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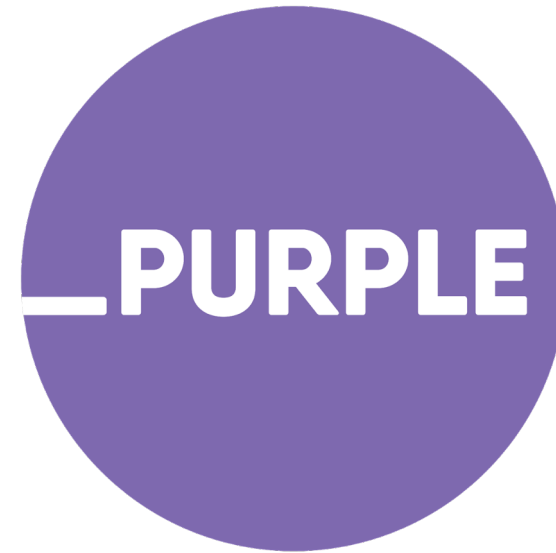
ON THE SPOT
UTILITY RESOURCES LLC

★ 2021 MIDWEST ★ **DAMAGE PREVENTION** ★ **TRAINING CONFERENCE**



***SUCCESSFUL UTILITY COORDINATION DURING DESIGN =
SUCCESSFUL CONTRACTOR CONSTRUCTION***

November 2021
French Lick, Indiana



*Sandra Jones, P.E.
Utility Coordination &
Design*



*Kevin Hintz, P.E.
Utility & Railroad
Coordination*



*Theresa Mendoza
Program Manager*

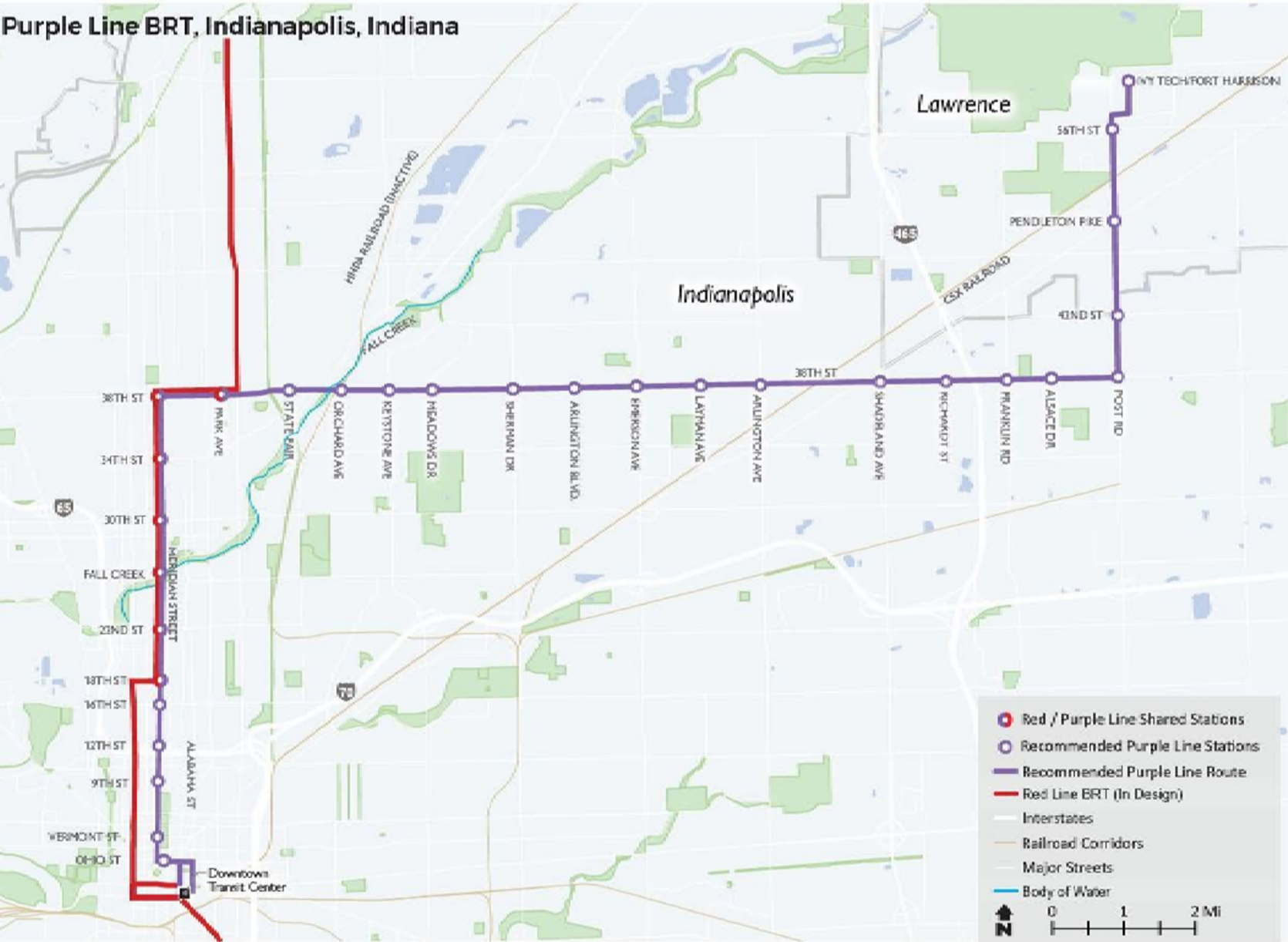


Project Scope Includes:

