OHIO DEPARTMENT OF TRANSPORTATION

Opportunity Corridor

PROJECT 3: DESIGN-BUILD PROJECT

Attention: Letting Manager
Project 3000 (17)
CUY IR 490/SR 010 02.09/19.28
PID 96833

Volume 1

Technical Proposal

December 21, 2017

Trumbull-Great Lakes-Ruhlin
a joint venture

PART ES

Executive Summary

Executive Summary

Trumbull-Great Lakes-Ruhlin, a Joint Venture (TGR), is excited about the opportunity to complete the final section of the Opportunity Corridor. Through a collaborative, proactive approach, we will engage the Ohio Department of Transportation (ODOT) staff, third party stakeholders, and members of the local wards to deliver a cost-effective, community enhancing solution. TGR has partnered with designer HDR, design IQF TranSystems and Diversity and Inclusion Outreach Consultant Integral Management. This partnership creates an experienced team featuring personnel who are successfully delivering the OC2 and CCG2 design-build (DB) projects in ODOT's District 12, while also forming relationships and efficient processes that will be effectively used to complete this project.

Part A: Effective Project Management

A collaborative approach to partnering with ODOT, third parties and local residents that yields achievement of quality, budget and schedule goals

Hands-on project manager Adam Belasik will lead the TGR team. Over the past three years, he has led the TGR team's construction of CCG2 where he built strong relationships with District 12, 3rd party stakeholders, and New, Small, Local, and EDGE firms that we will utilize on this project.

Our management approach features:

- Structured project management meetings to integrate design, construction, diversity & inclusion, ODOT and 3rd party personnel.
- Proactive risk management to identify and resolve issues in a timely manner.
- Deputy rail and utility coordinators are value-added to manage detailed design development, review and comment resolution with third parties.
- A proven quality management program featuring value-added Dan Domalik, PE, CMQ-OE, CQA, as Design QC Manager and Courtney Norris, PE as Construction QC Manager.
- Effective planning and scheduling practices to manage design, IQF and construction resources.
- A comprehensive schedule to provide a clear critical path to complete the project on or before June 30, 2022.

Part B: Comprehensive Design

Seamless integration of project designers and craftsmen to provide an aesthetic and sustainable foundation for future growth

HDR's Ken Fertal, PE, PS, will lead the design team. Over the past 23 years, he has worked on some of the largest DB projects in Ohio and District 12. His experience with complex urban projects will allow him to coordinate and integrate design, construction and third party input. Our design approach includes:

- Design and IQF experience with ODOT design standards and processes.
- Design and IQF experience with local utilities, including WPC, CWD, NEORSD, CPP and FirstEnergy, as well as railways NS and GCRTA.
- An inclusive project communication strategy with structured design meetings.
- A Design Quality Management Plan (DQMP) requiring routine IQF over-the-shoulder and DB constructibility.

Our conceptual design detailed in Part B and Appendix F considers safety, cost effectiveness, constructability, sustainability and risk management, and features:

- A surface water collection system that significantly reduces detention requirements.
- Utility impact mitigation through early identification and innovative design solutions.
- Design of the Norfolk Southern Bridge for phased, top-down construction, eliminating conflicts with rail operations and substantial support of excavation.
- Design of E55th St. grade separation for top down construction to mitigate utility impacts and MOT challenges.

Part C: Safe, Effective Construction Management Approach

Effective planning and construction phasing to provide safe, reliable, continuous passage during and after construction

Successful construction requires extensive schedule, quality, and safety planning throughout the design phase. Jason Tucker, PE, of TGR has led TGR's DB construction team on the CCG2 project over the past three years. The strong relationships he has cultivated with ODOT, team members and stakeholders will help us seamlessly transition to OC3. Our team also offers the following benefits:

- Construction staff engaged in design to deliver a constructible, effective design solution.
- Proactive management of high-risk items early in the project to mitigate potential schedule impacts.
- Our Buildable Units approach to construction will facilitate comprehensive planning and improved quality of work.
- Safety built into every activity to protect workers, pedestrian and vehicular traffic.
- Formal approach to identifying and handling both known and unknown regulated materials.

Part D: Innovative, Dynamic Diversity, Inclusion, Outreach

A proactive diversity, inclusion and outreach plan that supports adjacent wards and local communities by connecting businesses and mentoring workforce

Diversity and Inclusion Outreach will be led by Integral Management, who will work with Wards 4, 5, 6, 7, 13, and 14 and surrounding communities to provide strategies to strengthen local residents and businesses. As the DB Diversity/Outreach Lead Manager, June Taylor and her team partners will build upon her successful experience in a similar role on OC2. Our approach features:

- Seamless transition from OC2 to OC3; June and Contractor Diversity/Outreach Lead Manager Jackie Jacob will continue to engage the disparaged communities.
- A customized plan to reach disparaged groups; TGR has engaged Adrian Maldonado & Associates and Lisa Wong, who have strong ties to the Hispanic and Asian Pacific American communities, respectively.
- Business and workforce development through our TGR Institute and Career Awareness Sessions.
- Verification for attainment of Diversity and Inclusion goals by the IQF's DIOP Auditor.

PART A

Project Management

Part A. Project Management

KEY POINTS

- » Experienced management team that worked together on CCG2
- » Co-located key design and construction team
- » Structured Risk Registry workshops
- » Value added Construction QC Manager, Courtney Norris
- » Value-added Public Involvement Manager Karen Lenehan
- » Value added Utility Deputy Joseph Ferenczy, PE
- » Value added Rail Deputy, Jon Winer, PE

A hands-on manager in the office and field, Adam is a catalyst for quality project design and delivery.

A.1 Management Approach

TGR approaches management of joint venture projects with a collaborative and proactive mindset. This has garnered our team many awards, including the prestigious **Don Conaway Partnering Award** which honors those that "exemplify the best practices in successful partnership" and the **Dispute Resolution Board Foundation Excellence in Dispute Avoidance and Resolution Award**. We will build upon our previous successes with our approach to OC3. The following elements will be incorporated into our management approach:

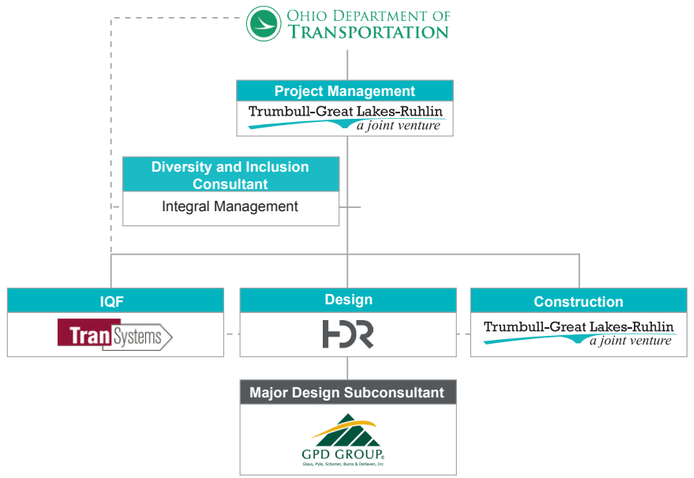
- Ongoing interface between design/construction disciplines, the IQF, the Diversity and Inclusion Consultant, and Department personnel to set and achieve goals
- Proactive risk management during design and construction to identify and resolve issues before they become problems
- Quality management built into all processes to effect design and construction conformance
- Establishment of roles and responsibilities of all team members to clarify each individual's imperative contributions to project success
- Development of a Critical Path Method schedule tied to resource planning to identify resources necessary to meet schedule milestones
- Facilitated interactions with third party entities to minimize disruptions to their operations while meeting our schedule
- Safety management integrated into design and construction

While these elements are important, the approach as a whole will only be effective with an enthusiastic, driven project manager at the helm. DB Project Manager Adam Belasik will facilitate our diverse team to develop and implement the best solutions for ODOT. A hands-on manager in the office and the field, Adam is a catalyst for quality project design and delivery by establishing a culture of mutual respect and inclusion through an open door policy and engagement of the team in proactive issue resolution. He will also empower staff to make decisions at the lowest level possible, and in the event that conflicts arise, Adam will help to expedite resolutions.

Project Discipline Interface

ODOT's point of contact will be TGR, who will supervise the overall management of the project and provide interface between various project disciplines along with their staff. This is illustrated in Figure A-1.

Figure A-1. Project Team Interface



Design, construction, IQF and diversity and inclusion staff members have established sound relationships through past projects and collaboration throughout the pursuit phase of this project. This interface will continue through project management meetings shown in Figure A-2 on the following page.

Department Interface

ODOT team members will be co-located with the design, construction, IQF, and Diversity/Inclusion Consultant to enhance interface with the project team. Through daily formal and informal dialogue, we will work together to design and implement constructible solutions. We will also engage ODOT in the partnering, task force, risk registry workshop, progress and quality management meetings.

The Department's SharePoint will be used for document control to facilitate the sharing of all quality documentation; information will be posted in a timely manner to facilitate ODOT quality oversight functions.

Figure A-2. Project Management Meetings

Meeting	Frequency	Attendees: Owners	Designers	IQF	3rd Party	Constructors	Meeting Goals	Project Benefits
Partnering Meeting	Quarterly	▶	▶	▶	▶	▶	▶ Led by impartial facilitator ▶ Establish project goals and assess performance to achieve them	▶ Promotes teamwork ▶ Issue resolution at lowest level ▶ Clear communication
ODOT Progress Meeting	Weekly	▶	▶	▶	▶	▶	▶ Assess project progression ▶ Detailed coordination ▶ Review and resolve action items	▶ Maintain schedule ▶ Communication ▶ Issue resolution
Risk Workshop	One formal workshop Ongoing coordination	▶	▶	▶	▶	▶	▶ Identify potential risks ▶ Develop mitigation plans	▶ Prevent delays ▶ Mitigation plans
Task Force Meetings	Weekly	▶	▶	▶	▶	▶	▶ Discuss issues resolution ▶ Establish schedule, budget and DIOP goals ▶ Assessment of risks and mitigation measures	▶ Promotes coordination ▶ Maintain schedule ▶ Constructable design

Design and Construction Quality

TGR will develop, execute and enforce a proactive Quality Program covering all elements of the project, including: design administration and management, design verification and checking, geotechnical investigations, construction and testing requirements, and environmental monitoring and compliance. This program will be documented in our Quality Management Plan (QMP) for the project. Our QMP will integrate quality control in all project activities. It will define quality processes, roles and responsibilities, lines of communication and document control procedures for both design and construction. It will define performance requirements relating to process control as well as product control. It will also define the interaction and engagement of quality oversight personnel.

Our quality program will establish an executive management review team who will routinely review quality results and direct changes as necessary. Doing work right the first time and continually improving our quality program will be a primary goal of our team.

DESIGN

DESIGN QUALITY CONTROL

Dan Domalik, PE, CMQ-OE, CQA, will manage Design Quality Control, establishing a Design Quality Management Plan (DQMP) for quality checks and balances for all disciplines. With more than 22 years in quality management. He will coordinate interdisciplinary reviews; verify design inputs, calculations, and conformance; and coordinate with the IQF. Dan will report directly to DB Design Project Manager Ken Fertal, PE, PS.

DESIGN QUALITY ASSURANCE

TranSystems will serve as the Independent Quality Firm (IQF) for this project, with Nabil Farah, PE serving as the Design IQF Project Manager. Nabil offers 29 years in complex roadway design, having managed large DB projects and led IQF and IQM for similar sized projects. Nabil and his staff will perform full compliance reviews of formal design submittals, track non-conformances and comment resolution, and perform document version control. TranSystems and their subconsultants will remain independent throughout the design and will have no involvement except to verify that TGR has followed the DQMP and the design is in compliance with the contract specifications.

DESIGN CHANGE MANAGEMENT

ODOT and TGR will continue a process that worked effectively on CCG2 to evaluate all field design change requests : Minor field changes will be addressed in the as-built drawings. Significant design changes will undergo a DQMP review process.

The IQF will be responsible for version control and maintenance of conformed plan sets. Our QMP will require that all non-conformances be closed before the related plan set is released for construction.

CONSTRUCTION

CONSTRUCTION QUALITY MANAGEMENT

Construction QC Manager Courtney Norris, PE will develop, execute and manage our Construction Quality Management Plan (CQMP). Courtney will be actively engaged during the design process to provide constructability and construction quality feedback. He will develop quality control work plans that specify processes for construction.

Courtney is a seasoned QC manager with 11 years of experience performing construction quality management for both the CCG1 and CCG2 portions of the Cleveland Innerbelt Project. During construction, Courtney will verify certification and accreditations, manage construction quality control resources, schedule field testing, verify quality control documentation and coordinate with the Quality Assurance Manager (QAM).

CONSTRUCTION QUALITY ASSURANCE

ODOT's QAM will verify that the construction quality control processes are followed and verify conformance with construction requirements. Courtney Norris will coordinate quality check points with QAM personnel and provide documentation of all inspections so that ODOT may fulfill their oversight and QA responsibilities.

Organizational Chart

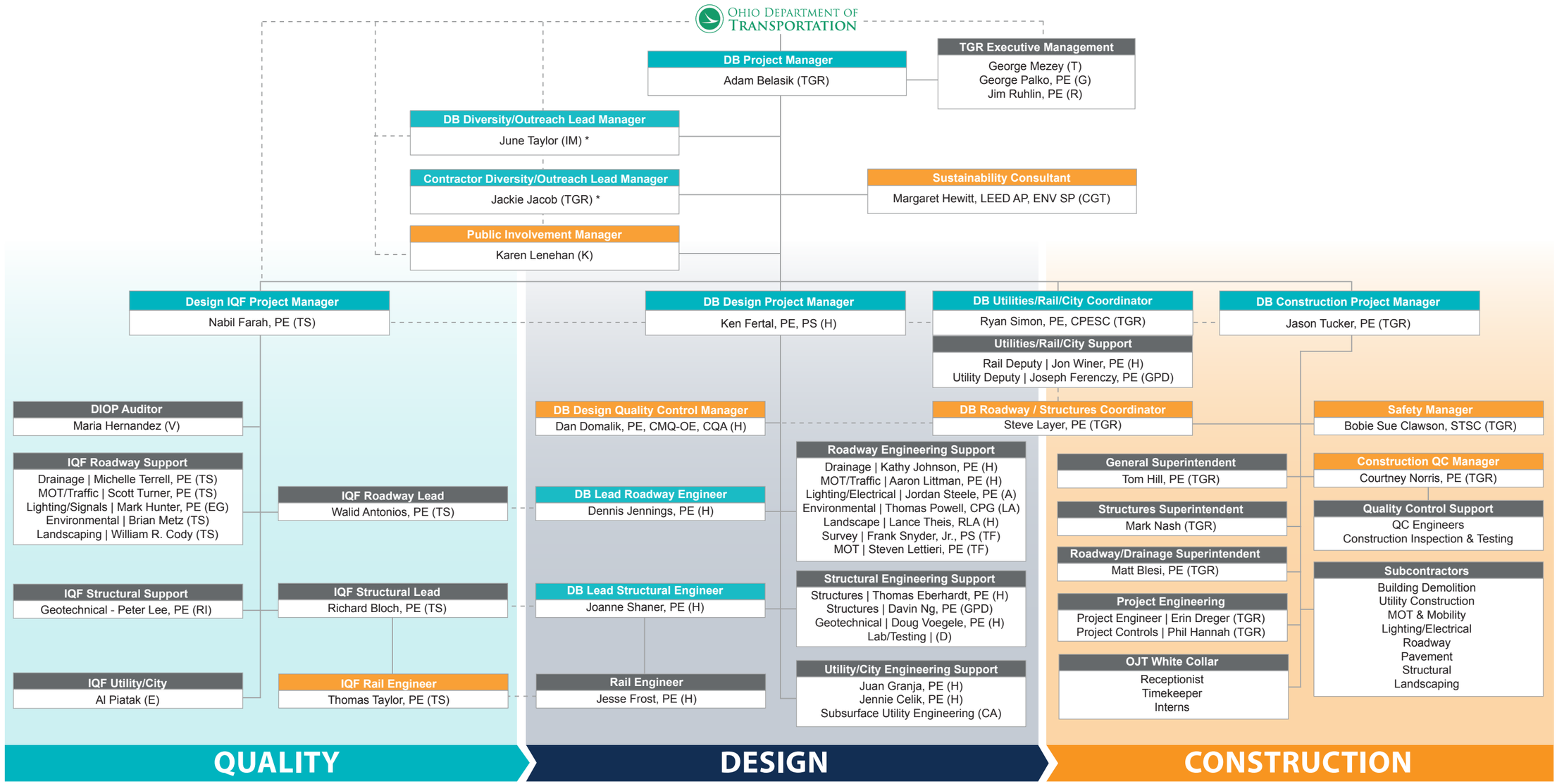
TGR's team has been structured for project success. This team will provide continuity from procurement through completion. The project organization and management approach have been developed to provide the proposed personnel with specific lines of authority and communication to meet the demands of this complex project.

As seen in the project organization chart (Figure A-3) on the following page, the team has a clear understanding of roles and functions. They are familiar with the necessary interaction to meet the needs of the owner, the community and other stakeholders such as GCRTA and NS.

Design & IQF Staffing

TGR's Design and IQF lead personnel have developed a resource loaded schedule which coincides with the Critical Path Method (CPM) schedule, shown in Appendix 6, that enables us to actively manage design and IQF resource needs. The schedule will be updated monthly throughout the design phase and used for long term design and IQF staffing needs, as well as major milestone tracking. Rolling three week

Figure A-3. Organization Chart



LEGEND

T - Trumbull Corp.
G - Great Lakes
R - Ruhlin
TGR - Trumbull-Great Lakes-Ruhlin JV
IM - Integral Management
K - Karen Lenehan Consulting Company

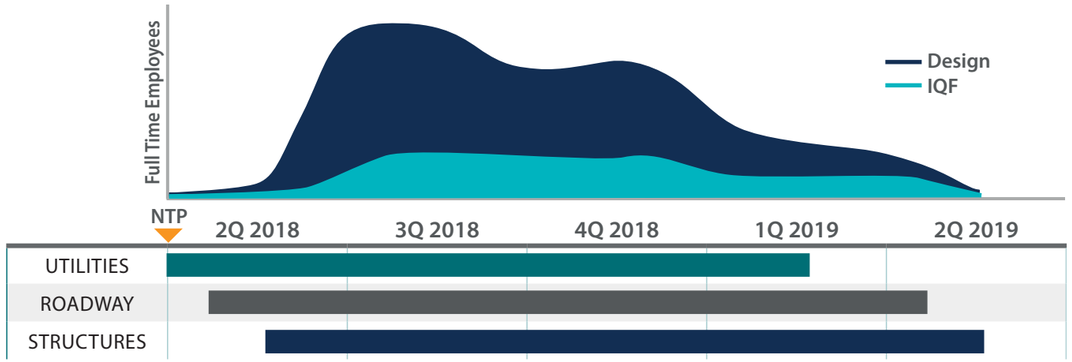
H - HDR
A - Advanced Engineering Consultants (EDGE)
D - DHDC (EDGE)
GPD - GPD Group
LA - Lawhon & Associates, Inc. (DBE)
TF - Thomas Fok & Associates, Inc. (EDGE)

TS - TranSystems
V - Verge Inc.
E - Euthenics, Inc. (SBE)
EG - Eggeman Engineering & Consulting (EDGE)
RI - Resource International (EDGE)
CGT - The Construction Green Team
CA - Cardno

Key Personnel
Supporting Staff
Value Added Staff

** For an expanded organization chart see Part D*

Figure A-4. Design and IQF Resources



lookahead schedules will be prepared using the CPM as a baseline, to manage daily, weekly and monthly staffing needs.

Short term schedules will be distributed to all design, construction, and IQF staff weekly, and the full CPM will be distributed monthly. Adam Belasik will lead weekly coordination meetings to confirm that staffing resources are adequate to meet deadlines. Ken Fertal and Nabil Farah will attend these meetings to review the status of the design activities and coordinate upcoming design reviews, as necessary.

Figure A-4 shows our anticipated resources based on the established buildable units shown in Figure A-7 on page A-07. These buildable units follow construction sequencing and will be the mechanism for tracking schedule.

Additional Staffing

To deliver a sustainable project for ODOT, we have added Margaret Hewitt, LEED AP, ENV SP to the team in the value-added position of Sustainability Consultant. Margaret is president of The Construction Green Team and will successfully lead us to achieve Silver Certification through FHWA's INVEST (Infrastructure Voluntary Evaluation Sustainability Tool).

Margaret was TGR's Sustainability Consultant on the CCG2 project where INVEST Platinum Certification was achieved. She has been actively involved during the pursuit phase of OC3 to identify sustainability opportunities throughout the project. Margaret and TGR are currently exploring areas such as green spaces, storm water management, plantings, waste recovery, and sustainable operating procedures.

Another value-added position is Public Involvement Manager Karen Lenehan. Karen will be our point of contact for public outreach activities and will co-locate in our project management office. Karen was TGR's Public Information Consultant on the CCG2 project, successfully managing the requirements of that position for the past three years. During that time, she established relationships with the Cleveland community and many other stakeholders who will also be involved on the OC3 project.

A.2 Coordination with Third Parties and Stakeholders

The TGR team has developed strong relationships with utility, city and rail stakeholders that will be affected by OC3 through involvement in:

- CCG2 and OC2 - TGR
- CCG1 and a General Engineering Contract with NS Railroad - HDR
- City of Cleveland and GCRTA - TranSystems

Our team understands the concerns of these stakeholders and will incorporate their needs into the conceptual design as well as the overall CPM schedule.

Approach to Coordination

Our approach to coordination has three key components:

1. Assignment of Key Personnel
2. Schedule Priority
3. Integration of stakeholders and third parties

ASSIGNMENT OF KEY PERSONNEL

The following individuals will play key roles in coordinating with third parties and stakeholders:

- **DB Project Manager Adam Belasik** will be responsible for monitoring coordination efforts and verifying that stakeholders are heard and feedback is incorporated into the design and construction plans.
- **DB Utilities/Rail/City Coordinator Ryan Simon, PE, CPESC,** will develop and execute a plan for third party and stakeholder coordination. He will oversee all aspects of communication, correspondence, plan reviews and field coordination with railroads, utilities, and the City of Cleveland. With the level of coordination required to meet the project schedule, we have identified two value-added positions to augment this role:
  - **Utility Deputy Joe Ferenczy, PE,** will assist Ryan in coordinating with utilities and the City of Cleveland. He will also manage the utility conflict matrix for design coordination with these entities.
  - **Rail Deputy Jon Winer, PE,** will coordinate with the railroads on design reviews. He will attend all railroad meetings and will facilitate issues resolution for designs involving the GCRTA and NS.

SCHEDULE PRIORITY

Critical activities have been prioritized in the CPM schedule to allow for sufficient review time during design. For example, the relocation design for Cleveland Public Power (CPP) will be submitted in one of the first design packages so that sufficient time is allowed for CPP's design review. See Appendix 6 for more information.

INTEGRATION OF STAKEHOLDERS AND THIRD PARTIES

Integrating Stakeholders and Third Parties in our management process will enable them to provide input into design and construction decisions. We will accomplish this through the following approach.

COORDINATION METHODS

TGR will hold one-on-one meetings with each third party and stakeholder to establish project understanding, common goals, and clear lines of communication. Ryan will establish schedules and agendas so that meetings are productive. Meeting minutes will clearly define action items and responsible parties to provide accountability throughout the project. These meetings will be a top priority early in the project to mitigate risk.

Following the one-on-one meetings, Ryan will schedule and facilitate weekly task force meetings between the project team, ODOT and representatives from third parties, as appropriate. Minutes will be distributed immediately following each meeting, documenting discussions, decisions, and action items.

Stakeholder specific meetings will be held on an as-needed basis throughout design and construction. Design review meetings will be held to resolve comments on design plan submissions. In addition, meetings to discuss upcoming work, service interruptions or temporary works will be required.

Ryan will use the CPM schedule to prioritize all known third party conflicts so all critical issues are

addressed and resolved quickly. The coordination and resolution of those critical conflicts with the appropriate third party will begin at the first scheduled progress meeting. Having decision makers from third parties providing insight at these meetings with ODOT and the TGR team, addressing critical items becomes much quicker and reduces risk of delay.

UTILITIES/CITY OF CLEVELAND

Joe Ferenczy will manage and update a project utility conflict matrix. The matrix will identify all known design conflicts, responsible parties and schedule to resolve or relocate. Once potential conflicts are identified, Ryan and Joe will coordinate with Steve Layer and the design team to identify potential design solutions.

RAILWAY

Jon Winer will assist Ryan in organizing and conducting coordination meetings with NS and GCRTA throughout the design and construction process. Design meetings will focus on railroad design requirements. Construction meetings will discuss logistics of track outages and construction procedures. We successfully coordinated with these railroads during CCG2 to make sure approvals were secured well in advance of construction of the bridge. Working over the RTA lines on CCG2 required TGR to plan well in advance of construction work so we could obtain the required approvals for outages in time for construction.

A.3 Roles & Responsibilities for DB Project Manager and DB Utilities/Rail/City Coordinator

As the Design-Build Project Manager, Adam Belasik will maintain ultimate responsibility for the success of the project, including the successful coordination with third party stakeholders. He will establish and foster a culture of partnering within our team and with all stakeholders, including ODOT and third parties. He will be responsible for managing the various contractual interfaces between TGR, ODOT and third parties, and facilitating issue resolution at all levels.

Ryan Simon, our DB Utilities/Rail/City Coordinator, will maintain responsibility for the coordination of detailed design and construction solutions to third party conflicts and the integration of those solutions into the overall design. He and his team started this task at the issuance of the RFP. He has been involved in every task force meeting throughout the pursuit of the project, and has actively integrated known conflicts into our conceptual design. He has also been involved in the development of our preliminary CPM schedule, giving him an in-depth knowledge of the potential impact various conflicts may have on the overall project schedule.

Steve Layer will assist Ryan to verify that all 3rd party design are thoroughly reviewed and incorporated into the overall design.

Ryan will prioritize coordination efforts in accordance with our CPM schedule. The critical designs will be conducted first so the risk of delays is minimized. Ryan will have full authority to make commitments to the various stakeholders on behalf of the TGR team to mitigate coordination risk.

Figure A-5. Project Management Key Personnel

NAME/ROLE	RESPONSIBILITIES	QUALIFICATIONS
Adam Belasik DB Project Manager	▸ Overall project management and DBT's performance ▸ Direct point of contact for ODOT ▸ Manage design and construction project staff ▸ Oversight of all safety, quality and diversity goals	▸ DB Project Manager for TGR on CCG2. ODOT District 12, $274M ▸ Active engagement with disparaged groups throughout the City of Cleveland on CCG2 and OC3 ▸ Established relationships with NS, GCRTA, Utilities and the City of Cleveland
Ryan Simon, PE, CPESC DB Utilities/Rail/City Coordinator	▸ Coordinate third party reviews ▸ Maintain effective communication with Utilities/ Rail/City stakeholders ▸ Facilitate issue resolution ▸ Facilitate collaboration with third parties during design and construction	▸ Strong background in managing design and construction projects for public agencies ▸ Experience dealing with NS, GCRTA, NEORSD and City of Cleveland utilities ▸ Developed project preliminary CPM schedule
SUPPORT STAFF		
Joe Ferenczy, PE Utility Deputy	▸ Coordinate design review comment resolution with Utilities/City of Cleveland ▸ Maintain utility conflict matrix ▸ Resolve utility conflict through design coordination with roadway and structures leads	▸ Extensive experience with City of Cleveland major infrastructure projects ▸ Established relationships with both public and private utilities including NEORSD, CPP, WPC, CWD, FirstEnergy, Dominion, and AT&T ▸ Project Manager for the $50M Public Square Redevelopment
Jon Winer, PE Rail Deputy	▸ Coordinate design review comment resolution with NS/GCRTA ▸ Internal design coordination with roadway and structures leads	▸ Established relationship with Norfolk Southern Railway (NS) and their Public Projects Group who will be responsible for the Railroad's approval of this project ▸ Experienced Project Manager and Lead Bridge Engineer on multiple NS bridge projects, including the NS bridge replacement project at MP B-154.16 in Painesville, OH ▸ Well versed in the railroad approval process including engineering and construction agreement requirements, overhead and underpass grade separation design criteria, design specification, and railroad design review schedules
VALUE ADDED STAFF		
Steve Layer, PE DB Coordinator	▸ Constructability reviews ▸ Procurement and business outreach for DIOP coordination of design and construction schedule ▸ Communicate design priorities based upon construction needs	▸ Over 35 years of industry experience ▸ Lead estimator on CCG1 and Columbus Crossroads design-build projects ▸ DB Coordinator on CCG2 and OC2 providing project specific experience for seamless transition ▸ Provides a direct line of communication between design leads, construction leads and utility coordinators ▸ Developed trusted relationships with ODOT, HNTB, RTA, City of Cleveland, NEORSD and NS

A.4 Schedule Effectiveness and Clarity

CPM Schedule Approach

The preliminary CPM Schedule and narrative are located in Appendix 6. The schedule has been prepared in accordance with all project issued addenda.

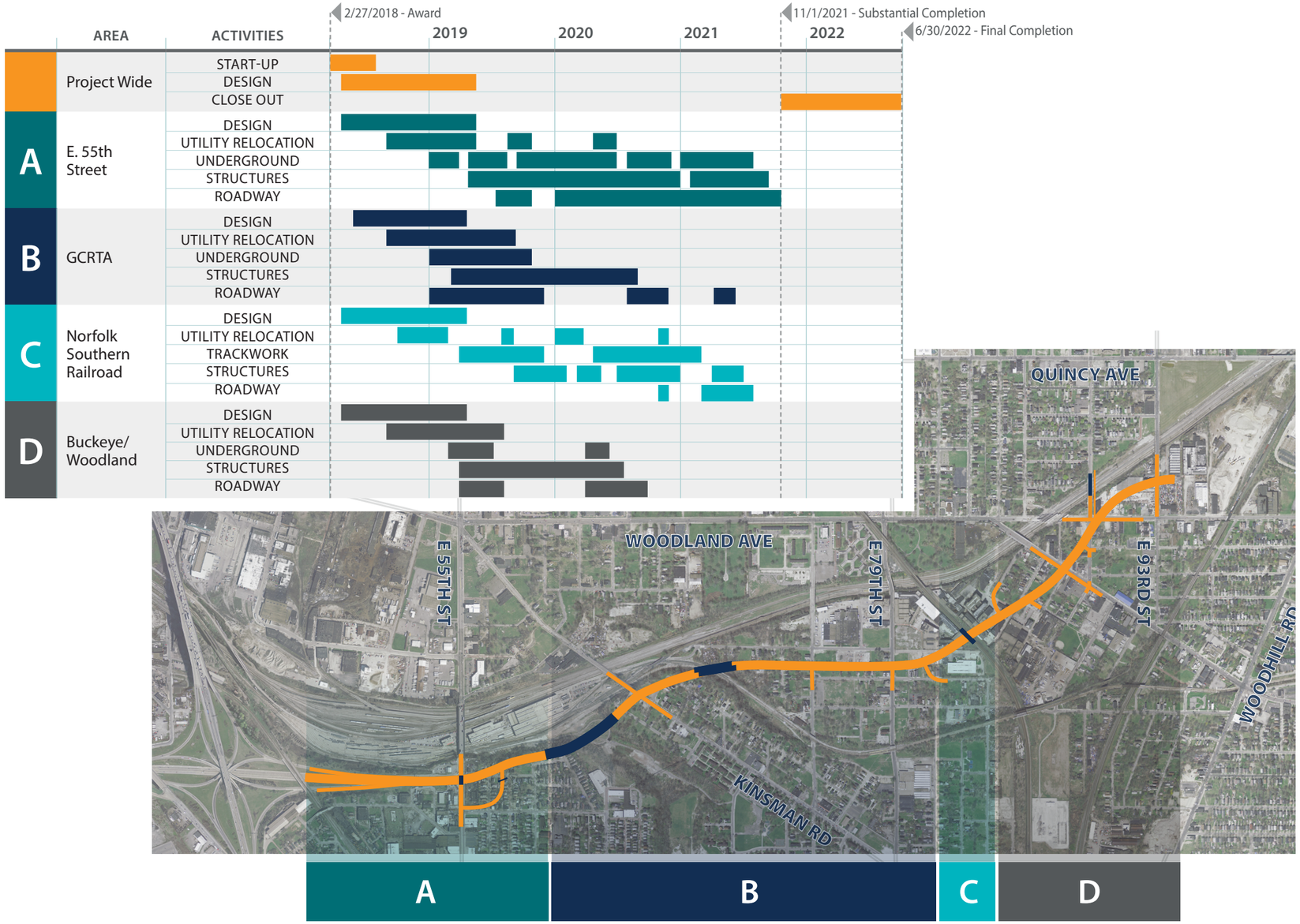
TGR has developed a comprehensive schedule that demonstrates a clear and thorough understanding of this project. Throughout the development of the CPM schedule, TGR has considered the following aspects of the project:

- Safety
- Constructability
- Utility coordination and relocation
- Design buildable units and document review time
- Long lead materials and fabrication durations
- Maintenance of traffic restrictions
- Third party coordination and permitting
- Removal of unregulated materials
- Final completion date and critical path to completion

The integration of these key elements, including the arrangement of drainage areas and outfalls, resulted in the project being organized into four geographic areas that correlate with the CPM Schedule's work breakdown structure. The four geographic areas as you move east through the site include:

- **Area A:** E. 55th Street Area including I-490, E. 55th Street, Quadrant Road
- **Area B:** GCRTA Area including Kinsman Road, E. 75th Street, E. 79th Street and bridges over Kingsbury Run Ravine and GCRTA Blue/ Green Lines
- **Area C:** Norfolk Southern Railroad Bridge Area from Grand Avenue to Lisbon Road
- **Area D:** Buckeye Road / Woodland Avenue including E. 89th Street Pedestrian Bridge

Figure A-6. Construction Sequence



Each area can be considered its own project within the overall project. Although the areas can be viewed as separate projects geographically, the sequencing of phases within and across each of the areas is vital to the success of the Project. Figure A-6 on the previous page illustrates the project's planned sequence of work by area.

The design buildable units were strategically developed to consider geographic areas; work disciplines including maintenance of traffic, roadway, underground, lighting and structures; and reviewers to minimize impact to the project schedule as work progresses.

Critical Path

The anticipated award of the project will begin the schedule's critical path with TGR submitting the Project Management Plan. Upon receipt of the Notice to Proceed, HDR will begin preliminary design and the development of key buildable units (see Figure A-7). The design of maintenance of traffic for Area A will be essential to the timely start of construction.

Area A contains the project's critical path throughout the duration of construction. It begins with pre-phase work that includes utility relocation, underground installation and construction of the E. 55th Street temporary run-around in preparation of Area A, Phase 1. Construction of Regulator S-10A will enable Retaining Walls #1 & 2 to be constructed at the E. 55th Street Bridge. Completion of the bridge and west side of E. 55th Street in Phase 1 will permit traffic to be moved from the temporary run-around to the newly constructed west side of E. 55th Street.

Area A, Phase 2 includes the construction of the east side of E. 55th Street. Once the north side is completed, permanent access to GCRTA will permit the start of construction for OH-10 east of E. 55th Street and wall construction along Quadrant Road.

Area A, Phases 3 includes the start of Retaining Wall #3A construction and the excavation and underground installation along Quadrant Rd. Phase 4 continues through paving and landscaping along Quadrant Rd, I-490 and OH-10 from E. 55th Street to Kingsbury Run Bridge. Upon its completion, OH-10 will be open to traffic in the final configuration from I-77 to E. 93rd Street with access to E. 55th Street and all cross-streets.

TGR's CPM schedule successfully accommodates efficient buildable unit design, utility relocation, continuity of operations, and phasing milestones, while achieving the required Substantial Completion Date of November 1, 2021 and Final Completion Date of June 30, 2022.

Figure A-7. Buildable Units

NO.	PROPOSED BUILDABLE UNITS	PROJECT AREA				
		PROJECT WIDE	A	B	C	D
1	Roadway (Kinsgbury to E. 79th)			▶		
2	Roadway (E. 55th to Kingsbury and E. 79th to E. 93rd)		▶		▶	▶
3	Traffic Control	▶				
4	CPP and Lighting	▶				
5	NEORSD Regulator and Sludge Main		▶			
6	Waterline (Main and Relocations)	▶				
7	MOT for BU#1			▶		
8	MOT For BU#2		▶		▶	▶
9	E. 55th Street Bridge over OH-10		▶			
10	E. 59th Ped Bridge over Quadrant Road		▶			
11	Walls (1, 2, 3a and 3b)		▶			
12	OH-10 Bridge over Kingsbury Run Ravine and Wall 4			▶		
13	OH-10 Bridge over GCRTA Blue-Green Lines			▶		
14	Norfolk Southern Railroad Bridge over OH-10				▶	
15	E. 89th Ped Bridge over NS & GCRTA					▶

Risks and Mitigation Measures

In anticipation of the Risk Registry Workshops that will be conducted during construction, TGR has developed a pursuit phase Risk Registry to identify and qualify project risks that could potentially impact the schedule. After confirming risk, TGR and ODOT will discuss solutions that will be incorporated into the CPM Schedule throughout its development. In order to maintain the construction schedule. Project risks and the respective mitigation strategies are shown in Figure A-8.

Figure A-8. Proactive Mitigation Approach

SCHEDULE RISKS	MITIGATION APPROACH
Utility Relocation	▶ Frequent and timely third party coordination of relocation plans ▶ Value-added position Utility Deputy, Joe Ferenczy, PE focus on utility coordination ▶ On-going management of utility matrix ▶ Schedule and conduct one-on-one coordination meetings with utility owners ▶ Use of Subsurface Utility Exploration (SUE) Level A techniques to refine or potentially eliminate utility relocation designs, resulting in cost savings and minimal or no utility service interruptions
Working Around GCRTA	▶ Timely requests for track permitting ▶ Advanced planning of GCRTA weekend outages ▶ Hourly work schedule to enable construction efficiency plan and resource availability ▶ Communication and coordination of working drawing submittals ▶ Value-added position Rail Deputy, Jon Winer, PE focus on GCRTA coordination
Working Around Norfolk Southern	▶ Timely requests for track time and flaggers ▶ Early and regular coordination with NS track work forces ▶ Value-added position Rail Deputy, Jon Winer, PE focus on NS coordination
Long Lead Material	▶ CPM activities that detail material procurement and fabrication status / lead time ▶ Assign field engineer to each fabricator for management of procurement process and monthly fabrication updates
Unknown Regulated Materials	▶ Perform early sampling in critical project areas ▶ Assign field engineer to manage and track all coordination and documentation of regulated material
E. 55th Street Intersection Coordination	▶ Coordinate plans and work with adjacent ODOT and City projects ▶ Integrate MOT for vehicles and pedestrians

PART B

Design and IQF

Part B. Design and IQF

KEY POINTS

- » ODOT experienced design team
- » Design concepts reduce maintenance and improve access
- » Established relationships with 3rd Parties including key relationships with NS Railroad
- » Five approved ATCs deliver maintainability, durability, and public mobility improvements
- » Quality Control process verifies compliance with ODOT's project goals, standards and scope of work

B.1 Design Organization Roles & Responsibilities of Design Key Personnel

Led by HDR, the OC3 design team provides collective knowledge of ODOT project goals, design standards, and requirements to design an innovative solution that considers community and stakeholder needs. The design team will coordinate closely with Design IQF TranSystems, who provides experience with hundreds of roadway, traffic, and bridge projects throughout Ohio.

Leading the design team is DB Design Project Manager Ken Fertal, PE, PS. Ken will work closely with the team to apply lessons learned and best practices to OC3 design tasks from experience on some of ODOT's largest DB projects and District 12 projects, including CCG1. Figure B-2 provides an overview of design key personnel; detailed resumes are located in Appendix 3.

Figure B-1. Design Team Organization

See page A-03 for legend

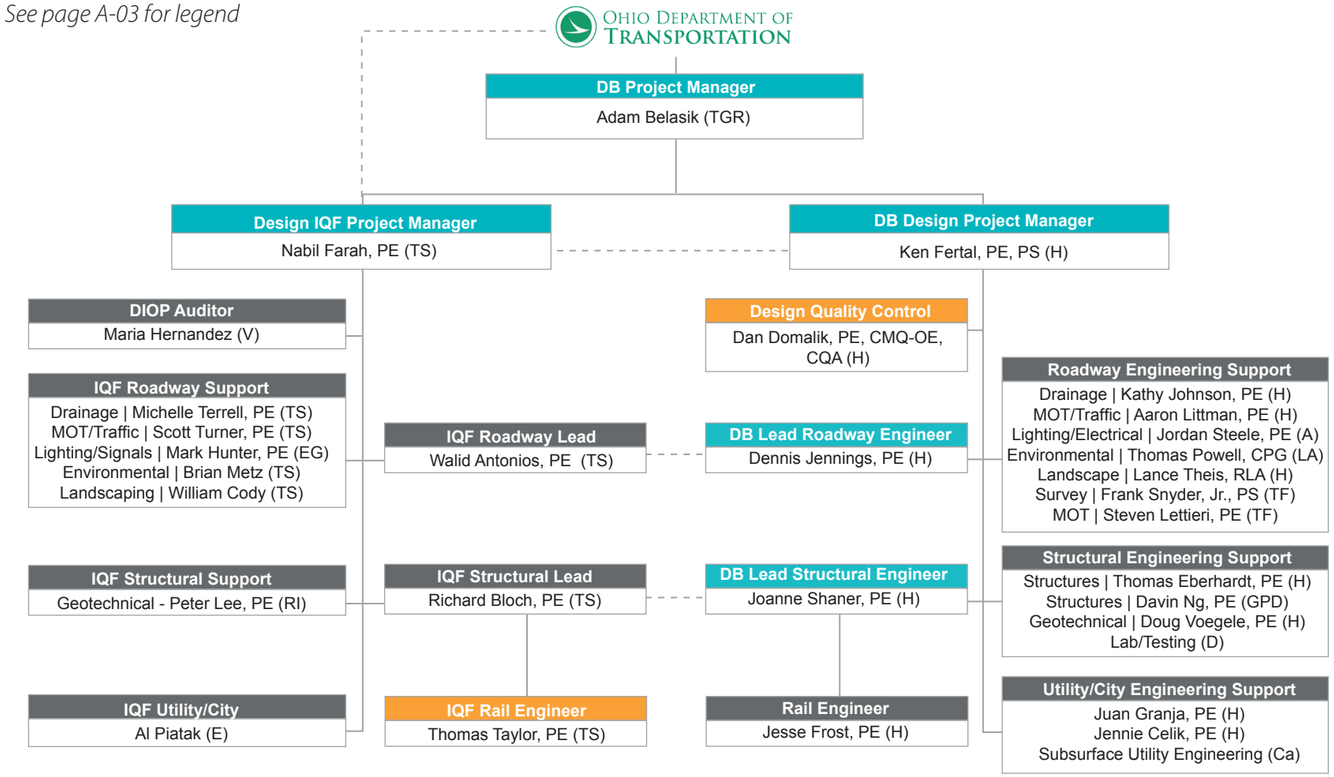


Figure B-2. Design Key Personnel

NAME/ROLE	RESPONSIBILITIES	QUALIFICATIONS
Ken Fertal, PE, PS DB Design Project Manager	▸ Coordination and execution of all design work ▸ Oversight of design schedules and submittals ▸ Verify conformance with scope and DQMP ▸ Consistent interface between contractors, designers, subs and third parties	▸ Ability to quickly understand project needs to coordinate and intertwine design, construction and third parties to gain consensus ▸ PM for D12 General Engineering Services contract ▸ Roadway Design Manager for CCG1, coordinating 10 sub-consultants, dozens of utilities and third parties ▸ MOT design review lead for SCI-823 (Portsmouth DB) and design lead for HAM-71-3.81(MLK DB)
Joanne Shaner, PE DB Lead Structural Engineer	▸ Serves as the engineer of record on all structures ▸ Compliance with scope documents and DQMP ▸ Collaboration between roadway, geotech and structures	▸ Intimate understanding of ODOT requirements ▸ Manages the HDR Ohio bridge section ▸ Excellent organizational and communication skills as evidenced by key leadership roles in the industry
Dennis Jennings, PE DB Lead Roadway Engineer	▸ Serves as the engineer of record on all roadway design ▸ Collaboration between roadway, drainage, traffic, MOT and utilities ▸ Compliance with scope documents and DQMP	▸ Led multi-disciplined design teams including subconsultants, SUE companies for interstate and urban highway project ▸ Lead Roadway Engineer for MLK DB Interchange ▸ Roadway Quality Reviewer for CCG1

Management Approach

TGR's Project Management Plan (PMP) describes the interaction of our team and our approach to managing project design processes, staff, schedules, and quality (Figure B-3).

TGR will work with ODOT to continuously improve the PMP. We welcome opportunities for improvement to the PMP as evidenced by the incorporation of suggestions from the Department's Quality Improvement Process Audit No. 6 of CCG2. Our approach includes the following:

- **Integrated Design and Construction Staff.** Design key personnel will be co-located at the project office along with construction staff, IQF, and ODOT.
- **Technology.** Technology will enhance the design process. Designers will use 3D bridge design (LARSA), building information modeling/CIM for roadway/utilities (where applicable), Skype desktop web meetings and video conference.
- **Document Control.** We will use a file management structure for both paper and electronic project files. This structure aligns with ODOT's and results in the effective location and retrieval of documents as dictated in the PMP. ProjectWise will be used by all design staff through quality review. Upon completion of the quality check, documents will be posted to a mirrored file structure on ODOT's SharePoint site.
- **Design Quality Control.** The Design Quality Management Plan (DQMP) will identify quality assurance/quality control (QA/QC) activities and personnel required to provide quality design deliverables. HDR reviewers will use Bluebeam software for paperless markup and QC comment resolution. QC reviews will be conducted in a four step process, which includes design checks, constructability reviews, interdisciplinary reviews and quality assurance. Design subconsultants will be trained in this process and will be subject to the same QC review criteria. DB Design QC Manager, Dan Domalik, PE, CMQ-OE, CQA who has 22 years of experience in quality management, will implement and monitor the DQMP.
- **Constructability Review.** TGR DB Roadway/ Structures Coordinator Steve Layer will work closely with the HDR designers to verify the design is consistent with the needs of the construction team.

Internal Design Team

DB Design Project Manager Ken Fertal, PE, PS, will manage subconsultants and specialty firms, many of which are familiar with District 12 practices. During the pre-bid phase, HDR pro-actively integrated subconsultants by including them in Task Force meetings, weekly design meetings, reviewing scope details, contracts, schedules and quality control expectations in the DQMP to deepen their understanding of procedures and standards.

During past projects, TGR has found the value added position of DB Coordinator to be effective in providing a constant flow of information and collaboration between the construction and design leads. Steve Layer, PE, will fill this role, similar to his role on CCG2.

As previously mentioned, Dan Domalik, PE, CMQ-OE, CQA will serve as the DB Design QC Manager. Dan has performed this same function on other DB projects. Dan will report to Ken and will work with the design team to verify design deliverables are compliant with scope, schedule and meet constructability requirements.

To further enhance collaboration, we have developed an inclusive project communication strategy that includes regular design meetings (see Figure B-4). During these meetings, team members will discuss important decisions being made at all levels and verify that all personnel are focused on quality, resources, schedule and constructability.

Debriefs of resulting decisions and information will be communicated to design staff via meeting minutes and managerial discussions. An Action Item List will be used to track design issues, which will then be completed or addressed before the next meeting. The lead designers will verify that the changes were made to the plans and design, and review them for compliance.

Figure B-3. Internal Design Team Interface

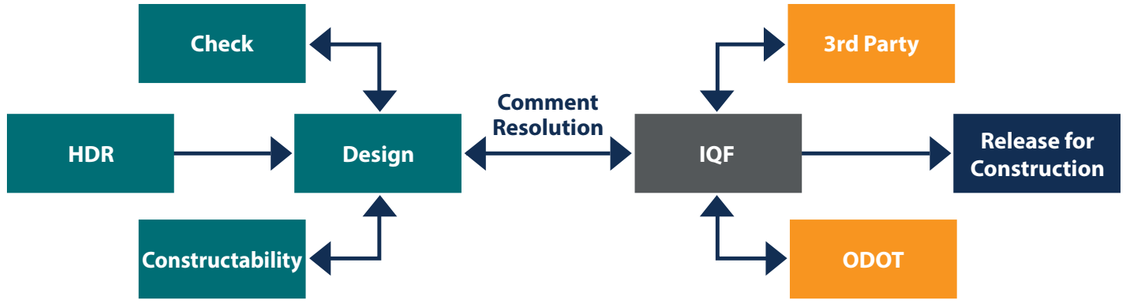


Figure B-4. Design Team Meetings

Meeting	Frequency	Attendees: DB Design PM	Design Leads	Designers	Sub Leads	Sub Designers	Meeting Goals	Project Benefits
Design Lead	Weekly	▶	▶		▶		▶ ODOT status overview/action items ▶ Task Force overview/Action items ▶ BU schedule milestones ▶ Cross-discipline coordination ▶ Staffing/budgets ▶ Design action items	▶ All design related items can be fully vetted at this level ▶ Quick and accurate response time on action items
Design Team	Monthly	▶	▶	▶	▶	▶	▶ Project update ▶ Design update ▶ Resources ▶ Quality	▶ Integrated team ▶ Consistent goals/objectives by all design staff ▶ Motivate staff
Roadway Team Meeting	Weekly	▶	▶		▶		▶ Detailed design coordination ▶ Software consistency ▶ Train/mentor for design QC procedures ▶ Status print review	▶ Overlap of roadway lead and design PM ▶ More accurate and complete set of plans for IQF review
Structure Team Meeting	Weekly	▶	▶		▶		▶ Detailed design coordination ▶ Software consistency ▶ Train/mentor for design QC procedures ▶ Status print review	▶ Overlap of structures lead and design PM ▶ More accurate and complete set of plans for IQF review
Designer Huddles	Daily			▶		▶	▶ Continual interaction between designers ▶ Review and update action items related to specific design elements	▶ On-the-fly resolution ▶ Opportunity to move decisions up to task leads

B.2 IQF Role/Responsibility and PMP Design Quality

TranSystems will serve as the IQF, verifying design conformance with ODOT's goals, requirements and standards. TranSystems is a 800-employee, national transportation consulting firm with 65 employees located in three Ohio offices. The IQF team, led by Nabil Farah (see Figure B-5), is experienced with design criteria and specifications for ODOT, railroads, and municipalities on complex transportation projects, including Segment 4 of the Southern Ohio Veterans Memorial Highway (Portsmouth Bypass) project. This was ODOT's first Design-Build-Finance-Operate and Maintain project and mandated strict IQF design requirements.

TranSystems will be supported by Euthenics Inc., Eggeman Engineering and Consulting and Resource International Inc. IQF staff members will be required to attend PMP training and specific IQF training to make sure that everyone understands the project's processes, roles and tools. The IQF team will work independently from the TGR team except when verifying all work is being completed in accordance with the scope, PMP, and ODOT standards. TranSystems recognizes the importance of the railroad involvement and its impact on the schedule, therefore Thomas Taylor, PE as IQF Railroad Lead has been assigned as a value-added position. Thomas has significant experience with freight Class I railroad and with Greater Cleveland Regional Transit Authority.

Figure B-5. IQF Key Personnel

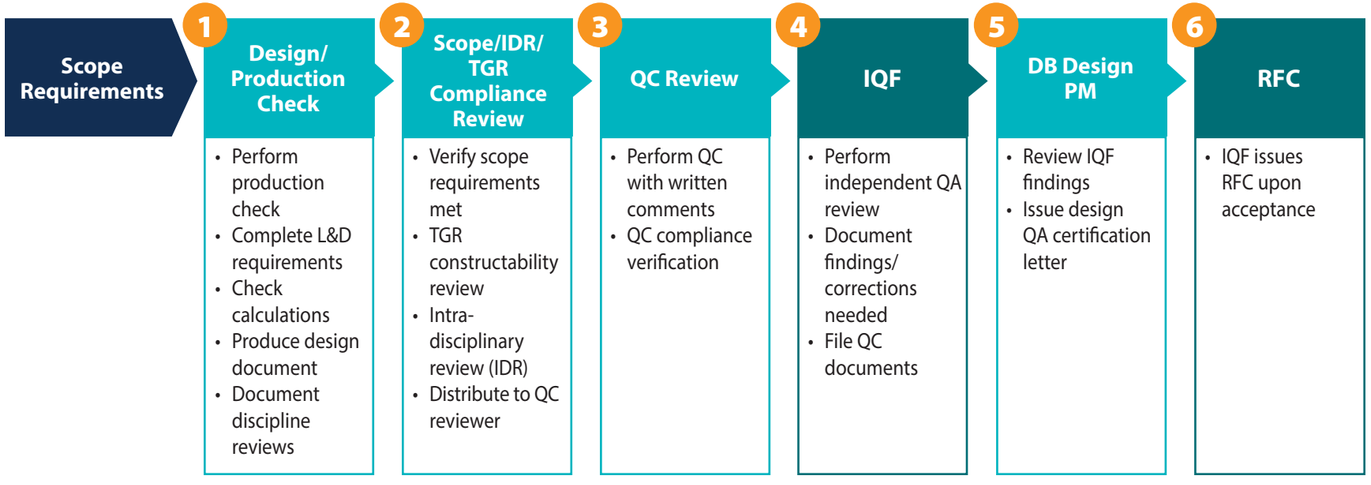
NAME/ROLE	RESPONSIBILITIES	QUALIFICATIONS
Nabil Farah, PE Design IQF Project Manager (DIQFPM)	▸ Manage and coordinate all IQF members ▸ Approve design submittals and IQF compliance verification ▸ Track comments and resolutions for design packages ▸ Report quality performance issues to ODOT ▸ Authority to stop design work ▸ Coordinate third party reviews	▸ Strong background in project management and structural engineering ▸ PM for Segment 4 of the Design-Build SCI-823-0.00 Southern Ohio Veterans Memorial Highway (5 miles of roadway and 8 bridges) ▸ Lead bridge design engineer for HAM-71-3.81 MLK ODOT Design-Build 30% Plans, $80M ▸ Completed numerous successful projects with 10 ODOT districts / City of Cleveland/RR, from planning stages through construction. Knowledge of District's quality expectations
SUPPORT STAFF		
Walid Antonios, PE IQF Roadway Lead	▸ Review and verify quality of roadway design packages ▸ Verify design input requirements ▸ Track comments and resolutions for design packages ▸ Report quality performance issues to DIQFPM	▸ Recognized expert in complex design ▸ Managed design on projects over $800M in construction ▸ Managed mega projects with multiple subconsultants and federal, state and local agencies
Richard Bloch, PE IQF Structural Lead	▸ Review and verify quality of structural design packages ▸ Verify design input requirements ▸ Track comments and resolutions for design packages ▸ Report quality performance issues to DIQFPM	▸ Complex bridge and structural design experience ▸ Management, plan preparation and inspections for DB and standard delivery projects for ODOT, railroad and GCRTA ▸ Lead bridge engineer for SCI-823 (Portsmouth DB)
Thomas Taylor, PE IQF Railroad Engineer	▸ Review and verify quality of railroad design packages ▸ Verify design input requirements ▸ Track comments and resolutions for design packages ▸ Report quality performance issues to DIQFPM	▸ Freight and transit rail design includes facilities, structures and special trackwork ▸ Coordination with NS and GCRTA design criteria, operations and expectations ▸ Completed 10 projects involving NS and over 20 projects with GCRTA ▸ Value added

Design Quality Assurance

HDR's proven DQMP will be implemented as part of the PMP; this is the same plan that was successfully used during ODOT's CCG1 and the I-71 MLK DB projects. The DQMP will outline the project QA/QC process and requirements to be followed by all designers including sub-consultants. It will also describe at which points in the process that the IQF will conduct its verification. TranSystems and the TGR team will implement a Design Checklist Form submittal requirement that will incorporate ODOT Design Criteria for each task (i.e., Bridge Design Manual for bridges, Location and Design Manual for roadway and drainage). As part of the PMP, the form will outline the criteria and information required for each design submittal. TranSystems helped develop the aforementioned document during the pre-bid phase and will be ready to implement and use it immediately following contract award.

The project will be designed and constructed in manageable pieces or buildable units (BU). These BUs will be subject to a series of quality assurance reviews prior to being released for construction. The DQMP will define this process, specifying the particular staff level, frequency and level of checking that occurs on each set of BU plans. Figure B-6 outlines this process.

Figure B-6. Key Design Quality Management Components



B.3 Conceptual Design Narrative

HDR's design allows us to develop construction-ready documents that will be quickly delivered to TGR personnel in the field. Our solution considers:

- Safety of the traveling public
- Safety of the construction workers while working around vehicular traffic, tall piers and active railroads
- Cost effectiveness of the design solutions
- Sustainability and durability of solutions
- Constructability
- Overall risk management

The following pages summarize our approach to key areas of our conceptual design.

Surface Water Collection System

HDR and its subconsultants have substantial experience with major storm sewers in the region. We understand Northeast Ohio Regional Sewer District and the City of Cleveland's specifications through our work on the Kingsbury Run Culvert Repair Project and Burke Airport Forcemain Replacement Project, among others.

The project's existing surface water system collects and drains into the City of Cleveland Division of Water and Pollution Control (WPC) combined sewer system. During wet weather events, a majority of the project area discharges from the combined sewer to the Cuyahoga River at CSO-40 via the Kingsbury Run culvert system, while the east end of the project is carried to the Easterly Water Treatment Plant by the East 79th Street Branch Interceptor. We propose five outfalls within the project area, as shown in Figure B-7.

Our pre-bid solution for drainage and Best Management Practices (BMP) focused on making

Figure B- 7. Proposed Outfalls

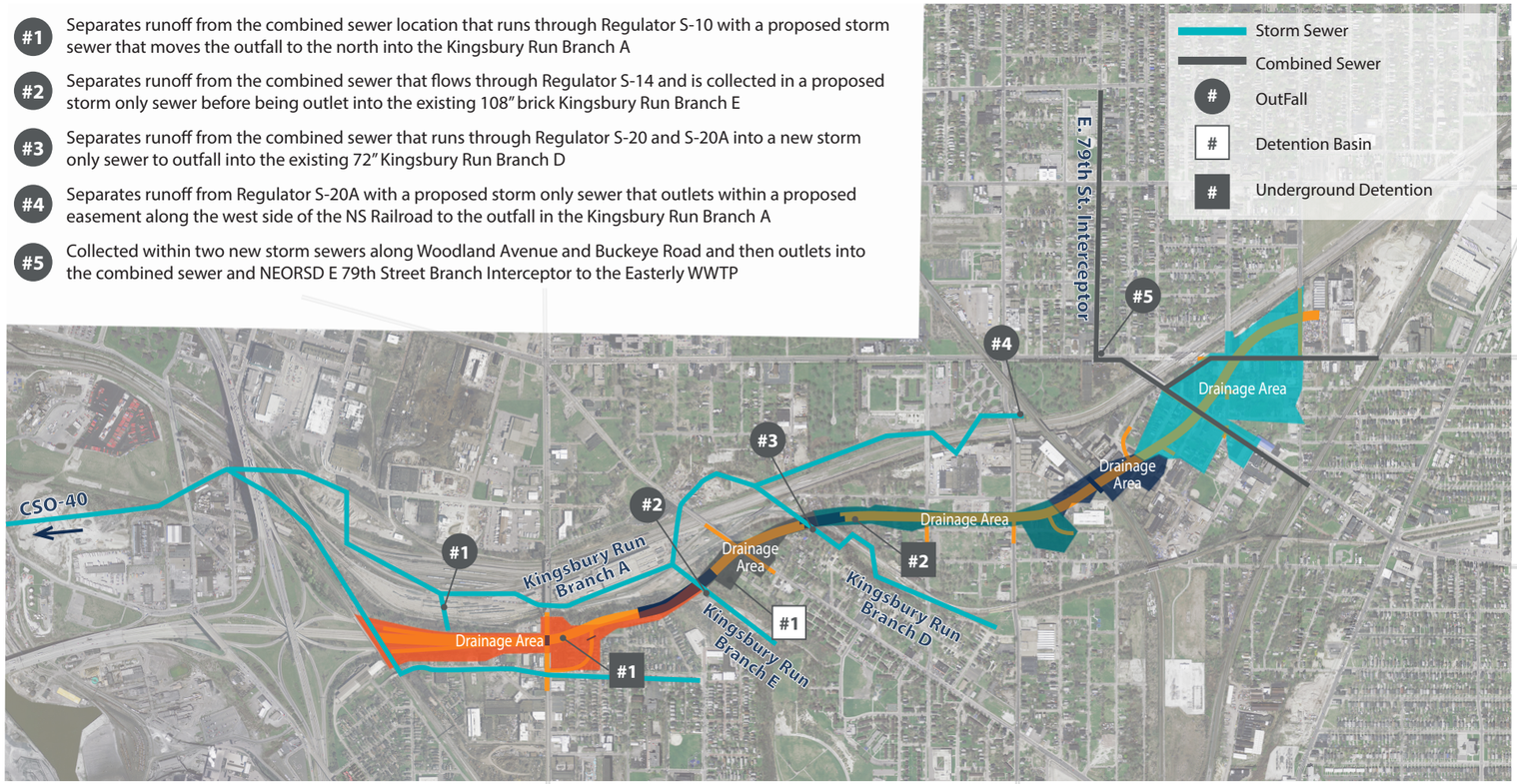
#1 Separates runoff from the combined sewer location that runs through Regulator S-10 with a proposed storm sewer that moves the outfall to the north into the Kingsbury Run Branch A

#2 Separates runoff from the combined sewer that flows through Regulator S-14 and is collected in a proposed storm only sewer before being outlet into the existing 108" brick Kingsbury Run Branch E

#3 Separates runoff from the combined sewer that runs through Regulator S-20 and S-20A into a new storm only sewer to outfall into the existing 72" Kingsbury Run Branch D

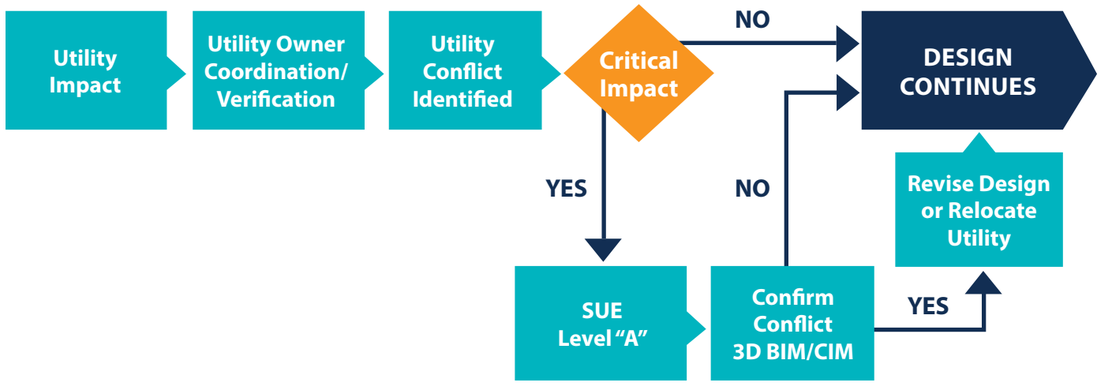
#4 Separates runoff from Regulator S-20A with a proposed storm only sewer that outlets within a proposed easement along the west side of the NS Railroad to the outfall in the Kingsbury Run Branch A

#5 Collected within two new storm sewers along Woodland Avenue and Buckeye Road and then outlets into the combined sewer and NEORSD E 79th Street Branch Interceptor to the Easterly WWTP



the reference design more efficient. This started by removing the area draining to the combined sewers from the project Earth Disturbed Area (EDA) for determination of the required treatment. This approach was later confirmed by Addendum 8. The next step in efficiency was to calculate the runoff coefficient used in the water quality volume calculation for sizing the BMPs. Using an appropriately calculated runoff coefficient instead of the most conservative value allows for the most efficient sizing. Once the treatment requirements were determined and BMP locations were set, the above ground detention basin was increased in size by 20% for sedimentation as required per the L&D Volume 2. For the two underground detention areas, manufactured systems were included to meet the water quality treatment, and were placed upstream of the underground systems. Our total BMP detention requirement is two-thirds lower than originally designed.

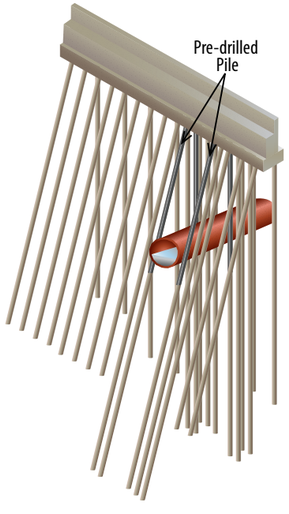
Figure B-8. Utility Impact Resolution



Subsurface Utilities

Joe Ferenczy, PE, will assist Ryan Simon, PE, CPESC, with utility coordination during the design phase, working with over 23 utility owners. Key to this role will be Joe's experience and relationships with these third parties, most recently completing the Redevelopment of Public Square which included $16M of utility relocations. Joe will work closely with DB Utilities/Rail/City Coordinator Ryan Simon to resolve all challenges associated with utilities affected by the project.

Figure B-9. Kingsbury Run Bridge Pile Layout



Recognition and identification of these impacts are important to our early phases of design. Our impact resolution process is shown in Figure B-8. The process starts with regular and clear communication. Weekly utility design and coordination meetings create valuable dialogue between all stakeholders to expedite conflict resolution. All identified critical impacts and large utility infrastructure will require increased levels of Subsurface Utility Engineering (SUE) information to determine alignment and elevation.

The TGR team has pre-coordinated with a number of public utilities, including CWD, WPC and NEORSD, to gain input into our proposal assumptions. As an example, one of the most significant utility impacts we identified is a large 60-inch combined sewer over which the rear abutment for the Kingsbury Run Ravine bridge will be constructed. Foundation piles near the active sewer will be pre-drilled to a depth deeper than the combined sewer, as shown in Figure B-9, to avoid damage to the sewer. The location of the existing sewer is based on SUE Level D (record drawings) information. Given the depth and size of the combined sewers, more accurate location is required. Subconsultant Cardno will provide SUE Level A information to reduce the risk of hitting the sewer during the pile construction.

Norfolk Southern Mainline Grade Separation

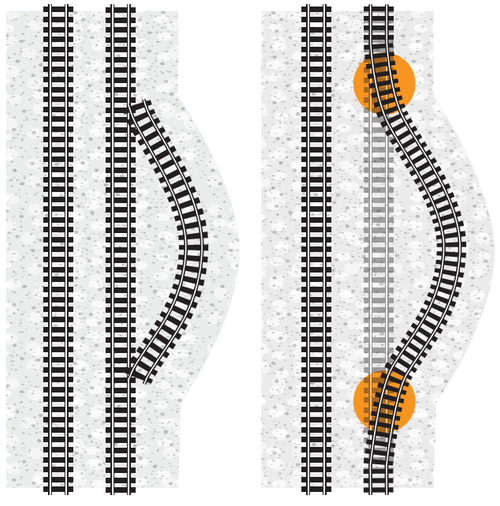
Coordination with Norfolk Southern (NS) will be the responsibility of DB Utilities/Rail/City Coordinator Ryan Simon, assisted by Rail Deputy Jon Winer, PE, of HDR. Jon has a comprehensive knowledge of NS standards and their staff developed through his established relationships and experience working as a project manager and lead designer on multiple NS rail projects. Jon will facilitate meetings with key NS staff to solve problems before they impact schedule. He has performed this role on various task orders of HDR's Master Service Agreement with NS.

HDR's conceptual design consists of two steel deck plate girder spans with a cast in place composite concrete deck, consistent with NS's Public Projects Manual standards. The abutments and center pier will be constructed utilizing the top down construction method. The abutments will consist of drilled shaft tangent walls, and the pier will be a cap and column on a drilled shaft foundation. The final bridge will maintain the two current active tracks and have room for an additional two future tracks.

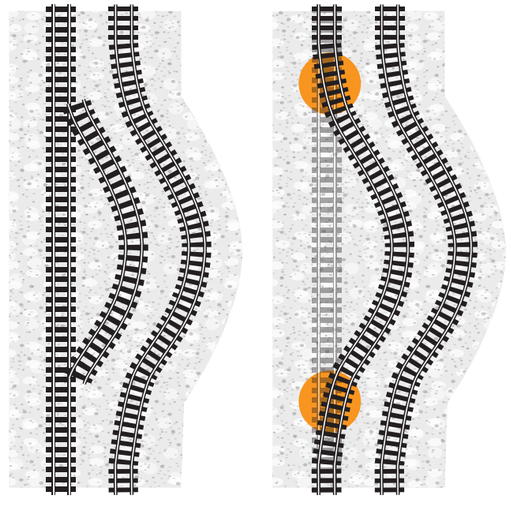
TRACK RELOCATION/PHASING AND TIE INS

Temporary relocation of the two tracks will be accomplished through horizontal shifts of track alignments using the multi-phased shoo fly configuration shown in Figure B-10.

Figure B-10. Phases 1: Multi-Phase Shoo Fly Configuration



Phase A. Construct one temporary shoo fly track to the east of current track alignment and shift main line track to shoo fly (not to scale)

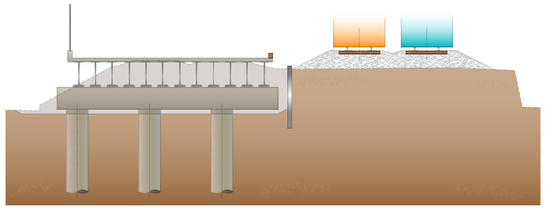


Phase B. Construct second temporary shoo fly track to the east of current track alignment and shift the second track to shoo fly (not to scale)

MULTI-PHASE BRIDGE CONSTRUCTION

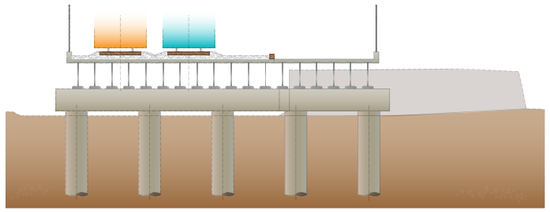
The bridge will be constructed working in conjunction with the shoo fly track relocation described previously and as illustrated in Figures B-11, B-12 and B-13).

Figure B-11. Phase 1: Western Portion Bridge Construction



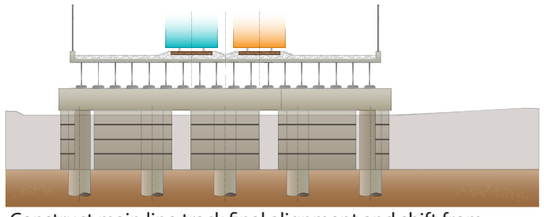
Construct Phase 2 track alignments on the western portion of new bridge coinciding with Phase 1 Track alignment, thereby minimizing work necessary in Phase 3 to transfer lines to final alignment

Figure B-12. Phase 2: Eastern Portion Bridge Construction



Remove the temporary shoring installed in Phase 1 and construct eastern portion of the proposed NS bridge and remove Phase 1 Shoofly tracks

Figure B-13. Phase 3: Final Alignment



Construct main line track final alignment and shift from temporary alignment. Remove current mainline temporary track alignment. Excavate underneath bridge down to roadway elevation. Install aesthetic concrete encasements for the pier and abutments

UTILITY COORDINATION/RELOCATION

We will provide bracket supports with the bridge span to allow for utility conduits in the girder bays. We will also install additional sleeves in both of the concrete deck curbs for additional utility lines. No utility conduits will be placed on the exterior fascia of the bridge, which is consistent with ODOT design practices.

DRAINAGE

The NS Bridge, located over a vertical sag on OH-10, will require the installation of bridge scuppers that will tie into catch basins and a closed storm system under the bridge. From the sag point on OH-10, our design proposes a northerly long jack and bore to Kingsbury Run Branch A (Outfall No. 4). This storm conduit will be constructed before significant excavation of the sag takes place, thereby providing means for temporary drainage during construction. This will also provide subgrade protection after excavation and until pavement is completed.

OTHER POTENTIAL RISKS

Coordinating design and construction with NS presents potential risk that may impact the project schedule. We have developed design concepts and construction means and methods that mitigate this potential risk for work on the NS Bridge. Figure B-14 below summarizes our strategy.

Figure B-14. NS Risk Strategy

ISSUE	MITIGATION STRATEGY	BENEFIT
Design Compliance	Perform quality review and audit on the TGR conceptual design	Conformance to NS design criteria
Schedule	Arrange work in the TGR CPM allowing sufficient time for design and review	Removes NS Bridge design and construction from the critical path
Constructability	Incorporate top down construction techniques	Eliminates major support of excavation adjacent to active rail lines, shortens reviews by NS
Impact to Rail Traffic	Design to allow construction of Phase 1 and Phase 2 with rail traffic directly adjacent	Allows safe construction to occur without interrupting rail traffic

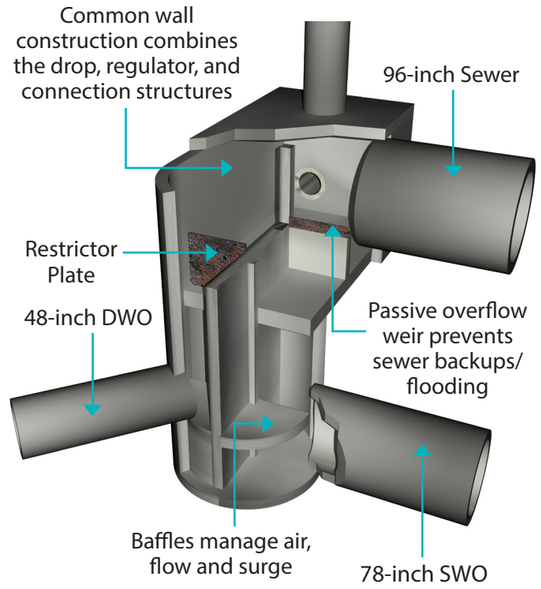
E. 55th Street Grade Separation

The area adjacent to the E. 55th Street Grade Separation is complex, requiring relocations to accommodate the new bridge, walls, drainage and highway infrastructure. Maintaining pedestrian and vehicular traffic in close proximity to the GCRTA facility and within tight ROW constraints will take careful planning and safe construction practices. TGR has spent much of the pre-bid phase focused on this one area of the project in order to develop a safe, practical construction process that resolves this detailed grade separation.

REGULATOR COORDINATION

Relocation of the sewer network and S-10 regulator is required due to the grade separation at OH-10 and E. 55th Street. Juan Granja, PE, in HDR's Cleveland office has significant experience in developing plans for similar regulator chambers for the NEORSD. Through this experience, we understand the challenge to relocating the local sewer infrastructure at this location is dropping the flow from an existing 96-inch to an existing 78-inch. This requires the flow to be dropped vertically approximately 20 feet. Dropping large flows an extended distance vertically presents several key challenges, including: energy dissipation, erosion potential, air entrainment, odor release, and solids handling. When designing large structures similar to these, NEORSD will focus on: hydraulics, operation and maintenance, and constructability. Our design addresses these three issues in Figure B-16 on the following page. This benefits ODOT by streamlining the approval process with NEORSD.

Figure B-15. Relocated Regulator



The design of the regulator structure includes construction of a large 20' diameter single walled, baffle structure located in the middle of E. 55th Street (See Figure B-15). Construction sequencing is critical for the regulator due to the large excavation required to construct the underground facility. The TGR design will enable the existing sewers to remain in operation for the majority of the sewer construction. This allows flow to continue as it currently does, which minimizes or eliminates the need for bypass pumping.

These design concepts are not new to TGR. Trumbull Corporation has successfully completed the construction of the OARS 2 Combined Sewer Overflow (CSO) project for the City of Columbus.

Figure B-16. NEORSD Preferences

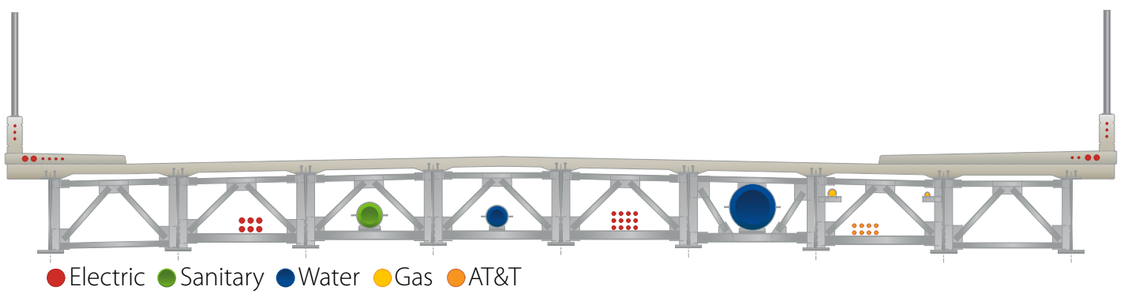
PREFERENCE	DESIGN SOLUTIONS	BENEFITS
Hydraulics	▸ Use adjustable weirs and orifice plates for future demands	▸ Allows for a permissible 13 overflows per year for Storm 91
Operation and Maintenance	▸ Use NEORSD standard, dual 24/42-inch manhole covers	▸ Meets NEORSD standards and supports ease of future maintenance
Constructability	▸ Combine regulator and drop structure into a single structure	▸ Reduces the number of excavations ▸ Increases safety of workers

UTILITY RELOCATION/COORDINATION

Construction of the E. 55th Street Bridge will require careful planning for permanent locations for existing utilities (see Figure B-17). Keeping them in operation is essential for businesses and residential areas. The following are three of the critical areas that will require special design.

- **Water.** Through discussions with Cleveland Water Department, the existing 30-inch water main on E. 55th Street can be shut off during the winter months between Labor Day and Memorial day for the E. 55th Street Bridge construction; having the flexibility to take this 30-inch main offline will help us to advance construction of the E. 55th Street Bridge. Due to constraints with ROW and other utilities, the TGR team proposes to construct the 30-inch water main on the E. 55th Street bridge as described in the scope of services. Short duration water service shutdowns will be coordinated with CWD for the cross-street replacements.
- **Sludge Main on E 55th Street.** Flow will be maintained except for a short time when we construct the bypass. A temporary 16-inch force main bypass will be constructed on the east side to maintain flows during construction of the bridge. The new 16-inch force main will be reconstructed on the bridge.
- **Overhead Utilities.** Impacted overhead utilities include CEI and communications along the north side of Bower Avenue and the northwest corner of I-490/E. 55th Street, which will be redesigned by CEI. Where impacted, existing aerial street lighting circuitry along E. 55th Street will be removed and replaced with new circuitry.

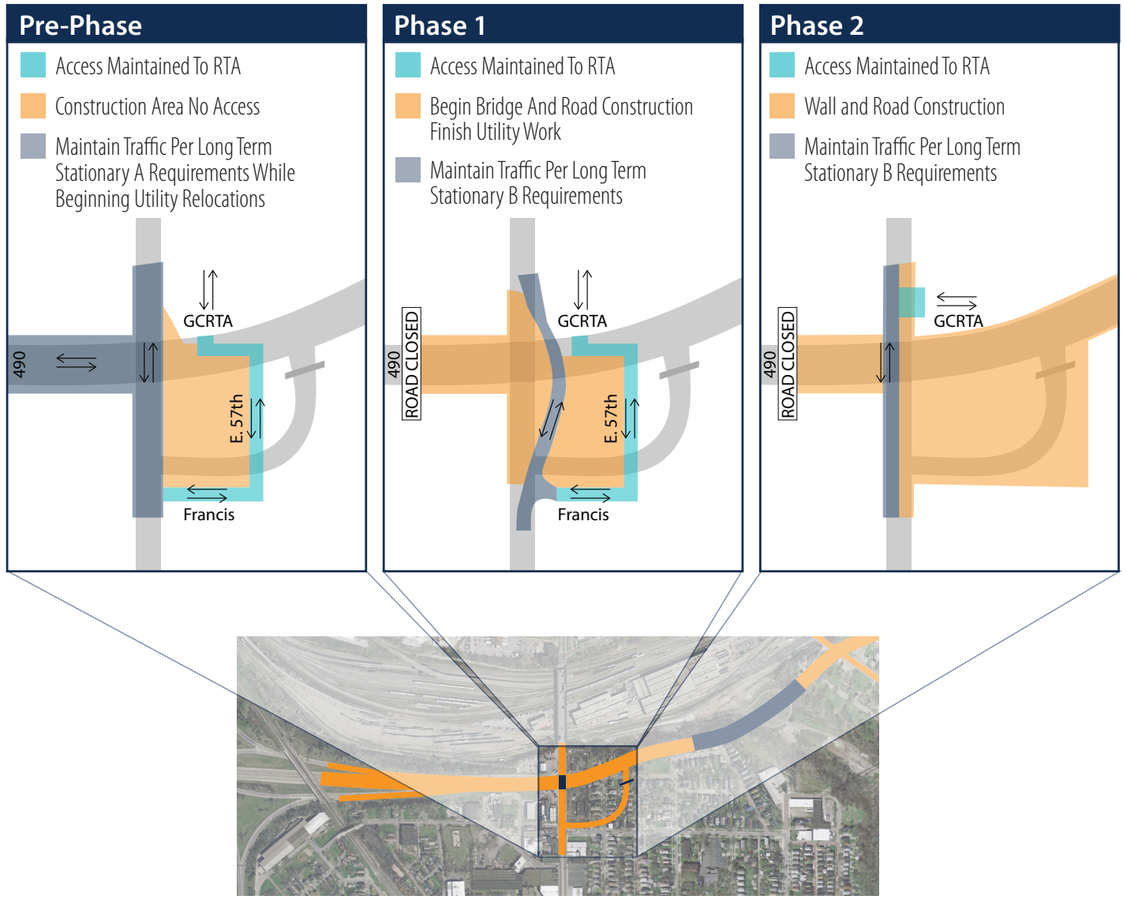
Figure B-17. E. 55th Street Transverse Section



MAINTENANCE OF TRAFFIC

One of the most important public facilities that must stay open throughout construction is the GCRTA E. 55th Street Transit Station, a vital link to multi-modal and transit commuters. The TGR team will coordinate early with GCRTA officials to finalize the design which impacts the station, bus loop, and parking located on the GCRTA property. Our maintenance of traffic (MOT) design will allow for full bus ingress and egress, as well as pedestrian and ADA accessible loading areas throughout construction. Figure B-18 demonstrates our phased approach to MOT. During the Pre-phase and Phase 1, access will be maintained to the existing GCRTA driveway off of Bower Avenue. During Phase 2, a new driveway will be constructed so that when the new E. 55th Street Bridge opens in Phase 2, GCRTA will be accessed directly from E. 55th Street. Access points will allow for vehicular, pedestrian and bus traffic.

Figure B-18. Maintenance of Traffic Scheme E. 55th



DRAINAGE OF THE INTERSECTION

The order of construction is important as it relates to the temporary drainage of the intersection. The proposed drainage for the area around the E. 55th Street grade separated intersection ties into the outfall to the west. This will be constructed first so that as excavation beneath E. 55th Street begins, maintenance of drainage is not an issue. Underground detention is also planned beneath the pavement footprint and out of sight of the public to maintain the aesthetics of the E. 55th Street and future Quadrant Road Public Plaza.

BRIDGE DESIGN COMPONENTS

The bridge components used for the E. 55th Street structure over OH-10 were determined with consideration for the many features of this area. For example, the single span structure was needed to avoid the no-build zone specified in the scope. Semi-integral abutments are proposed as they are the best alternative for accommodating the movement of the superstructure and eliminating rotation at the diaphragm. The semi-integral abutment also limits future maintenance which is important considering the traffic demands on and below the structure. A top-down construction sequencing is proposed to mitigate the need to support an extensive amount of excavation. Eliminating this need provides for a safer environment for the traveling public and avoids significant drainage issues. And lastly, unique crossframes are proposed in each bay to accommodate the numerous utilities which will be supported on this structure.

OTHER POTENTIAL RISKS

During HDR's thorough pre-bid design, additional risks and mitigation strategies were developed. See Figure B-19.

