NORTH CAROLINA
Department of Transportation









Design with Utilities in Mind

NCDOT Utilities Unit & Division 3 Personnel
September 20, 2022

Introductions

- **Don Hampton** – Regional Utilities Engineer
- **Jon Gaillard** – Western Regional Utility Coordinator
- **Lonny Sleeper** – Division 3 Utility Engineer
- **Todd Lapham** – Senior Utilities Engineer- Alternative Delivery Projects

Agenda

- Overview of the Utility Coordination and Design Process
- The Avoid, Minimize, and Accommodate Method
- Early Involvement and Red Flag Items
- Challenges in Utility Relocation
- Summary/Things to Consider
- Questions?

NORTH CAROLINA
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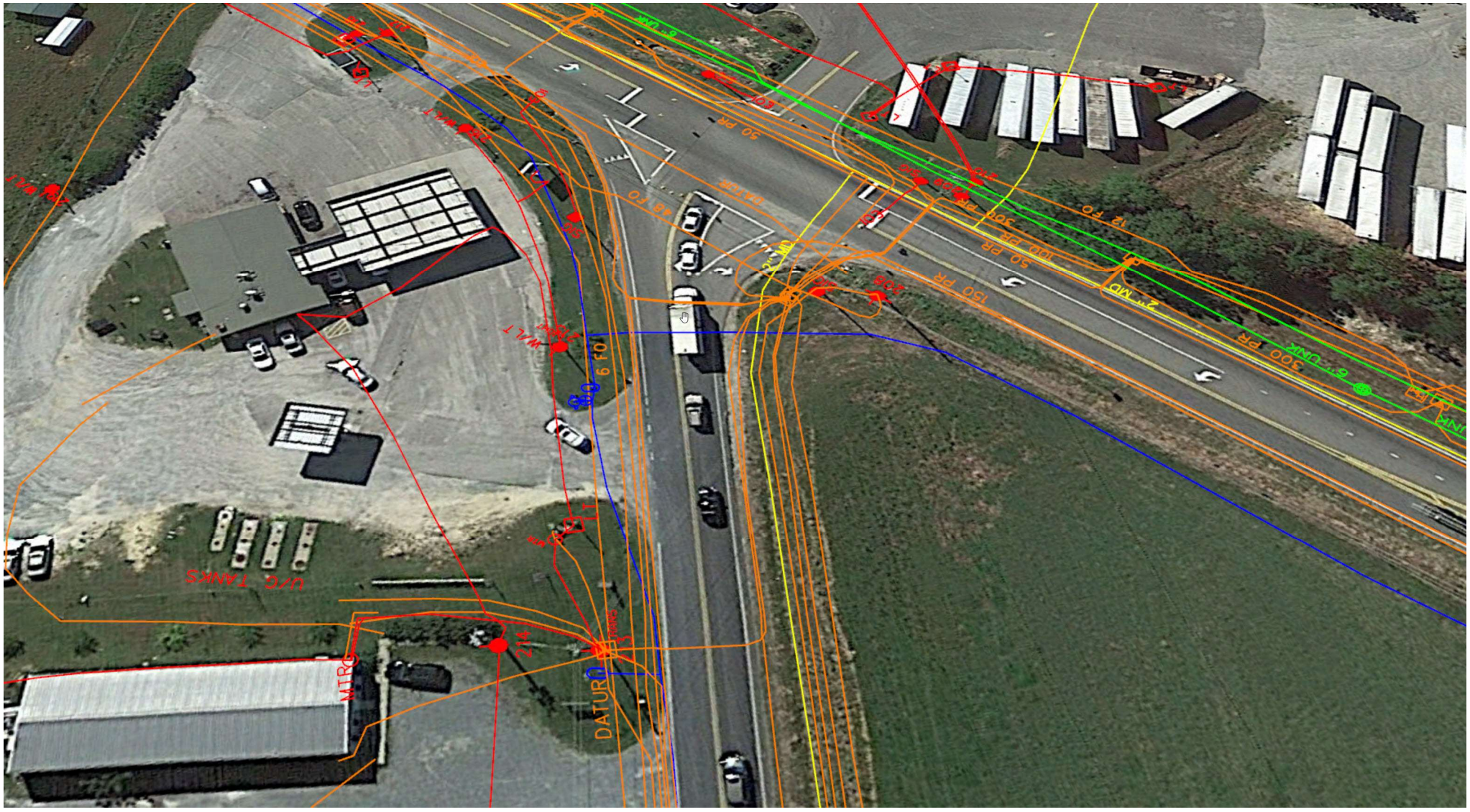
The Utility Coordination and Design Process

Jon Gaillard
Western Regional Utility Coordinator


County Mattress Brokers
& M Automotive
QUALITY PRE-OWNED
910.565.4133
mmautomotivenc.com
State Rd 2075
Google


U/C TANKS
MTRS
DATUM
214
6 FO
50' PR
100' PR
150' PR
300' PR
12" FO
2" MD
8" UNK

What is Utility Coordination?

- The facilitation of the removal, relocation, or adjustment of utility facilities when necessary for NCDOT highway improvement projects.

- Utility coordination involves ***all*** stakeholders in developing the most efficient and least impactful solution to accommodate utilities within a project, including:
  - Utility Owners
  - NCDOT (PMU, SMU, Roadway, Hydro, Geotech, EAU, etc.)
  - Design Teams
  - Project Managers
  - Property Owners
  - Government Agencies

Avoid, Minimize, Accommodate

- Our approach to utility coordination:
- Avoid- eliminate conflict by avoiding it
- Minimize- minimize the impact of conflict
- Accommodate- adjust or relocate existing facility

The Utility Coordination & Design Process

- Develop Initial Utility Relocation & Construction Estimates **(1UT1)**
- Investigate Existing Utilities **(1UT2)**
- Initiate Utility Coordination and/or Design **(2UT1)**
- Utility Relocation and Construction Estimates **(2UT2)**
- Advance Utility Coordination and/or Design **(3UT1)**
- Utility Relocation and Construction Estimates **(3UT2)**
- Complete Utility Coordination and/or Design **(4UT1)**
- Complete Utility Relocations by Owner **(4UT2)**
- Utility Construction Support **(5UT1)**

Develop Initial Utility Relocation & Construction Estimates (1UT1)

- The first step in utility coordination is to develop an initial utility estimate.
- Include anything that may be impacted within construction limits.
- Make note of high-impact facilities
  - Transmission facilities, substations, pump or lift stations, etc.

Develop Initial Utility Relocation & Construction Estimates (1UT1)

UTILITY ESTIMATE WORKSHEET

TIP No: U-6123
WBS Element No: 34263.1.1
State Project No:
Fed. Project No:
County: Burke
Description: Bridge replacement and intersection improvements at US 64 (Burkemont Ave) and US 70 (W. Flemin

Field Inspection - Evidence of Utilities

Gas:	Yes	Electric:	Yes	Telephone:	Yes	CATV:	Yes
Water:	Yes	Sewer:	Yes	Drainage:	Yes	Other:	Yes Fiber

Anticipated Relocation

Gas:	Yes	Electric:	Yes	Telephone:	Yes	CATV:	Yes
Water:	Yes	Sewer:	Yes	Drainage:	No	Other:	No

Summary: Intersection Improvements at Burkemont Ave (US 64) and US 70 (W. Fleming Dr)
Requesting Party: Lynnise Hawes
Estimate Date: August 10, 2022

Relocation Totals		Construction Total		Alternate Totals	
Power Poles:	$120,000.00	Power Poles:		**Relocation Total**	**$232,912.00**
Power Items:		Power Items:		**Construction Total**	**$39,122.00**
Telephone Poles:	$4,912.00	Telephone Poles:		**Alternate Total**	**$272,034.00**
Telephone Items		Telephone Items			
Gas Line:		Gas Line:			
Gas Items:		Gas Items:			
Water Line:		Water Line:	$22,500.00		
Water Items:		Water Items:	$8,110.00		
Sewer Line:		Sewer Line:			
Sewer Items:		Sewer Items:	$8,512.00		
Misc.Items:	$108,000.00	Misc.Items:			