- Reconfiguring existing major roadways
- Building 18 new stations
- Roadway improvements
 - Including new signalized intersections, resurfacing, new sidewalks and new curbs and ADA ramps



Purple Line BRT, Indianapolis, Indiana



*IndyGo*SM





- The Purple Line will be the second bus rapid transit (BRT) line in Indiana and part of the first all-electric BRT system in the nation.
- The 9.9-mile BRT corridor will serve the Indianapolis Regional Center, extending north from the Julia Carson Transit Center via the Redline Route to 38th Street and northeast to the City of Lawrence.
- Interagency coordination with City of Indianapolis, IndyGo and the City of Lawrence
- The total capital cost for the Purple Line Bus Rapid Transit Project is \$161,950,000 with contribution from the City of Indianapolis.
- Department of Public Works' contribution was made through a public referendum process.
- Purple Line Design followed the standard utility coordination process outlined by DPW.
- WSP USA was selected in the spring of 2017 to complete the design and environmental work for the Purple Line project.



WSP Design – Utility Coordination Schedule

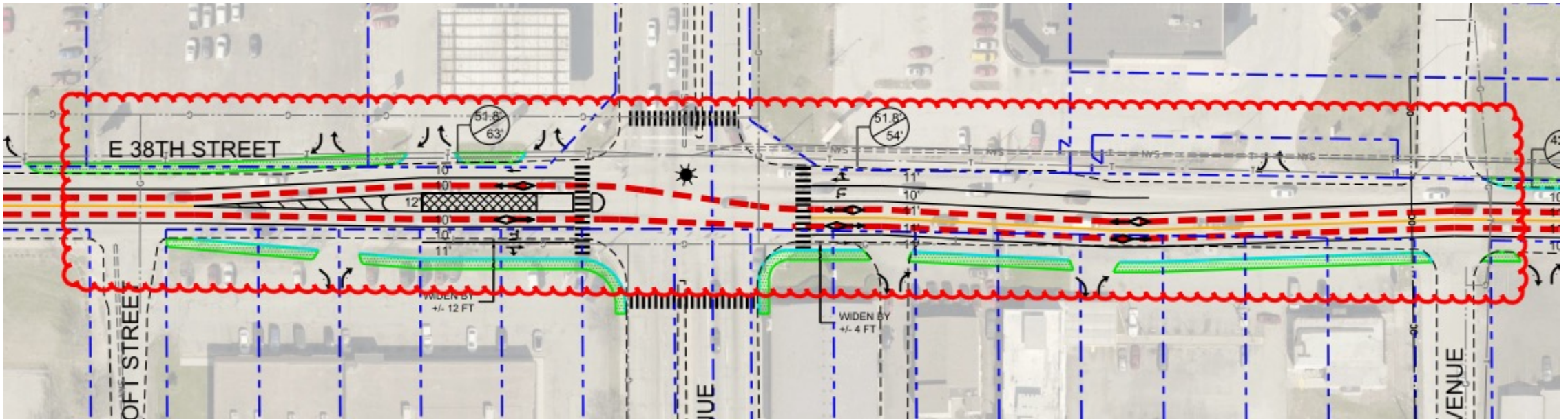
- **April 2017** – Project NTP from IndyGo
- **May 2017** – Initial Notice set to utilities
- **January 2018** – Verification Sent to utilities
- **May 2018** – 30% Plans distributed to utilities
- **Summer 2018** – First SUE was performed
- **March 2019** – 60% Plans distributed to utilities
- **Summer 2019** – Supplemental SUE was performed
- **May 2020** – Request for Work Plans
- **Nov 2020** – Work Plans started being Approved



WSP Design – Utility Coordination

10% Design Plans

- Initial Notice
- Request facility Plans



WSP Design – Utility Coordination

Utility Involvement

**Started with 31 Utilities
identified as being in the project area**

Ended with 21 separate utilities

Utilities such as:

Gas

Water

Electric

Telecom

Small Cell

Street Lights

Thermal

Sanitary

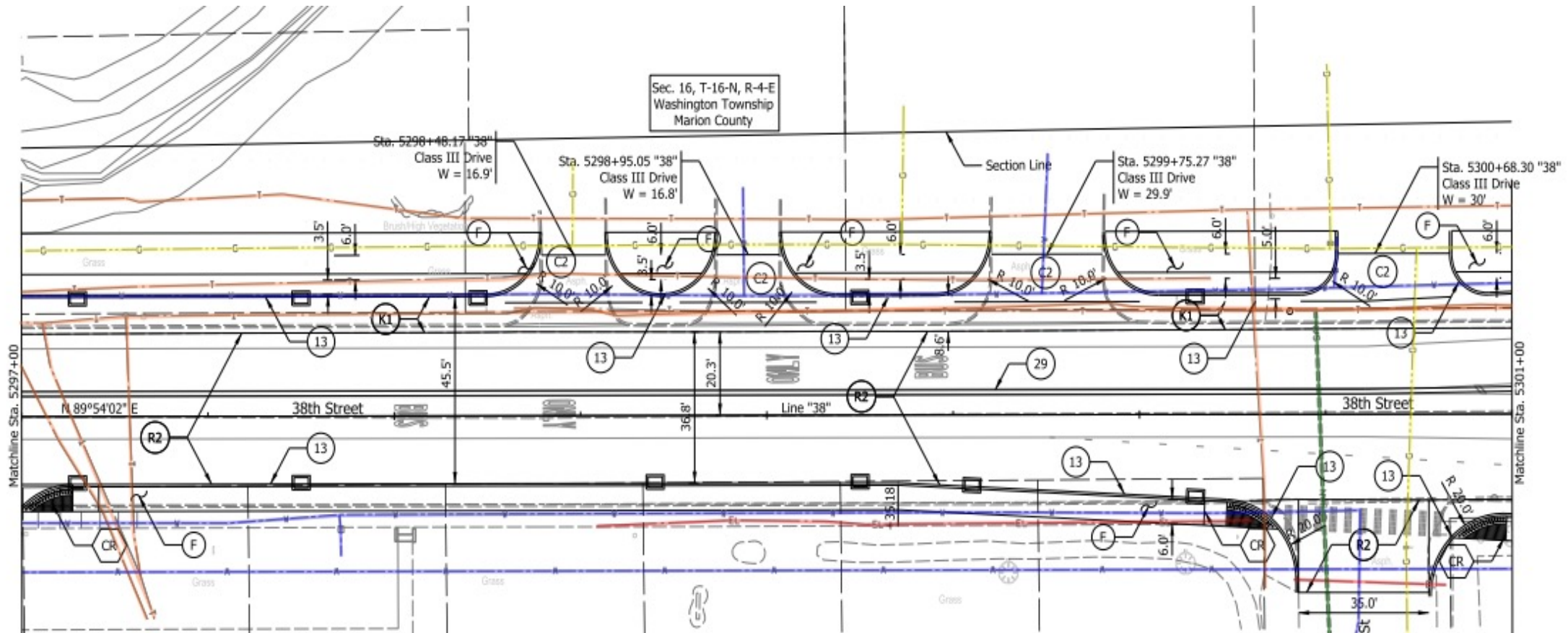
Cable



WSP Design – Utility Coordination

30% Design Plans

- Request Verification from utilities
- Conflict Analysis started



WSP Design – Utility Coordination

- What type of facility is the “T” line?