Figure B-19. Potential Risks and Mitigation Measures

RISK	MITIGATION STRATEGY	BENEFIT
Utilities	▸ Manage utility matrix ▸ Utilize SUE Level A ▸ Open communication with utility companies	▸ Minimize construction issues with utilities
Pedestrian Access	▸ Identify pedestrian access areas ▸ Develop and convey plan to traveling public	▸ Safe pedestrian access during construction

B.4 Conceptual Plan

Understanding of ODOT Project Scope and Standards

It is important for our design team to understand ODOT standards such as Location and Design Manuals, the Bridge Design Manual, and ODOT programs, to meet the project scope. Likewise, our quality checkers must have similar knowledge to perform compliance checks. HDR has proven this knowledge by consistent delivery of high quality plans and services. One example is our recent ODOT rating of 87 on the District 12 GES project where Ken Fertal was the project manager.

For the OC3 project, our team has performed an in-depth review of the preliminary design and detailed scope as well as received feedback from ODOT during the ATC process. We have worked together for the past eight months on our approach to develop a Conceptual Plan that exceeds the goals established for the project.

This Plan, shown in Appendix 7, demonstrates our clear understanding of ODOT requirements for the OC3 project. In addition, we have applied innovative ideas to make the project's basic configuration more efficient. Our design solutions are centered on providing safe and innovative solutions to the complex design and site conditions found on this project. Throughout this section and the Conceptual Plan, you will see the following icon identifying our innovative ideas (ATCs).

Alternative Technical Concepts

Effective Design Accommodates Utilities, Railroad and Maintenance of Traffic

The design team has made it a priority to accommodate third party facilities and provide for the safety of the traveling public through the project site. We realize that the successful economic development of the corridor depends on ease of connections to public facilities such as water, sewer and telecommunications. For railroads, reducing interruptions is key to their business. Our approved ATC 04 allowing the use of stay in place forms on GCRTA Blue-Green and E. 89th bridges minimize disruption to railroads during construction.

Design Features Reduce Maintenance or Improve Inspection Access

We are committed to providing ODOT with a final design that will reduce future maintenance costs and allow maintenance crews ease of access. These design features are summarized in Figure B-20.

Figure B-20. Effective Design

DESIGN FEATURE	BENEFIT TO PROJECT
Storm sewer trunk lines located in the center of the second lane from curb line	Allows adequate space for lateral connections between manholes and curb line catch basins and out of wheel path of vehicles
Roadway profile adjustments	Eliminates the need for scuppers on the Kingsbury Run and Blue-Green Line bridges
Manufactured systems placed in line with underground detention	Allows single inspection and maintenance trip
Providing jacking stiffeners at the supports, excluding structures with semi-integral abutments	Accommodates means for replacement

Durable and Maintainable Structural Components

The TGR design contains details that will inhibit corrosion and provide increased lifespan of the structures. Highlights are found in Figure B-21 below.

Figure B-21. Durable and Maintainable Design

STRUCTURAL COMPONENT	BENEFIT TO PROJECT
Weathering steel at Kingsbury Run and GCRTA Blue-Green Line bridges (ATC 03)	Reduces future maintenance for painting cycles
Jointless abutments at E. 55th Street, E. 59th Street and E. 89th Street bridges	Reduces corrosion by eliminating water infiltration
No fatigue prone welded attachments to the girders	Eliminates details which typically have shorter lifespans
Bridge framing plan widths	Accommodates future deck replacement
Narrower Median Widths (ATC 05)	Reduces retaining wall heights
Relocation of E. 59th Street bridge (ATC 07)	Shortens E. 59th Street bridge and provides access to Quadrant infield
Modified NS Railroad bridge pier aesthetics (ATC 09)	Eliminates maintenance within opening in pier
Modified baffles on Regulator	Manages air flow and surge

PART C

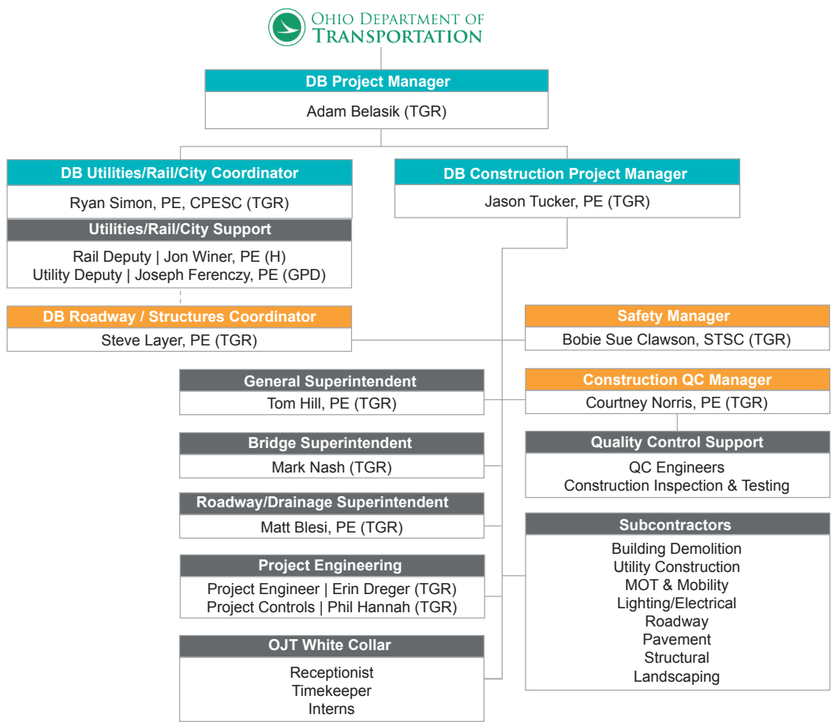
Construction

Part C. Construction

KEY POINTS

- » Established construction management team
- » Actively engaged during the design phase
- » Prepare and maintain construction risk registry
- » Strong safety culture and on-site presence
- » Experienced management of unknown regulated material
- » Committed to supporting and achieving NSLE, OJT and local workforce goals

Figure C-1. Construction Organization



C.1 Construction Organization Roles and Responsibilities of Construction Key Personnel

TGR's collaborative culture and proven processes provide the foundation for successful project delivery. Building on our successful DB project experience, construction team members will partner with designers from planning through construction. Primary members of the construction team are:

Figure C-2. Construction Key Personnel

NAME/ROLE	RESPONSIBILITIES	QUALIFICATIONS
Jason Tucker, PE DB Construction Project Manager	▸ Oversee all construction related operations ▸ Execute project safety and quality plans ▸ Maintain commitments to schedule and budget ▸ Execute diversity and inclusion workforce and NSLE goals	▸ Integral member of TGR on major pursuits over past six years ▸ Construction Project Manager for CCG2 ▸ Extensive coordination with relevant railway, public and private utilities within the Greater Cleveland area ▸ Proactively addresses ODOT and stakeholder needs ▸ Contributed to successful achievement of Diversity and Inclusion goals on CCG2
SUPPORT STAFF		
Tom Hill, PE General Superintendent	▸ Direct and coordinate field operations ▸ Oversee all subcontractor activities	▸ Experience on large complex urban projects including CCG2 ▸ Skilled at bridge, retaining wall, roadway and drainage construction
Mark Nash Structures Superintendent	▸ Direct structure and retaining wall activities ▸ Coordinate structure subcontractors	▸ Experience on large DB projects, including I-271 Summit County ▸ Familiar with working around GCRTA and NS
Matt Blesi, PE Roadway/Drainage Superintendent	▸ Direct roadway and earthwork activities ▸ Direct DB team utility relocations and installations ▸ Coordinate roadway subcontractors	▸ Experience on large complex urban projects including CCG2 ▸ Skilled at complex utility and underground installations ▸ Involved with OC2 estimating
VALUE ADDED		
Bobie Sue Clawson, STSC Safety Manager	▸ Implement TGR Safety Program on the Project ▸ Conduct Safety Pre-Activity Meetings	▸ Oversees safety management for large complex urban projects, including CCG2
Courtney Norris, PE Construction QC Manager	▸ Implement Construction Quality Management Plan ▸ Conduct Quality Pre-Activity Meetings ▸ Manage material documentation	▸ Quality control manager for large complex urban projects, including CCG1 and CCG2 projects ▸ Extensive experience in highway construction quality control management

Management Approach

Successful construction requires extensive schedule, quality, and safety planning throughout the design phase. TGR construction staff has been engaged in the design task force from day one to provide constructability input. Subcontractors will be included early in the process to evaluate construction sequencing, advance material procurement, and identify potential risks.

In addition to task force involvement, TGR will hold meetings to plan and execute construction operations (see Figure C-3). The bi-weekly construction coordination meeting and the weekly schedule meeting are primary planning tools to assist the managers, crews, and inspectors to plan for workforce and equipment requirements.

TGR recognizes the additional responsibility that the Department's Diversity and Inclusion goals place on the construction management team, and one of Jason Tucker's primary responsibilities will be to support the execution of the approved Diversity, Inclusion, and Outreach Plan (DIOP). A review of our team's program and current status in meeting all New, Small, Local and EDGE (NSLE) business goals as well as On-The-Job Training (OJT) and Workforce Development goals will be performed bi-weekly in our construction coordination meetings. Opportunities for improvement will be evaluated and employed throughout project delivery to track progress toward meeting our goal.

Figure C-3. Construction Meetings

MEETING	FREQUENCY	ATTENDEES: Project Managers	Field Supervision/ Engineers	Quality Manager	Safety Manager	Foreman	Crews	Subcontractors	ODOT and Inspectors (optional)	MEETING GOALS	PROJECT BENEFITS
Construction Coordination	Bi-Weekly	▶	▶	▶	▶			▶		▶ Address administrative action items ▶ Utility coordination ▶ Subcontractor coordination ▶ Quality and Safety Review ▶ Schedule and Cost Review ▶ Diversity and Inclusion Review	▶ Align and coordinate TGR team on project-wide items and job progress
Schedule Coordination	Weekly	▶	▶	▶	▶			▶		▶ Develop 3-Week Look Ahead Schedule	▶ Identifies all upcoming work for general contractor and all subcontractors ▶ Shared with Owner and inspection staff
Quality Coordination	Weekly	▶	▶	▶				▶	▶	▶ Review quality concerns ▶ Review upcoming activities with focus on quality	▶ Minimize rework ▶ Improve productivity
Safety Coordination	Weekly	▶	▶		▶			▶		▶ Review safety concerns ▶ Review upcoming activities with focus on safety	▶ Minimize hazards ▶ Improve productivity
Safety Talks	Weekly	▶	▶	▶	▶	▶	▶	▶	▶	▶ Discuss near misses and hazards ▶ Discuss upcoming activities	▶ Educates employees on safe practices ▶ Reduces injuries and accidents
Foremen	Weekly		▶	▶	▶	▶				▶ Review schedule and cost ▶ Plan for upcoming activities	▶ Align and coordinate TGR team on project-wide items and job progress
Huddles	Daily					▶	▶	▶	▶	▶ Review planned operations for the day ▶ Review safety hazards for the day	▶ Improves quality ▶ Reduces injuries and accidents
Pre-Activity	As Needed		▶	▶	▶			▶	▶	▶ Review specific upcoming activity with regard to process, quality, safety, inspection, material, and other requirements	▶ Raises awareness of new operations ▶ Reduces delays in the field
Subcontractor Orientations	As Needed		▶	▶	▶			▶		▶ Review expectations and requirements of subcontractors before starting work	▶ Primes the subcontractors for project success

C.2 Construction Approach and Risk Avoidance/Mitigation

TGR will implement an aggressive approach to construction, tackling high-risk areas early to minimize potential schedule impacts. Through planning and development of a Risk Registry, we will identify project risks critical to the overall schedule of the project or those likely to cause delay. Steps will be taken — including exploratory excavation and advance coordination — to "clear the field" of many risks early in the project, allowing the high production construction activities to progress.

Construction Approach

Just as we did during CCG2, TGR's construction approach will include process management, resource allocation and risk mitigation. The success of a DB project begins with the management of the Buildable Units (BU) through design and construction. Understanding the content, interaction and delivery schedule of these BUs allows the team to set priorities, identify risks, and develop mitigation alternatives.

The construction engineering staff will work with the project managers and superintendents to coordinate subcontractors and fabricators. Each vendor is assigned one point of contact to address schedule, quality, and billing needs.

One point of contact for vendors keeps critical delivery dates on track and maximizes quality.

The work breakdown structure of the project consists of the following four geographic areas. In each geographic area, similar approaches to the work will be utilized to provide maximum benefit to the project. These approaches are shown in Figure C-4.

A E. 55TH STREET

This area has the most intensive utility relocation, earthwork, and retaining wall work on the project. Early operations will include utility relocations and sewer regulator construction. Because the earthwork, structures, and retaining wall activities occur in the later stages of the project, these resources are available to pursue other areas of the project.

B GCRTA

The first structure constructed on the projects will be the bridges over the GCRTA. The resources to perform this work are readily available. The anticipated completion of the GCRTA bridges aligns with the E55th area structures and retaining wall work and transitions with ease between both areas. Other early efforts will be made to establish drainage outfalls and OH-10 trunk line utilities. The Kinsman intersection will be coordinated with the E55th St Area to avoid maintenance of traffic conflicts.

C NS RAILROAD BRIDGE

The work at the Norfolk Southern Bridge is a project inside a project. Early and regular coordination with NS will allow this work to proceed independent of the rest of the project. Close coordination during the design phase will provide a clear and concise plan for all necessary coordination efforts through each phase of bridge construction.

D BUCKEYE/WOODLAND

In a manner similar to Area B work, cross street reconstructions will be a priority to clear intersections of potential utility conflicts and schedule impacts. Once the intersections are complete, OH-10 construction can proceed with minimal impacts to the cross-street traffic.

Figure C-4. Construction Approaches

APPROACH TO WORK	BENEFIT TO THE PROJECT
Prioritize at-risk work	▸ Find issues early ▸ Maximize float ▸ Allows recovery time
Leveling of resources	▸ Provides continuity in crews, equipment and QC staff ▸ Minimize learning curves ▸ Capitalize on lessons learned ▸ Maintain trained staff
Create outfalls early	▸ Protects subgrade ▸ Minimize length of grade exposure
Build bridges and intersections early	▸ Establish connectivity through job
Perform work in continuous manner	▸ Reduce learning curve and maintain crew composition

Utility relocations, drainage outfall construction, and cross street reconstructions will be performed as early as possible. This approach allows the team to identify and mitigate potential conflicts at intersections, thereby reducing impacts to the schedule. It also reduces the duration of impacts to side streets through resource sequencing and efficiency. In addition, early efforts will be made to identify, classify, and remediate contaminated soils. Assessing these areas early will reduce unknowns and identify available alternate work areas should significant mitigation efforts be needed.

Once the side streets are completed, the majority of OH-10 can be built offline with minimal impact to the traveling public crossing the new corridor. This will allow for more clearly marked points of egress for construction activities, resulting in a safer work site for the public and construction crews.

Risk Avoidance/Mitigation

Throughout the project, the team will use three primary risk mitigation strategies:

1. **Advance as Early Activity —** Operations that present a potential schedule risk will be performed as early as possible to provide schedule float and has been built into our CPM schedule.
2. **Early and Often Coordination with Third-Parties —** Activities that require input and performance by third parties will be addressed through collaboration early on in the project, followed by frequent follow-up to confirm adherence to critical schedule deadlines.
3. **Minimize Length of Subgrade Exposure —** With a majority of the new roadway being lower than the surrounding grade heights, protection of the subgrade is imperative. Work will be phased to allow rapid and continuous roadway construction once grading operations begin.

Figure C-5 illustrates the phase of construction, risk of each area and appropriate mitigation approach.

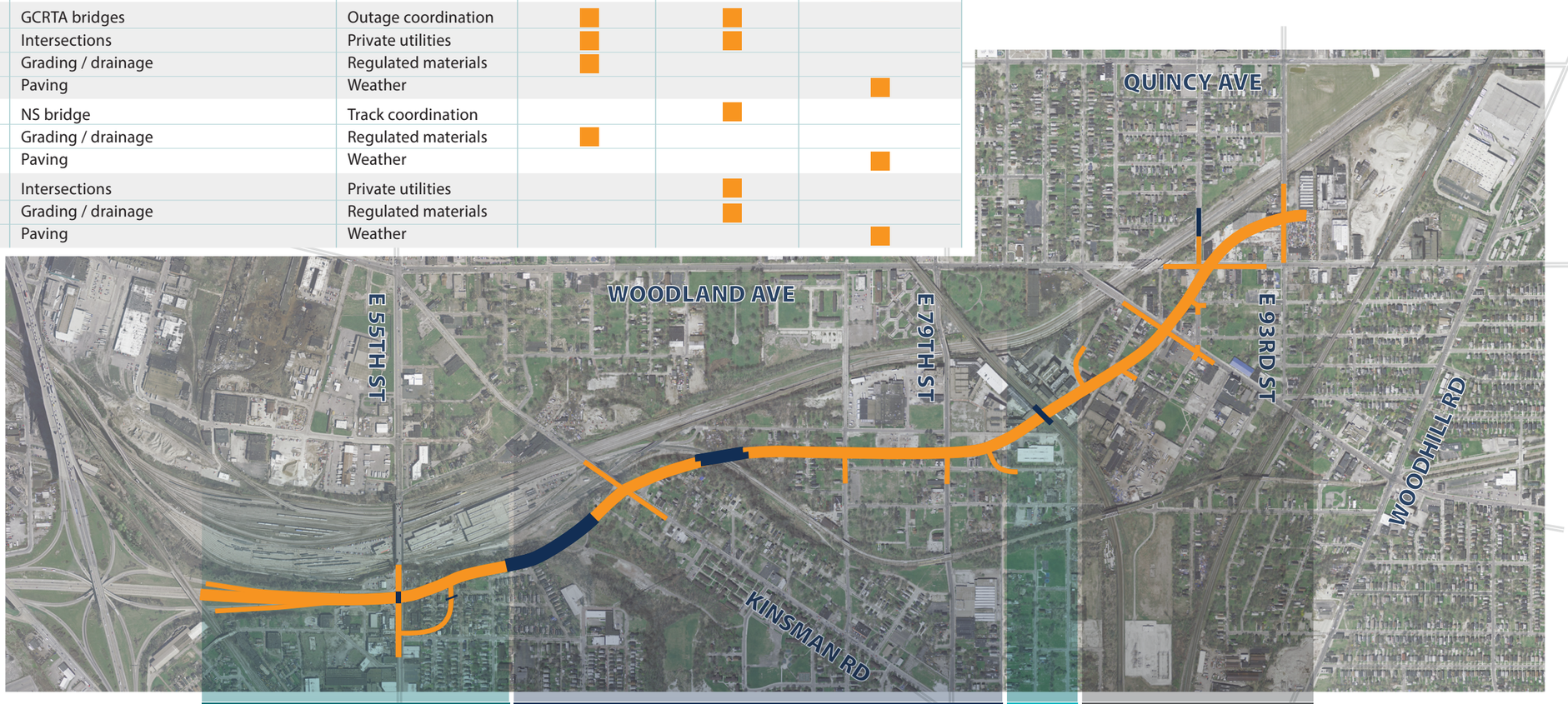
Construction Quality

Courtney Norris, PE, will oversee all aspects of the Construction Quality Management Plan (CQMP). A team of project quality engineers and third-party testing professionals will support him. Through our experience of working with an independent quality firm for construction, many processes have been adopted into our standard practices. TGR will:

- Manage field quality and interface with inspection personnel.
- Provide daily activity schedule with inspection needs (ex: concrete cylinders, compaction testing).
- Manage all quality aspects including QA/QC concrete, pavement, and drainage.
- Document management of material tickets, certifications and performance specifications.

Figure C-5. Project Risks and Mitigation Approaches by Area

	Area	Phase	Description	Risk	MITIGATION APPROACH: Early Activity	MITIGATION APPROACH: 3rd Party Coordination	MITIGATION APPROACH: Minimize Length of Subgrade Exposure
A	E. 55th Street	1	Utility relocation / regulator construction	Private utilities	■	■	
		2	Bridges / retaining walls	Private utilities		■	
		3	Grading / drainage	Regulated materials	■		
		4	Paving	Weather			■
B	GCRTA	1A	GCRTA bridges	Outage coordination	■	■	
		1B	Intersections	Private utilities	■	■	
		2	Grading / drainage	Regulated materials	■		
		3	Paving	Weather			■
C	Norfolk Southern Railroad	1	NS bridge	Track coordination		■	
		2	Grading / drainage	Regulated materials	■		
		3	Paving	Weather			■
D	Buckeye/ Woodland	1	Intersections	Private utilities		■	
		2	Grading / drainage	Regulated materials		■	
		3	Paving	Weather			■



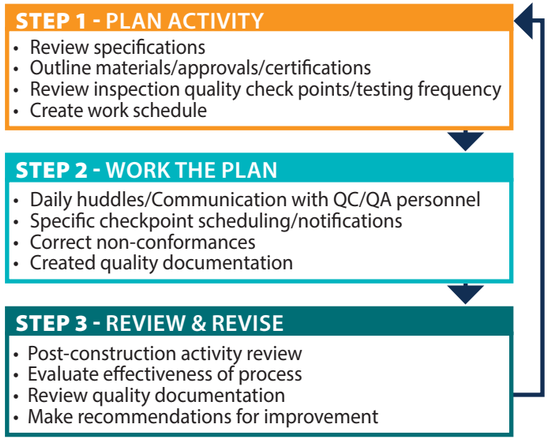
The quality manager and engineers are not the only personnel responsible for quality on the project. TGR maintains and encourages stop work authority for quality at all levels on the project. Maintaining a consistent workforce and crews will improve quality on the project.

All TGR managers, superintendents, trades people, and subcontractors will receive quality orientation prior to performing work on the project.

TGR understands that a detailed and comprehensive CQMP will be the key to our construction success on OC3. TGR prides itself on the quality and timely completion of our work, evident in our performance on CCG2. TGR is committed to satisfying ODOT's needs and expectations on OC3 by delivering a quality product.

TGR recognizes that with projects of this magnitude, there are opportunities for process improvements, and the approved CQMP will be no exception. Quality and production personnel can and will identify improvements to quality standards. All components of the CQMP facilitate overall construction quality and proper inspection and materials testing of project elements in an effort to deliver quality projects in accordance with contract documents. TGR will use the three-step process shown in Figure C-6 to implement CQMP procedures for construction so that QC requirements are met:

Figure C-6. CQMP Procedures



Clear communication is essential for project success, beginning with field managers maintaining constant contact with QC and ODOT inspection managers. Effective communication establishes trust that any team member may be open and honest about QC issues. TGR's construction team will coordinate daily with the inspectors on normal activities work that is non-conforming. A daily construction activity schedule by crew will be distributed to the construction and inspection forces to show the planned work for the day.

Resources

One of TGR's greatest strengths is its workforce. The joint venture draws from the local resources of three companies as needed to supply a highly-skilled labor force. Specialty foreman and crews for pipework, tunneling, steel erection, and concrete work can be brought into the project as necessary to maintain the most efficient execution of the work with the highest attention to safety and quality. The combined equipment fleet provides an ample supply of equipment to support these crews. TGR has local relationships to procure any additional specialty equipment that may be needed for the work.

Mitigating Risk

TGR will facilitate a Risk Registry Workshop with ODOT to develop and maintain a construction Risk Registry, quantifying and qualifying potential risks on the project. The probability and severity of the risk will be determined and mitigation strategies for each risk will be developed. This Risk Registry serves as a playbook for both TGR and ODOT to continually focus on potential risks during construction.

C.3 Safety

TGR is committed to developing and implementing a robust safety program that blends safety and project operations into one function. The TGR Team's owners and management have made it clear to employees, clients, and subcontractors that everyone must adhere to the safety program, taking all precautions to protect both the public and workers. We are actively involved in federal compliance programs, such as OSHA's Voluntary Protection Program (VPP), and intend to work with ODOT to establish a safety partnership for OC3. Under that partnership, OSHA, the TGR Team, and trade contractors will collaborate to foster a safe work environment.

Collectively, the TGR Team's safety programs have won five national safety awards from the Associated General Contractors (AGC) of America, along with numerous state and local awards for development and implementation of safety programs (e.g., Ohio Contractors Association, Bureau of Workers' Compensation, City of Cleveland). Furthermore, members of our safety team have been recognized as guest speakers on safety-related subjects, on both national and local levels. We are committed to applying this expertise to achieve zero lost-time incidents on this project.

Safety Considerations for This Project

Safety Manager, Bobie Sue Clawson, will develop a Site-Specific Health and Safety Plan (HASP) with input from project management, field operations, and safety management personnel. This plan addresses all potential project hazards and activities, as described in Figure C-7, Preliminary Safety Assessment. The HASP will be discussed with project staff and workers during safety orientations, pre-activity meetings, and training.

Figure C-7. Preliminary Safety Assessment

CONSIDERATIONS	MITIGATION STRATEGY
Emergency Response Plan	Site Specific to address emergency response and action
Pedestrian Safety	Pedestrian maintenance plans for each intersection, including signage and delineating specific access areas
Closures and Detours	Prepare content for ODOT social media announcements of upcoming changes
Working Around Utilities	Maintaining OUPS locate requests, photo documentation of markings, hydro-excavation in congested areas.
Working Around Railroads	Delineating no-work areas with physical barriers (fence). Daily communication with railroads during active construction periods. 3D modeling of structural steel laydown and erection plans
Bridge Construction	Top down to reduce falls and excavation shoring
Deep SOE at E 55th and Tunneling	Air monitoring, movement and vibration monitoring

Overall Approach to Safety

Safety management is extremely important to corporate team members down to apprentices. TGR will implement a comprehensive safety program to focus on achieving the following safety goals:

- Zero lost-time incidents
- Recordable case incidence rate 25% below BLS industry average
- 100% mandatory project safety video orientation for everyone on the job
- 100% participation in safety training
- 100% completion of planned safety observations

Safety Manager Bobie Sue Clawson will be a full-time staff member co-located with the team. She is a degreed professional with heavy civil construction safety experience, including with TGR during CCG2. As noted previously, Bobie Sue will lead the development of the site safety program (including a project-wide substance abuse program) and will work with superintendents and foremen to conduct safety training for the TGR Team. Training will include safety leadership, fall protection, crane management, qualified signal person evaluator, qualified rigging-evaluator, excavation, scaffold, work zone safety, First Aid/CPR/BBP/AED, substance abuse awareness, and OSHA 30-Hour Construction Safety Certification. In addition, we will conduct the following safety measures:

Figure C-8. TGR Team Safety Measures

▸ On-site safety manager	▸ AHA performed for critical activities
▸ Clearly defined and effective safety management systems	▸ Closely tracked safety performance and rewards for results
▸ Daily safety meetings/Weekly toolbox talks	▸ Weekly supervisor safety coordination meetings
▸ Extensive supervisor and employee training	▸ Monthly executive reviews
▸ Near-miss incident reporting system	▸ Daily safety observations (snapshot)
▸ Mandatory project safety video orientation	▸ 3D modeling for critical crane picks

We require all subcontractors to adhere to TGR standards; Bobie Sue will review their safety programs to verify compliance. Subcontractors must attend a mandatory pre-mobilization meeting to be briefed on safety expectations and requirements.

All project personnel and visitors will be required to participate in mandatory project safety orientation prior to being allowed on-site. Orientation will include a detailed review of project safety requirements, disciplinary policy, work zone safety and emergency procedures.

C.4 Unknown Regulated Materials

TGR will follow a process of identification, stop work, classification, and disposal when known and unknown substances are found. Team members are experienced in addressing the safety and project schedule risks associated with encountering these materials, including:

- Site access and delineation
- Surface water control
- Solid and liquid sampling protocols and analytical testing
- Regulated materials excavation, handling, staging and storage
- Regulated liquids handling and storage
- Identification, characterization, transportation and disposal of regulated and potentially hazardous substances

Approach to Unknown Regulated Materials

Unknown regulated materials can significantly impact cost and schedule. TGR will evaluate the environmental site assessment, then recommend and conduct sampling to address any identified gaps. Early detection around substructure elements and underground utility locations enables us to address affected areas in advance of major construction activities, thereby reducing the impact to the critical path of the project.

Prior to proceeding with any earth-disturbing activities, TGR will:

1. Designate stockpile areas for temporary storage of suspect material
2. Establish agreements with disposal facilities based on anticipated levels of impacted material
3. Prepare a responsibility matrix that defines roles, responsibilities and the management of impacted material

When contaminated material is discovered, it will be excavated, stockpiled, sampled, analyzed, characterized and transported for disposal at a licensed and approved landfill for either hazardous or non-hazardous material.

Handling and disposal methods will comply with the requirements of the Contract Documents and all applicable federal, state and local laws, rules, regulations and ordinances. All soil characterizations will be performed by a qualified disposal representative of TGR.

Transportation trucks with covered, leak-proof beds will be utilized. They will be directly loaded with excavated soils from the site and then directed to the appropriate disposal landfill. The third party transporter will complete waste transport manifests and provide them to TGR.

TGR field management staff is trained to recognize contaminated materials. Employees working in the vicinity of an excavation will be advised to remain alert for evidence of potentially contaminated waste removed from or encountered within the excavation. If physical evidence indicates that potentially contaminated waste is present within, or has been removed from, an excavation, the senior employee on site will remove employees from the immediate vicinity of the suspected hazard and immediately implement the TGR Contingency Plan via "Hazardous Waste/Crisis Management Response Checklist" (Figure C-9) as well as notify ODOT or their Designated Representative.

Figure C-9. Hazardous Waste/Crisis Management Response Checklist

CHECKLIST	
☑ STEP 1	**Identify Unknown Regulated Material** (Train staff so they know what to look for)
☑ STEP 2	**Stop Work and Notify** (Establish SPCC Plan)
☑ STEP 3	**Sample and Classify Material** (Establish 3rd Party Testing)
☑ STEP 4	**Determine Remediation and Disposal Options** (Establish disposal sites and chain of custodies)
☑ STEP 5	**Proceed with Remediation and Disposal** (Train staff so they know the procedures)

Coordination with ODOT and Stakeholders

TGR will communicate all procedures for handling and disposing of contaminated soil with ODOT or its designated representative. Once an unknown regulated material impacted area is identified, TGR will work with ODOT to evaluate the classification and remediation options, including on-site sorting and reclassification, as the conditions and unknown regulated material allows. The Spill Prevention Control and Countermeasures Plan for the project will detail the roles, duties, procedures, and decision matrices for managing the identification and disposal process, including remediation and disposal options. A project engineer will manage and track all coordination and documentation pertaining to identifying and managing regulated materials and will provide this information to ODOT.

PART D

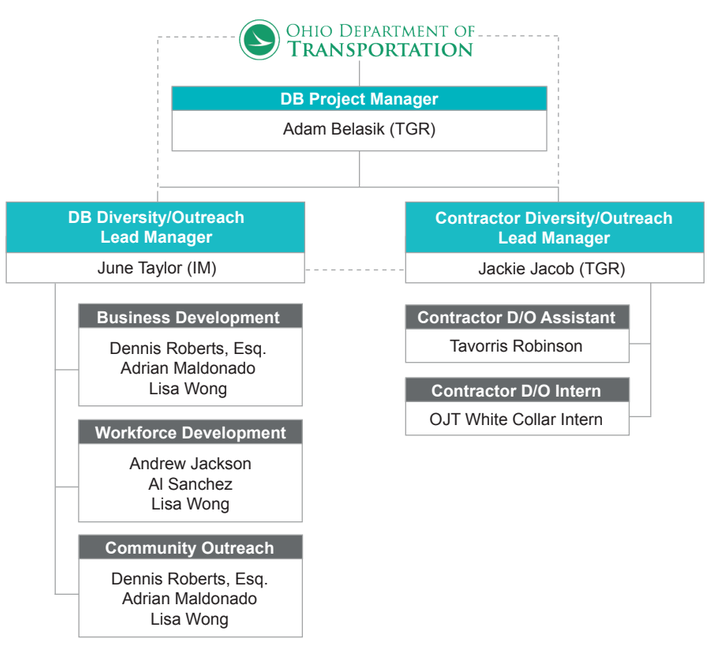
Community Involvement and
Diversity, Inclusion and Outreach

Part D. Community Involvement and Diversity, Inclusion and Outreach

KEY POINTS

- Team includes partners from the African-American, Hispanic and Asian Pacific American Communities
- Diversity team leaders familiar with the Opportunity Corridor communities
- Business development capacity building model
- Sustainable workforce development model
- Five community service projects

Figure D-1. Diversity and Inclusion Organization



TGR has carefully reviewed the 2015-16 Ohio Public Authorities Disparity Study, which identifies disparities within the African-American, Hispanic and Asian Pacific American communities as related to the Ohio transportation construction and professional services industries. Our New, Small, Local and EDGE (NSLE) businesses selected at bid time and our DIOP will address each of these disparaged groups and propose respective solutions.

To meet the project's NSLE project percentage goals and New, Small and Local (NSL) firm utilization goals, TGR developed the following strategies:

- Developing a Diversity, Inclusion and Outreach Plan (DIOP) that includes innovative local community philanthropic partnerships dedicated to addressing decades old challenges that have had devastating impacts on the lives of these citizens.
- Addressing the systematic social challenges to improve the workforce talent, mindset and skills repository in the wards surrounding the Opportunity Corridor community and identified in the Disparity Study.
- Defining for the community the "Capacity Building" needed in order to work with ODOT, TGR and their related industry partners, so that in the future these NSLE firms and individuals can be sustainable for the long term.
- Supporting economic development in the African-American, Hispanic and Asian Pacific American communities, identified disparaged groups, through the facilitation and introduction of new capital partners with financial resources and a due diligence process to support and expand contractual opportunities for local businesses.

TGR is committed to meeting the project goals for NSLE businesses. The TGR team has successfully completed ODOT's $273M CCG2 Innerbelt project where we surpassed the project's DBE goal of 15%. TGR team member, The Great Lakes Construction Co., is implementing ODOT's first DIOP on the OC2 project. Great Lakes has been working through many challenges with ODOT's OC2 Project and Outreach Team. The lessons learned from these challenges on OC2, uniquely positions our team to be successful on this project. Success on both of these projects started in the pursuit phase with advanced outreach and multiple interactive and informative meetings with regional NSLE businesses. We will employ similar processes to meet the goals of this project.

D.1 Organizational Roles and Responsibilities and Qualifications of the DIOC and Key Personnel

Integral Management (IM) will be the lead Diversity, Inclusion and Outreach Consultant (DIOC) on our team and will lead us to achieve the diversity goals for this project. IM has extensive experience with ODOT, the City of Cleveland, non-profit organizations, philanthropic foundations and the residents of Cleveland Wards 4, 5, and 6.

Outreach team partners Adrian Maldonado & Associates and Lisa Wong will work under the direction of IM and will assist with outreach and engagement among the Hispanic and Asian Pacific American communities.

The TGR Diversity and Inclusion Team will be led by DB Diversity/Outreach Lead Manager June Taylor of IM. June will be assisted by Contractor Diversity/Outreach Lead Manager Jackie Jacob. Both June and Jackie are executing the first ever DIOP on the OC2 project. They have established relationships through this work and are known and respected among the African American, Hispanic and Asian Pacific communities, including specifically Wards 4, 5, 6, 7, 13 and 14. Because of the synergies already established by the current team and the Opportunity Corridor communities, we anticipate a quick and seamless transition for what is the most important phase of Opportunity Corridor.

The many lessons learned from OC2 position our team to develop cutting edge solutions. The blend of practical "real community" experience, high-level business expertise and our resolve to "get it right" has lead us to the development of these unique workforce development and outreach strategies:

- Exposing the community to role models in the heavy highway transportation industry
- Securing community partners to improve literacy and exposure to engineering fields beginning in middle school and special STEM and immersion labeled high schools (Hispanic & Asian Pacific American) such as Global Ambassador Language Academy (GALA).
- Bringing capacity building agencies to provide capital to small businesses owned by the disparaged minority groups

> ***"If you want to bring about substantive change for the long term, let June Taylor and her team bring their talent, hard work and creativity to your project. Their work will set the bar against the competition."***
>
> *Mr. A. Malachi Mixon III, retired Chairman, Invacare*

These strategies will be further described in our DIOP.

June and Jackie will be assisted by the following Outreach Team Partners: Andrew Jackson, Dennis Roberts, and Tavorris Robinson. In addition, local leaders and Outreach Team Partners Adrian Maldonado, Al Sanchez and Lisa Wong will lead outreach efforts specifically for the Hispanic and Asian Pacific American Communities. Working collaboratively, the aforementioned Outreach Team Partners will effectively target the disparaged groups identified in ODOT's 2015-2016 Disparity Study.

Jackie will have a full-time assistant during the life of the project and a full-time "white collar" intern to assist with her responsibilities. This will be a great opportunity for a local resident to work on the OC3 project and gain experience for future employment in the diversity and inclusion profession.

Jackie will work with DB Coordination Team Member, Steve Layer, PE, during the procurement phase of the project to assist NSLE businesses not familiar with ODOT work. This synergy proved to be very successful on CCG2 and OC2.

Local Knowledge and Experience of DIOC

INTEGRAL MANAGEMENT

IM is a solution-oriented northeast Ohio leader in diversity and inclusion initiatives. Founded in 1993, IM is a well-respected, full service consulting firm headquartered in Cleveland. The experience and qualities of IM can best be described as trendsetting.

> ***"I call June Taylor when I need a solution or a best in class diversity model to complement my organization."***
>
> *James Wert, President and CEO, CM Wealth Partners*

IM has assisted businesses such as Shorebank Cleveland Corporation and organizations such as the Deaconess Community Foundation to manage the challenges of diversity and inclusion by developing solutions related to workforce, strategic recruitment, access to capital, mergers, acquisitions, creating diverse management teams and preventative youth offender solutions. IM's strength is in creating partnerships, having real conversations, and creating a legacy of solutions to help the urban community. The firm has achieved high praise through several initiatives, including:

Jobs Partnership Cleveland — Reversing decades of citizens depending on entitlements, by encouraging and mentoring them to pursue employment options

E. 151st Success Club/Lee Harvard Neighborhood — Exposing neighborhood residents to union, construction, and transportation-related employment and contracting opportunities

INROADS, Inc. — Creating mentorship experiences for minority youth as well as minority business owners in the engineering, technology, construction and science fields

Ginn Academy — Promoting positive images, role models and providing profiles of success for urban youth to emulate, decreasing exposure to negative choices

> ***"The partnership between Integral Management and Big Brother/Big Sisters has helped all of our participants improve their communication, etiquette and presentation skills."***
>
> *Yolanda Armstrong, President, Big Brother/Big Sisters, Cleveland Ohio*

Many of the due diligence practices and assessment techniques introduced by IM are in use today by area non-profits, for-profit organizations and investment funds focused on results. IM has a demonstrated successful track record in the following areas:

- **Outreach —** Identifying and securing the right talent to create diverse management teams to lead and grow businesses into successful firms based in the Midwest (The Scalerator)
- **Business Development —** Recruiting and identifying minority businesses throughout the Midwest in the right sectors — those poised for growth in a size and scale model optimal for a positive return on investment (Resilience Capital Partners)
- **Workforce —** Creating unique economic development solutions and partnerships to improve workforce, behavior and education training solutions (Fund for Economic Future)

ADRIAN MALDONADO & ASSOCIATES (AMA)

AMA is a multi-faceted small and emerging business that utilizes its owners' experience, in multiple arenas such as construction management, diversity tracking and reporting, demolition, construction and post construction clean-up. The firm has more than 30 years' experience in the area of diversity monitoring, tracking and reporting.

AMA is certified with the City of Cleveland, Section 3 HUD, Cuyahoga County SBE Program, Veteran Service Disabled Firm, and Cuyahoga Community College.

AMA has performed as a prime contractor, consultant or subcontractor with the following owners and/or projects:

- RTA East 34th New Rapid Station
- New MetroHealth Hospital
- NASA Glenn Lewis Research Center
- Louis Stokes Medical Center (VA)
- Cuyahoga Community College
- Cuyahoga Metropolitan Housing Authority
- Thriving Communities Institute (City of Lorain Properties survey)
- John Marshall High School
- City of Lorain property Survey
- City of Cleveland property Survey

LISA WONG, SOLE PROPRIETOR

Lisa has a keen understanding of how to best reach the Asian Pacific American community to garner their support or increase awareness about a particular issue.

Lisa is a leader in the Asian Pacific American community in Northeast Ohio and is uniquely adept at developing solutions and adding value to small, disadvantaged and challenged businesses throughout the targeted Wards within the Opportunity Corridor. She developed exceptional business development and outreach skills because of her experience with the following projects:

- Business Advisor, Minority Business Assistance Center, Urban League of Greater Cleveland
- Program Officer, Cleveland Council on World Affairs

- Event Manager, Lunar New Year Celebration at Asian Town Center
- Event Coordinator, Ohio Asian-American Health Conference

Because of Lisa's significant community profile, resourcefulness, and the fact that she possesses the most extensive database of Asian Pacific American contacts in the state, she is best positioned to inform the Asian Pacific American community of workforce/business opportunities related to the heavy highway/city road transportation industries. Additionally, Lisa is adept at using social media to her advantage; whether it's high tech (social media) or high touch (her phone contacts), she will bring all of the resourcefulness necessary to effectively recruit the number of individuals required to make a significant impact on the Asian Pacific American community.

Her access to the Asian Pacific American community is unsurpassed and because of her access she is uniquely qualified to share opportunities availabile in the heavy highway/city road industries. Lisa is poised to tap the Asian Pacific American community and use the MWW Building (owned by Margaret W. Wong & Associates) located at 3150 Chester Avenue, Cleveland, as the center point for leading our initiatives with the Asian Pacific American community in the region.

Local Knowledge and Experience of DB Diversity/Outreach Lead Manager

Figure D-2 represents our Diversity, Inclusion and Outreach Team. This table shows the responsibility and wealth of experience our team brings to this project to advance our Diversity, Inclusion and Outreach Plan that can be used throughout Ohio and the rest of the County.

Figure D-2. Diversity and Inclusion Key Personnel

NAME/ROLE	RESPONSIBILITIES	QUALIFICATIONS	
 **June Taylor** DB Diversity Outreach/ Outreach Lead Manager	▸ Lead overall outreach effort ▸ Author and execute DIOP ▸ Assist TGR to obtain ODOT's NSLE and OJT goals	▸ Workforce Lead on OC2 Project ▸ Chair, State of Ohio Minority Business Council ▸ Founder, Opportunity Corridor Inclusion Advisory Committee ▸ Founding Member, Opportunity Corridor, On-the Job-Task Force Committee	▸ Member, Disparity Study Steering Committee ▸ Member, Disparity Study Committee Planning Committee ▸ Familiar with Leadership for Opportunity Corridor Neighborhood Development
 **Jackie Jacob** Contractor Diversity/ Outreach Lead Manager	▸ Assist with outreach effort ▸ Youth development in local communities ▸ Lead TGR's internal diversity and inclusion efforts ▸ Monitor performance of the DIOP	▸ Contractor Diversity/Outreach Lead Manager on OC2 project ▸ TGR Project Engineer and active Diversity/Inclusion and Outreach Team member on ODOT Project CCG2 ▸ 2015 & 2016 ACE Mentoring Scholarship Committee ▸ Cleveland Engineering Association Future Executives Committee	▸ Participated on the Kaleidoscope Show for OC2 ▸ Three-time guest on Public Broadcasting Service Idea Center Show for ODOT projects CCG2 and OC2 ▸ Organized and judged the 2014 CMSD Winter STEM Showcase Bridge Competition at the Great Lakes Science Center ▸ 2015 Streetlaw Career Conference with Shaw High School
SUPPORT STAFF			
 **Dennis Roberts, Esq.** Outreach Team Partner — African American Community	▸ Outreach to the local African American businesses and community	▸ Workforce Development Leader on OC2 ▸ Previous Director of Cuyahoga County Workforce Development Department	▸ Strategist for Cuyahoga County and the City of Cleveland Political Campaigns
 **Tavorris Robinson** Contractor Diversity/Outreach Assistant	▸ Assistant to Jackie Jacob, Contractor Diversity/Outreach Lead Manager	▸ Over 10 years' of experience in social media marketing solutions, digital content creation and live-streaming. ▸ Social Media Coordinator for small, local, minority and EDGE firms looking to understand and increase their social media and Internet presence.	▸ Advisor to Untapped Potential, a prison outreach program designed to cultivate the skills of incarcerated individuals via education and training which, will eventually lead to employment and business support upon post-release.
 **Andrew Jackson** Outreach Team Partner — African American Community	▸ Workforce Development to targeted ethnic groups	▸ 25 years with Accenture: Responsible for delivering business and technology solutions for Global Fortune 500 companies. ▸ Company Partner in charge of the corporate Diversity Program. Led both the internal and external diversity efforts	▸ Seven years with Greater Cleveland Partnership; served as the lead for the Commission on Economic Inclusion for GCP. ▸ Project experience with The Cleveland Clinic, University Hospitals, Cleveland Art Museum, Cleveland Convention Center, The Medical Mart, Flats Eastbank, and Horseshoe Casino
 **Adrian Maldonado** Outreach Team Partner — Hispanic Community	▸ Outreach to the local Hispanic businesses and community	▸ Over 30 years' experience in the area of diversity monitoring, tracking and reporting ▸ Participated in every diversity study in Cuyahoga County up until 2008 when he retired as Director of Procurement & Diversity for Cuyahoga County	▸ Assisted in increasing the minority participation for the new Hilton Hotel project being built by the City of Cleveland and Cuyahoga County
 **Al Sanchez** Outreach Team Partner — Hispanic Community	▸ Outreach to the local Hispanic businesses and community	▸ Turner Construction Company Executive Vice President responsible for the Central United States, Mexico, and Canada comprising of 11 Turner offices and subsidiaries (1988-1997) ▸ Chairman for 10 commissioners of the Bond Accountability Commission (BAC) providing overview of the Cleveland Metropolitan Board of Education (2006 - present)	▸ Chairman of the Cuyahoga County Community Bond Correction Facility governing boards responsible for complete design and construction for a treatment center to provide services to 3rd and 4th degree felons in the amount of $10,800,000 for approximately 200 residents
 **Lisa Wong** Outreach Team Partner — Asian Pacific American (APA) Community	▸ Outreach to the local APA businesses and community	▸ 2015 Event Coordinator, Ohio Asian-American Health Conference, Cleveland, Ohio ▸ 2014-Present President, OCA Greater Cleveland - Asian Pacific American Advocates	▸ 2015 Project Lead, AAPI Civic Engagement Network of Ohio (ACE Network), OCA Greater Cleveland ▸ 2009-Present Co-Founder, Executive Committee Co-Chair, and Vendor Committee Chair, Cleveland Asian Festival

D.2 Draft DIOP Methods & Execution

As described in the DIOP (Appendix 10), we have created a "**Best in Class**" approach for business and workforce development along with community outreach. This includes TGR Core techniques new to ODOT and the heavy highway industry. These techniques include ***The TGR Institute*** and ***The TGR Talent Expo***. Both of these are introduced later in this section and further expanded on in our Draft DIOP in Appendix 10.

The TGR Institute delivers proven knowledge solutions which include a collection of workshops aimed at driving business results in the following categories:

- Obtaining construction knowledge
- How to run a business
- How to obtain capital to grow and sustain a business

The TGR Talent Expo will provide individuals with exposure to the many successful local companies, recruiters and union agents in northeast Ohio.

DIOP Outreach

We will use a technique new to the industry known as SmartOutreach. This technique was created by our outreach team partner Dennis Roberts, Esq. SmartOutreach is defined as a set of techniques and methods to strategically engage individuals, groups and community organizations.

Examples of those techniques includes:

- Door-to-door canvassing (including CMHA buildings)
- Grassroots organizing with community leaders (e.g., area church and religious leaders, local elected officials and other non-profit leaders)
- Community street engagement in high traffic areas (e.g., malls and plazas)
- Commercial canvassing (micro businesses)

We also have access to a proprietary database that allows us to identify neighborhood residents at a very micro/individual level. With laser accuracy, our data sets and subsequent analysis of the datasets, make our outreach efforts more strategic and hence Smart. This is complemented by our demographic/census based data, which allow us to more readily target households that may have employment and other workforce related needs. Thus, our approach is more streamlined and results oriented.

Business Development

PURSUIT PHASE

On December 15 and 16, 2016, TGR met individually with over 60 companies from all disparaged groups. During the meetings, information was gathered about how TGR could help these companies secure work on OC3 as well as other unrelated construction projects throughout greater Cleveland. Through a survey, many attendees indicated it was the first time that they felt included as part of a major construction project's Pursuit Phase.

TGR JV partner, The Great Lakes Construction Co., was the first major construction company to host a bilingual community event in the State of Ohio. All of our OC3 pursuit phase efforts included bilingual fliers, use of Hispanic media and a Spanish translator available at each of our events.

We included the Minority Business Assistance Center of Cleveland (MBAC) as a partner for our two-day event. MBAC was present to help businesses get their EDGE certification paperwork completed in order to be approved prior to the bid date of this project. "This is the first time a tier one contractor has invited the Urban League to partner on an event so that our clients could obtain certification and a better understanding of the construction project from the contractors' perspective," said Darrell Johnson, Director, Minority Business Assistance Center and the Urban League of Cleveland. Because of this ground-breaking engagement with these companies, we learned about these business owners' challenges and shared ways to help these businesses with access to capital and to select the best business sectors and improve their businesses' systems and infrastructure.

Two companies submitted their certifications at this event:

1. T. Rice Communications
2. PTS Enterprises of Ohio LLC

Many companies who attended the event were interested in EDGE certification. Companies in business for less than one year were ineligible for certification, however, MBAC maintains contact with the ineligible companies and is committed to following up with them, after one year, so they may complete the certification process and be prepared to bid during the next opportunity.

Making personal connections with individuals during the Estimating 101 Educational Workshops builds relationships with NSLE businesses.

On February 9, 2017, TGR sponsored a half-day Estimating 101 Educational Workshop. TGR executive team member Vice President, Mark Grdina presented to educate small businesses about estimating practices in our industry. This unprecedented workshop was well received by the targeted disparaged groups. Approximately 15 African American, 8 Hispanic and 10 small businesses participated in the event.

On February 10, 2017, our estimating team held our second face-to-face meeting with 61 NSLE companies to discuss specific scope packages. Due to the nature of DB Projects, plans are not available until several weeks prior to the bid date of a project. Hosting this second face-to-face-meeting on this date, in particular, allowed our estimators to:

- Provide scope requirements and plans to each company
- Get to know the NSLE businesses more intimately
- Create one of the largest NSLE databases of firms in Northeast Ohio
- Create more manageable and size-appropriate scope packages for the NSLE firms

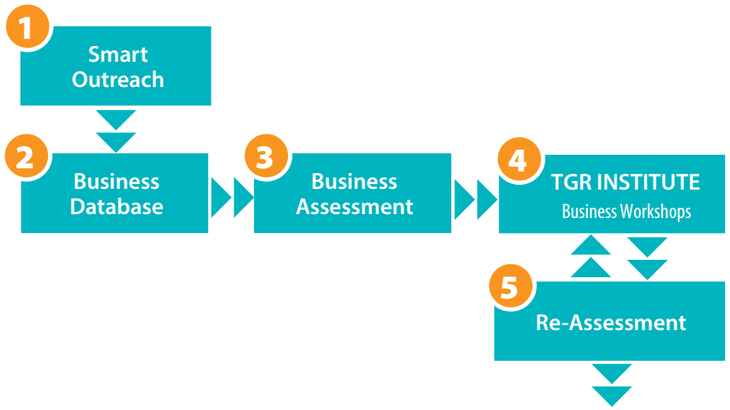
"This is amazing. I learned things that I did not know before and I have been in business since 2006. To have a contractor like TGR who is looking out for the little guys is great. They don't want us to fail."

Patty McGee, President of DOC Enterprises (referring to the estimating workshop)

POST-AWARD PHASE

Our DIOP will explain this model in more detail, but the intent of our capacity building model is shown in Figure D-3.

Figure D-3. TGR Capacity Building Model



1. Set of techniques and methods used to strategically engage targeted individuals, and businesses interested in the heavy highway construction industry
2. A database will be created to make sure the company and owner's information is accurate. This database will also allow documentation of their progress through The TGR Institute
3. At this stage the company, owner and management team are assessed to determine at what stage of The TGR Institute they will enter
4. The TGR Institute will consist of tailored workshops three major categories of focus which will complement the business owner or the business infrastructure. Individual workshops under these main categories will include: Estimating, Construction Basics, Safety, IT, Accounting, Finance, English as a Second Language and Access to Capital, entrepreneurship and succession planning
5. Our experience has shown that businesses who attend the above workshops may need attend additional workshops in order to strengthen their business competencies. **Re-assessment at this stage will make sure that they have learned the skills to advance to the next stage.** Advancing to the next stage prior to properly completing the workshops sessions most likely will lead to company failure
6. At this stage, the business is able to stand on its own and has the competencies necessary to reach out to the industry if they have questions about running a business

MENTORING

PROTÉGÉ SPECIFIC MAJOR MENTORING GOALS

TGR will mentor the following companies from the three identified disparaged groups. In addition to guiding them through the TGR Institute, we will help them attain the goals listed in Figure D-4.

Each of the businesses that we have selected to mentor on this project have different needs and we have identified specific objectives to help them obtain more work with ODOT which will help ODOT's DBE capacity building long term goals.

Figure D-4. TGR Mentoring Commitments

FIRM NAME	FIRM TYPE	PROPOSED GOAL
Moody Engineering	African American Design Consultant	▸ Obtain Bicycle Facilities Prequalification
VDP Safety & Uniforms, Ltd.	African American Contractor	▸ Increase market exposure in the heavy civil construction industry throughout Ohio
Cordero Cement	Hispanic Contractor	▸ Obtaining ODOT pre-qualification ▸ Obtain DBE certification ▸ Understanding doing business with ODOT (certified payrolls, construction drawings and specifications, the ODOT Manual Operating Procedures)
Utilitech	Hispanic Contractor	▸ Obtaining ODOT prequalification ▸ Obtain DBE certification ▸ Understanding doing business with ODOT (certified payrolls, construction drawings and specifications, the ODOT Manual Operating Procedures)
Advanced Engineering Consultants	Asian Pacific American Design Consultant	▸ Obtain Basic Traffic Signal prequalification

Workforce Development

Our DIOP will explain this model in more detail, but the intent of our TGR Sustainability Workforce Model shown in Figure D-6 is on the following page.

The Workforce Development section of the DIOP is structured to provide exposure to the skills and behaviors required to assist residents and individuals in Wards 4, 5, 6, 7, 13 and 14 to become 21st Century prepared citizens who are ready, willing and able to work.

ON-THE-JOB TRAINING (OJT)

As always, TGR will surpass the required OJT goals on this project by utilizing both our TGR Sustainable Workforce Model and our SmartOutreach strategy simultaneously.

Our outreach efforts described in the Workforce Development section of the DIOP will provide our team with an extensive database of talent to choose from. This will allow us to hire individuals to achieve the project specific goals of 20,000 hours of Type 1, blue collar jobs; 10,000 hours from residents from Wards 4, 5 and 6 of Type 2, white collar/ professional jobs; along with achieving 20% workforce hours from individuals from residents of the City of Cleveland, including 4% resident construction work hours from low-income City of Cleveland residents. OJT opportunities include:

- **Type 1 —** Union laborers, operators, carpenters, iron workers, cement masons and teamsters
- **Type 2 —** Engineering interns, timekeeper, security, administration, and receptionist, and local neighborhood ambassadors.

During OC2, Career Awareness Sessions (CAS) have identified that in the African-American community, approximately 90% are unemployable due to having a felony record and other barriers. Our DIOP will address this issue.

Great Lakes' OC2 CAS have identified in the Hispanic Community approximately 95% of the attendees are employable, however, their inability to speak English is their employment barrier. Our DIOP will address this issue.

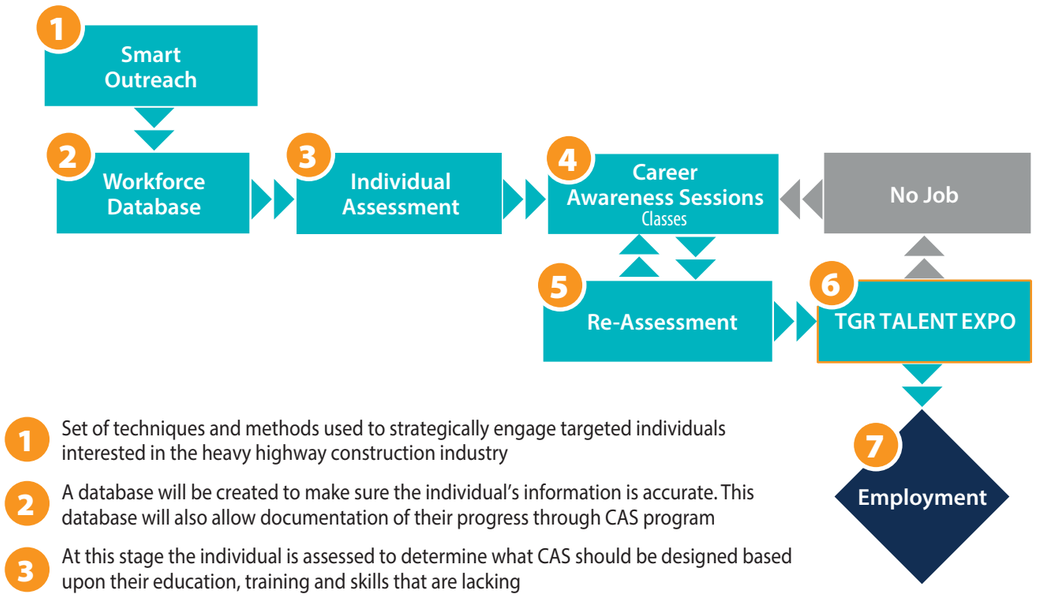
Our Draft DIOP provides more details and specifics on our OJT plan.

Figure D-5 provides TGR's OJT hours from the CCG2 Project, demonstrating our success in achieving ODOT's goal. We will apply a similar approach to reach the goals for the OC3 project.

Figure D-5. CCG2 OJT Trainee Hours

Blue Collar	Total to Date	White Collar	Total to Date
Carpenters	5,107	Design Intern	0
Cement Masons	1,219	Engineer	12,427
Iron Workers	10,522	IQF	5,217
Laborers	7,273	Safety	0
Operators	26,844	Sustainability	3,250
Pile Drivers	5,584		
Painters	1,123		
TOTAL	**57,672**	**TOTAL**	**20,894**

Figure D-6. TGR Sustainability Workforce Model



1. Set of techniques and methods used to strategically engage targeted individuals interested in the heavy highway construction industry
2. A database will be created to make sure the individual's information is accurate. This database will also allow documentation of their progress through CAS program
3. At this stage the individual is assessed to determine what CAS should be designed based upon their education, training and skills that are lacking
4. "Tailor" made Career Awareness Sessions will include subjects such as: English as a second language, life skill coaching, communication skills, personal finance, GED/HS Diploma, Resume Writing, CDL Training, Your Choices = Your Life
5. Our experience has shown that individuals who attend the above CAS may need attend additional sessions in order to strengthen their individual skills. **Re-assessment at this stage will make sure that they have been exposed to the type of skills employers are looking for in today's workforce.** This re-assessment will help ensure their long term success
6. TGR will host two TGR Talent Expos in the spring of 2019 and 2020 for individuals looking for work. Our team will invite local government agencies and businesses to set up booths for attendees to visit and present themselves for employment. Invited organizations and companies include but not limited to the Ohio Department of Transportation, the City of Cleveland, First Energy, Time Warner Cable, Dominion East Ohio, the Cleveland Clinic, University Hospitals, Cleveland State, and Cuyahoga Community College
7. The Workforce Development section of the DIOP is structured to provide exposure to the skills and behaviors required to make residents and individuals in Wards 4, 5, 6, 7, 13, and 14 to become 21st Century prepared citizens. Ready, willing and able to work

Community Outreach

Our outreach team partners are familiar with the local community from each of the three identified disparaged groups. They will assist with implementing our plan for both the youth and community service components of our DIOP.

YOUTH OUTREACH

Our SmartOutreach team of Andrew Jackson, Al Sanchez and Lisa Wong will utilize the local schools and organizations to identify the schools and projects needed to advance our community outreach.

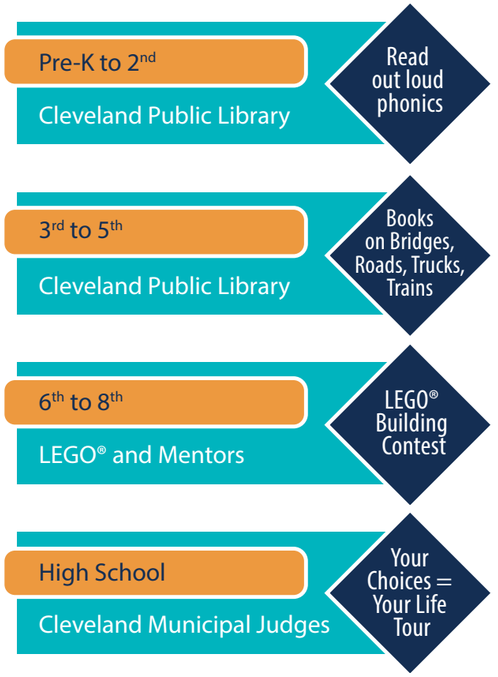
The success of educating a local community on workforce development and diversity and inclusion begins with commitment followed by an intense passion for helping the local youth. The goal of our Community Outreach Model shown in Figure D-7 is two-fold:

- Expose the youth to educational and career opportunities in engineering, transportation and construction.
- Expose K-12 urban youth to positive role models and behaviors, as well as educational, STEM, and Global Ambassador Language Academy-related activities to increase likelihood of employment.

TGR will actively perform outreach to kids in Wards 4, 5, 6, 7, 13 and 14 by partnering with the following local youth education programs:

- Big Brothers Big Sisters of Cleveland
- STEM-related high schools
- Immersion labeled high schools such as Global Ambassador Language Academy

Figure D-7. Sample Community Outreach Model



COMMUNITY SERVICE PROJECTS

TGR will sponsor the five projects shown in Figure D-8 as part of our Diversity & Inclusion program.

Figure D-8. Proposed Community Service Projects

#	PROJECT	DESCRIPTION
1	TGR Talent Expo (Spring 2019)	The fair will take place at Max Hayes High School. We will help prepare students for these fairs and invite local businesses such as, but not limited to: First Energy, Cleveland Clinic Foundation, The Cleveland Indians, The Cleveland Cavaliers, The Cleveland Browns, The City of Cleveland and Local Unions.
2	TGR Talent Expo (Spring 2020)	The fair will take place at Max Hayes High School. We will help prepare students for these fairs and invite local businesses such as, but not limited to: First Energy, Cleveland Clinic Foundation, The Cleveland Indians, The Cleveland Cavaliers, The Cleveland Browns, The City of Cleveland and Local Unions.
3	"Your Choices = Your Life" Initiative	This initiative will bring both judges and the prosecutor's office to area high school students to talk about how their life choices will impact their long-term life opportunities. Judge Michael J. Ryan, Juvenile Division, Juvenile Justice Center will partner with other African-American Judges and tour area high schools, as well as The Big Sisters/Big Brothers of Cleveland to educate minority youth on the pitfalls of making bad choices at an early age.
4	Buckeye Neighborhood Basketball Court Restoration	The Cleveland Cavaliers have agreed to participate with TGR on a community service project located in the City of Cleveland's Buckeye Neighborhood. Local councilman Kenneth L. Johnson is in support of the community service project to construct two basketball courts. The project details will be determined and agreed upon by all parties in 2018; the selected project will be completed in 2019. Work at this location will include grading, drainage, pavement, striping, lighting and the needed basketball equipment. The exact location for these basketball courts has not been determined. Since we do not have a contract with ODOT at the time of this proposal, land owners are not willing to commit to a site. The final site will be in partnership by all major local stakeholders. See Figure 10 on page 15 of Appendix F.10 for an illustration of the proposed basketball courts. (The Cleveland Cavaliers have given permission for use of its logo in this proposal.) The Cleveland Cavaliers have agreed to refinish the hardwood basketball court at the Kenneth L. Johnson Recreation Center.
5	West Side Ward 14 Park	TGR has reached out and identified a local, west side Ward 14, non-profit partner to create a park for the local community. Work at this proposed location will include grading, drainage, seeding, lighting, fencing and playground equipment. The exact location has not been established at the time of this proposal. The final site will be agreed upon by all major local stakeholders. This will be a very exciting project for everyone. See Figure 11 on page 15 of Appendix F.10 for an illustration of the proposed park.

LANGUAGE INTERPRETERS

One of the most difficult barriers for Hispanic and Asian Pacific American business owners and individual job seekers to overcome is communicating and understanding the English language. Therefore, as necessary, we will confirm that Spanish and/or Asian language interpreter(s) are present at all meetings/events listed in our DIOP. We will also have these interpreters on call to assist our team during our outreach efforts.

Third Party Quarterly Audits

Maria Hernandez of Verge Inc., a local workforce development non-profit organization, working under IQF TranSystems, will monitor our DIOP, OC3 Scope of Services Section 5 — Diversity, Inclusion, and Outreach requirements, PN 98 and PN 99 requirements quarterly for compliance.

The above quarterly audits will be in addition to the responsibilities of Contractor Diversity/Outreach Lead Manager, Jackie Jacob, for monitoring and reporting data as required by the OC3 Scope of Services Section 5 — Diversity, Inclusion, and Outreach, PN 98 and PN 99.

A matrix of responsibilities and meetings, as they relate to OC3 Scope of Services Section 5 — Diversity, Inclusion, PN 98 and PN 99 will be created and approved by ODOT as a tool to easily track our successful execution of the DIOP. See a sample matrix on pages 18 and 19 of our Draft DIOP.

For example, third-party quarterly audits will include, but are not limited to:

- Key milestones required in our Business and Workforce Development commitments
- Actual NSLE work completed and paid percentages
- On-the-job training (OJT) hours
- City of Cleveland Resident Workforce Hours

D.3 Diversity, Inclusion & Outreach Commitments

As shown in our NSLE summary in Appendix 9 of this proposal, we are committed to and will exceed ODOT's project goals for NSLE businesses. In addition to exceeding these goals, we have achieved 14.5% EDGE project participation to achieve 2 bonus points. Achieving these goals has also allowed us to include 63 NSL businesses on this project for another 5 bonus points.

We have also included in Appendix 9 the signed affidavit letters from our NSLE businesses listed on our summary sheet. This will help expedite contract award.

Figure D-9. NSL Firm Utilization (Quantity)

New Firms:	8
Small Firms:	8
Local Firms:	46

Figure D-10. NSLE OC3 Participation (Percent)

EDGE:	14.4
New:	2.1
Small:	2.7
Local:	6.6

PART E

Prequalification

E. Prequalifications

Figure E-1. Construction Prequalifications

Work Type Code	Work Type Description	Contractor/ Subcontractor(s) to Perform the Work
1	Clearing & Grubbing	Trumbull-Great Lakes-Ruhlin
2	Building Removal	Trumbull-Great Lakes-Ruhlin
3	Gas, Oil, Water Well Abandonments	Trumbull-Great Lakes-Ruhlin
4	Roadway Excavation & Embankment Construction	Trumbull-Great Lakes-Ruhlin
5	Major Roadway Excavations	Trumbull-Great Lakes-Ruhlin
6	Incidental Grading	Trumbull-Great Lakes-Ruhlin
7	Soil Stabilization	Trumbull-Great Lakes-Ruhlin
8	Temporary Soil Erosion & Sediment Control	Trumbull-Great Lakes-Ruhlin
9	Aggregate Bases	Trumbull-Great Lakes-Ruhlin
10	Flexible Paving	Trumbull-Great Lakes-Ruhlin
11	Apply Bituminous Treatments	Trumbull-Great Lakes-Ruhlin
12	Rigid Paving	Trumbull-Great Lakes-Ruhlin
13	Pavement Planning, Milling, Scarification	Trumbull-Great Lakes-Ruhlin
14	Concrete Texturing	Prequalified Subcontractor
15	Sawing	Trumbull-Great Lakes-Ruhlin
16	Flexible Pavement Replacement	Trumbull-Great Lakes-Ruhlin
17	Rigid Pavement Replacement	Trumbull-Great Lakes-Ruhlin
18	Pavement Rubblizing, Breaking, Pulverizing	Trumbull-Great Lakes-Ruhlin
19	Structure Removal	Trumbull-Great Lakes-Ruhlin
20	Level 1 Bridge	Trumbull-Great Lakes-Ruhlin
21	Level 2 Bridge	Trumbull-Great Lakes-Ruhlin
22	Level 3 Bridge	Trumbull-Great Lakes-Ruhlin
23	Reinforcing Steel	Trumbull-Great Lakes-Ruhlin
24	Structural Steel Erection	Trumbull-Great Lakes-Ruhlin
25	Stud Welding	Trumbull-Great Lakes-Ruhlin
26	Structural Steel Painting	Prequalified Subcontractor
27	Expansion & Contracting Joints, Joint sealers, Bearing Devices	Trumbull-Great Lakes-Ruhlin
28	Caissons / Drilled Shafts	Trumbull-Great Lakes-Ruhlin
29	Structure Repairs	Trumbull-Great Lakes-Ruhlin
30	Hydrodemolition	Trumbull-Great Lakes-Ruhlin
31	Structural Steel Repairs	Trumbull-Great Lakes-Ruhlin
32	Heat Straightening	Trumbull-Great Lakes-Ruhlin
33	Tieback Installation	Trumbull-Great Lakes-Ruhlin
34	Earth Retaining Structures	Trumbull-Great Lakes-Ruhlin
35	Drainage (Culverts, Misc.)	Trumbull-Great Lakes-Ruhlin
36	Guardrail / Attenuators	Prequalified Subcontractor
37	Fence	Trumbull-Great Lakes-Ruhlin
38	Misc. Concrete	Trumbull-Great Lakes-Ruhlin
39	Maintenance of Traffic	Trumbull-Great Lakes-Ruhlin
40	Waterproofing	Trumbull-Great Lakes-Ruhlin
41	Raised Pavement Markers	Prequalified Subcontractor
42	Signing	Trumbull-Great Lakes-Ruhlin
43	Highway Lighting	Prequalified Subcontractor
44	Traffic Signals — Standard	Prequalified Subcontractor
45	Pavement Markings	Prequalified Subcontractor
46	Landscaping	Trumbull-Great Lakes-Ruhlin
47	Mowing	Prequalified Subcontractor
48	Trucking	Trumbull-Great Lakes-Ruhlin
49	Herbicidal Spraying	Prequalified Subcontractor
50	Railroad Track Construction	Trumbull-Great Lakes-Ruhlin
51	Micro Tunneling	Prequalified Subcontractor
52	Tunneling	Prequalified Subcontractor
53	Piling	Trumbull-Great Lakes-Ruhlin
54	Post-Tensioning Bridge Members	N/A
55	Fiber Optic Cable Installation, Splicing, Termination and Testing — Traffic Signal System	Prequalified Subcontractor
56	Fiber Optic Cable Installation, Splicing, Termination and Testing — Intelligent Transportation System	Prequalified Subcontractor
57	Sealing of Concrete Surfaces with Epoxy or Non-Epoxy Sealers	Trumbull-Great Lakes-Ruhlin

Figure E-2. Design Prequalifications

Prequalification Category	Contractor/Subcontract(s) to Perform the Design Work
Roadway: Bicycle Facilities and Enhancement Design	HDR Engineering, Inc.
Roadway: Complex Roadway Design	HDR Engineering, Inc. Thomas Fok & Associates, Inc. (EDGE) CCI Engineering Services (EDGE)
Subsurface Utility Engineering	Cardno
Bridge Design: Level 2 Bridge Design	HDR Engineering, Inc. GPD Group
Bridge Design: Bridge Design Sub-factors: Complex Geometry	HDR Engineering, Inc. GPD Group
Soils/Geotechnical Services: Geotechnical Engineering Services	HDR Engineering, Inc.
Soils/Geotechnical Services: Geotechnical Testing Laboratory	DHDC Engineering Consulting Services, Inc.
Soils/Geotechnical Services: Geotechnical Field Exploration Services	DHDC Engineering Consulting Services, Inc.
Soils/Geotechnical Services: Geotechnical Drilling Inspection Services	DHDC Engineering Consulting Services, Inc.
Traffic Signal Design: Traffic Signal System Design	HDR Engineering, Inc.
Highway Lighting Design: Complex Lighting Design	Advanced Engineering Consultants (EDGE)
Environmental Documentation: Environmental Site Assessment Phase II	Lawhon & Associates, Inc. (DBE)

PART F.1

Appendix 1 - Administrative Submittal (Forms A-1 and C-1)

FORM A-1 PROPOSAL LETTER

Name of Short-listed Offeror: Trumbull-Great Lakes-Ruhlin, a joint venture

Date: December 21, 2017

Ohio Department of Transportation
Office of Contracts, First Floor
1980 W. Broad Street
Columbus, OH 43223

On behalf of the Short-listed Offeror, the undersigned submit the documents described in paragraph 1 of this Proposal Letter in response to the Request for Proposals for the Opportunity Corridor Section 3 Project (the "**RFP**") issued by the Ohio Department of Transportation (the "**Department**").

The Short-listed Offeror hereby acknowledges delivery by Short-listed Offeror to the Department of the enclosed Price Proposal. Together with the Technical Proposal, the submittal by the DBT shall collectively constitute the "Proposal" for the purposes of this letter.

If this Proposal is accepted by the Department, the Short-listed Offeror is prepared to enter this agreement without varying or amending its terms (except for modifications agreed to by the Department in its sole discretion), and to satisfy all other conditions to the award of the contract, including compliance with all commitments contained in this Proposal.

1. Enclosed with this Proposal Letter is the Technical Proposal and Price Proposal of the Short-listed Offeror consisting of all documents and information required by the RFP.

2. The following individual(s) is/are authorized to enter into negotiations with the Department on behalf of the Short-listed Offeror in connection with this RFP:

   George E. Mezey, President, Trumbull Corporation, George J. Palko, PE, President and CEO, The Great Lakes Construction Co., James L. Ruhlin, PE, President & CEO, The Ruhlin Company.

3. The Short-listed Offeror acknowledges receipt of following Addenda:

   Addendum No. 1 – 10/27/16
   Addendum No. 2 – 11/3/16
   Addendum No. 3 – 11/4/16
   Addendum No. 4 – 11/16/16

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   Addendum No. 5 – 11/17/16
   Addendum No. 6 – 12/6/16
   Addendum No. 7 – 12/22/16
   Addendum No. 8 – 1/23/17
   Addendum No. 9 – 1/25/17
   Addendum No. 10 – 2/22/17
   Addendum No. 11 – 3/2/17
   Addendum No. 12 – 3/9/17
   Addendum No. 13 – 3/17/17
   Addendum No. 14 – 3/17/17
   Addendum No. 15 – 3/23/17
   Addendum No. 16 – 4/7/17
   Addendum No. 17 – 4/14/17
   Addendum No. 18 – 5/12/17
   Addendum No. 19 – 6/9/17
   Addendum No. 20 – 11/3/17
   Addendum No. 21 – 11/17/17
   Addendum No. 22 – 12/12/17

4. The Short-listed Offeror hereby certifies that:
   a) its Proposal is submitted without reservation, qualification, assumptions, deviations or conditions;
   b) it has carefully examined and is fully familiar with all of the provisions of the RFP, has reviewed all materials provided, the Addenda and the Department's responses to questions, and is satisfied that the RFP provides sufficient detail regarding the obligations to be performed by the Short-listed Offeror and does not contain internal inconsistencies;
   c) it has conducted such other field investigations and additional design development as is prudent and reasonable in preparing this Proposal;
   d) it has carefully checked all the words, figures and statements in the Proposal;
   e) it has notified the Department of any deficiencies or omissions in the RFP or other documents provided by the Department;
   f) the Lead Contractor has been prequalified for such work by the Department in accordance with the terms of the RFP;
   g) neither the Proposer nor its employees, members, agents, consultants or advisors have entered either directly or indirectly into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive selection in connection with its Proposal

5. The Short-listed Offeror represents that all statements made and information

provided in the SOQ (except as amended, resubmitted and/or updated by the enclosed Technical Proposal) are true, correct and accurate as of the date of submission of this Technical Proposal.

6. The Short-listed Offeror further understands that all costs and expenses incurred in preparing the Technical Proposal and participating in the RFP Process will be borne solely by the Short-listed Offeror, except any stipend that may be paid in accordance with the RFP.

7. The Short-listed Offeror consents to the Department's disclosure of its Technical Proposal pursuant to the Department's public records policy to any persons as required by law after Award. The Short-listed Offeror acknowledges and agrees to the disclosure terms described in the RFP and expressly waives any right to contest such disclosures.

8. The Short-listed Offeror agrees that:
   a) The Department will not be responsible for any errors, omissions, inaccuracies or incomplete statements in the Proposal;
   b) The Department's acceptance of the Proposal does not constitute any statement or determination as to its completeness, responsiveness or compliance with the requirements of the RFP;
   c) If the Short-listed Offeror has the best value proposal, the Short-listed Offeror is committed to meeting the goals for New Business, Small Business, Local Business and EDGE Business involvement;
   d) If the Short-listed Offeror has the best value proposal, the individuals identified as Key Personnel will be available on a full-time basis for the periods necessary to fulfill their Project-related responsibilities; and
   e) in the event a substantive difference is identified before or after Award, between the terms for the Project offered by the Short-listed Offeror in its Proposal and any provision in the RFP, the provisions of the relevant Contract Document will prevail and the Short-listed Offeror will not be entitled to alter its Proposal, as applicable.

9. The Proposal shall be governed by and construed in all respects according to the law of the State of Ohio.

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10. The Short-listed Offeror's business address:

225 North Shore Drive			
(No.)	(Street)	(Floor or Suite)	
Pittsburgh	PA	15212	USA
(City)	(State or Province)	(ZIP or Postal Code)	(Country)

State/Country of Organization (if applicable): _____

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[Trumbull Corporation]
By: _____
Name: George E. Mezey
Title: President

[The Great Lakes Construction Co.]
By: _____
Name: George J. Palko, P.E.
Title: President & CEO

[The Ruhlin Company]
By: _____
Name: James L. Ruhlin, P.E.
Title: President & CEO

[HDR Engineering, Inc.]
By: _____
Name: John B. Hyre, P.E.
Title: Vice President

[TranSystems Corporation of Ohio]
By: _____
Name: Allen Biehl, P.E.
Title: Vice President

POWER OF ATTORNEY

WHEREAS, Trumbull Corporation ("Trumbull") is a corporation organized and existing under the laws of Pennsylvania with its principal place of business located at 225 North Shore Drive, Pittsburgh, PA 15212; and

WHEREAS, The Ruhlin Company ("Ruhlin") is a corporation organized and existing under the laws of Ohio with its principal place of business located at 6931 Ridge Road, Sharon Center, OH 44274; and

WHEREAS, The Great Lakes Construction Company ("Great Lakes") is a corporation organized and existing under the laws of Ohio with its principal place of business located at 2608 Great Lakes Way, Hinckley, OH 44233; and

WHEREAS, Trumbull, Ruhlin and Great Lakes (collectively, the "Parties") have entered into a certain Joint Venture Pre-Bidding Agreement dated September 30, 2016, for the purpose of submitting a joint proposal (the "Proposal") to the Ohio Department of Transportation for the construction of the Opportunity Corridor Section 3 Project (the "Project") in the name of Trumbull-Great Lakes-Ruhlin, a Joint Venture, 225 North Shore Drive, P.O. Box 6774, Pittsburgh, PA 15212 (the "Joint Venture").

NOW THEREFORE, in consideration of the foregoing recitals, Trumbull, Ruhlin and Great Lakes hereby appoint George Mezey, President of Trumbull, as the Agent (attorney-in-fact) for the Joint Venture with the power and authority to act for the Joint Venture and bind the Joint Venture partners in any lawful way with respect to the following:

(A) Execute such applications for bonds, insurance policies, indemnity agreements and other documents as may be necessary in connection with the submission of the Proposal for the Project and for the execution and performance of any contract awarded to the Joint Venture for the Project.

This Power of Attorney is effective immediately and shall terminate on the date fixed by the Parties for termination of the Joint Venture.

The Agent is released from any liability to the Parties arising out of the acts or failures to act of the Agent, except for willful misconduct and/or gross negligence. The Parties agree to indemnify and hold the Agent harmless against any liability or expense, including attorney's fees, that the Agent may incur as the result of acting or failing to act under this instrument, except for liability and expense resulting from willful misconduct and/or gross negligence.

The Parties may amend or revoke this Power of Attorney at any time by a signed instrument delivered to the Agent. If this instrument has been filed or recorded in public records, then any amendment or revocation also will be similarly filed or recorded, but a similar filing or recording of the amendment or revocation will not be necessary to effectuate the amendment or revocation with respect to the Agent and to all persons who have actual knowledge of the amendment or revocation.

This Power of Attorney may be executed in two or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same original.

The Parties hereby warrant and represent that: (a) they have read this Power of Attorney and/or have had it explained to them to their satisfaction by their counsel; (b) they have the requisite power and authority to enter into this Power of Attorney; (c) any and all authorizations for the execution and delivery of this Power of Attorney have been duly obtained and issued; and (d) this Power of Attorney constitutes a legal, valid and binding agreement between the Parties to transfer the powers identified above to the Agent to act on behalf of and bind the Joint Venture.

This Power of Attorney will be governed by the laws of the State of Ohio without regard to conflicts of laws principles and is intended to be valid in all jurisdictions of the United States and all foreign nations.

IN WITNESS WHEREOF, and intending to be legally bound, the Parties hereto, by their undersigned, duly authorized representatives, have caused this Power of Attorney to be executed on the date indicated.

[REST OF PAGE INTENTIONALLY BLANK. SIGNATURE PAGES FOLLOW].

TRUMBULL CORPORATION

By: _____

Its: President

Date: 12/20/17

State of Pennsylvania

County of Allegheny

Subscribed and sworn to before me this 20 day of December, 2017.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Kathleen S. Banks, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires March 2, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Kathleen A. Banks
(Notary Public)

3/2/21
(Commission Expires)

THE GREAT LAKES CONSTRUCTION CO.

By: _____

Its: President + CEO

Date: 12/20/17

State of Pennsylvania

County of Allegheny

Subscribed and sworn to before me this 20 day of December, 2017.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Kathleen S. Banks, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires March 2, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Kathleen A. Banks
(Notary Public)

3/2/21
(Commission Expires)

THE RUHLIN COMPANY

By: _____

Its: President + CEO

Date: 12/20/17

State of Pennsylvania

County of Allegheny

Subscribed and sworn to before me this 20 day of December, 2017.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Kathleen S. Banks, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires March 2, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Kathleen A. Banks
(Notary Public)

3/2/21
(Commission Expires)

ACKNOWLEDGMENT OF AGENT

I HEREBY, ACKNOWLEDGE, ACCEPT AND AGREE THAT BY ACCEPTING OR ACTING UNDER THE APPOINTMENT, I ASSUME THE FIDUCIARY AND OTHER LEGAL RESPONSIBLITIES OF THE AGENT.

Dated: 12/20/17

George Mezey
Trumbull Corporation
President

TRUMBULL CORPORATION
BOARD OF DIRECTORS MEETING
DECEMBER 20, 2017

A special telephone conference meeting of the Directors of Trumbull Corporation was held on December 20, 2017, at 9:00 a.m.

The following Directors were present on the conference call:

Jane D. Hecht
Diane D. Rowe
Clifford R. Rowe
Stephen M. Clark

representing a majority of the Board of Directors (H. Kennedy Linge was absent).

Stephen M. Clark addressed the Board and explained that special action was needed to: 1) identify an individual authorized to execute and deliver on behalf of Trumbull Corporation proposals, contracts and bid documents that would form part of the proposal to be submitted to the Ohio Department of Transportation for the construction of the Opportunity Corridor Section 3 Project (the "Proposal").

Upon motion duly made, seconded, and unanimously adopted, it was:

RESOLVED: that George Mezey, as President of Trumbull Corporation, is authorized to execute and deliver all documents on behalf of Trumbull Corporation that form part of the Proposal.

There being no further business, the telephone conference meeting was adjourned at approximately 9:30 a.m.

Stephen M. Clark
Secretary

THE GREAT LAKES CONSTRUCTION CO.