Detail: Intersection Improvements at Burkemont Ave (US 64) and US 70 (W. Fleming Dr)

Power Poles

Type	Location	Number	Cost / Pole	Total Cost
Distribution Pole (Local)		8	$15,000.00	$120,000.00
	Total:	**8**		**$120,000.00**

Telephone Poles

Type	Location	Number	Cost / Pole	Total Cost
Three Cable Telephone Pole		1	$4,912.00	$4,912.00
	Total:	**1**		**$4,912.00**

Water Lines

Line Type	Location	Length	Cost per Ft.	Total Cost
12" Water Line Per Linear Foot		300	$75.00	$22,500.00
	Total:			**$22,500.00**

Water Items

Item	Location	Number	Unit Cost	Total Cost
Water Meter Relocation		1	$972.00	$972.00
Valves		2	$1,069.00	$2,138.00
Fire Hydrant New		1	$5,000.00	$5,000.00
	Total:			**$8,110.00**

Sewer Items

Item	Location	Number	Unit Cost	Total Cost
Manhole		2	$4,256.00	$8,512.00
	Total:			**$8,512.00**

Miscelansous Items and Adjustments

Item	Location	Number	Unit Cost	Total Cost
Contigency		1	$48,000.00	$48,000.00
Clearing		1	$60,000.00	$60,000.00
	Total:			**$108,000.00**
			Alternate Total	**$272,034.00**

Investigate Existing Utilities (1UT2)

- Initial contact with utilities to explain project scope, location and possible alignments, and the project schedule.
  - Request that utility owners provide details of facilities within project limits, including critical or high-impact facilities
  - Request details on factors that may affect project schedules
    - Lengthy design times
    - Material lead times
    - Internal budgets for construction
- Preliminary Utility Investigations
  - Inventory, estimate, risks to budget and schedule, avoidance
- Utility Risk and Analysis Report
- Determine Utility Relocations
- Obtain Utility Construction Requests

Initiate Utility Coordination and/or Design (2UT1)

- Determine conflicts
  - Review plans for likely areas of conflict
- Develop preliminary relocation schedule to be shared with utilities
  - Important to consider joint-use facilities!
  - Durations for relocation ***and*** retiring/removal of existing facilities
  - Just a baseline, will be fine-tuned as project progresses
- Utility Kickoff Meeting
  - Provide information to utility companies about the project
  - Discuss project schedule
  - Discuss preliminary relocation alignments
  - Request utilities to develop preliminary plans and identify any necessary easements
  - Review cost responsibilities

Initiate Utility Coordination and/or Design (2UT1)

- Determine cost responsibilities
  - Investigate prior rights documentation
  - Determine if the utility's claims are justifiable
- Create relocation schedules
  - These will continue to be fine-tuned throughout life of the project.
  - PM's need to be updated as schedules change
- Preliminary relocation and construction plans
  - These will also be fine-tuned as project progresses, especially after hydro designs are complete
- SUE & Geotech Requests

Initiate Utility Coordination and/or Design (2UT1)

- Utility parcel list and PUE submission for inclusion into right of way plans.
  - Important for right of way to be aware of any priority utility parcels and a date which the are needed by to maintain relocation schedules
  - Ultimately impacts overall project schedule

Utility Relocation and Construction Estimates (2UT2)

- Estimates are updated

Advance Utility Coordination and/or Design (3UT1)

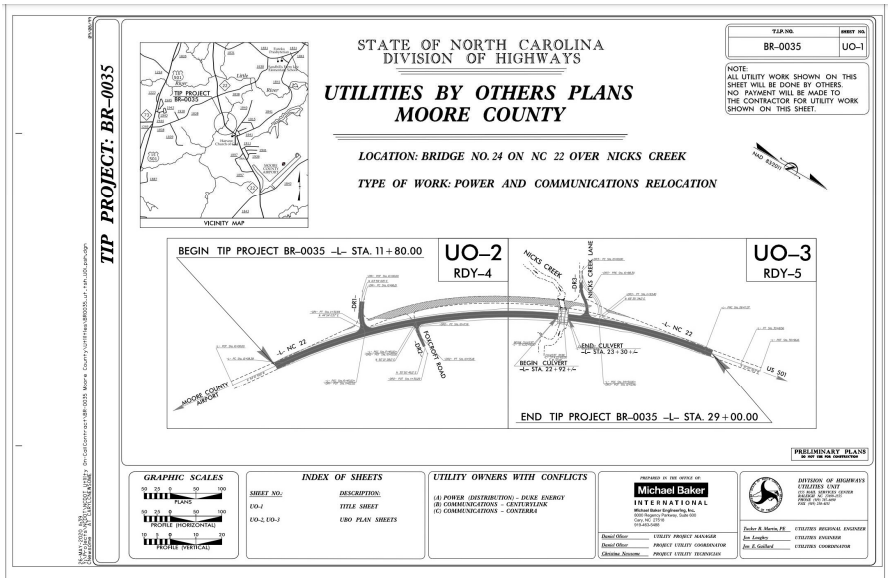
- Submission and review of Utility Relocation Plan Packages
  - UbO Plans, SP, Estimates
- Submission and review of Utility Agreement Plans
  - UC Plans, SP, Estimate
- Water & Sewer Permit Initiation
  - Needed for water & sewer work to be constructed by project contractor
- Utility Permit Plans
  - Dependent on area of utility impacts
- Submission of Final Utility Coordination Working Plans
  - Final utility alignments with final PUE
- Authorization of Utility Relocation and Encroachment Agreements

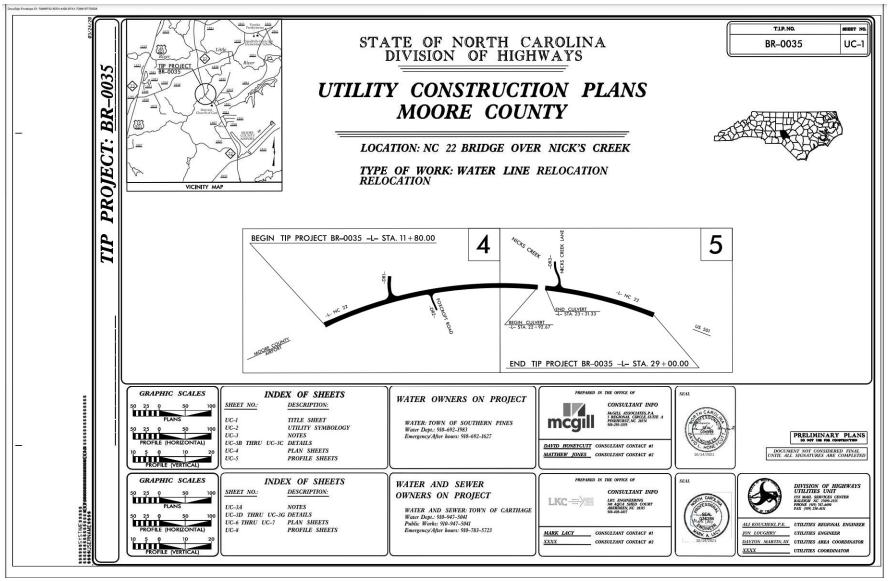
Utility Relocation and Construction Estimates (3UT2)

- Estimates are updated

Complete Utility Coordination and/or Design (4UT1)

- Completion of UbO Plans
- Completion of UC Plans
- Receive Water & Sewer Permits
- Execute Utility Agreements
- Utility Certification





Complete Utility Relocations by Owner (4UT2)

- Relocation scheduling conference
  - Includes utility reps, utility's contractor, PM, and resident engineer
- Maintain contact with utilities throughout relocation construction
  - Weekly
- Maintain updated utility relocation schedule
  - Weekly, or as required
- Continued coordination for any issues that arise

Utility Construction Support (5UT1)

- Continue 4UT2, as necessary, until all utility relocations are complete.
- Review Utilities Materials Submittals.

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Avoid, Minimize, and Accommodate Utilities

Don Hampton
Western Region Utilities Engineer

Lonny Sleeper
Division 3 Utilities Engineer

Early Involvement of Utility Owners

- Show project limits so that potential conflicts can be identified
- Allow to plan for project relocation budgets around future Let dates
- Allow to allocate resources for future relocations
- Utility company can inform NCDOT of new builds or infrastructure upgrades within the proposed project limits and plan accordingly

Avoiding Utility Impacts

Why avoid?

