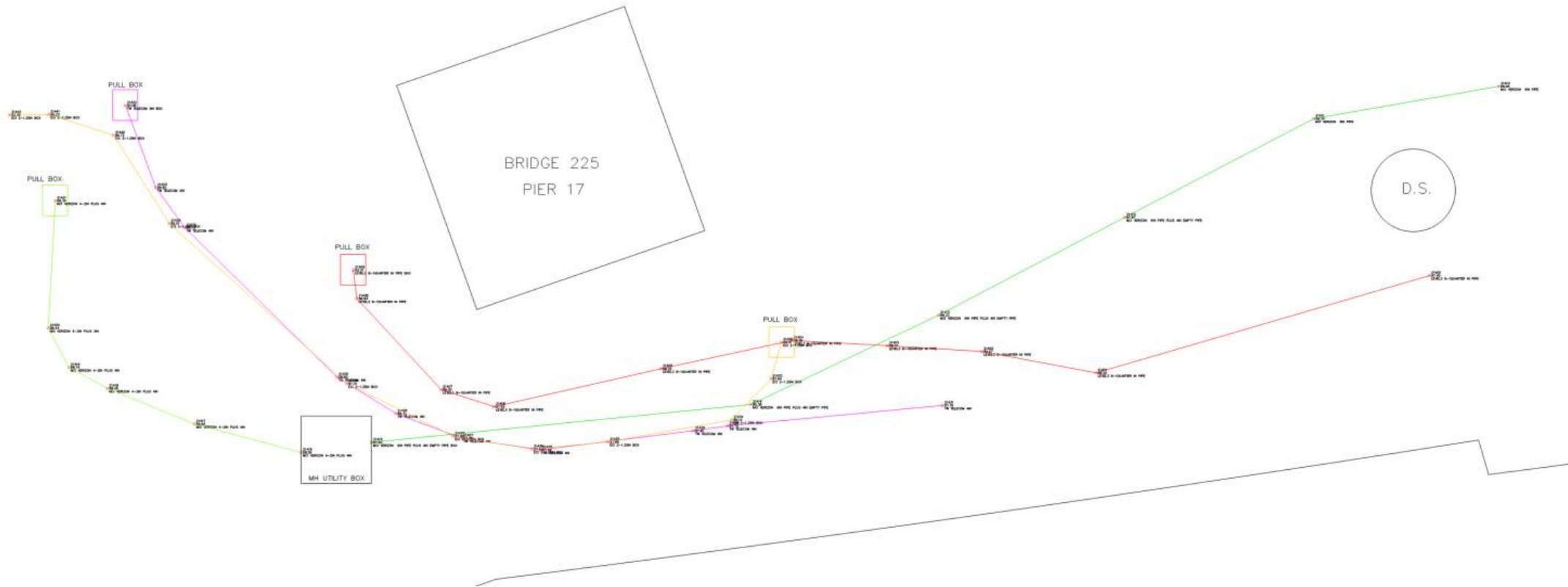


# 100 Lake Lucerne Project





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# 100 Lake Lucerne Project





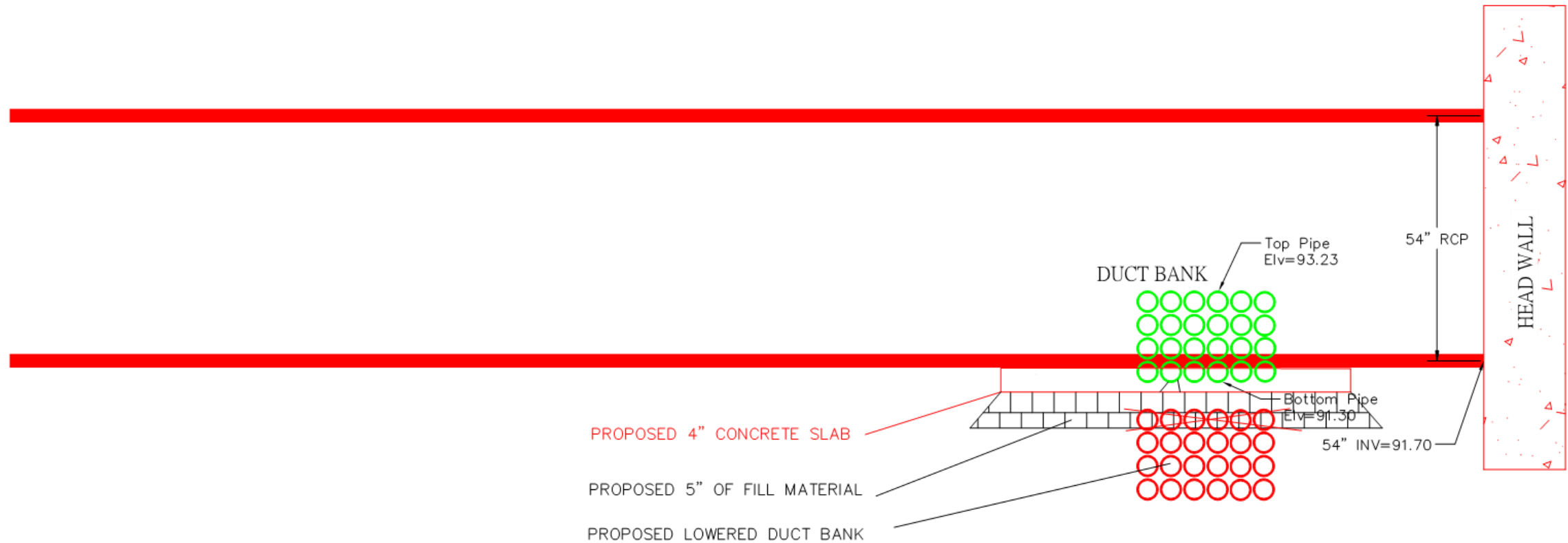
# 100 Lake Lucerne Project



- **APPROXIMATELY 90 DAYS TO COMPLETE IN THE FIELD**
- **RELOCATED 6 HANDHOLES AND FIBER CABLES**
- **SPLICES = 0**
- **SERVICE OUTAGE = 0**
- **1 YR PRIOR TO BRIDGE CONSTRUCTION**
- **TOTAL COST OF RELOCATION BY EACH UAO APPROX. \$3.1 MILLION**
- **COST TO RELOCATE WITH HYDRO-EXCAVATION APPROX. \$150,000**



# AT&T Florida I-4 Crossing





# AT&T Florida I-4 Crossing



Badger was able to vacuum excavate to lower this 24-4" At&t conduit to clear dual 54" drainage RCP





# AT&T Florida I-4 Crossing





# AT&T Florida I-4 Crossing





# AT&T Florida I-4 Crossing



Noticed that the at&t had 24 - 4" conduit crossing I-4. At the manhole "J" hole, 16 - 4" conduit to the field. At&t will never use more than 16 pipe to the field. Cut the top 6 conduit to get final clearance needed

- **RELOCATE 24 WAY AT&T CONDUIT RUN WITH AND FIBER COPPER CABLES**
- **SPLICES = 0**
- **SERVICE OUTAGE = 0**
- **18 MONTHS TO RELOCATE**
- **TOTAL COST OF RELOCATION BY UAO APPROX. \$1.5 MILLION**
- **COST TO RELOCATE WITH HYDRO-EXCAVATION AND LOWERING IN PLACE LESS THAN \$15,000**
- **2 DAYS TO COMPLETE**



# 76" casing for 72" 105' transmission pole



3 1.25" conduit with a 288 fiber and a 96 fiber. Moved approx. 2.5' to clear proposed casing. Vacuum excavated and cable slack pulled from nearby handholes. Casing was placed and split conduit placed on working fiber cables. 3 hours to complete.