Action in Writing

By

Board of Directors

The undersigned, being all the Directors of The Great Lakes Construction Co., an Ohio corporation (the "Corporation"), acting pursuant to the authority of Section 1701.54 of the Ohio Revised Code, hereby consent to the adoption of the following specified resolutions and approve and adopt such resolutions with the same force and effect as if they were approved and adopted at a duly constituted meeting of the Board of Directors of the Corporation:

RESOLVED, that from and after the date of adoption of this resolution, each of the following officers of the Corporation, namely James W. Fox, Mark E. Grdina, Kurtis L. Knapp, Albert P. Leonard, George J. Palko and Jeffrey W. Tarnowski shall have full power and authority to sign and obligate the Corporation with respect to all proposals, bids, contracts, or other undertakings of any kind or nature with any federal, state, county, municipal, or other governmental entity, or with any corporation, partnership, limited liability company, joint venture, individual or other private entity, for or in connection with construction, services, equipment, retail purchases, sales or other transactions of any kind or nature involving the business of the Corporation, and such officer's signature shall be conclusive evidence that such officer was acting with the approval of the Board of Directors of the Corporation, and be it

RESOLVED FURTHER, that from and after the date of adoption of this resolution, the foregoing officers shall have full power and authority to delegate any or all of the power and authority described in the foregoing paragraph to any other officer or employee of this Corporation, with such limitations on said power and authority so delegated as shall be determined by the delegating officer, such delegation to be set forth in a writing to be entered upon the books and records of the Corporation, and be it

RESOLVED FURTHER, that all prior acts by the individuals who served as officers of the Corporation prior to the date hereof are ratified, affirmed and approved so long as taken in good faith and in the best interests of the Corporation; and be it

RESOLVED FINALLY, that all prior acts by the individuals who served as officers of the Corporation, and each of them, in connection with the foregoing resolutions and any and all other documents, instruments or agreements delivered in connection therewith to carry out and effectuate the purposes and intent of the foregoing resolutions be, and they hereby are, ratified, authorized, and approved with the same effect as if specifically authorized and approved by the Board of Directors at or prior to the time at which such acts and things were done or performed.

Dated: February 3, 2017

George J. Palko

Jeffrey W. Tarnowski

James W. Fox

Attest: Kurtis L. Knapp, Secretary
2608 Great Lakes Way
Hinckley, OH 44233
State of Incorporation: Ohio

Sworn to before me and subscribed in my presence this 3rd day of February, 2017.

Notary Public
My Commission Expires: May 3, 2020

NOTARIAL SEAL STATE OF OHIO

SHEILA A. KAVALEC
NOTARY PUBLIC
FOR THE
STATE OF OHIO
My Commission Expires
May 3, 2020

CERTIFICATE

I, the undersigned, Vice President, Treasurer and Secretary of The Ruhlin Company, a Corporation duly organized and existing under the laws of the State of Ohio, hereby CERTIFY that the attached is a true copy of a certain resolution duly adopted by the Board of Directors of said Corporation in accordance with the By-Laws at, and recorded in the minutes of, a meeting of said Board duly held on April 27, 2017, and not subsequently rescinded or modified.

I further CERTIFY that the person whose name, title, and signature appears below is a duly elected, qualified, and acting officer of said Corporation and holds on the date of this Certificate the office set opposite his name, and that the signature appearing opposite his name is the genuine signature of said officer:

Name of Officer	**Title of Officer**	**Signature of Officer**
James L. Ruhlin	President & CEO	

IN WITNESS WHEREOF, I have hereunder set my hand and affixed the seal of said Corporation this 20 day of December, 2017.

Russell F. Gregory
Vice President, Treasurer & Secretary

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FORM C-1 DBT INFORMATION

DBT:	Trumbull-Great Lakes-Ruhlin, a Joint Venture
Contact Person:	Mr. Bryon Breese, P.E., DBIA
Address:	225 North Shore Drive PO Box 6774 Pittsburgh, PA 15212
Telephone Number:	412-807-2000
Email Address:	bryon.breese@trumbullcorp.com

DB Contractor:	Trumbull-Great Lakes-Ruhlin, a Joint Venture
Contact Person:	Mr. Bryon Breese, P.E., DBIA
Address:	225 North Shore Drive PO Box 6774 Pittsburgh, PA 15212
Telephone Number:	412-807-2000
Email Address:	bryon.breese@trumbullcorp.com

DB Designer:	HDR Engineering, Inc.
Contact Person:	Mr. Ken Fertal, P.E., P.S.
Address:	1100 Superior Avenue Suite 650 Cleveland, OH 44114
Telephone Number:	216-912-4240
Email Address:	ken.fertal@hdrinc.com
Ohio Registration Number:	01885

IQF:	TranSystems Corporation of Ohio
Contact Person:	Mr. Nabil Farah, P.E.
Address:	55 Public Square Suite 1900 Cleveland, OH 44113
Telephone Number:	216-861-1780
Email Address:	nffarah@transystems.com

PART F.2

Appendix 2 - Project Management
Key Personnel Resumes

Adam Belasik

DB Project Manager

Adam will lead the project, managing the team's overall efforts to deliver the project in accordance with the contract requirements. He will have full authority to make final decisions on behalf of the DB team, serving as the primary point of contact with ODOT. Adam has experience in the heavy highway construction industry with an emphasis on large bridge and highway projects, including the CCG2.

"Working with the TGR joint venture has been fantastic. Team members are integrated, professional and accountable. I believe in the opportunity corridor and how it will make a positive impact on the community."

ODOT Project 133000, Cleveland Innerbelt CCG2, Cleveland, OH ($273M)

Adam is the DB Project Manager for this complex, DB bridge project. This project is part of a program of projects for the reconstruction of the existing interstate highways around the central business district of Cleveland, OH. The scope of work involves the replacement of the existing I-90 Central Viaduct, with a new eastbound I-90 bridge. This nearly 4,000-foot-long bridge spans the Cuyahoga River, Norfolk Southern RR, CSX RR, and Cleveland's RTA at over 115 feet tall, and involves complex steel erection with a delta frame configuration. Under Adam's leadership, Trumbull, GLCC and Ruhlin successfully merged cultures and processes to become a seamless, integrated team. Adam's oversight has led the project team to exceed DBE and OJT goals, while also establishing strong relationships among the joint venture and local entities. We will leverage these relationships during OC3.

MDOT, ICC Contract C, Montgomery & Prince George's Counties, MD ($528M)

Adam was Regional Manager and Project Executive on this DB highway project. The project included the construction of 4.5 miles of limited-access highway, two major interchanges, and 24 bridges. This project won several excellence awards from the American Concrete Institute, a national DB award in transportation, the best transportation project from ENR, the Globe award from ARTBA, and the Top Roads award from Roads & Bridge Magazine.

ICC-D/E DB, Montgomery & Prince George's Counties, MD ($87M)

Adam was Project Executive for this DB project, consisting of a one-mile extension of the InterCounty Connector Toll Road from I-95 (The DC Beltway) to Route 1. Work included a new interchange at Virginia Manor Road along with extensive work to widen both Route 1 and Virginia Manor Road. Work included the extensive construction of Collector Distributor (CD) roads along one of the heaviest traffic volumes and environmentally sensitive areas in the country, I-95 (the DC Beltway). As Senior Executive, Adam provided oversight of the ICC-D/E project, similar to that on the ICC-C previously completed project, focusing on safety, schedule and resource monitoring. Adam worked closely with the construction team responsible for all field construction operations.

Cuyahoga River Bridge, Peninsula, OH ($51M)

Adam managed this project for the construction of twin, 2,660-foot bridges, 175 feet above the Cuyahoga River. They included a 900-foot, segmentally constructed, precast, post-tensioned concrete girder unit flanked by two precast, prestressed concrete girder units. Work also included the demolition of the two 2,600-foot existing steel truss bridges, which was self performed by the team. As Project Manager, Adam was responsible for project oversight and worked directly with the JV construction manager and team daily to meet project schedule, safety, quality and cost control goals.

Port Authority of Allegheny County, North Shore Connector Tunnel and Gateway Stations, Pittsburgh, PA ($205M)

Adam was Project Executive on this project that was one of many involved in the completion of the North Shore Connector, which extended the Pittsburgh T subway system from downtown to the North Shore. The work involved the boring of twin, 22-feet-diameter tunnels; a cut-and-cover tunnel; and two light rail stations; including monitoring all the buildings adjacent to the alignment, maintenance and protection of traffic, and replacing the sidewalks and streets. As full-time, on-site Executive Manager, Adam was responsible for overall management of the JV team and its execution of work on this project, focusing on safety, schedule, owner relations, subcontractor relations and cost accountability.

SR 0279 (A06 & A07), Fort Pitt Bridge and Tunnels, Pittsburgh, PA ($90M)

Adam managed the rehabilitation of the Fort Pitt Bridge and Tunnels. The project was one of the region's busiest arteries, carrying 148,000 daily commuters. As Project Manager, Adam was responsible for overall daily management of the entire project and attended all owner progress meetings, with ultimate accountability for the construction team's performance to Pennsylvania DOT and Trumbull.

I-79 Sec A12, Kirwan Heights, PA ($96M)

Adam managed this project, which included the reconstruction of six miles of six lanes of interstate roadway along with three major interchanges, including 21 bridges, on western Pennsylvania's busiest section of I-79. Adam was on the job 100 percent of the time and was completely responsible for all site management and construction work, including safety, subcontractors, cost and owner relations. He also led the value engineering redesign of the roadway section that substituted rubbilized and recycled concrete pavement with an asphalt concrete overlay for the original design, saving the owner more than $1M.

HIGHLIGHTS

FIRM
- Trumbull Corporation

EDUCATION
- BS, Civil & Environmental Engineering, Clarkson University

REGISTRATIONS
- N/A

OFFICE LOCATION
- Cleveland, Ohio

YEARS OF EXPERIENCE
- 38 total (25 with Trumbull)

RELEVANCE/BENEFITS TO THIS PROJECT
- Current TGR Project Manager, CCG2
- D12 and large DB experience
- Diversity, inclusion and outreach
- Third party stakeholder and utility coordination
- Roadway construction
- Bridge construction
- Utility relocation
- Railroad track relocation/ coordination

Ryan Simon, PE, CPESC

DB Rail/Utilities/City Coordinator

Ryan has 12 years of experience managing transportation projects with complex local government and utility coordination components. He is currently working in the estimating department, bidding on large ODOT design-bid-build and DB projects. Ryan has been involved during the entire bid pursuit of OC3, and he will move directly into the field as the DB Rail/Utility/City Coordinator. His project management experience, in contract administration, maintaining CPM schedules, conducting progress meetings, and official correspondence with the owner, will support the transition to DB Rail/Utility/City Coordinator. Ryan will coordinate with utilities, railroads, city/local representatives and other third parties, and will have authority to make commitments on behalf of our DB team. He will report directly to DB Project Manager Adam Belasik and work with both design and construction team members.

"Growing up locally, I have experienced the ups and downs of the region. The ability to create new economic development, new jobs and a new identity for a forgotten community by constructing a transportation project is a unique opportunity."

ODOT Project 120630, West 65th Street Bridge Replacements, Cuyahoga County, OH ($6M)

Ryan managed the removal and replacement of one vehicular and two pedestrian bridges over GCRTA and NS Railroads in Cleveland's Eco Village neighborhood. The project involved the removal and installation of a canopy install/removal and support of catenary upon removal of existing bridge. His responsibilities included project startup, coordination of project safety, project planning and scheduling, and coordination with utilities (Verizon, CPP, CEI and CWD) and railroads throughout the first one-third of the contract.

Cleveland-Cuyahoga County Port Authority, Railroad Improvement Project, Cuyahoga County, OH ($4M)

Ryan was the Project Manager for this railroad improvement project to improve shipping capabilities at the Cleveland-Cuyahoga County Port Authority. The project included more than 7,400 feet of new track installation, which included a connection to NS Railroads. Work also included the construction of a railroad bridge to enable future service to Essroc cement. He oversaw all aspects of project construction, including owner relations and utility (CPP, NEORSD, CWD and AT&T) and rail coordination.

ODOT Project 110095, E. 93rd Street Bridge Rehabilitation, Cuyahoga County, OH ($4M)

Ryan was the Project Manager for the removal and replacement of the E. 93rd Street bridge over GCRTA and NS Railroads, the same busy rail corridor as OC3. He oversaw all aspects of project construction, including owner relations and utility (CPP, CWD) and rail coordination.

CSX National Gateway Initiative, Universal Interlocking, Portage County, OH ($1M)

Ryan managed these two universal interlocking projects to improve flow of rail traffic by increasing the use of double-stack trains. The projects included the reconstruction of 13,000 feet of track. He oversaw all aspects of project construction, including owner relations and utility coordination.

CSX DB National Gateway Initiative, 5th Street Bridge Replacement, Trumbull County, OH ($2M)

Ryan was the Project Manager of this DB project to improve the flow of rail traffic by increasing the use of double-stack trains. The work included the relocation of highly sensitive Verizon fiber optics; as well as the community's assurance of the new bridge design and construction after a train derailment caused the collapse of the existing structure. He oversaw all aspects of project construction, including DB coordination.

ODOT Project 103017, DB Bridges over IR-90, Ashtabula County, OH ($1M)

Ryan managed this DB project that required the rehabilitation of three bridges over IR-90. The work included bridge replacement, hydro-demolition and roadway sealing. He oversaw all aspects of project construction, including DB coordination.

ODOT Project 080598, Front Street Grade Crossing Elimination, Cuyahoga County, OH ($18M)

Ryan was the Project Engineer for the construction of new bridges over NS Railroad and CSXT to eliminate railroad at-grade crossings. The one-mile, five-lane roadway included 25,000 LF of underground utility installation and 67,000 SF of MSE walls. His responsibilities included field crew supervision, utility (Berea Water, Columbia Gas, TW Cable, First Energy) and rail coordination, cost management, shop drawings, schedule maintenance, quality control, material procurement, quantity tracking, RFI and change order initiation, city coordination, and subcontractor management.

City of Lorain

Ryan was the Lead Design Engineer and Construction Project Manager while employed by the City of Lorain. He led roadway and utility projects from inception, into the design and construction phases through project closeout. Ryan coordinated with several utilities (Lorain Water & Sewer, First Energy, Century Link, Time Warner Cable, Columbia Gas) during the design and construction phases. Coordination included pre-planning and review with affected utilities as well as on-site coordination during construction between the utility and contractor. Ryan's design and construction experience was integral to successfully coordinating the utilities and contractor.

HIGHLIGHTS

FIRM

- The Great Lakes Construction Co.

EDUCATION

- BS, Civil Engineering, University of Toledo

REGISTRATIONS

Professional Engineer

- OH, No. 73102
- CPESC: 5225

OFFICE LOCATION

- Hinckley, Ohio

YEARS OF EXPERIENCE

- 14 total (7 with Great Lakes)

RELEVANCE/BENEFITS TO THIS PROJECT

- Railroad track relocation/ coordination
- Third party stakeholder and utility coordination
- DB experience
- Roadway construction
- Utility relocation

PART F.3

Appendix 3 - Design and IQF Key Personnel Resumes

Ken Fertal, PE, PS

DB Design Project Manager

Ken serves as Senior Project Manager in HDR's Cleveland office. He brings 24 years of experience on projects involving complex roadway structures, drainage, utilities, survey and right-of-way design elements. He has worked for clients across the state of Ohio, including ODOT, the Ohio Turnpike and Infrastructure Commission, and numerous counties and cities. Ken will report directly to the DB Project Manager and will have full authority to direct all aspects of design for HDR and its subconsultants.

"Born and raised in Cleveland, I have been a part of many projects that benefit the traveling public, but provide little benefit to community revitalization. To take part in a project that flips this stigma 180 degrees not only makes me excited as an engineer, but makes me proud as a Clevelander."

ODOT Project 103000 Cleveland Innerbelt CCG1, DB, Cleveland, OH ($283M)

Ken served as Roadway Design Manager for ODOT's first major DB construction project of the Cleveland Innerbelt Program. This involved design and construction of a new bridge over the Cuyahoga River Valley on I-90. Innovative ideas resulted in significant cost savings, including ideas such as lowering the main viaduct profile and allowing the Ontario Ramp to merge with the mainline sooner than originally planned. Ken was responsible for design and coordination with the DB contractor on all design aspects under the disciplines of roadway, environmental, landscaping, drainage, utilities, waterlines, traffic control, lighting and aesthetic enhancements. Ken was involved in construction, coordinating all RFIs and NDCs with the design team.

ODOT, General Engineering Services, Cleveland, OH ($1.175M)

Ken managed a General Engineering Services contract with District 12, working as an extension of the District's staff on eight task orders. Design task orders included slope failure repairs, bin wall replacement, deck rehabilitation, noise barrier installation, redesign of a pedestrian bridge, emergency repair of a cracked bridge beam, and design review of a heavily skewed bridge over I-77 in Independence. He also managed two design consultants for the rehabilitation of an interchange and rural road widening to accommodate Amish buggy lanes. Ken led the team to meet all submission dates and to achieve budgets at or below the negotiated fees. HDR's recent contract evaluation received a rating of 87, and noted, "Project Manager provided excellent response to the various changes to work requests and the demanding compressed timelines."

ODOT Project 95639 FRA-70, The Far East Freeway, Columbus, OH ($85M)

As Project Manager, Ken is responsible for the final design of Phase 1 of the Far East Freeway, which partially reconfigures the system-to-system interchange of IR-70 and IR-270 and the interchange of IR-70 and Brice Road. Ken manages the team of HDR and five subconsultants to design 10 bridges, two of which are multi-span flyover structures; 14 walls; improvements to I-70 and I-270; along with eight ramps, drainage, maintenance of traffic (MOT), traffic control and lighting.

ODOT Project 77628 HAM-71-0381, MLK DB, Cincinnati, OH ($80M)

Ken was the MOT Lead for this fast-paced DB project to create a new interchange at the I-71 corridor in the Uptown area of Cincinnati. The project constructed a new combined, tight-diamond and folded-diamond interchange at MLK Drive. As MOT Lead, Ken worked directly with roadway and structure engineers and contractors to develop phasing plans for I-71 and all local roads to be included in 10 Buildable Units. Ken led the coordination between the contractor, City of Cincinnati and ODOT to close I-71 for a weekend for the removal of a railroad structure spanning the freeway.

ODOT Project 93592 WOO/LUC-75-30.10/0.00, Toledo, OH ($215M)

As Project Manager, Ken is leading the design of a major reconstruction on I-75 between Glenwood Road and Segue Road in Toledo that includes upgrading 3.48 miles of interstate along with three interchanges and six bridges, one being over the Maumee River. He is responsible for HDR's subconsultant role to design the reconstruction of the South Avenue interchange, perform traffic control for the entire project, rehabilitate and widen a three-span structure, and design a new simple-span structure over railroad.

ODOT Project 81746 FRA-23-22.23, Columbus, OH ($65M)

Ken was Project Manager of the final stages of design to reconstruct the I-270/US 23 systems interchange. A key component was to provide relief to the US 23 off-ramps by construction of a trench for NB through traffic. During final design stages, plans were expedited by three months. Ken led all design disciplines in a series of work sessions with members of ODOT and the cities of Columbus and Worthington, to expedite comment resolution and to perform constructability reviews. In response to a major concern of traffic congestion in construction, Ken helped develop an alternative concept to utilize a continuous flow intersection at the US 23 and I-270 interchange. This would switch the NB and SB movements to allow the intersection to have the exit ramp merge with US 23 on a green phase instead of waiting for a separate left-turn phase.

ODOT MOT-75-12.00 Interchange Reconstruction, Dayton, OH, ($125M)

Lead Roadway Designer responsible for the coordination of all roadway efforts among four subconsultants, for the I-75 Phase 2 reconstruction project in downtown Dayton. The project included the design and construction of a third continuous through lane in each direction on I-75 and the replacement of 15 structures, including two major Great Miami River spans, for the 1.11-mile stretch of mainline. Two existing interchanges were redesigned into a single interchange, providing the critical link from I-75 to the central business district. His work included a complex, nine-phase MOT plan, currently underway. With roadway and MOT teams working closely, proposed alignments were set off line, allowing for the contractor to work for almost a year without disruption of I-75 traffic.

HIGHLIGHTS

FIRM
- HDR

EDUCATION
- BS, Civil Engineering, Cleveland State University, 1997

REGISTRATIONS

Professional Engineer
- OH, No. 67122

Professional Surveyor
- OH, No. 8262

OFFICE LOCATION
- Cleveland, Ohio

YEARS OF EXPERIENCE
- 24 total (5 with HDR)

RELEVANCE/BENEFITS TO THIS PROJECT
- Large DB experience in Ohio
- Experience with local municipalities and District 12
- Third party stakeholder coordination experience
- Heavy highway and urban roadway design
- Utility relocation design
- Lifelong Cleveland resident

Joanne Shaner, PE

DB Lead Structural Engineer

Joanne is the Section Manager for HDR's Ohio structures group. She works out of the Cleveland office, and has 20 years of project management and design experience. Joanne's experience includes several years of bridge design and analysis for steel and concrete structures, plan development from type studies to final design, retaining wall layout and design, bridge inspection, and structure load ratings. She also has many years of project management experience, where she has been responsible for the successful completion of a variety of transportation-related projects, including roadway realignment projects, railroad bridge rehabilitation, roadway bridge rehabilitation, bridge replacement, construction projects, and general engineering services contracts.

"I have watched the City of Cleveland revitalize as I come and go for work and fun every day. It has been wonderful watching Euclid Avenue come back to life along with many other areas of downtown Cleveland. This project expands that revitalization further east."

CUY-90-14.90 – Cleveland Innerbelt Bridge (CCG1), Cleveland, OH ($283M)

After joining HDR, Joanne served as a Senior Bridge Engineer as part of the team for the design and construction of the new bridge over the Cuyahoga River Valley on I-90, along with associated approach work and improvements to the local street network. HDR served as the IQF responsible for maintaining the accuracy, standardization, and correctness of all design plan submissions completed by the DB team. Construction review services included comprehensive reviews of Notice of Design Changes, Requests for Information and inspection of the work being performed. HDR also prepared and tracked all Non-Compliance Reports for the project. Joanne's responsibilities included review of a variety of bridge-related items.

CUY-77/90.14.96/16.33, Cleveland Innerbelt CCG3, Cleveland, OH ($380M)

Joanne is the Project Manager for HDR's portion of this project. The work for this portion of the corridor generally includes the reconstruction of I-90 Eastbound and Westbound between East 9th Street and Carnegie Avenue. HDR's scope includes roadway, drainage, structure design and plan development. Specifically, HDR is developing the conceptual and final drainage for the entire project, the roadway alignments and plans for the ramps from the local roads to and from I-90, and the design and final plans for four structures and nine retaining walls. The structures include a large, curved-girder steel structure and two additional steel structures on the flyover ramp from I-90 WB to I-77 SB and one highly skewed two-span steel structure on Carnegie Avenue over I-90.

MOT-75 Interchange Reconstruction, Dayton, OH ($230M)

Joanne served as the Deputy Project Manager and Structures Lead for the I-75 Phase 2 reconstruction project in downtown Dayton. Joanne was responsible for overseeing the design and plan development for seven new structures of various span arrangements, including the two, new major structures over the Great Miami River, and six MSE walls. Coordination included the involvement of several in-house teams as well as coordination of multiple subconsultants. Two of the structures are precast concrete I-beam bridges and the remaining five are steel girder bridges. The project included the design and construction of a third continuous through lane in each direction on I-75 and the replacement of 15 structures — including two major Great Miami River spans — for the 1.11-mile stretch of mainline. Two existing interchanges were redesigned into a single interchange, providing the critical link from I-75 to the central business district.

FRA-270 Reconstruction, I-270/SR 315/U.S. 23, Columbus, OH ($65M)

Joanne served as the Deputy Project Manager and Structures Lead for this project, which consisted of the redesign and reconstruction of the I-270/SR 315/U.S. 23 systems interchanges in Columbus to mitigate this congested, high-crash location. Approximately 16 lane-miles within the two interchange areas on I-270 and 13 bridges will be reconstructed. The project involved two closely spaced interchanges being redesigned with directional ramps and collector-distributor roads to eliminate the weaves that are causing the congestion. A key component of the project was to provide relief to the U.S. 23 off-ramps by constructing a trench for through traffic on the U.S. 23 arterial bottleneck, north of the interstate mainline. The trench components consisted of soil nail walls, soldier pile walls, and partial and full-width structure crossings.

Jeremiah Morrow Bridge Construction, WAR-71-1514, Warren County, OH ($88M)

Joanne served as Project Manager during construction and was responsible for leading the construction phase for the new, 2,230-foot Jeremiah Morrow Bridges over the Little Miami River. The cast-in-place, unbalanced cantilever segmental twin structures replace the 40-year-old, twin, two-lane structures that were functionally obsolete. The consultant's role during construction is to respond to RFIs, continuously model the structure as it is being constructed to verify contractor's measurements, review engineering submittals from the contractor, perform site visits at critical construction times, and attend various meetings, including partnering meetings, Dispute Resolution Board meetings, and project meetings.

East 105th Street/MLK Jr. Drive Intersection Study, Cleveland, OH ($8M)

Joanne managed the design and development of construction documents for improvements to the E. 105th St./Martin Luther King, Jr. Dr. intersection in the University Circle area of Cleveland. The consultant provided planning and design engineering services for the reconfiguration of the E. 105th Street/MLK Intersection. The comprehensive planning and design phase services included public involvement, environmental documentation (including Section 106 and 4(f) coordination), utility coordination, preliminary engineering, and detailed design of the various local roadways and two pedestrian bridges.

HIGHLIGHTS

FIRM

- HDR

EDUCATION

- MS, Civil Engineering, Ohio University, 1996
- BS, Civil Engineering, Ohio University, 1994

REGISTRATIONS

Professional Engineer

- OH, No. 67029

OFFICE LOCATION

- Cleveland, Ohio

YEARS OF EXPERIENCE

- 20 total (5 with HDR)

RELEVANCE/BENEFITS TO THIS PROJECT

- Large DB experience in Ohio
- Experience with local municipalities and District 12
- Complex steel and concrete structure design
- Railroad bridge design and coordination
- Managed large teams on complex projects
- Local Cleveland resident

Dennis Jennings, PE

Roadway Engineer

Dennis is a Roadway Section Manager at HDR. His background includes managing and designing roadway improvement projects, geometric design, storm sewer design, traffic and planning projects, pavement marking design, maintenance of traffic, right-of-way layout, cost estimating and other transportation engineering activities. Dennis is a seasoned roadway engineer who has spent 22 of the past 26 years designing projects for ODOT and municipalities and counties in Ohio. His experience includes new alignments, widening, reconstruction, intersection improvement, safety corrections, bridges, and railway work. From lighting to traffic, structures and roadways, Dennis has designed corridors to improve safety of infrastructure for the community.

"I'm looking forward to relocating to Cleveland and working on this project — it has great potential! In addition to improving community access, it has many opportunities for improvements that are not only aesthetically appealing but functional."

ODOT HAM-71-0381 (MLK DB), Cincinnati, OH ($80M)

Dennis is the Roadway Design Manager for the DB of a local street network and the I-71 corridor to improve access to the Uptown area of Cincinnati, thereby enhancing economic vitality, reducing travel times, and simplifying wayfinding. The team reconstructed nearly two miles of I-71 roadway and eight new or rehabilitated bridges on or over I-71. Dennis oversaw the significant redesign of the local roadway, southbound I-71 ramps, and modifications to northbound ramps. This included a new, combined, tight-diamond and folded-diamond interchange at Martin Luther King, Jr. Drive.

FRA-70-16.17, Far East Freeway, Columbus, OH ($85M)

Dennis served as a Roadway Technical Adviser and Reviewer for this study and design for the Far East Freeway project. The project includes 10 miles of interstate, five service interchanges and one system interchange on I-70 east of Columbus. Dennis reviewed the preliminary plans and cost estimates for the study, and will provide quality control reviews for the design of the I-70/I-270 interchange.

CUY-90-29.22, Lakeland Boulevard Connector, City of Euclid, OH ($2M)

Dennis was the Roadway Reviewer, and managed the staff assigned to a superstructure/slab removal of two mainline bridges on I-90 over the Lakeland Boulevard Connector in the City of Euclid. He participated in a traffic feasibility study and conceptual MOT plan that recommended the removal of the Connector and converting South Lakeland Boulevard to two-way traffic. The study also proposed several recommendations to enhance traffic flow. The design for this project was completed in 2014 and was constructed by our JV partner, Great Lakes Construction, in 2015.

LUC-75-06.70, I-75 Widening, Lucas County, OH ($63M)

As Project Manager, Dennis led the final design of 1.76 miles of I-75 in Toledo. The project included adding a travel lane in each direction, auxiliary lanes between ramps, relocation of southbound lanes, removal of left-hand entrance ramp and ramp modifications. The project abuts the limits of LUC-75-03.99 and required close coordination of proposed improvements.

Innerbelt Bridge Construction Contract Group 1 (CCG1), CUY-90-14.90 DB, Cleveland, OH ($283M)

As an Independent Design Quality Roadway Reviewer, Dennis performed and documented over-the-shoulder, interim and final roadway reviews of the design of a new bridge over the Cuyahoga River Valley on I-90. The bridge accommodated six lanes of bi-directional traffic, and now supports five lanes of westbound through traffic.

SCI-823-0.00/6.81, Portsmouth Bypass, Portsmouth, OH ($800M)

Dennis was the Senior Project Engineer responsible for the quality control review of Stage 3 plans. Located in Southern Ohio, SR 823 is a proposed four-lane, limited-access facility through mountainous terrain. This approximately 10-mile section of the project involves several deep-rock cuts and high fills, each approaching 200 feet. The project includes three interchanges and numerous overpasses.

Butler County Engineer's Office, BUT-Maud-Hughes Road Over NS Railroad, Butler County, OH ($2.8M)

Dennis was the Roadway Project Manager for the replacement of a bridge structure on new alignment in Butler County. The project included a new, single-span structure on MSE walls that replaced a deteriorating bridge on substandard alignment. The new alignment provided a two-lane facility designed for 40 mph. This project included close coordination with ODOT, Butler County, NS Railroad and adjacent property owners to analyze the impacts in order to design an acceptable solution for the challenging alignment.

HAM-275-37.77/38.95/39.40, Interstate Bridge Rehab, Cincinnati, OH ($5M)

Dennis served as Roadway Project Manager for final design for the bridge rehabilitation of six structures on I-275 in southeast Hamilton County. The project included a maintenance of traffic alternative analysis (MOTAA) along a bifurcated section of I-275 for the rehabilitation of the US 52, Markley Road and Birney Lane overpasses. MOTAA included the preliminary schematics of contraflow and part-width construction strategies along with preliminary cross sections at hinge points.

HAM-CR612-0.20, West MLK Drive, Cincinnati, OH ($10M)

Roadway Manager and QC Reviewer for this roadway realignment project that included the study, design, and preparation of construction plans for the City of Cincinnati along MLK Drive. The project widened the existing, narrow, four-lane road to a five-lane section, including a multiuse path. The project was coordinated with the ODOT project to reconfigure the I-75 Hopple Street Interchange. The Plans were developed utilizing AutoCAD and Civil 3D.

HIGHLIGHTS

FIRM

- HDR

EDUCATION

- BS, Civil Engineering, University of Cincinnati, 1991

REGISTRATIONS

Professional Engineer

- KY, No. 20639
- OH, No. 59444

OFFICE LOCATION

- Cincinnati, Ohio

YEARS OF EXPERIENCE

- 26 total (7 with HDR)

RELEVANCE/BENEFITS TO THIS PROJECT

- Large DB experience in Ohio
- Complex urban and interstate roadway design experience
- Utility relocation design
- Railroad track relocation/ coordination
- Managed multi-disciplined teams on complex projects
- Complex MOT planning and design

Nabil Farah, PE

Design IQF Project Manager

Nabil is a Senior Project Manager with TranSystems and has extensive experience in structural engineering, primarily involving highway and bridge improvements. He is responsible for the management, design and preparation of construction plans and specifications on various projects for various departments of transportation, including ODOT. His authority is to ensure that the requirements of the Design Quality Management Plan are being met and manage matters related to design quality.

"This is a nice opportunity to take part in a project that will make such a positive impact on the community. Having worked on a billion dollars of work for ODOT, this project will be one of the most impactful ones to the surrounding area."

ODOT Project 143000 SR 823 Portsmouth Bypass Design-Build Portsmouth, OH ($776M)

Nabil served as the project manager for TranSystems and was responsible for the design and plan preparation of 25% of the project which included approximately 5 miles of roadway and 8 bridges including 2 curved bridges over NSRR. The project's design component began January 2015 and concluded in July 2016. The construction began in June 2015 and is projected to be completed in 2018. In 2015, The Portsmouth Gateway Group (PGG) was selected by ODOT under the first-ever Public-Private partnership (P3) to design and construct the project.

CUY-90-14.90 Cleveland Innerbelt Design-Build Cleveland, OH ($278M)

Chief bridge engineer responsible for providing pre-award plans on ODOT's first design-build project, the Innerbelt bridge and approaches for the HNTB/Walsh team. Project includes 3,200 foot main structure and approaches to the structure and three additional new bridges and 12 rehabilitated and widened structures. The project was awarded to the Walsh team at a cost of $287 million, approximately $120 million below ODOT's estimated cost.

ODOT Project 133026 I-71 Uptown/MLK Interchange/ HAM-71-3.81 Design-Build Cincinnati, OH ($84M)

Nabil served as the bridge project manager for the preparation of the 30% plans and scope for this $84 million fast paced design-build in the uptown area of the City of Cincinnati. This project included the development of alternatives to improve access between I-71 and the Uptown area of Cincinnati and the surrounding neighborhoods. The process included a multi-layered strategy for meaningful public involvement including a Steering Committee, larger Stakeholder Group, various public meetings, and a project website. The 30%plans included the following: Line-Grade-Typical Plans, RW Plans, Signal Warrant Analysis, Bridge Structure Type Study (7 locations), Real Estate Acquisition Services, and Detailed Cost Estimates. TranSystems is continuing to provide technical assistance to ODOT and the Design-Build team throughout construction of the new interchange.

ODOT Project 77332/85531 CUY-90-15.24 Innerbelt Westbound Structure Cleveland, OH ($287M)

Technical Reviewer. Bridge/structure technical reviewer responsible for performing an independent review of the foundation design of the main viaduct structure. The structure consists of 2,750 foot, 9-span delta girder frames on tall substructure units founded on HP 18X204 grade 60.

ODOT Project 13565 CUY-77-11.11 Various Rail Bridges Cuyahoga County ($10M)

Project manager/Chief bridge engineer. Nabil was responsible for providing preliminary and final design and final plans for three Newburgh and South Shore Railroad Bridges over I-77 in Cuyahoga County. These bridges consist of through girders simple span type structures ranging from 140 feet to 170 feet in length and supported on full height abutment walls.

ODOT Project 22222 CUY-77-1.89 Cleveland, OH ($95M)

Bridge project manager. Nabil was responsible for providing preliminary widening details and existing structure analysis for 13 mainline bridges and four overhead bridges as part of the widening of CUY-77 from Rockside Road to CUY-82 in Cuyahoga County.

ODOT Project 77255 LUC-75/475 Reconstruction Toledo, OH ($250M)

Nabil was bridge project manager responsible for providing widening details and existing structure analysis and/or replacement for 26 bridges to accommodate new alignments and interstate widening for the $250 million I-75/I-475 Interchange Modification project in Toledo. This busy systems interchange has the heaviest congestion and highest accident rate in the Toledo area. The preferred alternative includes five interchanges and 26 bridge replacements or widenings.

HIGHLIGHTS

FIRM

- TranSystems

EDUCATION

- M.S. Civil Engineering (concentration in Structures & Foundations), Cleveland State University, 1986
- B.S. Civil Engineering, Cleveland State University, 1984

REGISTRATIONS

Professional Engineer

- OH, No. 54420

OFFICE LOCATION

- Columbus, Ohio

YEARS OF EXPERIENCE

- 29 total (9 with TranSystems)

RELEVANCE/BENEFITS TO THIS PROJECT

- DB experience
- Local design experience

PART F.4

Appendix 4 - Construction Key Personnel Resumes

Jason Tucker, PE

DB Construction Project Manager

Jason is a proactive, skilled project manager who manages all aspects of construction. His duties include contract administration, submitting materials for approval, coordinating field supervision, maintaining CPM schedules, conducting progress meetings, and maintaining official correspondence with the owner. He is team oriented, engaging team members to tackle challenges together and informing them so everyone understands the project's goals. During this project, he will continue the cooperative partnering activities he executed during the Innerbelt project. Jason's authority is to manage the overall construction on the project and report directly to DB Project Manager Adam Belasik. He will be full time on site during construction.

"As a lifelong resident of the Cleveland area, I'm excited to work on a project to help develop a forgotten area and boost the economy of Cleveland. It's a challenging, complex project that I know the JV will manage well."

ODOT Project 133000, Cleveland Innerbelt CCG2, Cleveland, OH ($273M)

Jason was the DB Construction Project Manager on this project, working closely with Adam Belasik to manage the DB with an IQF as part of a program to reconstruct the existing interstate highways around the central business district of Cleveland. The project included demolition of the existing I-90 Innerbelt Bridge and construction of the eastbound GVV Bridge. This entailed construction of new concrete and asphalt pavement, drainage, retaining walls, 10 new bridge structures, piling and drilled caissons – many of these activities occurred simultaneously in different areas. In addition, he oversaw all aspects of the project construction, including operations, quality, safety and owner relations. This included the startup and management of a three-company joint venture: the TGR team.

ODOT Project 110255, US-50, Hamilton County, OH ($55M)

The project involved the demolition and reconstruction of the Waldvogel Viaduct in Cincinnati, OH. It included demolition of a 9.4-million-pound, half-mile steel bent girder-truss structure, placement of 42,000 SY of concrete pavement, construction of 58,000 SF of MSE walls, and building 15 bridges. The 248,000 SF of bridge deck included four curved-girder flyover bridges, one variable-width girder bridge widening, and four phased highway bridges. Major project challenges included removal of the existing structure in close proximity to active traffic and adjacent structures. The project included a $1.2M value engineering cost proposal. Jason oversaw all aspects of the project construction.

ODOT Project 110499, IR-90, Lake County, OH ($60M)

Jason managed the joint venture reconstruction and widening of eight miles of a four-lane divided highway, including 10 bridges. Jason's responsibilities included management of all shop drawings, procedures and submittals. In addition, he was the scheduling representative for the project.

ODOT Project 08597, SR 2, Lake County, OH ($92M)

This project involved the reconstruction and widening of five miles of six-lane divided highway, including 12 bridges. Major project challenges included phased construction of multiple bridges and minimizing construction access points for roadway and bridge reconstruction. Jason served as the Bridge/Structures Project Manager of this joint venture and oversaw the construction of all bridges, retaining walls and noise barriers. Responsibilities included management of all shop drawings, procedures, submittals and the scheduling representative for the project.

ODOT Project 08598, Front Street, Berea, OH ($18M)

Jason managed the construction of new structures over CSXT and Norfolk Southern Railroad, one mile of five-lane roadway, and 67,000 square feet of MSE walls. Both railroads had a high volume of traffic and were located in close proximity to each other. At-grade crossings existed up and over both railroads. Construction involved installation of utilities under the railroad track, construction of retaining walls adjacent to the railways, and construction of bridges over them. Close coordination was required to maintain safety, as high daily rail traffic occurred.

ODOT Project 068006, US-20 Major Reconstruction, Painesville Township, OH ($17M)

Jason managed the reconstruction and widening of three miles of five-lane roadway, including major drainage and traffic control enhancements. Major street utility coordination was required, as well as construction of the new roadway, sidewalks and landscaping. Jason oversaw all aspects of the project construction.

ODOT Project 056017, Adelbert Road Over GCRTA, NSRR, CSXT, Cuyahoga County, OH ($4M)

Jason served as Project Manager on this rail project, which included demolition and reconstruction of the structure over three railroads. Major project challenges included completion of work while maintaining pedestrian traffic and minimizing rail traffic disruption. Jason oversaw all aspects of the project construction.

ODOT Project 000239, IR-71 Third Lane Major Reconstruction, Medina County, OH ($75M)

This project included the reconstruction and widening of 11 miles of six-lane interstate highway, including earthwork, drainage, concrete paving, asphalt paving, 19 bridges and traffic control. Jason served as Project Engineer and Assistant Superintendent on the project.

HIGHLIGHTS

FIRM

- The Great Lakes Construction Co.

EDUCATION

- MBA, Cleveland State University
- BS, Civil Engineering, Ohio Northern University

REGISTRATIONS

Professional Engineer

- OH, No. 73247

OFFICE LOCATION

- Cleveland, Ohio

YEARS OF EXPERIENCE

- 18 total (18 with Great Lakes)

RELEVANCE/BENEFITS TO THIS PROJECT

- TGR Construction Project Manager on CCG2
- D12 and large DB experience
- Diversity, inclusion and outreach
- Third party stakeholder and utility coordination
- Roadway construction
- Bridge construction
- Utility relocation
- Railroad track relocation/ coordination
- ODOT experience

PART F.5

Appendix 5 - Community Involvement and Diversity & Inclusion Key Personnel Resumes

June Taylor

DB Diversity/Outreach Lead Manager

June is a skilled outreach manager with experience working with ODOT on community outreach on the OC2 project. June will manage the project-specific diversity and workforce development, reporting to DB Project Manager Adam Belasik. She will work closely with designers, constructors and ODOT during both design and construction to achieve ODOT's and local community goals with the respect to Outreach and Workforce Development.

"The Innerbelt and OC2 projects provide an excellent foundation for the success of diversity and inclusion during OC3. This next phase will put Cleveland leagues ahead of other cities in engaging the minority and disadvantaged communities."

Integral Management, Cleveland, OH, President (2015-Present)

June provides diversity and inclusion expertise to organizations and industry leaders regarding local community outreach efforts, developing and mentoring MBE/DBE and disadvantaged firms. She creates leading-edge workforce development strategies to solve lack of recession-proof job training and in-demand employment skills in locales where unemployment rates are consistently 30 percent and greater for certain demographics. She has demonstrated unique sensitivity and skillset and is keenly aware of urban and small business challenges with regard to size, scale, capacity and access to capital.

Highlights of her diversity and inclusion programs include:

- Outreach sessions featuring educational and networking sessions
- Career awareness
- Workforce development sessions
- Youth mentoring through public school, public club, and STEM programs
- Currently leading Workforce Development on OC2 with Great Lakes

MWV Pinnacle Advisory Services, Cleveland, OH, President (2007-2015)

June provided strategic due diligence to research industry sectors and entrepreneurs for one of the country's only private equity funds ($30M) based in Ohio, focusing on minority entrepreneurs, diverse management teams and economic development. This required thought leadership and analysis to support the fund's goals, guidelines and investment return parameters. MWV created one of the largest minority capitalists, and is considered one of the most creative workforce solution-oriented engines in the United States. Investors are drawn from Ohio's corporations in diversified manufacturing, financial services, foundations and the public sector. Her duties in this role included:

- Develop workforce and education support for urban and rural talent currently deemed "unemployable." Placed talent into workforce in portfolio companies in Canton, Akron, Dayton and Cleveland. Also Florence, SC; Wheeling and Huntington, WV; Show Low, AZ; Detroit, MI; and Chicago, IL.
- Provide advice and counsel on partnerships, alliances and the challenges of minority business development, including workforce, behavior and education training solutions.
- Collaborate with State of Ohio, county, municipal workforce, education and economic development agencies to secure loans, grants and tax credits for the fund's portfolio companies.
- Partner with CEO and senior leadership in Northeast Ohio to assist in developing minority capitalists of size and scale, appropriate for MWV Pinnacle's investment targets.
- Develop the MWV Entrepreneur & Management Certification Due Diligence Process, which has certified more than 25 individuals out of 4,300 applicants and management teams for funding consideration, thereby allowing them to be presented to the Board of Advisors (e.g., 10 leading CEOs in Northeast Ohio).

MWV Pinnacle Capital Fund, Ltd., Cleveland, OH, Vice President (2003-2007)

June provided vision and support to the managing partner regarding training and developing talent with limited education (<9th grade reading and math proficiency levels) into productive resources for three portfolio companies located in challenging locales throughout the United States.

The Redmond Group, Cleveland, OH, President (1997-2003)

June created this consulting firm to provide executive search, staffing design, executive coaching, organizational development and training. Her clients included Eaton Corporation, General Motors, ING Financial Services, The Northcoast Fund, Charles Schwab, Sara Lee Corporation, Shorebank Cleveland Corporation and Cuyahoga Community College.

HIGHLIGHTS

FIRM

- Integral Management

EDUCATION

- Master of Management, Concentrations in Finance, Marketing and Organizational Development, 1993
- BS, Industrial Engineering, 1997

REGISTRATIONS

- N/A

OFFICE LOCATION

- Cleveland, Ohio

YEARS OF EXPERIENCE

- 15 total (1 with Integral Management)

RELEVANCE/BENEFITS TO THIS PROJECT

- OC2 Workforce Development Team Leader, statewide trend-setting outreach leader (working with Great Lakes)
- DB experience
- Diversity, inclusion and outreach
- Local knowledge of the community in Wards 4, 5 & 6
- Established relationship with ODOT D12 and Central Office personnel

Jacqueline (Jackie) Jacob

Contractor Diversity/Outreach Lead Manager

Jackie is a project engineer who specializes in contractor diversity and outreach. She is currently serving in this role for OC2, working with the OC2 Contractor Diversity/Outreach Lead Manager on the tracking and documentation of project goals for Small, New, Local, Economically Disadvantaged Businesses (EDGE), On-the-Job Training (OJT) hours and Cleveland Residents hours. Previously, she served in a community outreach role on the second phase of the George V. Voinovich Bridge, mentoring and educating local students as well as tracking and documentation of DBE goals. This detailed reporting assisted ODOT with communicating to concerned local individuals and educating that TGR was executing all contract and technical proposal requirements. Jackie will be on site 100 percent of the time on OC3, assisting with the tracking and documentation of diversity and inclusion statistics as well as the buyout of the project to meet or exceed all project goals. During OC3, Jackie will also lead the youth educational component of our team's Diversity, Inclusion and Opportunity Plan (DIOP).

"Connecting the community and making opportunities available to the neighborhoods are extremely important. OC3 will have an even bigger impact on diversity inclusion than OC2. I'd be thrilled to expand on what we've accomplished."

ODOT Project 163000, Opportunity Corridor 2, Cleveland, OH ($35M)

Jackie is the Contractor Diversity/Outreach Lead for Opportunity Corridor 2. She works closely with the lead diversity and inclusion consultant, workforce consultant, and public information person to develop and implement a thorough diversity and inclusion effort. During the project she focuses on:

- **Planning and Participation in Diversity and Inclusion Outreach Sessions:** Jackie assists in the planning of, and attends, outreach business sessions, which feature an educational component as well as networking sessions.
- **Tracking and Reporting:** She meets with ODOT and team during biweekly meetings to inform the team of project progress; handles all tracking of Diversity and Inclusion participation; and creates and maintains biweekly logs. She also monitors OTJ training hours, proposal and scope commitments.
- **Youth Mentoring:** Jackie participates in the ACE mentoring program and works with Cleveland Metropolitan School District STEM programs to educate students on careers in the industry through instruction and hands-on activities. She also participates in educational sessions with the Boys and Girls Club.
- **Career Education:** Jackie helps coordinate career awareness and workforce development sessions.

ODOT Project 133000, Cleveland Innerbelt CCG2, Cleveland, OH ($265M)

Jackie was a Contractor Diversity Aide and Project Engineer on this ODOT DB best value project. Jackie worked with the project Diversity and Inclusion Consultant to document the project goals along with active involvement with youth mentoring. Additional duties included:

- **Business Matchmaking:** Jackie worked with Steve Layer and Jason Tucker to develop and implement outreach matchmaker sessions. Disadvantaged firms were invited to the event and given the opportunity to discuss their business's strengths and how they might fit into the project.
- **Youth Mentoring:** Jackie participated in the ACE mentoring program and worked with Cleveland Metropolitan School District STEM programs to educate students on careers in the industry through instruction and hands-on activities.
- **Tracking and Reporting:** Jackie met with ODOT and the team during biweekly meetings to inform the team of project progress, handled all tracking of Diversity and Inclusion participation, and creates and maintains biweekly logs. She also monitored on-the-job training hours, proposal and scope commitments. She compiled a DBE quarterly report that would document matchmaker sessions and prepare project paperwork for the ODOT DBE audits.

In addition to her diversity and inclusion role, Jackie also assisted with project management of field engineering.

City of Youngstown, V & M Star Brier Hill Park Phase 2, Youngstown, OH ($14M)

Jackie was the Project Engineer for the expanded rail facilities on approximately 105 acres of property into a new industrial park. The work included site excavation and embankment construction, removal of unsuitable and excess materials, site grading, construction of new track drains and under drains, construction of 80,000 feet of new railroad track, including sub ballast and ballast, boring and jacking utility crossings and installation of chain link fence.

COMMUNITY INVOLVEMENT

- **ACE Mentoring (2014 and 2015):** Helping students in the Max Hayes program with a project on an ACE topic throughout the fall and winter. Prepared a presentation to give in a competition with other schools where they can win scholarships.
- **Presentations/After-school Activities at Marion Sterling and George Washington, Grades 6-8 (2014):** Gave presentations on TGR, careers in construction and also participated in a hands-on activity.
- **CMSD STEM Engagement Pilot Program With Orchard and Urban Community Schools (2015):** Min. of six sessions of 1.5 hour at each school with 6th to 8th grade students, providing construction engagement, informative hands-on challenges and activities, tour and presentations with competitions.
- **Numerous School Tours** (2014 and 2015)
- **CMSD STEM Fair Showcase (2014):** Helped present and judge for bridge building competition.
- **St. Martin De Porres High School Work-Study Program, Coordinator** (2015)

HIGHLIGHTS

FIRM
- The Great Lakes Construction Co.

EDUCATION
- BS, Civil & Construction Engineering, Youngstown State University
- AAS, Drafting & Design Tech, Youngstown State University

REGISTRATIONS
- N/A

OFFICE LOCATION
- Cleveland, Ohio

YEARS OF EXPERIENCE
- 5 total (5 with Great Lakes)

RELEVANCE/BENEFITS TO THIS PROJECT
- Contractor Diversity & Outreach Lead Manager on OC2
- Contractor Diversity Aide on CCG2
- DB experience
- Diversity, inclusion and outreach
- Youth education

PART F.6

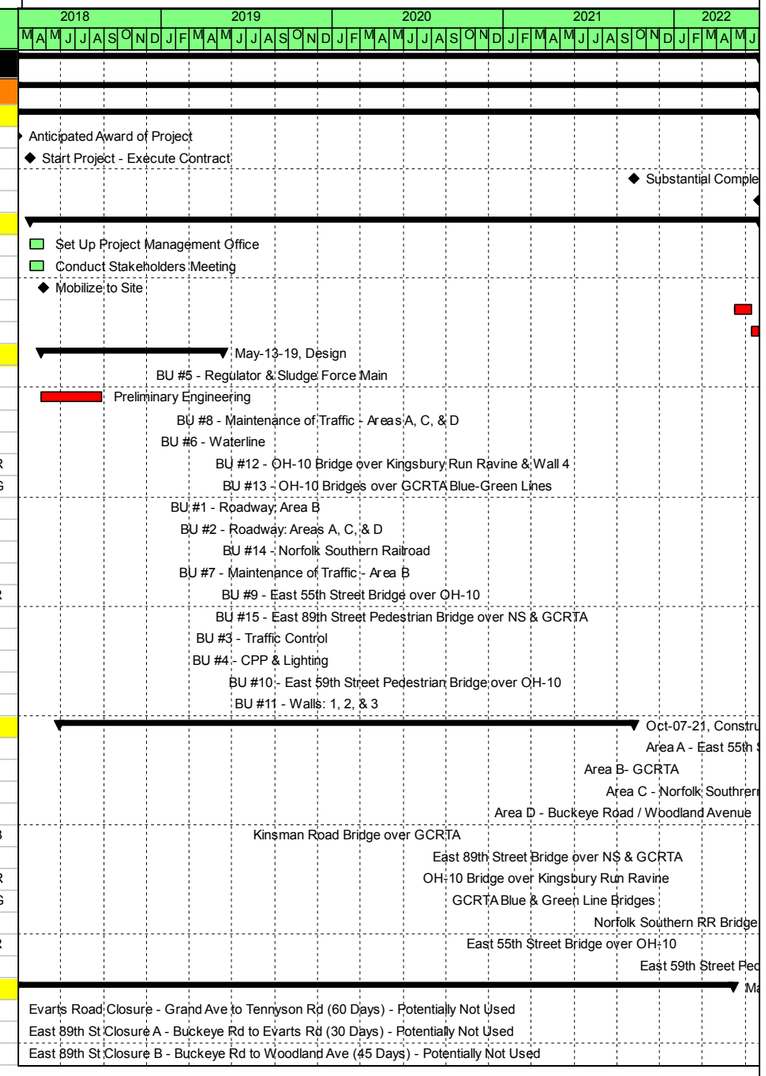
Appendix 6 - Preliminary CPM Schedule & Narrative

ODOT Project No. 173000
CUY-IR490/SR 010-02.09/19.28 Opportunity Corridor Project 3

Trumbull-Great Lakes-Ruhlin
a joint venture

PROPOSAL SCHEDULE - COMPLETE

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
ODOT 3000-17 Opportunity Corridor Project 3									
Project Summary									
Milestones									
PSM-1010	Anticipated Award of Project	0	Feb-27-18		20	173000-5D Admin/Workdays			
PSM-1020	Start Project - Execute Contract	0	Mar-27-18*		0	173000-5D Admin/Workdays			
PSM-1030	Substantial Completion	0		Oct-07-21*	15	173000-6D			
PSM-1040	End Project - Final Acceptance	0		Jun-30-22	0	173000-5D			
General									
PSG-1000	Set Up Project Management Office	30	Mar-27-18	Apr-25-18	274	173000-7D Admin/Fab			
PSG-1020	Conduct Stakeholders Meeting	30	Mar-27-18	Apr-25-18	274	173000-7D Admin/Fab			
PSG-1010	Mobilize to Site	0	Apr-25-18		142	173000-5D			
PSG-1040	Engineer's Punchlist	20	May-10-22	Jun-14-22	0	173000-5D			
PSG-1050	Demobilize from Project	10	Jun-15-22	Jun-30-22	0	173000-5D			
Design									
PSD-1030	BU #5 - Regulator & Sludge Force Main	222	Apr-19-18	Nov-26-18	72	173000-7D Admin/Fab	A		E55th
PSD-1170	Preliminary Engineering	130	Apr-19-18	Aug-26-18	32	173000-7D Admin/Fab			
PSD-1060	BU #8 - Maintenance of Traffic - Areas A, C, & D	254	Apr-30-18	Jan-08-19	29	173000-7D Admin/Fab			E55th
PSD-1050	BU #6 - Waterline	210	May-10-18	Dec-05-18	79	173000-7D Admin/Fab			
PSD-1130	BU #12 - OH-10 Bridge over Kingsbury Run Ravine & Wall 4	328	May-10-18	Apr-02-19	339	173000-7D Admin/Fab	B		OH10KR
PSD-1140	BU #13 - OH-10 Bridges over GCRTA Blue-Green Lines	342	May-10-18	Apr-16-19	374	173000-7D Admin/Fab	B		OH10BG
PSD-1200	BU #1 - Roadway: Area B	232	May-10-18	Dec-27-18	144	173000-7D Admin/Fab	B		
PSD-1000	BU #2 - Roadway: Areas A, C, & D	245	May-17-18	Jan-16-19	203	173000-7D Admin/Fab			
PSD-1150	BU #14 - Norfolk Southern Railroad	333	May-19-18	Apr-16-19	136	173000-7D Admin/Fab	C		NS10
PSD-1070	BU #7 - Maintenance of Traffic - Area B	221	Jun-08-18	Jan-14-19	185	173000-7D Admin/Fab	B		
PSD-1100	BU #9 - East 55th Street Bridge over OH-10	299	Jun-21-18	Apr-15-19	189	173000-7D Admin/Fab	A		E55thBR
PSD-1160	BU #15 - East 89th Street Pedestrian Bridge over NS & GCRTA	285	Jun-21-18	Apr-01-19	277	173000-7D Admin/Fab	D		E89thB
PSD-1010	BU #3 - Traffic Control	217	Jul-17-18	Feb-18-19	197	173000-7D Admin/Fab			
PSD-1020	BU #4 - CPP & Lighting	210	Jul-17-18	Feb-11-19	154	173000-7D Admin/Fab			
PSD-1110	BU #10 - East 59th Street Pedestrian Bridge over OH-10	265	Aug-09-18	Apr-30-19	560	173000-7D Admin/Fab	A		E59thB
PSD-1120	BU #11 - Walls: 1, 2, & 3	260	Aug-27-18	May-13-19	101	173000-7D Admin/Fab	A		
Construction									
PSC-1000	Area A - East 55th Street	628	May-29-18	Oct-07-21	11	173000-5D	A		
PSC-1025	Area B- GCRTA	556	May-29-18	May-28-21	83	173000-5D	B		
PSC-1080	Area C - Norfolk Southrern Railroad	581	May-29-18	Jul-14-21	58	173000-5D	C		
PSC-1110	Area D - Buckeye Road / Woodland Avenue	463	May-29-18	Nov-17-20	176	173000-5D	D		
PSC-1050	Kinsman Road Bridge over GCRTA	61	Feb-22-19	Jun-21-19	75	173000-5D	B		KinsmnB
PSC-1120	East 89th Street Bridge over NS & GCRTA	236	Apr-02-19	Jul-07-20	218	173000-5D	D		E89thB
PSC-1030	OH-10 Bridge over Kingsbury Run Ravine	225	Apr-02-19	Jun-17-20	258	173000-5D	B		OH10KR
PSC-1060	GCRTA Blue & Green Line Bridges	252	Apr-16-19	Aug-18-20	223	173000-5D	B		OH10BG
PSC-1090	Norfolk Southern RR Bridge over OH-10	327	Sep-04-19	Jun-16-21	73	173000-5D	C		NS10
PSC-1010	East 55th Street Bridge over OH-10	92	Apr-03-20	Sep-17-20	11	173000-5D	A		E55thBR
PSC-1020	East 59th Street Pedestrian Bridge over OH-10	88	Apr-16-21	Sep-24-21	17	173000-5D	A		E59thB
Maintenance of Traffic									
PSMT-1160	Evarts Road Closure - Grand Ave to Tennyson Rd (60 Days) - Potentially Not Used	0	Feb-27-18	Feb-27-18	1585	173000-7D Admin/Fab	D		Evarts
PSMT-1170	East 89th St Closure A - Buckeye Rd to Evarts Rd (30 Days) - Potentially Not Used	0	Feb-27-18	Feb-27-18	1585	173000-7D Admin/Fab	D		E89th
PSMT-1180	East 89th St Closure B - Buckeye Rd to Woodland Ave (45 Days) - Potentially Not U	0	Feb-27-18	Feb-27-18	1585	173000-7D Admin/Fab	D		E89th



Start Date: Feb-27-18
Finish Date: Jun-30-22
Must Finish Date 30-June-22
Data Date: Feb-27-18
Run Date: Dec-20-17 11:34

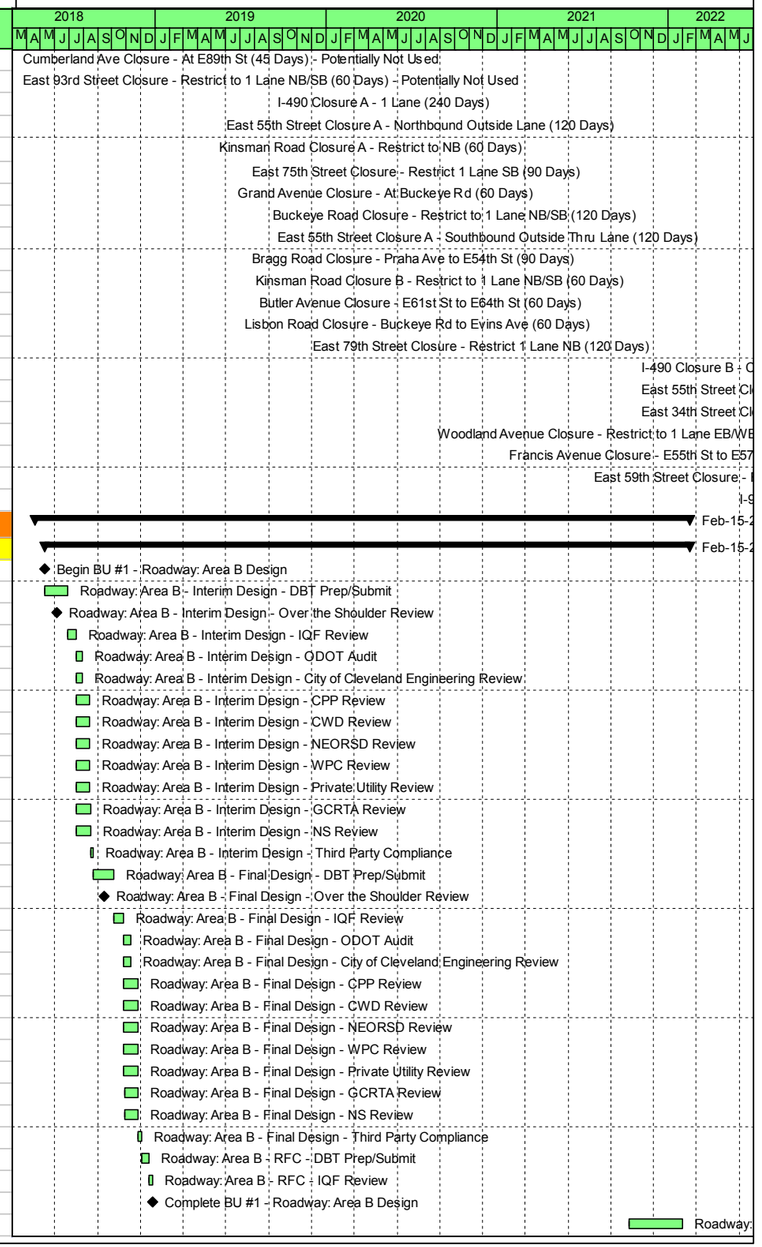
Actual Work
Remaining Work
Critical Remaining Work
Milestone
% Complete
Summary

PID 96833
Anticipated Award Date: 02/27/2018
Substantial Completion Date: 11/01/2021
Completion Date: 06/30/2022

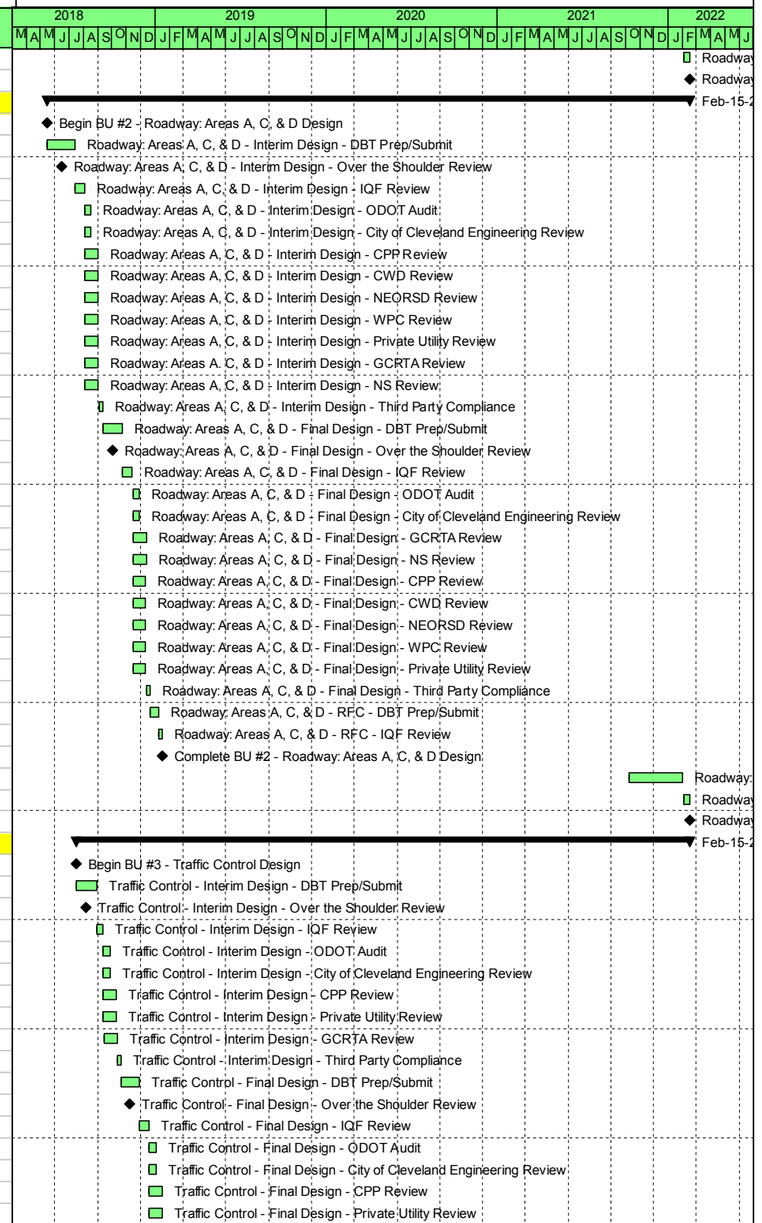
Trumbull-Great Lakes-Ruhlin _____ Date _____

Owner Representative _____ Date _____

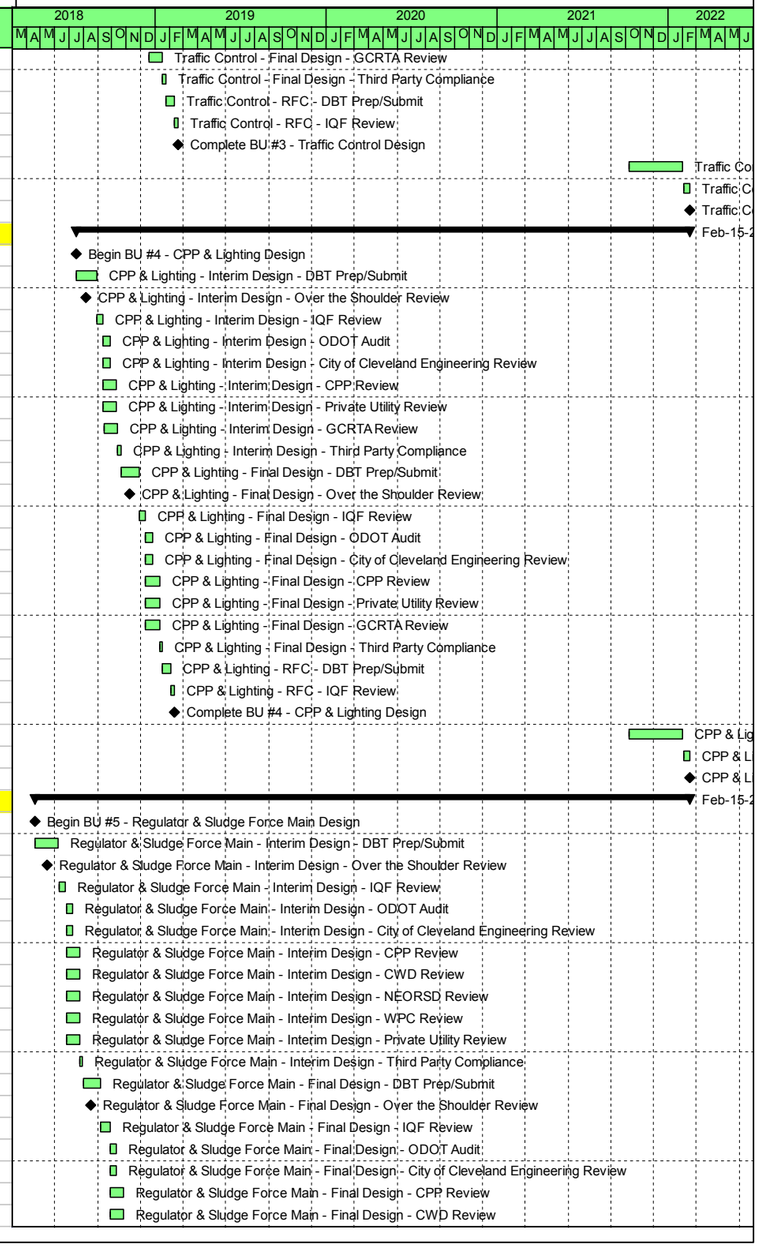
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
PSMT-1200	Cumberland Ave Closure - At E89th St (45 Days) - Potentially Not Used	0	Feb-27-18	Feb-27-18	1585	173000-7D Admin/Fab	D		Cumber
PSMT-1220	East 93rd Street Closure - Restrict to 1 Lane NB/SB (60 Days) - Potentially Not Used	0	Feb-27-18	Feb-27-18	1585	173000-7D Admin/Fab	D		E93rd
PSMT-1000	I-490 Closure A - 1 Lane (240 Days)	228	Jan-09-19	Aug-24-19	20	173000-7D Admin/Fab	A		I490
PSMT-1020	East 55th Street Closure A - Northbound Outside Lane (120 Days)	120	Jan-09-19	May-08-19	128	173000-7D Admin/Fab	A		E55th
PSMT-1100	Kinsman Road Closure A - Restrict to NB (60 Days)	60	Feb-22-19	Apr-22-19	141	173000-7D Admin/Fab	B		Kinsman
PSMT-1120	East 75th Street Closure - Restrict 1 Lane SB (90 Days)	88	Apr-05-19	Jul-01-19	725	173000-7D Admin/Fab	B		E75th
PSMT-1150	Grand Avenue Closure - At Buckeye Rd (60 Days)	42	Apr-19-19	May-30-19	394	173000-7D Admin/Fab	D		GrandE
PSMT-1190	Buckeye Road Closure - Restrict to 1 Lane NB/SB (120 Days)	117	Apr-19-19	Aug-13-19	393	173000-7D Admin/Fab	D		Buckeye
PSMT-1030	East 55th Street Closure A - Southbound Outside Thru Lane (120 Days)	108	May-09-19	Aug-24-19	20	173000-7D Admin/Fab	A		E55th
PSMT-1060	Bragg Road Closure - Praha Ave to E54th St (90 Days)	55	May-09-19	Jul-02-19	73	173000-7D Admin/Fab	A		Bragg
PSMT-1110	Kinsman Road Closure B - Restrict to 1 Lane NB/SB (60 Days)	56	May-15-19	Jul-09-19	122	173000-7D Admin/Fab	B		Kinsman
PSMT-1080	Butler Avenue Closure - E61st St to E64th St (60 Days)	58	May-21-19	Jul-17-19	105	173000-7D Admin/Fab	A		Butler
PSMT-1140	Lisbon Road Closure - Buckeye Rd to Evins Ave (60 Days)	16	May-31-19	Jun-15-19	397	173000-7D Admin/Fab	D		Lisbon
PSMT-1130	East 79th Street Closure - Restrict 1 Lane NB (120 Days)	113	Jul-19-19	Nov-08-19	721	173000-7D Admin/Fab	B		E79th
PSMT-1010	I-490 Closure B - Complete (730 Days)	728	Oct-12-19	Oct-08-21	160	173000-7D Admin/Fab	A		I490
PSMT-1040	East 55th Street Closure B - Restricted to 1 Lane NB/SB (730 Days)	728	Oct-12-19	Oct-08-21	160	173000-7D Admin/Fab	A		E55th
PSMT-1050	East 34th Street Closure - At Woodland Ave (730 Days)	728	Oct-12-19	Oct-08-21	160	173000-7D Admin/Fab	A		E34th
PSMT-1210	Woodland Avenue Closure - Restrict to 1 Lane EB/WB (120 Days)	120	Apr-02-20	Jul-30-20	456	173000-7D Admin/Fab	D		Woodlan
PSMT-1090	Francis Avenue Closure - E55th St to E57th St (120 Days)	49	Nov-12-20	Dec-30-20	24	173000-7D Admin/Fab	A		Francis
PSMT-1070	East 59th Street Closure - Francis Ave to Bower Ave (90 Days)	69	Apr-23-21	Jun-30-21	121	173000-7D Admin/Fab	A		E59th
PSMT-1230	I-90 Westbound Lane Reconfiguration	36	Apr-01-22	May-06-22	0	173000-7D Admin/Fab	A		I90
Design - Buildable Units									
BU #1 - Roadway: Area B									
BU01-1000	Begin BU #1 - Roadway: Area B Design	0	May-09-18		55	173000-5D Admin/Workdays		Design	
BU01-1010	Roadway: Area B - Interim Design - DBT Prep/Submit	36	May-09-18	Jun-29-18	55	173000-5D Admin/Workdays		Design	
BU01-1020	Roadway: Area B - Interim Design - Over the Shoulder Review	0	Jun-05-18		119	173000-5D Admin/Workdays		Design	
BU01-1030	Roadway: Area B - Interim Design - IQF Review	10	Jun-29-18	Jul-16-18	101	173000-5D Admin/Workdays		Design	
BU01-1040	Roadway: Area B - Interim Design - ODOT Audit	10	Jul-16-18	Jul-30-18	111	173000-5D Admin/Workdays		Design	
BU01-1050	Roadway: Area B - Interim Design - City of Cleveland Engineering Review	10	Jul-16-18	Jul-30-18	111	173000-5D Admin/Workdays		Design	
BU01-1080	Roadway: Area B - Interim Design - CPP Review	20	Jul-16-18	Aug-13-18	101	173000-5D Admin/Workdays		Design	
BU01-1090	Roadway: Area B - Interim Design - CWD Review	20	Jul-16-18	Aug-13-18	101	173000-5D Admin/Workdays		Design	
BU01-1100	Roadway: Area B - Interim Design - NEORSD Review	20	Jul-16-18	Aug-13-18	101	173000-5D Admin/Workdays		Design	
BU01-1110	Roadway: Area B - Interim Design - WPC Review	20	Jul-16-18	Aug-13-18	101	173000-5D Admin/Workdays		Design	
BU01-1120	Roadway: Area B - Interim Design - Private Utility Review	20	Jul-16-18	Aug-13-18	101	173000-5D Admin/Workdays		Design	
BU01-1060	Roadway: Area B - Interim Design - GCRTA Review	30	Jul-17-18	Aug-15-18	145	173000-7D Admin/Fab		Design	
BU01-1070	Roadway: Area B - Interim Design - NS Review	30	Jul-17-18	Aug-15-18	145	173000-7D Admin/Fab		Design	
BU01-1130	Roadway: Area B - Interim Design - Third Party Compliance	5	Aug-15-18	Aug-22-18	99	173000-5D Admin/Workdays		Design	
BU01-1140	Roadway: Area B - Final Design - DBT Prep/Submit	31	Aug-22-18	Oct-05-18	99	173000-5D Admin/Workdays		Design	
BU01-1150	Roadway: Area B - Final Design - Over the Shoulder Review	0	Sep-13-18		115	173000-5D Admin/Workdays		Design	
BU01-1160	Roadway: Area B - Final Design - IQF Review	15	Oct-05-18	Oct-26-18	99	173000-5D Admin/Workdays		Design	
BU01-1170	Roadway: Area B - Final Design - ODOT Audit	10	Oct-26-18	Nov-09-18	111	173000-5D Admin/Workdays		Design	
BU01-1180	Roadway: Area B - Final Design - City of Cleveland Engineering Review	10	Oct-26-18	Nov-09-18	111	173000-5D Admin/Workdays		Design	
BU01-1190	Roadway: Area B - Final Design - CPP Review	20	Oct-26-18	Nov-26-18	101	173000-5D Admin/Workdays		Design	
BU01-1200	Roadway: Area B - Final Design - CWD Review	20	Oct-26-18	Nov-26-18	101	173000-5D Admin/Workdays		Design	
BU01-1210	Roadway: Area B - Final Design - NEORSD Review	20	Oct-26-18	Nov-26-18	101	173000-5D Admin/Workdays		Design	
BU01-1220	Roadway: Area B - Final Design - WPC Review	20	Oct-26-18	Nov-26-18	101	173000-5D Admin/Workdays		Design	
BU01-1230	Roadway: Area B - Final Design - Private Utility Review	20	Oct-26-18	Nov-26-18	101	173000-5D Admin/Workdays		Design	
BU01-1240	Roadway: Area B - Final Design - GCRTA Review	30	Oct-27-18	Nov-25-18	144	173000-7D Admin/Fab		Design	
BU01-1250	Roadway: Area B - Final Design - NS Review	30	Oct-27-18	Nov-25-18	144	173000-7D Admin/Fab		Design	
BU01-1260	Roadway: Area B - Final Design - Third Party Compliance	5	Nov-26-18	Dec-03-18	101	173000-5D Admin/Workdays		Design	
BU01-1270	Roadway: Area B - RFC - DBT Prep/Submit	12	Dec-03-18	Dec-19-18	101	173000-5D Admin/Workdays		Design	
BU01-1280	Roadway: Area B - RFC - IQF Review	5	Dec-19-18	Dec-27-18	101	173000-5D Admin/Workdays		Design	
BU01-1290	Complete BU #1 - Roadway: Area B Design	0		Dec-27-18	101	173000-5D Admin/Workdays		Design	
BU01-1300	Roadway: Area B - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays		Design	



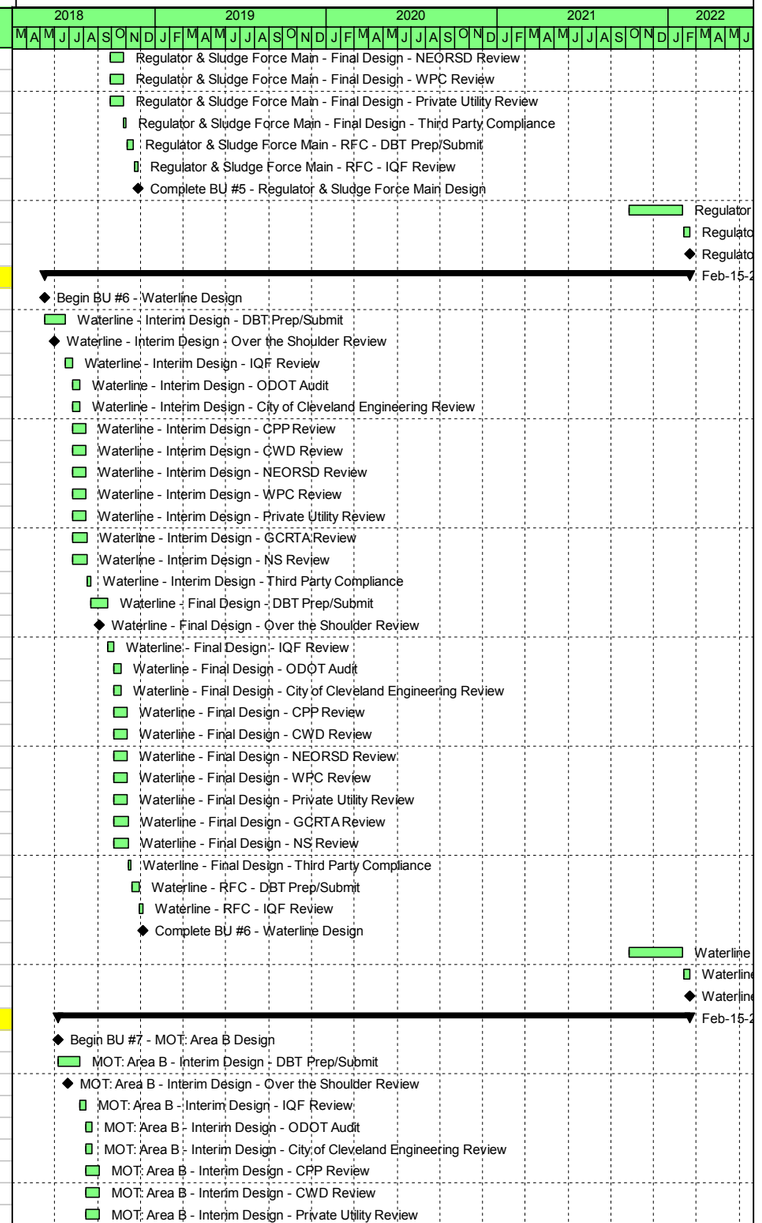
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU01-1310	Roadway: Area B - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU01-1320	Roadway: Area B - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU #2 - Roadway: Areas A, C, & D									
BU02-1000	Begin BU #2 - Roadway: Areas A, C, & D Design	0	May-16-18		99	173000-5D Admin/Workdays		Design	
BU02-1010	Roadway: Areas A, C, & D - Interim Design - DBT Prep/Submit	40	May-16-18	Jul-13-18	99	173000-5D Admin/Workdays		Design	
BU02-1020	Roadway: Areas A, C, & D - Interim Design - Over the Shoulder Review	0	Jun-14-18		119	173000-5D Admin/Workdays		Design	
BU02-1030	Roadway: Areas A, C, & D - Interim Design - IQF Review	15	Jul-13-18	Aug-03-18	99	173000-5D Admin/Workdays		Design	
BU02-1040	Roadway: Areas A, C, & D - Interim Design - ODOT Audit	10	Aug-03-18	Aug-17-18	154	173000-5D Admin/Workdays		Design	
BU02-1050	Roadway: Areas A, C, & D - Interim Design - City of Cleveland Engineering Review	10	Aug-03-18	Aug-17-18	154	173000-5D Admin/Workdays		Design	
BU02-1080	Roadway: Areas A, C, & D - Interim Design - CPP Review	20	Aug-03-18	Aug-31-18	99	173000-5D Admin/Workdays		Design	
BU02-1090	Roadway: Areas A, C, & D - Interim Design - CWD Review	20	Aug-03-18	Aug-31-18	144	173000-5D Admin/Workdays		Design	
BU02-1100	Roadway: Areas A, C, & D - Interim Design - NEORSD Review	20	Aug-03-18	Aug-31-18	144	173000-5D Admin/Workdays		Design	
BU02-1110	Roadway: Areas A, C, & D - Interim Design - WPC Review	20	Aug-03-18	Aug-31-18	144	173000-5D Admin/Workdays		Design	
BU02-1120	Roadway: Areas A, C, & D - Interim Design - Private Utility Review	20	Aug-03-18	Aug-31-18	138	173000-5D Admin/Workdays		Design	
BU02-1060	Roadway: Areas A. C, & D - Interim Design - GCRTA Review	30	Aug-04-18	Sep-02-18	206	173000-7D Admin/Fab		Design	
BU02-1070	Roadway: Areas A, C, & D - Interim Design - NS Review	30	Aug-04-18	Sep-02-18	206	173000-7D Admin/Fab		Design	
BU02-1130	Roadway: Areas A, C, & D - Interim Design - Third Party Compliance	5	Sep-04-18	Sep-10-18	144	173000-5D Admin/Workdays		Design	
BU02-1140	Roadway: Areas A, C, & D - Final Design - DBT Prep/Submit	31	Sep-11-18	Oct-23-18	144	173000-5D Admin/Workdays		Design	
BU02-1150	Roadway: Areas A, C, & D - Final Design - Over the Shoulder Review	0	Oct-02-18		160	173000-5D Admin/Workdays		Design	
BU02-1160	Roadway: Areas A, C, & D - Final Design - IQF Review	15	Oct-24-18	Nov-13-18	144	173000-5D Admin/Workdays		Design	
BU02-1170	Roadway: Areas A, C, & D - Final Design - ODOT Audit	10	Nov-14-18	Nov-28-18	154	173000-5D Admin/Workdays		Design	
BU02-1180	Roadway: Areas A, C, & D - Final Design - City of Cleveland Engineering Review	10	Nov-14-18	Nov-28-18	154	173000-5D Admin/Workdays		Design	
BU02-1240	Roadway: Areas A, C, & D - Final Design - GCRTA Review	30	Nov-14-18	Dec-13-18	207	173000-7D Admin/Fab		Design	
BU02-1250	Roadway: Areas A, C, & D - Final Design - NS Review	30	Nov-14-18	Dec-13-18	207	173000-7D Admin/Fab		Design	
BU02-1190	Roadway: Areas A, C, & D - Final Design - CPP Review	20	Nov-14-18	Dec-12-18	144	173000-5D Admin/Workdays		Design	
BU02-1200	Roadway: Areas A, C, & D - Final Design - CWD Review	20	Nov-14-18	Dec-12-18	144	173000-5D Admin/Workdays		Design	
BU02-1210	Roadway: Areas A, C, & D - Final Design - NEORSD Review	20	Nov-14-18	Dec-12-18	144	173000-5D Admin/Workdays		Design	
BU02-1220	Roadway: Areas A, C, & D - Final Design - WPC Review	20	Nov-14-18	Dec-12-18	144	173000-5D Admin/Workdays		Design	
BU02-1230	Roadway: Areas A, C, & D - Final Design - Private Utility Review	20	Nov-14-18	Dec-12-18	144	173000-5D Admin/Workdays		Design	
BU02-1260	Roadway: Areas A, C, & D - Final Design - Third Party Compliance	5	Dec-13-18	Dec-20-18	143	173000-5D Admin/Workdays		Design	
BU02-1270	Roadway: Areas A, C, & D - RFC - DBT Prep/Submit	12	Dec-20-18	Jan-09-19	143	173000-5D Admin/Workdays		Design	
BU02-1280	Roadway: Areas A, C, & D - RFC - IQF Review	5	Jan-09-19	Jan-16-19	143	173000-5D Admin/Workdays		Design	
BU02-1290	Complete BU #2 - Roadway: Areas A, C, & D Design	0		Jan-16-19	143	173000-5D Admin/Workdays		Design	
BU02-1300	Roadway: Areas A, C, & D - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays		Design	
BU02-1310	Roadway: Areas A, C, & D - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU02-1320	Roadway: Areas A, C, & D - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU #3 - Traffic Control									
BU03-1000	Begin BU #3 - Traffic Control Design	0	Jul-16-18		139	173000-5D Admin/Workdays		Design	
BU03-1010	Traffic Control - Interim Design - DBT Prep/Submit	31	Jul-16-18	Aug-28-18	139	173000-5D Admin/Workdays		Design	
BU03-1020	Traffic Control - Interim Design - Over the Shoulder Review	0	Aug-06-18		155	173000-5D Admin/Workdays		Design	
BU03-1030	Traffic Control - Interim Design - IQF Review	10	Aug-28-18	Sep-12-18	139	173000-5D Admin/Workdays		Design	
BU03-1040	Traffic Control - Interim Design - ODOT Audit	10	Sep-12-18	Sep-26-18	149	173000-5D Admin/Workdays		Design	
BU03-1050	Traffic Control - Interim Design - City of Cleveland Engineering Review	10	Sep-12-18	Sep-26-18	149	173000-5D Admin/Workdays		Design	
BU03-1060	Traffic Control - Interim Design - CPP Review	20	Sep-12-18	Oct-10-18	139	173000-5D Admin/Workdays		Design	
BU03-1070	Traffic Control - Interim Design - Private Utility Review	20	Sep-12-18	Oct-10-18	139	173000-5D Admin/Workdays		Design	
BU03-1080	Traffic Control - Interim Design - GCRTA Review	30	Sep-13-18	Oct-12-18	198	173000-7D Admin/Fab		Design	
BU03-1090	Traffic Control - Interim Design - Third Party Compliance	5	Oct-12-18	Oct-19-18	137	173000-5D Admin/Workdays		Design	
BU03-1100	Traffic Control - Final Design - DBT Prep/Submit	26	Oct-19-18	Nov-27-18	137	173000-5D Admin/Workdays		Design	
BU03-1110	Traffic Control - Final Design - Over the Shoulder Review	0	Nov-07-18		150	173000-5D Admin/Workdays		Design	
BU03-1120	Traffic Control - Final Design - IQF Review	15	Nov-27-18	Dec-18-18	137	173000-5D Admin/Workdays		Design	
BU03-1130	Traffic Control - Final Design - ODOT Audit	10	Dec-18-18	Jan-03-19	148	173000-5D Admin/Workdays		Design	
BU03-1140	Traffic Control - Final Design - City of Cleveland Engineering Review	10	Dec-18-18	Jan-03-19	148	173000-5D Admin/Workdays		Design	
BU03-1160	Traffic Control - Final Design - CPP Review	20	Dec-18-18	Jan-17-19	138	173000-5D Admin/Workdays		Design	
BU03-1170	Traffic Control - Final Design - Private Utility Review	20	Dec-18-18	Jan-17-19	138	173000-5D Admin/Workdays		Design	