WSP Design – Utility Coordination

- Time to request SUE work on utilities

1) WSP SUE

- * 123 Test Holes
- * 5735 LF of Designating

2) AT&T performed SUE

- * 162 Test Holes

3) City of Lawrence SUE

- * 25 Test Holes

4) CEG Water SUE

- * 40 Test Holes

5) Zayo SUE

- * 10 Test Holes

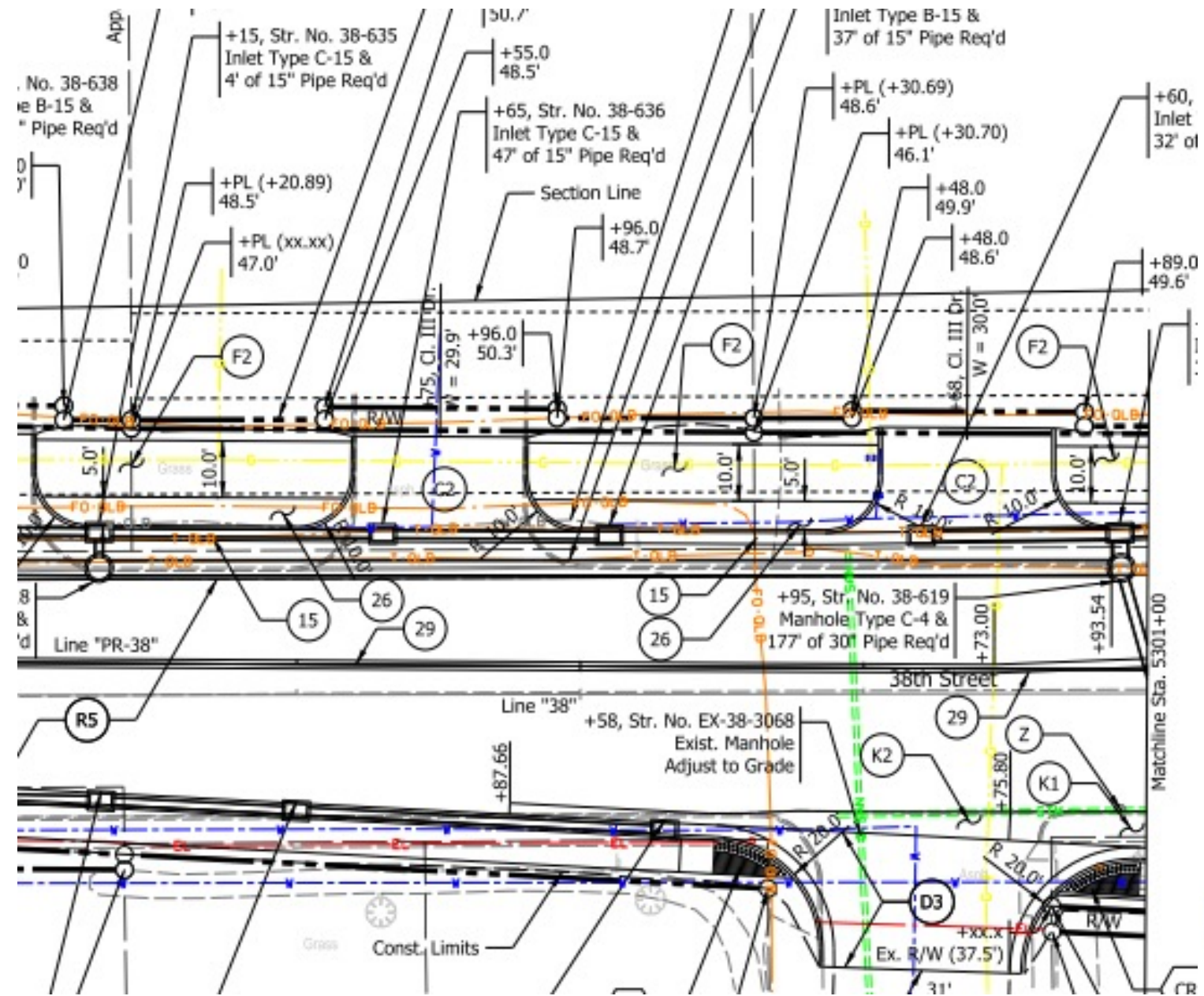
Utility Test Hole Locations

TH ID NO	Road/Alignment	Station	Offset	Rt./Lt.	Type of Utility	Width of Conduit/Diameter of Pipe (in)	Thickness of Conduit (in)	Northing	Easting	Existing Ground Elevation	Top of Utility - Field Depth (Ft)	Top of Utility - Elevation
WSP TH 359	38th St.	5319+88	-34.5	Lt.	Water	16		309560.07	807561.89	825.95	5.5	820.46
WSP TH 360	38th St.	5328+03	-32.4	Lt.	Water	16		309549.55	808376.90	829.49	4.0	825.53
WSP TH 361	38th St.	5329+53	-31.5	Lt.	Water	16		309547.83	808526.34	831.11	5.1	826.04
WSP TH 362	38th St.	5330+02	23.8	Rt.	Water	8		309492.43	808574.97	831.12	4.5	826.67
WSP TH 363	38th St.	5330+12	23.2	Rt.	Gas	3		309492.94	808585.50	831.46	3.0	828.43
WSP TH 364	38th St.	5332+49	22.7	Rt.	Gas	2		309492.97	808822.53	833.44	2.8	830.65
WSP TH 365	38th St.	5332+49	23.5	Rt.	Water	8 O.D.		309492.20	808822.58	833.43	4.6	828.84
WSP TH 366	38th St.	5332+83	-51.0	Lt.	Water	12		309566.74	808856.25	833.82	4.7	829.09
WSP TH 367	38th St.	5334+02	-33.5	Lt.	Water	16		309550.09	808975.51	834.62	4.9	829.77
WSP TH 368	38th St.	5336+85	-31.3	Lt.	Water	16		309549.78	809258.55	835.32	5.0	830.31
WSP TH 369	38th St.	5339+95	23.6	Rt.	Gas	3		309496.97	809568.06	836.56	2.6	833.91



WSP Design – Utility Coordination

- 60% Plans
- One-on-One Meetings



WSP Design – Utility Coordination

- 60% Plans
- One-on-One Meetings

“I consider the one-on-one meetings to be far more effective than the overall utility coordination meetings, especially on a project of this size.”

- Zach Goodbar, AT&T

“Working with the designer one-on-one, allowed CEG to identify our conflict points directly and express the best way to eliminate conflicts”