- High relocation costs
- Facilities that are within an existing private easement or a fee simple parcel
- A one-year or greater relocation duration for a single portion of the facility

Power Substation

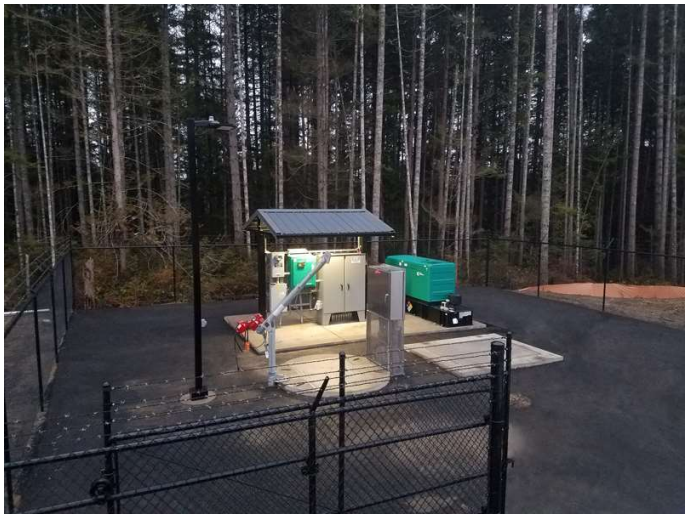
- Can cost $10-50 million to relocate
- Usually located within a fee simple parcel
- Additional R/W cost
- 2 to 5 years for relocation

Power Transmission Lines

- Can cost $350,000 per pole to relocate
- Usually located within a private easement
- Additional R/W cost
- Can take up to 24 months to relocate

Sewer Pump Station

- Can cost $875,000+ to relocate
- Usually located within a fee simple parcel
- Additional R/W cost for new station location
- Normally included as part of the UC Design and part of the contract



SLIC Sites (Cabinets)

- Can cost $350,000 per cabinet to relocate
- Usually located within a fee simple parcel
- Additional R/W cost for new site location
- Can take up to 24 months to relocate

Communication Vault (not a HH)

- Average 8’ x 10’ in size
- Multiple conduits entering/leaving
- Spaced 650’ to 750’ apart
- Impact to conduit between vaults usually results in two vaults being impacted
- Impact to a single vault usually results in 3 vaults with associated conduit being impacted
- Usually longer than normal relocation times
- Can cost $350,000 per vault to relocate and up to 24 months relocation time

Transmission
Gas Regulator Stations

- Cost to relocate a gas transmission stations is extremely expensive due to complexity of relocation
- Usually located within a private easement
- Additional R/W cost for new station location

Distribution
Gas Regulator Station

- Can cost $150,000 for the station itself
- Usually located within a private easement
- Additional R/W cost for new station location

How can we avoid?

- Early involvement of utility owner.
- Identifying the high value facilities early in project development
- Evaluate to determine if facility can be avoided by adjusting design

Minimizing Utility Impacts

Why minimize?

- Reduce impacts to utilities
- Reduce relocation duration
- Reduce relocation cost to utility owner and NCDOT

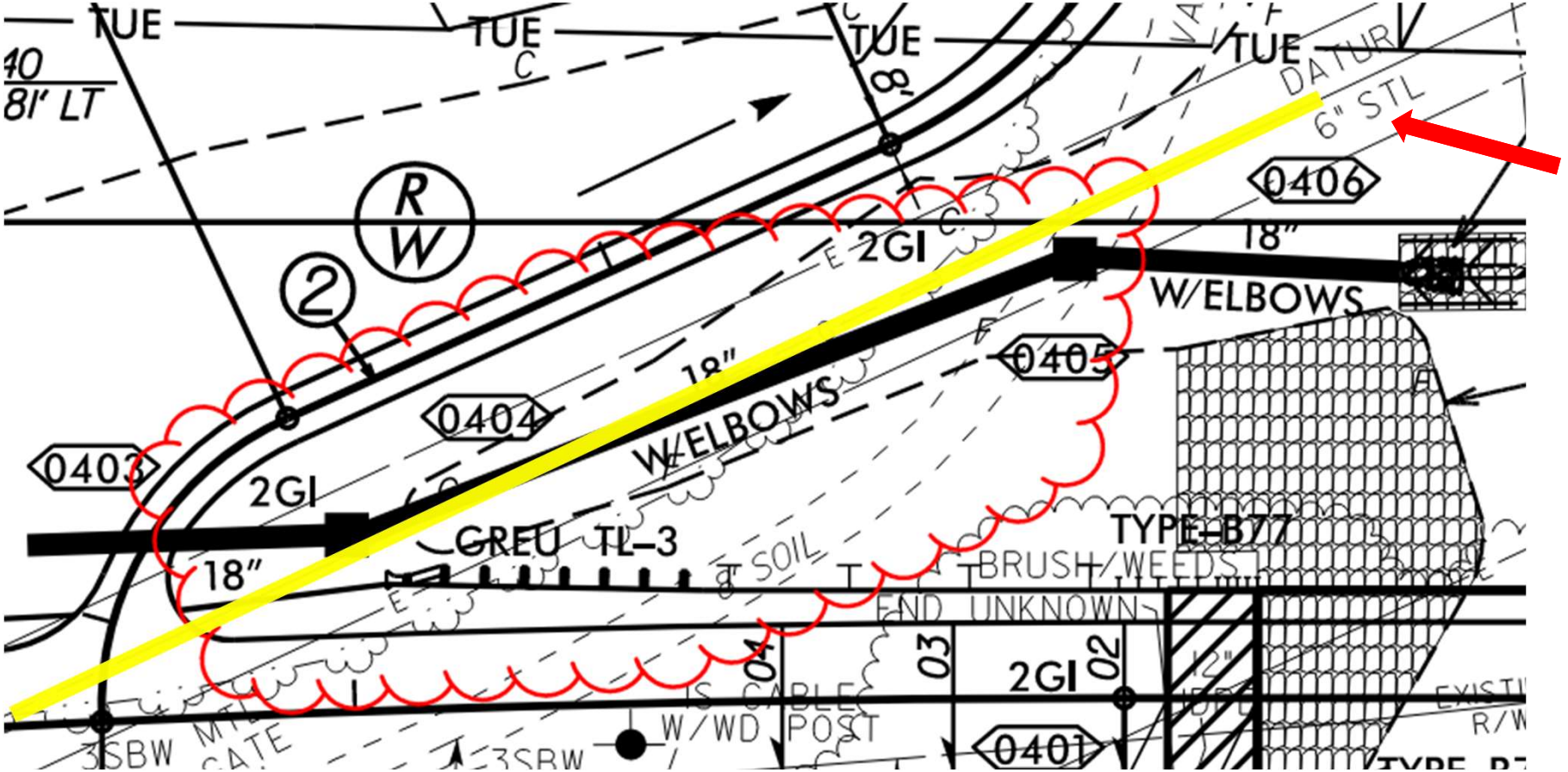
Minimizing Utility Impacts

How can we minimize?