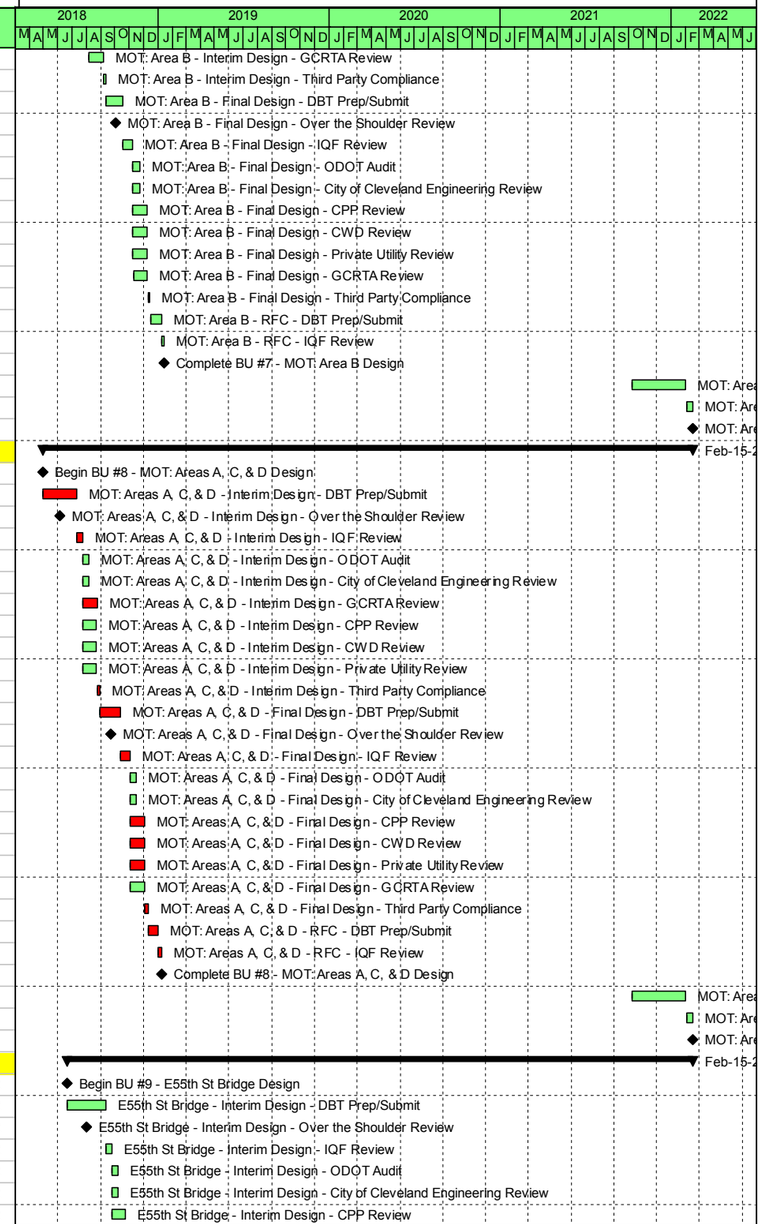
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU03-1150	Traffic Control - Final Design - GCRTA Review	30	Dec-19-18	Jan-17-19	196	173000-7D Admin/Fab		Design	
BU03-1180	Traffic Control - Final Design - Third Party Compliance	5	Jan-17-19	Jan-24-19	138	173000-5D Admin/Workdays		Design	
BU03-1190	Traffic Control - RFC - DBT Prep/Submit	12	Jan-24-19	Feb-11-19	138	173000-5D Admin/Workdays		Design	
BU03-1200	Traffic Control - RFC - IQF Review	5	Feb-11-19	Feb-18-19	138	173000-5D Admin/Workdays		Design	
BU03-1210	Complete BU #3 - Traffic Control Design	0		Feb-18-19	138	173000-5D Admin/Workdays		Design	
BU03-1220	Traffic Control - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays		Design	
BU03-1230	Traffic Control - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU03-1240	Traffic Control - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU #4 - CPP & Lighting									
BU04-1000	Begin BU #4 - CPP & Lighting Design	0	Jul-16-18		109	173000-5D Admin/Workdays		Design	
BU04-1010	CPP & Lighting - Interim Design - DBT Prep/Submit	31	Jul-16-18	Aug-28-18	109	173000-5D Admin/Workdays		Design	
BU04-1020	CPP & Lighting - Interim Design - Over the Shoulder Review	0	Aug-06-18		125	173000-5D Admin/Workdays		Design	
BU04-1030	CPP & Lighting - Interim Design - IQF Review	10	Aug-28-18	Sep-12-18	109	173000-5D Admin/Workdays		Design	
BU04-1040	CPP & Lighting - Interim Design - ODOT Audit	10	Sep-12-18	Sep-26-18	119	173000-5D Admin/Workdays		Design	
BU04-1050	CPP & Lighting - Interim Design - City of Cleveland Engineering Review	10	Sep-12-18	Sep-26-18	119	173000-5D Admin/Workdays		Design	
BU04-1060	CPP & Lighting - Interim Design - CPP Review	20	Sep-12-18	Oct-10-18	109	173000-5D Admin/Workdays		Design	
BU04-1070	CPP & Lighting - Interim Design - Private Utility Review	20	Sep-12-18	Oct-10-18	109	173000-5D Admin/Workdays		Design	
BU04-1080	CPP & Lighting - Interim Design - GCRTA Review	30	Sep-13-18	Oct-12-18	156	173000-7D Admin/Fab		Design	
BU04-1090	CPP & Lighting - Interim Design - Third Party Compliance	5	Oct-12-18	Oct-19-18	107	173000-5D Admin/Workdays		Design	
BU04-1100	CPP & Lighting - Final Design - DBT Prep/Submit	26	Oct-19-18	Nov-27-18	107	173000-5D Admin/Workdays		Design	
BU04-1110	CPP & Lighting - Final Design - Over the Shoulder Review	0	Nov-07-18		120	173000-5D Admin/Workdays		Design	
BU04-1120	CPP & Lighting - Final Design - IQF Review	10	Nov-27-18	Dec-11-18	107	173000-5D Admin/Workdays		Design	
BU04-1130	CPP & Lighting - Final Design - ODOT Audit	10	Dec-11-18	Dec-26-18	118	173000-5D Admin/Workdays		Design	
BU04-1140	CPP & Lighting - Final Design - City of Cleveland Engineering Review	10	Dec-11-18	Dec-26-18	118	173000-5D Admin/Workdays		Design	
BU04-1160	CPP & Lighting - Final Design - CPP Review	20	Dec-11-18	Jan-10-19	108	173000-5D Admin/Workdays		Design	
BU04-1170	CPP & Lighting - Final Design - Private Utility Review	20	Dec-11-18	Jan-10-19	108	173000-5D Admin/Workdays		Design	
BU04-1150	CPP & Lighting - Final Design - GCRTA Review	30	Dec-12-18	Jan-10-19	153	173000-7D Admin/Fab		Design	
BU04-1180	CPP & Lighting - Final Design - Third Party Compliance	5	Jan-10-19	Jan-17-19	108	173000-5D Admin/Workdays		Design	
BU04-1190	CPP & Lighting - RFC - DBT Prep/Submit	12	Jan-17-19	Feb-04-19	108	173000-5D Admin/Workdays		Design	
BU04-1200	CPP & Lighting - RFC - IQF Review	5	Feb-04-19	Feb-11-19	108	173000-5D Admin/Workdays		Design	
BU04-1210	Complete BU #4 - CPP & Lighting Design	0		Feb-11-19	108	173000-5D Admin/Workdays		Design	
BU04-1220	CPP & Lighting - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays		Design	
BU04-1230	CPP & Lighting - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU04-1240	CPP & Lighting - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU #5 - Regulator & Sludge Force Main									
BU05-1000	Begin BU #5 - Regulator & Sludge Force Main Design	0	Apr-19-18		50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1010	Regulator & Sludge Force Main - Interim Design - DBT Prep/Submit	36	Apr-19-18	Jun-08-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1020	Regulator & Sludge Force Main - Interim Design - Over the Shoulder Review	0	May-15-18		68	173000-5D Admin/Workdays	A	Design	E55th
BU05-1030	Regulator & Sludge Force Main - Interim Design - IQF Review	10	Jun-11-18	Jun-22-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1040	Regulator & Sludge Force Main - Interim Design - ODOT Audit	10	Jun-25-18	Jul-09-18	60	173000-5D Admin/Workdays	A	Design	E55th
BU05-1050	Regulator & Sludge Force Main - Interim Design - City of Cleveland Engineering Rev	10	Jun-25-18	Jul-09-18	60	173000-5D Admin/Workdays	A	Design	E55th
BU05-1060	Regulator & Sludge Force Main - Interim Design - CPP Review	20	Jun-25-18	Jul-23-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1070	Regulator & Sludge Force Main - Interim Design - CWD Review	20	Jun-25-18	Jul-23-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1080	Regulator & Sludge Force Main - Interim Design - NEORSD Review	20	Jun-25-18	Jul-23-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1090	Regulator & Sludge Force Main - Interim Design - WPC Review	20	Jun-25-18	Jul-23-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1100	Regulator & Sludge Force Main - Interim Design - Private Utility Review	20	Jun-25-18	Jul-23-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1110	Regulator & Sludge Force Main - Interim Design - Third Party Compliance	5	Jul-24-18	Jul-30-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1120	Regulator & Sludge Force Main - Final Design - DBT Prep/Submit	26	Jul-31-18	Sep-05-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1130	Regulator & Sludge Force Main - Final Design - Over the Shoulder Review	0	Aug-17-18		63	173000-5D Admin/Workdays	A	Design	E55th
BU05-1140	Regulator & Sludge Force Main - Final Design - IQF Review	15	Sep-06-18	Sep-26-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1150	Regulator & Sludge Force Main - Final Design - ODOT Audit	10	Sep-27-18	Oct-10-18	60	173000-5D Admin/Workdays	A	Design	E55th
BU05-1160	Regulator & Sludge Force Main - Final Design - City of Cleveland Engineering Revie	10	Sep-27-18	Oct-10-18	60	173000-5D Admin/Workdays	A	Design	E55th
BU05-1170	Regulator & Sludge Force Main - Final Design - CPP Review	20	Sep-27-18	Oct-24-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1180	Regulator & Sludge Force Main - Final Design - CWD Review	20	Sep-27-18	Oct-24-18	50	173000-5D Admin/Workdays	A	Design	E55th



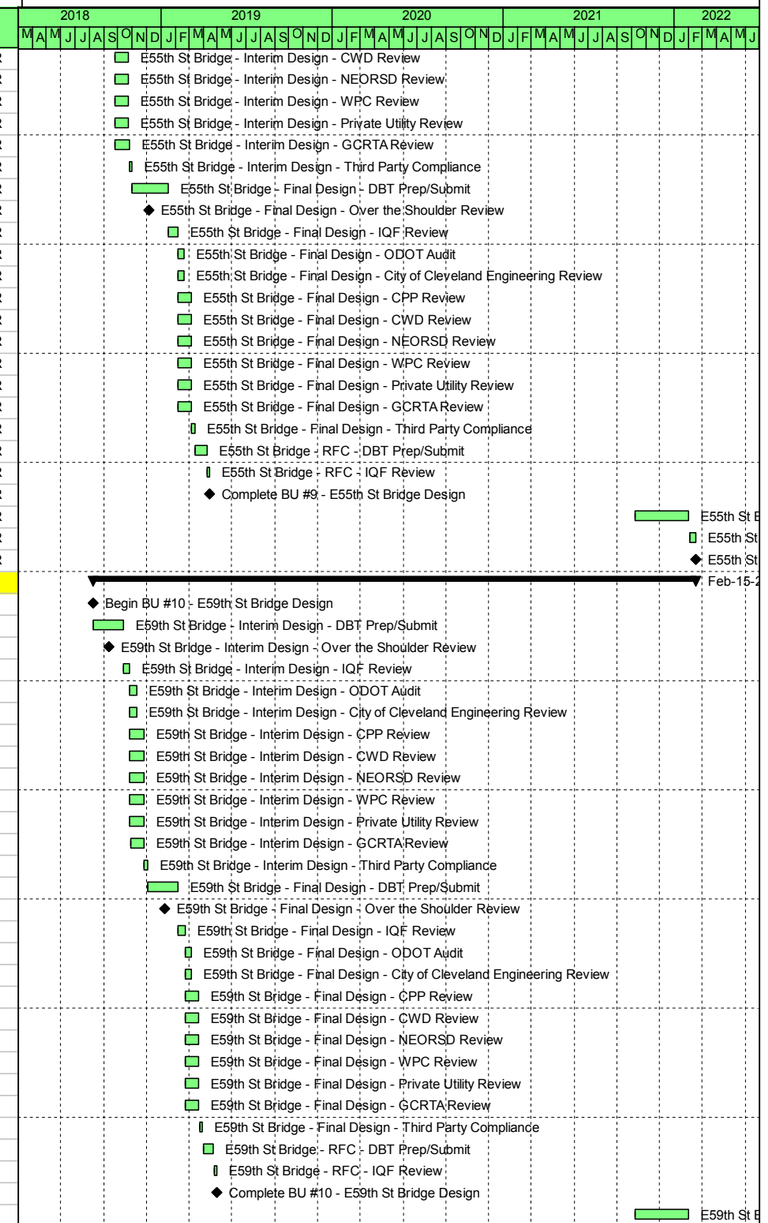
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU05-1190	Regulator & Sludge Force Main - Final Design - NEORSD Review	20	Sep-27-18	Oct-24-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1200	Regulator & Sludge Force Main - Final Design - WPC Review	20	Sep-27-18	Oct-24-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1210	Regulator & Sludge Force Main - Final Design - Private Utility Review	20	Sep-27-18	Oct-24-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1220	Regulator & Sludge Force Main - Final Design - Third Party Compliance	5	Oct-25-18	Oct-31-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1230	Regulator & Sludge Force Main - RFC - DBT Prep/Submit	12	Nov-01-18	Nov-16-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1240	Regulator & Sludge Force Main - RFC - IQF Review	5	Nov-19-18	Nov-26-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1250	Complete BU #5 - Regulator & Sludge Force Main Design	0		Nov-26-18	50	173000-5D Admin/Workdays	A	Design	E55th
BU05-1260	Regulator & Sludge Force Main - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	A	Design	E55th
BU05-1270	Regulator & Sludge Force Main - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E55th
BU05-1280	Regulator & Sludge Force Main - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E55th
BU #6 - Waterline									
BU06-1000	Begin BU #6 - Waterline Design	0	May-09-18		55	173000-5D Admin/Workdays		Design	
BU06-1010	Waterline - Interim Design - DBT Prep/Submit	31	May-09-18	Jun-22-18	55	173000-5D Admin/Workdays		Design	
BU06-1020	Waterline - Interim Design - Over the Shoulder Review	0	May-31-18		71	173000-5D Admin/Workdays		Design	
BU06-1030	Waterline - Interim Design - IQF Review	10	Jun-22-18	Jul-09-18	55	173000-5D Admin/Workdays		Design	
BU06-1040	Waterline - Interim Design - ODOT Audit	10	Jul-09-18	Jul-23-18	67	173000-5D Admin/Workdays		Design	
BU06-1050	Waterline - Interim Design - City of Cleveland Engineering Review	10	Jul-09-18	Jul-23-18	67	173000-5D Admin/Workdays		Design	
BU06-1080	Waterline - Interim Design - CPP Review	20	Jul-09-18	Aug-06-18	57	173000-5D Admin/Workdays		Design	
BU06-1090	Waterline - Interim Design - CWD Review	20	Jul-09-18	Aug-06-18	57	173000-5D Admin/Workdays		Design	
BU06-1100	Waterline - Interim Design - NEORSD Review	20	Jul-09-18	Aug-06-18	57	173000-5D Admin/Workdays		Design	
BU06-1110	Waterline - Interim Design - WPC Review	20	Jul-09-18	Aug-06-18	57	173000-5D Admin/Workdays		Design	
BU06-1120	Waterline - Interim Design - Private Utility Review	20	Jul-09-18	Aug-06-18	57	173000-5D Admin/Workdays		Design	
BU06-1060	Waterline - Interim Design - GCRTA Review	30	Jul-10-18	Aug-08-18	78	173000-7D Admin/Fab		Design	
BU06-1070	Waterline - Interim Design - NS Review	30	Jul-10-18	Aug-08-18	78	173000-7D Admin/Fab		Design	
BU06-1130	Waterline - Interim Design - Third Party Compliance	5	Aug-08-18	Aug-15-18	55	173000-5D Admin/Workdays		Design	
BU06-1135	Waterline - Final Design - DBT Prep/Submit	26	Aug-15-18	Sep-21-18	55	173000-5D Admin/Workdays		Design	
BU06-1140	Waterline - Final Design - Over the Shoulder Review	0	Sep-04-18		68	173000-5D Admin/Workdays		Design	
BU06-1150	Waterline - Final Design - IQF Review	10	Sep-21-18	Oct-05-18	55	173000-5D Admin/Workdays		Design	
BU06-1160	Waterline - Final Design - ODOT Audit	10	Oct-05-18	Oct-19-18	65	173000-5D Admin/Workdays		Design	
BU06-1170	Waterline - Final Design - City of Cleveland Engineering Review	10	Oct-05-18	Oct-19-18	65	173000-5D Admin/Workdays		Design	
BU06-1200	Waterline - Final Design - CPP Review	20	Oct-05-18	Nov-02-18	55	173000-5D Admin/Workdays		Design	
BU06-1210	Waterline - Final Design - CWD Review	20	Oct-05-18	Nov-02-18	55	173000-5D Admin/Workdays		Design	
BU06-1220	Waterline - Final Design - NEORSD Review	20	Oct-05-18	Nov-02-18	55	173000-5D Admin/Workdays		Design	
BU06-1230	Waterline - Final Design - WPC Review	20	Oct-05-18	Nov-02-18	55	173000-5D Admin/Workdays		Design	
BU06-1240	Waterline - Final Design - Private Utility Review	20	Oct-05-18	Nov-02-18	55	173000-5D Admin/Workdays		Design	
BU06-1180	Waterline - Final Design - GCRTA Review	30	Oct-06-18	Nov-04-18	80	173000-7D Admin/Fab		Design	
BU06-1190	Waterline - Final Design - NS Review	30	Oct-06-18	Nov-04-18	80	173000-7D Admin/Fab		Design	
BU06-1250	Waterline - Final Design - Third Party Compliance	5	Nov-05-18	Nov-09-18	55	173000-5D Admin/Workdays		Design	
BU06-1255	Waterline - RFC - DBT Prep/Submit	12	Nov-12-18	Nov-28-18	55	173000-5D Admin/Workdays		Design	
BU06-1260	Waterline - RFC - IQF Review	5	Nov-29-18	Dec-05-18	55	173000-5D Admin/Workdays		Design	
BU06-1270	Complete BU #6 - Waterline Design	0		Dec-05-18	55	173000-5D Admin/Workdays		Design	
BU06-1280	Waterline - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays		Design	
BU06-1290	Waterline - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU06-1300	Waterline - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU #7 - Maintenance of Traffic: Area B									
BU07-1000	Begin BU #7 - MOT: Area B Design	0	Jun-07-18		130	173000-5D Admin/Workdays		Design	
BU07-1010	MOT: Area B - Interim Design - DBT Prep/Submit	31	Jun-07-18	Jul-23-18	130	173000-5D Admin/Workdays		Design	
BU07-1020	MOT: Area B - Interim Design - Over the Shoulder Review	0	Jun-28-18		146	173000-5D Admin/Workdays		Design	
BU07-1030	MOT: Area B - Interim Design - IQF Review	10	Jul-23-18	Aug-06-18	130	173000-5D Admin/Workdays		Design	
BU07-1040	MOT: Area B - Interim Design - ODOT Audit	10	Aug-06-18	Aug-20-18	141	173000-5D Admin/Workdays		Design	
BU07-1050	MOT: Area B - Interim Design - City of Cleveland Engineering Review	10	Aug-06-18	Aug-20-18	141	173000-5D Admin/Workdays		Design	
BU07-1060	MOT: Area B - Interim Design - CPP Review	20	Aug-06-18	Sep-04-18	131	173000-5D Admin/Workdays		Design	
BU07-1070	MOT: Area B - Interim Design - CWD Review	20	Aug-06-18	Sep-04-18	131	173000-5D Admin/Workdays		Design	
BU07-1080	MOT: Area B - Interim Design - Private Utility Review	20	Aug-06-18	Sep-04-18	131	173000-5D Admin/Workdays		Design	



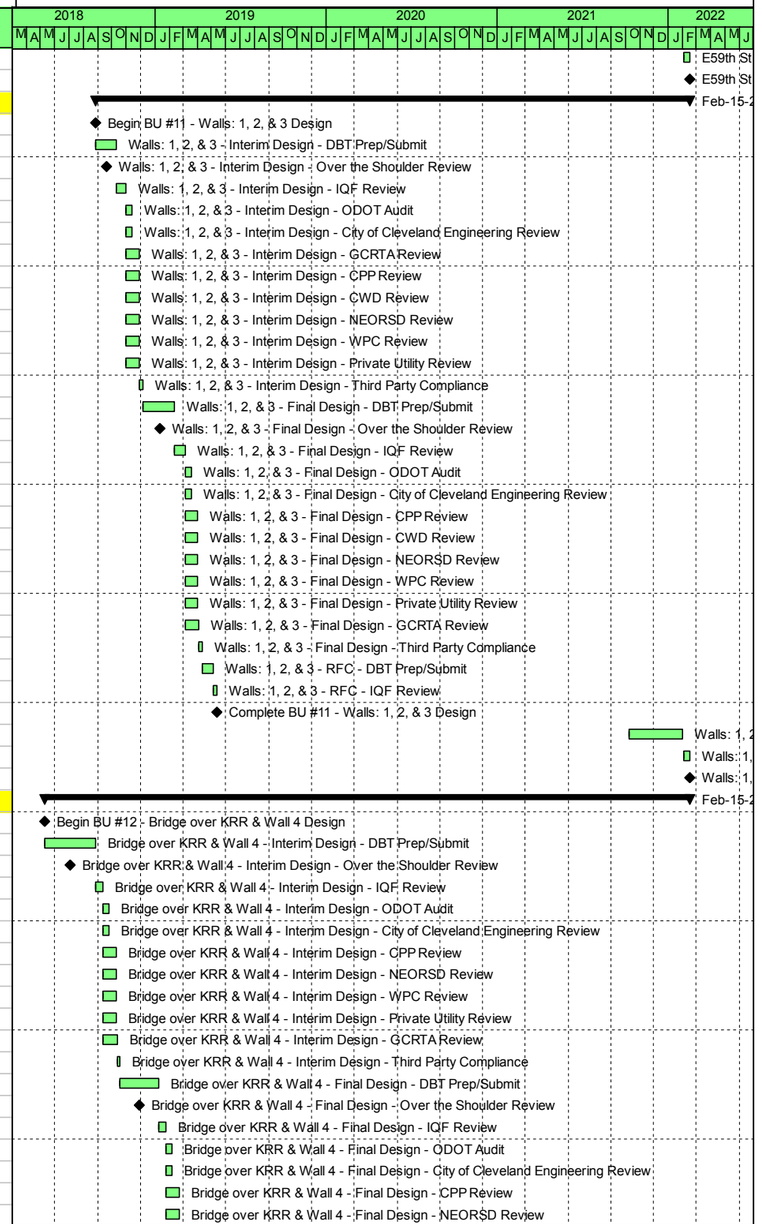
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU07-1090	MOT: Area B - Interim Design - GCRTA Review	30	Aug-07-18	Sep-05-18	187	173000-7D Admin/Fab		Design	
BU07-1100	MOT: Area B - Interim Design - Third Party Compliance	5	Sep-05-18	Sep-12-18	130	173000-5D Admin/Workdays		Design	
BU07-1110	MOT: Area B - Final Design - DBT Prep/Submit	26	Sep-12-18	Oct-18-18	130	173000-5D Admin/Workdays		Design	
BU07-1120	MOT: Area B - Final Design - Over the Shoulder Review	0	Oct-01-18		143	173000-5D Admin/Workdays		Design	
BU07-1130	MOT: Area B - Final Design - IQF Review	15	Oct-18-18	Nov-08-18	130	173000-5D Admin/Workdays		Design	
BU07-1140	MOT: Area B - Final Design - ODOT Audit	10	Nov-08-18	Nov-23-18	141	173000-5D Admin/Workdays		Design	
BU07-1150	MOT: Area B - Final Design - City of Cleveland Engineering Review	10	Nov-08-18	Nov-23-18	141	173000-5D Admin/Workdays		Design	
BU07-1170	MOT: Area B - Final Design - CPP Review	20	Nov-08-18	Dec-07-18	131	173000-5D Admin/Workdays		Design	
BU07-1180	MOT: Area B - Final Design - CWD Review	20	Nov-08-18	Dec-07-18	131	173000-5D Admin/Workdays		Design	
BU07-1190	MOT: Area B - Final Design - Private Utility Review	20	Nov-08-18	Dec-07-18	131	173000-5D Admin/Workdays		Design	
BU07-1160	MOT: Area B - Final Design - GCRTA Review	30	Nov-09-18	Dec-08-18	187	173000-7D Admin/Fab		Design	
BU07-1200	MOT: Area B - Final Design - Third Party Compliance	5	Dec-10-18	Dec-14-18	131	173000-5D Admin/Workdays		Design	
BU07-1210	MOT: Area B - RFC - DBT Prep/Submit	14	Dec-17-18	Jan-07-19	131	173000-5D Admin/Workdays		Design	
BU07-1220	MOT: Area B - RFC - IQF Review	5	Jan-08-19	Jan-14-19	131	173000-5D Admin/Workdays		Design	
BU07-1230	Complete BU #7 - MOT: Area B Design	0		Jan-14-19	131	173000-5D Admin/Workdays		Design	
BU07-1240	MOT: Area B - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays		Design	
BU07-1250	MOT: Area B - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU07-1260	MOT: Area B - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays		Design	
BU #8 - Maintenance of Traffic: Areas A, C, & D									
BU08-1000	Begin BU #8 - MOT: Areas A, C, & D Design	0	Apr-30-18		23	173000-5D Admin/Workdays	A	Design	E55th
BU08-1010	MOT: Areas A, C, & D - Interim Design - DBT Prep/Submit	50	Apr-30-18	Jul-10-18	23	173000-5D Admin/Workdays	A	Design	E55th
BU08-1020	MOT: Areas A, C, & D - Interim Design - Over the Shoulder Review	0	Jun-05-18		48	173000-5D Admin/Workdays	A	Design	E55th
BU08-1030	MOT: Areas A, C, & D - Interim Design - IQF Review	10	Jul-11-18	Jul-24-18	23	173000-5D Admin/Workdays	A	Design	E55th
BU08-1040	MOT: Areas A, C, & D - Interim Design - ODOT Audit	10	Jul-25-18	Aug-07-18	33	173000-5D Admin/Workdays	A	Design	E55th
BU08-1050	MOT: Areas A, C, & D - Interim Design - City of Cleveland Engineering Review	10	Jul-25-18	Aug-07-18	33	173000-5D Admin/Workdays	A	Design	E55th
BU08-1090	MOT: Areas A, C, & D - Interim Design - GCRTA Review	30	Jul-25-18	Aug-23-18	32	173000-7D Admin/Fab	A	Design	E55th
BU08-1060	MOT: Areas A, C, & D - Interim Design - CPP Review	20	Jul-25-18	Aug-21-18	23	173000-5D Admin/Workdays	A	Design	E55th
BU08-1070	MOT: Areas A, C, & D - Interim Design - CWD Review	20	Jul-25-18	Aug-21-18	23	173000-5D Admin/Workdays	A	Design	E55th
BU08-1080	MOT: Areas A, C, & D - Interim Design - Private Utility Review	20	Jul-25-18	Aug-21-18	23	173000-5D Admin/Workdays	A	Design	E55th
BU08-1100	MOT: Areas A, C, & D - Interim Design - Third Party Compliance	5	Aug-23-18	Aug-30-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1110	MOT: Areas A, C, & D - Final Design - DBT Prep/Submit	30	Aug-30-18	Oct-12-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1120	MOT: Areas A, C, & D - Final Design - Over the Shoulder Review	0	Sep-21-18		36	173000-5D Admin/Workdays	A	Design	E55th
BU08-1130	MOT: Areas A, C, & D - Final Design - IQF Review	15	Oct-12-18	Nov-02-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1140	MOT: Areas A, C, & D - Final Design - ODOT Audit	10	Nov-02-18	Nov-16-18	31	173000-5D Admin/Workdays	A	Design	E55th
BU08-1150	MOT: Areas A, C, & D - Final Design - City of Cleveland Engineering Review	10	Nov-02-18	Nov-16-18	31	173000-5D Admin/Workdays	A	Design	E55th
BU08-1170	MOT: Areas A, C, & D - Final Design - CPP Review	20	Nov-02-18	Dec-03-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1180	MOT: Areas A, C, & D - Final Design - CWD Review	20	Nov-02-18	Dec-03-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1190	MOT: Areas A, C, & D - Final Design - Private Utility Review	20	Nov-02-18	Dec-03-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1160	MOT: Areas A, C, & D - Final Design - GCRTA Review	30	Nov-03-18	Dec-02-18	32	173000-7D Admin/Fab	A	Design	E55th
BU08-1200	MOT: Areas A, C, & D - Final Design - Third Party Compliance	5	Dec-03-18	Dec-10-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1210	MOT: Areas A, C, & D - RFC - DBT Prep/Submit	14	Dec-10-18	Dec-31-18	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1220	MOT: Areas A, C, & D - RFC - IQF Review	5	Dec-31-18	Jan-08-19	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1230	Complete BU #8 - MOT: Areas A, C, & D Design	0		Jan-08-19	21	173000-5D Admin/Workdays	A	Design	E55th
BU08-1240	MOT: Areas A, C, & D - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	A	Design	E55th
BU08-1250	MOT: Areas A, C, & D - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E55th
BU08-1260	MOT: Areas A, C, & D - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E55th
BU #9 - East 55th Street Bridge over OH-10									
BU09-1000	Begin BU #9 - E55th St Bridge Design	0	Jun-20-18		133	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1010	E55th St Bridge - Interim Design - DBT Prep/Submit	56	Jun-20-18	Sep-10-18	133	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1020	E55th St Bridge - Interim Design - Over the Shoulder Review	0	Jul-31-18		161	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1030	E55th St Bridge - Interim Design - IQF Review	10	Sep-10-18	Sep-24-18	133	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1040	E55th St Bridge - Interim Design - ODOT Audit	10	Sep-24-18	Oct-08-18	145	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1050	E55th St Bridge - Interim Design - City of Cleveland Engineering Review	10	Sep-24-18	Oct-08-18	145	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1060	E55th St Bridge - Interim Design - CPP Review	20	Sep-24-18	Oct-22-18	135	173000-5D Admin/Workdays	A	Design	E55thBR



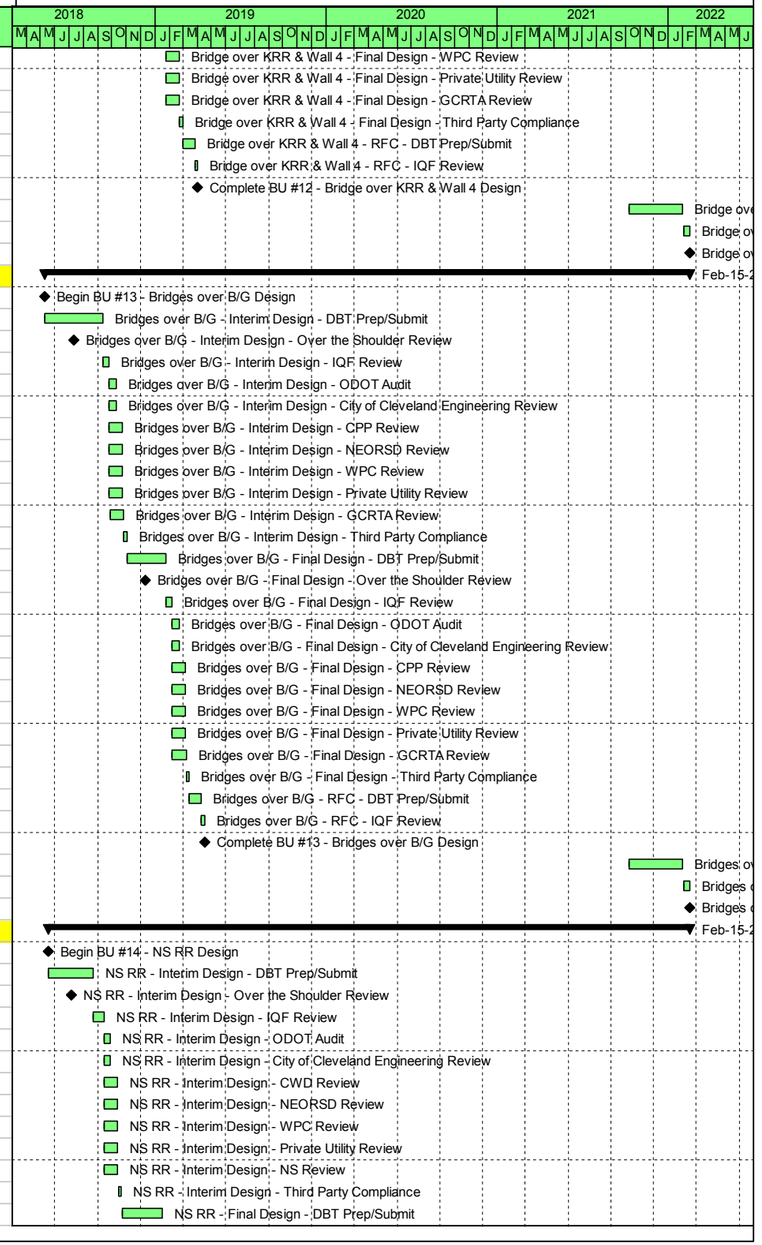
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU09-1070	E55th St Bridge - Interim Design - CWD Review	20	Sep-24-18	Oct-22-18	135	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1080	E55th St Bridge - Interim Design - NEORSD Review	20	Sep-24-18	Oct-22-18	135	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1090	E55th St Bridge - Interim Design - WPC Review	20	Sep-24-18	Oct-22-18	135	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1100	E55th St Bridge - Interim Design - Private Utility Review	20	Sep-24-18	Oct-22-18	135	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1110	E55th St Bridge - Interim Design - GCRTA Review	30	Sep-25-18	Oct-24-18	190	173000-7D Admin/Fab	A	Design	E55thBR
BU09-1120	E55th St Bridge - Interim Design - Third Party Compliance	5	Oct-24-18	Oct-31-18	133	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1130	E55th St Bridge - Final Design - DBT Prep/Submit	51	Oct-31-18	Jan-15-19	133	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1140	E55th St Bridge - Final Design - Over the Shoulder Review	0	Dec-06-18		159	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1150	E55th St Bridge - Final Design - IQF Review	15	Jan-15-19	Feb-05-19	133	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1160	E55th St Bridge - Final Design - ODOT Audit	10	Feb-05-19	Feb-19-19	144	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1170	E55th St Bridge - Final Design - City of Cleveland Engineering Review	10	Feb-05-19	Feb-19-19	144	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1190	E55th St Bridge - Final Design - CPP Review	20	Feb-05-19	Mar-05-19	134	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1200	E55th St Bridge - Final Design - CWD Review	20	Feb-05-19	Mar-05-19	134	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1210	E55th St Bridge - Final Design - NEORSD Review	20	Feb-05-19	Mar-05-19	134	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1220	E55th St Bridge - Final Design - WPC Review	20	Feb-05-19	Mar-05-19	134	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1230	E55th St Bridge - Final Design - Private Utility Review	20	Feb-05-19	Mar-05-19	134	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1180	E55th St Bridge - Final Design - GCRTA Review	30	Feb-06-19	Mar-07-19	189	173000-7D Admin/Fab	A	Design	E55thBR
BU09-1240	E55th St Bridge - Final Design - Third Party Compliance	5	Mar-07-19	Mar-14-19	132	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1250	E55th St Bridge - RFC - DBT Prep/Submit	17	Mar-14-19	Apr-08-19	132	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1260	E55th St Bridge - RFC - IQF Review	5	Apr-08-19	Apr-15-19	132	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1270	Complete BU #9 - E55th St Bridge Design	0		Apr-15-19	132	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1280	E55th St Bridge - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1290	E55th St Bridge - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E55thBR
BU09-1300	E55th St Bridge - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E55thBR
BU #10 - East 59th Street Pedestrian Bridge over OH-10									
BU10-1000	Begin BU #10 - E59th St Bridge Design	0	Aug-08-18		391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1010	E59th St Bridge - Interim Design - DBT Prep/Submit	46	Aug-08-18	Oct-12-18	391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1020	E59th St Bridge - Interim Design - Over the Shoulder Review	0	Sep-11-18		414	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1030	E59th St Bridge - Interim Design - IQF Review	10	Oct-12-18	Oct-26-18	391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1040	E59th St Bridge - Interim Design - ODOT Audit	10	Oct-26-18	Nov-09-18	402	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1050	E59th St Bridge - Interim Design - City of Cleveland Engineering Review	10	Oct-26-18	Nov-09-18	402	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1060	E59th St Bridge - Interim Design - CPP Review	20	Oct-26-18	Nov-26-18	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1070	E59th St Bridge - Interim Design - CWD Review	20	Oct-26-18	Nov-26-18	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1080	E59th St Bridge - Interim Design - NEORSD Review	20	Oct-26-18	Nov-26-18	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1090	E59th St Bridge - Interim Design - WPC Review	20	Oct-26-18	Nov-26-18	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1100	E59th St Bridge - Interim Design - Private Utility Review	20	Oct-26-18	Nov-26-18	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1110	E59th St Bridge - Interim Design - GCRTA Review	30	Oct-27-18	Nov-25-18	562	173000-7D Admin/Fab	A	Design	E59thB
BU10-1120	E59th St Bridge - Interim Design - Third Party Compliance	5	Nov-26-18	Dec-03-18	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1130	E59th St Bridge - Final Design - DBT Prep/Submit	46	Dec-03-18	Feb-07-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1140	E59th St Bridge - Final Design - Over the Shoulder Review	0	Jan-07-19		415	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1150	E59th St Bridge - Final Design - IQF Review	10	Feb-07-19	Feb-21-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1160	E59th St Bridge - Final Design - ODOT Audit	10	Feb-21-19	Mar-07-19	402	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1170	E59th St Bridge - Final Design - City of Cleveland Engineering Review	10	Feb-21-19	Mar-07-19	402	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1190	E59th St Bridge - Final Design - CPP Review	20	Feb-21-19	Mar-21-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1200	E59th St Bridge - Final Design - CWD Review	20	Feb-21-19	Mar-21-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1210	E59th St Bridge - Final Design - NEORSD Review	20	Feb-21-19	Mar-21-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1220	E59th St Bridge - Final Design - WPC Review	20	Feb-21-19	Mar-21-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1230	E59th St Bridge - Final Design - Private Utility Review	20	Feb-21-19	Mar-21-19	392	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1180	E59th St Bridge - Final Design - GCRTA Review	30	Feb-22-19	Mar-23-19	561	173000-7D Admin/Fab	A	Design	E59thB
BU10-1240	E59th St Bridge - Final Design - Third Party Compliance	5	Mar-25-19	Mar-29-19	391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1250	E59th St Bridge - RFC - DBT Prep/Submit	17	Apr-01-19	Apr-23-19	391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1260	E59th St Bridge - RFC - IQF Review	5	Apr-24-19	Apr-30-19	391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1270	Complete BU #10 - E59th St Bridge Design	0		Apr-30-19	391	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1280	E59th St Bridge - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	A	Design	E59thB



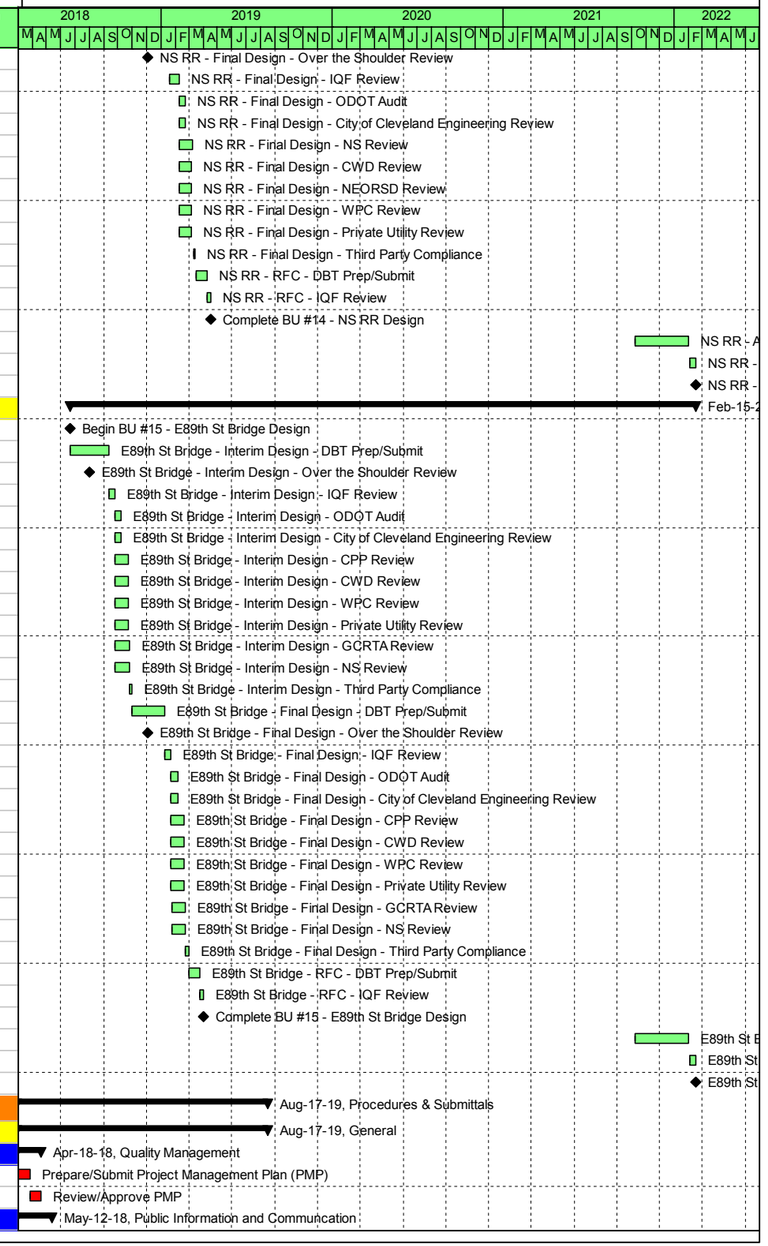
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU10-1290	E59th St Bridge - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E59thB
BU10-1300	E59th St Bridge - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	A	Design	E59thB
BU #11 - Walls: 1, 2, & 3									
BU11-1000	Begin BU #11 - Walls: 1, 2, & 3 Design	0	Aug-27-18		71	173000-5D Admin/Workdays	A	Design	
BU11-1010	Walls: 1, 2, & 3 - Interim Design - DBT Prep/Submit	31	Aug-27-18	Oct-09-18	71	173000-5D Admin/Workdays	A	Design	
BU11-1020	Walls: 1, 2, & 3 - Interim Design - Over the Shoulder Review	0	Sep-18-18		87	173000-5D Admin/Workdays	A	Design	
BU11-1030	Walls: 1, 2, & 3 - Interim Design - IQF Review	15	Oct-10-18	Oct-30-18	71	173000-5D Admin/Workdays	A	Design	
BU11-1040	Walls: 1, 2, & 3 - Interim Design - ODOT Audit	10	Oct-31-18	Nov-13-18	83	173000-5D Admin/Workdays	A	Design	
BU11-1050	Walls: 1, 2, & 3 - Interim Design - City of Cleveland Engineering Review	10	Oct-31-18	Nov-13-18	83	173000-5D Admin/Workdays	A	Design	
BU11-1110	Walls: 1, 2, & 3 - Interim Design - GCRTA Review	30	Oct-31-18	Nov-29-18	104	173000-7D Admin/Fab	A	Design	
BU11-1060	Walls: 1, 2, & 3 - Interim Design - CPP Review	20	Oct-31-18	Nov-28-18	73	173000-5D Admin/Workdays	A	Design	
BU11-1070	Walls: 1, 2, & 3 - Interim Design - CWD Review	20	Oct-31-18	Nov-28-18	73	173000-5D Admin/Workdays	A	Design	
BU11-1080	Walls: 1, 2, & 3 - Interim Design - NEORSD Review	20	Oct-31-18	Nov-28-18	73	173000-5D Admin/Workdays	A	Design	
BU11-1090	Walls: 1, 2, & 3 - Interim Design - WPC Review	20	Oct-31-18	Nov-28-18	73	173000-5D Admin/Workdays	A	Design	
BU11-1100	Walls: 1, 2, & 3 - Interim Design - Private Utility Review	20	Oct-31-18	Nov-28-18	73	173000-5D Admin/Workdays	A	Design	
BU11-1120	Walls: 1, 2, & 3 - Interim Design - Third Party Compliance	5	Nov-29-18	Dec-06-18	72	173000-5D Admin/Workdays	A	Design	
BU11-1130	Walls: 1, 2, & 3 - Final Design - DBT Prep/Submit	46	Dec-06-18	Feb-12-19	72	173000-5D Admin/Workdays	A	Design	
BU11-1140	Walls: 1, 2, & 3 - Final Design - Over the Shoulder Review	0	Jan-10-19		95	173000-5D Admin/Workdays	A	Design	
BU11-1150	Walls: 1, 2, & 3 - Final Design - IQF Review	15	Feb-12-19	Mar-05-19	72	173000-5D Admin/Workdays	A	Design	
BU11-1160	Walls: 1, 2, & 3 - Final Design - ODOT Audit	10	Mar-05-19	Mar-19-19	83	173000-5D Admin/Workdays	A	Design	
BU11-1170	Walls: 1, 2, & 3 - Final Design - City of Cleveland Engineering Review	10	Mar-05-19	Mar-19-19	83	173000-5D Admin/Workdays	A	Design	
BU11-1190	Walls: 1, 2, & 3 - Final Design - CPP Review	20	Mar-05-19	Apr-02-19	73	173000-5D Admin/Workdays	A	Design	
BU11-1200	Walls: 1, 2, & 3 - Final Design - CWD Review	20	Mar-05-19	Apr-02-19	73	173000-5D Admin/Workdays	A	Design	
BU11-1210	Walls: 1, 2, & 3 - Final Design - NEORSD Review	20	Mar-05-19	Apr-02-19	73	173000-5D Admin/Workdays	A	Design	
BU11-1220	Walls: 1, 2, & 3 - Final Design - WPC Review	20	Mar-05-19	Apr-02-19	73	173000-5D Admin/Workdays	A	Design	
BU11-1230	Walls: 1, 2, & 3 - Final Design - Private Utility Review	20	Mar-05-19	Apr-02-19	73	173000-5D Admin/Workdays	A	Design	
BU11-1180	Walls: 1, 2, & 3 - Final Design - GCRTA Review	30	Mar-06-19	Apr-04-19	103	173000-7D Admin/Fab	A	Design	
BU11-1240	Walls: 1, 2, & 3 - Final Design - Third Party Compliance	5	Apr-04-19	Apr-11-19	71	173000-5D Admin/Workdays	A	Design	
BU11-1250	Walls: 1, 2, & 3 - RFC - DBT Prep/Submit	17	Apr-11-19	May-06-19	71	173000-5D Admin/Workdays	A	Design	
BU11-1260	Walls: 1, 2, & 3 - RFC - IQF Review	5	May-06-19	May-13-19	71	173000-5D Admin/Workdays	A	Design	
BU11-1270	Complete BU #11 - Walls: 1, 2, & 3 Design	0		May-13-19	71	173000-5D Admin/Workdays	A	Design	
BU11-1280	Walls: 1, 2, & 3 - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	A	Design	
BU11-1290	Walls: 1, 2, & 3 - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	A	Design	
BU11-1300	Walls: 1, 2, & 3 - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	A	Design	
BU #12 - OH-10 Bridge over Kingsbury Run Ravine & Wall 4									
BU12-1000	Begin BU #12 - Bridge over KRR & Wall 4 Design	0	May-09-18		239	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1010	Bridge over KRR & Wall 4 - Interim Design - DBT Prep/Submit	76	May-09-18	Aug-27-18	239	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1020	Bridge over KRR & Wall 4 - Interim Design - Over the Shoulder Review	0	Jul-03-18		277	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1030	Bridge over KRR & Wall 4 - Interim Design - IQF Review	10	Aug-27-18	Sep-11-18	239	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1040	Bridge over KRR & Wall 4 - Interim Design - ODOT Audit	10	Sep-11-18	Sep-25-18	250	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1050	Bridge over KRR & Wall 4 - Interim Design - City of Cleveland Engineering Review	10	Sep-11-18	Sep-25-18	250	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1060	Bridge over KRR & Wall 4 - Interim Design - CPP Review	20	Sep-11-18	Oct-09-18	240	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1070	Bridge over KRR & Wall 4 - Interim Design - NEORSD Review	20	Sep-11-18	Oct-09-18	240	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1080	Bridge over KRR & Wall 4 - Interim Design - WPC Review	20	Sep-11-18	Oct-09-18	240	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1090	Bridge over KRR & Wall 4 - Interim Design - Private Utility Review	20	Sep-11-18	Oct-09-18	240	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1100	Bridge over KRR & Wall 4 - Interim Design - GCRTA Review	30	Sep-12-18	Oct-11-18	342	173000-7D Admin/Fab	B	Design	OH10KR
BU12-1110	Bridge over KRR & Wall 4 - Interim Design - Third Party Compliance	5	Oct-11-18	Oct-18-18	238	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1120	Bridge over KRR & Wall 4 - Final Design - DBT Prep/Submit	56	Oct-18-18	Jan-09-19	238	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1130	Bridge over KRR & Wall 4 - Final Design - Over the Shoulder Review	0	Nov-28-18		266	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1140	Bridge over KRR & Wall 4 - Final Design - IQF Review	10	Jan-09-19	Jan-23-19	238	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1150	Bridge over KRR & Wall 4 - Final Design - ODOT Audit	10	Jan-23-19	Feb-06-19	249	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1160	Bridge over KRR & Wall 4 - Final Design - City of Cleveland Engineering Review	10	Jan-23-19	Feb-06-19	249	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1170	Bridge over KRR & Wall 4 - Final Design - CPP Review	20	Jan-23-19	Feb-20-19	239	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1180	Bridge over KRR & Wall 4 - Final Design - NEORSD Review	20	Jan-23-19	Feb-20-19	239	173000-5D Admin/Workdays	B	Design	OH10KR



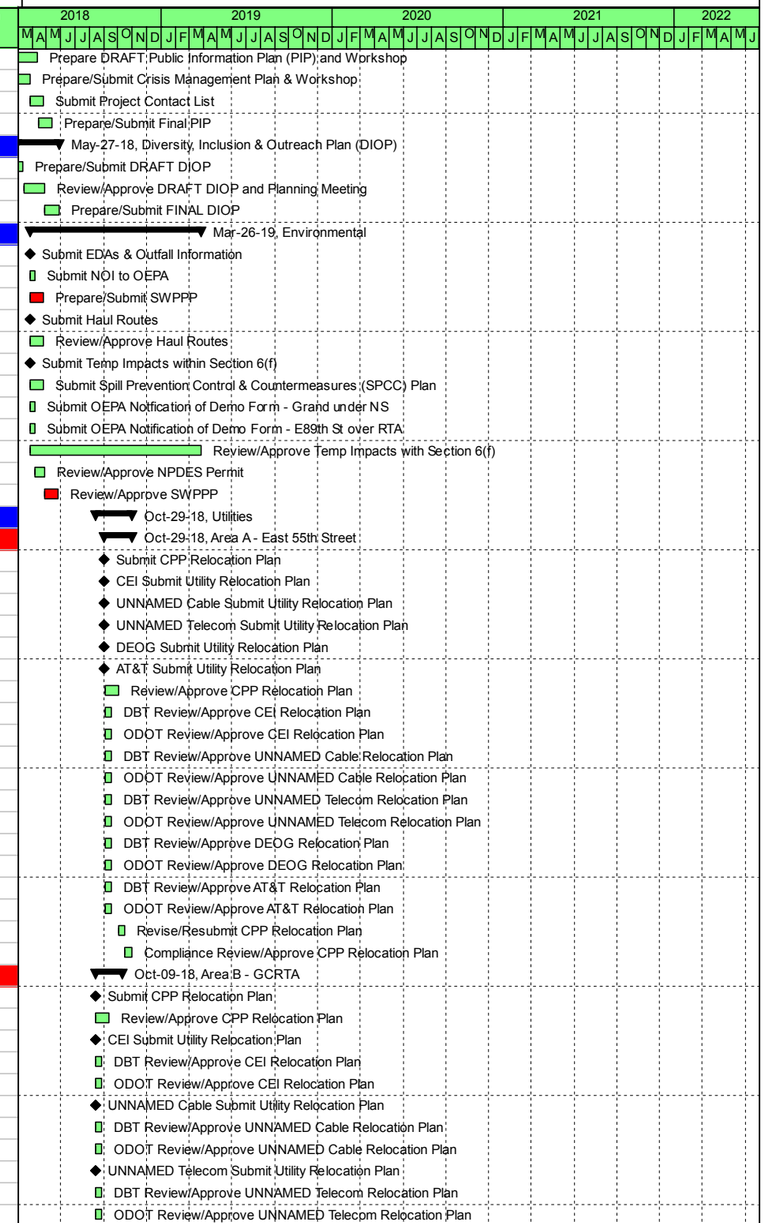
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU12-1190	Bridge over KRR & Wall 4 - Final Design - WPC Review	20	Jan-23-19	Feb-20-19	239	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1200	Bridge over KRR & Wall 4 - Final Design - Private Utility Review	20	Jan-23-19	Feb-20-19	239	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1210	Bridge over KRR & Wall 4 - Final Design - GCRTA Review	30	Jan-24-19	Feb-22-19	341	173000-7D Admin/Fab	B	Design	OH10KR
BU12-1220	Bridge over KRR & Wall 4 - Final Design - Third Party Compliance	5	Feb-22-19	Mar-01-19	237	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1230	Bridge over KRR & Wall 4 - RFC - DBT Prep/Submit	17	Mar-01-19	Mar-26-19	237	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1240	Bridge over KRR & Wall 4 - RFC - IQF Review	5	Mar-26-19	Apr-02-19	237	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1250	Complete BU #12 - Bridge over KRR & Wall 4 Design	0		Apr-02-19	237	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1260	Bridge over KRR & Wall 4 - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1270	Bridge over KRR & Wall 4 - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	B	Design	OH10KR
BU12-1280	Bridge over KRR & Wall 4 - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	B	Design	OH10KR
BU #13 - OH-10 Bridges over GCRTA Blue-Green Lines									
BU13-1000	Begin BU #13 - Bridges over B/G Design	0	May-09-18		262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1010	Bridges over B/G - Interim Design - DBT Prep/Submit	86	May-09-18	Sep-11-18	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1020	Bridges over B/G - Interim Design - Over the Shoulder Review	0	Jul-11-18		305	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1030	Bridges over B/G - Interim Design - IQF Review	10	Sep-11-18	Sep-25-18	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1040	Bridges over B/G - Interim Design - ODOT Audit	10	Sep-25-18	Oct-09-18	274	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1050	Bridges over B/G - Interim Design - City of Cleveland Engineering Review	10	Sep-25-18	Oct-09-18	274	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1060	Bridges over B/G - Interim Design - CPP Review	20	Sep-25-18	Oct-23-18	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1070	Bridges over B/G - Interim Design - NEORSD Review	20	Sep-25-18	Oct-23-18	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1080	Bridges over B/G - Interim Design - WPC Review	20	Sep-25-18	Oct-23-18	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1090	Bridges over B/G - Interim Design - Private Utility Review	20	Sep-25-18	Oct-23-18	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1100	Bridges over B/G - Interim Design - GCRTA Review	30	Sep-26-18	Oct-25-18	376	173000-7D Admin/Fab	B	Design	OH10BG
BU13-1110	Bridges over B/G - Interim Design - Third Party Compliance	5	Oct-25-18	Nov-01-18	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1120	Bridges over B/G - Final Design - DBT Prep/Submit	56	Nov-01-18	Jan-23-19	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1130	Bridges over B/G - Final Design - Over the Shoulder Review	0	Dec-12-18		290	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1140	Bridges over B/G - Final Design - IQF Review	10	Jan-23-19	Feb-06-19	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1150	Bridges over B/G - Final Design - ODOT Audit	10	Feb-06-19	Feb-20-19	274	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1160	Bridges over B/G - Final Design - City of Cleveland Engineering Review	10	Feb-06-19	Feb-20-19	274	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1170	Bridges over B/G - Final Design - CPP Review	20	Feb-06-19	Mar-06-19	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1180	Bridges over B/G - Final Design - NEORSD Review	20	Feb-06-19	Mar-06-19	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1190	Bridges over B/G - Final Design - WPC Review	20	Feb-06-19	Mar-06-19	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1200	Bridges over B/G - Final Design - Private Utility Review	20	Feb-06-19	Mar-06-19	264	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1210	Bridges over B/G - Final Design - GCRTA Review	30	Feb-07-19	Mar-08-19	376	173000-7D Admin/Fab	B	Design	OH10BG
BU13-1220	Bridges over B/G - Final Design - Third Party Compliance	5	Mar-08-19	Mar-15-19	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1230	Bridges over B/G - RFC - DBT Prep/Submit	17	Mar-15-19	Apr-09-19	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1240	Bridges over B/G - RFC - IQF Review	5	Apr-09-19	Apr-16-19	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1250	Complete BU #13 - Bridges over B/G Design	0		Apr-16-19	262	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1260	Bridges over B/G - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1270	Bridges over B/G - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	B	Design	OH10BG
BU13-1280	Bridges over B/G - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	B	Design	OH10BG
BU #14 - Norfolk Southern Railroad									
BU14-1000	Begin BU #14 - NS RR Design	0	May-18-18		95	173000-5D Admin/Workdays	C	Design	NS10
BU14-1010	NS RR - Interim Design - DBT Prep/Submit	66	May-18-18	Aug-22-18	95	173000-5D Admin/Workdays	C	Design	NS10
BU14-1020	NS RR - Interim Design - Over the Shoulder Review	0	Jul-06-18		128	173000-5D Admin/Workdays	C	Design	NS10
BU14-1030	NS RR - Interim Design - IQF Review	15	Aug-22-18	Sep-13-18	95	173000-5D Admin/Workdays	C	Design	NS10
BU14-1040	NS RR - Interim Design - ODOT Audit	10	Sep-13-18	Sep-27-18	107	173000-5D Admin/Workdays	C	Design	NS10
BU14-1050	NS RR - Interim Design - City of Cleveland Engineering Review	10	Sep-13-18	Sep-27-18	107	173000-5D Admin/Workdays	C	Design	NS10
BU14-1060	NS RR - Interim Design - CWD Review	20	Sep-13-18	Oct-11-18	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1070	NS RR - Interim Design - NEORSD Review	20	Sep-13-18	Oct-11-18	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1080	NS RR - Interim Design - WPC Review	20	Sep-13-18	Oct-11-18	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1090	NS RR - Interim Design - Private Utility Review	20	Sep-13-18	Oct-11-18	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1100	NS RR - Interim Design - NS Review	30	Sep-14-18	Oct-13-18	138	173000-7D Admin/Fab	C	Design	NS10
BU14-1110	NS RR - Interim Design - Third Party Compliance	5	Oct-15-18	Oct-19-18	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1120	NS RR - Final Design - DBT Prep/Submit	61	Oct-22-18	Jan-17-19	96	173000-5D Admin/Workdays	C	Design	NS10



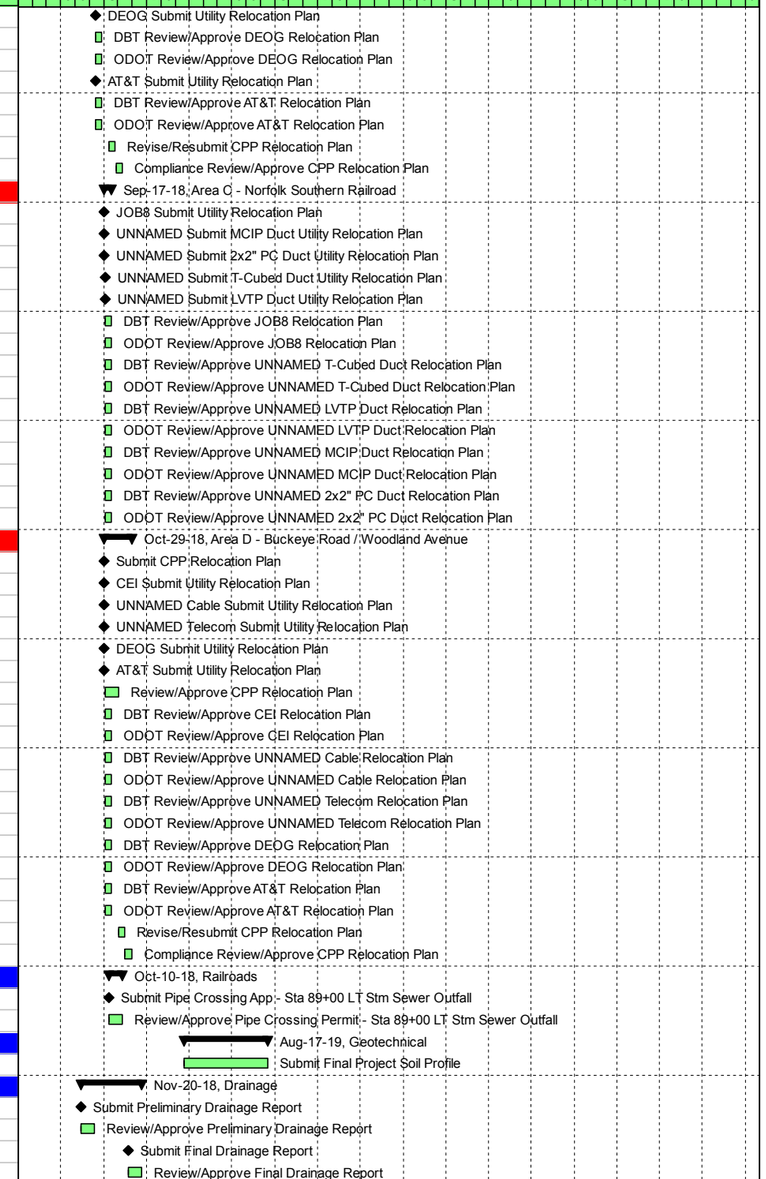
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
BU14-1130	NS RR - Final Design - Over the Shoulder Review	0	Dec-04-18		127	173000-5D Admin/Workdays	C	Design	NS10
BU14-1140	NS RR - Final Design - IQF Review	15	Jan-18-19	Feb-07-19	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1150	NS RR - Final Design - ODOT Audit	10	Feb-08-19	Feb-21-19	107	173000-5D Admin/Workdays	C	Design	NS10
BU14-1160	NS RR - Final Design - City of Cleveland Engineering Review	10	Feb-08-19	Feb-21-19	107	173000-5D Admin/Workdays	C	Design	NS10
BU14-1210	NS RR - Final Design - NS Review	30	Feb-08-19	Mar-09-19	137	173000-7D Admin/Fab	C	Design	NS10
BU14-1170	NS RR - Final Design - CWD Review	20	Feb-08-19	Mar-07-19	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1180	NS RR - Final Design - NEORSD Review	20	Feb-08-19	Mar-07-19	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1190	NS RR - Final Design - WPC Review	20	Feb-08-19	Mar-07-19	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1200	NS RR - Final Design - Private Utility Review	20	Feb-08-19	Mar-07-19	97	173000-5D Admin/Workdays	C	Design	NS10
BU14-1220	NS RR - Final Design - Third Party Compliance	5	Mar-11-19	Mar-15-19	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1230	NS RR - RFC - DBT Prep/Submit	17	Mar-18-19	Apr-09-19	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1240	NS RR - RFC - IQF Review	5	Apr-10-19	Apr-16-19	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1250	Complete BU #14 - NS RR Design	0		Apr-16-19	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1260	NS RR - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1270	NS RR - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	C	Design	NS10
BU14-1280	NS RR - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	C	Design	NS10
BU #15 - East 89th Street Pedestrian Bridge over NS & GCRTA									
BU15-1000	Begin BU #15 - E89th St Bridge Design	0	Jun-20-18		196	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1010	E89th St Bridge - Interim Design - DBT Prep/Submit	56	Jun-20-18	Sep-10-18	196	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1020	E89th St Bridge - Interim Design - Over the Shoulder Review	0	Jul-31-18		224	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1030	E89th St Bridge - Interim Design - IQF Review	10	Sep-10-18	Sep-24-18	196	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1040	E89th St Bridge - Interim Design - ODOT Audit	10	Sep-24-18	Oct-08-18	207	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1050	E89th St Bridge - Interim Design - City of Cleveland Engineering Review	10	Sep-24-18	Oct-08-18	207	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1060	E89th St Bridge - Interim Design - CPP Review	20	Sep-24-18	Oct-22-18	197	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1070	E89th St Bridge - Interim Design - CWD Review	20	Sep-24-18	Oct-22-18	197	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1080	E89th St Bridge - Interim Design - WPC Review	20	Sep-24-18	Oct-22-18	197	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1090	E89th St Bridge - Interim Design - Private Utility Review	20	Sep-24-18	Oct-22-18	197	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1100	E89th St Bridge - Interim Design - GCRTA Review	30	Sep-25-18	Oct-24-18	280	173000-7D Admin/Fab	D	Design	E89thB
BU15-1110	E89th St Bridge - Interim Design - NS Review	30	Sep-25-18	Oct-24-18	280	173000-7D Admin/Fab	D	Design	E89thB
BU15-1120	E89th St Bridge - Interim Design - Third Party Compliance	5	Oct-24-18	Oct-31-18	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1130	E89th St Bridge - Final Design - DBT Prep/Submit	46	Oct-31-18	Jan-08-19	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1140	E89th St Bridge - Final Design - Over the Shoulder Review	0	Dec-04-18		218	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1150	E89th St Bridge - Final Design - IQF Review	10	Jan-08-19	Jan-22-19	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1160	E89th St Bridge - Final Design - ODOT Audit	10	Jan-22-19	Feb-05-19	205	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1170	E89th St Bridge - Final Design - City of Cleveland Engineering Review	10	Jan-22-19	Feb-05-19	205	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1200	E89th St Bridge - Final Design - CPP Review	20	Jan-22-19	Feb-19-19	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1210	E89th St Bridge - Final Design - CWD Review	20	Jan-22-19	Feb-19-19	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1220	E89th St Bridge - Final Design - WPC Review	20	Jan-22-19	Feb-19-19	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1230	E89th St Bridge - Final Design - Private Utility Review	20	Jan-22-19	Feb-19-19	195	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1180	E89th St Bridge - Final Design - GCRTA Review	30	Jan-23-19	Feb-21-19	276	173000-7D Admin/Fab	D	Design	E89thB
BU15-1190	E89th St Bridge - Final Design - NS Review	30	Jan-23-19	Feb-21-19	276	173000-7D Admin/Fab	D	Design	E89thB
BU15-1240	E89th St Bridge - Final Design - Third Party Compliance	5	Feb-21-19	Feb-28-19	193	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1250	E89th St Bridge - RFC - DBT Prep/Submit	17	Feb-28-19	Mar-25-19	193	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1260	E89th St Bridge - RFC - IQF Review	5	Mar-25-19	Apr-01-19	193	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1270	Complete BU #15 - E89th St Bridge Design	0		Apr-01-19	193	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1280	E89th St Bridge - As-Built - DBT Prep/Submit	80	Oct-08-21	Feb-01-22	96	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1290	E89th St Bridge - As-Built - IQF Review	10	Feb-02-22	Feb-15-22	96	173000-5D Admin/Workdays	D	Design	E89thB
BU15-1300	E89th St Bridge - As-Built - Submit to ODOT	0		Feb-15-22	96	173000-5D Admin/Workdays	D	Design	E89thB
Procedures & Submittals									
General									
Quality Management									
SGQM-1000	Prepare/Submit Project Management Plan (PMP)	30	Feb-27-18	Mar-28-18	32	173000-7D Admin/Fab			
SGQM-1010	Review/Approve PMP	15	Mar-28-18	Apr-18-18	22	173000-5D Admin/Workdays			
Public Information and Communcation									



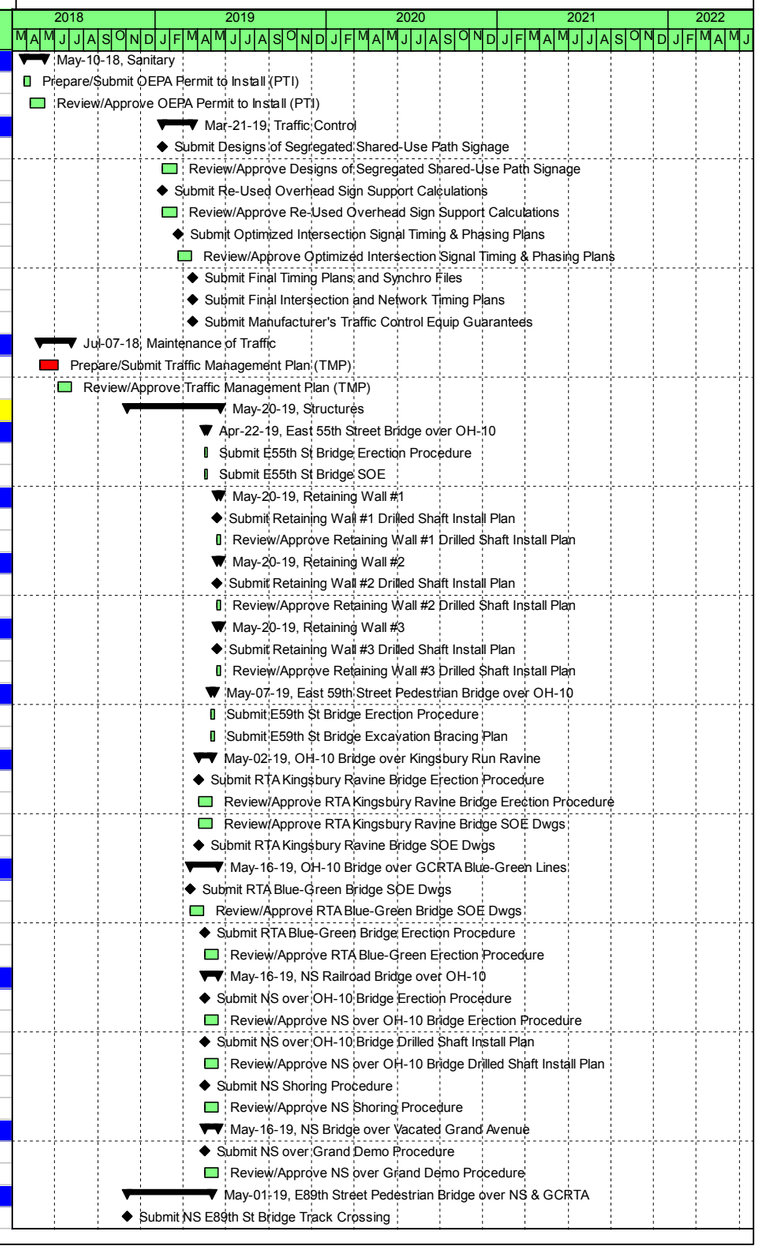
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
SGPI-1020	Prepare DRAFT Public Information Plan (PIP) and Workshop	45	Feb-27-18	Apr-12-18	257	173000-7D Admin/Fab			
SGPI-1040	Prepare/Submit Crisis Management Plan & Workshop	30	Feb-27-18	Mar-28-18	302	173000-7D Admin/Fab			
SGPI-1090	Submit Project Contact List	30	Mar-27-18	Apr-25-18	274	173000-7D Admin/Fab			
SGPI-1030	Prepare/Submit Final PIP	30	Apr-13-18	May-12-18	257	173000-7D Admin/Fab			
Diversity, Inclusion & Outreach Plan (DIOP)									
SGDI-1050	Prepare/Submit DRAFT DIOP	14	Feb-27-18	Mar-12-18	249	173000-7D Admin/Fab			
SGDI-1060	Review/Approve DRAFT DIOP and Planning Meeting	46	Mar-13-18	Apr-27-18	249	173000-7D Admin/Fab			
SGDI-1070	Prepare/Submit FINAL DIOP	30	Apr-28-18	May-27-18	249	173000-7D Admin/Fab			
Environmental									
SGE-1100	Submit EDAs & Outfall Information	0	Mar-27-18		273	173000-7D Admin/Fab			
SGE-1110	Submit NOI to OEPA	10	Mar-27-18	Apr-05-18	273	173000-7D Admin/Fab			
SGE-1130	Prepare/Submit SWPPP	30	Mar-27-18	Apr-25-18	243	173000-7D Admin/Fab			
SGE-1150	Submit Haul Routes	0	Mar-27-18		274	173000-7D Admin/Fab			
SGE-1160	Review/Approve Haul Routes	30	Mar-27-18	Apr-25-18	274	173000-7D Admin/Fab			
SGE-1170	Submit Temp Impacts within Section 6(f)	0	Mar-27-18		489	173000-7D Admin/Fab			
SGE-1180	Submit Spill Prevention Control & Countermeasures (SPCC) Plan	30	Mar-27-18	Apr-25-18	274	173000-7D Admin/Fab			
SGE-1190	Submit OEPA Notfication of Demo Form - Grand under NS	10	Mar-27-18	Apr-05-18	818	173000-7D Admin/Fab			
SGE-1200	Submit OEPA Notification of Demo Form - E89th St over RTA	10	Mar-27-18	Apr-05-18	739	173000-7D Admin/Fab			
SGE-1210	Review/Approve Temp Impacts with Section 6(f)	365	Mar-27-18	Mar-26-19	489	173000-7D Admin/Fab			
SGE-1120	Review/Approve NPDES Permit	21	Apr-06-18	Apr-26-18	273	173000-7D Admin/Fab			
SGE-1140	Review/Approve SWPPP	31	Apr-26-18	May-26-18	243	173000-7D Admin/Fab			
Utilities									
Area A - East 55th Street									
UR55-1000	Submit CPP Relocation Plan	0	Sep-01-18		145	173000-7D Admin/Fab	A		
UR55-1020	CEI Submit Utility Relocation Plan	0	Sep-01-18		200	173000-7D Admin/Fab	A		
UR55-1050	UNNAMED Cable Submit Utility Relocation Plan	0	Sep-01-18		272	173000-7D Admin/Fab	A		
UR55-1080	UNNAMED Telecom Submit Utility Relocation Plan	0	Sep-01-18		244	173000-7D Admin/Fab	A		
UR55-1110	DEOG Submit Utility Relocation Plan	0	Sep-01-18		341	173000-7D Admin/Fab	A		
UR55-1140	AT&T Submit Utility Relocation Plan	0	Sep-01-18		303	173000-7D Admin/Fab	A		
UR55-1010	Review/Approve CPP Relocation Plan	20	Sep-04-18	Oct-01-18	99	173000-5D Admin/Workdays	A		
UR55-1030	DBT Review/Approve CEI Relocation Plan	10	Sep-04-18	Sep-17-18	138	173000-5D Admin/Workdays	A		
UR55-1040	ODOT Review/Approve CEI Relocation Plan	10	Sep-04-18	Sep-17-18	138	173000-5D Admin/Workdays	A		
UR55-1060	DBT Review/Approve UNNAMED Cable Relocation Plan	10	Sep-04-18	Sep-17-18	189	173000-5D Admin/Workdays	A		
UR55-1070	ODOT Review/Approve UNNAMED Cable Relocation Plan	10	Sep-04-18	Sep-17-18	189	173000-5D Admin/Workdays	A		
UR55-1090	DBT Review/Approve UNNAMED Telecom Relocation Plan	10	Sep-04-18	Sep-17-18	170	173000-5D Admin/Workdays	A		
UR55-1100	ODOT Review/Approve UNNAMED Telecom Relocation Plan	10	Sep-04-18	Sep-17-18	170	173000-5D Admin/Workdays	A		
UR55-1120	DBT Review/Approve DEOG Relocation Plan	10	Sep-04-18	Sep-17-18	237	173000-5D Admin/Workdays	A		
UR55-1130	ODOT Review/Approve DEOG Relocation Plan	10	Sep-04-18	Sep-17-18	237	173000-5D Admin/Workdays	A		
UR55-1150	DBT Review/Approve AT&T Relocation Plan	10	Sep-04-18	Sep-17-18	210	173000-5D Admin/Workdays	A		
UR55-1160	ODOT Review/Approve AT&T Relocation Plan	10	Sep-04-18	Sep-17-18	210	173000-5D Admin/Workdays	A		
UR55-1170	Revise/Resubmit CPP Relocation Plan	10	Oct-02-18	Oct-15-18	99	173000-5D Admin/Workdays	A		
UR55-1180	Compliance Review/Approve CPP Relocation Plan	10	Oct-16-18	Oct-29-18	99	173000-5D Admin/Workdays	A		
Area B - GCRTA									
URTA-1000	Submit CPP Relocation Plan	0	Aug-14-18		192	173000-7D Admin/Fab	B		
URTA-1010	Review/Approve CPP Relocation Plan	20	Aug-14-18	Sep-11-18	134	173000-5D Admin/Workdays	B		
URTA-1020	CEI Submit Utility Relocation Plan	0	Aug-14-18		170	173000-7D Admin/Fab	B		
URTA-1030	DBT Review/Approve CEI Relocation Plan	10	Aug-14-18	Aug-27-18	118	173000-5D Admin/Workdays	B		
URTA-1040	ODOT Review/Approve CEI Relocation Plan	10	Aug-14-18	Aug-27-18	118	173000-5D Admin/Workdays	B		
URTA-1050	UNNAMED Cable Submit Utility Relocation Plan	0	Aug-14-18		239	173000-7D Admin/Fab	B		
URTA-1060	DBT Review/Approve UNNAMED Cable Relocation Plan	10	Aug-14-18	Aug-27-18	167	173000-5D Admin/Workdays	B		
URTA-1070	ODOT Review/Approve UNNAMED Cable Relocation Plan	10	Aug-14-18	Aug-27-18	167	173000-5D Admin/Workdays	B		
URTA-1080	UNNAMED Telecom Submit Utility Relocation Plan	0	Aug-14-18		234	173000-7D Admin/Fab	B		
URTA-1090	DBT Review/Approve UNNAMED Telecom Relocation Plan	10	Aug-14-18	Aug-27-18	164	173000-5D Admin/Workdays	B		
URTA-1100	ODOT Review/Approve UNNAMED Telecom Relocation Plan	10	Aug-14-18	Aug-27-18	164	173000-5D Admin/Workdays	B		