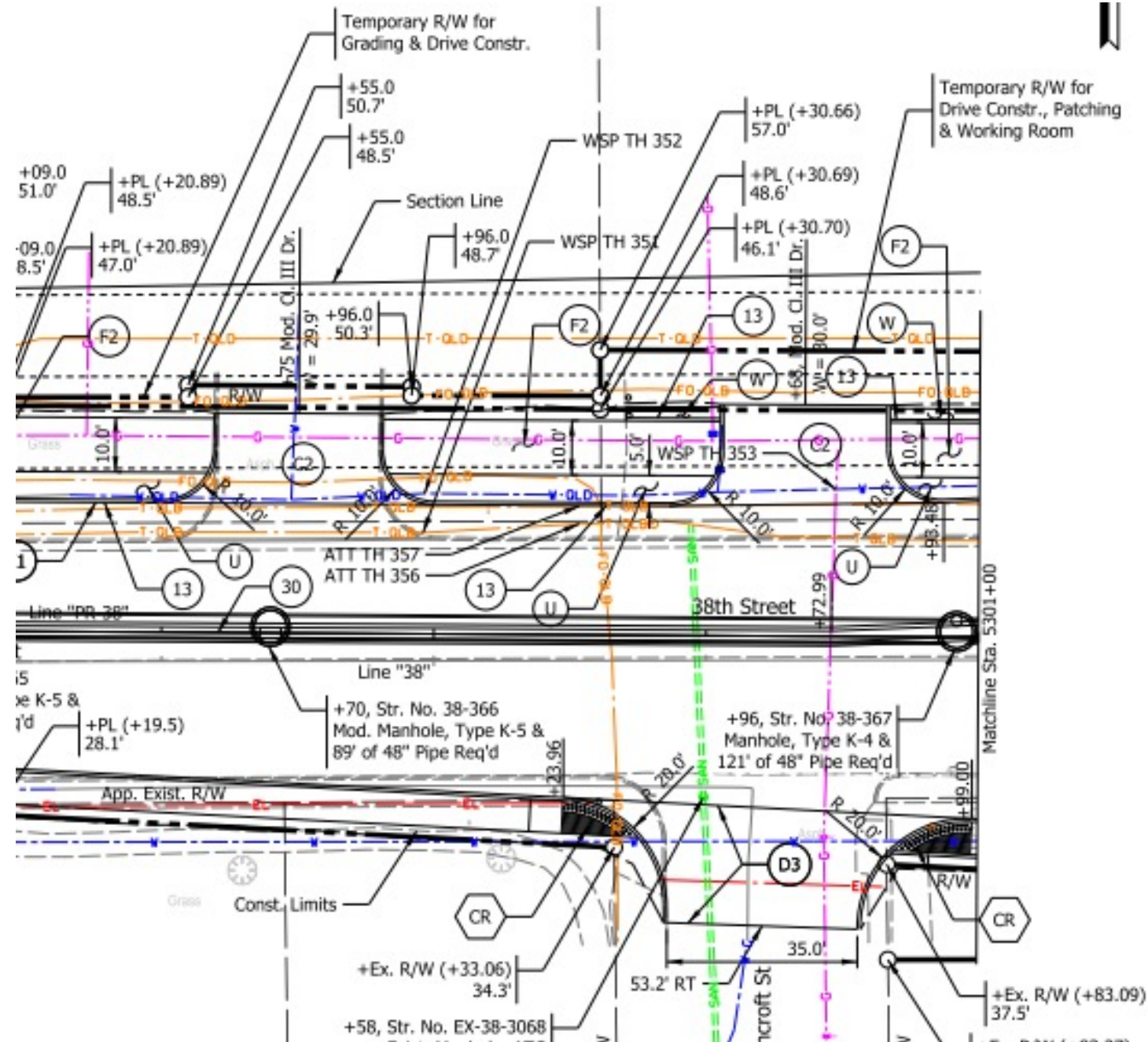
- Scott Ritter, CEG Water

“Meeting with the designer one-on-one gave us an opportunity to discuss proposed storm sewer inlets and how slight elevation changes could eliminate conflicts”

- Wessler Engineering, City of Lawrence



* Request Work Plans



WSP Design – Utility Coordination

Reductions in Relocations

AT&T

- Eliminate 50% of the conflict locations

Very important specifically on this project because with the original number of conflict locations we likely would have had to replace ALL cables in the corridor dating back 70 years and this would have delayed the IndyGo project indefinitely. With less conflict locations we were able to move forward with a design to lower existing cables in many places as well as support existing cables. While still a very large and complex undertaking for AT&T, this is not as complex as a full relocation, which would have been multimillions to replace and ate up all our field resources for years which would pull away from our ability to meet dates on other INDOT/municipal projects.

- Saved 2+ years of relocations
Full relocation likely would have taken 3+ years
- Savings of over \$2 Million.



WSP Design – Utility Coordination

Reductions in Relocations

City of Lawrence

- Relocation to be performed as “Work in Contract” to manage schedule
- Reduce cost due to reducing redundancy. Only one restoration.
- Eliminated 25% of initial conflicts

CEG Water

- Eliminate 60% of the conflict locations
- Saved 18 months of relocations



WSP Design – Utility Coordination

Work Plan Approval Process

- 1) Utility Submit Work Plan to WSP for Review and Approval
- 2) WSP reviewed Work Plan
- 3) BF&S reviewed Work Plan
- 4) Comments were combined and sent back to utility for adjustments
- 5) Utility resubmitted work plan
- 6) WSP/BF&S reviewed for concurrence on review
- 7) WSP signed approved Work Plan and uploaded to eBuilder
- 8) BF&S signed Work Plan in eBuilder
- 9) City of Indianapolis reviewed/signed Work Plan in eBuilder
- 10) IndyGo reviewed/signed Work Plan in eBuilder
- 11) WSP sent Approved Work Plan and Initial NTP (for material procurement) to utility
- 12) BF&S sent Construction NTP to utility

*****DO NOT COMPLETE BELOW THIS POINT*****

The following sections are to be used by personnel to review the utility relocation work plan.