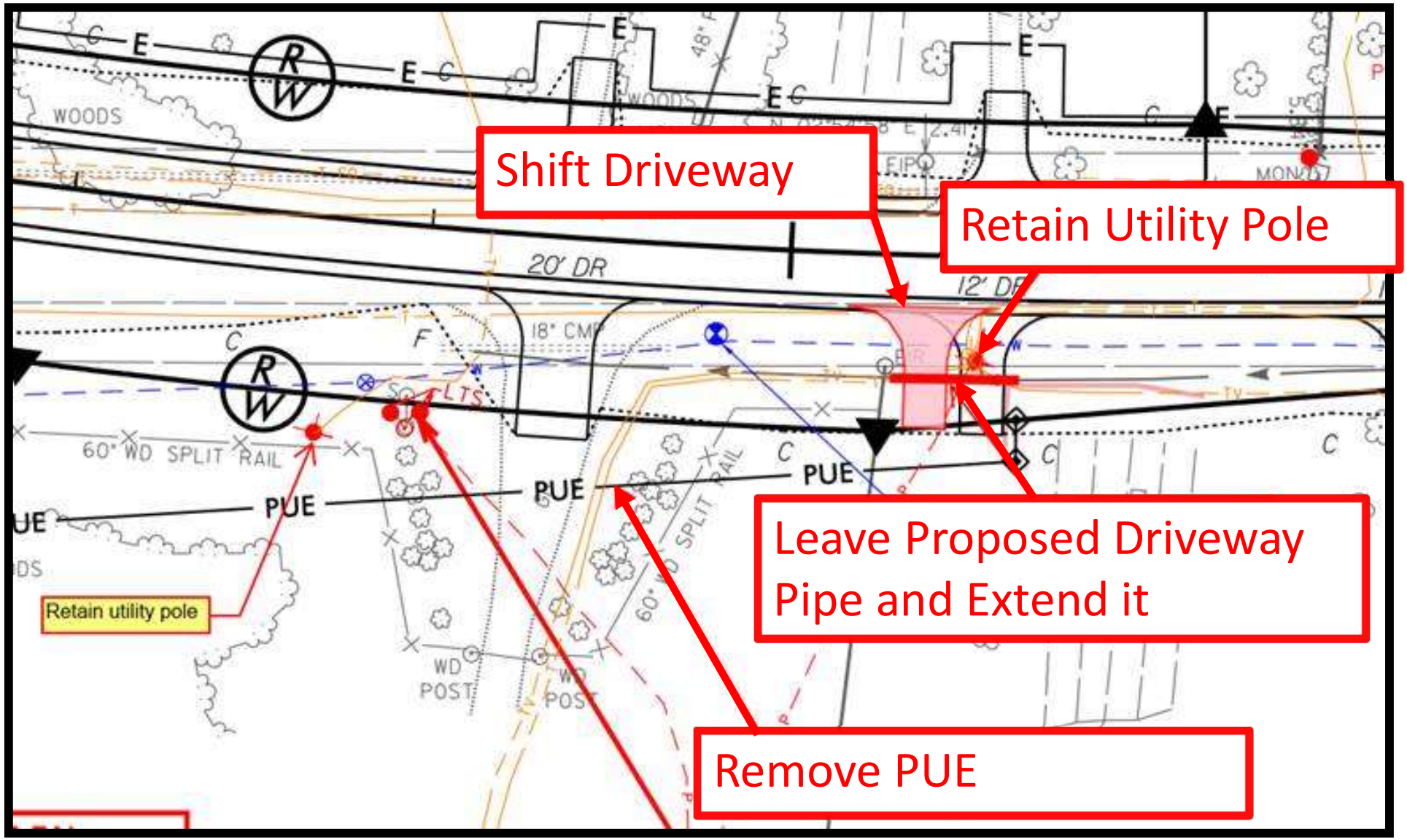
- Early involvement of utility owner.
- Review drainage structures and pipes to avoid conflicts
- Review grading and ditches to avoid conflicts
- Look at constructability of the work be performed to avoid conflict (also identify conflicts)

Example: Shifting a Drainage Structure

- Possible change in location of a drainage box and adjustment to reduce possible utility conflict

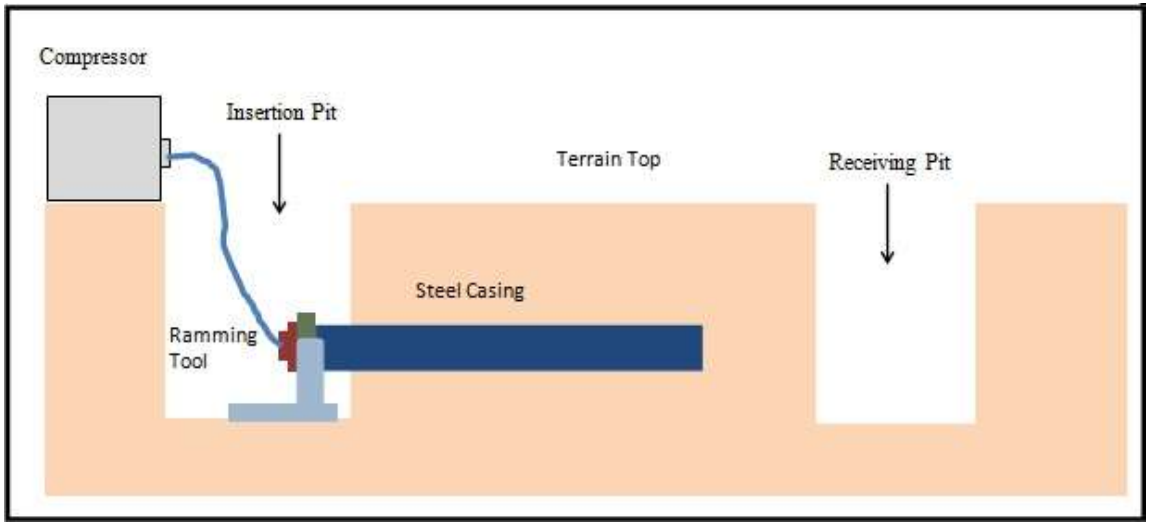


Example: Alter Design

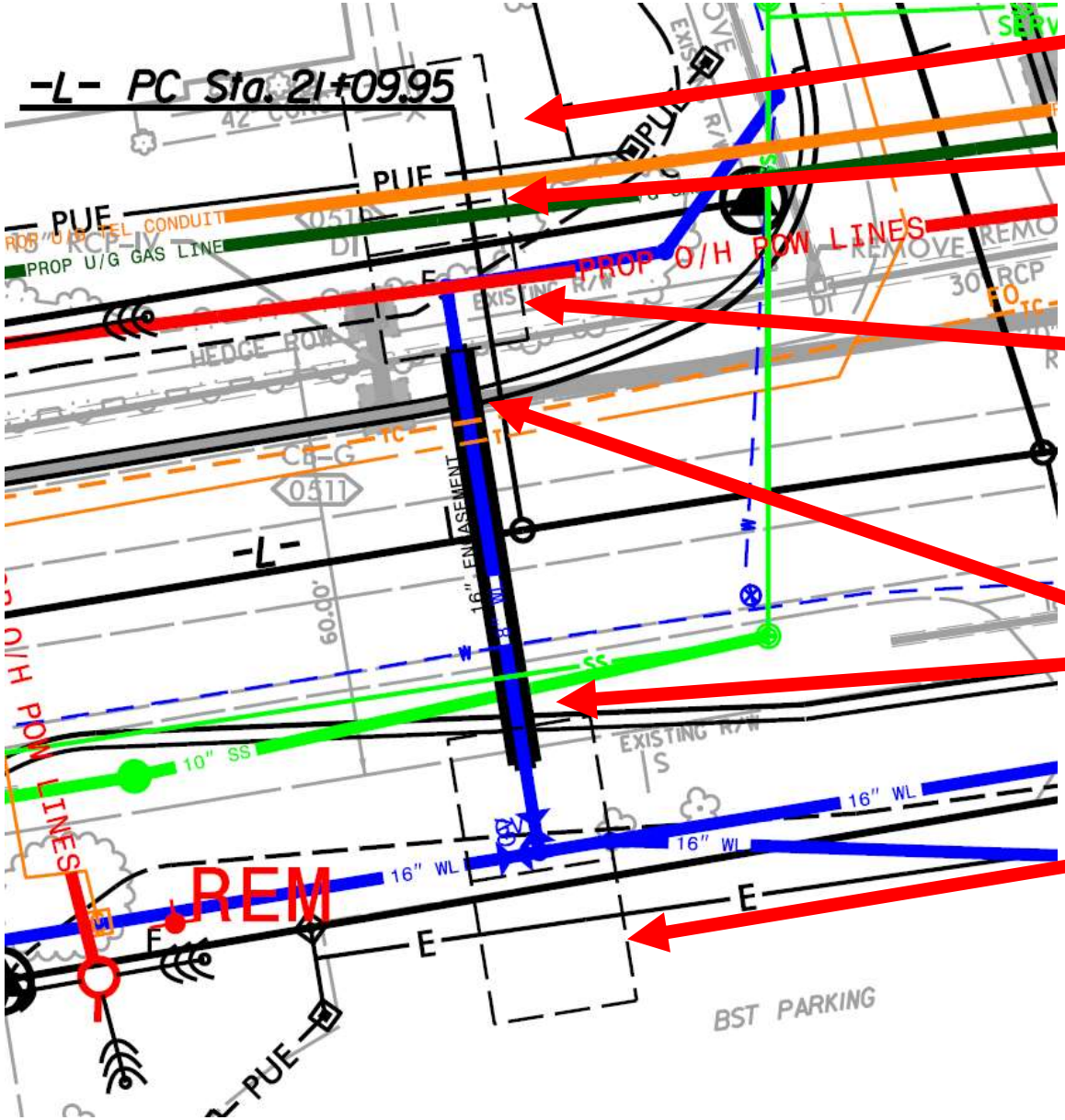


Bore and Jack Sending/ Receiving Pits

- Bore pits can have a large footprints, both sending and receiving
- Depth of pit may require a sheet pile shoring which installation can be impacted by overhead utilities
- Proposed utility relocation must be taken into consideration
- Additional ROW impacts not identified with setting PUE's may be required