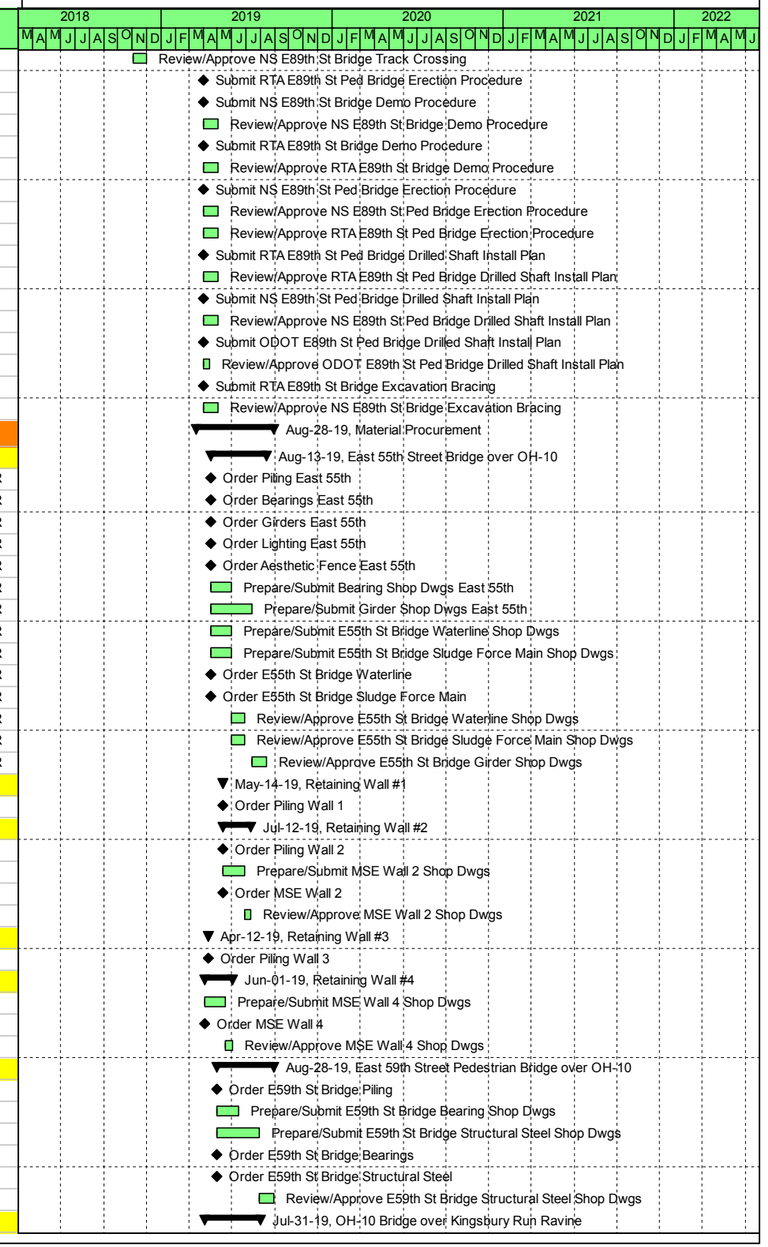
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
URTA-1110	DEOG Submit Utility Relocation Plan	0	Aug-14-18		288	173000-7D Admin/Fab	B		
URTA-1120	DBT Review/Approve DEOG Relocation Plan	10	Aug-14-18	Aug-27-18	201	173000-5D Admin/Workdays	B		
URTA-1130	ODOT Review/Approve DEOG Relocation Plan	10	Aug-14-18	Aug-27-18	201	173000-5D Admin/Workdays	B		
URTA-1140	AT&T Submit Utility Relocation Plan	0	Aug-14-18		157	173000-7D Admin/Fab	B		
URTA-1150	DBT Review/Approve AT&T Relocation Plan	10	Aug-14-18	Aug-27-18	109	173000-5D Admin/Workdays	B		
URTA-1160	ODOT Review/Approve AT&T Relocation Plan	10	Aug-14-18	Aug-27-18	109	173000-5D Admin/Workdays	B		
URTA-1170	Revise/Resubmit CPP Relocation Plan	10	Sep-12-18	Sep-25-18	134	173000-5D Admin/Workdays	B		
URTA-1180	Compliance Review/Approve CPP Relocation Plan	10	Sep-26-18	Oct-09-18	134	173000-5D Admin/Workdays	B		
Area C - Norfolk Southern Railroad									
URNS-1000	JOB8 Submit Utility Relocation Plan	0	Sep-01-18		299	173000-7D Admin/Fab	C		
URNS-1090	UNNAMED Submit MCIP Duct Utility Relocation Plan	0	Sep-01-18		335	173000-7D Admin/Fab	C		
URNS-1120	UNNAMED Submit 2x2" PC Duct Utility Relocation Plan	0	Sep-01-18		472	173000-7D Admin/Fab	C		
URNS-1030	UNNAMED Submit T-Cubed Duct Utility Relocation Plan	0	Sep-03-18		333	173000-7D Admin/Fab	C		
URNS-1060	UNNAMED Submit LVTP Duct Utility Relocation Plan	0	Sep-03-18		325	173000-7D Admin/Fab	C		
URNS-1010	DBT Review/Approve JOB8 Relocation Plan	10	Sep-04-18	Sep-17-18	208	173000-5D Admin/Workdays	C		
URNS-1020	ODOT Review/Approve JOB8 Relocation Plan	10	Sep-04-18	Sep-17-18	208	173000-5D Admin/Workdays	C		
URNS-1040	DBT Review/Approve UNNAMED T-Cubed Duct Relocation Plan	10	Sep-04-18	Sep-17-18	233	173000-5D Admin/Workdays	C		
URNS-1050	ODOT Review/Approve UNNAMED T-Cubed Duct Relocation Plan	10	Sep-04-18	Sep-17-18	233	173000-5D Admin/Workdays	C		
URNS-1070	DBT Review/Approve UNNAMED LVTP Duct Relocation Plan	10	Sep-04-18	Sep-17-18	227	173000-5D Admin/Workdays	C		
URNS-1080	ODOT Review/Approve UNNAMED LVTP Duct Relocation Plan	10	Sep-04-18	Sep-17-18	227	173000-5D Admin/Workdays	C		
URNS-1100	DBT Review/Approve UNNAMED MCIP Duct Relocation Plan	10	Sep-04-18	Sep-17-18	233	173000-5D Admin/Workdays	C		
URNS-1110	ODOT Review/Approve UNNAMED MCIP Duct Relocation Plan	10	Sep-04-18	Sep-17-18	233	173000-5D Admin/Workdays	C		
URNS-1130	DBT Review/Approve UNNAMED 2x2" PC Duct Relocation Plan	10	Sep-04-18	Sep-17-18	328	173000-5D Admin/Workdays	C		
URNS-1140	ODOT Review/Approve UNNAMED 2x2" PC Duct Relocation Plan	10	Sep-04-18	Sep-17-18	328	173000-5D Admin/Workdays	C		
Area D - Buckeye Road / Woodland Avenue									
URBW-1200	Submit CPP Relocation Plan	0	Sep-01-18		422	173000-7D Admin/Fab	D		
URBW-1000	CEI Submit Utility Relocation Plan	0	Sep-01-18		424	173000-7D Admin/Fab	D		
URBW-1030	UNNAMED Cable Submit Utility Relocation Plan	0	Sep-01-18		451	173000-7D Admin/Fab	D		
URBW-1060	UNNAMED Telecom Submit Utility Relocation Plan	0	Sep-01-18		460	173000-7D Admin/Fab	D		
URBW-1090	DEOG Submit Utility Relocation Plan	0	Sep-01-18		494	173000-7D Admin/Fab	D		
URBW-1300	AT&T Submit Utility Relocation Plan	0	Sep-01-18		544	173000-7D Admin/Fab	D		
URBW-1210	Review/Approve CPP Relocation Plan	20	Sep-04-18	Oct-01-18	293	173000-5D Admin/Workdays	D		
URBW-1010	DBT Review/Approve CEI Relocation Plan	10	Sep-04-18	Sep-17-18	295	173000-5D Admin/Workdays	D		
URBW-1020	ODOT Review/Approve CEI Relocation Plan	10	Sep-04-18	Sep-17-18	295	173000-5D Admin/Workdays	D		
URBW-1040	DBT Review/Approve UNNAMED Cable Relocation Plan	10	Sep-04-18	Sep-17-18	314	173000-5D Admin/Workdays	D		
URBW-1050	ODOT Review/Approve UNNAMED Cable Relocation Plan	10	Sep-04-18	Sep-17-18	314	173000-5D Admin/Workdays	D		
URBW-1070	DBT Review/Approve UNNAMED Telecom Relocation Plan	10	Sep-04-18	Sep-17-18	320	173000-5D Admin/Workdays	D		
URBW-1080	ODOT Review/Approve UNNAMED Telecom Relocation Plan	10	Sep-04-18	Sep-17-18	320	173000-5D Admin/Workdays	D		
URBW-1100	DBT Review/Approve DEOG Relocation Plan	10	Sep-04-18	Sep-17-18	342	173000-5D Admin/Workdays	D		
URBW-1110	ODOT Review/Approve DEOG Relocation Plan	10	Sep-04-18	Sep-17-18	342	173000-5D Admin/Workdays	D		
URBW-1310	DBT Review/Approve AT&T Relocation Plan	10	Sep-04-18	Sep-17-18	378	173000-5D Admin/Workdays	D		
URBW-1320	ODOT Review/Approve AT&T Relocation Plan	10	Sep-04-18	Sep-17-18	378	173000-5D Admin/Workdays	D		
URBW-1220	Revise/Resubmit CPP Relocation Plan	10	Oct-02-18	Oct-15-18	293	173000-5D Admin/Workdays	D		
URBW-1230	Compliance Review/Approve CPP Relocation Plan	10	Oct-16-18	Oct-29-18	293	173000-5D Admin/Workdays	D		
Railroads									
SGRR-2050	Submit Pipe Crossing App - Sta 89+00 LT Stm Sewer Outfall	0	Sep-11-18		301	173000-7D Admin/Fab			
SGRR-2060	Review/Approve Pipe Crossing Permit - Sta 89+00 LT Stm Sewer Outfall	30	Sep-11-18	Oct-10-18	301	173000-7D Admin/Fab			
Geotechnical									
SGG-2130	Submit Final Project Soil Profile	180	Feb-19-19	Aug-17-19	1048	173000-7D Admin/Fab			
Drainage									
SGD-2070	Submit Preliminary Drainage Report	0	Jul-14-18		236	173000-7D Admin/Fab			
SGD-2080	Review/Approve Preliminary Drainage Report	28	Jul-14-18	Aug-10-18	236	173000-7D Admin/Fab			
SGD-2090	Submit Final Drainage Report	0	Oct-24-18		237	173000-7D Admin/Fab			
SGD-2100	Review/Approve Final Drainage Report	28	Oct-24-18	Nov-20-18	237	173000-7D Admin/Fab			



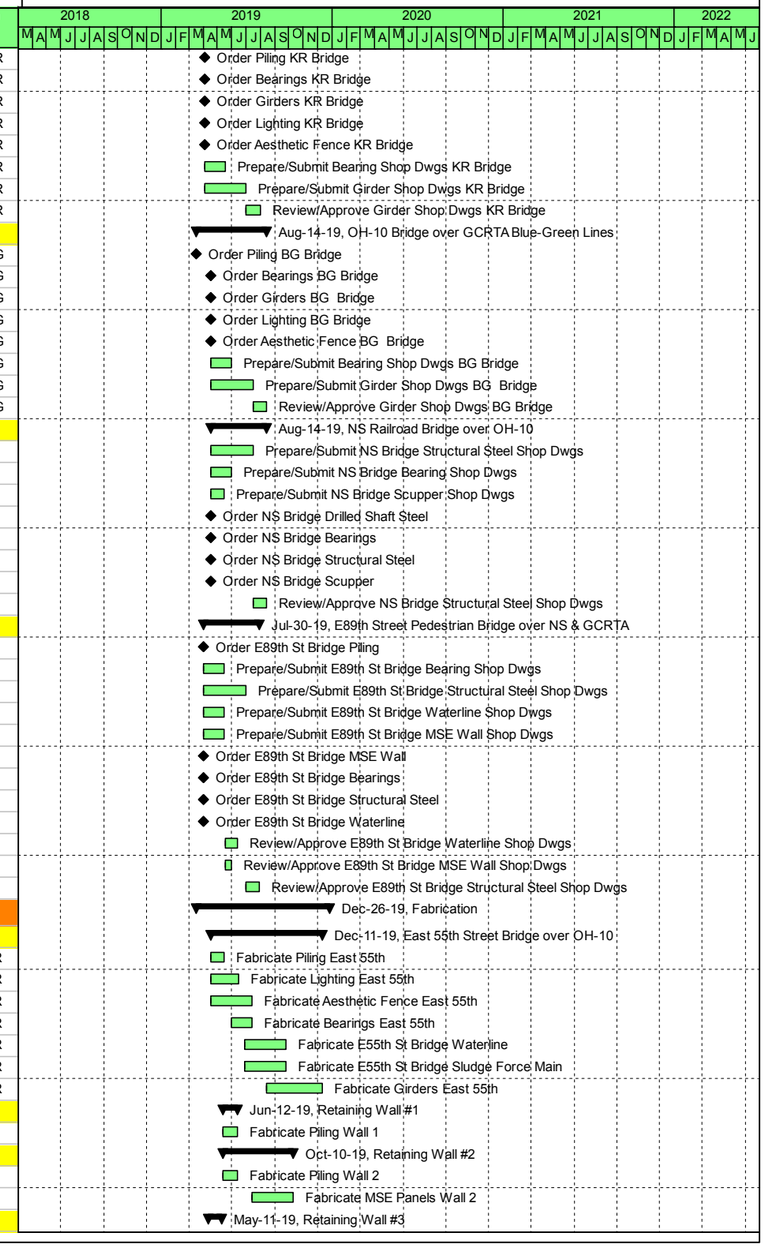
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
Sanitary									
SGS-2110	Prepare/Submit OEPA Permit to Install (PTI)	14	Mar-27-18	Apr-09-18	102	173000-7D Admin/Fab			
SGS-2120	Review/Approve OEPA Permit to Install (PTI)	31	Apr-10-18	May-10-18	102	173000-7D Admin/Fab			
Traffic Control									
SGTC-2190	Submit Designs of Segregated Shared-Use Path Signage	0	Jan-17-19		572	173000-7D Admin/Fab			
SGTC-2200	Review/Approve Designs of Segregated Shared-Use Path Signage	30	Jan-17-19	Feb-15-19	572	173000-7D Admin/Fab			
SGTC-2210	Submit Re-Used Overhead Sign Support Calculations	0	Jan-17-19		444	173000-7D Admin/Fab			
SGTC-2220	Review/Approve Re-Used Overhead Sign Support Calculations	30	Jan-17-19	Feb-15-19	444	173000-7D Admin/Fab			
SGTC-2150	Submit Optimized Intersection Signal Timing & Phasing Plans	0	Feb-19-19		954	173000-7D Admin/Fab			
SGTC-2160	Review/Approve Optimized Intersection Signal Timing & Phasing Plans	30	Feb-19-19	Mar-20-19	954	173000-7D Admin/Fab			
SGTC-2140	Submit Final Timing Plans and Synchro Files	0	Mar-21-19		1198	173000-7D Admin/Fab			
SGTC-2170	Submit Final Intersection and Network Timing Plans	0	Mar-21-19		1198	173000-7D Admin/Fab			
SGTC-2180	Submit Manufacturer's Traffic Control Equip Guarantees	0	Mar-21-19		1198	173000-7D Admin/Fab			
Maintenance of Traffic									
SGMT-3000	Prepare/Submit Traffic Management Plan (TMP)	40	Apr-29-18	Jun-07-18	32	173000-7D Admin/Fab			
SGMT-3010	Review/Approve Traffic Management Plan (TMP)	30	Jun-08-18	Jul-07-18	180	173000-7D Admin/Fab			
Structures									
East 55th Street Bridge over OH-10									
SB55-1000	Submit E55th St Bridge Erection Procedure	7	Apr-16-19	Apr-22-19	422	173000-7D Admin/Fab	A		E55thBR
SB55-1010	Submit E55th St Bridge SOE	7	Apr-16-19	Apr-22-19	378	173000-7D Admin/Fab	A		E55thBR
Retaining Wall #1									
SRW1-1010	Submit Retaining Wall #1 Drilled Shaft Install Plan	0	May-14-19		276	173000-7D Admin/Fab	C		NS10
SRW1-1020	Review/Approve Retaining Wall #1 Drilled Shaft Install Plan	7	May-14-19	May-20-19	276	173000-7D Admin/Fab	C		NS10
Retaining Wall #2									
SRW2-1000	Submit Retaining Wall #2 Drilled Shaft Install Plan	0	May-14-19		274	173000-7D Admin/Fab	C		NS10
SRW2-1010	Review/Approve Retaining Wall #2 Drilled Shaft Install Plan	7	May-14-19	May-20-19	274	173000-7D Admin/Fab	C		NS10
Retaining Wall #3									
SRW3-1000	Submit Retaining Wall #3 Drilled Shaft Install Plan	0	May-14-19		101	173000-7D Admin/Fab	C		NS10
SRW3-1010	Review/Approve Retaining Wall #3 Drilled Shaft Install Plan	7	May-14-19	May-20-19	101	173000-7D Admin/Fab	C		NS10
East 59th Street Pedestrian Bridge over OH-10									
SB59-1000	Submit E59th St Bridge Erection Procedure	7	May-01-19	May-07-19	793	173000-7D Admin/Fab	A		E59thB
SB59-1010	Submit E59th St Bridge Excavation Bracing Plan	7	May-01-19	May-07-19	744	173000-7D Admin/Fab	A		E59thB
OH-10 Bridge over Kingsbury Run Ravine									
SBKR-1000	Submit RTA Kingsbury Ravine Bridge Erection Procedure	0	Apr-03-19		551	173000-7D Admin/Fab	B		OH10KR
SBKR-1010	Review/Approve RTA Kingsbury Ravine Bridge Erection Procedure	30	Apr-03-19	May-02-19	551	173000-7D Admin/Fab	B		OH10KR
SBKR-1020	Review/Approve RTA Kingsbury Ravine Bridge SOE Dwgs	30	Apr-03-19	May-02-19	399	173000-7D Admin/Fab	B		OH10KR
SBKR-1030	Submit RTA Kingsbury Ravine Bridge SOE Dwgs	0	Apr-03-19		399	173000-7D Admin/Fab	B		OH10KR
OH-10 Bridge over GCRTA Blue-Green Lines									
SBBG-1020	Submit RTA Blue-Green Bridge SOE Dwgs	0	Mar-16-19		519	173000-7D Admin/Fab	B		OH10BG
SBBG-1030	Review/Approve RTA Blue-Green Bridge SOE Dwgs	30	Mar-16-19	Apr-14-19	519	173000-7D Admin/Fab	B		OH10BG
SBBG-1000	Submit RTA Blue-Green Bridge Erection Procedure	0	Apr-17-19		585	173000-7D Admin/Fab	B		OH10BG
SBBG-1010	Review/Approve RTA Blue-Green Erection Procedure	30	Apr-17-19	May-16-19	585	173000-7D Admin/Fab	B		OH10BG
NS Railroad Bridge over OH-10									
SBNS-1000	Submit NS over OH-10 Bridge Erection Procedure	0	Apr-17-19		349	173000-7D Admin/Fab	C		NS10
SBNS-1010	Review/Approve NS over OH-10 Bridge Erection Procedure	30	Apr-17-19	May-16-19	349	173000-7D Admin/Fab	C		NS10
SBNS-1020	Submit NS over OH-10 Bridge Drilled Shaft Install Plan	0	Apr-17-19		278	173000-7D Admin/Fab	C		NS10
SBNS-1030	Review/Approve NS over OH-10 Bridge Drilled Shaft Install Plan	30	Apr-17-19	May-16-19	278	173000-7D Admin/Fab	C		NS10
SBNS-1040	Submit NS Shoring Procedure	0	Apr-17-19		265	173000-7D Admin/Fab	C		NS10
SBNS-1050	Review/Approve NS Shoring Procedure	30	Apr-17-19	May-16-19	265	173000-7D Admin/Fab	C		NS10
NS Bridge over Vacated Grand Avenue									
SBGA-1000	Submit NS over Grand Demo Procedure	0	Apr-17-19		412	173000-7D Admin/Fab	C		NSGR
SBGA-1010	Review/Approve NS over Grand Demo Procedure	30	Apr-17-19	May-16-19	412	173000-7D Admin/Fab	C		NSGR
E89th Street Pedestrian Bridge over NS & GCRTA									
SB89-1140	Submit NS E89th St Bridge Track Crossing	0	Nov-01-18		474	173000-7D Admin/Fab	D		E89thB



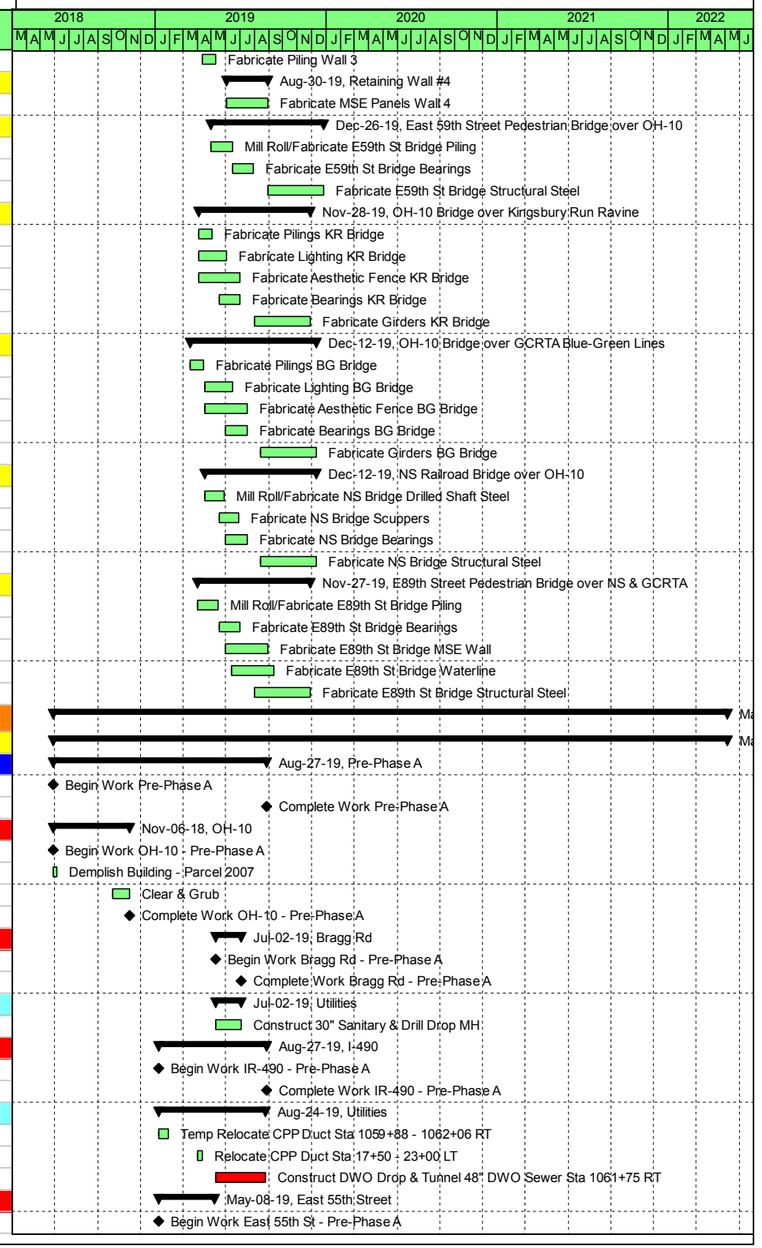
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
SB89-1150	Review/Approve NS E89th St Bridge Track Crossing	30	Nov-01-18	Nov-30-18	474	173000-7D Admin/Fab	D		E89thB
SB89-1060	Submit RTA E89th St Ped Bridge Erection Procedure	0		Apr-01-19	488	173000-7D Admin/Fab	D		E89thB
SB89-1000	Submit NS E89th St Bridge Demo Procedure	0	Apr-02-19		348	173000-7D Admin/Fab	D		E89thB
SB89-1010	Review/Approve NS E89th St Bridge Demo Procedure	30	Apr-02-19	May-01-19	348	173000-7D Admin/Fab	D		E89thB
SB89-1020	Submit RTA E89th St Bridge Demo Procedure	0	Apr-02-19		328	173000-7D Admin/Fab	D		E89thB
SB89-1030	Review/Approve RTA E89th St Bridge Demo Procedure	30	Apr-02-19	May-01-19	328	173000-7D Admin/Fab	D		E89thB
SB89-1040	Submit NS E89th St Ped Bridge Erection Procedure	0	Apr-02-19		491	173000-7D Admin/Fab	D		E89thB
SB89-1050	Review/Approve NS E89th St Ped Bridge Erection Procedure	30	Apr-02-19	May-01-19	491	173000-7D Admin/Fab	D		E89thB
SB89-1070	Review/Approve RTA E89th St Ped Bridge Erection Procedure	30	Apr-02-19	May-01-19	488	173000-7D Admin/Fab	D		E89thB
SB89-1080	Submit RTA E89th St Ped Bridge Drilled Shaft Install Plan	0	Apr-02-19		432	173000-7D Admin/Fab	D		E89thB
SB89-1090	Review/Approve RTA E89th St Ped Bridge Drilled Shaft Install Plan	30	Apr-02-19	May-01-19	432	173000-7D Admin/Fab	D		E89thB
SB89-1100	Submit NS E89th St Ped Bridge Drilled Shaft Install Plan	0	Apr-02-19		439	173000-7D Admin/Fab	D		E89thB
SB89-1110	Review/Approve NS E89th St Ped Bridge Drilled Shaft Install Plan	30	Apr-02-19	May-01-19	439	173000-7D Admin/Fab	D		E89thB
SB89-1120	Submit ODOT E89th St Ped Bridge Drilled Shaft Install Plan	0	Apr-02-19		448	173000-7D Admin/Fab	D		E89thB
SB89-1130	Review/Approve ODOT E89th St Ped Bridge Drilled Shaft Install Plan	14	Apr-02-19	Apr-15-19	448	173000-7D Admin/Fab	D		E89thB
SB89-1160	Submit RTA E89th St Bridge Excavation Bracing	0	Apr-02-19		446	173000-7D Admin/Fab	D		E89thB
SB89-1170	Review/Approve NS E89th St Bridge Excavation Bracing	30	Apr-02-19	May-01-19	446	173000-7D Admin/Fab	D		E89thB
Material Procurement									
East 55th Street Bridge over OH-10									
MP55-1005	Order Piling East 55th	0	Apr-16-19		359	173000-7D Admin/Fab	A		E55thBR
MP55-1010	Order Bearings East 55th	0	Apr-16-19		338	173000-7D Admin/Fab	A		E55thBR
MP55-1020	Order Girders East 55th	0	Apr-16-19		189	173000-7D Admin/Fab	A		E55thBR
MP55-1050	Order Lighting East 55th	0	Apr-16-19		469	173000-7D Admin/Fab	A		E55thBR
MP55-1060	Order Aesthetic Fence East 55th	0	Apr-16-19		449	173000-7D Admin/Fab	A		E55thBR
MP55-1015	Prepare/Submit Bearing Shop Dwgs East 55th	45	Apr-16-19	May-30-19	338	173000-7D Admin/Fab	A		E55thBR
MP55-1025	Prepare/Submit Girder Shop Dwgs East 55th	90	Apr-16-19	Jul-14-19	189	173000-7D Admin/Fab	A		E55thBR
MP55-1070	Prepare/Submit E55th St Bridge Waterline Shop Dwgs	45	Apr-16-19	May-30-19	302	173000-7D Admin/Fab	A		E55thBR
MP55-1090	Prepare/Submit E55th St Bridge Sludge Force Main Shop Dwgs	45	Apr-16-19	May-30-19	294	173000-7D Admin/Fab	A		E55thBR
MP55-1030	Order E55th St Bridge Waterline	0	Apr-16-19		302	173000-7D Admin/Fab	A		E55thBR
MP55-1040	Order E55th St Bridge Sludge Force Main	0	Apr-16-19		294	173000-7D Admin/Fab	A		E55thBR
MP55-1080	Review/Approve E55th St Bridge Waterline Shop Dwgs	28	May-31-19	Jun-27-19	302	173000-7D Admin/Fab	A		E55thBR
MP55-1100	Review/Approve E55th St Bridge Sludge Force Main Shop Dwgs	28	May-31-19	Jun-27-19	294	173000-7D Admin/Fab	A		E55thBR
MP55-1035	Review/Approve E55th St Bridge Girder Shop Dwgs	30	Jul-15-19	Aug-13-19	189	173000-7D Admin/Fab	A		E55thBR
Retaining Wall #1									
MPW1-1000	Order Piling Wall 1	0	May-14-19		484	173000-7D Admin/Fab	A		RW1
Retaining Wall #2									
MPW2-1000	Order Piling Wall 2	0	May-14-19		251	173000-7D Admin/Fab	A		RW2
MPW2-1020	Prepare/Submit MSE Wall 2 Shop Dwgs	45	May-14-19	Jun-27-19	572	173000-7D Admin/Fab	A		RW4
MPW2-1030	Order MSE Wall 2	0	May-14-19		572	173000-7D Admin/Fab	A		RW4
MPW2-1010	Review/Approve MSE Wall 2 Shop Dwgs	15	Jun-28-19	Jul-12-19	572	173000-7D Admin/Fab	A		RW4
Retaining Wall #3									
MPW3-1000	Order Piling Wall 3	0	Apr-12-19		110	173000-7D Admin/Fab	A		RW3
Retaining Wall #4									
MPW4-1010	Prepare/Submit MSE Wall 4 Shop Dwgs	45	Apr-03-19	May-17-19	501	173000-7D Admin/Fab	A		RW4
MPW4-1030	Order MSE Wall 4	0	Apr-03-19		501	173000-7D Admin/Fab	A		RW4
MPW4-1020	Review/Approve MSE Wall 4 Shop Dwgs	15	May-18-19	Jun-01-19	501	173000-7D Admin/Fab	A		RW4
East 59th Street Pedestrian Bridge over OH-10									
MP59-1000	Order E59th St Bridge Piling	0	May-01-19		718	173000-7D Admin/Fab	A		E59thB
MP59-1010	Prepare/Submit E59th St Bridge Bearing Shop Dwgs	45	May-01-19	Jun-14-19	709	173000-7D Admin/Fab	A		E59thB
MP59-1020	Prepare/Submit E59th St Bridge Structural Steel Shop Dwgs	90	May-01-19	Jul-29-19	560	173000-7D Admin/Fab	A		E59thB
MP59-1030	Order E59th St Bridge Bearings	0	May-01-19		709	173000-7D Admin/Fab	A		E59thB
MP59-1040	Order E59th St Bridge Structural Steel	0	May-01-19		560	173000-7D Admin/Fab	A		E59thB
MP59-1050	Review/Approve E59th St Bridge Structural Steel Shop Dwgs	30	Jul-30-19	Aug-28-19	560	173000-7D Admin/Fab	A		E59thB
OH-10 Bridge over Kingsbury Run Ravine									



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
MPKR-1020	Order Piling KR Bridge	0	Apr-03-19		397	173000-7D Admin/Fab	B		OH10KR
MPKR-1030	Order Bearings KR Bridge	0	Apr-03-19		486	173000-7D Admin/Fab	B		OH10KR
MPKR-1050	Order Girders KR Bridge	0	Apr-03-19		341	173000-7D Admin/Fab	B		OH10KR
MPKR-1090	Order Lighting KR Bridge	0	Apr-03-19		858	173000-7D Admin/Fab	B		OH10KR
MPKR-1100	Order Aesthetic Fence KR Bridge	0	Apr-03-19		842	173000-7D Admin/Fab	B		OH10KR
MPKR-1040	Prepare/Submit Bearing Shop Dwgs KR Bridge	45	Apr-03-19	May-17-19	486	173000-7D Admin/Fab	B		OH10KR
MPKR-1060	Prepare/Submit Girder Shop Dwgs KR Bridge	90	Apr-03-19	Jul-01-19	341	173000-7D Admin/Fab	B		OH10KR
MPKR-1070	Review/Approve Girder Shop Dwgs KR Bridge	30	Jul-02-19	Jul-31-19	341	173000-7D Admin/Fab	B		OH10KR
OH-10 Bridge over GCRTA Blue-Green Lines									
MPBG-1010	Order Piling BG Bridge	0	Mar-16-19		507	173000-7D Admin/Fab	B		OH10BG
MPBG-1020	Order Bearings BG Bridge	0	Apr-17-19		521	173000-7D Admin/Fab	B		OH10BG
MPBG-1040	Order Girders BG Bridge	0	Apr-17-19		375	173000-7D Admin/Fab	B		OH10BG
MPBG-1080	Order Lighting BG Bridge	0	Apr-17-19		849	173000-7D Admin/Fab	B		OH10BG
MPBG-1090	Order Aesthetic Fence BG Bridge	0	Apr-17-19		828	173000-7D Admin/Fab	B		OH10BG
MPBG-1030	Prepare/Submit Bearing Shop Dwgs BG Bridge	45	Apr-17-19	May-31-19	521	173000-7D Admin/Fab	B		OH10BG
MPBG-1050	Prepare/Submit Girder Shop Dwgs BG Bridge	90	Apr-17-19	Jul-15-19	375	173000-7D Admin/Fab	B		OH10BG
MPBG-1060	Review/Approve Girder Shop Dwgs BG Bridge	30	Jul-16-19	Aug-14-19	375	173000-7D Admin/Fab	B		OH10BG
NS Railroad Bridge over OH-10									
MPNS-1000	Prepare/Submit NS Bridge Structural Steel Shop Dwgs	90	Apr-17-19	Jul-15-19	139	173000-7D Admin/Fab	C		NS10
MPNS-1020	Prepare/Submit NS Bridge Bearing Shop Dwgs	45	Apr-17-19	May-31-19	288	173000-7D Admin/Fab	C		NS10
MPNS-1030	Prepare/Submit NS Bridge Scupper Shop Dwgs	30	Apr-17-19	May-16-19	382	173000-7D Admin/Fab	C		NS10
MPNS-1040	Order NS Bridge Drilled Shaft Steel	0	Apr-17-19		266	173000-7D Admin/Fab	C		NS10
MPNS-1050	Order NS Bridge Bearings	0	Apr-17-19		288	173000-7D Admin/Fab	C		NS10
MPNS-1060	Order NS Bridge Structural Steel	0	Apr-17-19		139	173000-7D Admin/Fab	C		NS10
MPNS-1070	Order NS Bridge Scupper	0	Apr-17-19		382	173000-7D Admin/Fab	C		NS10
MPNS-1010	Review/Approve NS Bridge Structural Steel Shop Dwgs	30	Jul-16-19	Aug-14-19	139	173000-7D Admin/Fab	C		NS10
E89th Street Pedestrian Bridge over NS & GCRTA									
MP89-1000	Order E89th St Bridge Piling	0	Apr-02-19		417	173000-7D Admin/Fab	D		E89thB
MP89-1010	Prepare/Submit E89th St Bridge Bearing Shop Dwgs	45	Apr-02-19	May-16-19	424	173000-7D Admin/Fab	D		E89thB
MP89-1020	Prepare/Submit E89th St Bridge Structural Steel Shop Dwgs	90	Apr-02-19	Jun-30-19	278	173000-7D Admin/Fab	D		E89thB
MP89-1030	Prepare/Submit E89th St Bridge Waterline Shop Dwgs	45	Apr-02-19	May-16-19	385	173000-7D Admin/Fab	D		E89thB
MP89-1050	Prepare/Submit E89th St Bridge MSE Wall Shop Dwgs	45	Apr-02-19	May-16-19	328	173000-7D Admin/Fab	D		E89thB
MP89-1070	Order E89th St Bridge MSE Wall	0	Apr-02-19		328	173000-7D Admin/Fab	D		E89thB
MP89-1080	Order E89th St Bridge Bearings	0	Apr-02-19		424	173000-7D Admin/Fab	D		E89thB
MP89-1090	Order E89th St Bridge Structural Steel	0	Apr-02-19		278	173000-7D Admin/Fab	D		E89thB
MP89-1100	Order E89th St Bridge Waterline	0	Apr-02-19		385	173000-7D Admin/Fab	D		E89thB
MP89-1040	Review/Approve E89th St Bridge Waterline Shop Dwgs	28	May-17-19	Jun-13-19	385	173000-7D Admin/Fab	D		E89thB
MP89-1060	Review/Approve E89th St Bridge MSE Wall Shop Dwgs	15	May-17-19	May-31-19	328	173000-7D Admin/Fab	D		E89thB
MP89-1110	Review/Approve E89th St Bridge Structural Steel Shop Dwgs	30	Jul-01-19	Jul-30-19	278	173000-7D Admin/Fab	D		E89thB
Fabrication									
East 55th Street Bridge over OH-10									
F55-1000	Fabricate Piling East 55th	30	Apr-16-19	May-15-19	359	173000-7D Admin/Fab	A		E55thBR
F55-1040	Fabricate Lighting East 55th	60	Apr-16-19	Jun-14-19	469	173000-7D Admin/Fab	A		E55thBR
F55-1050	Fabricate Aesthetic Fence East 55th	90	Apr-16-19	Jul-14-19	449	173000-7D Admin/Fab	A		E55thBR
F55-1010	Fabricate Bearings East 55th	45	May-31-19	Jul-14-19	338	173000-7D Admin/Fab	A		E55thBR
F55-1060	Fabricate E55th St Bridge Waterline	90	Jun-28-19	Sep-25-19	302	173000-7D Admin/Fab	A		E55thBR
F55-1070	Fabricate E55th St Bridge Sludge Force Main	90	Jun-28-19	Sep-25-19	294	173000-7D Admin/Fab	A		E55thBR
F55-1020	Fabricate Girders East 55th	120	Aug-14-19	Dec-11-19	189	173000-7D Admin/Fab	A		E55thBR
Retaining Wall #1									
FW1-1000	Fabricate Piling Wall 1	30	May-14-19	Jun-12-19	484	173000-7D Admin/Fab	A		RW1
Retaining Wall #2									
FW2-1000	Fabricate Piling Wall 2	30	May-14-19	Jun-12-19	251	173000-7D Admin/Fab	A		RW2
FW2-1010	Fabricate MSE Panels Wall 2	90	Jul-13-19	Oct-10-19	572	173000-7D Admin/Fab	A		RW2
Retaining Wall #3									



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
FW3-1000	Fabricate Piling Wall 3	30	Apr-12-19	May-11-19	110	173000-7D Admin/Fab	A		RW3
Retaining Wall #4									
FW4-1000	Fabricate MSE Panels Wall 4	90	Jun-02-19	Aug-30-19	501	173000-7D Admin/Fab	A		RW4
East 59th Street Pedestrian Bridge over OH-10									
F59-1020	Mill Roll/Fabricate E59th St Bridge Piling	45	May-01-19	Jun-14-19	718	173000-7D Admin/Fab	A		E59thB
F59-1000	Fabricate E59th St Bridge Bearings	45	Jun-15-19	Jul-29-19	709	173000-7D Admin/Fab	A		E59thB
F59-1010	Fabricate E59th St Bridge Structural Steel	120	Aug-29-19	Dec-26-19	560	173000-7D Admin/Fab	A		E59thB
OH-10 Bridge over Kingsbury Run Ravine									
FKR-1010	Fabricate Pilings KR Bridge	30	Apr-03-19	May-02-19	397	173000-7D Admin/Fab	B		OH10KR
FKR-1050	Fabricate Lighting KR Bridge	60	Apr-03-19	Jun-01-19	858	173000-7D Admin/Fab	B		OH10KR
FKR-1060	Fabricate Aesthetic Fence KR Bridge	90	Apr-03-19	Jul-01-19	842	173000-7D Admin/Fab	B		OH10KR
FKR-1020	Fabricate Bearings KR Bridge	45	May-18-19	Jul-01-19	486	173000-7D Admin/Fab	B		OH10KR
FKR-1030	Fabricate Girders KR Bridge	120	Aug-01-19	Nov-28-19	341	173000-7D Admin/Fab	B		OH10KR
OH-10 Bridge over GCRTA Blue-Green Lines									
FBG-1010	Fabricate Pilings BG Bridge	30	Mar-16-19	Apr-14-19	507	173000-7D Admin/Fab	B		OH10BG
FBG-1050	Fabricate Lighting BG Bridge	60	Apr-17-19	Jun-15-19	849	173000-7D Admin/Fab	B		OH10BG
FBG-1060	Fabricate Aesthetic Fence BG Bridge	90	Apr-17-19	Jul-15-19	828	173000-7D Admin/Fab	B		OH10BG
FBG-1020	Fabricate Bearings BG Bridge	45	Jun-01-19	Jul-15-19	521	173000-7D Admin/Fab	B		OH10BG
FBG-1030	Fabricate Girders BG Bridge	120	Aug-15-19	Dec-12-19	375	173000-7D Admin/Fab	B		OH10BG
NS Railroad Bridge over OH-10									
FNS-1030	Mill Roll/Fabricate NS Bridge Drilled Shaft Steel	42	Apr-17-19	May-28-19	266	173000-7D Admin/Fab	C		NS10
FNS-1020	Fabricate NS Bridge Scuppers	42	May-17-19	Jun-27-19	382	173000-7D Admin/Fab	C		NS10
FNS-1000	Fabricate NS Bridge Bearings	45	Jun-01-19	Jul-15-19	288	173000-7D Admin/Fab	C		NS10
FNS-1010	Fabricate NS Bridge Structural Steel	120	Aug-15-19	Dec-12-19	139	173000-7D Admin/Fab	C		NS10
E89th Street Pedestrian Bridge over NS & GCRTA									
F89-1000	Mill Roll/Fabricate E89th St Bridge Piling	45	Apr-02-19	May-16-19	417	173000-7D Admin/Fab	D		E89thB
F89-1010	Fabricate E89th St Bridge Bearings	45	May-17-19	Jun-30-19	424	173000-7D Admin/Fab	D		E89thB
F89-1040	Fabricate E89th St Bridge MSE Wall	90	Jun-01-19	Aug-29-19	328	173000-7D Admin/Fab	D		E89thB
F89-1030	Fabricate E89th St Bridge Waterline	90	Jun-14-19	Sep-11-19	385	173000-7D Admin/Fab	D		E89thB
F89-1020	Fabricate E89th St Bridge Structural Steel	120	Jul-31-19	Nov-27-19	278	173000-7D Admin/Fab	D		E89thB
Construction									
Area A - East 55th Street									
Pre-Phase A									
APPA-1000	Begin Work Pre-Phase A	0	May-29-18		126	173000-5D	A	PPA	
APPA-2000	Complete Work Pre-Phase A	0		Aug-27-19	12	173000-5D	A	PPA	
OH-10									
CR10-1000	Begin Work OH-10 - Pre-Phase A	0	May-29-18		126	173000-5D	A	PPA	OH10
CR10-1010	Demolish Building - Parcel 2007	5	May-29-18	Jun-05-18	126	173000-5D	A	PPA	OH10
CR10-1020	Clear & Grub	20	Oct-01-18	Nov-06-18	66	173000-5D Clearing	A	PPA	OH10
CR10-1030	Complete Work OH-10 - Pre-Phase A	0		Nov-06-18	149	173000-5D	A	PPA	OH10
Bragg Rd									
CRBR-1000	Begin Work Bragg Rd - Pre-Phase A	0	May-09-19		42	173000-5D	A	PPA	Bragg
CRBR-1010	Complete Work Bragg Rd - Pre-Phase A	0		Jul-02-19	42	173000-5D	A	PPA	Bragg
Utilities									
CRBR-U100	Construct 30" Sanitary & Drill Drop MH	30	May-09-19	Jul-02-19	42	173000-5D	A	PPA	Bragg
I-490									
C490-1000	Begin Work IR-490 - Pre-Phase A	0	Jan-09-19		32	173000-5D	A	PPA	I490
C490-1010	Complete Work IR-490 - Pre-Phase A	0		Aug-27-19	40	173000-5D	A	PPA	I490
Utilities									
C490-U100	Temp Relocate CPP Duct Sta 1059+88 - 1062+06 RT	10	Jan-09-19	Jan-30-19	32	173000-5D	A	PPA	I490
C490-U120	Relocate CPP Duct Sta 17+50 - 23+00 LT	8	Apr-02-19	Apr-12-19	111	173000-5D	A	PPA	I490
C490-U110	Construct DWO Drop & Tunnel 48" DWO Sewer Sta 1061+75 RT	75	May-09-19	Aug-24-19	14	173000-6D	A	PPA	I490
East 55th Street									
CR55-1000	Begin Work East 55th St - Pre-Phase A	0	Jan-09-19		13	173000-5D	A	PPA	E55th

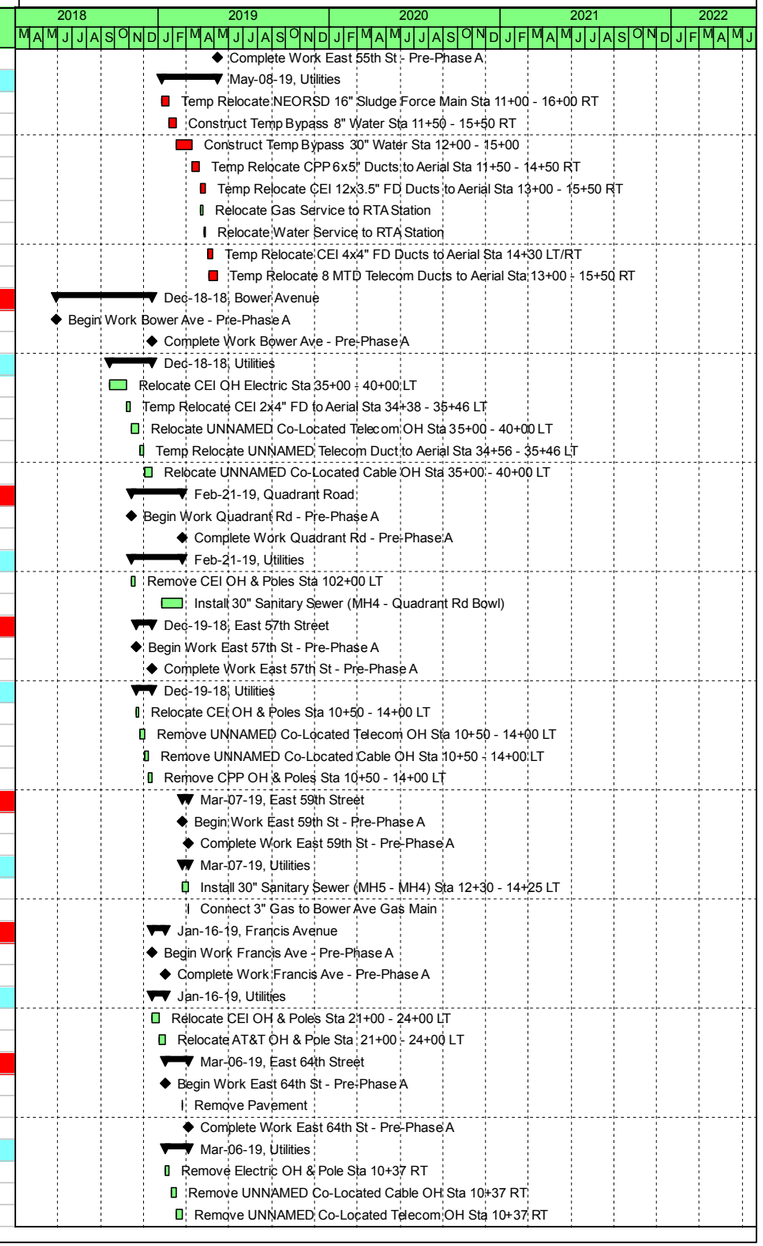


ODOT Project No. 173000
CUY-IR490/SR 010-02.09/19.28 Opportunity Corridor Project 3

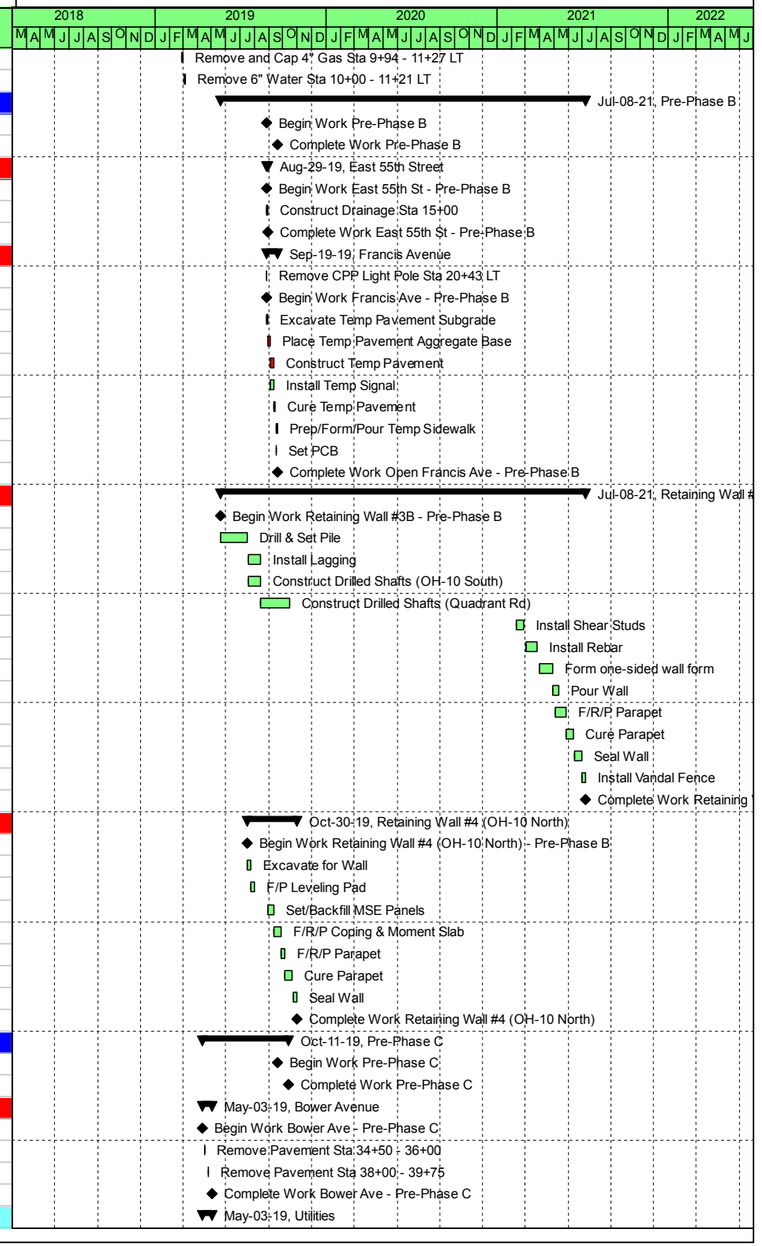
Trumbull-Great Lakes-Ruhlin
a joint venture

PROPOSAL SCHEDULE - COMPLETE

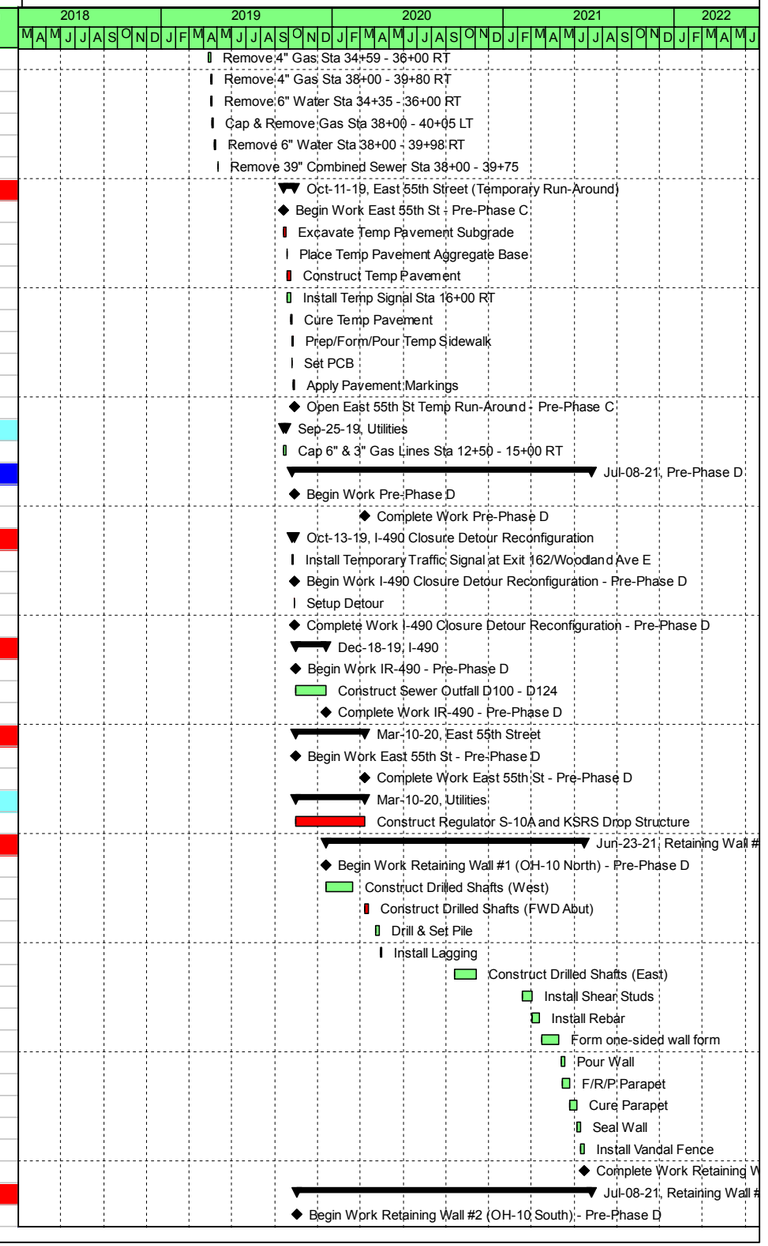
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR55-1010	Complete Work East 55th St - Pre-Phase A	0		May-08-19	72	173000-5D	A	PPA	E55th
Utilities									
CR55-U110	Temp Relocate NEORSD 16" Sludge Force Main Sta 11+00 - 16+00 RT	10	Jan-09-19	Jan-24-19	17	173000-6D	A	PPA	E55th
CR55-U300	Construct Temp Bypass 8" Water Sta 11+50 - 15+50 RT	8	Jan-25-19	Feb-07-19	17	173000-6D	A	PPA	E55th
CR55-U320	Construct Temp Bypass 30" Water Sta 12+00 - 15+00	20	Feb-08-19	Mar-13-19	17	173000-6D	A	PPA	E55th
CR55-U100	Temp Relocate CPP 6x5" Ducts to Aerial Sta 11+50 - 14+50 RT	8	Mar-14-19	Mar-29-19	13	173000-5D	A	PPA	E55th
CR55-U130	Temp Relocate CEI 12x3.5" FD Ducts to Aerial Sta 13+00 - 15+50 RT	8	Apr-02-19	Apr-12-19	13	173000-5D	A	PPA	E55th
CR55-U140	Relocate Gas Service to RTA Station	4	Apr-02-19	Apr-05-19	83	173000-5D	A	PPA	E55th
CR55-U150	Relocate Water Service to RTA Station	4	Apr-09-19	Apr-12-19	83	173000-5D	A	PPA	E55th
CR55-U160	Temp Relocate CEI 4x4" FD Ducts to Aerial Sta 14+30 LT/RT	8	Apr-16-19	Apr-26-19	13	173000-5D	A	PPA	E55th
CR55-U120	Temp Relocate 8 MTD Telecom Ducts to Aerial Sta 13+00 - 15+50 RT	8	Apr-19-19	May-08-19	13	173000-5D	A	PPA	E55th
Bower Avenue									
CRBO-1500	Begin Work Bower Ave - Pre-Phase A	0	May-29-18		156	173000-5D	A	PPA	Bower
CRBO-1510	Complete Work Bower Ave - Pre-Phase A	0		Dec-18-18	126	173000-5D	A	PPA	Bower
Utilities									
CRBO-U110	Relocate CEI OH Electric Sta 35+00 - 40+00 LT	20	Sep-19-18	Oct-24-18	93	173000-5D	A	PPA	Bower
CRBO-U140	Temp Relocate CEI 2x4" FD to Aerial Sta 34+38 - 35+46 LT	4	Oct-25-18	Nov-02-18	93	173000-5D	A	PPA	Bower
CRBO-U120	Relocate UNNAMED Co-Located Telecom OH Sta 35+00 - 40+00 LT	10	Nov-06-18	Nov-21-18	126	173000-5D	A	PPA	Bower
CRBO-U130	Temp Relocate UNNAMED Telecom Duct to Aerial Sta 34+56 - 35+46 LT	4	Nov-23-18	Nov-30-18	126	173000-5D	A	PPA	Bower
CRBO-U150	Relocate UNNAMED Co-Located Cable OH Sta 35+00 - 40+00 LT	10	Dec-03-18	Dec-18-18	126	173000-5D	A	PPA	Bower
Quadrant Road									
CRQR-1000	Begin Work Quadrant Rd - Pre-Phase A	0	Nov-06-18		93	173000-5D	A	PPA	Quad
CRQR-2010	Complete Work Quadrant Rd - Pre-Phase A	0		Feb-21-19	92	173000-5D	A	PPA	Quad
Utilities									
CRQR-U100	Remove CEI OH & Poles Sta 102+00 LT	5	Nov-06-18	Nov-13-18	93	173000-5D	A	PPA	Quad
CRQR-U200	Install 30" Sanitary Sewer (MH4 - Quadrant Rd Bowl)	20	Jan-09-19	Feb-21-19	92	173000-5D	A	PPA	Quad
East 57th Street									
CR57-2000	Begin Work East 57th St - Pre-Phase A	0	Nov-14-18		93	173000-5D	A	PPA	E57th
CR57-2010	Complete Work East 57th St - Pre-Phase A	0		Dec-19-18	93	173000-5D	A	PPA	E57th
Utilities									
CR57-U130	Relocate CEI OH & Poles Sta 10+50 - 14+00 LT	5	Nov-14-18	Nov-21-18	93	173000-5D	A	PPA	E57th
CR57-U140	Remove UNNAMED Co-Located Telecom OH Sta 10+50 - 14+00 LT	5	Nov-23-18	Dec-03-18	93	173000-5D	A	PPA	E57th
CR57-U150	Remove UNNAMED Co-Located Cable OH Sta 10+50 - 14+00 LT	5	Dec-04-18	Dec-11-18	93	173000-5D	A	PPA	E57th
CR57-U160	Remove CPP OH & Poles Sta 10+50 - 14+00 LT	5	Dec-12-18	Dec-19-18	93	173000-5D	A	PPA	E57th
East 59th Street									
CR59-2000	Begin Work East 59th St - Pre-Phase A	0	Feb-22-19		92	173000-5D	A	PPA	E59th
CR59-2010	Complete Work East 59th St - Pre-Phase A	0		Mar-07-19	92	173000-5D	A	PPA	E59th
Utilities									
CR59-U110	Install 30" Sanitary Sewer (MH5 - MH4) Sta 12+30 - 14+25 LT	5	Feb-22-19	Mar-05-19	92	173000-5D	A	PPA	E59th
CR59-U100	Connect 3" Gas to Bower Ave Gas Main	2	Mar-06-19	Mar-07-19	92	173000-5D	A	PPA	E59th
Francis Avenue									
CRFA-5000	Begin Work Francis Ave - Pre-Phase A	0	Dec-20-18		93	173000-5D	A	PPA	Francis
CRFA-5010	Complete Work Francis Ave - Pre-Phase A	0		Jan-16-19	93	173000-5D	A	PPA	Francis
Utilities									
CRFA-U110	Relocate CEI OH & Poles Sta 21+00 - 24+00 LT	5	Dec-20-18	Jan-03-19	93	173000-5D	A	PPA	Francis
CRFA-U100	Relocate AT&T OH & Pole Sta 21+00 - 24+00 LT	5	Jan-04-19	Jan-16-19	93	173000-5D	A	PPA	Francis
East 64th Street									
CR64-1000	Begin Work East 64th St - Pre-Phase A	0	Jan-17-19		93	173000-5D	A	PPA	E64th
CR64-1010	Remove Pavement	2	Feb-21-19	Feb-22-19	93	173000-5D	A	PPA	E64th
CR64-1020	Complete Work East 64th St - Pre-Phase A	0		Mar-06-19	93	173000-5D	A	PPA	E64th
Utilities									
CR64-U110	Remove Electric OH & Pole Sta 10+37 RT	5	Jan-17-19	Jan-25-19	93	173000-5D	A	PPA	E64th
CR64-U120	Remove UNNAMED Co-Located Cable OH Sta 10+37 RT	5	Jan-30-19	Feb-07-19	93	173000-5D	A	PPA	E64th
CR64-U140	Remove UNNAMED Co-Located Telecom OH Sta 10+37 RT	5	Feb-08-19	Feb-20-19	93	173000-5D	A	PPA	E64th



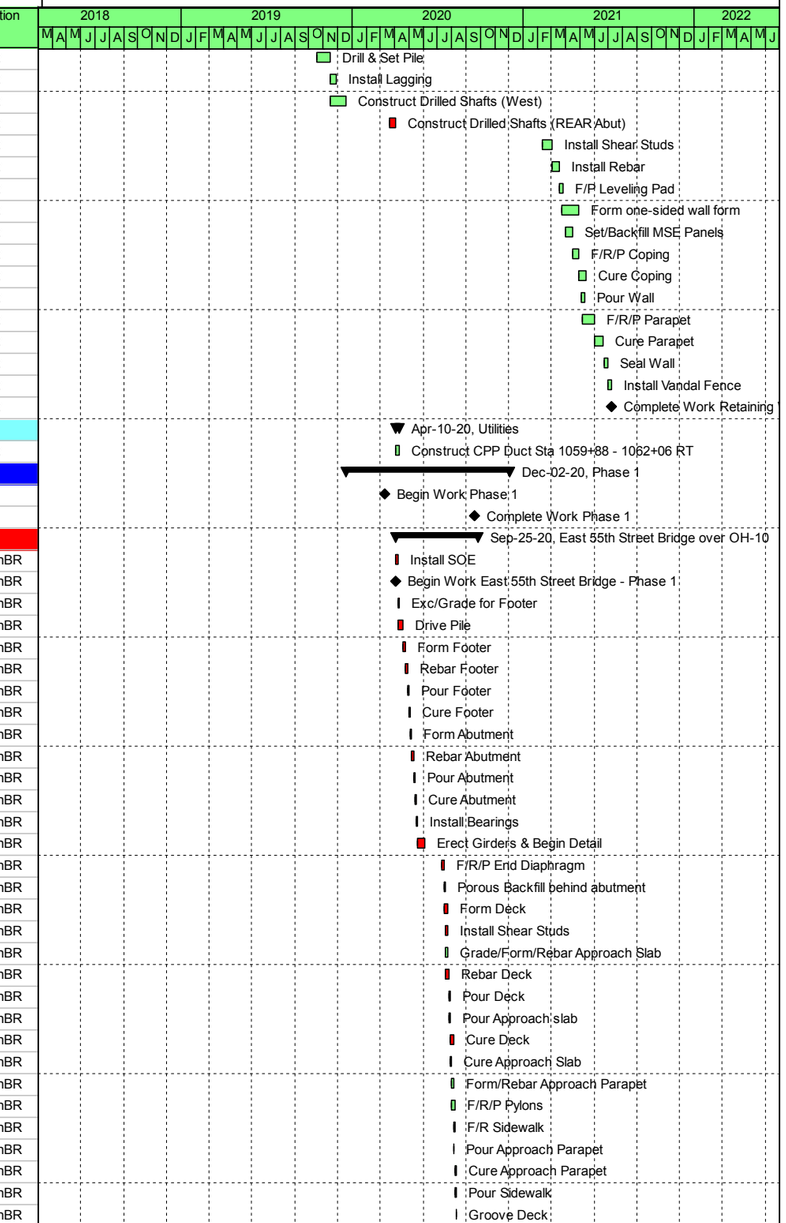
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR64-U130	Remove and Cap 4" Gas Sta 9+94 - 11+27 LT	3	Feb-27-19	Mar-01-19	93	173000-5D	A	PPA	E64th
CR64-U100	Remove 6" Water Sta 10+00 - 11+21 LT	2	Mar-05-19	Mar-06-19	93	173000-5D	A	PPA	E64th
Pre-Phase B									
APPB-1000	Begin Work Pre-Phase B	0	Aug-27-19		12	173000-5D	A	PPB	
APPB-1010	Complete Work Pre-Phase B	0		Sep-19-19	13	173000-5D	A	PPB	
East 55th Street									
CR55-2000	Begin Work East 55th St - Pre-Phase B	0	Aug-27-19		25	173000-5D	A	PPB	E55th
CR55-2020	Construct Drainage Sta 15+00	3	Aug-27-19	Aug-29-19	25	173000-5D	A	PPB	E55th
CR55-2010	Complete Work East 55th St - Pre-Phase B	0		Aug-29-19	25	173000-5D	A	PPB	E55th
Francis Avenue									
CRFA-U120	Remove CPP Light Pole Sta 20+43 LT	1	Aug-27-19	Aug-27-19	12	173000-5D	A	PPB	Francis
CRFA-3000	Begin Work Francis Ave - Pre-Phase B	0	Aug-27-19		12	173000-5D	A	PPB	Francis
CRFA-1010	Excavate Temp Pavement Subgrade	2	Aug-28-19	Aug-29-19	12	173000-5D	A	PPB	Francis
CRFA-1020	Place Temp Pavement Aggregate Base	2	Aug-30-19	Sep-03-19	12	173000-5D	A	PPB	Francis
CRFA-1030	Construct Temp Pavement	5	Sep-04-19	Sep-11-19	12	173000-5D	A	PPB	Francis
CRFA-1040	Install Temp Signal	5	Sep-04-19	Sep-11-19	15	173000-5D	A	PPB	Francis
CRFA-1070	Cure Temp Pavement	3	Sep-12-19	Sep-14-19	26	173000-7D Cure	A	PPB	Francis
CRFA-1050	Prep/Form/Pour Temp Sidewalk	3	Sep-17-19	Sep-19-19	13	173000-5D	A	PPB	Francis
CRFA-1080	Set PCB	1	Sep-17-19	Sep-17-19	15	173000-5D	A	PPB	Francis
CRFA-1060	Complete Work Open Francis Ave - Pre-Phase B	0		Sep-19-19	13	173000-5D	A	PPB	Francis
Retaining Wall #3B									
CRW3-5000	Begin Work Retaining Wall #3B - Pre-Phase B	0	May-21-19		57	173000-5D	A	PPB	RW3
CRW3-5010	Drill & Set Pile	32	May-21-19	Jul-17-19	57	173000-5D	A	PPB	RW3
CRW3-5020	Install Lagging	17	Jul-18-19	Aug-15-19	215	173000-5D	A	PPB	RW3
CRW3-5030	Construct Drilled Shafts (OH-10 South)	15	Jul-18-19	Aug-13-19	57	173000-5D	A	PPB	RW3
CRW3-5110	Construct Drilled Shafts (Quadrant Rd)	35	Aug-14-19	Oct-16-19	57	173000-5D	A	PPB	RW3
CRW3-5040	Install Shear Studs	8	Feb-11-21	Feb-26-21	65	173000-5D	A	PPB	RW3
CRW3-5050	Install Rebar	15	Mar-02-21	Mar-26-21	65	173000-5D	A	PPB	RW3
CRW3-5060	Form one-sided wall form	15	Mar-31-21	Apr-28-21	65	173000-5D	A	PPB	RW3
CRW3-5070	Pour Wall	8	Apr-29-21	May-12-21	65	173000-5D	A	PPB	RW3
CRW3-5120	F/R/P Parapet	12	May-05-21	May-26-21	65	173000-5D	A	PPB	RW3
CRW3-5080	Cure Parapet	17	May-27-21	Jun-12-21	114	173000-7D Cure	A	PPB	RW3
CRW3-5090	Seal Wall	9	Jun-15-21	Jun-30-21	61	173000-5D Paint/Shutdown 11/1-3/31	A	PPB	RW3
CRW3-5130	Install Vandal Fence	5	Jul-01-21	Jul-08-21	61	173000-5D	A	PPB	RW3
CRW3-5100	Complete Work Retaining Wall #3B (OH-10 South)	0		Jul-08-21	61	173000-5D	A	PPB	RW3
Retaining Wall #4 (OH-10 North)									
CRW4-1000	Begin Work Retaining Wall #4 (OH-10 North) - Pre-Phase B	0	Jul-16-19		267	173000-5D	A	PPB	RW4
CRW4-1010	Excavate for Wall	5	Jul-16-19	Jul-24-19	267	173000-5D	A	PPB	RW4
CRW4-1020	F/P Leveling Pad	5	Jul-24-19	Aug-01-19	267	173000-5D	A	PPB	RW4
CRW4-1030	Set/Backfill MSE Panels	5	Aug-30-19	Sep-10-19	250	173000-5D	A	PPB	RW4
CRW4-1040	F/R/P Coping & Moment Slab	10	Sep-10-19	Sep-27-19	362	173000-5D	A	PPB	RW4
CRW4-1060	F/R/P Parapet	3	Sep-27-19	Oct-04-19	363	173000-5D	A	PPB	RW4
CRW4-1050	Cure Parapet	17	Oct-05-19	Oct-21-19	716	173000-7D Cure	A	PPB	RW4
CRW4-1090	Seal Wall	5	Oct-22-19	Oct-30-19	223	173000-5D Paint/Shutdown 11/1-3/31	A	PPB	RW4
CRW4-1100	Complete Work Retaining Wall #4 (OH-10 North)	0		Oct-30-19	363	173000-5D	A	PPB	RW4
Pre-Phase C									
APPC-1000	Begin Work Pre-Phase C	0	Sep-20-19		13	173000-5D	A	PPC	
APPC-1010	Complete Work Pre-Phase C	0		Oct-11-19	14	173000-5D	A	PPC	
Bower Avenue									
CRBO-1000	Begin Work Bower Ave - Pre-Phase C	0	Apr-13-19		123	173000-6D	A	PPA	Bower
CRBO-1010	Remove Pavement Sta 34+50 - 36+00	1	Apr-17-19	Apr-17-19	123	173000-6D	A	PPA	Bower
CRBO-4080	Remove Pavement Sta 38+00 - 39+75	1	Apr-24-19	Apr-24-19	111	173000-5D	A	PPA	Bower
CRBO-1020	Complete Work Bower Ave - Pre-Phase C	0		May-03-19	142	173000-6D	A	PPA	Bower
Utilities									



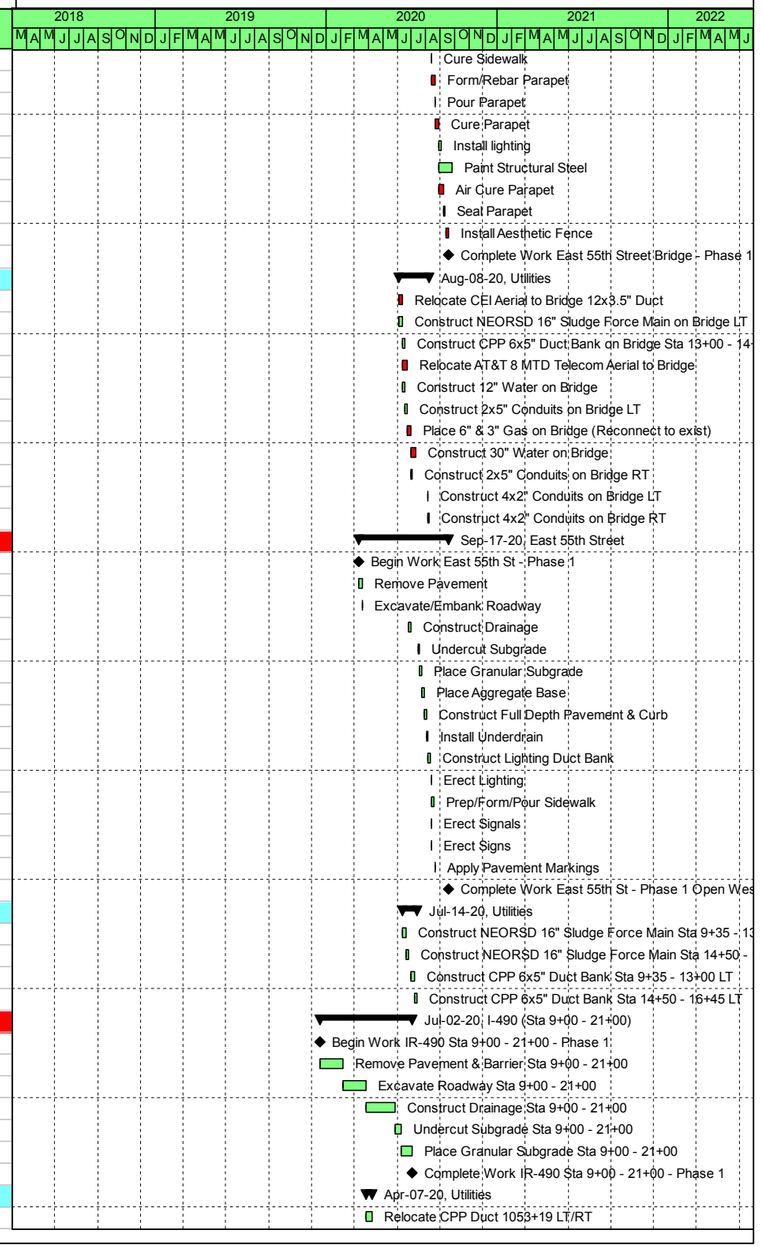
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRBO-U210	Remove 4" Gas Sta 34+59 - 36+00 RT	2	Apr-13-19	Apr-16-19	123	173000-6D	A	PPA	Bower
CRBO-U270	Remove 4" Gas Sta 38+00 - 39+80 RT	2	Apr-17-19	Apr-18-19	111	173000-5D	A	PPA	Bower
CRBO-U200	Remove 6" Water Sta 34+35 - 36+00 RT	2	Apr-18-19	Apr-19-19	123	173000-6D	A	PPA	Bower
CRBO-U260	Cap & Remove Gas Sta 38+00 - 40+05 LT	2	Apr-19-19	Apr-23-19	111	173000-5D	A	PPA	Bower
CRBO-U250	Remove 6" Water Sta 38+00 - 39+98 RT	2	Apr-25-19	Apr-26-19	111	173000-5D	A	PPA	Bower
CRBO-U280	Remove 39" Combined Sewer Sta 38+00 - 39+75	2	May-02-19	May-03-19	111	173000-5D	A	PPA	Bower
East 55th Street (Temporary Run-Around)									
CR55-3000	Begin Work East 55th St - Pre-Phase C	0	Sep-20-19		18	173000-6D	A	PPC	E55th
CR55-3010	Excavate Temp Pavement Subgrade	3	Sep-20-19	Sep-25-19	18	173000-6D	A	PPC	E55th
CR55-3020	Place Temp Pavement Aggregate Base	2	Sep-26-19	Sep-27-19	18	173000-6D	A	PPC	E55th
CR55-3030	Construct Temp Pavement	5	Sep-28-19	Oct-04-19	18	173000-6D	A	PPC	E55th
CR55-3040	Install Temp Signal Sta 16+00 RT	5	Sep-28-19	Oct-04-19	20	173000-6D	A	PPC	E55th
CR55-3050	Cure Temp Pavement	3	Oct-05-19	Oct-07-19	28	173000-7D Cure	A	PPC	E55th
CR55-3060	Prep/Form/Pour Temp Sidewalk	3	Oct-08-19	Oct-10-19	18	173000-6D	A	PPC	E55th
CR55-3070	Set PCB	1	Oct-08-19	Oct-08-19	21	173000-6D	A	PPC	E55th
CR55-3080	Apply Pavement Markings	1	Oct-11-19	Oct-11-19	18	173000-6D	A	PPC	E55th
CR55-3090	Open East 55th St Temp Run-Around - Pre-Phase C	0		Oct-11-19	18	173000-6D	A	PPC	E55th
Utilities									
CR55-U310	Cap 6" & 3" Gas Lines Sta 12+50 - 15+00 RT	2	Sep-20-19	Sep-25-19	106	173000-5D	A	PPC	E55th
Pre-Phase D									
APPD-1000	Begin Work Pre-Phase D	0	Oct-12-19		14	173000-3D Weekend Shutdown	A	PPD	
APPD-2000	Complete Work Pre-Phase D	0		Mar-10-20	27	173000-5D	A	PPD	
I-490 Closure Detour Reconfiguration									
D490-1010	Install Temporary Traffic Signal at Exit 162/Woodland Ave E	3	Oct-08-19	Oct-10-19	15	173000-5D	A	PPD	I490
D490-1000	Begin Work I-490 Closure Detour Reconfiguration - Pre-Phase D	0	Oct-12-19		14	173000-3D Weekend Shutdown	A	PPD	I490
D490-1020	Setup Detour	3	Oct-12-19	Oct-13-19	14	173000-3D Weekend Shutdown	A	PPD	I490
D490-1030	Complete Work I-490 Closure Detour Reconfiguration - Pre-Phase D	0		Oct-13-19	14	173000-3D Weekend Shutdown	A	PPD	I490
I-490									
C490-1500	Begin Work IR-490 - Pre-Phase D	0	Oct-15-19		29	173000-5D	A	PPD	I490
C490-1510	Construct Sewer Outfall D100 - D124	42	Oct-15-19	Dec-18-19	36	173000-6D	A	PPD	I490
C490-1520	Complete Work IR-490 - Pre-Phase D	0		Dec-18-19	27	173000-5D	A	PPD	I490
East 55th Street									
CR55-4000	Begin Work East 55th St - Pre-Phase D	0	Oct-15-19		15	173000-5D	A	PPD	E55th
CR55-4010	Complete Work East 55th St - Pre-Phase D	0		Mar-10-20	27	173000-5D	A	PPD	E55th
Utilities									
CR55-U400	Construct Regulator S-10A and KSRS Drop Structure	90	Oct-15-19	Mar-10-20	20	173000-6D	A	PPD	E55th
Retaining Wall #1 (OH-10 North)									
CRW1-1000	Begin Work Retaining Wall #1 (OH-10 North) - Pre-Phase D	0	Dec-19-19		27	173000-5D	A	PPD	RW1
CRW1-1110	Construct Drilled Shafts (West)	25	Dec-19-19	Feb-14-20	27	173000-5D	A	PPD	RW1
CRW1-1120	Construct Drilled Shafts (FWD Abut)	7	Mar-11-20	Mar-19-20	20	173000-6D	A	PPD	RW1
CRW1-1010	Drill & Set Pile	5	Apr-03-20	Apr-10-20	102	173000-5D	A	PPD	RW1
CRW1-1020	Install Lagging	3	Apr-14-20	Apr-16-20	102	173000-5D	A	PPD	RW1
CRW1-1030	Construct Drilled Shafts (East)	22	Sep-18-20	Nov-04-20	18	173000-5D	A	PPD	RW1
CRW1-1040	Install Shear Studs	10	Feb-11-21	Mar-03-21	69	173000-5D	A	PPD	RW1
CRW1-1050	Install Rebar	10	Mar-04-21	Mar-19-21	69	173000-5D	A	PPD	RW1
CRW1-1060	Form one-sided wall form	20	Mar-24-21	Apr-30-21	69	173000-5D	A	PPD	RW1
CRW1-1070	Pour Wall	5	May-04-21	May-11-21	69	173000-5D	A	PPD	RW1
CRW1-1130	F/R/P Parapet	9	May-07-21	May-21-21	69	173000-5D	A	PPD	RW1
CRW1-1080	Cure Parapet	17	May-22-21	Jun-07-21	126	173000-7D Cure	A	PPD	RW1
CRW1-1090	Seal Wall	5	Jun-08-21	Jun-15-21	69	173000-5D Paint/Shutdown 11/1-3/31	A	PPD	RW1
CRW1-1140	Install Vandal Fence	5	Jun-16-21	Jun-23-21	69	173000-5D	A	PPD	RW1
CRW1-1100	Complete Work Retaining Wall #1 (OH-10 North)	0		Jun-23-21	69	173000-5D	A	PPD	RW1
Retaining Wall #2 (OH-10 South)									
CRW2-1000	Begin Work Retaining Wall #2 (OH-10 South) - Pre-Phase D	0	Oct-17-19		57	173000-5D	A	PPD	RW2