Section L **The Project Design Consultant shall review the work plan to ensure that it:**

- | | | | | | |
|----|---------------------------------------------------------|-----------------------------------------|-----------------------------|-------|-----|
| 1. | is compatible with department permit requirements? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Init. | SLI |
| 2. | is compatible with the project plans? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Init. | SLI |
| 3. | is compatible with the construction schedule? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Init. | SLI |
| 4. | is compatible with other utility relocation work plans? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Init. | SLI |
| 5. | has a reasonable relocation scheme? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Init. | SLI |
| 6. | has a reasonable cost for compensable work? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Init. | N/A |

WSP USA Reviewer:

Reviewer Name Signed: _____

Reviewer Name Printed: _____

Reviewer Date Signed: _____

BFS Reviewer:

Reviewer Name Signed: _____

Reviewer Name Printed: _____

Reviewer Date Signed: _____

Section M **Approved Work Plan.**

I have reviewed the work plan and found it acceptable.

DPW Reviewer:

Project Manager Named Signed: _____

Project Manager Name Printed: _____

Project Manager Date Signed: _____

IndyGo Reviewer:

Project Manager Named Signed: _____

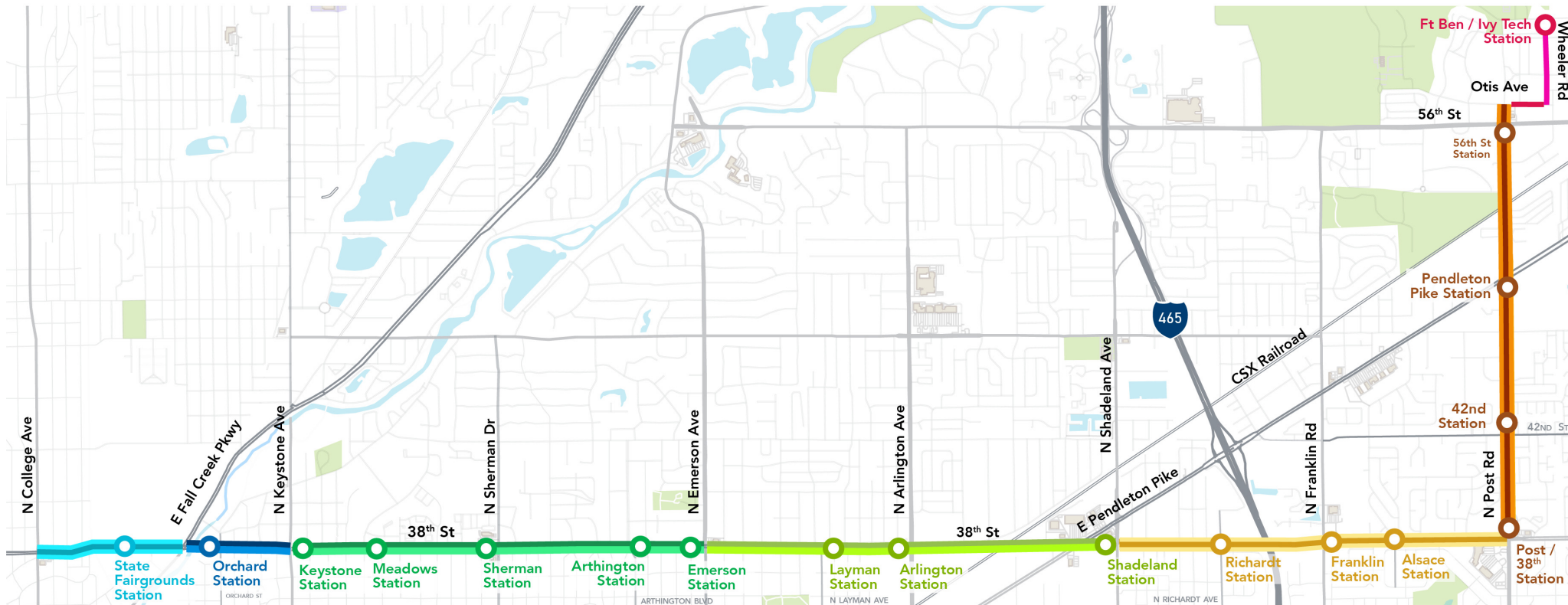
Project Manager Name Printed: _____

Project Manager Date Signed: _____



BF&S CM Team Brought In Construction Schedule & Milestones Outline

- Broke project into MOT / Construction Segments



BF&S CM – Utility Coordination

Work Plan Reviews:

- 21 total utilities, 69 total work plans, with >200 individual relocations
- Conflicts resolved, new utilities and relocations found

Utility Work Plan Review Comments

Project Name:		Purple Line - IndyGo		Date:		1/4/2021	
Utility Work Plan:		CEG Gas					
Additional Description:		Segment 3					