# 84" casing for 72" 105' transmission pole



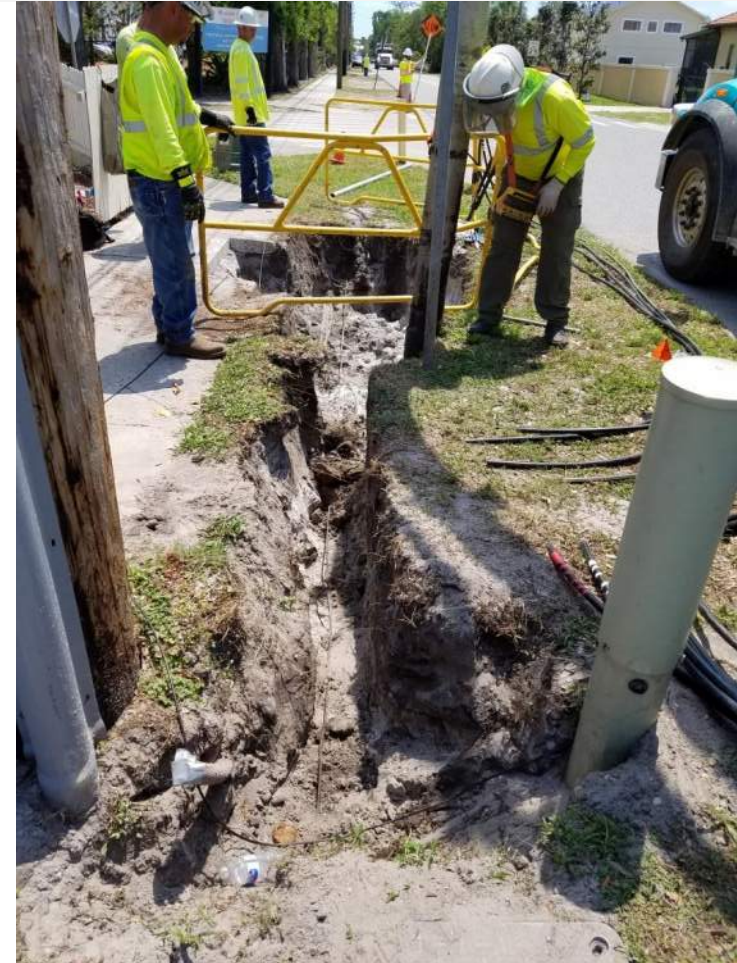
Fiber cable running directly through excavation.

Vacuum excavated and moved cable and conduit approx. 3' to clear casing. 1.5 hours. Both casings place in same day.