Bore and Jack Sending/ Receiving Pits



ROW Impacted

UBO Relocations Impacted

Overhead Power Impacted with Shoring Installation

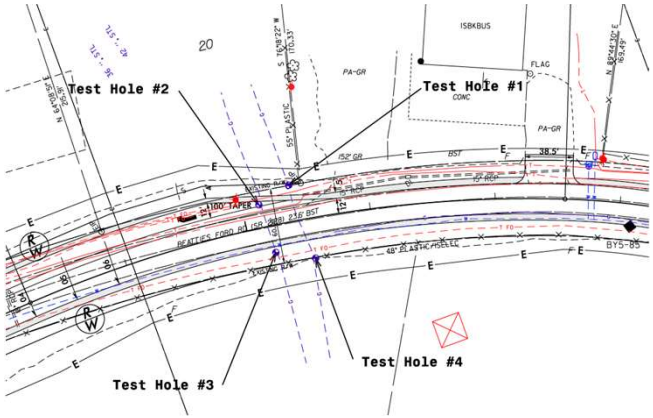
Factor in Depth of Pits

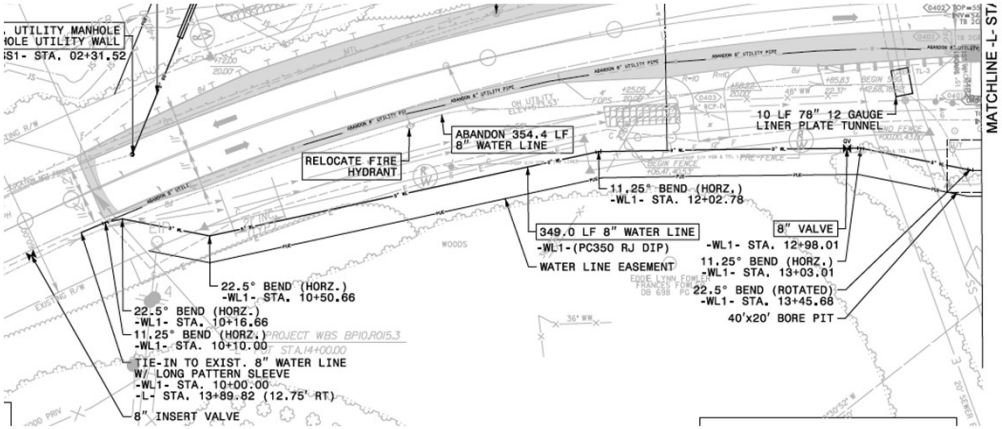
ROW Impact

Accommodating Utilities

How can we accommodate?

- Early involvement of utility owner
- Obtain new easement or R/W for the utility owner
- Obtain PUE/DUE/AUE for utilities to be relocated
- Work directly with utility owner to avoid or minimize utility conflicts
- Perform SUE (test holes)
- Include water/sewer design and relocation in project.





Why are we trying to…

- Avoid impacts?
- Minimize impacts?
- Accommodate Utilities?
- Get utility owners involved early?

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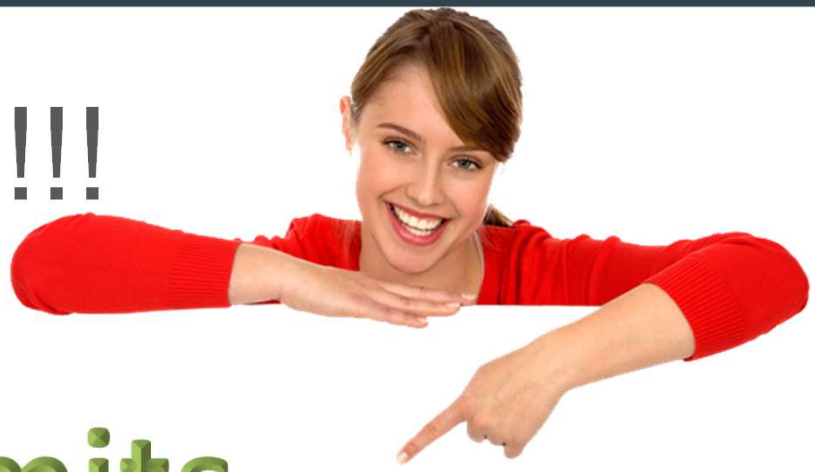
Challenges in Utility Relocation

Todd D. Lapham
Sr. Utilities Engineer – Alternative Delivery Projects

Who's to Blame!!!



Right of Way Acquisition

Permits

Project Design Firm

Hydraulics

Utility Owner

Other Units

Items to Consider – Project Types

- Design-Bid-Build
- Design-Build
- Express Design-Build
- CMGC
- P-3 (Public-Private Partnership)

- Division Managed
- Central Managed

Items to Consider - Permits

- Environmental Permits
- Who is responsible is dependent on the project.

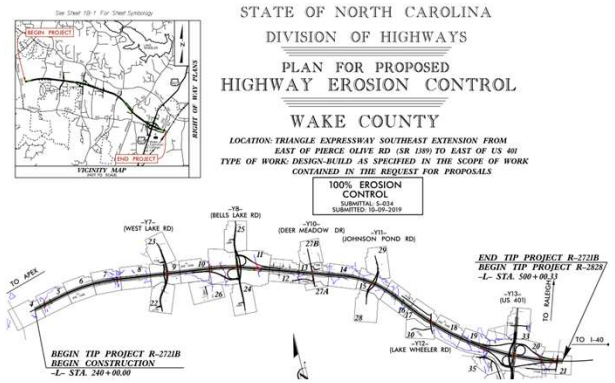
CAMA

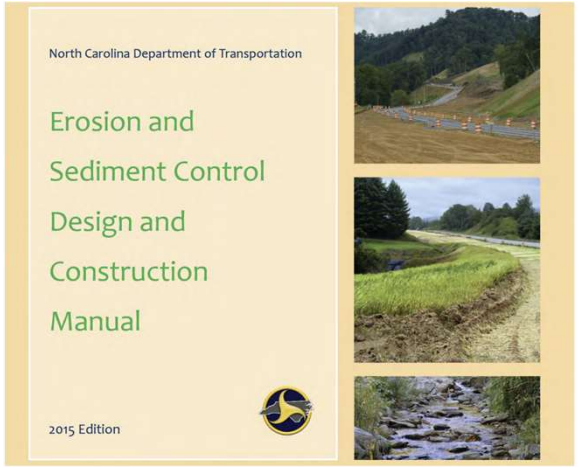
Coastal Area Management Act

404

401

- Erosion and Sediment Control Plans
  - Time frame for utilities to obtain permits.