1) - To Be Completed By <i>Reviewer</i>				2) - To Be Completed by <i>Responder / Agency</i>			3) - To Be Completed By <i>Reviewer</i>
Item No.	Reviewer/Host Engineer or Engineer/Firm	Date	Review Comment	Responsible Responder / Agency	Date	Responder / Agency Response	Open/Closed
1	Khintz, BFS	12/30/2020	CEG gas will be relocating/adjusting any and all service lines that are in conflict?	CEG GAS	3/16/2021	Yes, only Citizens Gas can relocate gas services.	CLOSED
2	Khintz, BFS	12/30/2020	Will CEG be estimating their total charged to the Contractor per DPW utility supporting spec?	CEG GAS	3/16/2021	Citizens Gas has never had to pay a DPW Contractor to support gas facilities in the past.	Closed - Contractor's Expenses
3	Khintz, BFS	12/30/2020	What type of restoration will CEG be performing especially in the areas that existing pavement is to remain?	CEG GAS	3/16/2021	Citizens Gas will do a temporary restoration and then if the pavement will not be replaced we will do a final restoration.	CLOSED
5	Khintz, BFS	1/4/2021	Potential missed conflict with 4" WR gas main crossing STR 38-118 not included in the relocation plan (~STA 5179+55)	CEG GAS	3/18/2021	The relocation will be added for the 4" WR gas main.	CLOSED
6	Khintz, BFS		Potential missed conflict with 2" WR gas main crossing STR 38-136 not included in the relocation plan (~STA 5181+69)	CEG GAS	3/18/2021	The 2" WR gas main will be relocated.	CLOSED
7	Khintz, BFS	1/4/2021	Unnecessary relocation on Sheet 11 of CEG gas relocation prints in SE corner of 38th & Kinnear Avenue?	CEG GAS	3/18/2021	This relocation will be removed from the plan set.	CLOSED
8	Khintz, BFS	1/4/2021	Potential missed conflict with service line crossing @ STA 5183+80?	CEG GAS	3/18/2021	Gas services will be adjusted as needed.	CLOSED
9	Khintz, BFS	1/4/2021	Potential missed conflict with service line crossing @ STA 5195+60?	CEG GAS	3/18/2021	Gas services will be adjusted as needed.	CLOSED
10	Khintz, BFS	1/4/2021	Potential missed conflict with service line crossing @ STA 5252+25?	CEG GAS	3/18/2021	Gas services will be adjusted as needed.	CLOSED
11	Khintz, BFS	1/4/2021	Potential missed conflict with service line crossing @ STA 5257+50?	CEG GAS	3/18/2021	Gas services will be adjusted as needed.	CLOSED



BF&S CM – Utility Coordination

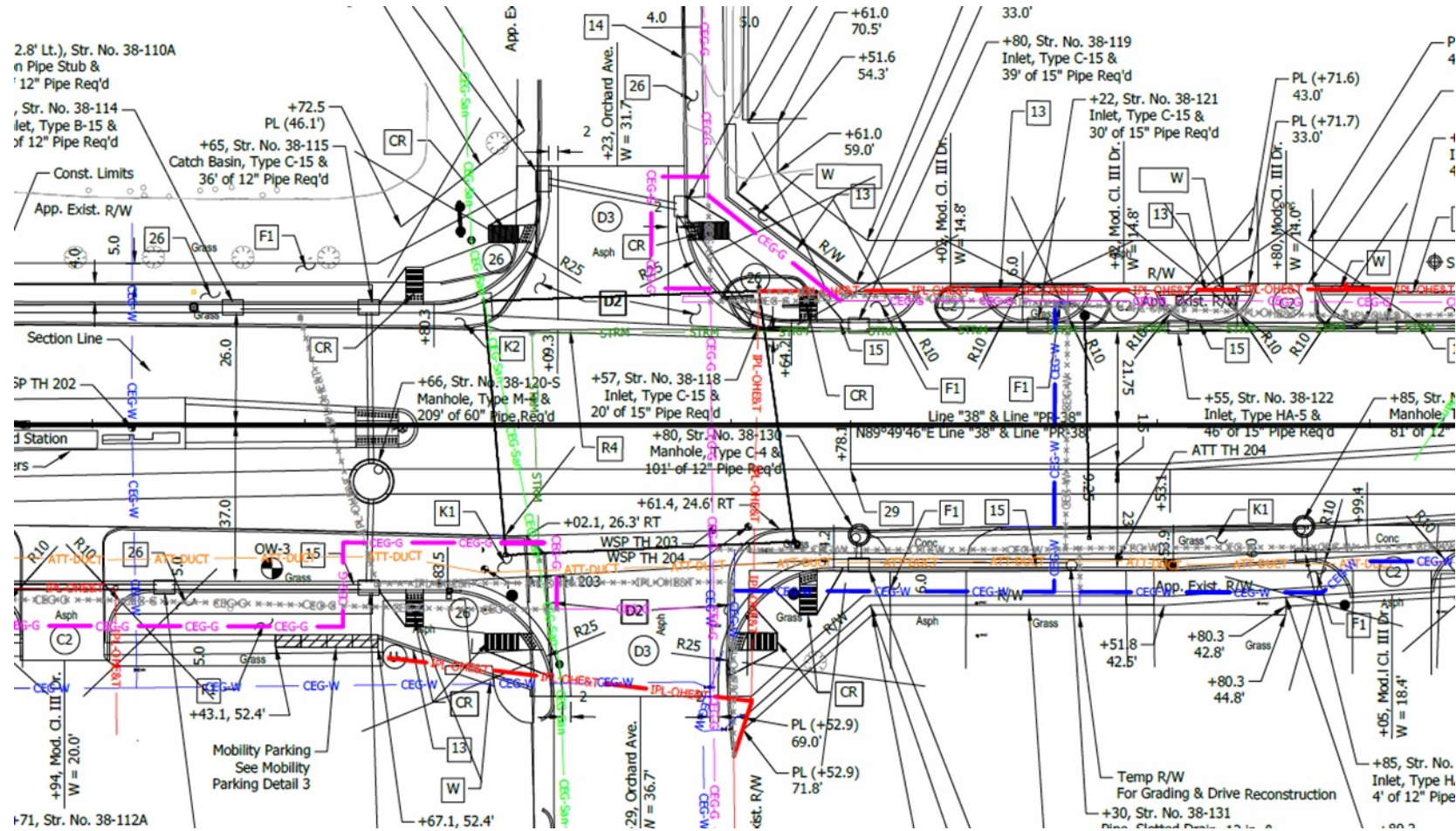
Work Plan Reviews:

- Relocations split into segments



BF&S CM – Utility Coordination Finalized Work Plan

- Compilation Relocation Plans



BF&S CM – Utility Coordination

Bi-Weekly Utility Progress Meetings

- Report progress / concerns / needs

Number	Utility	Location	E-Builder	Work Plan Approved (e-mail)	Pre-Construction NTP	Pre-Construction Completion Date	Construction Relocation NTP	Construction Completion Date	Status	Actor Responsible
45	IPL Street Lights	38th Street and Post Road							Work plan submitted 10/13/2021, working on final revisions to be submitted this week 10/15/2021	
		Ahead of Construction						4/1/2022	Bamerica applies to Luminaires	AES to finish
		Remove and install during/after							Dependent on Contractor notice	
46	Mobilitie	Small Cell Towers	UWP-13	4/30/2021	5/19/2021	6/2/2021	5/19/2021	6/18/2021	Field Work Completed 6-30-21	
47	T-Mobile	Small Cell Towers	UWP-65	7/28/2021	N/A	N/A	N/A	N/A	No conflicts	
48	US Signal	No owned facilities, leased from	UWP-76	9/7/2021	N/A	N/A	N/A	N/A	No conflicts	
49	Verizon	College to Fall Creek	UWP-67	9/2/2021	9/3/2021	11/17/2021	9/3/2021	3/16/2022	Relo schedule to be updated at next call by Steve Melson	Steve Melson - EEG
50	Verizon	Fall Creek to CSX RR	UWP-68	9/2/2021	9/3/2021	11/17/2021	9/3/2021	3/16/2022	Relo schedule to be updated at next call by Steve Melson	Steve Melson - EEG
51	Verizon	CSX RR to Post Rd	UWP-69	9/2/2021	9/3/2021	11/17/2021	9/3/2021	3/16/2022	Relo schedule to be updated at next call by Steve Melson	Steve Melson - EEG
52	Verizon	Post Road	UWP-70	9/2/2021	9/3/2021	11/17/2021	9/3/2021	3/16/2022	Relo schedule to be updated at next call by Steve Melson	Steve Melson - EEG
53	Windstream	Seg. 2 owned facilities, leased on S5	UWP-74	9/2/2021	N/A	N/A	N/A	N/A	No conflicts, if conflicts arise JDH is their Contractor	
54	Zayo 1	Coliseum Ave.	UWP-31	4/30/2021	7/13/2021	7/20/2021	7/13/2021		Dependent on PL contractor	
55	Zayo 10	Post Rd.: Pinehurst Dr. North	UWP-46	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
56	Zayo 11	Post @ 42nd	UWP-52	7/7/2021	7/13/2021	7/20/2021	7/13/2021		Dependent on IPL @ 42nd relocation completion	
57	Zayo 12	Post south of 46th	UWP-43	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
58	Zayo 13	Post @ Pendleton Pike	UWP-44	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
59	Zayo 14	Post North of Pendleton Pkwy	UWP-41	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
60	Zayo 15	Post @ RR north	UWP-45	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
61	Zayo 2	Station St.	UWP-36	7/7/2021	7/13/2021	7/20/2021	7/13/2021		Handhole is in future path, adjust during construction	
62	Zayo 3	Sherman Drive	UWP-35	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
63	Zayo 4	38th Dequincy to Emerson	UWP-51	7/7/2021	7/13/2021	7/20/2021	7/13/2021		Handhole is in future path, adjust during construction	
64	Zayo 5	38th College to Dequincy	UWP-32	4/30/2021	N/A	N/A	N/A	N/A	In AT&T ductbank	
65	Zayo 6	Post Road north of WP 15, Elmonte	UWP-42	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
66	Zayo 7	38th Franklin to Post	UWP-34	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
67	Zayo 8	38th @ East side of Fall Creek-	UWP-37	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
68	Zayo 9	Post Rd.: Otis & Wheeler (56th	UWP-39	4/30/2021	N/A	N/A	N/A	N/A	No conflicts	
69	Charter (Spectrum)								Confirmed working on work plan still 10/25/2021	Byron P. - Charter



★ 2021 MIDWEST ★ DAMAGE PREVENTION ★ TRAINING CONFERENCE



Sandra Jones, P.E.
Utility Coordination & Design
Sandra.Jones@wsp.com
317-278-3414



Kevin Hintz, P.E.
Utility & Railroad Coordination
khitz@bfsengr.com
317-713-4615



Theresa Mendoza
Program Manager
Theresa.Mendoza@indy.gov
317-327-2302