# Duke Transmission LV project Orlando



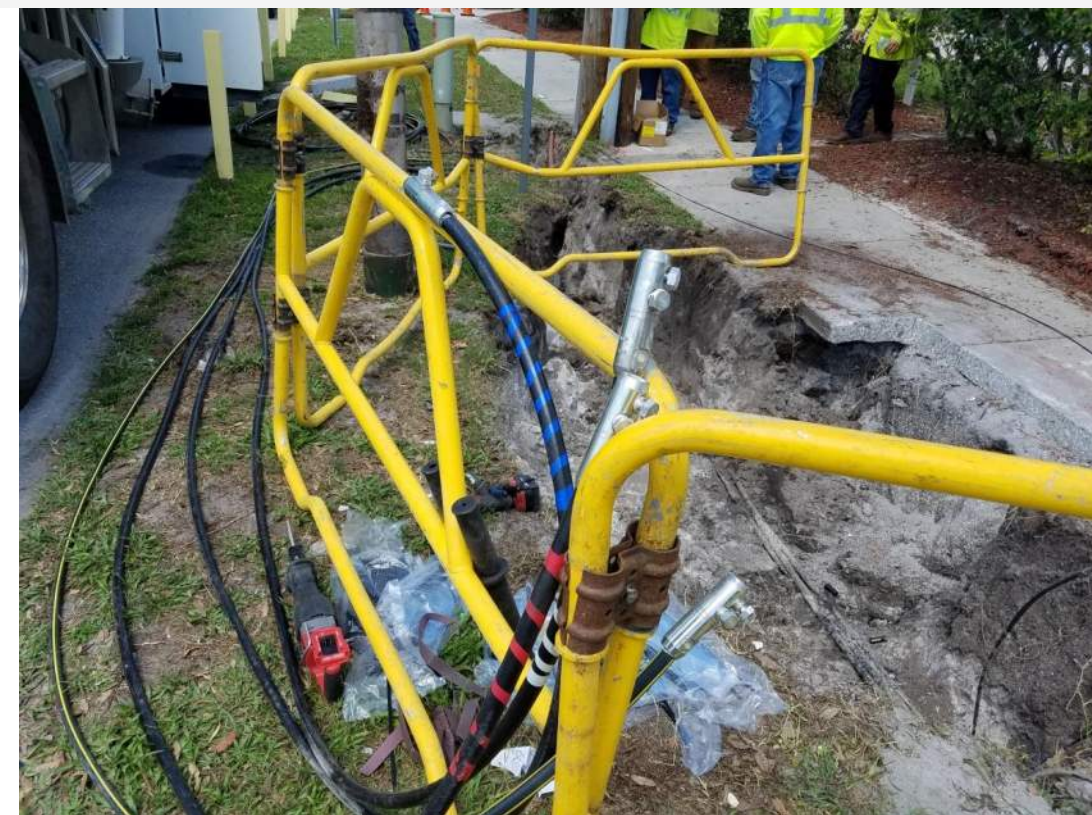


# Duke Transmission LV project Orlando



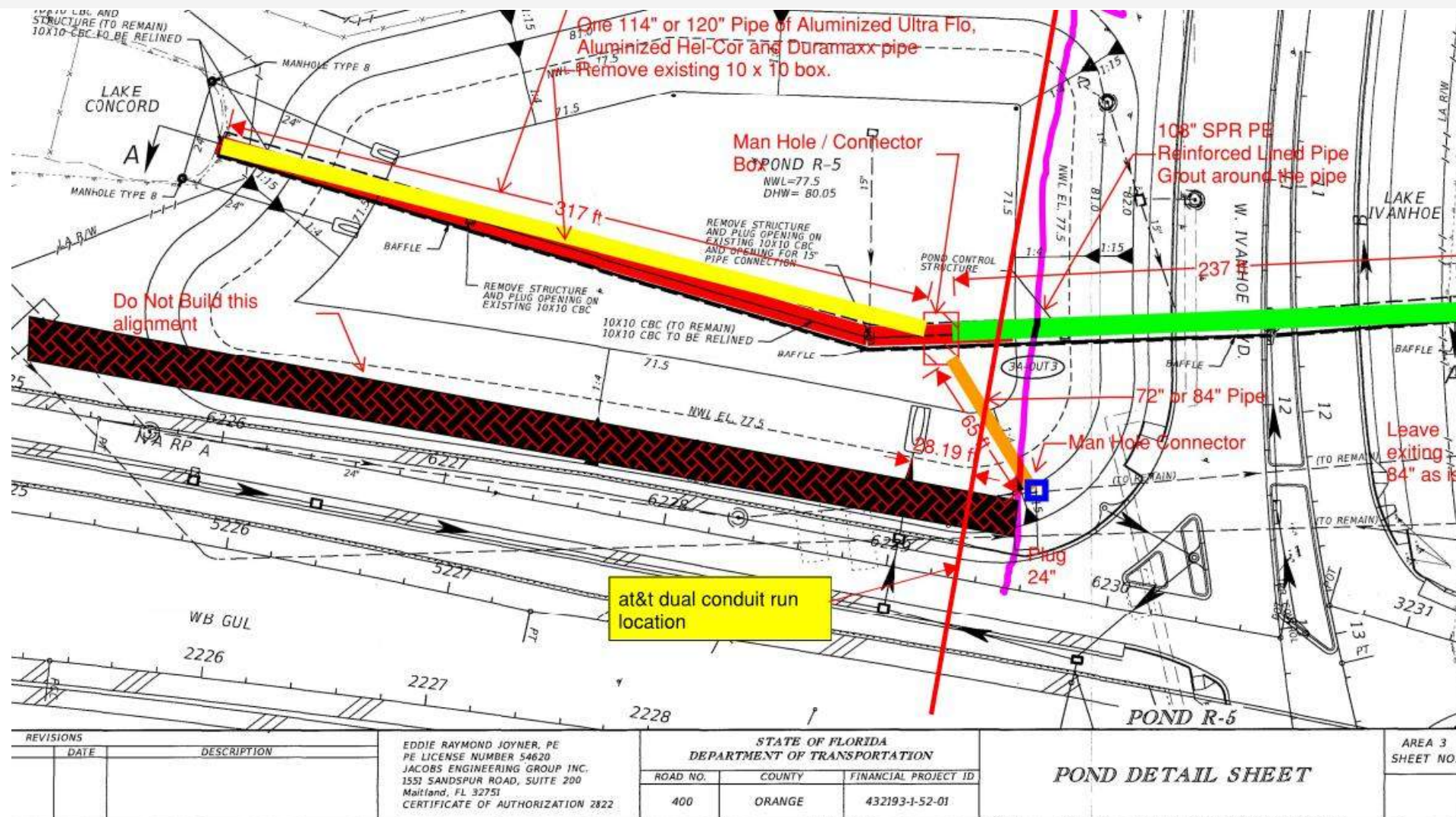


# Duke Transmission LV project Orlando





# Ivanhoe Pond Conflict

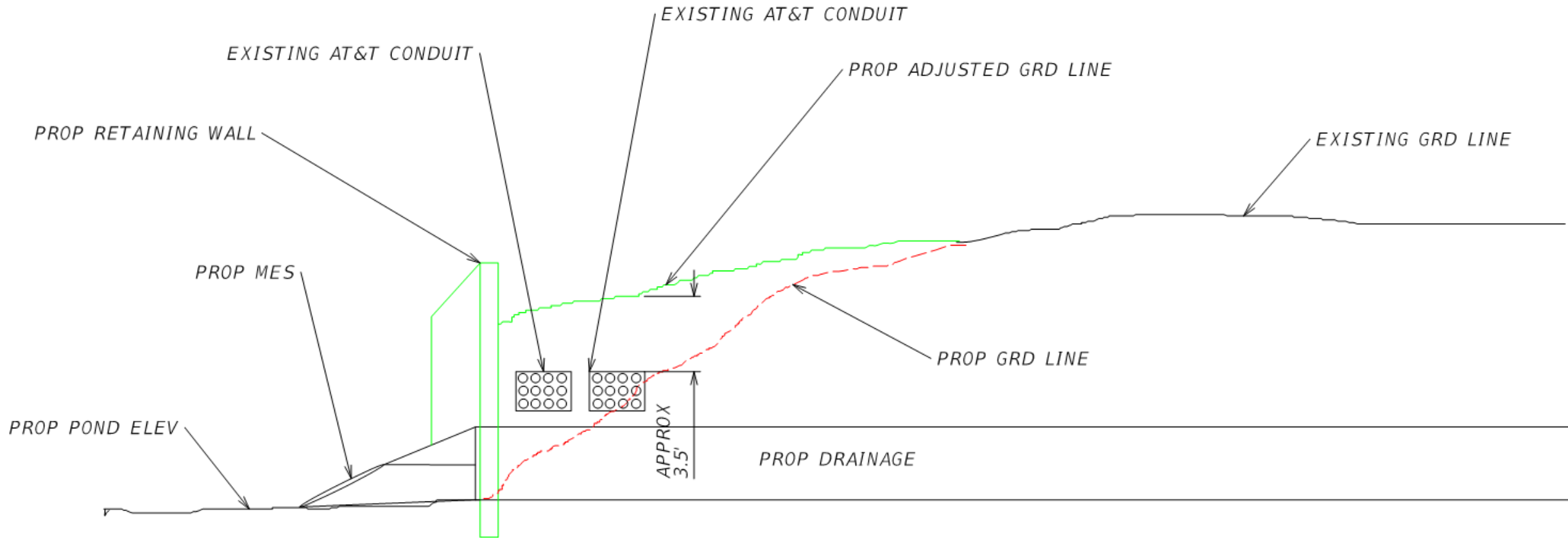


Conflict with at&t dual conduit run in conflict with the proposed pond at Ivanhoe off ramps and I-4. would require a complete relocation costing approx. \$1.5 Million and a 2 year schedule impact. Outside the box thinking resulted a pond reconfigure to get the proper volume and leave the facilities in place.





# Ivanhoe Pond Conflict



**Cross section proposal to eliminate the conflicts.**



# SR 30A Special Drainage Project

## CR 30A Drainage Project Walton County, Florida

**Issue:** Long time standing water after minimal rain event.

**Effects:** High volume of water limits pedestrian usage through this section.

**Safety:** Large number of walking and bike traffic can force pedestrians to merge into traffic or cross the road creating a safety hazard.

**Challenge:** Install a vertical drainage system due to minimal R.O.W. restrictions.

**Material:** One 48" Dia. X 10' Long perforated ADS pipe wrapped in fabric to minimize the silt intake, installed vertically with rock in the pipe. A steel grate was placed on top of the pipe and large stone placed on the grate.

**Time to complete:** 3 Hours. This included removing 2500 gallons of standing water prior to installation.

**Cost:** \$1503.00

**Outcome:** Reduce safety hazards for the general public.





# SR 30A Special Drainage Project





# SR 30A Special Drainage Project





# SR 30A Special Drainage Project





# SR 30A Special Drainage Project