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
WAKE COUNTY
LOCATION: TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION FROM EAST OF PIERCE OLIVE RD (SR 1389) TO EAST OF US 401
TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS
100% EROSION CONTROL
BEGIN TIP PROJECT R-2721B
BEGIN CONSTRUCTION
-L- STA. 240+00.00
END TIP PROJECT R-2721B
BEGIN TIP PROJECT R-2828
-L- STA. 500+00.33

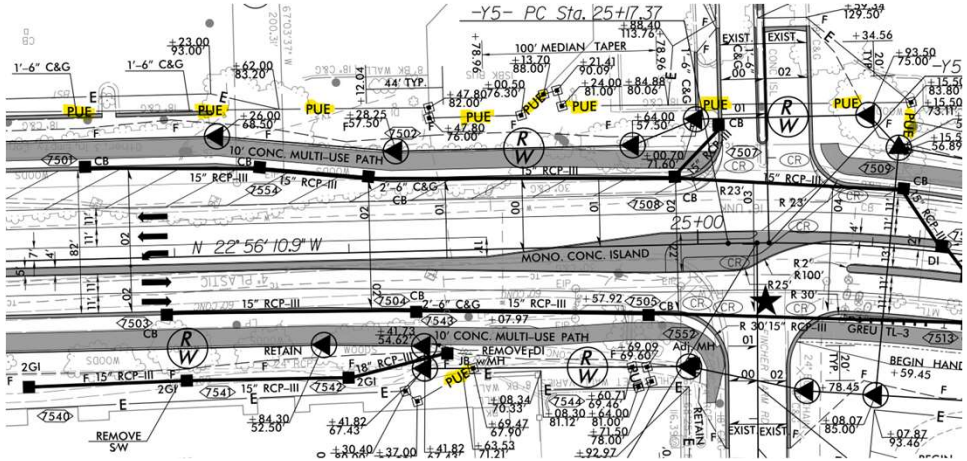


Items to Consider – R.O.W

Right of Way

Permanent Utility Easements

- Design and Acquisition



Tree Clearing

- By Contract or Contractor
- By Utility Owner

Items to Consider – NCDOT Caused

Design Time Frame

Change in the project design without getting input from the Utilities Unit and utility owners.

- Hydro not @ 75% or more
- Ditches change
- Drainage pipes move

3rd Party external stakeholders asking for utilities to move from OH to UG.

Multiple Projects in one area

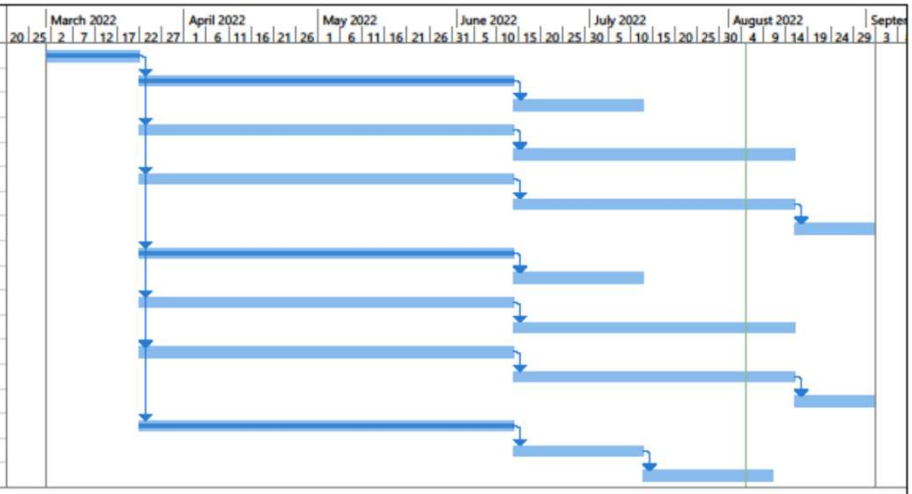
- Large Projects eat up resources, i.e. Designers, Crews and Materials

Items to Consider – Utilities Internal

- Small Sample
  - Funding
  - Crews
    - Shortage
    - Specialized
  - Materials
    - Buy American
    - Shelf Life
  - Non-NCDOT Projects
    - City Streets
    - Expansion
    - Maintenance
    - Emergency

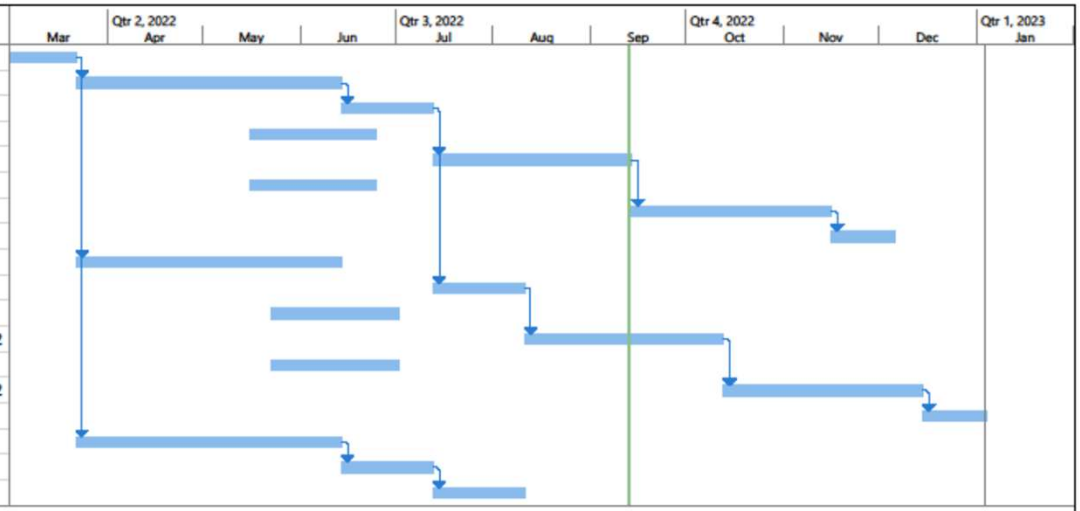
Example Project Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1	✓	100% Hydro Plans	15 days	Tue 3/1/22	Mon 3/21/22	
2	✓	Duke Energy - First Ave - Design	60 days	Tue 3/22/22	Mon 6/13/22	1
3		Duke Energy - First Ave - Construction	21 days	Tue 6/14/22	Tue 7/12/22	2
4		Spectrum - First Ave - Design	60 days	Tue 3/22/22	Mon 6/13/22	1
5		Spectrum - First Ave -Construction	45 days	Tue 6/14/22	Mon 8/15/22	4
6		AT&T - First Ave - Design	60 days	Tue 3/22/22	Mon 6/13/22	1
7		AT&T - First Ave -Construction	45 days	Tue 6/14/22	Mon 8/15/22	6
8		Duke Energy - Pole Removal	14 days	Tue 8/16/22	Fri 9/2/22	7
9	✓	Duke Energy - Second St - Design	60 days	Tue 3/22/22	Mon 6/13/22	1
10		Duke Energy - Second St - Construction	21 days	Tue 6/14/22	Tue 7/12/22	9
11		Spectrum - Second St - Design	60 days	Tue 3/22/22	Mon 6/13/22	1
12		Spectrum - Second St -Construction	45 days	Tue 6/14/22	Mon 8/15/22	11
13		AT&T - Second St - Design	60 days	Tue 3/22/22	Mon 6/13/22	1
14		AT&T - Second St -Construction	45 days	Tue 6/14/22	Mon 8/15/22	13
15		Duke Energy - Pole Removal	14 days	Tue 8/16/22	Fri 9/2/22	14
16	✓	UG - Dominion Gas	60 days	Tue 3/22/22	Mon 6/13/22	1
17		UG First Ave - Dominion Gas	21 days	Tue 6/14/22	Tue 7/12/22	16
18		UG Second St - Dominion Gas	21 days	Wed 7/13/22	Wed 8/10/22	17



Task Name	Duration (days)
Duke Energy - First Ave - Design	60
Duke Energy - First Ave - Construction	21
Spectrum - First Ave - Design	30
Spectrum - First Ave -Construction	60
AT&T - First Ave - Design	30
AT&T - First Ave -Construction	60
Duke Energy - Second St - Design	60
Duke Energy - Second St - Construction	21
Spectrum - Second St - Design	30
Spectrum - Second St -Construction	60
AT&T - Second St - Design	30
AT&T - Second St -Construction	60
UG First Ave - Dominion Gas	21
UG Second St - Dominion Gas	21