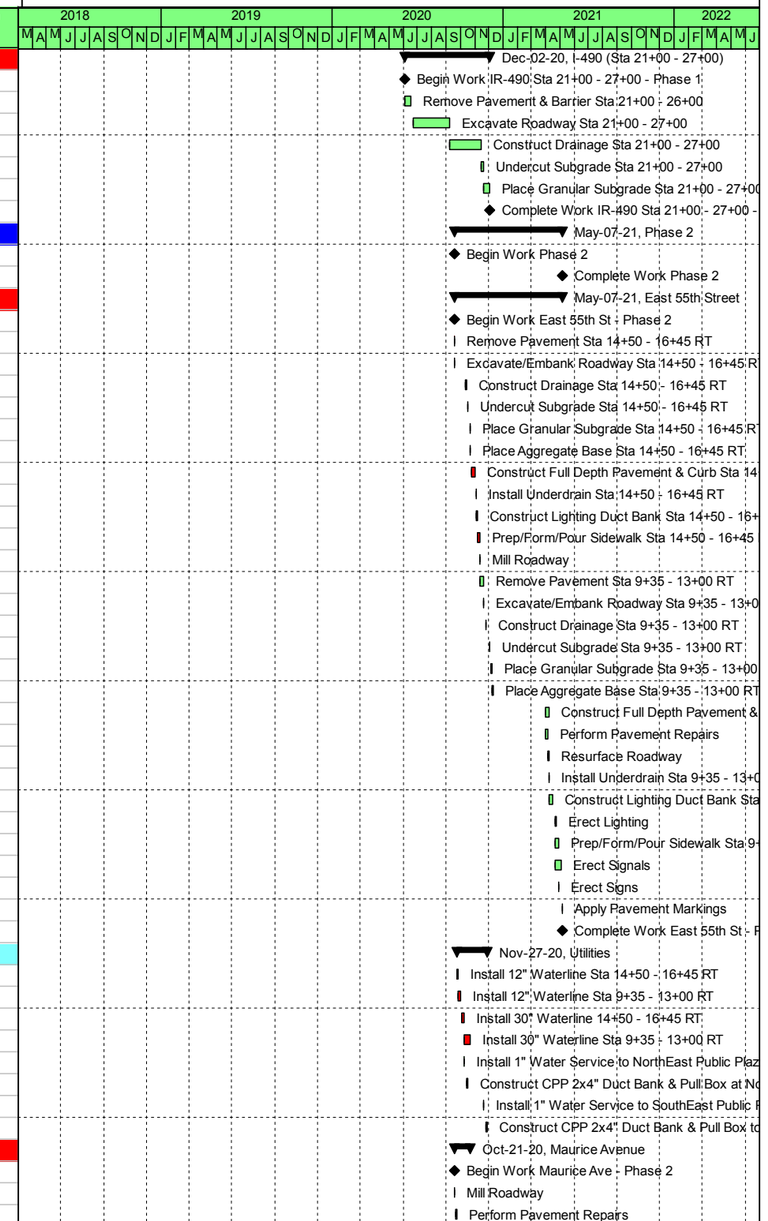
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRW2-1010	Drill & Set Pile	14	Oct-17-19	Nov-14-19	57	173000-5D	A	PPD	RW2
CRW2-1020	Install Lagging	8	Nov-15-19	Nov-29-19	174	173000-5D	A	PPD	RW2
CRW2-1110	Construct Drilled Shafts (West)	18	Nov-15-19	Dec-18-19	57	173000-5D	A	PPD	RW2
CRW2-1030	Construct Drilled Shafts (REAR Abut)	8	Mar-20-20	Apr-02-20	20	173000-6D	A	PPD	RW2
CRW2-1040	Install Shear Studs	10	Feb-11-21	Mar-03-21	64	173000-5D	A	PPD	RW2
CRW2-1050	Install Rebar	10	Mar-04-21	Mar-19-21	64	173000-5D	A	PPD	RW2
CRW2-1520	F/P Leveling Pad	5	Mar-18-21	Mar-26-21	18	173000-5D	A	PPD	RW2
CRW2-1060	Form one-sided wall form	20	Mar-24-21	Apr-30-21	64	173000-5D	A	PPD	RW2
CRW2-1530	Set/Backfill MSE Panels	10	Mar-31-21	Apr-15-21	18	173000-5D	A	PPD	RW2
CRW2-1540	F/R/P Coping	5	Apr-16-21	Apr-28-21	83	173000-5D	A	PPD	RW2
CRW2-1550	Cure Coping	17	Apr-29-21	May-15-21	149	173000-7D Cure	A	PPD	RW2
CRW2-1070	Pour Wall	5	May-04-21	May-11-21	64	173000-5D	A	PPD	RW2
CRW2-1120	F/R/P Parapet	14	May-07-21	Jun-02-21	64	173000-5D	A	PPD	RW2
CRW2-1080	Cure Parapet	17	Jun-03-21	Jun-19-21	114	173000-7D Cure	A	PPD	RW2
CRW2-1090	Seal Wall	5	Jun-22-21	Jun-30-21	61	173000-5D Paint/Shutdown 11/1-3/31	A	PPD	RW2
CRW2-1130	Install Vandal Fence	5	Jul-01-21	Jul-08-21	61	173000-5D	A	PPD	RW2
CRW2-1100	Complete Work Retaining Wall #2 (OH-10 South)	0		Jul-08-21	61	173000-5D	A	PPD	RW2
Utilities									
CRW2-U500	Construct CPP Duct Sta 1059+88 - 1062+06 RT	5	Apr-03-20	Apr-10-20	70	173000-5D	A	PPD	RW2
Phase 1									
AP1-1000	Begin Work Phase 1	0	Mar-11-20		27	173000-5D	A	P1	
AP1-2000	Complete Work Phase 1	0		Sep-17-20	11	173000-5D	A	P1	
East 55th Street Bridge over OH-10									
CB55-3005	Install SOE	3	Apr-03-20	Apr-07-20	20	173000-6D	A	P1	E55thBR
CB55-3000	Begin Work East 55th Street Bridge - Phase 1	0	Apr-03-20		20	173000-6D	A	P1	E55thBR
CB55-3010	Exc/Grade for Footer	3	Apr-08-20	Apr-10-20	20	173000-6D	A	P1	E55thBR
CB55-3015	Drive Pile	7	Apr-09-20	Apr-17-20	20	173000-6D	A	P1	E55thBR
CB55-3025	Form Footer	3	Apr-18-20	Apr-23-20	20	173000-6D	A	P1	E55thBR
CB55-3030	Rebar Footer	3	Apr-24-20	Apr-29-20	20	173000-6D	A	P1	E55thBR
CB55-3035	Pour Footer	1	Apr-30-20	Apr-30-20	20	173000-6D	A	P1	E55thBR
CB55-3040	Cure Footer	3	May-01-20	May-03-20	32	173000-7D Cure	A	P1	E55thBR
CB55-3045	Form Abutment	3	May-05-20	May-07-20	21	173000-6D	A	P1	E55thBR
CB55-3050	Rebar Abutment	4	May-07-20	May-12-20	21	173000-6D	A	P1	E55thBR
CB55-3055	Pour Abutment	1	May-13-20	May-13-20	21	173000-6D	A	P1	E55thBR
CB55-3060	Cure Abutment	3	May-14-20	May-16-20	31	173000-7D Cure	A	P1	E55thBR
CB55-3065	Install Bearings	1	May-16-20	May-20-20	19	173000-6D	A	P1	E55thBR
CB55-3070	Erect Girders & Begin Detail	10	May-20-20	Jun-04-20	19	173000-6D	A	P1	E55thBR
CB55-3080	F/R/P End Diaphragm	3	Jul-09-20	Jul-15-20	16	173000-5D	A	P1	E55thBR
CB55-3085	Porous Backfill behind abutment	2	Jul-15-20	Jul-17-20	27	173000-6D	A	P1	E55thBR
CB55-3090	Form Deck	6	Jul-15-20	Jul-23-20	19	173000-6D	A	P1	E55thBR
CB55-3095	Install Shear Studs	3	Jul-17-20	Jul-22-20	19	173000-6D	A	P1	E55thBR
CB55-3155	Grade/Form/Rebar Approach Slab	3	Jul-17-20	Jul-22-20	27	173000-6D	A	P1	E55thBR
CB55-3100	Rebar Deck	5	Jul-18-20	Jul-25-20	19	173000-6D	A	P1	E55thBR
CB55-3105	Pour Deck	1	Jul-25-20	Jul-28-20	20	173000-6D w/Shutdown 12/1-3/31	A	P1	E55thBR
CB55-3160	Pour Approach slab	1	Jul-25-20	Jul-28-20	25	173000-6D w/Shutdown 12/1-3/31	A	P1	E55thBR
CB55-3110	Cure Deck	7	Jul-29-20	Aug-04-20	26	173000-7D Cure	A	P1	E55thBR
CB55-3165	Cure Approach Slab	3	Jul-29-20	Jul-31-20	34	173000-7D Cure	A	P1	E55thBR
CB55-3170	Form/Rebar Approach Parapet	2	Jul-31-20	Aug-04-20	24	173000-5D	A	P1	E55thBR
CB55-3187	F/R/P Pylons	5	Jul-31-20	Aug-07-20	20	173000-5D	A	P1	E55thBR
CB55-3115	F/R Sidewalk	3	Aug-04-20	Aug-07-20	19	173000-6D	A	P1	E55thBR
CB55-3175	Pour Approach Parapet	1	Aug-04-20	Aug-05-20	24	173000-5D	A	P1	E55thBR
CB55-3180	Cure Approach Parapet	3	Aug-08-20	Aug-10-20	40	173000-7D Cure	A	P1	E55thBR
CB55-3120	Pour Sidewalk	1	Aug-08-20	Aug-11-20	19	173000-6D	A	P1	E55thBR
CB55-3185	Groove Deck	1	Aug-11-20	Aug-11-20	33	173000-5D	A	P1	E55thBR



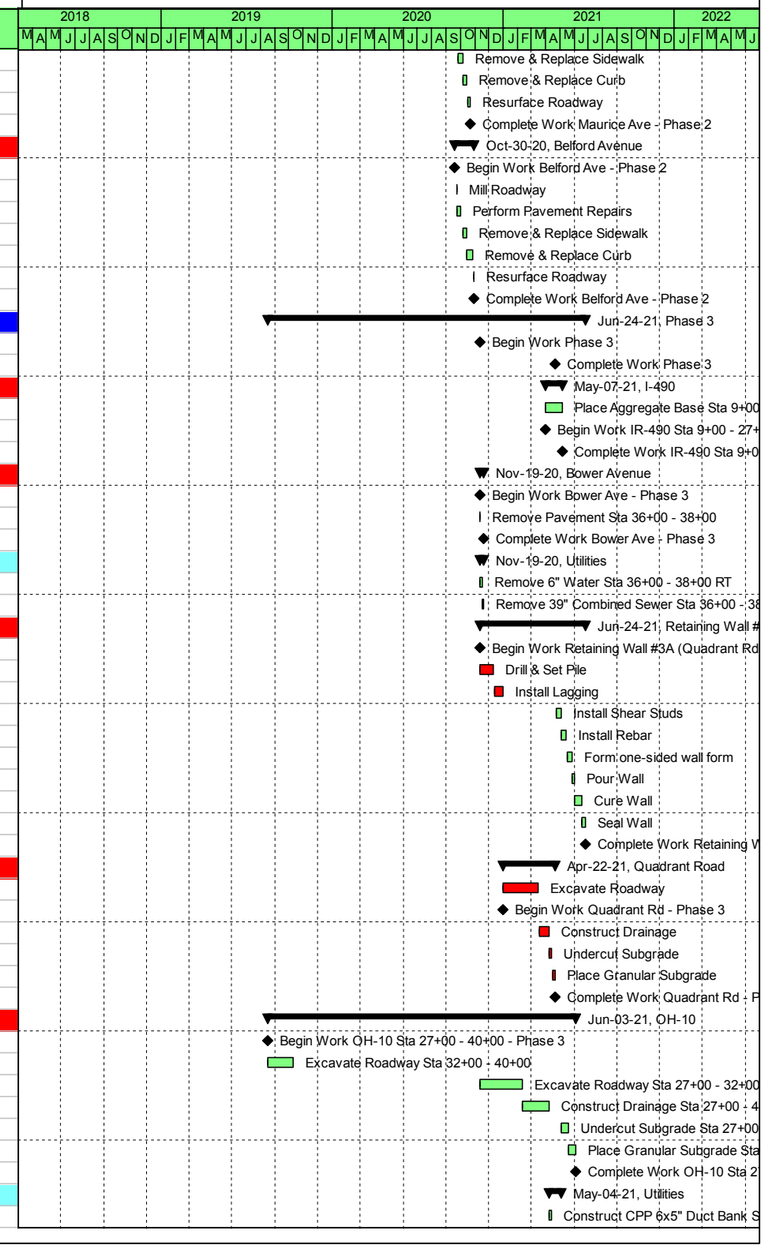
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CB55-3125	Cure Sidewalk	3	Aug-12-20	Aug-14-20	24	173000-7D Cure	A	P1	E55thBR
CB55-3130	Form/Rebar Parapet	4	Aug-14-20	Aug-20-20	17	173000-6D	A	P1	E55thBR
CB55-3140	Pour Parapet	1	Aug-20-20	Aug-21-20	17	173000-6D	A	P1	E55thBR
CB55-3145	Cure Parapet	7	Aug-22-20	Aug-28-20	22	173000-7D Cure	A	P1	E55thBR
CB55-3192	Install lighting	5	Aug-28-20	Sep-03-20	20	173000-6D	A	P1	E55thBR
CB55-3205	Paint Structural Steel	15	Aug-28-20	Sep-25-20	179	173000-5D Paint/Shutdown 11/1-3/31	A	P1	E55thBR
CB55-3215	Air Cure Parapet	10	Aug-29-20	Sep-07-20	22	173000-7D Cure	A	P1	E55thBR
CB55-3190	Seal Parapet	4	Sep-08-20	Sep-11-20	14	173000-6DPaint/Shutdown 11/1-3/31	A	P1	E55thBR
CB55-3150	Install Aesthetic Fence	4	Sep-12-20	Sep-17-20	14	173000-6D	A	P1	E55thBR
CB55-3195	Complete Work East 55th Street Bridge - Phase 1	0		Sep-17-20	14	173000-6D	A	P1	E55thBR
Utilities									
CB55-U200	Relocate CEI Aerial to Bridge 12x3.5" Duct	5	Jun-04-20	Jun-12-20	15	173000-5D	A	P1	E55thBR
CB55-U280	Construct NEORSD 16" Sludge Force Main on Bridge LT	5	Jun-04-20	Jun-12-20	22	173000-5D	A	P1	E55thBR
CB55-U110	Construct CPP 6x5" Duct Bank on Bridge Sta 13+00 - 14+50 LT	3	Jun-12-20	Jun-18-20	23	173000-5D	A	P1	E55thBR
CB55-U210	Relocate AT&T 8 MTD Telecom Aerial to Bridge	5	Jun-12-20	Jun-23-20	15	173000-5D	A	P1	E55thBR
CB55-U240	Construct 12" Water on Bridge	4	Jun-12-20	Jun-18-20	28	173000-6D	A	P1	E55thBR
CB55-U140	Construct 2x5" Conduits on Bridge LT	2	Jun-18-20	Jun-23-20	23	173000-5D	A	P1	E55thBR
CB55-U220	Place 6" & 3" Gas on Bridge (Reconnect to exist)	5	Jun-23-20	Jul-01-20	15	173000-5D	A	P1	E55thBR
CB55-U250	Construct 30" Water on Bridge	5	Jul-01-20	Jul-09-20	19	173000-6D	A	P1	E55thBR
CB55-U270	Construct 2x5" Conduits on Bridge RT	2	Jul-01-20	Jul-03-20	22	173000-6D	A	P1	E55thBR
CB55-U120	Construct 4x2" Conduits on Bridge LT	2	Aug-04-20	Aug-06-20	19	173000-6D	A	P1	E55thBR
CB55-U260	Construct 4x2" Conduits on Bridge RT	2	Aug-06-20	Aug-08-20	19	173000-6D	A	P1	E55thBR
East 55th Street									
CR55-5000	Begin Work East 55th St - Phase 1	0	Mar-11-20		72	173000-5D	A	P1	E55th
CR55-5020	Remove Pavement	4	Mar-11-20	Mar-17-20	72	173000-5D	A	P1	E55th
CR55-5030	Excavate/Embank Roadway	1	Mar-18-20	Mar-18-20	72	173000-5D	A	P1	E55th
CR55-5040	Construct Drainage	4	Jun-24-20	Jun-30-20	35	173000-6D	A	P1	E55th
CR55-5050	Undercut Subgrade	3	Jul-15-20	Jul-18-20	34	173000-6D	A	P1	E55th
CR55-5060	Place Granular Subgrade	3	Jul-18-20	Jul-23-20	34	173000-6D	A	P1	E55th
CR55-5070	Place Aggregate Base	3	Jul-23-20	Jul-28-20	34	173000-6D	A	P1	E55th
CR55-5080	Construct Full Depth Pavement & Curb	5	Jul-28-20	Aug-03-20	34	173000-6D w/Shutdown 12/1-3/31	A	P1	E55th
CR55-5090	Install Underdrain	2	Aug-04-20	Aug-05-20	35	173000-6D	A	P1	E55th
CR55-5160	Construct Lighting Duct Bank	4	Aug-06-20	Aug-11-20	35	173000-6D	A	P1	E55th
CR55-5100	Erect Lighting	1	Aug-12-20	Aug-12-20	39	173000-6D	A	P1	E55th
CR55-5110	Prep/Form/Pour Sidewalk	6	Aug-12-20	Aug-19-20	35	173000-6D	A	P1	E55th
CR55-5120	Erect Signals	2	Aug-12-20	Aug-13-20	39	173000-6D	A	P1	E55th
CR55-5130	Erect Signs	1	Aug-13-20	Aug-13-20	39	173000-6D	A	P1	E55th
CR55-5140	Apply Pavement Markings	1	Aug-20-20	Aug-20-20	35	173000-6D	A	P1	E55th
CR55-5010	Complete Work East 55th St - Phase 1 Open Westside Bi-Directional	0		Sep-17-20	14	173000-6D	A	P1	E55th
Utilities									
CR55-U500	Construct NEORSD 16" Sludge Force Main Sta 9+35 - 13+00 LT	5	Jun-12-20	Jun-19-20	35	173000-6D	A	P1	E55th
CR55-U510	Construct NEORSD 16" Sludge Force Main Sta 14+50 - 16+45 LT	3	Jun-19-20	Jun-24-20	35	173000-6D	A	P1	E55th
CR55-U520	Construct CPP 6x5" Duct Bank Sta 9+35 - 13+00 LT	5	Jun-30-20	Jul-08-20	35	173000-6D	A	P1	E55th
CR55-U530	Construct CPP 6x5" Duct Bank Sta 14+50 - 16+45 LT	4	Jul-08-20	Jul-14-20	35	173000-6D	A	P1	E55th
I-490 (Sta 9+00 - 21+00)									
C490-2000	Begin Work IR-490 Sta 9+00 - 21+00 - Phase 1	0	Dec-19-19		134	173000-5D	A	P1	I490
C490-2010	Remove Pavement & Barrier Sta 9+00 - 21+00	20	Dec-19-19	Feb-05-20	134	173000-5D	A	P1	I490
C490-2020	Excavate Roadway Sta 9+00 - 21+00	25	Feb-06-20	Mar-26-20	134	173000-5D	A	P1	I490
C490-2030	Construct Drainage Sta 9+00 - 21+00	30	Mar-27-20	May-27-20	134	173000-5D	A	P1	I490
C490-2040	Undercut Subgrade Sta 9+00 - 21+00	7	May-28-20	Jun-09-20	154	173000-5D	A	P1	I490
C490-2050	Place Granular Subgrade Sta 9+00 - 21+00	14	Jun-10-20	Jul-02-20	154	173000-5D	A	P1	I490
C490-2060	Complete Work IR-490 Sta 9+00 - 21+00 - Phase 1	0		Jul-02-20	154	173000-5D	A	P1	I490
Utilities									
C490-U200	Relocate CPP Duct 1053+19 LT/RT	5	Mar-27-20	Apr-07-20	200	173000-5D	A	P1	I490



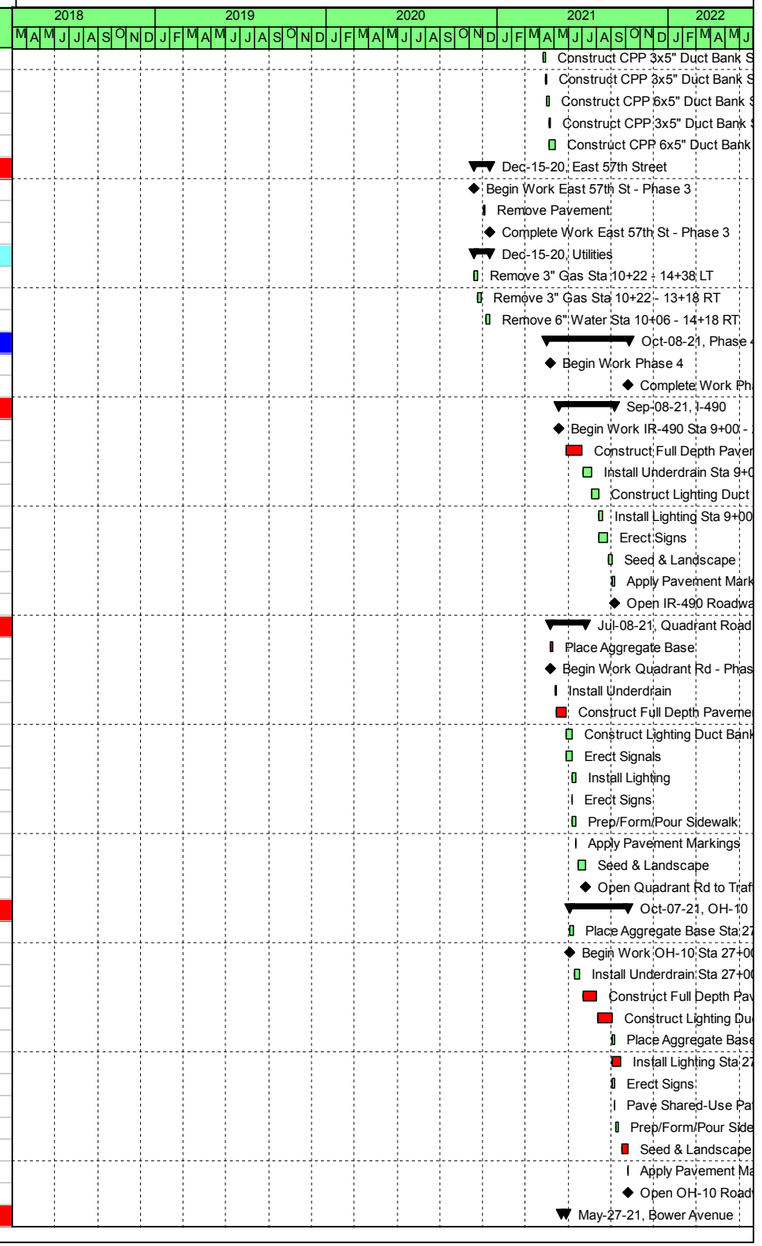
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
I-490 (Sta 21+00 - 27+00)									
C490-3000	Begin Work IR-490 Sta 21+00 - 27+00 - Phase 1	0	Jun-04-20		78	173000-5D	A	P1	I490
C490-3010	Remove Pavement & Barrier Sta 21+00 - 26+00	6	Jun-04-20	Jun-16-20	78	173000-5D	A	P1	I490
C490-3020	Excavate Roadway Sta 21+00 - 27+00	45	Jun-23-20	Sep-09-20	74	173000-5D	A	P1	I490
C490-3030	Construct Drainage Sta 21+00 - 27+00	33	Sep-09-20	Nov-13-20	74	173000-5D	A	P1	I490
C490-3040	Undercut Subgrade Sta 21+00 - 27+00	3	Nov-13-20	Nov-19-20	74	173000-5D	A	P1	I490
C490-3050	Place Granular Subgrade Sta 21+00 - 27+00	5	Nov-19-20	Dec-02-20	74	173000-5D	A	P1	I490
C490-3060	Complete Work IR-490 Sta 21+00 - 27+00 - Phase 1	0		Dec-02-20	74	173000-5D	A	P1	I490
Phase 2									
AP2-1000	Begin Work Phase 2	0	Sep-18-20		11	173000-5D	A	P2	
AP2-2000	Complete Work Phase 2	0		May-07-21	120	173000-6D	A	P2	
East 55th Street									
CR55-6000	Begin Work East 55th St - Phase 2	0	Sep-18-20		14	173000-6D	A	P2	E55th
CR55-6170	Remove Pavement Sta 14+50 - 16+45 RT	1	Sep-18-20	Sep-18-20	14	173000-6D	A	P2	E55th
CR55-6180	Excavate/Embank Roadway Sta 14+50 - 16+45 RT	1	Sep-19-20	Sep-19-20	14	173000-6D	A	P2	E55th
CR55-6190	Construct Drainage Sta 14+50 - 16+45 RT	2	Oct-13-20	Oct-14-20	15	173000-6D	A	P2	E55th
CR55-6200	Undercut Subgrade Sta 14+50 - 16+45 RT	1	Oct-17-20	Oct-17-20	15	173000-6D	A	P2	E55th
CR55-6210	Place Granular Subgrade Sta 14+50 - 16+45 RT	1	Oct-22-20	Oct-22-20	14	173000-6D	A	P2	E55th
CR55-6220	Place Aggregate Base Sta 14+50 - 16+45 RT	1	Oct-23-20	Oct-23-20	14	173000-6D	A	P2	E55th
CR55-6230	Construct Full Depth Pavement & Curb Sta 14+50 - 16+45 RT	5	Oct-24-20	Oct-31-20	14	173000-6D w/Shutdown 12/1-3/31	A	P2	E55th
CR55-6240	Install Underdrain Sta 14+50 - 16+45 RT	1	Nov-03-20	Nov-03-20	14	173000-6D	A	P2	E55th
CR55-6250	Construct Lighting Duct Bank Sta 14+50 - 16+45 RT	3	Nov-04-20	Nov-06-20	14	173000-6D	A	P2	E55th
CR55-6260	Prep/Form/Pour Sidewalk Sta 14+50 - 16+45 RT	3	Nov-07-20	Nov-11-20	14	173000-6D	A	P2	E55th
CR55-6270	Mill Roadway	1	Nov-12-20	Nov-12-20	82	173000-5D	A	P2	E55th
CR55-6010	Remove Pavement Sta 9+35 - 13+00 RT	3	Nov-13-20	Nov-18-20	82	173000-5D	A	P2	E55th
CR55-6020	Excavate/Embank Roadway Sta 9+35 - 13+00 RT	1	Nov-19-20	Nov-19-20	82	173000-5D	A	P2	E55th
CR55-6030	Construct Drainage Sta 9+35 - 13+00 RT	1	Nov-24-20	Nov-24-20	82	173000-5D	A	P2	E55th
CR55-6040	Undercut Subgrade Sta 9+35 - 13+00 RT	2	Dec-02-20	Dec-03-20	82	173000-5D	A	P2	E55th
CR55-6050	Place Granular Subgrade Sta 9+35 - 13+00 RT	2	Dec-04-20	Dec-08-20	82	173000-5D	A	P2	E55th
CR55-6060	Place Aggregate Base Sta 9+35 - 13+00 RT	2	Dec-09-20	Dec-10-20	82	173000-5D	A	P2	E55th
CR55-6070	Construct Full Depth Pavement & Curb Sta 9+35 - 13+00 RT	4	Apr-01-21	Apr-07-21	31	173000-5D w/Shutdown 12/1-3/31	A	P2	E55th
CR55-6280	Perform Pavement Repairs	3	Apr-01-21	Apr-06-21	45	173000-5D w/Shutdown 12/1-3/31	A	P2	E55th
CR55-6290	Resurface Roadway	2	Apr-07-21	Apr-08-21	45	173000-5D w/Shutdown 12/1-3/31	A	P2	E55th
CR55-6080	Install Underdrain Sta 9+35 - 13+00 RT	1	Apr-08-21	Apr-08-21	32	173000-5D	A	P2	E55th
CR55-6090	Construct Lighting Duct Bank Sta 9+35 - 13+00 RT	5	Apr-09-21	Apr-16-21	32	173000-5D	A	P2	E55th
CR55-6100	Erect Lighting	3	Apr-21-21	Apr-23-21	35	173000-5D	A	P2	E55th
CR55-6110	Prep/Form/Pour Sidewalk Sta 9+35 - 13+00 RT	6	Apr-21-21	Apr-30-21	34	173000-5D	A	P2	E55th
CR55-6120	Erect Signals	8	Apr-21-21	May-05-21	32	173000-5D	A	P2	E55th
CR55-6130	Erect Signs	2	Apr-28-21	Apr-29-21	35	173000-5D	A	P2	E55th
CR55-6140	Apply Pavement Markings	2	May-06-21	May-07-21	32	173000-5D w/Shutdown 12/1-3/31	A	P2	E55th
CR55-6160	Complete Work East 55th St - Phase 2 Open to Permanent Configuration	0		May-07-21	32	173000-5D	A	P2	E55th
Utilities									
CR55-U630	Install 12" Waterline Sta 14+50 - 16+45 RT	3	Sep-23-20	Sep-25-20	14	173000-6D	A	P2	E55th
CR55-U620	Install 12" Waterline Sta 9+35 - 13+00 RT	4	Sep-26-20	Oct-02-20	14	173000-6D	A	P2	E55th
CR55-U650	Install 30" Waterline 14+50 - 16+45 RT	5	Oct-03-20	Oct-09-20	14	173000-6D	A	P2	E55th
CR55-U640	Install 30" Waterline Sta 9+35 - 13+00 RT	7	Oct-10-20	Oct-21-20	14	173000-6D	A	P2	E55th
CR55-U660	Install 1" Water Service to NorthEast Public Plaza	1	Oct-10-20	Oct-10-20	15	173000-6D	A	P2	E55th
CR55-U610	Construct CPP 2x4" Duct Bank & Pull Box at NorthEast Public Plaza	2	Oct-15-20	Oct-16-20	15	173000-6D	A	P2	E55th
CR55-U670	Install 1" Water Service to SouthEast Public Plaza	1	Nov-20-20	Nov-20-20	82	173000-5D	A	P2	E55th
CR55-U600	Construct CPP 2x4" Duct Bank & Pull Box to SouthEast Public Plaza	2	Nov-25-20	Nov-27-20	82	173000-5D	A	P2	E55th
Maurice Avenue									
CRMA-1000	Begin Work Maurice Ave - Phase 2	0	Sep-18-20		183	173000-5D	A	P2	Maurice
CRMA-1010	Mill Roadway	1	Sep-18-20	Sep-18-20	183	173000-5D	A	P2	Maurice
CRMA-1020	Perform Pavement Repairs	3	Sep-22-20	Sep-24-20	128	173000-5D w/Shutdown 12/1-3/31	A	P2	Maurice



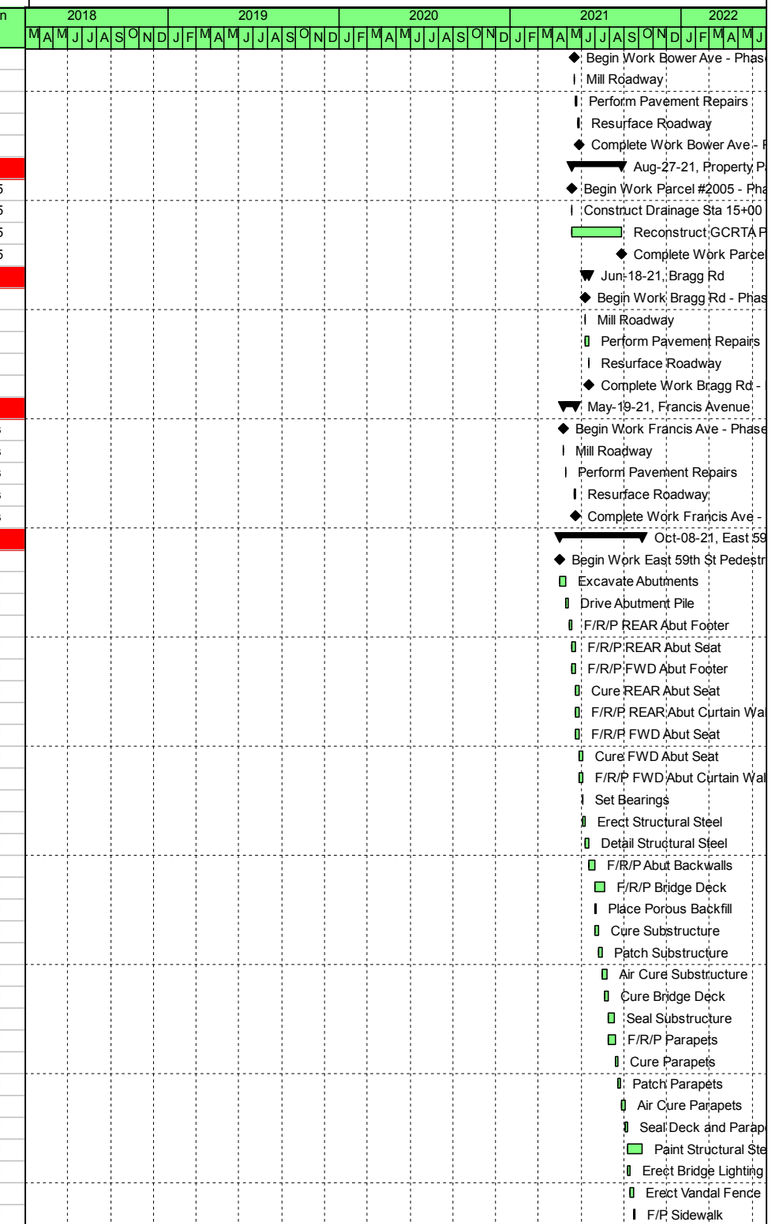
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRMA-1060	Remove & Replace Sidewalk	5	Sep-25-20	Oct-06-20	184	173000-5D	A	P2	Maurice
CRMA-1050	Remove & Replace Curb	6	Oct-07-20	Oct-15-20	187	173000-5D	A	P2	Maurice
CRMA-1030	Resurface Roadway	2	Oct-16-20	Oct-21-20	131	173000-5D w/Shutdown 12/1-3/31	A	P2	Maurice
CRMA-1040	Complete Work Maurice Ave - Phase 2	0		Oct-21-20	189	173000-5D	A	P2	Maurice
Belford Avenue									
CRBA-1000	Begin Work Belford Ave - Phase 2	0	Sep-18-20		188	173000-5D	A	P2	Belford
CRBA-1010	Mill Roadway	1	Sep-23-20	Sep-23-20	187	173000-5D	A	P2	Belford
CRBA-1020	Perform Pavement Repairs	3	Sep-24-20	Sep-30-20	131	173000-5D w/Shutdown 12/1-3/31	A	P2	Belford
CRBA-1030	Remove & Replace Sidewalk	5	Oct-07-20	Oct-14-20	184	173000-5D	A	P2	Belford
CRBA-1040	Remove & Replace Curb	6	Oct-15-20	Oct-28-20	184	173000-5D	A	P2	Belford
CRBA-1050	Resurface Roadway	2	Oct-29-20	Oct-30-20	128	173000-5D w/Shutdown 12/1-3/31	A	P2	Belford
CRBA-1060	Complete Work Belford Ave - Phase 2	0		Oct-30-20	184	173000-5D	A	P2	Belford
Phase 3									
AP3-1000	Begin Work Phase 3	0	Nov-12-20		17	173000-5D	A	P3	
AP3-2000	Complete Work Phase 3	0		Apr-22-21	10	173000-5D	A	P3	
I-490									
C490-4010	Place Aggregate Base Sta 9+00 - 27+00	20	Apr-01-21	May-07-21	19	173000-5D w/Shutdown 12/1-3/31	A	P3	I490
C490-4000	Begin Work IR-490 Sta 9+00 - 27+00 - Phase 3	0	Apr-01-21		19	173000-5D w/Shutdown 12/1-3/31	A	P3	I490
C490-4100	Complete Work IR-490 Sta 9+00 - 27+00 - Phase 3	0		May-07-21	19	173000-5D w/Shutdown 12/1-3/31	A	P3	I490
Bower Avenue									
CRBO-4050	Begin Work Bower Ave - Phase 3	0	Nov-12-20		13	173000-5D	A	P3	Bower
CRBO-4060	Remove Pavement Sta 36+00 - 38+00	1	Nov-12-20	Nov-12-20	13	173000-5D	A	P3	Bower
CRBO-4070	Complete Work Bower Ave - Phase 3	0		Nov-19-20	49	173000-5D	A	P3	Bower
Utilities									
CRBO-U300	Remove 6" Water Sta 36+00 - 38+00 RT	2	Nov-13-20	Nov-17-20	49	173000-5D	A	P3	Bower
CRBO-U330	Remove 39" Combined Sewer Sta 36+00 - 38+00	2	Nov-18-20	Nov-19-20	49	173000-5D	A	P3	Bower
Retaining Wall #3A (Quadrant Road)									
CRW3-4030	Begin Work Retaining Wall #3A (Quadrant Rd) - Phase 3	0	Nov-12-20		11	173000-5D	A	P3	RW3
CRW3-4040	Drill & Set Pile	20	Nov-12-20	Dec-11-20	14	173000-6D	A	P3	RW3
CRW3-4050	Install Lagging	10	Dec-12-20	Dec-30-20	14	173000-6D	A	P3	RW3
CRW3-4070	Install Shear Studs	5	Apr-23-21	May-04-21	72	173000-5D	A	P3	RW3
CRW3-4080	Install Rebar	7	May-05-21	May-14-21	72	173000-5D	A	P3	RW3
CRW3-4090	Form one-sided wall form	6	May-18-21	May-27-21	72	173000-5D	A	P3	RW3
CRW3-4100	Pour Wall	2	May-28-21	Jun-01-21	72	173000-5D	A	P3	RW3
CRW3-4110	Cure Wall	17	Jun-02-21	Jun-18-21	130	173000-7D Cure	A	P3	RW3
CRW3-4120	Seal Wall	3	Jun-18-21	Jun-24-21	68	173000-5D Paint/Shutdown 11/1-3/31	A	P3	RW3
CRW3-4130	Complete Work Retaining Wall #3A (Quadrant Rd)	0		Jun-24-21	68	173000-5D	A	P3	RW3
Quadrant Road									
CRQR-3000	Excavate Roadway	35	Dec-31-20	Mar-17-21	10	173000-5D	A	P3	Quad
CRQR-3010	Begin Work Quadrant Rd - Phase 3	0	Dec-31-20		10	173000-5D	A	P3	Quad
CRQR-3020	Construct Drainage	10	Mar-18-21	Apr-07-21	10	173000-5D	A	P3	Quad
CRQR-3030	Undercut Subgrade	4	Apr-08-21	Apr-14-21	10	173000-5D	A	P3	Quad
CRQR-3040	Place Granular Subgrade	4	Apr-15-21	Apr-22-21	10	173000-5D	A	P3	Quad
CRQR-4120	Complete Work Quadrant Rd - Phase 3	0		Apr-22-21	10	173000-5D	A	P3	Quad
OH-10									
CR10-3010	Begin Work OH-10 Sta 27+00 - 40+00 - Phase 3	0	Aug-16-19		215	173000-5D	A	P3	OH10
CR10-3060	Excavate Roadway Sta 32+00 - 40+00	30	Aug-16-19	Oct-10-19	215	173000-5D	A	P3	OH10
CR10-3000	Excavate Roadway Sta 27+00 - 32+00	40	Nov-13-20	Feb-10-21	13	173000-5D	A	P3	OH10
CR10-3020	Construct Drainage Sta 27+00 - 40+00	28	Feb-11-21	Apr-07-21	13	173000-5D	A	P3	OH10
CR10-3030	Undercut Subgrade Sta 27+00 - 40+00	9	May-05-21	May-19-21	13	173000-5D	A	P3	OH10
CR10-3040	Place Granular Subgrade Sta 27+00 - 40+00	8	May-20-21	Jun-03-21	13	173000-5D	A	P3	OH10
CR10-3050	Complete Work OH-10 Sta 27+00 - 40+00	0		Jun-03-21	13	173000-5D	A	P3	OH10
Utilities									
CR10-U800	Construct CPP 6x5" Duct Bank Sta 27+00 - 30+50 RT	4	Apr-08-21	Apr-14-21	13	173000-5D	A	P3	OH10



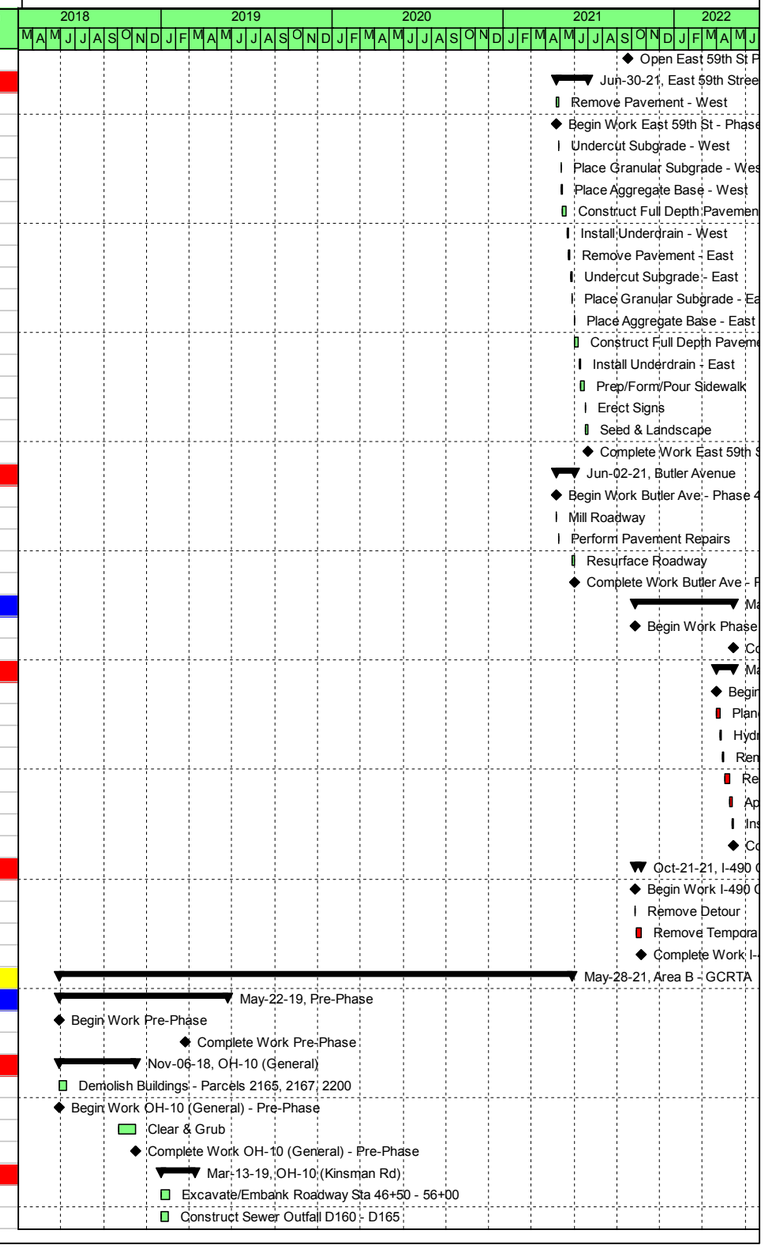
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR10-U830	Construct CPP 3x5" Duct Bank Sta 32+00 LT/RT	3	Apr-08-21	Apr-13-21	17	173000-5D	A	P3	OH10
CR10-U840	Construct CPP 3x5" Duct Bank Sta 36+00 LT/RT	3	Apr-14-21	Apr-16-21	17	173000-5D	A	P3	OH10
CR10-U820	Construct CPP 6x5" Duct Bank Sta 30+50 - 32+00 LT/RT	3	Apr-15-21	Apr-21-21	13	173000-5D	A	P3	OH10
CR10-U850	Construct CPP 3x5" Duct Bank Sta 40+00 LT/RT	3	Apr-21-21	Apr-23-21	17	173000-5D	A	P3	OH10
CR10-U810	Construct CPP 6x5" Duct Bank Sta 32+00 - 40+00 LT	6	Apr-22-21	May-04-21	13	173000-5D	A	P3	OH10
East 57th Street									
CR57-3000	Begin Work East 57th St - Phase 3	0	Nov-12-20		17	173000-5D	A	P3	E57th
CR57-3010	Remove Pavement	3	Dec-02-20	Dec-04-20	17	173000-5D	A	P3	E57th
CR57-3020	Complete Work East 57th St - Phase 3	0		Dec-15-20	17	173000-5D	A	P3	E57th
Utilities									
CR57-U100	Remove 3" Gas Sta 10+22 - 14+38 LT	5	Nov-12-20	Nov-19-20	17	173000-5D	A	P3	E57th
CR57-U110	Remove 3" Gas Sta 10+22 - 13+18 RT	4	Nov-20-20	Nov-27-20	17	173000-5D	A	P3	E57th
CR57-U120	Remove 6" Water Sta 10+06 - 14+18 RT	5	Dec-08-20	Dec-15-20	17	173000-5D	A	P3	E57th
Phase 4									
AP4-1000	Begin Work Phase 4	0	Apr-23-21		10	173000-5D	A	P4	
AP4-2000	Complete Work Phase 4	0		Oct-07-21	11	173000-5D	A	P4	
I-490									
C490-4110	Begin Work IR-490 Sta 9+00 - 27+00 - Phase 4	0	May-11-21		20	173000-5D	A	P4	I490
C490-4030	Construct Full Depth Pavement & Curb Sta 9+00 - 27+00	25	May-27-21	Jul-01-21	14	173000-6D w/Shutdown 12/1-3/31	A	P4	I490
C490-4020	Install Underdrain Sta 9+00 - 27+00	10	Jul-02-21	Jul-20-21	26	173000-5D	A	P4	I490
C490-4040	Construct Lighting Duct Banks Sta 9+00 - 27+00	10	Jul-21-21	Aug-05-21	26	173000-5D	A	P4	I490
C490-4050	Install Lighting Sta 9+00 - 27+00	5	Aug-06-21	Aug-13-21	31	173000-5D	A	P4	I490
C490-4060	Erect Signs	10	Aug-06-21	Aug-24-21	26	173000-5D	A	P4	I490
C490-4070	Seed & Landscape	6	Aug-25-21	Sep-02-21	26	173000-5D	A	P4	I490
C490-4080	Apply Pavement Markings	3	Sep-03-21	Sep-08-21	26	173000-5D w/Shutdown 12/1-3/31	A	P4	I490
C490-4090	Open IR-490 Roadway to Traffic Sta 9+00 - 27+00	0		Sep-08-21	26	173000-5D	A	P4	I490
Quadrant Road									
CRQR-4000	Place Aggregate Base	4	Apr-23-21	Apr-30-21	10	173000-5D	A	P4	Quad
CRQR-4110	Begin Work Quadrant Rd - Phase 4	0	Apr-23-21		10	173000-5D	A	P4	Quad
CRQR-4010	Install Underdrain	3	May-04-21	May-06-21	10	173000-5D	A	P4	Quad
CRQR-4020	Construct Full Depth Pavement & Curb	10	May-07-21	May-26-21	10	173000-5D w/Shutdown 12/1-3/31	A	P4	Quad
CRQR-4030	Construct Lighting Duct Banks	8	May-27-21	Jun-09-21	61	173000-5D	A	P4	Quad
CRQR-4070	Erect Signals	8	May-27-21	Jun-09-21	76	173000-5D	A	P4	Quad
CRQR-4040	Install Lighting	4	Jun-10-21	Jun-16-21	72	173000-5D	A	P4	Quad
CRQR-4050	Erect Signs	1	Jun-10-21	Jun-10-21	66	173000-5D	A	P4	Quad
CRQR-4060	Prep/Form/Pour Sidewalk	6	Jun-10-21	Jun-18-21	61	173000-5D	A	P4	Quad
CRQR-4090	Apply Pavement Markings	1	Jun-17-21	Jun-17-21	73	173000-5D w/Shutdown 12/1-3/31	A	P4	Quad
CRQR-4080	Seed & Landscape	10	Jun-22-21	Jul-08-21	61	173000-5D	A	P4	Quad
CRQR-4100	Open Quadrant Rd to Traffic - Phase 4	0		Jul-08-21	61	173000-5D	A	P4	Quad
OH-10									
CR10-4010	Place Aggregate Base Sta 27+00 - 40+00	5	Jun-04-21	Jun-11-21	13	173000-5D	A	P4	OH10
CR10-4000	Begin Work OH-10 Sta 27+00 - 40+00 - Phase 4	0	Jun-04-21		13	173000-5D	A	P4	OH10
CR10-4020	Install Underdrain Sta 27+00 - 40+00	8	Jun-15-21	Jun-25-21	13	173000-5D	A	P4	OH10
CR10-4030	Construct Full Depth Pavement & Curb Sta 27+00 - 40+00	20	Jul-02-21	Jul-30-21	14	173000-6D w/Shutdown 12/1-3/31	A	P4	OH10
CR10-4040	Construct Lighting Duct Banks Sta 27+00 - 40+00 LT/RT	20	Aug-02-21	Sep-02-21	11	173000-5D	A	P4	OH10
CR10-4210	Place Aggregate Base Shared-Use Path (Behind Retaining Wall #3)	2	Sep-03-21	Sep-07-21	13	173000-5D	A	P4	OH10
CR10-4050	Install Lighting Sta 27+00 - 40+00	10	Sep-03-21	Sep-22-21	11	173000-5D	A	P4	OH10
CR10-4060	Erect Signs	3	Sep-03-21	Sep-08-21	18	173000-5D	A	P4	OH10
CR10-4220	Pave Shared-Use Path (Behind Retaining Wall #3)	2	Sep-08-21	Sep-09-21	13	173000-5D w/Shutdown 12/1-3/31	A	P4	OH10
CR10-4200	Prep/Form/Pour Sidewalk (East of E64th St)	4	Sep-10-21	Sep-16-21	13	173000-5D	A	P4	OH10
CR10-4070	Seed & Landscape	6	Sep-23-21	Oct-05-21	11	173000-5D	A	P4	OH10
CR10-4080	Apply Pavement Markings	2	Oct-06-21	Oct-07-21	11	173000-5D w/Shutdown 12/1-3/31	A	P4	OH10
CR10-4090	Open OH-10 Roadway to Traffic Sta 27+00 - 40+00 - Phase 4	0		Oct-07-21	11	173000-5D	A	P4	OH10
Bower Avenue									



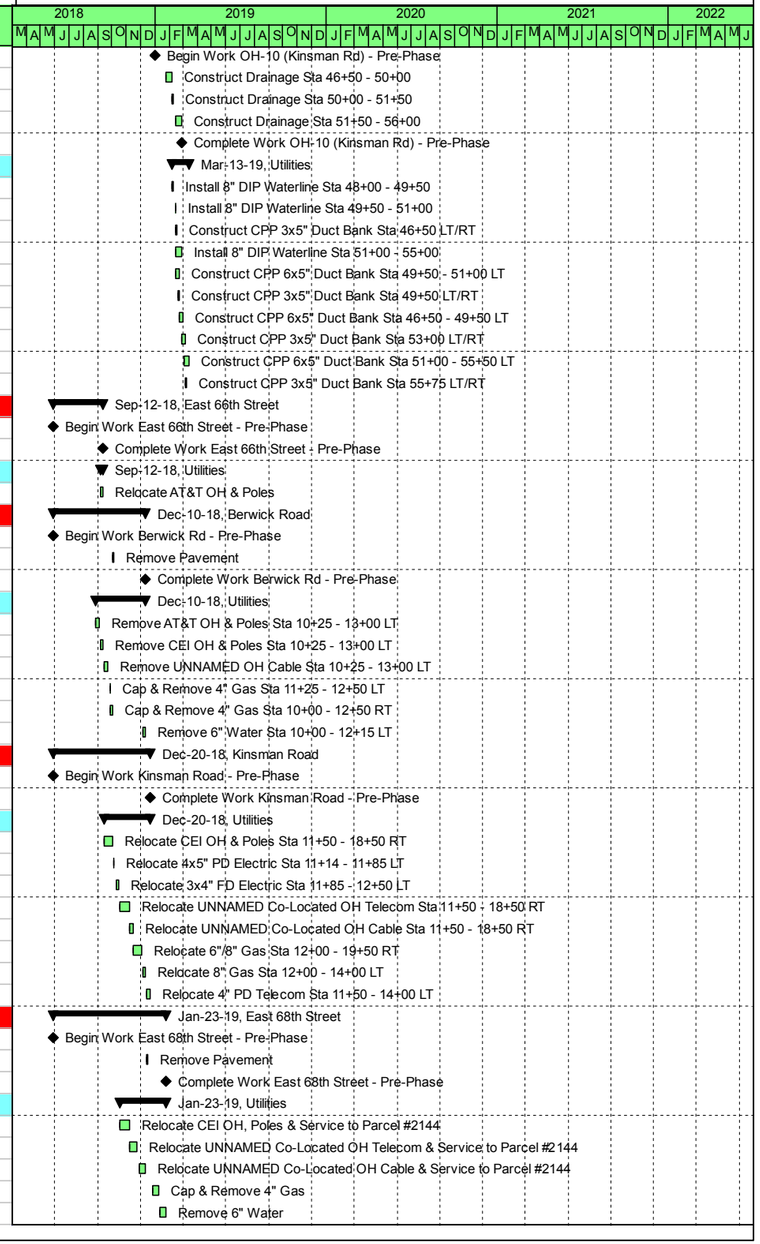
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRBO-4000	Begin Work Bower Ave - Phase 4	0	May-18-21		82	173000-5D	A	P4	Bower
CRBO-4010	Mill Roadway	1	May-18-21	May-18-21	82	173000-5D	A	P4	Bower
CRBO-4020	Perform Pavement Repairs	3	May-19-21	May-21-21	82	173000-5D w/Shutdown 12/1-3/31	A	P4	Bower
CRBO-4030	Resurface Roadway	2	May-26-21	May-27-21	82	173000-5D w/Shutdown 12/1-3/31	A	P4	Bower
CRBO-4040	Complete Work Bower Ave - Phase 4	0		May-27-21	84	173000-5D	A	P4	Bower
Property Parcel #2005 (GCRTA Parking Lot)									
CRTA-1000	Begin Work Parcel #2005 - Phase 4	0	May-11-21		32	173000-5D	A	P4	PP2005
CRTA-1010	Construct Drainage Sta 15+00	2	May-11-21	May-12-21	32	173000-5D	A	P4	PP2005
CRTA-1020	Reconstruct GCRTA Parking Lot	60	May-13-21	Aug-27-21	32	173000-5D w/Shutdown 12/1-3/31	A	P4	PP2005
CRTA-1030	Complete Work Parcel #2005 - Phase 4	0		Aug-27-21	32	173000-5D	A	P4	PP2005
Bragg Rd									
CRBR-2000	Begin Work Bragg Rd - Phase 4	0	Jun-09-21		71	173000-5D	A	P4	Bragg
CRBR-2010	Mill Roadway	1	Jun-09-21	Jun-10-21	71	173000-5D	A	P4	Bragg
CRBR-2020	Perform Pavement Repairs	3	Jun-10-21	Jun-16-21	72	173000-5D w/Shutdown 12/1-3/31	A	P4	Bragg
CRBR-2030	Resurface Roadway	2	Jun-16-21	Jun-18-21	72	173000-5D w/Shutdown 12/1-3/31	A	P4	Bragg
CRBR-2040	Complete Work Bragg Rd - Phase 4	0		Jun-18-21	71	173000-5D	A	P4	Bragg
Francis Avenue									
CRFA-2000	Begin Work Francis Ave - Phase 4	0	Apr-23-21		96	173000-5D	A	P4	Francis
CRFA-2010	Mill Roadway	1	Apr-23-21	Apr-23-21	96	173000-5D	A	P4	Francis
CRFA-2020	Perform Pavement Repairs	3	Apr-28-21	Apr-30-21	96	173000-5D w/Shutdown 12/1-3/31	A	P4	Francis
CRFA-2030	Resurface Roadway	2	May-18-21	May-19-21	88	173000-5D w/Shutdown 12/1-3/31	A	P4	Francis
CRFA-2040	Complete Work Francis Ave - Phase 4	0		May-19-21	88	173000-5D	A	P4	Francis
East 59th Street Pedestrian Bridge over OH-10									
CB59-1000	Begin Work East 59th St Pedestrian Bridge - Phase 4	0	Apr-16-21		18	173000-5D	A	P4	E59thB
CB59-1030	Excavate Abutments	5	Apr-16-21	Apr-28-21	18	173000-5D	A	P4	E59thB
CB59-1040	Drive Abutment Pile	4	Apr-29-21	May-05-21	18	173000-5D	A	P4	E59thB
CB59-2000	F/R/P REAR Abut Footer	4	May-06-21	May-12-21	18	173000-5D	A	P4	E59thB
CB59-2010	F/R/P REAR Abut Seat	4	May-13-21	May-19-21	22	173000-5D	A	P4	E59thB
CB59-2020	F/R/P FWD Abut Footer	4	May-13-21	May-19-21	18	173000-5D	A	P4	E59thB
CB59-2040	Cure REAR Abut Seat	7	May-20-21	May-26-21	42	173000-7D Cure	A	P4	E59thB
CB59-2030	F/R/P REAR Abut Curtain Walls	5	May-20-21	May-28-21	79	173000-5D	A	P4	E59thB
CB59-2050	F/R/P FWD Abut Seat	4	May-20-21	May-27-21	18	173000-5D	A	P4	E59thB
CB59-2070	Cure FWD Abut Seat	7	May-28-21	Jun-03-21	34	173000-7D Cure	A	P4	E59thB
CB59-2060	F/R/P FWD Abut Curtain Walls	5	May-28-21	Jun-04-21	75	173000-5D	A	P4	E59thB
CB59-2080	Set Bearings	1	Jun-03-21	Jun-04-21	18	173000-5D	A	P4	E59thB
CB59-2090	Erect Structural Steel	3	Jun-04-21	Jun-10-21	18	173000-5D	A	P4	E59thB
CB59-2100	Detail Structural Steel	5	Jun-10-21	Jun-18-21	18	173000-5D	A	P4	E59thB
CB59-2110	F/R/P Abut Backwalls	5	Jun-18-21	Jun-30-21	18	173000-5D	A	P4	E59thB
CB59-2120	F/R/P Bridge Deck	12	Jun-30-21	Jul-21-21	18	173000-5D w/Shutdown 12/1-3/31	A	P4	E59thB
CB59-2130	Place Porous Backfill	2	Jun-30-21	Jul-02-21	62	173000-5D	A	P4	E59thB
CB59-2270	Cure Substructure	7	Jul-01-21	Jul-07-21	295	173000-7D Cure	A	P4	E59thB
CB59-2170	Patch Substructure	5	Jul-07-21	Jul-15-21	147	173000-5D	A	P4	E59thB
CB59-2280	Air Cure Substructure	10	Jul-16-21	Jul-25-21	296	173000-7D Cure	A	P4	E59thB
CB59-2140	Cure Bridge Deck	7	Jul-22-21	Jul-28-21	33	173000-7D Cure	A	P4	E59thB
CB59-2190	Seal Substructure	9	Jul-28-21	Aug-10-21	76	173000-5D Paint/Shutdown 11/1-3/31	A	P4	E59thB
CB59-2150	F/R/P Parapets	10	Jul-28-21	Aug-12-21	19	173000-5D	A	P4	E59thB
CB59-2160	Cure Parapets	7	Aug-13-21	Aug-19-21	34	173000-7D Cure	A	P4	E59thB
CB59-2260	Patch Parapets	2	Aug-19-21	Aug-24-21	18	173000-5D	A	P4	E59thB
CB59-2180	Air Cure Parapets	10	Aug-25-21	Sep-03-21	34	173000-7D Cure	A	P4	E59thB
CB59-2200	Seal Deck and Parapets	3	Sep-03-21	Sep-09-21	17	173000-5D Paint/Shutdown 11/1-3/31	A	P4	E59thB
CB59-2230	Paint Structural Steel	15	Sep-09-21	Oct-08-21	58	173000-5D Paint/Shutdown 11/1-3/31	A	P4	E59thB
CB59-2210	Erect Bridge Lighting	2	Sep-09-21	Sep-14-21	17	173000-5D	A	P4	E59thB
CB59-2220	Erect Vandal Fence	4	Sep-14-21	Sep-22-21	17	173000-5D	A	P4	E59thB
CB59-2240	F/P Sidewalk	2	Sep-22-21	Sep-24-21	17	173000-5D	A	P4	E59thB



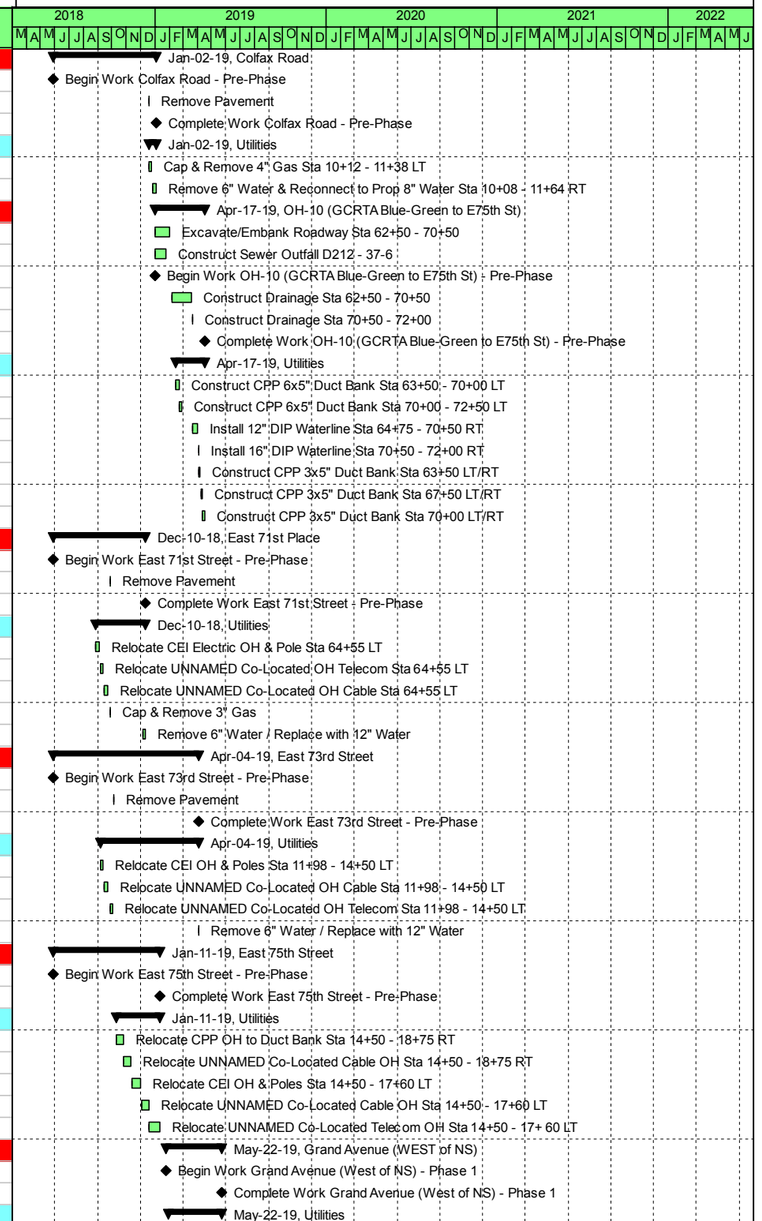
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CB59-2250	Open East 59th St Pedestrian Bridge to Traffic	0		Sep-24-21	17	173000-5D	A	P4	E59thB
East 59th Street									
CR59-1000	Remove Pavement - West	2	Apr-23-21	Apr-28-21	66	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-1010	Begin Work East 59th St - Phase 4	0	Apr-23-21		66	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-1040	Undercut Subgrade - West	2	Apr-29-21	Apr-30-21	66	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-1050	Place Granular Subgrade - West	1	May-04-21	May-04-21	66	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-1060	Place Aggregate Base - West	2	May-05-21	May-06-21	66	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-1070	Construct Full Depth Pavement & Curb - West	5	May-07-21	May-14-21	66	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-1080	Install Underdrain - West	2	May-18-21	May-19-21	66	173000-5D	A	P4	E59th
CR59-2020	Remove Pavement - East	2	May-20-21	May-21-21	66	173000-5D	A	P4	E59th
CR59-2030	Undercut Subgrade - East	2	May-26-21	May-27-21	66	173000-5D	A	P4	E59th
CR59-2040	Place Granular Subgrade - East	1	May-28-21	May-28-21	66	173000-5D	A	P4	E59th
CR59-2050	Place Aggregate Base - East	2	Jun-01-21	Jun-02-21	66	173000-5D	A	P4	E59th
CR59-2060	Construct Full Depth Pavement & Curb - East	5	Jun-03-21	Jun-10-21	67	173000-5D w/Shutdown 12/1-3/31	A	P4	E59th
CR59-2070	Install Underdrain - East	2	Jun-11-21	Jun-15-21	66	173000-5D	A	P4	E59th
CR59-1100	Prep/Form/Pour Sidewalk	5	Jun-16-21	Jun-23-21	66	173000-5D	A	P4	E59th
CR59-1120	Erect Signs	1	Jun-24-21	Jun-24-21	66	173000-5D	A	P4	E59th
CR59-1140	Seed & Landscape	2	Jun-25-21	Jun-30-21	66	173000-5D	A	P4	E59th
CR59-1150	Complete Work East 59th St to Traffic - Phase 4	0		Jun-30-21	66	173000-5D	A	P4	E59th
Butler Avenue									
CRBU-1000	Begin Work Butler Ave - Phase 4	0	Apr-23-21		96	173000-5D	A	P4	Butler
CRBU-1010	Mill Roadway	1	Apr-23-21	Apr-23-21	96	173000-5D	A	P4	Butler
CRBU-1020	Perform Pavement Repairs	3	Apr-28-21	Apr-30-21	96	173000-5D w/Shutdown 12/1-3/31	A	P4	Butler
CRBU-1030	Resurface Roadway	2	May-28-21	Jun-02-21	82	173000-5D w/Shutdown 12/1-3/31	A	P4	Butler
CRBU-1040	Complete Work Butler Ave - Phase 4	0		Jun-02-21	81	173000-5D	A	P4	Butler
Phase 5									
AP5-1000	Begin Work Phase 5	0	Oct-08-21		75	173000-5D	A	P5	
AP5-2000	Complete Work Phase 5	0		May-06-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	
I-90 Westbound Lane Reconfiguration									
CR90-1000	Begin Work I-90 WB Lane Reconfiguration - Phase 5	0	Apr-01-22		0	173000-5D Landscape w/Shutdown	A	P5	I90
CR90-1010	Plane Roadway	4	Apr-01-22	Apr-07-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
CR90-1020	Hydro Removal of Pavement Markings	2	Apr-08-22	Apr-12-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
CR90-1040	Remove & Replace Signs	3	Apr-13-22	Apr-15-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
CR90-1030	Resurface Roadway	5	Apr-20-22	Apr-28-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
CR90-1050	Apply Pavement Markings	3	Apr-29-22	May-04-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
CR90-1060	Install RPMs	2	May-05-22	May-06-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
CR90-1070	Complete Work I-90 WB Lane Reconfiguration - Phase 5	0		May-06-22	0	173000-5D Paint/Shutdown 11/1-3/31	A	P5	I90
I-490 Closure Detour Reconfiguration									
D490-2000	Begin Work I-490 Closure Detour Reconfiguration - Phase 5	0	Oct-08-21		75	173000-5D	A	P5	I490
D490-2030	Remove Detour	1	Oct-08-21	Oct-08-21	75	173000-5D	A	P5	I490
D490-2010	Remove Temporary Traffic Signal at Exit 162/Woodland Ave E	6	Oct-12-21	Oct-21-21	75	173000-5D	A	P5	I490
D490-2020	Complete Work I-490 Closure Detour Reconfiguration - Phase 5	0		Oct-21-21	75	173000-5D	A	P5	I490
Area B - GCRTA									
Pre-Phase									
BPPA-1000	Begin Work Pre-Phase	0	May-29-18		129	173000-5D	B	PPA	
BPPA-1010	Complete Work Pre-Phase	0		Feb-21-19	75	173000-5D	B	PPA	
OH-10 (General)									
CR10-3700	Demolish Buildings - Parcels 2165, 2167, 2200	9	May-29-18	Jun-12-18	204	173000-5D	B	PPA	OH10
CR10-3720	Begin Work OH-10 (General) - Pre-Phase	0	May-29-18		133	173000-5D	B	PPA	OH10
CR10-3710	Clear & Grub	20	Oct-01-18	Nov-06-18	66	173000-5D Clearing	B	PPA	OH10
CR10-3730	Complete Work OH-10 (General) - Pre-Phase	0		Nov-06-18	125	173000-5D	B	PPA	OH10
OH-10 (Kinsman Rd)									
CR10-5010	Excavate/Embank Roadway Sta 46+50 - 56+00	9	Jan-02-19	Jan-18-19	75	173000-5D	B	PPA	OH10
CR10-5200	Construct Sewer Outfall D160 - D165	7	Jan-02-19	Jan-16-19	77	173000-5D	B	PPA	OH10



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR10-5210	Begin Work OH-10 (Kinsman Rd) - Pre-Phase	0	Jan-02-19		75	173000-5D	B	PPA	OH10
CR10-5020	Construct Drainage Sta 46+50 - 50+00	7	Jan-23-19	Feb-06-19	75	173000-5D	B	PPA	OH10
CR10-5110	Construct Drainage Sta 50+00 - 51+50	2	Feb-07-19	Feb-08-19	75	173000-5D	B	PPA	OH10
CR10-5100	Construct Drainage Sta 51+50 - 56+00	7	Feb-13-19	Feb-27-19	406	173000-5D	B	PPA	OH10
CR10-5220	Complete Work OH-10 (Kinsman Rd) - Pre-Phase	0		Feb-27-19	406	173000-5D	B	PPA	OH10
Utilities									
CR10-U145	Install 8" DIP Waterline Sta 48+00 - 49+50	2	Feb-07-19	Feb-08-19	75	173000-5D	B	PPA	OH10
CR10-U155	Install 8" DIP Waterline Sta 49+50 - 51+00	2	Feb-13-19	Feb-14-19	75	173000-5D	B	PPA	OH10
CR10-U205	Construct CPP 3x5" Duct Bank Sta 46+50 LT/RT	3	Feb-13-19	Feb-15-19	401	173000-5D	B	PPA	OH10
CR10-U165	Install 8" DIP Waterline Sta 51+00 - 55+00	5	Feb-15-19	Feb-27-19	400	173000-5D	B	PPA	OH10
CR10-U185	Construct CPP 6x5" Duct Bank Sta 49+50 - 51+00 LT	3	Feb-15-19	Feb-21-19	75	173000-5D	B	PPA	OH10
CR10-U215	Construct CPP 3x5" Duct Bank Sta 49+50 LT/RT	3	Feb-20-19	Feb-22-19	401	173000-5D	B	PPA	OH10
CR10-U175	Construct CPP 6x5" Duct Bank Sta 46+50 - 49+50 LT	4	Feb-22-19	Mar-01-19	399	173000-5D	B	PPA	OH10
CR10-U225	Construct CPP 3x5" Duct Bank Sta 53+00 LT/RT	3	Feb-28-19	Mar-05-19	400	173000-5D	B	PPA	OH10
CR10-U195	Construct CPP 6x5" Duct Bank Sta 51+00 - 55+50 LT	5	Mar-05-19	Mar-13-19	399	173000-5D	B	PPA	OH10
CR10-U235	Construct CPP 3x5" Duct Bank Sta 55+75 LT/RT	3	Mar-06-19	Mar-08-19	400	173000-5D	B	PPA	OH10
East 66th Street									
CR66-3000	Begin Work East 66th Street - Pre-Phase	0	May-29-18		218	173000-5D	B	PPA	E66th
CR66-3010	Complete Work East 66th Street - Pre-Phase	0		Sep-12-18	162	173000-5D	B	PPA	E66th
Utilities									
CR66-U110	Relocate AT&T OH & Poles	5	Sep-05-18	Sep-12-18	162	173000-5D	B	PPA	E66th
Berwick Road									
CRBE-1010	Begin Work Berwick Rd - Pre-Phase	0	May-29-18		129	173000-5D	B	PPA	Berwick
CRBE-1000	Remove Pavement	2	Oct-03-18	Oct-04-18	132	173000-5D	B	PPA	Berwick
CRBE-1020	Complete Work Berwick Rd - Pre-Phase	0		Dec-10-18	127	173000-5D	B	PPA	Berwick
Utilities									
CRBE-U150	Remove AT&T OH & Poles Sta 10+25 - 13+00 LT	5	Aug-28-18	Sep-04-18	78	173000-5D	B	PPA	Berwick
CRBE-U130	Remove CEI OH & Poles Sta 10+25 - 13+00 LT	5	Sep-05-18	Sep-12-18	78	173000-5D	B	PPA	Berwick
CRBE-U140	Remove UNNAMED OH Cable Sta 10+25 - 13+00 LT	5	Sep-13-18	Sep-21-18	124	173000-5D	B	PPA	Berwick
CRBE-U110	Cap & Remove 4" Gas Sta 11+25 - 12+50 LT	2	Sep-26-18	Sep-27-18	132	173000-5D	B	PPA	Berwick
CRBE-U120	Cap & Remove 4" Gas Sta 10+00 - 12+50 RT	2	Sep-28-18	Oct-02-18	132	173000-5D	B	PPA	Berwick
CRBE-U100	Remove 6" Water Sta 10+00 - 12+15 LT	2	Dec-06-18	Dec-10-18	100	173000-5D	B	PPA	Berwick
Kinsman Road									
CRKR-3000	Begin Work Kinsman Road - Pre-Phase	0	May-29-18		139	173000-5D	B	PPA	Kinsman
CRKR-3010	Complete Work Kinsman Road - Pre-Phase	0		Dec-20-18	100	173000-5D	B	PPA	Kinsman
Utilities									
CRKR-U150	Relocate CEI OH & Poles Sta 11+50 - 18+50 RT	10	Sep-13-18	Oct-03-18	78	173000-5D	B	PPA	Kinsman
CRKR-U130	Relocate 4x5" PD Electric Sta 11+14 - 11+85 LT	2	Oct-04-18	Oct-05-18	78	173000-5D	B	PPA	Kinsman
CRKR-U140	Relocate 3x4" FD Electric Sta 11+85 - 12+50 LT	5	Oct-09-18	Oct-16-18	78	173000-5D	B	PPA	Kinsman
CRKR-U160	Relocate UNNAMED Co-Located OH Telecom Sta 11+50 - 18+50 RT	10	Oct-17-18	Nov-06-18	100	173000-5D	B	PPA	Kinsman
CRKR-U170	Relocate UNNAMED Co-Located OH Cable Sta 11+50 - 18+50 RT	5	Nov-07-18	Nov-14-18	100	173000-5D	B	PPA	Kinsman
CRKR-U100	Relocate 6"/8" Gas Sta 12+00 - 19+50 RT	10	Nov-15-18	Dec-04-18	100	173000-5D	B	PPA	Kinsman
CRKR-U110	Relocate 8" Gas Sta 12+00 - 14+00 LT	5	Dec-05-18	Dec-12-18	100	173000-5D	B	PPA	Kinsman
CRKR-U120	Relocate 4" PD Telecom Sta 11+50 - 14+00 LT	5	Dec-13-18	Dec-20-18	100	173000-5D	B	PPA	Kinsman
East 68th Street									
CR68-1010	Begin Work East 68th Street - Pre-Phase	0	May-29-18		156	173000-5D	B	PPA	E68th
CR68-1000	Remove Pavement	2	Dec-13-18	Dec-17-18	78	173000-5D	B	PPA	E68th
CR68-1020	Complete Work East 68th Street - Pre-Phase	0		Jan-23-19	202	173000-5D	B	PPA	E68th
Utilities									
CR68-U100	Relocate CEI OH, Poles & Service to Parcel #2144	10	Oct-17-18	Nov-06-18	78	173000-5D	B	PPA	E68th
CR68-U130	Relocate UNNAMED Co-Located OH Telecom & Service to Parcel #2144	10	Nov-07-18	Nov-23-18	78	173000-5D	B	PPA	E68th
CR68-U140	Relocate UNNAMED Co-Located OH Cable & Service to Parcel #2144	10	Nov-28-18	Dec-12-18	78	173000-5D	B	PPA	E68th
CR68-U120	Cap & Remove 4" Gas	5	Dec-26-18	Jan-09-19	202	173000-5D	B	PPA	E68th
CR68-U110	Remove 6" Water	6	Jan-10-19	Jan-23-19	202	173000-5D	B	PPA	E68th

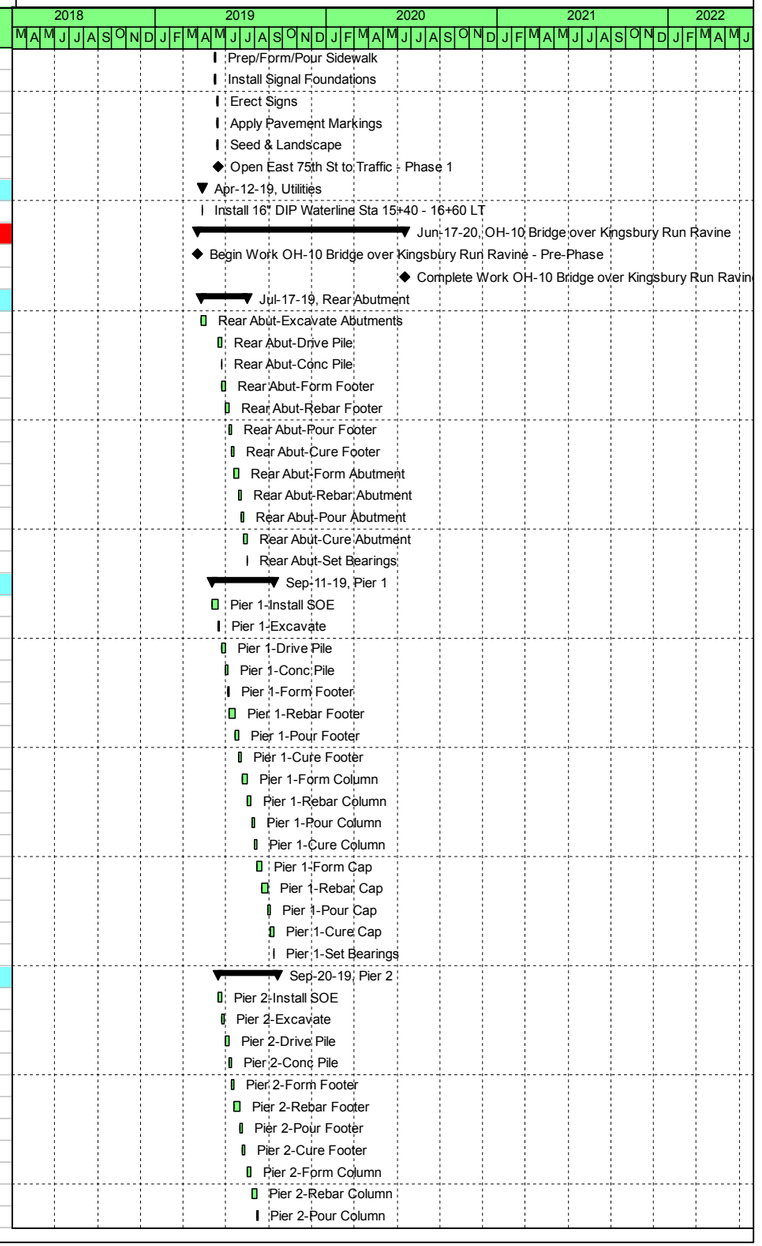


Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
Colfax Road									
CRCX-1010	Begin Work Colfax Road - Pre-Phase	0	May-29-18		188	173000-5D	B	PPA	Colfax
CRCX-1000	Remove Pavement	2	Dec-18-18	Dec-19-18	78	173000-5D	B	PPA	Colfax
CRCX-1020	Complete Work Colfax Road - Pre-Phase	0		Jan-02-19	211	173000-5D	B	PPA	Colfax
Utilities									
CRCX-U110	Cap & Remove 4" Gas Sta 10+12 - 11+38 LT	2	Dec-20-18	Dec-24-18	202	173000-5D	B	PPA	Colfax
CRCX-U100	Remove 6" Water & Reconnect to Prop 8" Water Sta 10+08 - 11+64 RT	2	Dec-26-18	Jan-02-19	211	173000-5D	B	PPA	Colfax
OH-10 (GCRTA Blue-Green to E75th St)									
CR10-6010	Excavate/Embank Roadway Sta 62+50 - 70+50	15	Jan-02-19	Feb-01-19	65	173000-5D	B	PPA	OH10
CR10-6200	Construct Sewer Outfall D212 - 37-6	10	Jan-02-19	Jan-23-19	70	173000-5D	B	PPA	OH10
CR10-6210	Begin Work OH-10 (GCRTA Blue-Green to E75th St) - Pre-Phase	0	Jan-02-19		65	173000-5D	B	PPA	OH10
CR10-6020	Construct Drainage Sta 62+50 - 70+50	20	Feb-06-19	Mar-20-19	65	173000-5D	B	PPA	OH10
CR10-6100	Construct Drainage Sta 70+50 - 72+00	2	Mar-21-19	Mar-22-19	71	173000-5D	B	PPA	OH10
CR10-6220	Complete Work OH-10 (GCRTA Blue-Green to E75th St) - Pre-Phase	0		Apr-17-19	388	173000-5D	B	PPA	OH10
Utilities									
CR10-U140	Construct CPP 6x5" Duct Bank Sta 63+50 - 70+00 LT	4	Feb-13-19	Feb-20-19	83	173000-5D	B	PPA	OH10
CR10-U150	Construct CPP 6x5" Duct Bank Sta 70+00 - 72+50 LT	3	Feb-21-19	Feb-27-19	83	173000-5D	B	PPA	OH10
CR10-U100	Install 12" DIP Waterline Sta 64+75 - 70+50 RT	6	Mar-21-19	Apr-02-19	65	173000-5D	B	PPA	OH10
CR10-U105	Install 16" DIP Waterline Sta 70+50 - 72+00 RT	2	Apr-03-19	Apr-04-19	65	173000-5D	B	PPA	OH10
CR10-U220	Construct CPP 3x5" Duct Bank Sta 63+50 LT/RT	3	Apr-03-19	Apr-05-19	388	173000-5D	B	PPA	OH10
CR10-U230	Construct CPP 3x5" Duct Bank Sta 67+50 LT/RT	3	Apr-09-19	Apr-11-19	388	173000-5D	B	PPA	OH10
CR10-U240	Construct CPP 3x5" Duct Bank Sta 70+00 LT/RT	3	Apr-12-19	Apr-17-19	388	173000-5D	B	PPA	OH10
East 71st Place									
CR71-1010	Begin Work East 71st Street - Pre-Phase	0	May-29-18		158	173000-5D	B	PPA	E71st
CR71-1000	Remove Pavement	1	Sep-26-18	Sep-26-18	113	173000-5D	B	PPA	E71st
CR71-1020	Complete Work East 71st Street - Pre-Phase	0		Dec-10-18	447	173000-5D	B	PPA	E71st
Utilities									
CR71-U120	Relocate CEI Electric OH & Pole Sta 64+55 LT	5	Aug-28-18	Sep-04-18	107	173000-5D	B	PPA	E71st
CR71-U130	Relocate UNNAMED Co-Located OH Telecom Sta 64+55 LT	5	Sep-05-18	Sep-12-18	113	173000-5D	B	PPA	E71st
CR71-U140	Relocate UNNAMED Co-Located OH Cable Sta 64+55 LT	5	Sep-13-18	Sep-21-18	113	173000-5D	B	PPA	E71st
CR71-U110	Cap & Remove 3" Gas	1	Sep-27-18	Sep-27-18	145	173000-5D	B	PPA	E71st
CR71-U100	Remove 6" Water / Replace with 12" Water	2	Dec-06-18	Dec-10-18	109	173000-5D	B	PPA	E71st
East 73rd Street									
CR73-1020	Begin Work East 73rd Street - Pre-Phase	0	May-29-18		163	173000-5D	B	PPA	E73rd
CR73-1000	Remove Pavement	2	Oct-04-18	Oct-05-18	107	173000-5D	B	PPA	E73rd
CR73-1010	Complete Work East 73rd Street - Pre-Phase	0		Apr-04-19	75	173000-5D	B	PPA	E73rd
Utilities									
CR73-U110	Relocate CEI OH & Poles Sta 11+98 - 14+50 LT	5	Sep-05-18	Sep-12-18	107	173000-5D	B	PPA	E73rd
CR73-U120	Relocate UNNAMED Co-Located OH Cable Sta 11+98 - 14+50 LT	5	Sep-13-18	Sep-21-18	107	173000-5D	B	PPA	E73rd
CR73-U130	Relocate UNNAMED Co-Located OH Telecom Sta 11+98 - 14+50 LT	5	Sep-26-18	Oct-03-18	107	173000-5D	B	PPA	E73rd
CR73-U100	Remove 6" Water / Replace with 12" Water	2	Apr-03-19	Apr-04-19	75	173000-5D	B	PPA	E73rd
East 75th Street									
CR75-3000	Begin Work East 75th Street - Pre-Phase	0	May-29-18		166	173000-5D	B	PPA	E75th
CR75-3010	Complete Work East 75th Street - Pre-Phase	0		Jan-11-19	92	173000-5D	B	PPA	E75th
Utilities									
CR75-U110	Relocate CPP OH to Duct Bank Sta 14+50 - 18+75 RT	10	Oct-10-18	Oct-25-18	92	173000-5D	B	PPA	E75th
CR75-U120	Relocate UNNAMED Co-Located Cable OH Sta 14+50 - 18+75 RT	7	Oct-26-18	Nov-09-18	92	173000-5D	B	PPA	E75th
CR75-U130	Relocate CEI OH & Poles Sta 14+50 - 17+60 LT	10	Nov-13-18	Nov-30-18	92	173000-5D	B	PPA	E75th
CR75-U140	Relocate UNNAMED Co-Located Cable OH Sta 14+50 - 17+60 LT	10	Dec-03-18	Dec-18-18	92	173000-5D	B	PPA	E75th
CR75-U150	Relocate UNNAMED Co-Located Telecom OH Sta 14+50 - 17+ 60 LT	10	Dec-19-18	Jan-11-19	92	173000-5D	B	PPA	E75th
Grand Avenue (WEST of NS)									
CRGW-3000	Begin Work Grand Avenue (West of NS) - Phase 1	0	Jan-24-19		204	173000-5D	B	PPA	GrandW
CRGW-3010	Complete Work Grand Avenue (West of NS) - Phase 1	0		May-22-19	202	173000-5D	B	PPA	GrandW
Utilities									