ID	Task Mode	Task Name	Duration	Start	Finish
1		100% Hydro Plans	15 days	Tue 3/1/22	Mon 3/21/22
2		Duke Energy - First Ave - Design	60 days	Tue 3/22/22	Mon 6/13/22
3		Duke Energy - First Ave - Construction	21 days	Tue 6/14/22	Tue 7/12/22
4		Spectrum - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
5		Spectrum - First Ave -Construction	45 days	Wed 7/13/22	Tue 9/13/22
6		AT&T - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
7		AT&T - First Ave -Construction	45 days	Wed 9/14/22	Tue 11/15/22
8		Duke Energy - Pole Removal	14 days	Wed 11/16/22	Mon 12/5/22
9		Duke Energy - Second St - Design	60 days	Tue 3/22/22	Mon 6/13/22
10		Duke Energy - Second St - Construction	21 days	Wed 7/13/22	Wed 8/10/22
11		Spectrum - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
12		Spectrum - Second St -Construction	45 days	Thu 8/11/22	Wed 10/12/22
13		AT&T - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
14		AT&T - Second St -Construction	45 days	Thu 10/13/22	Wed 12/14/22
15		Duke Energy - Pole Removal	14 days	Thu 12/15/22	Tue 1/3/23
16		UG - Dominion Gas	60 days	Tue 3/22/22	Mon 6/13/22
17		UG First Ave - Dominion Gas	21 days	Tue 6/14/22	Tue 7/12/22
18		UG Second St - Dominion Gas	21 days	Wed 7/13/22	Wed 8/10/22



First Ave. Milestones:		
	Start Date:	Completeion Date:
Power:	6/14/2022	7/12/2022
Spectrum:	7/13/2022	9/13/2022
AT&T:	9/14/2022	11/15/2022

Second St. Milestones:		
	Start Date:	Completeion Date:
Power:	7/13/2022	8/10/2022
Spectrum:	8/11/2022	10/12/2022
AT&T:	10/13/2022	12/14/2022

Project: Project1.mpp
Date: Tue 9/13/22

Task, Split, Milestone, Summary, Project Summary, Inactive Task, Inactive Milestone, Inactive Summary, Manual Task, Duration-only, Manual Summary Rollup, Manual Summary, Start-only, Finish-only, External Tasks, External Milestone, Deadline, Progress, Manual Progress

Page 1

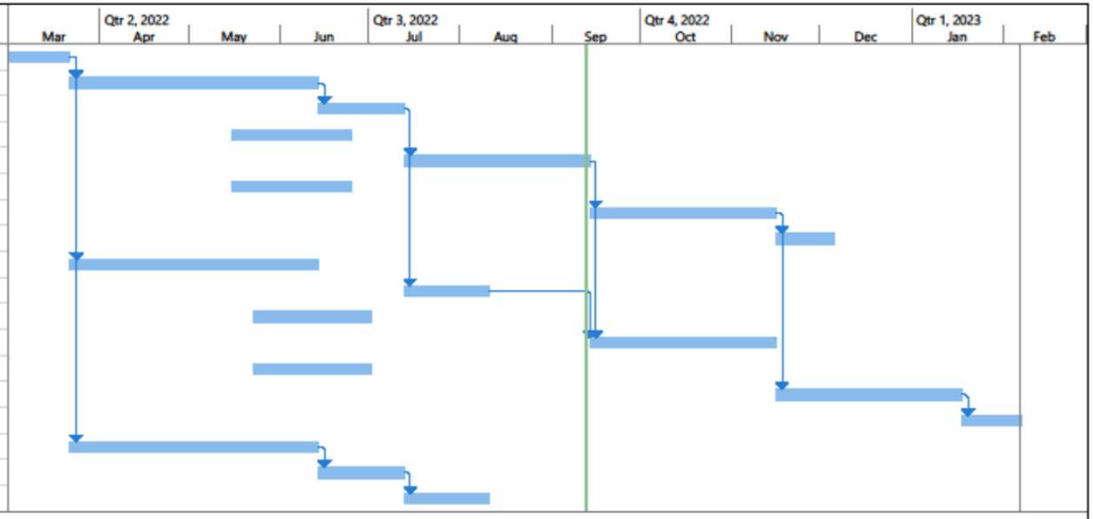
Example Project Schedule

*** Example Utility Company Activities ***

Activity Name	Duration (Business Days)
NC-1997, Project Initiation	
Funding ID Created and Approved	
Conflicts ID	
Prior Rights Research	30 days
High Level Cost and Engineering Est	
UPEA Creation and Submission	45 days
NCDOT Review and Approval	15 days
Environmental Assessment and Permits	
Initial Design	5 Days
PUE Submission and Review/ Approval	
Engineering Design/URA or EA package development	30 Days
Power Company Design Review/ Submittal	5-7 days
Submit URA or EA to DOT	
URA or EA Approval	10 days
Required ROW/PUE Acquisition	
ROW Verification - Power Company	22 days
DOT Environmental Permitting	
WO Scheduling	5 days
Pre-Construction Meeting - Milestone	
Site Readiness (Silt Fencing, Pole Staking, etc.)	
Vegetation Work (Can be flipped before Pre-con)	
Crew Work – 1 crew most of the time.	

*** times frames and activities will change per project. ***

ID	Task Mode	Task Name	Duration	Start	Finish
1		100% Hydro Plans	15 days	Tue 3/1/22	Mon 3/21/22
2		Duke Energy - First Ave - Design	60 days	Tue 3/22/22	Mon 6/13/22
3		Duke Energy - First Ave - Construction	21 days	Tue 6/14/22	Tue 7/12/22
4		Spectrum - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
5		Spectrum - First Ave -Construction	45 days	Wed 7/13/22	Tue 9/13/22
6		AT&T - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
7		AT&T - First Ave -Construction	45 days	Wed 9/14/22	Tue 11/15/22
8		Duke Energy - Pole Removal	14 days	Wed 11/16/22	Mon 12/5/22
9		Duke Energy - Second St - Design	60 days	Tue 3/22/22	Mon 6/13/22
10		Duke Energy - Second St - Construction	21 days	Wed 7/13/22	Wed 8/10/22
11		Spectrum - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
12		Spectrum - Second St -Construction	45 days	Wed 9/14/22	Tue 11/15/22
13		AT&T - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
14		AT&T - Second St -Construction	45 days	Wed 11/16/22	Tue 1/17/23
15		Duke Energy - Pole Removal	14 days	Wed 1/18/23	Mon 2/6/23
16		UG - Dominion Gas	60 days	Tue 3/22/22	Mon 6/13/22
17		UG First Ave - Dominion Gas	21 days	Tue 6/14/22	Tue 7/12/22
18		UG Second St - Dominion Gas	21 days	Wed 7/13/22	Wed 8/10/22



	First Ave. Milestones:			Second St. Milestones:			
	Start Date:	Completeion Date:		Start Date:	Completeion Date:	
Power:	6/14/2022	7/12/2022	Power:	7/13/2022	8/10/2022	
Spectrum:	7/13/2022	9/13/2022	Spectrum:	9/14/2022	11/15/2022	One Month Difference
AT&T:	9/14/2022	11/15/2022	AT&T:	11/16/2022	1/17/2023	One Month Difference

Project: Project1
Date: Tue 9/13/22

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

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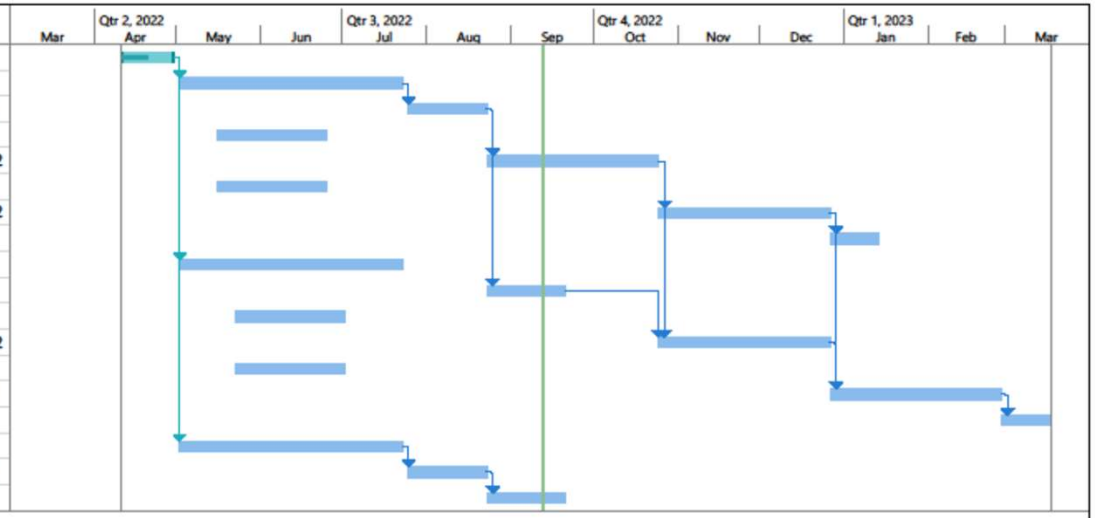
ID	Task Mode	Task Name	Duration	Start	Finish
1		100% Hydro Plans - Delayed	15 days	Mon 4/11/22	Fri 4/29/22
2		Duke Energy - First Ave - Design	60 days	Mon 5/2/22	Fri 7/22/22
3		Duke Energy - First Ave - Construction	21 days	Mon 7/25/22	Mon 8/22/22
4		Spectrum - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
5		Spectrum - First Ave -Construction	45 days	Tue 8/23/22	Mon 10/24/22
6		AT&T - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
7		AT&T - First Ave -Construction	45 days	Tue 10/25/22	Mon 12/26/22
8		Duke Energy - Pole Removal	14 days	Tue 12/27/22	Fri 1/13/23
9		Duke Energy - Second St - Design	60 days	Mon 5/2/22	Fri 7/22/22
10		Duke Energy - Second St - Construction	21 days	Tue 8/23/22	Tue 9/20/22
11		Spectrum - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
12		Spectrum - Second St -Construction	45 days	Tue 10/25/22	Mon 12/26/22
13		AT&T - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
14		AT&T - Second St -Construction	45 days	Tue 12/27/22	Mon 2/27/23
15		Duke Energy - Pole Removal	14 days	Tue 2/28/23	Fri 3/17/23
16		UG - Dominion Gas	60 days	Mon 5/2/22	Fri 7/22/22
17		UG First Ave - Dominion Gas	21 days	Mon 7/25/22	Mon 8/22/22
18		UG Second St - Dominion Gas	21 days	Tue 8/23/22	Tue 9/20/22



First Ave. Milestones:		
	Start Date:	Completeion Date:
Power:	7/25/2022	8/22/2022
Spectrum:	8/23/2022	10/24/2022
AT&T:	10/25/2022	12/26/2022

Second St. Milestones:		
	Start Date:	Completeion Date:
Power:	8/23/2022	9/20/2022
Spectrum:	10/25/2022	12/26/2022
AT&T:	12/27/2022	2/27/2023

Project: Project1
Date: Tue 9/13/22

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

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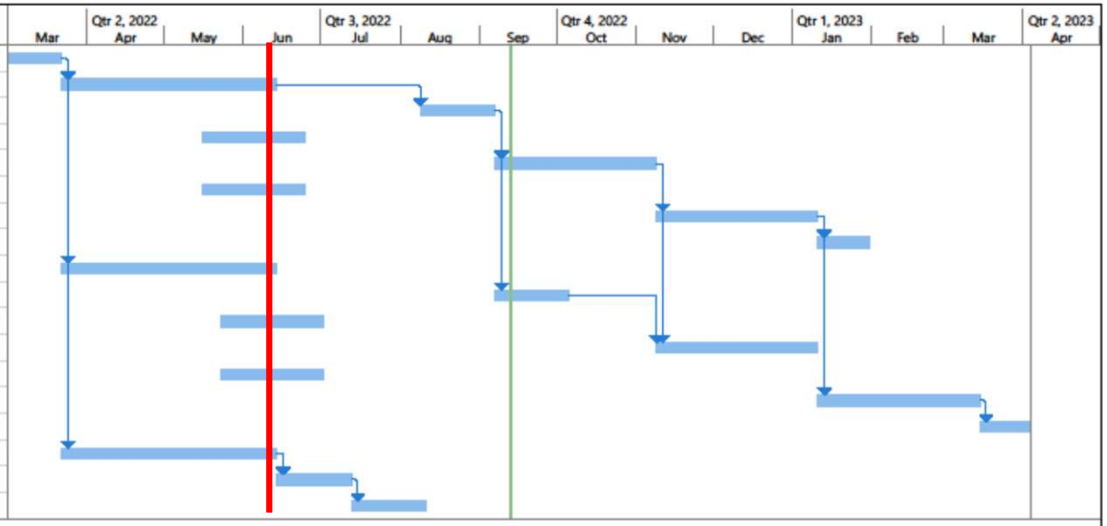
ID	Task Mode	Task Name	Duration	Start	Finish
1		100% Hydro Plans	15 days	Tue 3/1/22	Mon 3/21/22
2		Duke Energy - First Ave - Design	60 days	Tue 3/22/22	Mon 6/13/22
3		Duke Energy - First Ave - Construction	21 days	Tue 8/9/22	Tue 9/6/22
4		Spectrum - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
5		Spectrum - First Ave -Construction	45 days	Wed 9/7/22	Tue 11/8/22
6		AT&T - First Ave - Design	30 days	Mon 5/16/22	Fri 6/24/22
7		AT&T - First Ave -Construction	45 days	Wed 11/9/22	Tue 1/10/23
8		Duke Energy - Pole Removal	14 days	Wed 1/11/23	Mon 1/30/23
9		Duke Energy - Second St - Design	60 days	Tue 3/22/22	Mon 6/13/22
10		Duke Energy - Second St - Construction	21 days	Wed 9/7/22	Wed 10/5/22
11		Spectrum - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
12		Spectrum - Second St -Construction	45 days	Wed 11/9/22	Tue 1/10/23
13		AT&T - Second St - Design	30 days	Mon 5/23/22	Fri 7/1/22
14		AT&T - Second St -Construction	45 days	Wed 1/11/23	Tue 3/14/23
15		Duke Energy - Pole Removal	14 days	Wed 3/15/23	Mon 4/3/23
16		UG - Dominion Gas	60 days	Tue 3/22/22	Mon 6/13/22
17		UG First Ave - Dominion Gas	21 days	Tue 6/14/22	Tue 7/12/22
18		UG Second St - Dominion Gas	21 days	Wed 7/13/22	Wed 8/10/22



First Ave. Milestones:		
	Start Date:	Completeion Date:
Power:	8/9/2022	9/6/2022
Spectrum:	9/7/2022	11/8/2022
AT&T:	11/9/2022	1/10/2023

Second St. Milestones:		
	Start Date:	Completeion Date:
Power:	9/7/2022	10/5/2022
Spectrum:	11/9/2022	1/10/2023
AT&T:	1/11/2023	3/14/2023

- **1 wk delay for design change = 8 wk delay for construction**

Project: Project1
Date: Tue 9/13/22

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

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Summary

- There are many factors that can affect utilities on a project
- Utility owners have internal issues that can also affect relocation schedules that we have no control over
- Interdisciplinary communication is key
- Designing a project with utilities in mind can help improve overall project delivery schedules

Useful Links

- Utilities Unit Connect Site
- NCDOT Utilities Accommodations Manual
- NCDOT Utilities Unit Directory

Contacts

- Byron Sanders Jr., PE, CPM, State Utilities Manager
  - bsanders@ncdot.gov
- Bo Hemphill, PE, Eastern Region Manager (Div. 1-4 & 6)
  - bohemphill@ncdot.gov
- Amy York, Central Region Manager (Div. 5 & 7-9)
  - adyork@ncdot.gov
- Michael Bright, Western Region Manager (Div. 10-14)
  - mrbright@ncdot.gov
- Larry Sanders, MGIST, PE, CPM, State Encroachments Engineer
  - ldsanders1@ncdot.gov


ANY
QUESTIONS
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