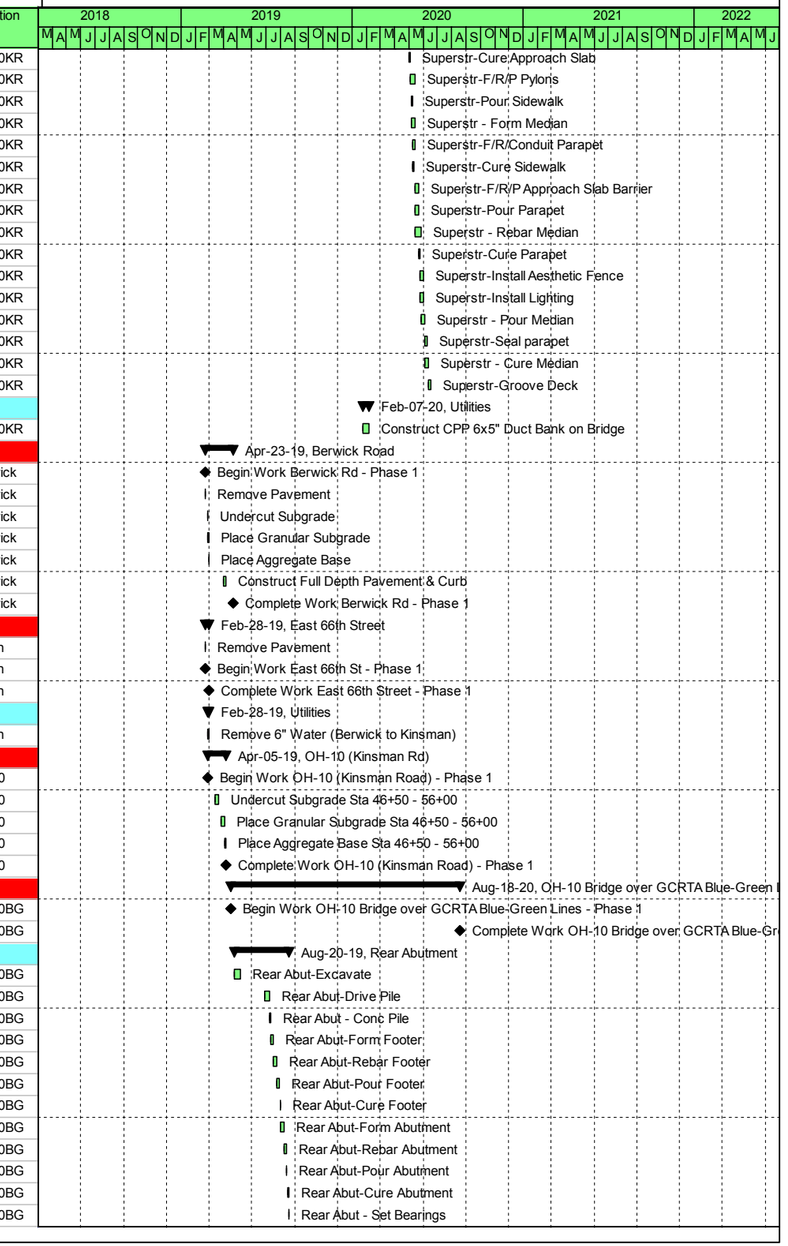
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRGW-U140	Relocate CEI OH & Poles Sta 81+00 - 90+00	15	Jan-30-19	Mar-01-19	202	173000-5D	B	PPA	GrandW
CRGW-U150	Relocate UNNAMED Co-Located OH Telecom Sta 81+00 - 90+00	15	Mar-05-19	Apr-03-19	202	173000-5D	B	PPA	GrandW
CRGW-U160	Relocate UNNAMED Co-Located OH Cable Sta 81+00 - 90+00	15	Apr-04-19	May-02-19	202	173000-5D	B	PPA	GrandW
CRGW-U130	Relocate 4" Gas Sta 84+00 - 91+00	10	May-03-19	May-22-19	202	173000-5D	B	PPA	GrandW
Phase 1									
BP1-1000	Begin Work Phase 1	0	Feb-22-19		75	173000-5D	B	P1	
BP1-2000	Complete Work Phase 1	0		May-14-19	66	173000-5D	B	P1	
Kinsman Road									
CRKR-1000	Remove Pavement	2	Feb-22-19	Feb-23-19	97	173000-6D	B	P1	Kinsman
CRKR-1010	Begin Work Kinsman Rd - Phase 1	0	Feb-22-19		97	173000-6D	B	P1	Kinsman
CRKR-1020	Excavate/Embank Roadway	2	Feb-23-19	Feb-27-19	97	173000-6D	B	P1	Kinsman
CRKR-1040	Construct Drainage	6	Feb-28-19	Mar-07-19	97	173000-6D	B	P1	Kinsman
CRKR-1050	Undercut Subgrade	3	Mar-21-19	Mar-23-19	97	173000-6D	B	P1	Kinsman
CRKR-1060	Place Granular Subgrade	3	Mar-27-19	Mar-29-19	97	173000-6D	B	P1	Kinsman
CRKR-1070	Place Aggregate Base	3	Mar-29-19	Apr-02-19	97	173000-6D	B	P1	Kinsman
CRKR-1080	Construct Full Depth Pavement & Curb	5	Apr-03-19	Apr-09-19	96	173000-6D w/Shutdown 12/1-3/31	B	P1	Kinsman
CRKR-1090	Install Underdrain	3	Apr-10-19	Apr-12-19	97	173000-6D	B	P1	Kinsman
CRKR-1110	Erect Lighting	4	Apr-13-19	Apr-18-19	97	173000-6D	B	P1	Kinsman
CRKR-1120	Prep/Form/Pour Sidewalk	5	Apr-13-19	Apr-19-19	97	173000-6D	B	P1	Kinsman
CRKR-1130	Install Signal Foundations	3	Apr-13-19	Apr-17-19	99	173000-6D	B	P1	Kinsman
CRKR-1150	Apply Pavement Markings	1	Apr-18-19	Apr-18-19	99	173000-6D	B	P1	Kinsman
CRKR-1140	Erect Signs	1	Apr-19-19	Apr-19-19	97	173000-6D	B	P1	Kinsman
CRKR-1160	Seed & Landscape	1	Apr-20-19	Apr-20-19	97	173000-6D	B	P1	Kinsman
CRKR-1170	Open Kinsman Rd to Traffic - Phase 1	0		Apr-23-19	97	173000-6D	B	P1	Kinsman
Utilities									
CRKR-U200	Remove 8" Waterline/Install 12" Waterline	2	Mar-08-19	Mar-09-19	97	173000-6D	B	P1	Kinsman
CRKR-U240	Install 1" Water Service to SouthEast Public Plaza	1	Mar-13-19	Mar-13-19	97	173000-6D	B	P1	Kinsman
CRKR-U250	Install 1" Water Service to SouthWest Public Plaza	1	Mar-14-19	Mar-14-19	97	173000-6D	B	P1	Kinsman
CRKR-U230	Construct Add'l 4x4" Duct Bank & Pull Boxes Sta 11+50 - 13+50 RT	3	Mar-15-19	Mar-20-19	97	173000-6D	B	P1	Kinsman
CRKR-U210	Construct CPP 2x4" Duct Bank & Pull Box at SouthEast Public Plaza	2	Mar-21-19	Mar-22-19	114	173000-6D	B	P1	Kinsman
CRKR-U220	Construct CPP 2x4" Duct Bank & Pull Box at SouthWest Public Plaza	2	Mar-23-19	Mar-27-19	114	173000-6D	B	P1	Kinsman
Kinsman Road Bridge over GCRTA									
CBKR-4010	Remove Approach Slab	2	Feb-22-19	Feb-23-19	121	173000-6D	B	P1	KinsmnB
CBKR-4000	Begin Work Kinsman Rd Bridge - Phase 1	0	Feb-22-19		121	173000-6D	B	P1	KinsmnB
CBKR-4020	Undercut Subgrade	1	Feb-27-19	Feb-27-19	121	173000-6D	B	P1	KinsmnB
CBKR-4030	Place Granular Subgrade	1	Feb-28-19	Feb-28-19	121	173000-6D	B	P1	KinsmnB
CBKR-4040	Place Aggregate Base	1	Mar-01-19	Mar-01-19	121	173000-6D	B	P1	KinsmnB
CBKR-4050	Form/Resteel/Pour Approach Slab	3	Apr-01-19	Apr-03-19	103	173000-6D w/Shutdown 12/1-3/31	B	P1	KinsmnB
CBKR-4060	Cure Approach Slab	7	Apr-04-19	Apr-10-19	152	173000-7D Cure	B	P1	KinsmnB
CBKR-4070	Groove Approach Slab	1	Apr-10-19	Apr-11-19	104	173000-6D	B	P1	KinsmnB
CBKR-4080	Open Kinsman Rd Bridge to Traffic - Phase 1	0		Apr-11-19	104	173000-6D	B	P1	KinsmnB
East 75th Street									
CR75-1010	Mill Roadway & Remove Pavement	2	Apr-05-19	Apr-09-19	65	173000-5D	B	P1	E75th
CR75-1000	Begin Work East 75th St - Phase 1	0	Apr-05-19		65	173000-5D	B	P1	E75th
CR75-1020	Embank Roadway	1	Apr-10-19	Apr-10-19	65	173000-5D	B	P1	E75th
CR75-1180	Perform Pavement Repairs	3	Apr-10-19	Apr-12-19	78	173000-5D w/Shutdown 12/1-3/31	B	P1	E75th
CR75-1030	Construct Drainage	1	Apr-16-19	Apr-16-19	65	173000-5D	B	P1	E75th
CR75-1040	Undercut Subgrade	2	Apr-17-19	Apr-18-19	65	173000-5D	B	P1	E75th
CR75-1050	Place Granular Subgrade	2	Apr-18-19	Apr-19-19	65	173000-5D	B	P1	E75th
CR75-1060	Place Aggregate Base	1	Apr-23-19	Apr-23-19	65	173000-5D	B	P1	E75th
CR75-1070	Construct Full Depth Pavement & Curb	5	Apr-24-19	May-02-19	66	173000-5D w/Shutdown 12/1-3/31	B	P1	E75th
CR75-1080	Install Underdrain	1	May-03-19	May-03-19	66	173000-5D	B	P1	E75th
CR75-1170	Resurface Roadway	1	May-03-19	May-03-19	69	173000-5D w/Shutdown 12/1-3/31	B	P1	E75th
CR75-1090	Erect Lighting	3	May-08-19	May-10-19	66	173000-5D	B	P1	E75th

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR75-1100	Prep/Form/Pour Sidewalk	3	May-08-19	May-10-19	66	173000-5D	B	P1	E75th
CR75-1110	Install Signal Foundations	3	May-08-19	May-10-19	66	173000-5D	B	P1	E75th
CR75-1120	Erect Signs	1	May-14-19	May-14-19	66	173000-5D	B	P1	E75th
CR75-1130	Apply Pavement Markings	1	May-14-19	May-14-19	66	173000-5D	B	P1	E75th
CR75-1140	Seed & Landscape	1	May-14-19	May-14-19	66	173000-5D	B	P1	E75th
CR75-1150	Open East 75th St to Traffic - Phase 1	0		May-14-19	66	173000-5D	B	P1	E75th
Utilities									
CR75-U200	Install 16" DIP Waterline Sta 15+40 - 16+60 LT	2	Apr-11-19	Apr-12-19	65	173000-5D	B	P1	E75th
OH-10 Bridge over Kingsbury Run Ravine									
CBKR-3000	Begin Work OH-10 Bridge over Kingsbury Run Ravine - Pre-Phase	0	Apr-02-19		211	173000-5D	B	P1	OH10KR
CBKR-3010	Complete Work OH-10 Bridge over Kingsbury Run Ravine	0		Jun-17-20	258	173000-5D	B	P1	OH10KR
Rear Abutment									
CBKR-3020	Rear Abut-Excavate Abutments	5	Apr-10-19	Apr-18-19	211	173000-5D	B	P1	OH10KR
CBKR-3030	Rear Abut-Drive Pile	5	May-14-19	May-22-19	200	173000-5D	B	P1	OH10KR
CBKR-3035	Rear Abut-Conc Pile	2	May-22-19	May-24-19	200	173000-5D	B	P1	OH10KR
CBKR-3040	Rear Abut-Form Footer	3	May-24-19	May-30-19	200	173000-5D	B	P1	OH10KR
CBKR-3050	Rear Abut-Rebar Footer	5	May-30-19	Jun-07-19	200	173000-5D	B	P1	OH10KR
CBKR-3070	Rear Abut-Pour Footer	2	Jun-07-19	Jun-12-19	204	173000-5D	B	P1	OH10KR
CBKR-3080	Rear Abut-Cure Footer	7	Jun-13-19	Jun-19-19	474	173000-7D Cure	B	P1	OH10KR
CBKR-3090	Rear Abut-Form Abutment	5	Jun-19-19	Jun-28-19	244	173000-5D	B	P1	OH10KR
CBKR-3100	Rear Abut-Rebar Abutment	3	Jun-28-19	Jul-03-19	244	173000-5D	B	P1	OH10KR
CBKR-3110	Rear Abut-Pour Abutment	2	Jul-03-19	Jul-09-19	244	173000-5D	B	P1	OH10KR
CBKR-3120	Rear Abut-Cure Abutment	7	Jul-10-19	Jul-16-19	471	173000-7D Cure	B	P1	OH10KR
CBKR-3130	Rear Abut-Set Bearings	1	Jul-16-19	Jul-17-19	243	173000-5D	B	P1	OH10KR
Pier 1									
CBKR-3200	Pier 1-Install SOE	5	May-02-19	May-14-19	202	173000-5D	B	P1	OH10KR
CBKR-3210	Pier 1-Excavate	3	May-14-19	May-17-19	202	173000-5D	B	P1	OH10KR
CBKR-3220	Pier 1-Drive Pile	5	May-22-19	May-30-19	200	173000-5D	B	P1	OH10KR
CBKR-3230	Pier 1-Conc Pile	2	May-30-19	Jun-04-19	200	173000-5D	B	P1	OH10KR
CBKR-3240	Pier 1-Form Footer	3	Jun-04-19	Jun-07-19	200	173000-5D	B	P1	OH10KR
CBKR-3250	Pier 1-Rebar Footer	6	Jun-07-19	Jun-20-19	200	173000-5D	B	P1	OH10KR
CBKR-3260	Pier 1-Pour Footer	3	Jun-20-19	Jun-27-19	200	173000-5D	B	P1	OH10KR
CBKR-3270	Pier 1-Cure Footer	7	Jun-28-19	Jul-04-19	392	173000-7D Cure	B	P1	OH10KR
CBKR-3280	Pier 1-Form Column	6	Jul-05-19	Jul-16-19	200	173000-5D	B	P1	OH10KR
CBKR-3290	Pier 1-Rebar Column	6	Jul-17-19	Jul-25-19	200	173000-5D	B	P1	OH10KR
CBKR-3300	Pier 1-Pour Column	3	Jul-26-19	Jul-31-19	200	173000-5D	B	P1	OH10KR
CBKR-3310	Pier 1-Cure Column	7	Aug-01-19	Aug-07-19	391	173000-7D Cure	B	P1	OH10KR
CBKR-3320	Pier 1-Form Cap	6	Aug-07-19	Aug-16-19	200	173000-5D	B	P1	OH10KR
CBKR-3330	Pier 1-Rebar Cap	6	Aug-16-19	Aug-28-19	206	173000-5D	B	P1	OH10KR
CBKR-3340	Pier 1-Pour Cap	3	Aug-28-19	Sep-03-19	206	173000-5D	B	P1	OH10KR
CBKR-3350	Pier 1-Cure Cap	7	Sep-04-19	Sep-10-19	415	173000-7D Cure	B	P1	OH10KR
CBKR-3360	Pier 1-Set Bearings	1	Sep-10-19	Sep-11-19	211	173000-5D	B	P1	OH10KR
Pier 2									
CBKR-3410	Pier 2-Install SOE	5	May-14-19	May-22-19	203	173000-5D	B	P1	OH10KR
CBKR-3420	Pier 2-Excavate	3	May-22-19	May-28-19	203	173000-5D	B	P1	OH10KR
CBKR-3430	Pier 2-Drive Pile	5	May-30-19	Jun-07-19	201	173000-5D	B	P1	OH10KR
CBKR-3440	Pier 2-Conc Pile	2	Jun-07-19	Jun-12-19	201	173000-5D	B	P1	OH10KR
CBKR-3450	Pier 2-Form Footer	3	Jun-12-19	Jun-19-19	201	173000-5D	B	P1	OH10KR
CBKR-3460	Pier 2-Rebar Footer	6	Jun-19-19	Jul-01-19	201	173000-5D	B	P1	OH10KR
CBKR-3470	Pier 2-Pour Footer	3	Jul-01-19	Jul-05-19	201	173000-5D	B	P1	OH10KR
CBKR-3480	Pier 2-Cure Footer	7	Jul-06-19	Jul-12-19	395	173000-7D Cure	B	P1	OH10KR
CBKR-3490	Pier 2-Form Column	6	Jul-17-19	Jul-25-19	200	173000-5D	B	P1	OH10KR
CBKR-3500	Pier 2-Rebar Column	6	Jul-26-19	Aug-06-19	200	173000-5D	B	P1	OH10KR
CBKR-3510	Pier 2-Pour Column	3	Aug-07-19	Aug-09-19	200	173000-5D	B	P1	OH10KR

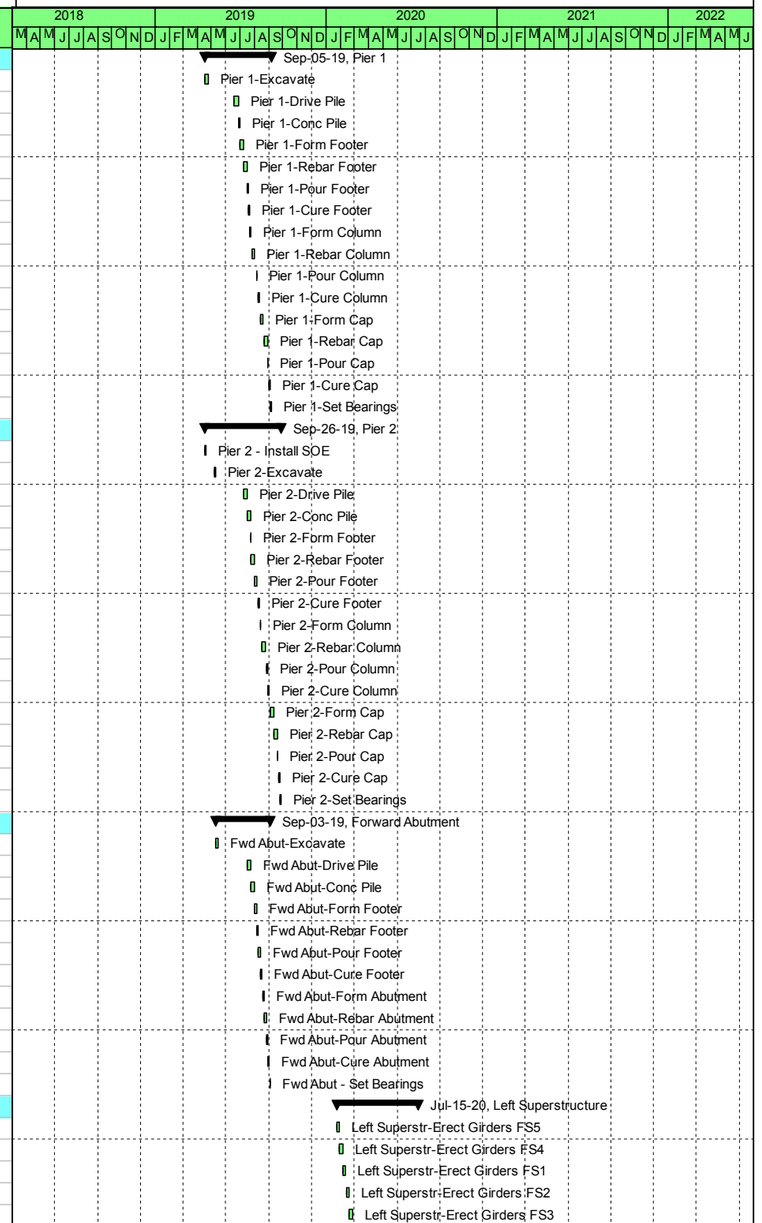


Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CBKR-3520	Pier 2-Cure Column	7	Aug-10-19	Aug-16-19	391	173000-7D Cure	B	P1	OH10KR
CBKR-3530	Pier 2-Form Cap	6	Aug-16-19	Aug-28-19	200	173000-5D	B	P1	OH10KR
CBKR-3540	Pier 2-Rebar Cap	6	Aug-28-19	Sep-06-19	203	173000-5D	B	P1	OH10KR
CBKR-3550	Pier 2-Pour Cap	3	Sep-06-19	Sep-12-19	203	173000-5D	B	P1	OH10KR
CBKR-3560	Pier 2-Cure Cap	7	Sep-13-19	Sep-19-19	406	173000-7D Cure	B	P1	OH10KR
CBKR-3570	Pier 2-Set Bearings	1	Sep-19-19	Sep-20-19	205	173000-5D	B	P1	OH10KR
Pier 3									
CBKR-3600	Pier 3-Install SOE	5	May-22-19	May-30-19	205	173000-5D	B	P1	OH10KR
CBKR-3610	Pier 3-Excavate	3	May-30-19	Jun-05-19	205	173000-5D	B	P1	OH10KR
CBKR-3620	Pier 3-Drive Pile	5	Jun-07-19	Jun-19-19	203	173000-5D	B	P1	OH10KR
CBKR-3630	Pier 3-Conc Pile	2	Jun-19-19	Jun-21-19	203	173000-5D	B	P1	OH10KR
CBKR-3640	Pier 3-Form Footer	3	Jun-21-19	Jun-28-19	203	173000-5D	B	P1	OH10KR
CBKR-3650	Pier 3-Rebar Footer	6	Jun-28-19	Jul-10-19	203	173000-5D	B	P1	OH10KR
CBKR-3660	Pier 3-Pour Footer	3	Jul-10-19	Jul-16-19	203	173000-5D	B	P1	OH10KR
CBKR-3670	Pier 3-Cure Footer	7	Jul-17-19	Jul-23-19	394	173000-7D Cure	B	P1	OH10KR
CBKR-3680	Pier 3-Form Column	6	Jul-26-19	Aug-06-19	201	173000-5D	B	P1	OH10KR
CBKR-3690	Pier 3-Rebar Column	6	Aug-07-19	Aug-15-19	201	173000-5D	B	P1	OH10KR
CBKR-3700	Pier 3-Pour Column	3	Aug-16-19	Aug-21-19	201	173000-5D	B	P1	OH10KR
CBKR-3710	Pier 3-Cure Column	7	Aug-22-19	Aug-28-19	392	173000-7D Cure	B	P1	OH10KR
CBKR-3720	Pier 3-Form Cap	6	Aug-28-19	Sep-06-19	200	173000-5D	B	P1	OH10KR
CBKR-3730	Pier 3-Rebar Cap	6	Sep-06-19	Sep-18-19	200	173000-5D	B	P1	OH10KR
CBKR-3740	Pier 3-Pour Cap	3	Sep-18-19	Sep-25-19	200	173000-5D	B	P1	OH10KR
CBKR-3750	Pier 3-Cure Cap	7	Sep-26-19	Oct-02-19	393	173000-7D Cure	B	P1	OH10KR
CBKR-3760	Pier 3-Set Bearings	1	Oct-02-19	Oct-03-19	200	173000-5D	B	P1	OH10KR
Forward Abutment									
CBKR-6110	Fwd Abut-Excavate Abutments	5	Apr-02-19	Apr-10-19	211	173000-5D	B	P1	OH10KR
CBKR-6120	Fwd Abut-Drive Pile	5	May-02-19	May-14-19	200	173000-5D	B	P1	OH10KR
CBKR-6130	Fwd Abut-Conc Pile	2	May-14-19	May-16-19	249	173000-5D	B	P1	OH10KR
CBKR-6140	Fwd Abut-Form Footer	3	Jun-28-19	Jul-03-19	226	173000-5D	B	P1	OH10KR
CBKR-6150	Fwd Abut-Rebar Footer	5	Jul-03-19	Jul-12-19	226	173000-5D	B	P1	OH10KR
CBKR-6160	Fwd Abut-Conc Footer	2	Jul-16-19	Jul-18-19	225	173000-5D	B	P1	OH10KR
CBKR-6180	Fwd Abut-Cure Footer	7	Jul-19-19	Jul-25-19	438	173000-7D Cure	B	P1	OH10KR
CBKR-6190	Fwd Abut-Form Abutment	5	Jul-25-19	Aug-02-19	224	173000-5D	B	P1	OH10KR
CBKR-6200	Fwd Abut-Rebar Abutment	3	Aug-02-19	Aug-08-19	224	173000-5D	B	P1	OH10KR
CBKR-6210	Fwd Abut-Pour Abutment	2	Aug-08-19	Aug-13-19	224	173000-5D	B	P1	OH10KR
CBKR-6220	Fwd Abut-Cure Abutment	7	Aug-14-19	Aug-20-19	436	173000-7D Cure	B	P1	OH10KR
CBKR-6230	Fwd Abut-Set Bearings	1	Aug-20-19	Aug-21-19	223	173000-5D	B	P1	OH10KR
Superstructure									
CBKR-6235	Superstr-Erect Girders FS1	3	Nov-29-19	Dec-04-19	172	173000-5D	B	P1	OH10KR
CBKR-6240	Superstr-Erect Girders FS2	3	Dec-05-19	Dec-10-19	172	173000-5D	B	P1	OH10KR
CBKR-6245	Superstr-Erect Girders FS3	3	Dec-11-19	Dec-13-19	172	173000-5D	B	P1	OH10KR
CBKR-6250	Superstr-Erect Girders FS4	3	Dec-17-19	Dec-19-19	172	173000-5D	B	P1	OH10KR
CBKR-6255	Superstr-Erect Girders FS5	5	Dec-20-19	Jan-02-20	172	173000-5D	B	P1	OH10KR
CBKR-6260	Superstr-Erect Girders FS6	3	Jan-03-20	Jan-09-20	172	173000-5D	B	P1	OH10KR
CBKR-6265	Superstr-Erect Girders FS7	5	Jan-10-20	Jan-22-20	172	173000-5D	B	P1	OH10KR
CBKR-6290	Superstr-F/R/P Backwalls	4	Feb-12-20	Feb-19-20	173	173000-5D	B	P1	OH10KR
CBKR-6300	Superstr-Form Deck	15	Feb-20-20	Mar-18-20	173	173000-5D	B	P1	OH10KR
CBKR-6310	Superstr-Shear Studs	5	Mar-19-20	Mar-27-20	185	173000-5D	B	P1	OH10KR
CBKR-6410	Superstr-F/R Approach Slabs	5	Mar-19-20	Mar-27-20	200	173000-5D	B	P1	OH10KR
CBKR-6320	Superstr-Rebar Deck	10	Apr-01-20	Apr-16-20	185	173000-5D	B	P1	OH10KR
CBKR-6330	Superstr-Pour Deck	5	Apr-17-20	Apr-29-20	129	173000-5D w/Shutdown 12/1-3/31	B	P1	OH10KR
CBKR-6340	Superstr-Cure Deck	7	Apr-30-20	May-06-20	497	173000-7D Cure	B	P1	OH10KR
CBKR-6350	Superstr-F/R/Conduit Sidewalk	3	Apr-30-20	May-05-20	260	173000-5D	B	P1	OH10KR
CBKR-6420	Superstr-Pour Approach Slab	2	Apr-30-20	May-01-20	129	173000-5D w/Shutdown 12/1-3/31	B	P1	OH10KR

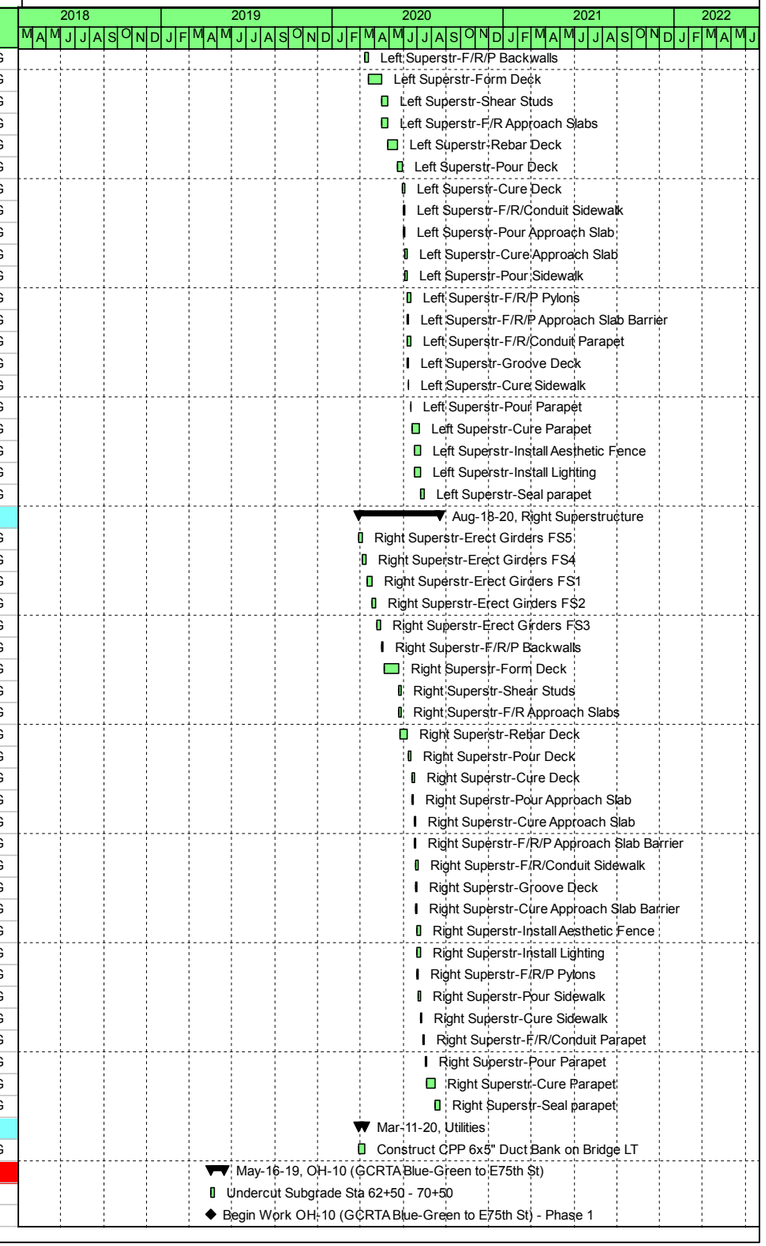
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CBKR-6430	Superstr-Cure Approach Slab	3	May-02-20	May-04-20	394	173000-7D Cure	B	P1	OH10KR
CBKR-6480	Superstr-F/R/P Pylons	6	May-05-20	May-14-20	261	173000-5D	B	P1	OH10KR
CBKR-6360	Superstr-Pour Sidewalk	2	May-06-20	May-08-20	259	173000-5D	B	P1	OH10KR
CBKR-6372	Superstr - Form Median	5	May-06-20	May-15-20	258	173000-5D	B	P1	OH10KR
CBKR-6380	Superstr-F/R/Conduit Parapet	3	May-08-20	May-15-20	259	173000-5D	B	P1	OH10KR
CBKR-6370	Superstr-Cure Sidewalk	3	May-09-20	May-11-20	506	173000-7D Cure	B	P1	OH10KR
CBKR-6440	Superstr-F/R/P Approach Slab Barrier	3	May-15-20	May-21-20	261	173000-5D	B	P1	OH10KR
CBKR-6390	Superstr-Pour Parapet	2	May-15-20	May-21-20	259	173000-5D	B	P1	OH10KR
CBKR-6374	Superstr - Rebar Median	5	May-15-20	May-27-20	258	173000-5D	B	P1	OH10KR
CBKR-6400	Superstr-Cure Parapet	3	May-22-20	May-24-20	500	173000-7D Cure	B	P1	OH10KR
CBKR-6490	Superstr-Install Aesthetic Fence	5	May-26-20	Jun-02-20	267	173000-5D	B	P1	OH10KR
CBKR-6450	Superstr-Install Lighting	5	May-26-20	Jun-02-20	260	173000-5D	B	P1	OH10KR
CBKR-6376	Superstr - Pour Median	5	May-27-20	Jun-04-20	258	173000-5D	B	P1	OH10KR
CBKR-6460	Superstr-Seal parapet	5	Jun-03-20	Jun-10-20	189	173000-5D Paint/Shutdown 11/1-3/31	B	P1	OH10KR
CBKR-6378	Superstr - Cure Median	5	Jun-04-20	Jun-12-20	258	173000-5D	B	P1	OH10KR
CBKR-6470	Superstr-Groove Deck	2	Jun-12-20	Jun-17-20	258	173000-5D	B	P1	OH10KR
Utilities									
CBKR-U100	Construct CPP 6x5" Duct Bank on Bridge	8	Jan-23-20	Feb-07-20	173	173000-5D	B	P1	OH10KR
Berwick Road									
CRBE-2010	Begin Work Berwick Rd - Phase 1	0	Feb-22-19		95	173000-5D	B	P1	Berwick
CRBE-2020	Remove Pavement	1	Feb-22-19	Feb-22-19	95	173000-5D	B	P1	Berwick
CRBE-2030	Undercut Subgrade	1	Feb-27-19	Feb-27-19	95	173000-5D	B	P1	Berwick
CRBE-2040	Place Granular Subgrade	1	Feb-28-19	Feb-28-19	95	173000-5D	B	P1	Berwick
CRBE-2050	Place Aggregate Base	1	Mar-01-19	Mar-01-19	95	173000-5D	B	P1	Berwick
CRBE-2070	Construct Full Depth Pavement & Curb	5	Apr-01-19	Apr-05-19	83	173000-5D w/Shutdown 12/1-3/31	B	P1	Berwick
CRBE-2080	Complete Work Berwick Rd - Phase 1	0		Apr-23-19	76	173000-5D	B	P1	Berwick
East 66th Street									
CR66-1000	Remove Pavement	1	Feb-22-19	Feb-22-19	85	173000-5D	B	P1	E66th
CR66-1010	Begin Work East 66th St - Phase 1	0	Feb-22-19		85	173000-5D	B	P1	E66th
CR66-1020	Complete Work East 66th Street - Phase 1	0		Feb-28-19	85	173000-5D	B	P1	E66th
Utilities									
CR66-U100	Remove 6" Water (Berwick to Kinsman)	2	Feb-27-19	Feb-28-19	85	173000-5D	B	P1	E66th
OH-10 (Kinsman Rd)									
CR10-5000	Begin Work OH-10 (Kinsman Road) - Phase 1	0	Feb-28-19		406	173000-5D	B	P1	OH10
CR10-5030	Undercut Subgrade Sta 46+50 - 56+00	5	Mar-14-19	Mar-22-19	399	173000-5D	B	P1	OH10
CR10-5040	Place Granular Subgrade Sta 46+50 - 56+00	5	Mar-27-19	Apr-03-19	399	173000-5D	B	P1	OH10
CR10-5050	Place Aggregate Base Sta 46+50 - 56+00	2	Apr-04-19	Apr-05-19	399	173000-5D	B	P1	OH10
CR10-5130	Complete Work OH-10 (Kinsman Road) - Phase 1	0		Apr-05-19	399	173000-5D	B	P1	OH10
OH-10 Bridge over GCRTA Blue-Green Lines									
CBBG-3000	Begin Work OH-10 Bridge over GCRTA Blue-Green Lines - Phase 1	0	Apr-16-19		256	173000-5D	B	P1	OH10BG
CBBG-3110	Complete Work OH-10 Bridge over GCRTA Blue-Green Lines	0		Aug-18-20	223	173000-5D	B	P1	OH10BG
Rear Abutment									
CBBG-3010	Rear Abut-Excavate	5	Apr-24-19	May-08-19	256	173000-5D	B	P1	OH10BG
CBBG-3020	Rear Abut-Drive Pile	5	Jun-28-19	Jul-09-19	228	173000-5D	B	P1	OH10BG
CBBG-3025	Rear Abut - Conc Pile	2	Jul-09-19	Jul-11-19	250	173000-5D	B	P1	OH10BG
CBBG-3030	Rear Abut-Form Footer	3	Jul-11-19	Jul-17-19	250	173000-5D	B	P1	OH10BG
CBBG-3040	Rear Abut-Rebar Footer	5	Jul-17-19	Jul-25-19	250	173000-5D	B	P1	OH10BG
CBBG-3050	Rear Abut-Pour Footer	2	Jul-25-19	Jul-30-19	250	173000-5D	B	P1	OH10BG
CBBG-3060	Rear Abut-Cure Footer	3	Jul-31-19	Aug-02-19	487	173000-7D Cure	B	P1	OH10BG
CBBG-3070	Rear Abut-Form Abutment	3	Aug-02-19	Aug-08-19	247	173000-5D	B	P1	OH10BG
CBBG-3080	Rear Abut-Rebar Abutment	3	Aug-08-19	Aug-14-19	247	173000-5D	B	P1	OH10BG
CBBG-3090	Rear Abut-Pour Abutment	1	Aug-14-19	Aug-15-19	247	173000-5D	B	P1	OH10BG
CBBG-3100	Rear Abut-Cure Abutment	3	Aug-16-19	Aug-18-19	487	173000-7D Cure	B	P1	OH10BG
CBBG-3410	Rear Abut - Set Bearings	1	Aug-20-19	Aug-20-19	249	173000-5D	B	P1	OH10BG



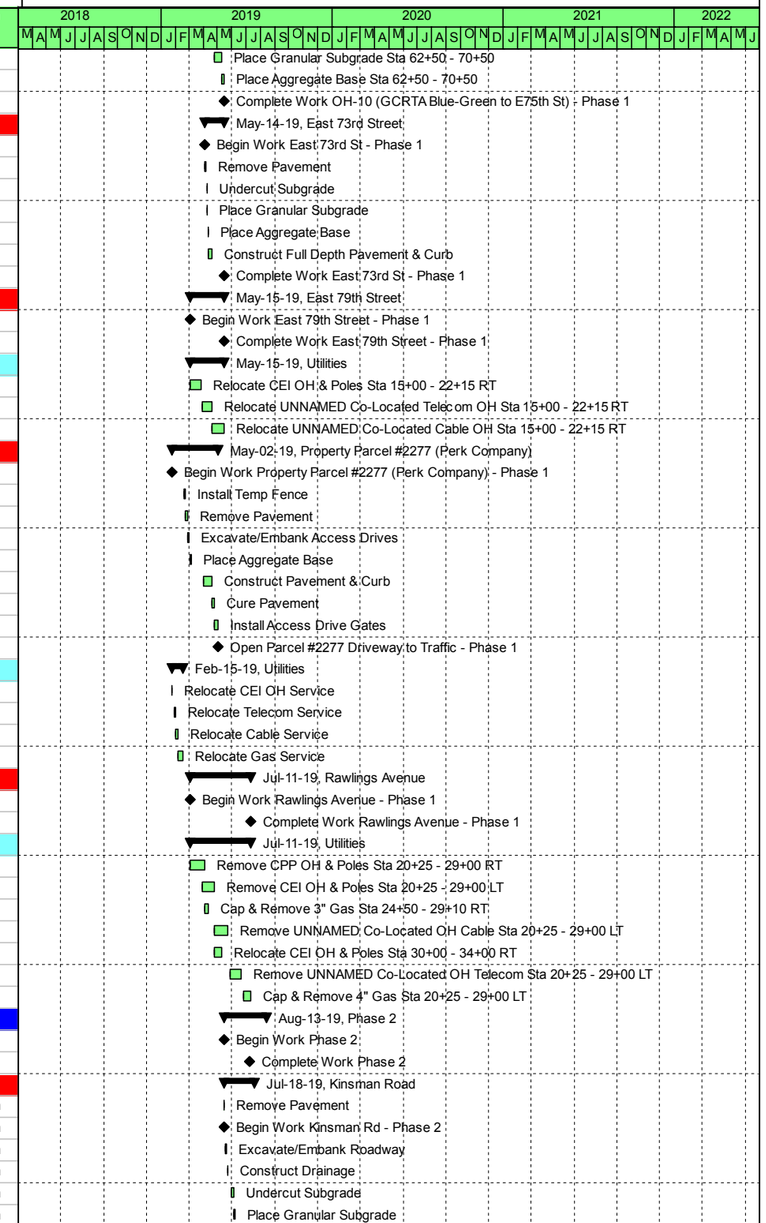
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
Pier 1									
CBBG-3120	Pier 1-Excavate	5	Apr-16-19	Apr-24-19	256	173000-5D	B	P1	OH10BG
CBBG-3130	Pier 1-Drive Pile	5	Jun-19-19	Jun-28-19	228	173000-5D	B	P1	OH10BG
CBBG-3135	Pier 1-Conc Pile	2	Jun-28-19	Jul-02-19	231	173000-5D	B	P1	OH10BG
CBBG-3140	Pier 1-Form Footer	3	Jul-02-19	Jul-09-19	231	173000-5D	B	P1	OH10BG
CBBG-3150	Pier 1-Rebar Footer	5	Jul-09-19	Jul-17-19	231	173000-5D	B	P1	OH10BG
CBBG-3160	Pier 1-Pour Footer	2	Jul-17-19	Jul-19-19	231	173000-5D	B	P1	OH10BG
CBBG-3170	Pier 1-Cure Footer	3	Jul-20-19	Jul-22-19	451	173000-7D Cure	B	P1	OH10BG
CBBG-3180	Pier 1-Form Column	3	Jul-23-19	Jul-25-19	234	173000-5D	B	P1	OH10BG
CBBG-3190	Pier 1-Rebar Column	5	Jul-26-19	Aug-02-19	234	173000-5D	B	P1	OH10BG
CBBG-3200	Pier 1-Pour Column	2	Aug-06-19	Aug-07-19	234	173000-5D	B	P1	OH10BG
CBBG-3210	Pier 1-Cure Column	3	Aug-08-19	Aug-10-19	458	173000-7D Cure	B	P1	OH10BG
CBBG-3220	Pier 1-Form Cap	5	Aug-13-19	Aug-20-19	233	173000-5D	B	P1	OH10BG
CBBG-3230	Pier 1-Rebar Cap	5	Aug-21-19	Aug-28-19	236	173000-5D	B	P1	OH10BG
CBBG-3240	Pier 1-Pour Cap	2	Aug-29-19	Aug-30-19	236	173000-5D	B	P1	OH10BG
CBBG-3245	Pier 1-Cure Cap	5	Aug-31-19	Sep-04-19	470	173000-7D Cure	B	P1	OH10BG
CBBG-3250	Pier 1-Set Bearings	1	Sep-04-19	Sep-05-19	239	173000-5D	B	P1	OH10BG
Pier 2									
CBBG-3260	Pier 2 - Install SOE	2	Apr-16-19	Apr-18-19	267	173000-5D	B	P1	OH10BG
CBBG-3270	Pier 2-Excavate	2	May-08-19	May-10-19	259	173000-5D	B	P1	OH10BG
CBBG-3280	Pier 2-Drive Pile	5	Jul-09-19	Jul-17-19	228	173000-5D	B	P1	OH10BG
CBBG-3285	Pier 2-Conc Pile	3	Jul-17-19	Jul-23-19	228	173000-5D	B	P1	OH10BG
CBBG-3290	Pier 2-Form Footer	2	Jul-23-19	Jul-25-19	228	173000-5D	B	P1	OH10BG
CBBG-3300	Pier 2-Rebar Footer	5	Jul-25-19	Aug-02-19	228	173000-5D	B	P1	OH10BG
CBBG-3310	Pier 2-Pour Footer	2	Aug-02-19	Aug-07-19	228	173000-5D	B	P1	OH10BG
CBBG-3320	Pier 2-Cure Footer	3	Aug-08-19	Aug-10-19	444	173000-7D Cure	B	P1	OH10BG
CBBG-3330	Pier 2-Form Column	3	Aug-13-19	Aug-15-19	226	173000-5D	B	P1	OH10BG
CBBG-3340	Pier 2-Rebar Column	5	Aug-16-19	Aug-23-19	226	173000-5D	B	P1	OH10BG
CBBG-3350	Pier 2-Pour Column	2	Aug-27-19	Aug-28-19	226	173000-5D	B	P1	OH10BG
CBBG-3360	Pier 2-Cure Column	3	Aug-29-19	Aug-31-19	445	173000-7D Cure	B	P1	OH10BG
CBBG-3370	Pier 2-Form Cap	5	Sep-03-19	Sep-10-19	226	173000-5D	B	P1	OH10BG
CBBG-3380	Pier 2-Rebar Cap	5	Sep-11-19	Sep-18-19	226	173000-5D	B	P1	OH10BG
CBBG-3390	Pier 2-Pour Cap	2	Sep-19-19	Sep-20-19	226	173000-5D	B	P1	OH10BG
CBBG-3395	Pier 2-Cure Cap	5	Sep-21-19	Sep-25-19	449	173000-7D Cure	B	P1	OH10BG
CBBG-3400	Pier 2-Set Bearings	1	Sep-25-19	Sep-26-19	228	173000-5D	B	P1	OH10BG
Forward Abutment									
CBBG-3420	Fwd Abut-Excavate	2	May-10-19	May-15-19	275	173000-5D	B	P1	OH10BG
CBBG-3430	Fwd Abut-Drive Pile	5	Jul-17-19	Jul-25-19	241	173000-5D	B	P1	OH10BG
CBBG-3435	Fwd Abut-Conc Pile	3	Jul-25-19	Jul-31-19	241	173000-5D	B	P1	OH10BG
CBBG-3440	Fwd Abut-Form Footer	3	Jul-31-19	Aug-06-19	241	173000-5D	B	P1	OH10BG
CBBG-3450	Fwd Abut-Rebar Footer	3	Aug-06-19	Aug-09-19	241	173000-5D	B	P1	OH10BG
CBBG-3460	Fwd Abut-Pour Footer	2	Aug-09-19	Aug-14-19	241	173000-5D	B	P1	OH10BG
CBBG-3470	Fwd Abut-Cure Footer	3	Aug-15-19	Aug-17-19	472	173000-7D Cure	B	P1	OH10BG
CBBG-3480	Fwd Abut-Form Abutment	2	Aug-20-19	Aug-21-19	239	173000-5D	B	P1	OH10BG
CBBG-3490	Fwd Abut-Rebar Abutment	3	Aug-22-19	Aug-27-19	239	173000-5D	B	P1	OH10BG
CBBG-3500	Fwd Abut-Pour Abutment	2	Aug-28-19	Aug-29-19	239	173000-5D	B	P1	OH10BG
CBBG-3510	Fwd Abut-Cure Abutment	3	Aug-30-19	Sep-01-19	473	173000-7D Cure	B	P1	OH10BG
CBBG-3520	Fwd Abut - Set Bearings	1	Sep-03-19	Sep-03-19	241	173000-5D	B	P1	OH10BG
Left Superstructure									
CBBG-3530	Left Superstr-Erect Girders FS5	3	Jan-23-20	Jan-29-20	172	173000-5D	B	P1	OH10BG
CBBG-3532	Left Superstr-Erect Girders FS4	3	Jan-30-20	Feb-05-20	172	173000-5D	B	P1	OH10BG
CBBG-3534	Left Superstr-Erect Girders FS1	3	Feb-06-20	Feb-12-20	172	173000-5D	B	P1	OH10BG
CBBG-3536	Left Superstr-Erect Girders FS2	3	Feb-13-20	Feb-19-20	172	173000-5D	B	P1	OH10BG
CBBG-3538	Left Superstr-Erect Girders FS3	3	Feb-20-20	Feb-26-20	172	173000-5D	B	P1	OH10BG



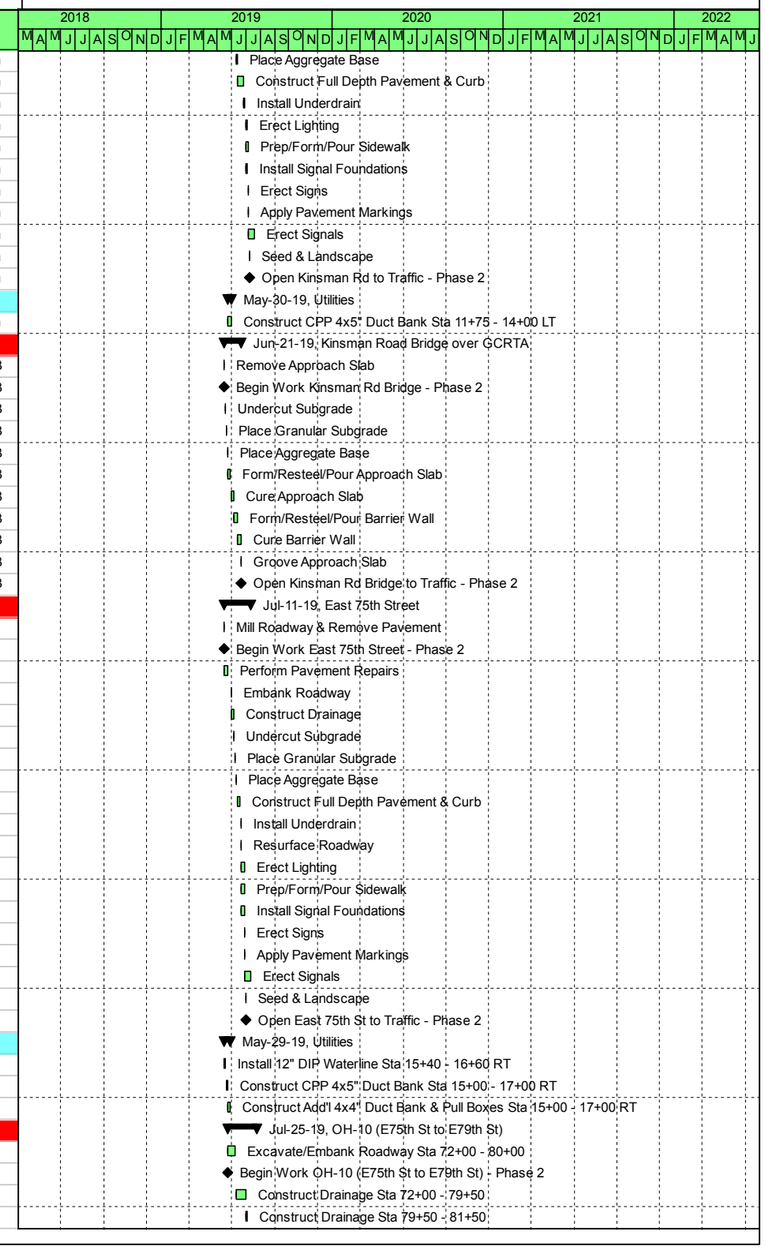
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CBBG-3540	Left Superstr-F/R/P Backwalls	4	Mar-12-20	Mar-18-20	173	173000-5D	B	P1	OH10BG
CBBG-3550	Left Superstr-Form Deck	15	Mar-19-20	Apr-16-20	173	173000-5D	B	P1	OH10BG
CBBG-3560	Left Superstr-Shear Studs	5	Apr-17-20	Apr-29-20	177	173000-5D	B	P1	OH10BG
CBBG-3710	Left Superstr-F/R Approach Slabs	5	Apr-17-20	Apr-29-20	192	173000-5D	B	P1	OH10BG
CBBG-3570	Left Superstr-Rebar Deck	10	Apr-30-20	May-20-20	177	173000-5D	B	P1	OH10BG
CBBG-3580	Left Superstr-Pour Deck	5	May-21-20	May-29-20	120	173000-5D w/Shutdown 12/1-3/31	B	P1	OH10BG
CBBG-3590	Left Superstr-Cure Deck	7	May-30-20	Jun-05-20	468	173000-7D Cure	B	P1	OH10BG
CBBG-3600	Left Superstr-F/R/Conduit Sidewalk	3	Jun-02-20	Jun-04-20	244	173000-5D	B	P1	OH10BG
CBBG-3720	Left Superstr-Pour Approach Slab	2	Jun-02-20	Jun-03-20	120	173000-5D w/Shutdown 12/1-3/31	B	P1	OH10BG
CBBG-3730	Left Superstr-Cure Approach Slab	7	Jun-04-20	Jun-10-20	357	173000-7D Cure	B	P1	OH10BG
CBBG-3610	Left Superstr-Pour Sidewalk	2	Jun-05-20	Jun-10-20	243	173000-5D	B	P1	OH10BG
CBBG-3770	Left Superstr-F/R/P Pylons	6	Jun-09-20	Jun-17-20	244	173000-5D	B	P1	OH10BG
CBBG-3740	Left Superstr-F/R/P Approach Slab Barrier	3	Jun-09-20	Jun-11-20	251	173000-5D	B	P1	OH10BG
CBBG-3630	Left Superstr-F/R/Conduit Parapet	3	Jun-10-20	Jun-16-20	243	173000-5D	B	P1	OH10BG
CBBG-3760	Left Superstr-Groove Deck	2	Jun-10-20	Jun-12-20	260	173000-5D	B	P1	OH10BG
CBBG-3620	Left Superstr-Cure Sidewalk	3	Jun-11-20	Jun-13-20	473	173000-7D Cure	B	P1	OH10BG
CBBG-3640	Left Superstr-Pour Parapet	2	Jun-16-20	Jun-18-20	243	173000-5D	B	P1	OH10BG
CBBG-3650	Left Superstr-Cure Parapet	17	Jun-19-20	Jul-05-20	472	173000-7D Cure	B	P1	OH10BG
CBBG-3775	Left Superstr-Install Aesthetic Fence	5	Jun-25-20	Jul-07-20	248	173000-5D	B	P1	OH10BG
CBBG-3745	Left Superstr-Install Lighting	5	Jun-25-20	Jul-07-20	243	173000-5D	B	P1	OH10BG
CBBG-3750	Left Superstr-Seal parapet	5	Jul-07-20	Jul-15-20	173	173000-5D Paint/Shutdown 11/1-3/31	B	P1	OH10BG
Right Superstructure									
CBBG-3790	Right Superstr-Erect Girders FS5	5	Feb-27-20	Mar-05-20	172	173000-5D	B	P1	OH10BG
CBBG-3792	Right Superstr-Erect Girders FS4	5	Mar-06-20	Mar-13-20	172	173000-5D	B	P1	OH10BG
CBBG-3794	Right Superstr-Erect Girders FS1	5	Mar-17-20	Mar-25-20	172	173000-5D	B	P1	OH10BG
CBBG-3796	Right Superstr-Erect Girders FS2	5	Mar-26-20	Apr-03-20	172	173000-5D	B	P1	OH10BG
CBBG-3798	Right Superstr-Erect Girders FS3	5	Apr-07-20	Apr-14-20	172	173000-5D	B	P1	OH10BG
CBBG-3800	Right Superstr-F/R/P Backwalls	3	Apr-15-20	Apr-17-20	172	173000-5D	B	P1	OH10BG
CBBG-3810	Right Superstr-Form Deck	15	Apr-22-20	May-21-20	172	173000-5D	B	P1	OH10BG
CBBG-3820	Right Superstr-Shear Studs	3	May-22-20	May-27-20	172	173000-5D	B	P1	OH10BG
CBBG-3920	Right Superstr-F/R Approach Slabs	3	May-22-20	May-27-20	185	173000-5D	B	P1	OH10BG
CBBG-3830	Right Superstr-Rebar Deck	10	May-26-20	Jun-10-20	172	173000-5D	B	P1	OH10BG
CBBG-3840	Right Superstr-Pour Deck	5	Jun-11-20	Jun-18-20	116	173000-5D w/Shutdown 12/1-3/31	B	P1	OH10BG
CBBG-3850	Right Superstr-Cure Deck	7	Jun-19-20	Jun-25-20	445	173000-7D Cure	B	P1	OH10BG
CBBG-3930	Right Superstr-Pour Approach Slab	2	Jun-19-20	Jun-23-20	116	173000-5D w/Shutdown 12/1-3/31	B	P1	OH10BG
CBBG-3940	Right Superstr-Cure Approach Slab	3	Jun-24-20	Jun-26-20	341	173000-7D Cure	B	P1	OH10BG
CBBG-3950	Right Superstr-F/R/P Approach Slab Barrier	3	Jun-24-20	Jun-26-20	246	173000-5D	B	P1	OH10BG
CBBG-3860	Right Superstr-F/R/Conduit Sidewalk	3	Jun-26-20	Jul-02-20	227	173000-5D	B	P1	OH10BG
CBBG-3980	Right Superstr-Groove Deck	2	Jun-26-20	Jul-01-20	250	173000-5D	B	P1	OH10BG
CBBG-3955	Right Superstr-Cure Approach Slab Barrier	3	Jun-27-20	Jun-29-20	478	173000-7D Cure	B	P1	OH10BG
CBBG-4000	Right Superstr-Install Aesthetic Fence	5	Jun-30-20	Jul-08-20	247	173000-5D	B	P1	OH10BG
CBBG-3960	Right Superstr-Install Lighting	5	Jun-30-20	Jul-08-20	247	173000-5D	B	P1	OH10BG
CBBG-3990	Right Superstr-F/R/P Pylons	3	Jun-30-20	Jul-02-20	249	173000-5D	B	P1	OH10BG
CBBG-3870	Right Superstr-Pour Sidewalk	2	Jul-02-20	Jul-08-20	227	173000-5D	B	P1	OH10BG
CBBG-3880	Right Superstr-Cure Sidewalk	3	Jul-09-20	Jul-11-20	438	173000-7D Cure	B	P1	OH10BG
CBBG-3890	Right Superstr-F/R/Conduit Parapet	3	Jul-14-20	Jul-16-20	226	173000-5D	B	P1	OH10BG
CBBG-3900	Right Superstr-Pour Parapet	2	Jul-17-20	Jul-21-20	226	173000-5D	B	P1	OH10BG
CBBG-3910	Right Superstr-Cure Parapet	17	Jul-22-20	Aug-07-20	439	173000-7D Cure	B	P1	OH10BG
CBBG-3970	Right Superstr-Seal parapet	5	Aug-07-20	Aug-18-20	153	173000-5D Paint/Shutdown 11/1-3/31	B	P1	OH10BG
Utilities									
CBBG-U100	Construct CPP 6x5" Duct Bank on Bridge LT	8	Feb-27-20	Mar-11-20	173	173000-5D	B	P1	OH10BG
OH-10 (GCRTA Blue-Green to E75th St)									
CR10-6030	Undercut Subgrade Sta 62+50 - 70+50	5	Apr-18-19	Apr-25-19	388	173000-5D	B	P1	OH10
CR10-6000	Begin Work OH-10 (GCRTA Blue-Green to E75th St) - Phase 1	0	Apr-18-19		388	173000-5D	B	P1	OH10



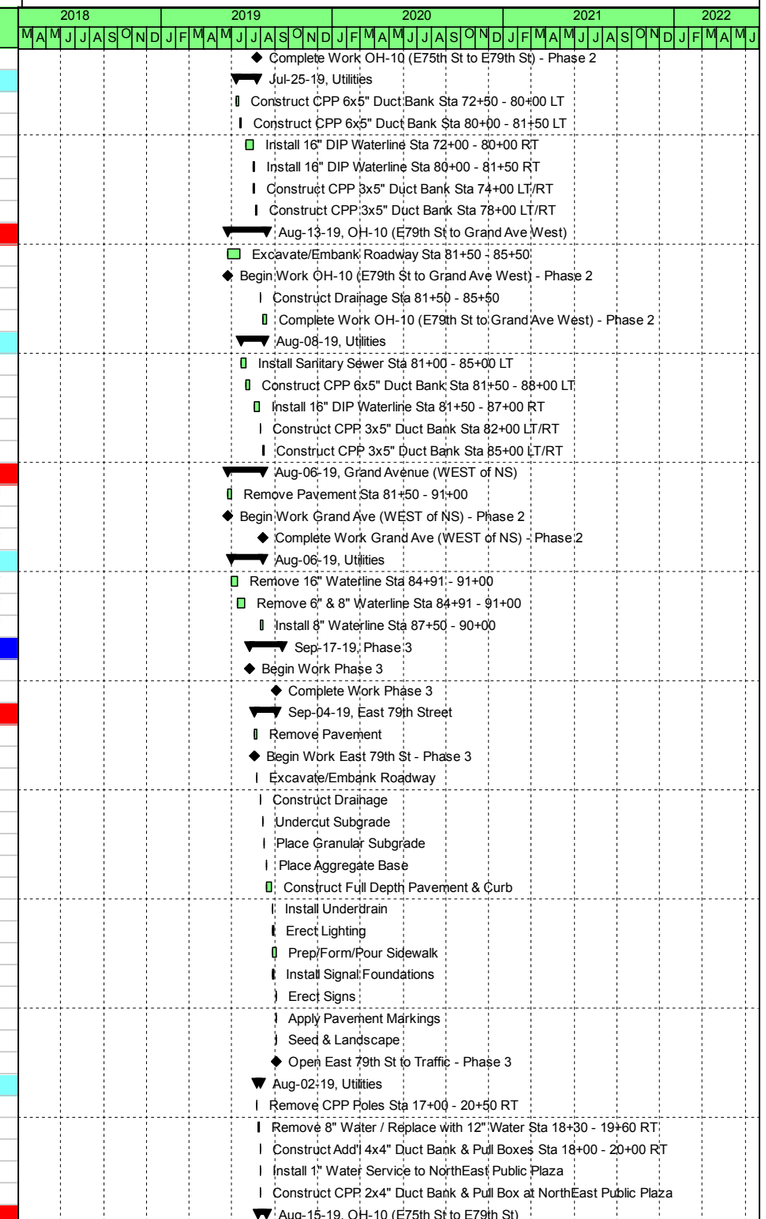
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR10-6040	Place Granular Subgrade Sta 62+50 - 70+50	5	Apr-26-19	May-09-19	388	173000-5D	B	P1	OH10
CR10-6050	Place Aggregate Base Sta 62+50 - 70+50	4	May-10-19	May-16-19	388	173000-5D	B	P1	OH10
CR10-6120	Complete Work OH-10 (GCRTA Blue-Green to E75th St) - Phase 1	0		May-16-19	388	173000-5D	B	P1	OH10
East 73rd Street									
CR73-2000	Begin Work East 73rd St - Phase 1	0	Apr-05-19		75	173000-5D	B	P1	E73rd
CR73-2010	Remove Pavement	1	Apr-05-19	Apr-05-19	75	173000-5D	B	P1	E73rd
CR73-2020	Undercut Subgrade	1	Apr-09-19	Apr-09-19	75	173000-5D	B	P1	E73rd
CR73-2030	Place Granular Subgrade	1	Apr-10-19	Apr-10-19	75	173000-5D	B	P1	E73rd
CR73-2040	Place Aggregate Base	1	Apr-11-19	Apr-11-19	75	173000-5D	B	P1	E73rd
CR73-2050	Construct Full Depth Pavement & Curb	5	Apr-12-19	Apr-19-19	75	173000-5D w/Shutdown 12/1-3/31	B	P1	E73rd
CR73-2060	Complete Work East 73rd St - Phase 1	0		May-14-19	66	173000-5D	B	P1	E73rd
East 79th Street									
CR79-3000	Begin Work East 79th Street - Phase 1	0	Mar-05-19		376	173000-5D	B	P1	E79th
CR79-3010	Complete Work East 79th Street - Phase 1	0		May-15-19	394	173000-5D	B	P1	E79th
Utilities									
CR79-U300	Relocate CEI OH & Poles Sta 15+00 - 22+15 RT	12	Mar-05-19	Mar-28-19	376	173000-5D	B	P1	E79th
CR79-U310	Relocate UNNAMED Co-Located Telecom OH Sta 15+00 - 22+15 RT	12	Mar-29-19	Apr-18-19	394	173000-5D	B	P1	E79th
CR79-U320	Relocate UNNAMED Co-Located Cable OH Sta 15+00 - 22+15 RT	12	Apr-19-19	May-15-19	394	173000-5D	B	P1	E79th
Property Parcel #2277 (Perk Company)									
CRPK-3000	Begin Work Property Parcel #2277 (Perk Company) - Phase 1	0	Jan-24-19		202	173000-5D	B	P1	PP2277
CRPK-1050	Install Temp Fence	2	Feb-20-19	Feb-21-19	220	173000-5D	B	P1	PP2277
CRPK-1010	Remove Pavement	2	Feb-22-19	Feb-27-19	220	173000-5D	B	P1	PP2277
CRPK-1020	Excavate/Embank Access Drives	2	Feb-28-19	Mar-01-19	220	173000-5D	B	P1	PP2277
CRPK-1030	Place Aggregate Base	3	Mar-05-19	Mar-07-19	220	173000-5D	B	P1	PP2277
CRPK-1040	Construct Pavement & Curb	12	Apr-01-19	Apr-18-19	156	173000-5D w/Shutdown 12/1-3/31	B	P1	PP2277
CRPK-1060	Cure Pavement	7	Apr-19-19	Apr-25-19	420	173000-7D Cure	B	P1	PP2277
CRPK-1070	Install Access Drive Gates	2	Apr-25-19	May-02-19	212	173000-5D	B	P1	PP2277
CRPK-1080	Open Parcel #2277 Driveway to Traffic - Phase 1	0		May-02-19	212	173000-5D	B	P1	PP2277
Utilities									
CRPK-U100	Relocate CEI OH Service	2	Jan-24-19	Jan-25-19	202	173000-5D	B	P1	PP2277
CRPK-U140	Relocate Telecom Service	2	Jan-30-19	Jan-31-19	215	173000-5D	B	P1	PP2277
CRPK-U130	Relocate Cable Service	2	Feb-01-19	Feb-06-19	220	173000-5D	B	P1	PP2277
CRPK-U120	Relocate Gas Service	5	Feb-07-19	Feb-15-19	220	173000-5D	B	P1	PP2277
Rawlings Avenue									
CRRA-3000	Begin Work Rawlings Avenue - Phase 1	0	Mar-05-19		388	173000-5D	B	P1	Rawling
CRRA-3010	Complete Work Rawlings Avenue - Phase 1	0		Jul-11-19	376	173000-5D	B	P1	Rawling
Utilities									
CRRA-U110	Remove CPP OH & Poles Sta 20+25 - 29+00 RT	15	Mar-05-19	Apr-03-19	413	173000-5D	B	P1	Rawling
CRRA-U120	Remove CEI OH & Poles Sta 20+25 - 29+00 LT	15	Mar-29-19	Apr-24-19	376	173000-5D	B	P1	Rawling
CRRA-U160	Cap & Remove 3" Gas Sta 24+50 - 29+10 RT	5	Apr-04-19	Apr-11-19	413	173000-5D	B	P1	Rawling
CRRA-U130	Remove UNNAMED Co-Located OH Cable Sta 20+25 - 29+00 LT	15	Apr-25-19	May-24-19	376	173000-5D	B	P1	Rawling
CRRA-U180	Relocate CEI OH & Poles Sta 30+00 - 34+00 RT	7	Apr-25-19	May-10-19	431	173000-5D	B	P1	Rawling
CRRA-U140	Remove UNNAMED Co-Located OH Telecom Sta 20+25 - 29+00 LT	15	May-28-19	Jun-21-19	376	173000-5D	B	P1	Rawling
CRRA-U150	Cap & Remove 4" Gas Sta 20+25 - 29+00 LT	10	Jun-26-19	Jul-11-19	376	173000-5D	B	P1	Rawling
Phase 2									
BP2-1000	Begin Work Phase 2	0	May-15-19		66	173000-5D	B	P2	
BP2-2000	Complete Work Phase 2	0		Jul-09-19	365	173000-5D	B	P2	
Kinsman Road									
CRKR-2000	Remove Pavement	2	May-15-19	May-16-19	66	173000-5D	B	P2	Kinsman
CRKR-2010	Begin Work Kinsman Rd - Phase 2	0	May-15-19		66	173000-5D	B	P2	Kinsman
CRKR-2020	Excavate/Embank Roadway	2	May-17-19	May-21-19	66	173000-5D	B	P2	Kinsman
CRKR-2030	Construct Drainage	2	May-22-19	May-23-19	66	173000-5D	B	P2	Kinsman
CRKR-2040	Undercut Subgrade	3	May-31-19	Jun-05-19	66	173000-5D	B	P2	Kinsman
CRKR-2050	Place Granular Subgrade	2	Jun-06-19	Jun-07-19	66	173000-5D	B	P2	Kinsman



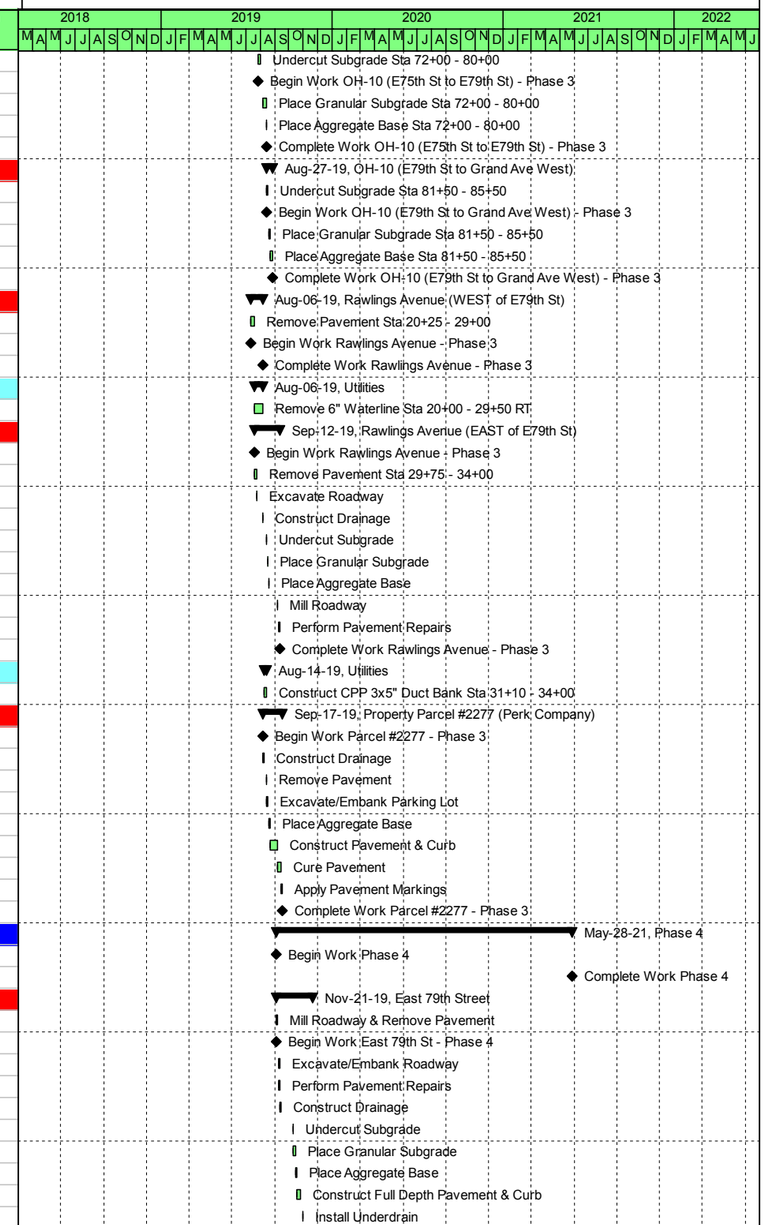
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRKR-2060	Place Aggregate Base	3	Jun-11-19	Jun-13-19	66	173000-5D	B	P2	Kinsman
CRKR-2070	Construct Full Depth Pavement & Curb	6	Jun-14-19	Jun-26-19	67	173000-5D w/Shutdown 12/1-3/31	B	P2	Kinsman
CRKR-2080	Install Underdrain	2	Jun-27-19	Jun-28-19	67	173000-5D	B	P2	Kinsman
CRKR-2090	Erect Lighting	3	Jul-01-19	Jul-03-19	67	173000-5D	B	P2	Kinsman
CRKR-2100	Prep/Form/Pour Sidewalk	4	Jul-01-19	Jul-05-19	67	173000-5D	B	P2	Kinsman
CRKR-2110	Install Signal Foundations	3	Jul-01-19	Jul-03-19	68	173000-5D	B	P2	Kinsman
CRKR-2120	Erect Signs	1	Jul-05-19	Jul-05-19	67	173000-5D	B	P2	Kinsman
CRKR-2130	Apply Pavement Markings	1	Jul-05-19	Jul-05-19	69	173000-5D w/Shutdown 12/1-3/31	B	P2	Kinsman
CRKR-2160	Erect Signals	8	Jul-05-19	Jul-18-19	426	173000-5D	B	P2	Kinsman
CRKR-2140	Seed & Landscape	1	Jul-09-19	Jul-09-19	67	173000-5D	B	P2	Kinsman
CRKR-2150	Open Kinsman Rd to Traffic - Phase 2	0		Jul-09-19	67	173000-5D	B	P2	Kinsman
Utilities									
CRKR-U260	Construct CPP 4x5" Duct Bank Sta 11+75 - 14+00 LT	4	May-24-19	May-30-19	66	173000-5D	B	P2	Kinsman
Kinsman Road Bridge over GCRTA									
CBKR-6000	Remove Approach Slab	2	May-15-19	May-16-19	76	173000-5D	B	P2	KinsmnB
CBKR-6010	Begin Work Kinsman Rd Bridge - Phase 2	0	May-15-19		76	173000-5D	B	P2	KinsmnB
CBKR-6020	Undercut Subgrade	1	May-17-19	May-17-19	76	173000-5D	B	P2	KinsmnB
CBKR-6030	Place Granular Subgrade	1	May-21-19	May-21-19	76	173000-5D	B	P2	KinsmnB
CBKR-6040	Place Aggregate Base	1	May-22-19	May-22-19	76	173000-5D	B	P2	KinsmnB
CBKR-6050	Form/Resteel/Pour Approach Slab	3	May-23-19	May-29-19	76	173000-5D w/Shutdown 12/1-3/31	B	P2	KinsmnB
CBKR-6060	Cure Approach Slab	7	May-30-19	Jun-05-19	139	173000-7D Cure	B	P2	KinsmnB
CBKR-6090	Form/Resteel/Pour Barrier Wall	5	Jun-05-19	Jun-13-19	75	173000-5D	B	P2	KinsmnB
CBKR-6100	Cure Barrier Wall	7	Jun-14-19	Jun-20-19	140	173000-7D Cure	B	P2	KinsmnB
CBKR-6070	Groove Approach Slab	1	Jun-20-19	Jun-21-19	75	173000-5D	B	P2	KinsmnB
CBKR-6080	Open Kinsman Rd Bridge to Traffic - Phase 2	0		Jun-21-19	75	173000-5D	B	P2	KinsmnB
East 75th Street									
CR75-2010	Mill Roadway & Remove Pavement	1	May-15-19	May-15-19	368	173000-5D	B	P2	E75th
CR75-2000	Begin Work East 75th Street - Phase 2	0	May-15-19		368	173000-5D	B	P2	E75th
CR75-2170	Perform Pavement Repairs	3	May-16-19	May-22-19	275	173000-5D w/Shutdown 12/1-3/31	B	P2	E75th
CR75-2020	Embank Roadway	1	May-30-19	May-30-19	368	173000-5D	B	P2	E75th
CR75-2030	Construct Drainage	2	May-31-19	Jun-04-19	368	173000-5D	B	P2	E75th
CR75-2040	Undercut Subgrade	2	Jun-05-19	Jun-06-19	368	173000-5D	B	P2	E75th
CR75-2050	Place Granular Subgrade	1	Jun-07-19	Jun-07-19	368	173000-5D	B	P2	E75th
CR75-2060	Place Aggregate Base	1	Jun-11-19	Jun-11-19	368	173000-5D	B	P2	E75th
CR75-2070	Construct Full Depth Pavement & Curb	5	Jun-12-19	Jun-19-19	256	173000-5D w/Shutdown 12/1-3/31	B	P2	E75th
CR75-2080	Install Underdrain	1	Jun-20-19	Jun-20-19	369	173000-5D	B	P2	E75th
CR75-2160	Resurface Roadway	1	Jun-20-19	Jun-20-19	260	173000-5D w/Shutdown 12/1-3/31	B	P2	E75th
CR75-2090	Erect Lighting	3	Jun-21-19	Jun-27-19	369	173000-5D	B	P2	E75th
CR75-2100	Prep/Form/Pour Sidewalk	3	Jun-21-19	Jun-27-19	370	173000-5D	B	P2	E75th
CR75-2110	Install Signal Foundations	3	Jun-21-19	Jun-27-19	370	173000-5D	B	P2	E75th
CR75-2120	Erect Signs	1	Jun-28-19	Jun-28-19	369	173000-5D	B	P2	E75th
CR75-2130	Apply Pavement Markings	1	Jun-28-19	Jun-28-19	257	173000-5D w/Shutdown 12/1-3/31	B	P2	E75th
CR75-2180	Erect Signals	8	Jun-28-19	Jul-11-19	430	173000-5D	B	P2	E75th
CR75-2140	Seed & Landscape	1	Jul-01-19	Jul-01-19	369	173000-5D	B	P2	E75th
CR75-2150	Open East 75th St to Traffic - Phase 2	0		Jul-01-19	369	173000-5D	B	P2	E75th
Utilities									
CR75-U300	Install 12" DIP Waterline Sta 15+40 - 16+60 RT	2	May-16-19	May-17-19	368	173000-5D	B	P2	E75th
CR75-U320	Construct CPP 4x5" Duct Bank Sta 15+00 - 17+00 RT	3	May-21-19	May-23-19	368	173000-5D	B	P2	E75th
CR75-U310	Construct Add'l 4x4" Duct Bank & Pull Boxes Sta 15+00 - 17+00 RT	3	May-24-19	May-29-19	368	173000-5D	B	P2	E75th
OH-10 (E75th St to E79th St)									
CR10-6310	Excavate/Embank Roadway Sta 72+00 - 80+00	10	May-23-19	Jun-07-19	346	173000-5D	B	P2	OH10
CR10-6300	Begin Work OH-10 (E75th St to E79th St) - Phase 2	0	May-23-19		346	173000-5D	B	P2	OH10
CR10-6320	Construct Drainage Sta 72+00 - 79+50	11	Jun-11-19	Jul-01-19	346	173000-5D	B	P2	OH10
CR10-6400	Construct Drainage Sta 79+50 - 81+50	2	Jul-02-19	Jul-03-19	358	173000-5D	B	P2	OH10



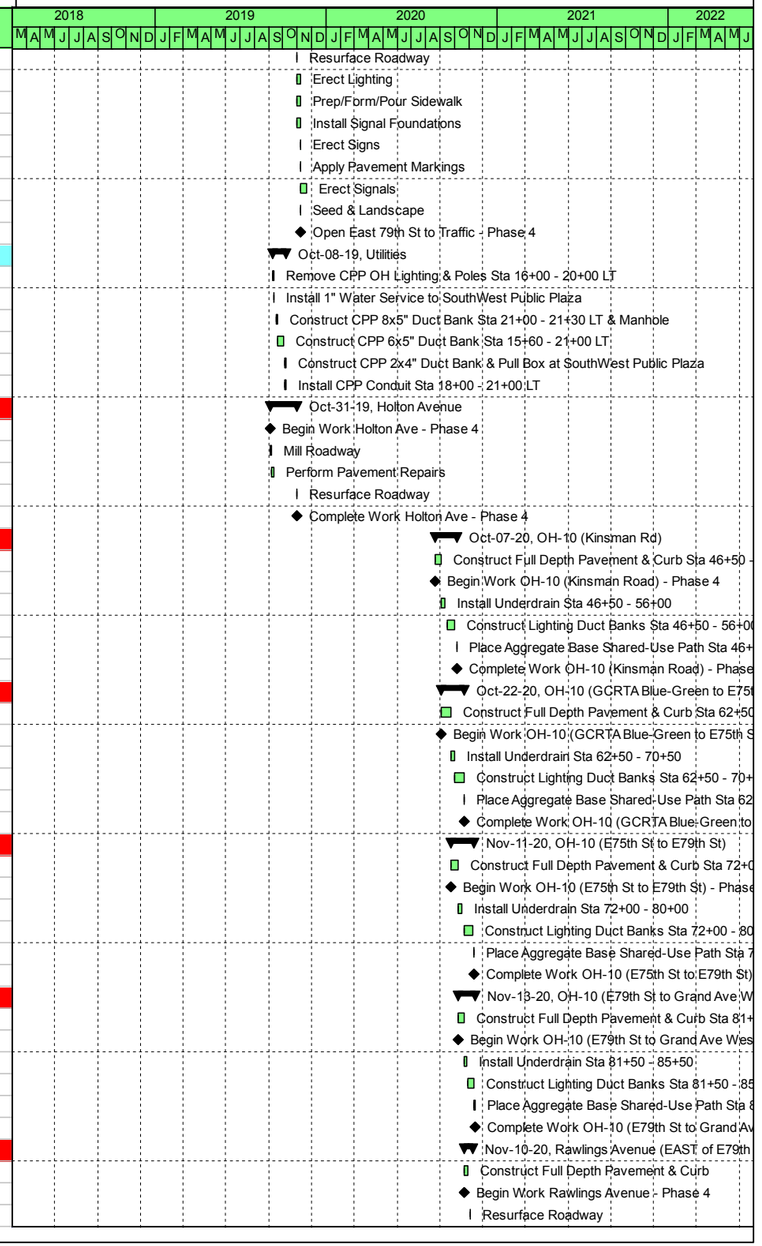
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR10-6410	Complete Work OH-10 (E75th St to E79th St) - Phase 2	0		Jul-25-19	346	173000-5D	B	P2	OH10
Utilities									
CR10-U160	Construct CPP 6x5" Duct Bank Sta 72+50 - 80+00 LT	4	Jun-11-19	Jun-14-19	364	173000-5D	B	P2	OH10
CR10-U170	Construct CPP 6x5" Duct Bank Sta 80+00 - 81+50 LT	3	Jun-19-19	Jun-21-19	364	173000-5D	B	P2	OH10
CR10-U110	Install 16" DIP Waterline Sta 72+00 - 80+00 RT	8	Jul-02-19	Jul-16-19	346	173000-5D	B	P2	OH10
CR10-U200	Install 16" DIP Waterline Sta 80+00 - 81+50 RT	2	Jul-17-19	Jul-18-19	349	173000-5D	B	P2	OH10
CR10-U280	Construct CPP 3x5" Duct Bank Sta 74+00 LT/RT	3	Jul-17-19	Jul-19-19	346	173000-5D	B	P2	OH10
CR10-U290	Construct CPP 3x5" Duct Bank Sta 78+00 LT/RT	3	Jul-23-19	Jul-25-19	346	173000-5D	B	P2	OH10
OH-10 (E79th St to Grand Ave West)									
CR10-6610	Excavate/Embank Roadway Sta 81+50 - 85+50	15	May-23-19	Jun-19-19	364	173000-5D	B	P2	OH10
CR10-6600	Begin Work OH-10 (E79th St to Grand Ave West) - Phase 2	0	May-23-19		364	173000-5D	B	P2	OH10
CR10-6620	Construct Drainage Sta 81+50 - 85+50	3	Jul-31-19	Aug-02-19	349	173000-5D	B	P2	OH10
CR10-6700	Complete Work OH-10 (E79th St to Grand Ave West) - Phase 2	5	Aug-06-19	Aug-13-19	349	173000-5D	B	P2	OH10
Utilities									
CR10-U190	Install Sanitary Sewer Sta 81+00 - 85+00 LT	6	Jun-20-19	Jul-01-19	364	173000-5D	B	P2	OH10
CR10-U210	Construct CPP 6x5" Duct Bank Sta 81+50 - 88+00 LT	4	Jul-02-19	Jul-09-19	364	173000-5D	B	P2	OH10
CR10-U120	Install 16" DIP Waterline Sta 81+50 - 87+00 RT	6	Jul-19-19	Jul-30-19	349	173000-5D	B	P2	OH10
CR10-U250	Construct CPP 3x5" Duct Bank Sta 82+00 LT/RT	3	Jul-31-19	Aug-02-19	351	173000-5D	B	P2	OH10
CR10-U260	Construct CPP 3x5" Duct Bank Sta 85+00 LT/RT	3	Aug-06-19	Aug-08-19	351	173000-5D	B	P2	OH10
Grand Avenue (WEST of NS)									
CRGW-1010	Remove Pavement Sta 81+50 - 91+00	5	May-23-19	May-30-19	202	173000-5D	B	P2	GrandW
CRGW-1000	Begin Work Grand Ave (WEST of NS) - Phase 2	0	May-23-19		202	173000-5D	B	P2	GrandW
CRGW-1020	Complete Work Grand Ave (WEST of NS) - Phase 2	0		Aug-06-19	393	173000-5D	B	P2	GrandW
Utilities									
CRGW-U110	Remove 16" Waterline Sta 84+91 - 91+00	7	May-31-19	Jun-12-19	202	173000-5D	B	P2	GrandW
CRGW-U100	Remove 6" & 8" Waterline Sta 84+91 - 91+00	7	Jun-13-19	Jun-27-19	202	173000-5D	B	P2	GrandW
CRGW-U120	Install 8" Waterline Sta 87+50 - 90+00	4	Jul-31-19	Aug-06-19	393	173000-5D	B	P2	GrandW
Phase 3									
BP3-1000	Begin Work Phase 3	0	Jul-10-19		365	173000-5D	B	P3	
BP3-2000	Complete Work Phase 3	0		Sep-04-19	359	173000-5D	B	P3	
East 79th Street									
CR79-1010	Remove Pavement	3	Jul-19-19	Jul-24-19	359	173000-5D	B	P3	E79th
CR79-1000	Begin Work East 79th St - Phase 3	0	Jul-19-19*		359	173000-5D	B	P3	E79th
CR79-1020	Excavate/Embank Roadway	1	Jul-25-19	Jul-25-19	359	173000-5D	B	P3	E79th
CR79-1030	Construct Drainage	2	Jul-31-19	Aug-01-19	360	173000-5D	B	P3	E79th
CR79-1040	Undercut Subgrade	2	Aug-06-19	Aug-07-19	359	173000-5D	B	P3	E79th
CR79-1050	Place Granular Subgrade	2	Aug-08-19	Aug-09-19	359	173000-5D	B	P3	E79th
CR79-1060	Place Aggregate Base	2	Aug-13-19	Aug-14-19	359	173000-5D	B	P3	E79th
CR79-1070	Construct Full Depth Pavement & Curb	6	Aug-15-19	Aug-23-19	247	173000-5D w/Shutdown 12/1-3/31	B	P3	E79th
CR79-1080	Install Underdrain	1	Aug-27-19	Aug-27-19	359	173000-5D	B	P3	E79th
CR79-1090	Erect Lighting	3	Aug-28-19	Aug-30-19	359	173000-5D	B	P3	E79th
CR79-1100	Prep/Form/Pour Sidewalk	4	Aug-28-19	Sep-03-19	359	173000-5D	B	P3	E79th
CR79-1110	Install Signal Foundations	3	Aug-28-19	Aug-30-19	360	173000-5D	B	P3	E79th
CR79-1120	Erect Signs	1	Sep-03-19	Sep-03-19	359	173000-5D	B	P3	E79th
CR79-1130	Apply Pavement Markings	1	Sep-03-19	Sep-03-19	360	173000-5D	B	P3	E79th
CR79-1140	Seed & Landscape	1	Sep-04-19	Sep-04-19	359	173000-5D	B	P3	E79th
CR79-1150	Open East 79th St to Traffic - Phase 3	0		Sep-04-19	359	173000-5D	B	P3	E79th
Utilities									
CR79-U120	Remove CPP Poles Sta 17+00 - 20+50 RT	1	Jul-25-19	Jul-25-19	364	173000-5D	B	P3	E79th
CR79-U110	Remove 8" Water / Replace with 12" Water Sta 18+30 - 19+60 RT	2	Jul-26-19	Jul-30-19	359	173000-5D	B	P3	E79th
CR79-U130	Construct Add'l 4x4" Duct Bank & Pull Boxes Sta 18+00 - 20+00 RT	3	Jul-31-19	Aug-02-19	359	173000-5D	B	P3	E79th
CR79-U140	Install 1" Water Service to NorthEast Public Plaza	1	Jul-31-19	Jul-31-19	372	173000-5D	B	P3	E79th
CR79-U100	Construct CPP 2x4" Duct Bank & Pull Box at NorthEast Public Plaza	2	Aug-01-19	Aug-02-19	372	173000-5D	B	P3	E79th
OH-10 (E75th St to E79th St)									



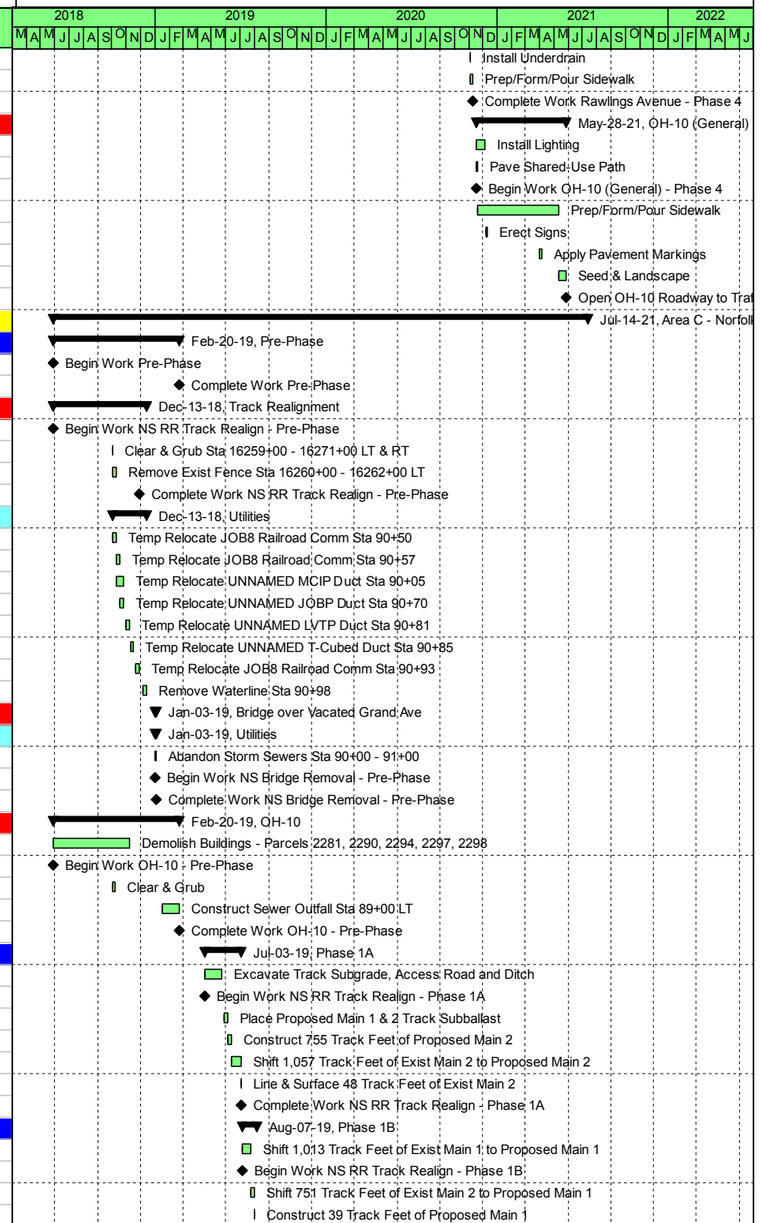
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR10-6330	Undercut Subgrade Sta 72+00 - 80+00	5	Jul-26-19	Aug-02-19	346	173000-5D	B	P3	OH10
CR10-6420	Begin Work OH-10 (E75th St to E79th St) - Phase 3	0	Jul-26-19		346	173000-5D	B	P3	OH10
CR10-6340	Place Granular Subgrade Sta 72+00 - 80+00	5	Aug-06-19	Aug-13-19	346	173000-5D	B	P3	OH10
CR10-6350	Place Aggregate Base Sta 72+00 - 80+00	2	Aug-14-19	Aug-15-19	346	173000-5D	B	P3	OH10
CR10-6440	Complete Work OH-10 (E75th St to E79th St) - Phase 3	0		Aug-15-19	346	173000-5D	B	P3	OH10
OH-10 (E79th St to Grand Ave West)									
CR10-6630	Undercut Subgrade Sta 81+50 - 85+50	3	Aug-14-19	Aug-16-19	349	173000-5D	B	P3	OH10
CR10-6710	Begin Work OH-10 (E79th St to Grand Ave West) - Phase 3	0	Aug-14-19		349	173000-5D	B	P3	OH10
CR10-6640	Place Granular Subgrade Sta 81+50 - 85+50	3	Aug-20-19	Aug-22-19	349	173000-5D	B	P3	OH10
CR10-6650	Place Aggregate Base Sta 81+50 - 85+50	2	Aug-23-19	Aug-27-19	349	173000-5D	B	P3	OH10
CR10-6730	Complete Work OH-10 (E79th St to Grand Ave West) - Phase 3	0		Aug-27-19	349	173000-5D	B	P3	OH10
Rawlings Avenue (WEST of E79th St)									
CRRA-1000	Remove Pavement Sta 20+25 - 29+00	4	Jul-12-19	Jul-18-19	376	173000-5D	B	P3	Rawling
CRRA-1020	Begin Work Rawlings Avenue - Phase 3	0	Jul-12-19		376	173000-5D	B	P3	Rawling
CRRA-1030	Complete Work Rawlings Avenue - Phase 3	0		Aug-06-19	376	173000-5D	B	P3	Rawling
Utilities									
CRRA-U100	Remove 6" Waterline Sta 20+00 - 29+50 RT	10	Jul-19-19	Aug-06-19	376	173000-5D	B	P3	Rawling
Rawlings Avenue (EAST of E79th St)									
CRRA-2000	Begin Work Rawlings Avenue - Phase 3	0	Jul-19-19		394	173000-5D	B	P3	Rawling
CRRA-1010	Remove Pavement Sta 29+75 - 34+00	2	Jul-19-19	Jul-23-19	394	173000-5D	B	P3	Rawling
CRRA-2010	Excavate Roadway	2	Jul-24-19	Jul-25-19	394	173000-5D	B	P3	Rawling
CRRA-2020	Construct Drainage	2	Aug-06-19	Aug-07-19	389	173000-5D	B	P3	Rawling
CRRA-2030	Undercut Subgrade	1	Aug-15-19	Aug-15-19	389	173000-5D	B	P3	Rawling
CRRA-2040	Place Granular Subgrade	1	Aug-16-19	Aug-16-19	389	173000-5D	B	P3	Rawling
CRRA-2050	Place Aggregate Base	1	Aug-20-19	Aug-20-19	389	173000-5D	B	P3	Rawling
CRRA-2110	Mill Roadway	1	Sep-06-19	Sep-06-19	375	173000-5D	B	P3	Rawling
CRRA-2120	Perform Pavement Repairs	3	Sep-10-19	Sep-12-19	263	173000-5D w/Shutdown 12/1-3/31	B	P3	Rawling
CRRA-2130	Complete Work Rawlings Avenue - Phase 3	0		Sep-12-19	375	173000-5D	B	P3	Rawling
Utilities									
CRRA-U500	Construct CPP 3x5" Duct Bank Sta 31+10 - 34+00	4	Aug-08-19	Aug-14-19	389	173000-5D	B	P3	Rawling
Property Parcel #2277 (Perk Company)									
CRPK-2000	Begin Work Parcel #2277 - Phase 3	0	Aug-07-19		393	173000-5D	B	P3	PP2277
CRPK-2050	Construct Drainage	3	Aug-07-19	Aug-09-19	393	173000-5D	B	P3	PP2277
CRPK-2010	Remove Pavement	2	Aug-13-19	Aug-14-19	393	173000-5D	B	P3	PP2277
CRPK-2020	Excavate/Embank Parking Lot	2	Aug-15-19	Aug-16-19	393	173000-5D	B	P3	PP2277
CRPK-2030	Place Aggregate Base	2	Aug-20-19	Aug-21-19	393	173000-5D	B	P3	PP2277
CRPK-2040	Construct Pavement & Curb	10	Aug-22-19	Sep-06-19	281	173000-5D w/Shutdown 12/1-3/31	B	P3	PP2277
CRPK-2060	Cure Pavement	7	Sep-07-19	Sep-13-19	776	173000-7D Cure	B	P3	PP2277
CRPK-2070	Apply Pavement Markings	1	Sep-13-19	Sep-17-19	280	173000-5D w/Shutdown 12/1-3/31	B	P3	PP2277
CRPK-2080	Complete Work Parcel #2277 - Phase 3	0		Sep-17-19	392	173000-5D	B	P3	PP2277
Phase 4									
BP4-1000	Begin Work Phase 4	0	Sep-05-19		359	173000-5D	B	P4	
BP4-2000	Complete Work Phase 4	0		May-28-21	83	173000-5D	B	P4	
East 79th Street									
CR79-2010	Mill Roadway & Remove Pavement	2	Sep-05-19	Sep-06-19	359	173000-5D	B	P4	E79th
CR79-2000	Begin Work East 79th St - Phase 4	0	Sep-05-19		359	173000-5D	B	P4	E79th
CR79-2020	Excavate/Embank Roadway	2	Sep-10-19	Sep-11-19	359	173000-5D	B	P4	E79th
CR79-2170	Perform Pavement Repairs	3	Sep-10-19	Sep-12-19	280	173000-5D w/Shutdown 12/1-3/31	B	P4	E79th
CR79-2030	Construct Drainage	2	Sep-12-19	Sep-13-19	359	173000-5D	B	P4	E79th
CR79-2040	Undercut Subgrade	2	Oct-09-19	Oct-10-19	359	173000-5D	B	P4	E79th
CR79-2050	Place Granular Subgrade	2	Oct-11-19	Oct-15-19	359	173000-5D	B	P4	E79th
CR79-2060	Place Aggregate Base	2	Oct-16-19	Oct-17-19	359	173000-5D	B	P4	E79th
CR79-2070	Construct Full Depth Pavement & Curb	5	Oct-18-19	Oct-25-19	247	173000-5D w/Shutdown 12/1-3/31	B	P4	E79th
CR79-2080	Install Underdrain	1	Oct-30-19	Oct-30-19	359	173000-5D	B	P4	E79th



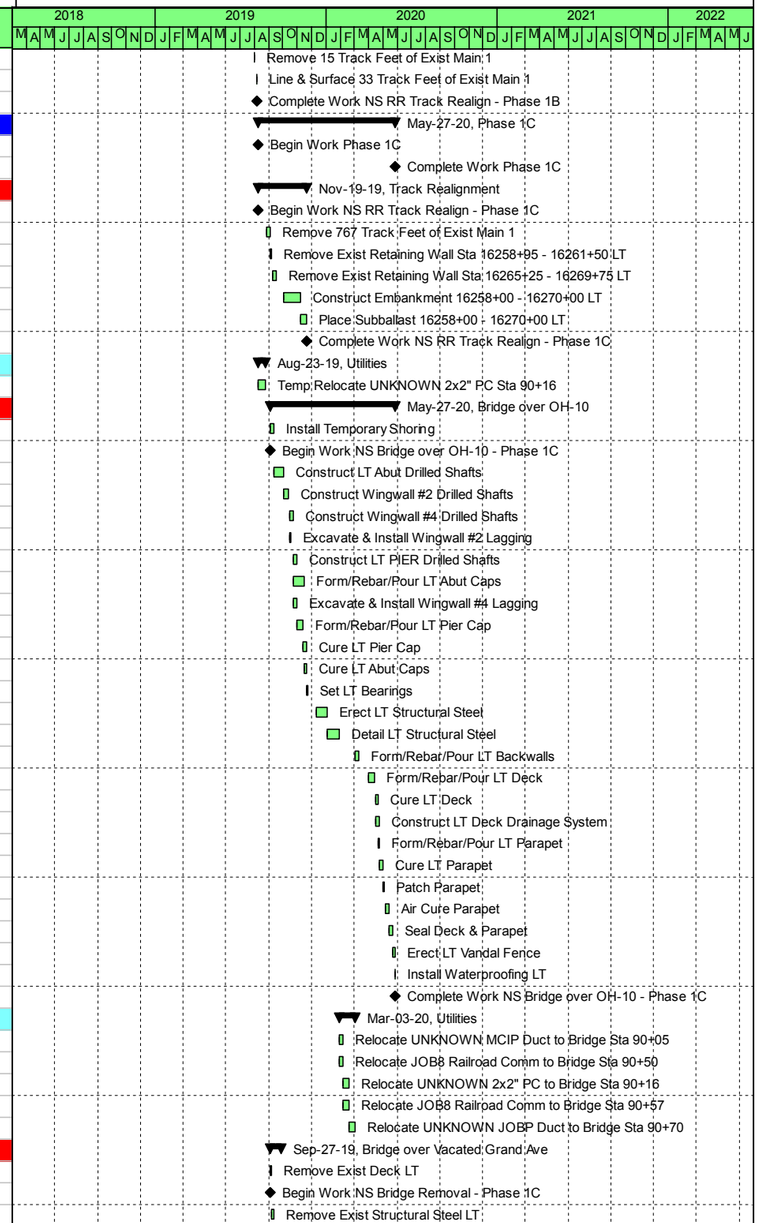
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR79-2160	Resurface Roadway	1	Oct-30-19	Oct-30-19	369	173000-5D	B	P4	E79th
CR79-2090	Erect Lighting	3	Oct-31-19	Nov-06-19	365	173000-5D	B	P4	E79th
CR79-2100	Prep/Form/Pour Sidewalk	4	Oct-31-19	Nov-07-19	365	173000-5D	B	P4	E79th
CR79-2110	Install Signal Foundations	3	Oct-31-19	Nov-06-19	359	173000-5D	B	P4	E79th
CR79-2120	Erect Signs	1	Nov-07-19	Nov-07-19	365	173000-5D	B	P4	E79th
CR79-2130	Apply Pavement Markings	1	Nov-07-19	Nov-07-19	253	173000-5D w/Shutdown 12/1-3/31	B	P4	E79th
CR79-2180	Erect Signals	8	Nov-07-19	Nov-21-19	359	173000-5D	B	P4	E79th
CR79-2140	Seed & Landscape	1	Nov-08-19	Nov-08-19	365	173000-5D	B	P4	E79th
CR79-2150	Open East 79th St to Traffic - Phase 4	0		Nov-08-19	365	173000-5D	B	P4	E79th
Utilities									
CR79-U220	Remove CPP OH Lighting & Poles Sta 16+00 - 20+00 LT	1	Sep-10-19	Sep-10-19	373	173000-5D	B	P4	E79th
CR79-U230	Install 1" Water Service to SouthWest Public Plaza	1	Sep-12-19	Sep-12-19	387	173000-5D	B	P4	E79th
CR79-U240	Construct CPP 8x5" Duct Bank Sta 21+00 - 21+30 LT & Manhole	3	Sep-17-19	Sep-19-19	359	173000-5D	B	P4	E79th
CR79-U210	Construct CPP 6x5" Duct Bank Sta 15+60 - 21+00 LT	6	Sep-20-19	Oct-03-19	359	173000-5D	B	P4	E79th
CR79-U200	Construct CPP 2x4" Duct Bank & Pull Box at SouthWest Public Plaza	2	Oct-04-19	Oct-08-19	377	173000-5D	B	P4	E79th
CR79-U250	Install CPP Conduit Sta 18+00 - 21+00 LT	2	Oct-04-19	Oct-08-19	359	173000-5D	B	P4	E79th
Holton Avenue									
CRHA-1000	Begin Work Holton Ave - Phase 4	0	Sep-05-19		375	173000-5D	B	P4	Holton
CRHA-1010	Mill Roadway	1	Sep-05-19	Sep-05-19	375	173000-5D	B	P4	Holton
CRHA-1040	Perform Pavement Repairs	3	Sep-06-19	Sep-11-19	281	173000-5D w/Shutdown 12/1-3/31	B	P4	Holton
CRHA-1020	Resurface Roadway	2	Oct-30-19	Oct-31-19	257	173000-5D w/Shutdown 12/1-3/31	B	P4	Holton
CRHA-1030	Complete Work Holton Ave - Phase 4	0		Oct-31-19	369	173000-5D	B	P4	Holton
OH-10 (Kinsman Rd)									
CR10-5070	Construct Full Depth Pavement & Curb Sta 46+50 - 56+00	9	Aug-20-20	Sep-03-20	84	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-5140	Begin Work OH-10 (Kinsman Road) - Phase 4	0	Aug-20-20		141	173000-5D	B	P4	OH10
CR10-5060	Install Underdrain Sta 46+50 - 56+00	5	Sep-04-20	Sep-11-20	159	173000-5D	B	P4	OH10
CR10-5080	Construct Lighting Duct Banks Sta 46+50 - 56+00 LT/RT	10	Sep-15-20	Oct-02-20	159	173000-5D	B	P4	OH10
CR10-5090	Place Aggregate Base Shared-Use Path Sta 46+50 - 56+00 RT	2	Oct-06-20	Oct-07-20	159	173000-5D	B	P4	OH10
CR10-5120	Complete Work OH-10 (Kinsman Road) - Phase 4	0		Oct-07-20	159	173000-5D	B	P4	OH10
OH-10 (GCRTA Blue-Green to E75th St)									
CR10-6070	Construct Full Depth Pavement & Curb Sta 62+50 - 70+50	9	Sep-04-20	Sep-22-20	84	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-6130	Begin Work OH-10 (GCRTA Blue-Green to E75th St) - Phase 4	0	Sep-04-20		141	173000-5D	B	P4	OH10
CR10-6060	Install Underdrain Sta 62+50 - 70+50	5	Sep-23-20	Oct-01-20	151	173000-5D	B	P4	OH10
CR10-6080	Construct Lighting Duct Banks Sta 62+50 - 70+50 LT/RT	10	Oct-02-20	Oct-21-20	151	173000-5D	B	P4	OH10
CR10-6090	Place Aggregate Base Shared-Use Path Sta 62+50 - 70+50 RT	1	Oct-22-20	Oct-22-20	151	173000-5D	B	P4	OH10
CR10-6110	Complete Work OH-10 (GCRTA Blue-Green to E75th St) - Phase 4	0		Oct-22-20	151	173000-5D	B	P4	OH10
OH-10 (E75th St to E79th St)									
CR10-6370	Construct Full Depth Pavement & Curb Sta 72+00 - 80+00	9	Sep-23-20	Oct-08-20	84	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-6450	Begin Work OH-10 (E75th St to E79th St) - Phase 4	0	Sep-23-20		140	173000-5D	B	P4	OH10
CR10-6360	Install Underdrain Sta 72+00 - 80+00	5	Oct-09-20	Oct-16-20	142	173000-5D	B	P4	OH10
CR10-6380	Construct Lighting Duct Banks Sta 72+00 - 80+00 LT/RT	10	Oct-21-20	Nov-10-20	142	173000-5D	B	P4	OH10
CR10-6390	Place Aggregate Base Shared-Use Path Sta 72+00 - 80+00 RT	1	Nov-11-20	Nov-11-20	142	173000-5D	B	P4	OH10
CR10-6430	Complete Work OH-10 (E75th St to E79th St) - Phase 4	0		Nov-11-20	142	173000-5D	B	P4	OH10
OH-10 (E79th St to Grand Ave West)									
CR10-6670	Construct Full Depth Pavement & Curb Sta 81+50 - 85+50	6	Oct-09-20	Oct-21-20	84	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-6740	Begin Work OH-10 (E79th St to Grand Ave West) - Phase 4	0	Oct-09-20		140	173000-5D	B	P4	OH10
CR10-6660	Install Underdrain Sta 81+50 - 85+50	3	Oct-22-20	Oct-28-20	140	173000-5D	B	P4	OH10
CR10-6680	Construct Lighting Duct Banks Sta 81+50 - 85+50 LT/RT	8	Oct-29-20	Nov-12-20	140	173000-5D	B	P4	OH10
CR10-6690	Place Aggregate Base Shared-Use Path Sta 81+50 - 85+50 RT	1	Nov-13-20	Nov-13-20	140	173000-5D	B	P4	OH10
CR10-6720	Complete Work OH-10 (E79th St to Grand Ave West) - Phase 4	0		Nov-13-20	140	173000-5D	B	P4	OH10
Rawlings Avenue (EAST of E79th St)									
CRRA-2060	Construct Full Depth Pavement & Curb	5	Oct-22-20	Oct-30-20	114	173000-5D w/Shutdown 12/1-3/31	B	P4	Rawling
CRRA-2140	Begin Work Rawlings Avenue - Phase 4	0	Oct-22-20		170	173000-5D	B	P4	Rawling
CRRA-2080	Resurface Roadway	1	Nov-03-20	Nov-03-20	127	173000-5D w/Shutdown 12/1-3/31	B	P4	Rawling



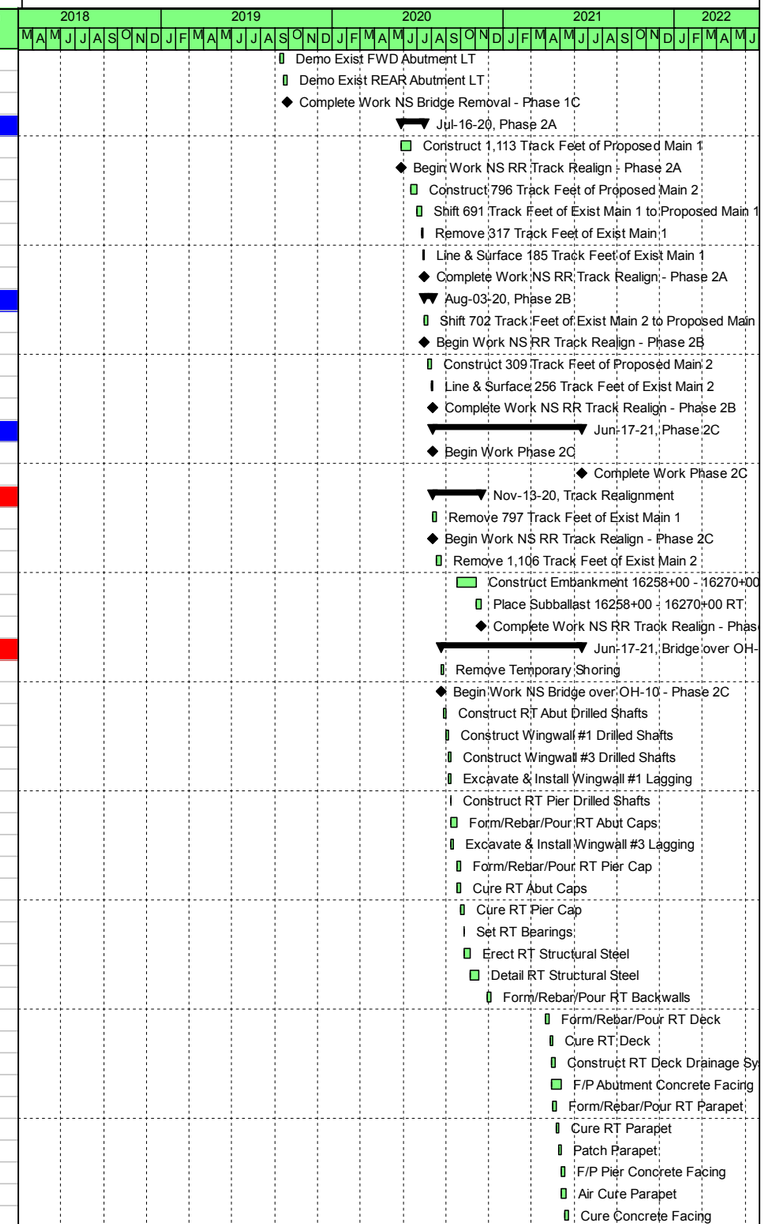
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRRA-2070	Install Underdrain	1	Nov-04-20	Nov-04-20	170	173000-5D	B	P4	Rawling
CRRA-2100	Prep/Form/Pour Sidewalk	3	Nov-05-20	Nov-10-20	170	173000-5D	B	P4	Rawling
CRRA-2090	Complete Work Rawlings Avenue - Phase 4	0		Nov-10-20	170	173000-5D	B	P4	Rawling
OH-10 (General)									
CR10-5530	Install Lighting	10	Nov-17-20	Dec-04-20	153	173000-5D	B	P4	OH10
CR10-5510	Pave Shared-Use Path	2	Nov-17-20	Nov-18-20	83	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-5580	Begin Work OH-10 (General) - Phase 4	0	Nov-17-20		140	173000-5D	B	P4	OH10
CR10-5520	Prep/Form/Pour Sidewalk	25	Nov-19-20	May-11-21	83	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-5540	Erect Signs	4	Dec-08-20	Dec-11-20	153	173000-5D	B	P4	OH10
CR10-5550	Apply Pavement Markings	3	Apr-01-21	Apr-06-21	111	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-5560	Seed & Landscape	10	May-12-21	May-28-21	83	173000-5D w/Shutdown 12/1-3/31	B	P4	OH10
CR10-5570	Open OH-10 Roadway to Traffic - Sta 46+50 - 85+50 - Phase 4	0		May-28-21	83	173000-5D	B	P4	OH10
Area C - Norfolk Southern Railroad									
Pre-Phase									
CPPA-1000	Begin Work Pre-Phase	0	May-29-18		149	173000-5D	C	PPA	
CPPA-2000	Complete Work Pre-Phase	0		Feb-20-19	102	173000-5D	C	PPA	
Track Realignment									
CRNS-1520	Begin Work NS RR Track Realign - Pre-Phase	0	May-29-18		152	173000-5D	C	PPA	NSTR
CRNS-1500	Clear & Grub Sta 16259+00 - 16271+00 LT & RT	2	Oct-01-18	Oct-02-18	84	173000-5D Clearing	C	PPA	NSTR
CRNS-1510	Remove Exist Fence Sta 16260+00 - 16262+00 LT	5	Oct-03-18	Oct-10-18	154	173000-5D	C	PPA	NSTR
CRNS-1530	Complete Work NS RR Track Realign - Pre-Phase	0		Nov-29-18	139	173000-5D	C	PPA	NSTR
Utilities									
CRNS-U200	Temp Relocate JOB8 Railroad Comm Sta 90+50	5	Oct-03-18	Oct-10-18	139	173000-5D	C	PPA	NSTR
CRNS-U210	Temp Relocate JOB8 Railroad Comm Sta 90+57	5	Oct-11-18	Oct-18-18	139	173000-5D	C	PPA	NSTR
CRNS-U100	Temp Relocate UNNAMED MCIP Duct Sta 90+05	10	Oct-11-18	Oct-26-18	154	173000-5D	C	PPA	NSTR
CRNS-U230	Temp Relocate UNNAMED JOBP Duct Sta 90+70	5	Oct-19-18	Oct-26-18	139	173000-5D	C	PPA	NSTR
CRNS-U240	Temp Relocate UNNAMED LVTP Duct Sta 90+81	5	Oct-31-18	Nov-08-18	139	173000-5D	C	PPA	NSTR
CRNS-U250	Temp Relocate UNNAMED T-Cubed Duct Sta 90+85	5	Nov-09-18	Nov-16-18	139	173000-5D	C	PPA	NSTR
CRNS-U220	Temp Relocate JOB8 Railroad Comm Sta 90+93	5	Nov-20-18	Nov-29-18	139	173000-5D	C	PPA	NSTR
CRNS-U300	Remove Waterline Sta 90+98	5	Dec-06-18	Dec-13-18	130	173000-5D	C	PPA	NSTR
Bridge over Vacated Grand Ave									
Utilities									
CNSV-U130	Abandon Storm Sewers Sta 90+00 - 91+00	2	Jan-02-19	Jan-03-19	122	173000-5D	C	PPA	NSGR
CNSV-U140	Begin Work NS Bridge Removal - Pre-Phase	0	Jan-02-19		122	173000-5D	C	PPA	NSGR
CNSV-U150	Complete Work NS Bridge Removal - Pre-Phase	0		Jan-03-19	122	173000-5D	C	PPA	NSGR
OH-10									
CR10-7170	Demolish Buildings - Parcels 2281, 2290, 2294, 2297, 2298	90	May-29-18	Nov-08-18	209	173000-5D	C	PPA	OH10
CR10-7200	Begin Work OH-10 - Pre-Phase	0	May-29-18		149	173000-5D	C	PPA	OH10
CR10-7180	Clear & Grub	5	Oct-01-18	Oct-08-18	81	173000-5D Clearing	C	PPA	OH10
CR10-7110	Construct Sewer Outfall Sta 89+00 LT	15	Jan-16-19	Feb-20-19	102	173000-5D	C	PPA	OH10
CR10-7210	Complete Work OH-10 - Pre-Phase	0		Feb-20-19	102	173000-5D	C	PPA	OH10
Phase 1A									
CRNS-1030	Excavate Track Subgrade, Access Road and Ditch	20	Apr-17-19	May-24-19	75	173000-5D	C	P1A	NSTR
CP1A-1000	Begin Work NS RR Track Realign - Phase 1A	0	Apr-17-19		75	173000-5D	C	P1A	NSTR
CRNS-1040	Place Proposed Main 1 & 2 Track Subballast	5	May-28-19	Jun-04-19	75	173000-5D	C	P1A	NSTR
CRNS-1000	Construct 755 Track Feet of Proposed Main 2	5	Jun-05-19	Jun-12-19	75	173000-5D	C	P1A	NSTR
CRNS-1010	Shift 1,057 Track Feet of Exist Main 2 to Proposed Main 2	10	Jun-13-19	Jul-02-19	75	173000-5D	C	P1A	NSTR
CRNS-1020	Line & Surface 48 Track Feet of Exist Main 2	1	Jul-03-19	Jul-03-19	75	173000-5D	C	P1A	NSTR
CP1A-2000	Complete Work NS RR Track Realign - Phase 1A	0		Jul-03-19	75	173000-5D	C	P1A	NSTR
Phase 1B									
CRNS-2000	Shift 1,013 Track Feet of Exist Main 1 to Proposed Main 1	10	Jul-05-19	Jul-23-19	75	173000-5D	C	P1B	NSTR
CP1B-1000	Begin Work NS RR Track Realign - Phase 1B	0	Jul-05-19		75	173000-5D	C	P1B	NSTR
CRNS-2010	Shift 751 Track Feet of Exist Main 2 to Proposed Main 1	5	Jul-24-19	Jul-31-19	75	173000-5D	C	P1B	NSTR
CRNS-2020	Construct 39 Track Feet of Proposed Main 1	1	Aug-01-19	Aug-01-19	75	173000-5D	C	P1B	NSTR



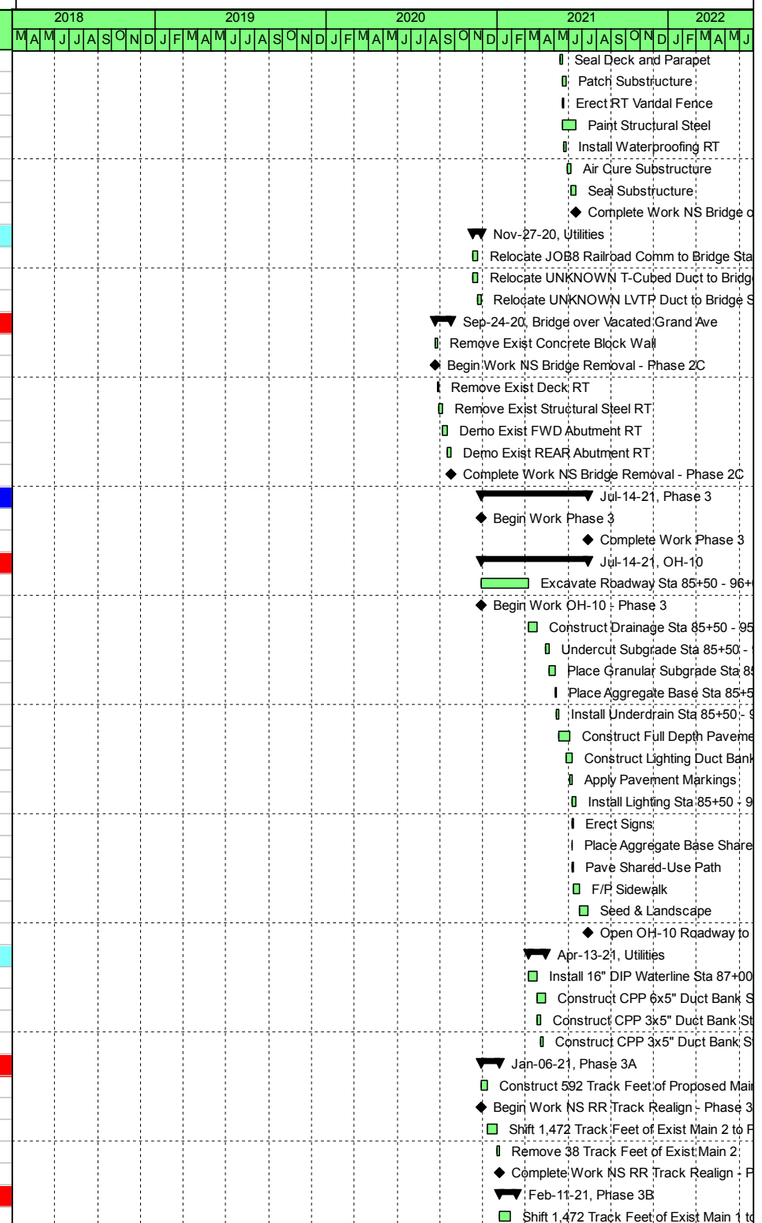
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRNS-2030	Remove 15 Track Feet of Exist Main 1	1	Aug-02-19	Aug-02-19	75	173000-5D	C	P1B	NSTR
CRNS-2040	Line & Surface 33 Track Feet of Exist Main 1	2	Aug-06-19	Aug-07-19	75	173000-5D	C	P1B	NSTR
CP1B-2500	Complete Work NS RR Track Realign - Phase 1B	0		Aug-07-19	75	173000-5D	C	P1B	NSTR
Phase 1C									
CP1C-1000	Begin Work Phase 1C	0	Aug-08-19		75	173000-5D	C	P1C	NSTR
CP1C-2000	Complete Work Phase 1C	0		May-27-20	59	173000-5D	C	P1C	NSTR
Track Realignment									
CRNS-3010	Begin Work NS RR Track Realign - Phase 1C	0	Aug-08-19		75	173000-5D	C	P1C	NSTR
CRNS-3000	Remove 767 Track Feet of Exist Main 1	5	Aug-27-19	Sep-03-19	75	173000-5D	C	P1C	NSTR
CRNS-4050	Remove Exist Retaining Wall Sta 16258+95 - 16261+50 LT	3	Sep-04-19	Sep-06-19	156	173000-5D	C	P1C	NSTR
CRNS-4060	Remove Exist Retaining Wall Sta 16265+25 - 16269+75 LT	5	Sep-10-19	Sep-17-19	156	173000-5D	C	P1C	NSTR
CRNS-3180	Construct Embankment 16258+00 - 16270+00 LT	20	Oct-02-19	Nov-07-19	150	173000-5D	C	P1C	NSTR
CRNS-3190	Place Subballast 16258+00 - 16270+00 LT	5	Nov-08-19	Nov-19-19	150	173000-5D	C	P1C	NSTR
CRNS-3020	Complete Work NS RR Track Realign - Phase 1C	0		Nov-19-19	150	173000-5D	C	P1C	NSTR
Utilities									
CRNS-U110	Temp Relocate UNKNOWN 2x2" PC Sta 90+16	10	Aug-08-19	Aug-23-19	75	173000-5D	C	P1C	NSTR
Bridge over OH-10									
CBNS-1000	Install Temporary Shoring	5	Sep-04-19	Sep-11-19	75	173000-5D	C	P1C	NS10
CBNS-1030	Begin Work NS Bridge over OH-10 - Phase 1C	0	Sep-04-19		75	173000-5D	C	P1C	NS10
CBNS-1010	Construct LT Abut Drilled Shafts	10	Sep-12-19	Oct-02-19	75	173000-5D	C	P1C	NS10
CBNS-1040	Construct Wingwall #2 Drilled Shafts	6	Oct-03-19	Oct-11-19	75	173000-5D	C	P1C	NS10
CBNS-1050	Construct Wingwall #4 Drilled Shafts	6	Oct-15-19	Oct-23-19	75	173000-5D	C	P1C	NS10
CBNS-1100	Excavate & Install Wingwall #2 Lagging	3	Oct-15-19	Oct-17-19	162	173000-5D	C	P1C	NS10
CBNS-1020	Construct LT PIER Drilled Shafts	3	Oct-24-19	Oct-30-19	76	173000-5D	C	P1C	NS10
CBNS-1060	Form/Rebar/Pour LT Abut Caps	10	Oct-24-19	Nov-14-19	75	173000-5D	C	P1C	NS10
CBNS-1110	Excavate & Install Wingwall #4 Lagging	3	Oct-24-19	Oct-30-19	159	173000-5D	C	P1C	NS10
CBNS-1080	Form/Rebar/Pour LT Pier Cap	6	Oct-31-19	Nov-13-19	76	173000-5D	C	P1C	NS10
CBNS-1095	Cure LT Pier Cap	7	Nov-14-19	Nov-20-19	160	173000-7D Cure	C	P1C	NS10
CBNS-1090	Cure LT Abut Caps	7	Nov-15-19	Nov-21-19	159	173000-7D Cure	C	P1C	NS10
CBNS-1190	Set LT Bearings	1	Nov-21-19	Nov-22-19	74	173000-5D	C	P1C	NS10
CBNS-1120	Erect LT Structural Steel	10	Dec-12-19	Jan-03-20	64	173000-5D	C	P1C	NS10
CBNS-1210	Detail LT Structural Steel	10	Jan-03-20	Jan-29-20	64	173000-5D	C	P1C	NS10
CBNS-1125	Form/Rebar/Pour LT Backwalls	4	Mar-03-20	Mar-10-20	64	173000-5D	C	P1C	NS10
CBNS-1130	Form/Rebar/Pour LT Deck	8	Apr-01-20	Apr-14-20	54	173000-5D w/Shutdown 12/1-3/31	C	P1C	NS10
CBNS-1140	Cure LT Deck	7	Apr-15-20	Apr-21-20	104	173000-7D Cure	C	P1C	NS10
CBNS-1150	Construct LT Deck Drainage System	5	Apr-15-20	Apr-23-20	385	173000-5D	C	P1C	NS10
CBNS-1160	Form/Rebar/Pour LT Parapet	3	Apr-22-20	Apr-24-20	56	173000-5D	C	P1C	NS10
CBNS-1170	Cure LT Parapet	7	Apr-25-20	May-01-20	104	173000-7D Cure	C	P1C	NS10
CBNS-1220	Patch Parapet	1	May-01-20	May-05-20	57	173000-5D	C	P1C	NS10
CBNS-1230	Air Cure Parapet	10	May-06-20	May-15-20	104	173000-7D Cure	C	P1C	NS10
CBNS-1240	Seal Deck & Parapet	3	May-15-20	May-22-20	58	173000-5D Paint/Shutdown 11/1-3/31	C	P1C	NS10
CBNS-1180	Erect LT Vandal Fence	1	May-22-20	May-26-20	59	173000-5D	C	P1C	NS10
CBNS-1200	Install Waterproofing LT	1	May-26-20	May-27-20	59	173000-5D	C	P1C	NS10
CBNS-1250	Complete Work NS Bridge over OH-10 - Phase 1C	0		May-27-20	59	173000-5D	C	P1C	NS10
Utilities									
CBNS-U120	Relocate UNKNOWN MCIP Duct to Bridge Sta 90+05	5	Jan-29-20	Feb-07-20	69	173000-5D	C	P1C	NS10
CBNS-U200	Relocate JOB8 Railroad Comm to Bridge Sta 90+50	5	Jan-29-20	Feb-07-20	64	173000-5D	C	P1C	NS10
CBNS-U130	Relocate UNKNOWN 2x2" PC to Bridge Sta 90+16	5	Feb-07-20	Feb-20-20	69	173000-5D	C	P1C	NS10
CBNS-U210	Relocate JOB8 Railroad Comm to Bridge Sta 90+57	5	Feb-07-20	Feb-20-20	64	173000-5D	C	P1C	NS10
CBNS-U230	Relocate UNKNOWN JOBP Duct to Bridge Sta 90+70	5	Feb-20-20	Mar-03-20	64	173000-5D	C	P1C	NS10
Bridge over Vacated Grand Ave									
CNSV-1030	Remove Exist Deck LT	2	Sep-04-19	Sep-05-19	150	173000-5D	C	P1C	NSGR
CNSV-1040	Begin Work NS Bridge Removal - Phase 1C	0	Sep-04-19		150	173000-5D	C	P1C	NSGR
CNSV-1000	Remove Exist Structural Steel LT	2	Sep-06-19	Sep-10-19	150	173000-5D	C	P1C	NSGR



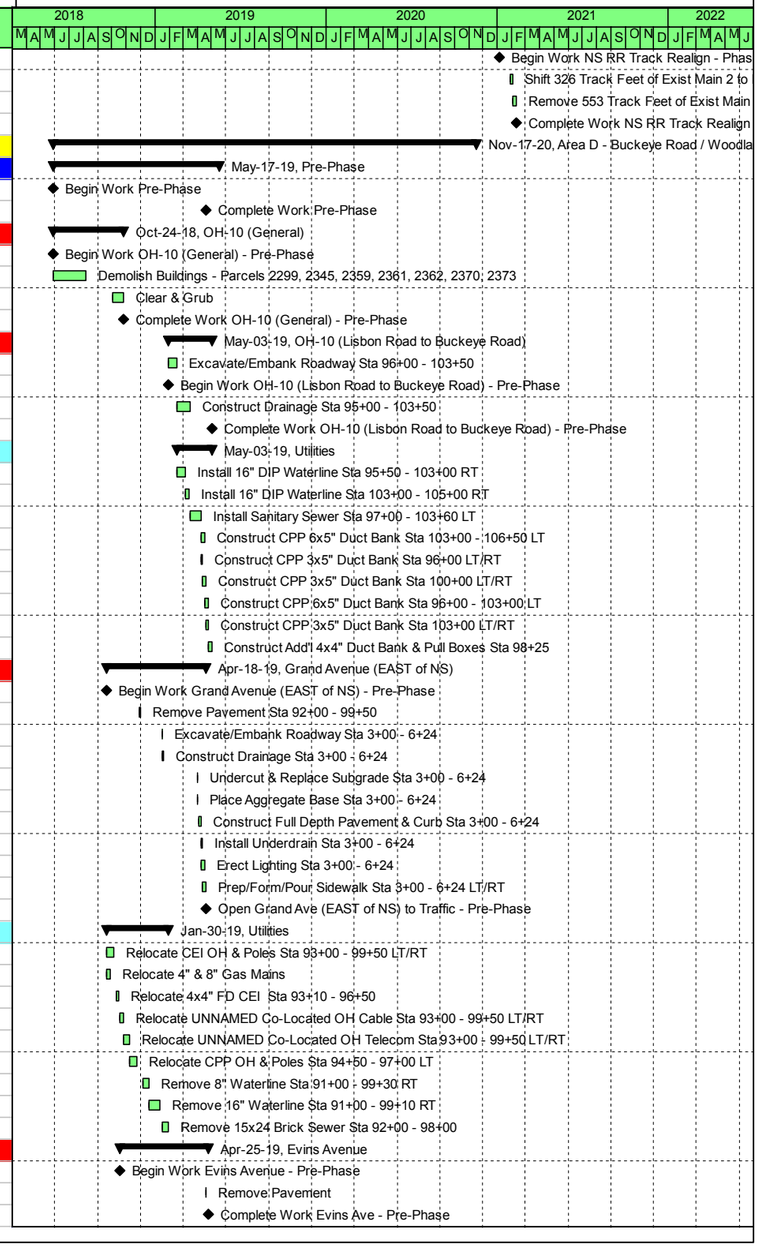
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CNSV-1010	Demo Exist FWD Abutment LT	5	Sep-11-19	Sep-18-19	150	173000-5D	C	P1C	NSGR
CNSV-1020	Demo Exist REAR Abutment LT	5	Sep-19-19	Sep-27-19	150	173000-5D	C	P1C	NSGR
CNSV-1050	Complete Work NS Bridge Removal - Phase 1C	0		Sep-27-19	150	173000-5D	C	P1C	NSGR
Phase 2A									
CRNS-4000	Construct 1,113 Track Feet of Proposed Main 1	11	May-27-20	Jun-16-20	59	173000-5D	C	P2A	NSTR
CP2A-1000	Begin Work NS RR Track Realign - Phase 2A	0	May-27-20		59	173000-5D	C	P2A	NSTR
CRNS-4010	Construct 796 Track Feet of Proposed Main 2	8	Jun-16-20	Jun-30-20	59	173000-5D	C	P2A	NSTR
CRNS-4020	Shift 691 Track Feet of Exist Main 1 to Proposed Main 1	5	Jun-30-20	Jul-09-20	59	173000-5D	C	P2A	NSTR
CRNS-4030	Remove 317 Track Feet of Exist Main 1	2	Jul-09-20	Jul-14-20	59	173000-5D	C	P2A	NSTR
CRNS-4040	Line & Surface 185 Track Feet of Exist Main 1	2	Jul-14-20	Jul-16-20	59	173000-5D	C	P2A	NSTR
CP2A-2000	Complete Work NS RR Track Realign - Phase 2A	0		Jul-16-20	59	173000-5D	C	P2A	NSTR
Phase 2B									
CRNS-5000	Shift 702 Track Feet of Exist Main 2 to Proposed Main 2	5	Jul-16-20	Jul-24-20	59	173000-5D	C	P2B	NSTR
CP2B-1000	Begin Work NS RR Track Realign - Phase 2B	0	Jul-16-20		59	173000-5D	C	P2B	NSTR
CRNS-5010	Construct 309 Track Feet of Proposed Main 2	3	Jul-24-20	Jul-30-20	59	173000-5D	C	P2B	NSTR
CRNS-5020	Line & Surface 256 Track Feet of Exist Main 2	2	Jul-30-20	Aug-03-20	59	173000-5D	C	P2B	NSTR
CP2B-2000	Complete Work NS RR Track Realign - Phase 2B	0		Aug-03-20	59	173000-5D	C	P2B	NSTR
Phase 2C									
CP2C-1000	Begin Work Phase 2C	0	Aug-03-20		59	173000-5D	C	P2C	
CP2C-2000	Complete Work Phase 2C	0		Jun-16-21	73	173000-5D	C	P2C	
Track Realignment									
CRNS-6000	Remove 797 Track Feet of Exist Main 1	5	Aug-03-20	Aug-11-20	59	173000-5D	C	P2C	NSTR
CRNS-6040	Begin Work NS RR Track Realign - Phase 2C	0	Aug-03-20		59	173000-5D	C	P2C	NSTR
CRNS-6010	Remove 1,106 Track Feet of Exist Main 2	7	Aug-11-20	Aug-21-20	59	173000-5D	C	P2C	NSTR
CRNS-6020	Construct Embankment 16258+00 - 16270+00 RT	20	Sep-24-20	Nov-05-20	144	173000-5D	C	P2C	NSTR
CRNS-6030	Place Subballast 16258+00 - 16270+00 RT	5	Nov-05-20	Nov-13-20	144	173000-5D	C	P2C	NSTR
CRNS-6050	Complete Work NS RR Track Realign - Phase 2C	0		Nov-13-20	144	173000-5D	C	P2C	NSTR
Bridge over OH-10									
CBNS-2000	Remove Temporary Shoring	1	Aug-21-20	Aug-25-20	59	173000-5D	C	P2C	NS10
CBNS-2030	Begin Work NS Bridge over OH-10 - Phase 2C	0	Aug-21-20		59	173000-5D	C	P2C	NS10
CBNS-2010	Construct RT Abut Drilled Shafts	4	Aug-25-20	Sep-01-20	59	173000-5D	C	P2C	NS10
CBNS-2040	Construct Wingwall #1 Drilled Shafts	3	Sep-01-20	Sep-04-20	59	173000-5D	C	P2C	NS10
CBNS-2050	Construct Wingwall #3 Drilled Shafts	3	Sep-04-20	Sep-10-20	59	173000-5D	C	P2C	NS10
CBNS-2100	Excavate & Install Wingwall #1 Lagging	3	Sep-04-20	Sep-10-20	206	173000-5D	C	P2C	NS10
CBNS-2020	Construct RT Pier Drilled Shafts	1	Sep-10-20	Sep-11-20	64	173000-5D	C	P2C	NS10
CBNS-2060	Form/Rebar/Pour RT Abut Caps	6	Sep-10-20	Sep-23-20	59	173000-5D	C	P2C	NS10
CBNS-2110	Excavate & Install Wingwall #3 Lagging	3	Sep-10-20	Sep-16-20	206	173000-5D	C	P2C	NS10
CBNS-2070	Form/Rebar/Pour RT Pier Cap	4	Sep-23-20	Oct-01-20	59	173000-5D	C	P2C	NS10
CBNS-2090	Cure RT Abut Caps	7	Sep-24-20	Sep-30-20	134	173000-7D Cure	C	P2C	NS10
CBNS-2080	Cure RT Pier Cap	7	Oct-02-20	Oct-08-20	126	173000-7D Cure	C	P2C	NS10
CBNS-2095	Set RT Bearings	1	Oct-08-20	Oct-09-20	58	173000-5D	C	P2C	NS10
CBNS-2120	Erect RT Structural Steel	6	Oct-09-20	Oct-22-20	58	173000-5D	C	P2C	NS10
CBNS-2250	Detail RT Structural Steel	8	Oct-22-20	Nov-10-20	58	173000-5D	C	P2C	NS10
CBNS-2125	Form/Rebar/Pour RT Backwalls	3	Nov-27-20	Dec-04-20	140	173000-5D	C	P2C	NS10
CBNS-2130	Form/Rebar/Pour RT Deck	6	Apr-01-21	Apr-09-21	87	173000-5D w/Shutdown 12/1-3/31	C	P2C	NS10
CBNS-2140	Cure RT Deck	7	Apr-10-21	Apr-16-21	160	173000-7D Cure	C	P2C	NS10
CBNS-2150	Construct RT Deck Drainage System	5	Apr-13-21	Apr-21-21	207	173000-5D	C	P2C	NS10
CBNS-2270	F/P Abutment Concrete Facing	10	Apr-13-21	May-04-21	74	173000-5D	C	P2C	NS10
CBNS-2160	Form/Rebar/Pour RT Parapet	3	Apr-16-21	Apr-23-21	86	173000-5D	C	P2C	NS10
CBNS-2170	Cure RT Parapet	7	Apr-24-21	Apr-30-21	160	173000-7D Cure	C	P2C	NS10
CBNS-2290	Patch Parapet	1	Apr-30-21	May-04-21	87	173000-5D	C	P2C	NS10
CBNS-2280	F/P Pier Concrete Facing	5	May-04-21	May-12-21	74	173000-5D	C	P2C	NS10
CBNS-2210	Air Cure Parapet	10	May-05-21	May-14-21	159	173000-7D Cure	C	P2C	NS10
CBNS-2300	Cure Concrete Facing	7	May-13-21	May-19-21	134	173000-7D Cure	C	P2C	NS10



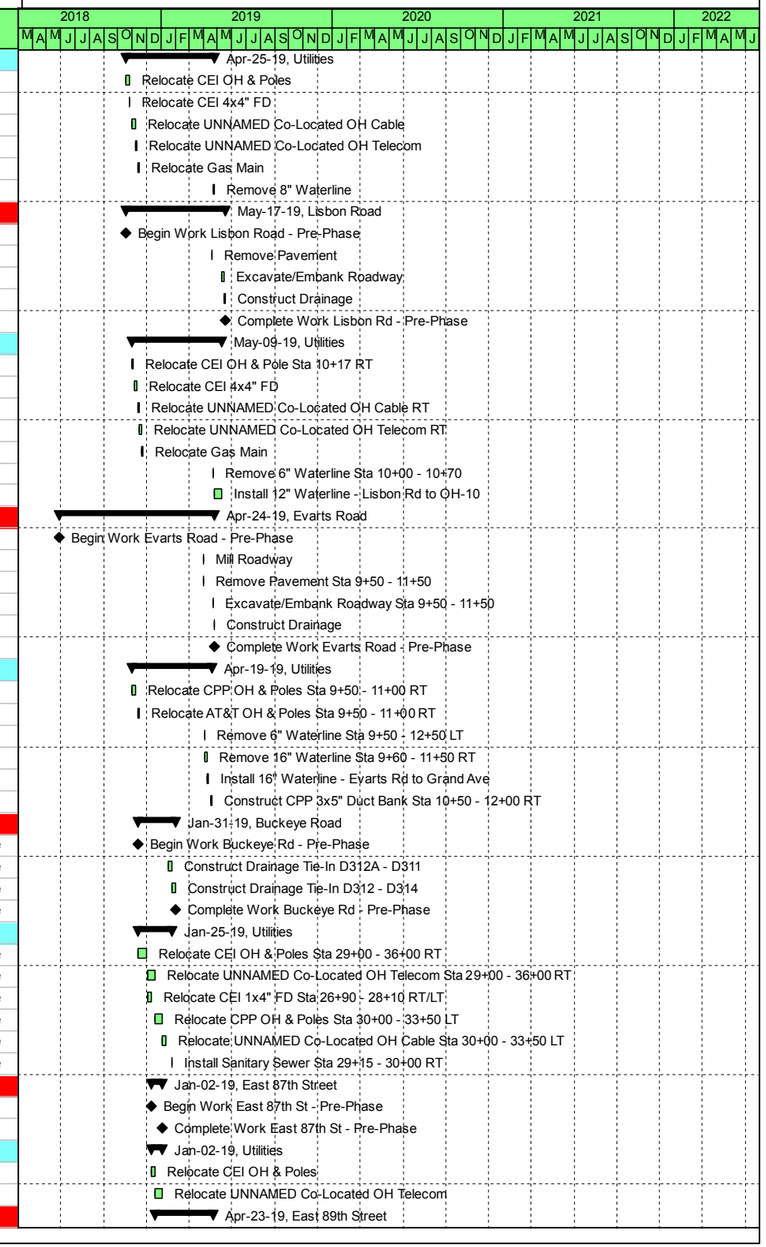
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CBNS-2220	Seal Deck and Parapet	3	May-14-21	May-20-21	85	173000-5D Paint/Shutdown 11/1-3/31	C	P2C	NS10
CBNS-2260	Patch Substructure	5	May-19-21	May-28-21	73	173000-5D	C	P2C	NS10
CBNS-2180	Erect RT Vandal Fence	1	May-20-21	May-21-21	85	173000-5D	C	P2C	NS10
CBNS-2200	Paint Structural Steel	15	May-20-21	Jun-17-21	120	173000-5D Paint/Shutdown 11/1-3/31	C	P2C	NS10
CBNS-2190	Install Waterproofing RT	1	May-21-21	May-26-21	85	173000-5D	C	P2C	NS10
CBNS-2240	Air Cure Substructure	10	May-29-21	Jun-07-21	134	173000-7D Cure	C	P2C	NS10
CBNS-2230	Seal Substructure	6	Jun-08-21	Jun-16-21	73	173000-5D Paint/Shutdown 11/1-3/31	C	P2C	NS10
CBNS-2330	Complete Work NS Bridge over OH-10 - Phase 2C	0		Jun-16-21	73	173000-5D	C	P2C	NS10
Utilities									
CBNS-U220	Relocate JOB8 Railroad Comm to Bridge Sta 90+93	5	Nov-10-20	Nov-18-20	58	173000-5D	C	P2C	NS10
CBNS-U250	Relocate UNKNOWN T-Cubed Duct to Bridge Sta 90+85	5	Nov-10-20	Nov-18-20	145	173000-5D	C	P2C	NS10
CBNS-U240	Relocate UNKNOWN LVTP Duct to Bridge Sta 90+81	5	Nov-18-20	Nov-27-20	58	173000-5D	C	P2C	NS10
Bridge over Vacated Grand Ave									
CNSV-2030	Remove Exist Concrete Block Wall	2	Aug-21-20	Aug-26-20	144	173000-5D	C	P2C	NSGR
CNSV-2060	Begin Work NS Bridge Removal - Phase 2C	0	Aug-21-20		144	173000-5D	C	P2C	NSGR
CNSV-2040	Remove Exist Deck RT	2	Aug-26-20	Aug-28-20	144	173000-5D	C	P2C	NSGR
CNSV-2000	Remove Exist Structural Steel RT	4	Aug-28-20	Sep-04-20	144	173000-5D	C	P2C	NSGR
CNSV-2010	Demo Exist FWD Abutment RT	5	Sep-04-20	Sep-15-20	144	173000-5D	C	P2C	NSGR
CNSV-2020	Demo Exist REAR Abutment RT	5	Sep-15-20	Sep-24-20	144	173000-5D	C	P2C	NSGR
CNSV-2050	Complete Work NS Bridge Removal - Phase 2C	0		Sep-24-20	144	173000-5D	C	P2C	NSGR
Phase 3									
CP3-1000	Begin Work Phase 3	0	Nov-27-20		58	173000-5D	C	P3	
CP3-2000	Complete Work Phase 3	0		Jul-14-21	58	173000-5D	C	P3	
OH-10									
CR10-7000	Excavate Roadway Sta 85+50 - 96+00	45	Nov-27-20	Mar-09-21	58	173000-5D	C	P3	OH10
CR10-7220	Begin Work OH-10 - Phase 3	0	Nov-27-20		58	173000-5D	C	P3	OH10
CR10-7020	Construct Drainage Sta 85+50 - 95+00	10	Mar-09-21	Mar-26-21	58	173000-5D	C	P3	OH10
CR10-7010	Undercut Subgrade Sta 85+50 - 95+00	5	Apr-13-21	Apr-22-21	58	173000-5D	C	P3	OH10
CR10-7100	Place Granular Subgrade Sta 85+50 - 95+00	5	Apr-22-21	May-04-21	58	173000-5D	C	P3	OH10
CR10-7030	Place Aggregate Base Sta 85+50 - 95+00	3	May-04-21	May-07-21	58	173000-5D	C	P3	OH10
CR10-7040	Install Underdrain Sta 85+50 - 95+00	3	May-07-21	May-13-21	58	173000-5D	C	P3	OH10
CR10-7050	Construct Full Depth Pavement & Curb Sta 85+50 - 95+00	10	May-13-21	Jun-03-21	58	173000-5D w/Shutdown 12/1-3/31	C	P3	OH10
CR10-7060	Construct Lighting Duct Banks Sta 85+50 - 95+00 LT/RT	8	May-26-21	Jun-09-21	58	173000-5D	C	P3	OH10
CR10-7090	Apply Pavement Markings	2	Jun-03-21	Jun-08-21	79	173000-5D w/Shutdown 12/1-3/31	C	P3	OH10
CR10-7070	Install Lighting Sta 85+50 - 95+00	5	Jun-09-21	Jun-17-21	72	173000-5D	C	P3	OH10
CR10-7080	Erect Signs	2	Jun-09-21	Jun-11-21	75	173000-5D	C	P3	OH10
CR10-7150	Place Aggregate Base Shared-Use Path	1	Jun-09-21	Jun-10-21	58	173000-5D	C	P3	OH10
CR10-7160	Pave Shared-Use Path	1	Jun-10-21	Jun-11-21	59	173000-5D w/Shutdown 12/1-3/31	C	P3	OH10
CR10-7140	F/P Sidewalk	7	Jun-11-21	Jun-24-21	58	173000-5D	C	P3	OH10
CR10-7120	Seed & Landscape	10	Jun-24-21	Jul-14-21	58	173000-5D	C	P3	OH10
CR10-7130	Open OH-10 Roadway to Traffic Sta 85+50 - 96+00 - Phase 3	0		Jul-14-21	58	173000-5D	C	P3	OH10
Utilities									
CR10-U130	Install 16" DIP Waterline Sta 87+00 - 95+50 RT	9	Mar-09-21	Mar-25-21	61	173000-5D	C	P3	OH10
CR10-U180	Construct CPP 6x5" Duct Bank Sta 88+00 - 96+00 LT	8	Mar-26-21	Apr-13-21	58	173000-5D	C	P3	OH10
CR10-U270	Construct CPP 3x5" Duct Bank Sta 88+50 LT/RT	3	Mar-26-21	Apr-02-21	60	173000-5D	C	P3	OH10
CR10-U440	Construct CPP 3x5" Duct Bank Sta 92+50 LT/RT	3	Apr-02-21	Apr-08-21	60	173000-5D	C	P3	OH10
Phase 3A									
CRNS-7000	Construct 592 Track Feet of Proposed Main 2	6	Nov-27-20	Dec-10-20	137	173000-5D	C	P3A	NSTR
CRNS-7030	Begin Work NS RR Track Realign - Phase 3A	0	Nov-27-20		137	173000-5D	C	P3A	NSTR
CRNS-7010	Shift 1,472 Track Feet of Exist Main 2 to Proposed Main 2	10	Dec-10-20	Dec-31-20	137	173000-5D	C	P3A	NSTR
CRNS-7020	Remove 38 Track Feet of Exist Main 2	1	Dec-31-20	Jan-06-21	137	173000-5D	C	P3A	NSTR
CRNS-7040	Complete Work NS RR Track Realign - Phase 3A	0		Jan-06-21	137	173000-5D	C	P3A	NSTR
Phase 3B									
CRNS-8000	Shift 1,472 Track Feet of Exist Main 1 to Proposed Main 1	10	Jan-06-21	Jan-28-21	137	173000-5D	C	P3B	NSTR



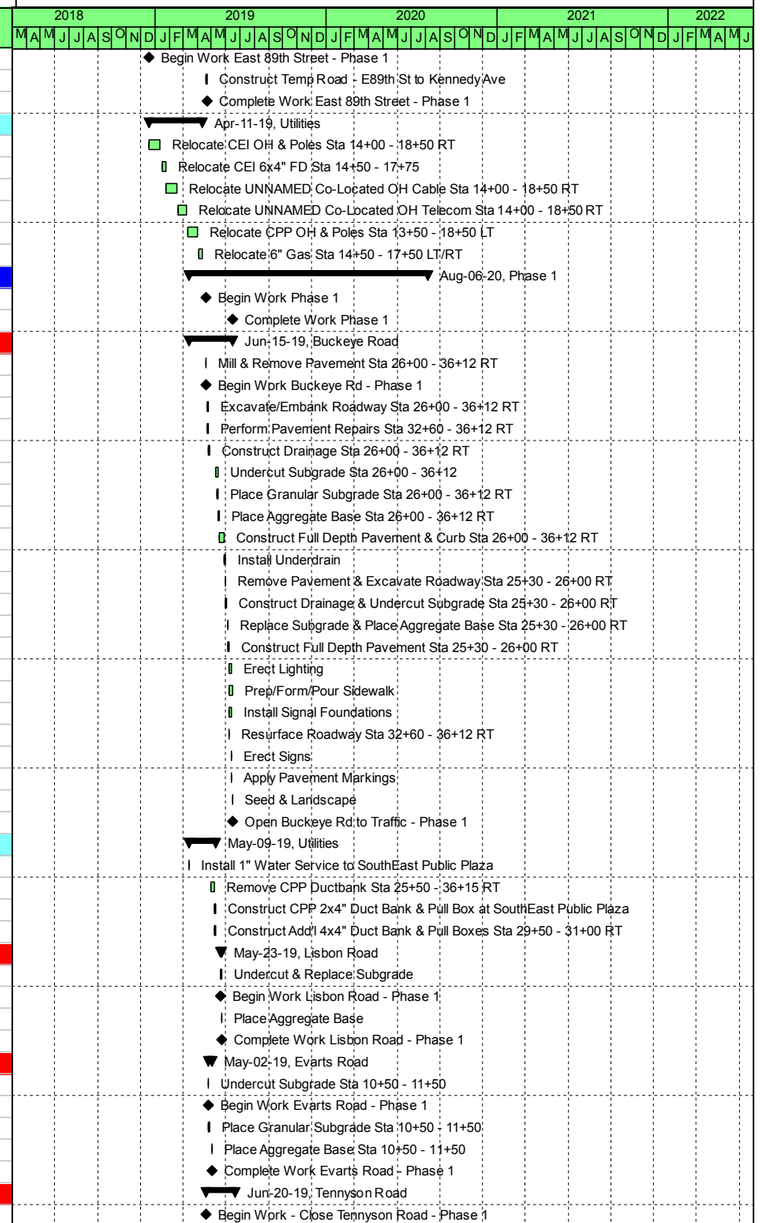
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRNS-8030	Begin Work NS RR Track Realign - Phase 3B	0	Jan-06-21		137	173000-5D	C	P3B	NSTR
CRNS-8010	Shift 326 Track Feet of Exist Main 2 to Proposed Main 1	2	Jan-28-21	Feb-03-21	137	173000-5D	C	P3B	NSTR
CRNS-8020	Remove 553 Track Feet of Exist Main 1 (Optional)	4	Feb-03-21	Feb-11-21	137	173000-5D	C	P3B	NSTR
CRNS-8040	Complete Work NS RR Track Realign - Phase 3B	0		Feb-11-21	137	173000-5D	C	P3B	NSTR
Area D - Buckeye Road / Woodland Avenue									
Pre-Phase									
DPPA-1000	Begin Work Pre-Phase	0	May-29-18		274	173000-5D	D	PPA	
DPPA-2000	Complete Work Pre-Phase	0		Apr-18-19	190	173000-5D	D	PPA	
OH-10 (General)									
CR10-8080	Begin Work OH-10 (General) - Pre-Phase	0	May-29-18		294	173000-5D	D	PPA	OH10
CR10-9000	Demolish Buildings - Parcels 2299, 2345, 2359, 2361, 2362, 2370, 2373	40	May-29-18	Aug-07-18	294	173000-5D	D	PPA	OH10
CR10-9010	Clear & Grub	15	Oct-01-18	Oct-24-18	153	173000-5D Clearing	D	PPA	OH10
CR10-9020	Complete Work OH-10 (General) - Pre-Phase	0		Oct-24-18	251	173000-5D	D	PPA	OH10
OH-10 (Lisbon Road to Buckeye Road)									
CR10-8000	Excavate/Embank Roadway Sta 96+00 - 103+50	10	Jan-30-19	Feb-15-19	266	173000-6D	D	PPA	OH10
CR10-8130	Begin Work OH-10 (Lisbon Road to Buckeye Road) - Pre-Phase	0	Jan-30-19		266	173000-6D	D	PPA	OH10
CR10-8030	Construct Drainage Sta 95+00 - 103+50	18	Feb-15-19	Mar-16-19	266	173000-6D	D	PPA	OH10
CR10-8120	Complete Work OH-10 (Lisbon Road to Buckeye Road) - Pre-Phase	0		May-03-19	272	173000-5D	D	PPA	OH10
Utilities									
CR10-U300	Install 16" DIP Waterline Sta 95+50 - 103+00 RT	8	Feb-15-19	Mar-06-19	216	173000-5D	D	PPA	OH10
CR10-U330	Install 16" DIP Waterline Sta 103+00 - 105+00 RT	4	Mar-06-19	Mar-14-19	216	173000-5D	D	PPA	OH10
CR10-U370	Install Sanitary Sewer Sta 97+00 - 103+60 LT	14	Mar-16-19	Apr-09-19	327	173000-6D	D	PPA	OH10
CR10-U500	Construct CPP 6x5" Duct Bank Sta 103+00 - 106+50 LT	5	Apr-09-19	Apr-16-19	348	173000-6D	D	PPA	OH10
CR10-U510	Construct CPP 3x5" Duct Bank Sta 96+00 LT/RT	3	Apr-09-19	Apr-12-19	276	173000-5D	D	PPA	OH10
CR10-U520	Construct CPP 3x5" Duct Bank Sta 100+00 LT/RT	3	Apr-12-19	Apr-18-19	276	173000-5D	D	PPA	OH10
CR10-U320	Construct CPP 6x5" Duct Bank Sta 96+00 - 103+00 LT	6	Apr-16-19	Apr-25-19	272	173000-5D	D	PPA	OH10
CR10-U530	Construct CPP 3x5" Duct Bank Sta 103+00 LT/RT	3	Apr-18-19	Apr-24-19	276	173000-5D	D	PPA	OH10
CR10-U390	Construct Add'l 4x4" Duct Bank & Pull Boxes Sta 98+25	3	Apr-25-19	May-03-19	272	173000-5D	D	PPA	OH10
Grand Avenue (EAST of NS)									
CRGE-3000	Begin Work Grand Avenue (EAST of NS) - Pre-Phase	0	Sep-19-18		211	173000-5D	D	PPA	GrandE
CRGE-1000	Remove Pavement Sta 92+00 - 99+50	3	Nov-28-18	Nov-30-18	211	173000-5D	D	PPA	GrandE
CRGE-2000	Excavate/Embank Roadway Sta 3+00 - 6+24	1	Jan-16-19	Jan-17-19	220	173000-5D	D	PPA	GrandE
CRGE-2010	Construct Drainage Sta 3+00 - 6+24	1	Jan-17-19	Jan-18-19	220	173000-5D	D	PPA	GrandE
CRGE-2020	Undercut & Replace Subgrade Sta 3+00 - 6+24	1	Apr-01-19	Apr-01-19	134	173000-5D w/Shutdown 12/1-3/31	D	PPA	GrandE
CRGE-2030	Place Aggregate Base Sta 3+00 - 6+24	1	Apr-02-19	Apr-02-19	134	173000-5D w/Shutdown 12/1-3/31	D	PPA	GrandE
CRGE-2040	Construct Full Depth Pavement & Curb Sta 3+00 - 6+24	4	Apr-03-19	Apr-09-19	134	173000-5D w/Shutdown 12/1-3/31	D	PPA	GrandE
CRGE-2050	Install Underdrain Sta 3+00 - 6+24	2	Apr-10-19	Apr-11-19	190	173000-5D	D	PPA	GrandE
CRGE-2070	Erect Lighting Sta 3+00 - 6+24	4	Apr-10-19	Apr-16-19	192	173000-5D	D	PPA	GrandE
CRGE-2080	Prep/Form/Pour Sidewalk Sta 3+00 - 6+24 LT/RT	4	Apr-12-19	Apr-18-19	190	173000-5D	D	PPA	GrandE
CRGE-2090	Open Grand Ave (EAST of NS) to Traffic - Pre-Phase	0		Apr-18-19	190	173000-5D	D	PPA	GrandE
Utilities									
CRGE-U200	Relocate CEI OH & Poles Sta 93+00 - 99+50 LT/RT	10	Sep-19-18	Oct-05-18	211	173000-5D	D	PPA	GrandE
CRGE-U240	Relocate 4" & 8" Gas Mains	5	Sep-19-18	Sep-27-18	244	173000-5D	D	PPA	GrandE
CRGE-U250	Relocate 4x4" FD CEI Sta 93+10 - 96+50	5	Oct-09-18	Oct-16-18	211	173000-5D	D	PPA	GrandE
CRGE-U220	Relocate UNNAMED Co-Located OH Cable Sta 93+00 - 99+50 LT/RT	5	Oct-17-18	Oct-24-18	211	173000-5D	D	PPA	GrandE
CRGE-U210	Relocate UNNAMED Co-Located OH Telecom Sta 93+00 - 99+50 LT/RT	5	Oct-25-18	Nov-06-18	211	173000-5D	D	PPA	GrandE
CRGE-U230	Relocate CPP OH & Poles Sta 94+50 - 97+00 LT	10	Nov-07-18	Nov-23-18	211	173000-5D	D	PPA	GrandE
CRGE-U100	Remove 8" Waterline Sta 91+00 - 99+30 RT	8	Dec-06-18	Dec-19-18	208	173000-5D	D	PPA	GrandE
CRGE-U110	Remove 16" Waterline Sta 91+00 - 99+10 RT	8	Dec-20-18	Jan-10-19	208	173000-5D	D	PPA	GrandE
CRGE-U120	Remove 15x24 Brick Sewer Sta 92+00 - 98+00	6	Jan-16-19	Jan-30-19	206	173000-5D	D	PPA	GrandE
Evins Avenue									
CREI-3000	Begin Work Evins Avenue - Pre-Phase	0	Oct-17-18		214	173000-5D	D	PPA	Evins
CREI-1000	Remove Pavement	1	Apr-19-19	Apr-19-19	284	173000-5D	D	PPA	Evins
CREI-1020	Complete Work Evins Ave - Pre-Phase	0		Apr-25-19	294	173000-5D	D	PPA	Evins



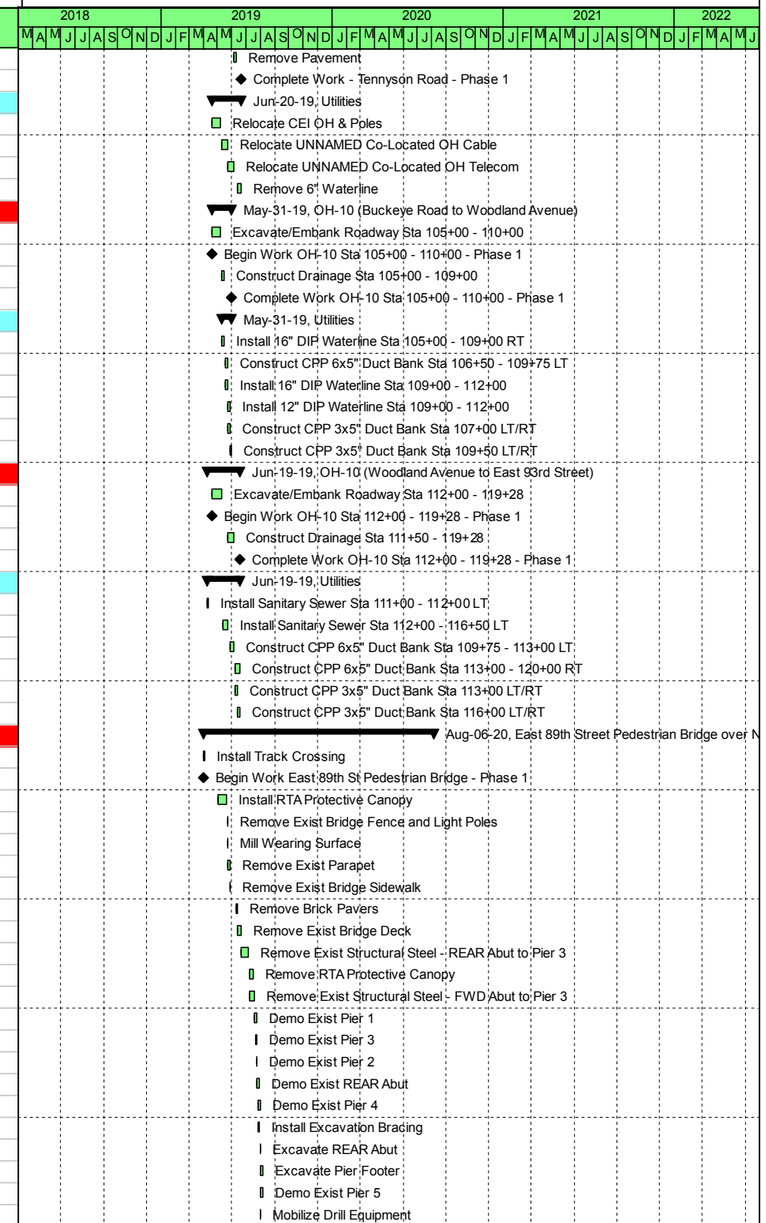
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
	Utilities								
CREI-U110	Relocate CEI OH & Poles	5	Oct-17-18	Oct-24-18	214	173000-5D	D	PPA	Evins
CREI-U150	Relocate CEI 4x4" FD	2	Oct-25-18	Oct-26-18	214	173000-5D	D	PPA	Evins
CREI-U130	Relocate UNNAMED Co-Located OH Cable	3	Oct-31-18	Nov-06-18	240	173000-5D	D	PPA	Evins
CREI-U120	Relocate UNNAMED Co-Located OH Telecom	3	Nov-07-18	Nov-09-18	240	173000-5D	D	PPA	Evins
CREI-U140	Relocate Gas Main	3	Nov-13-18	Nov-15-18	356	173000-5D	D	PPA	Evins
CREI-U200	Remove 8" Waterline	3	Apr-23-19	Apr-25-19	284	173000-5D	D	PPA	Evins
Lisbon Road									
CRLR-3000	Begin Work Lisbon Road - Pre-Phase	0	Oct-17-18		221	173000-5D	D	PPA	Lisbon
CRLR-1000	Remove Pavement	1	Apr-19-19	Apr-19-19	286	173000-5D	D	PPA	Lisbon
CRLR-1010	Excavate/Embank Roadway	2	May-10-19	May-14-19	284	173000-5D	D	PPA	Lisbon
CRLR-1020	Construct Drainage	3	May-15-19	May-17-19	284	173000-5D	D	PPA	Lisbon
CRLR-1080	Complete Work Lisbon Rd - Pre-Phase	0		May-17-19	284	173000-5D	D	PPA	Lisbon
	Utilities								
CRLR-U100	Relocate CEI OH & Pole Sta 10+17 RT	2	Oct-31-18	Nov-02-18	214	173000-5D	D	PPA	Lisbon
CRLR-U140	Relocate CEI 4x4" FD	4	Nov-06-18	Nov-09-18	214	173000-5D	D	PPA	Lisbon
CRLR-U120	Relocate UNNAMED Co-Located OH Cable RT	2	Nov-13-18	Nov-14-18	355	173000-5D	D	PPA	Lisbon
CRLR-U110	Relocate UNNAMED Co-Located OH Telecom RT	2	Nov-16-18	Nov-20-18	354	173000-5D	D	PPA	Lisbon
CRLR-U130	Relocate Gas Main	2	Nov-21-18	Nov-23-18	354	173000-5D	D	PPA	Lisbon
CRLR-U200	Remove 6" Waterline Sta 10+00 - 10+70	1	Apr-23-19	Apr-23-19	286	173000-5D	D	PPA	Lisbon
CRLR-U210	Install 12" Waterline - Lisbon Rd to OH-10	5	Apr-26-19	May-09-19	284	173000-5D	D	PPA	Lisbon
Evarts Road									
CREA-3000	Begin Work Evarts Road - Pre-Phase	0	May-29-18		296	173000-5D	D	PPA	Evarts
CREA-1080	Mill Roadway	1	Apr-01-19	Apr-01-19	258	173000-5D w/Shutdown 12/1-3/31	D	PPA	Evarts
CREA-1000	Remove Pavement Sta 9+50 - 11+50	1	Apr-02-19	Apr-02-19	355	173000-5D	D	PPA	Evarts
CREA-1010	Excavate/Embank Roadway Sta 9+50 - 11+50	1	Apr-23-19	Apr-23-19	355	173000-5D	D	PPA	Evarts
CREA-1020	Construct Drainage	1	Apr-24-19	Apr-24-19	355	173000-5D	D	PPA	Evarts
CREA-1120	Complete Work Evarts Road - Pre-Phase	0		Apr-24-19	355	173000-5D	D	PPA	Evarts
	Utilities								
CREA-U210	Relocate CPP OH & Poles Sta 9+50 - 11+00 RT	3	Oct-31-18	Nov-06-18	211	173000-5D	D	PPA	Evarts
CREA-U200	Relocate AT&T OH & Poles Sta 9+50 - 11+00 RT	3	Nov-13-18	Nov-15-18	240	173000-5D	D	PPA	Evarts
CREA-U100	Remove 6" Waterline Sta 9+50 - 12+50 LT	2	Apr-03-19	Apr-04-19	355	173000-5D	D	PPA	Evarts
CREA-U110	Remove 16" Waterline Sta 9+60 - 11+50 RT	2	Apr-05-19	Apr-09-19	355	173000-5D	D	PPA	Evarts
CREA-U120	Install 16" Waterline - Evarts Rd to Grand Ave	3	Apr-10-19	Apr-12-19	355	173000-5D	D	PPA	Evarts
CREA-U130	Construct CPP 3x5" Duct Bank Sta 10+50 - 12+00 RT	4	Apr-16-19	Apr-19-19	355	173000-5D	D	PPA	Evarts
Buckeye Road									
CRBK-1030	Begin Work Buckeye Rd - Pre-Phase	0	Nov-13-18		214	173000-5D	D	PPA	Buckeye
CRBK-1020	Construct Drainage Tie-In D312A - D311	3	Jan-16-19	Jan-23-19	217	173000-5D	D	PPA	Buckeye
CRBK-1000	Construct Drainage Tie-In D312 - D314	2	Jan-25-19	Jan-31-19	227	173000-5D	D	PPA	Buckeye
CRBK-1040	Complete Work Buckeye Rd - Pre-Phase	0		Jan-31-19	227	173000-5D	D	PPA	Buckeye
	Utilities								
CRBK-U130	Relocate CEI OH & Poles Sta 29+00 - 36+00 RT	10	Nov-13-18	Nov-30-18	214	173000-5D	D	PPA	Buckeye
CRBK-U140	Relocate UNNAMED Co-Located OH Telecom Sta 29+00 - 36+00 RT	10	Dec-03-18	Dec-18-18	228	173000-5D	D	PPA	Buckeye
CRBK-U150	Relocate CEI 1x4" FD Sta 26+90 - 28+10 RT/LT	5	Dec-03-18	Dec-10-18	214	173000-5D	D	PPA	Buckeye
CRBK-U110	Relocate CPP OH & Poles Sta 30+00 - 33+50 LT	5	Dec-19-18	Jan-02-19	233	173000-5D	D	PPA	Buckeye
CRBK-U120	Relocate UNNAMED Co-Located OH Cable Sta 30+00 - 33+50 LT	5	Jan-03-19	Jan-11-19	233	173000-5D	D	PPA	Buckeye
CRBK-U100	Install Sanitary Sewer Sta 29+15 - 30+00 RT	2	Jan-23-19	Jan-25-19	227	173000-5D	D	PPA	Buckeye
East 87th Street									
CR87-1000	Begin Work East 87th St - Pre-Phase	0	Dec-11-18		214	173000-5D	D	PPA	E87th
CR87-1010	Complete Work East 87th St - Pre-Phase	0		Jan-02-19	293	173000-5D	D	PPA	E87th
	Utilities								
CR87-U100	Relocate CEI OH & Poles	5	Dec-11-18	Dec-18-18	214	173000-5D	D	PPA	E87th
CR87-U110	Relocate UNNAMED Co-Located OH Telecom	5	Dec-19-18	Jan-02-19	234	173000-5D	D	PPA	E87th
East 89th Street									



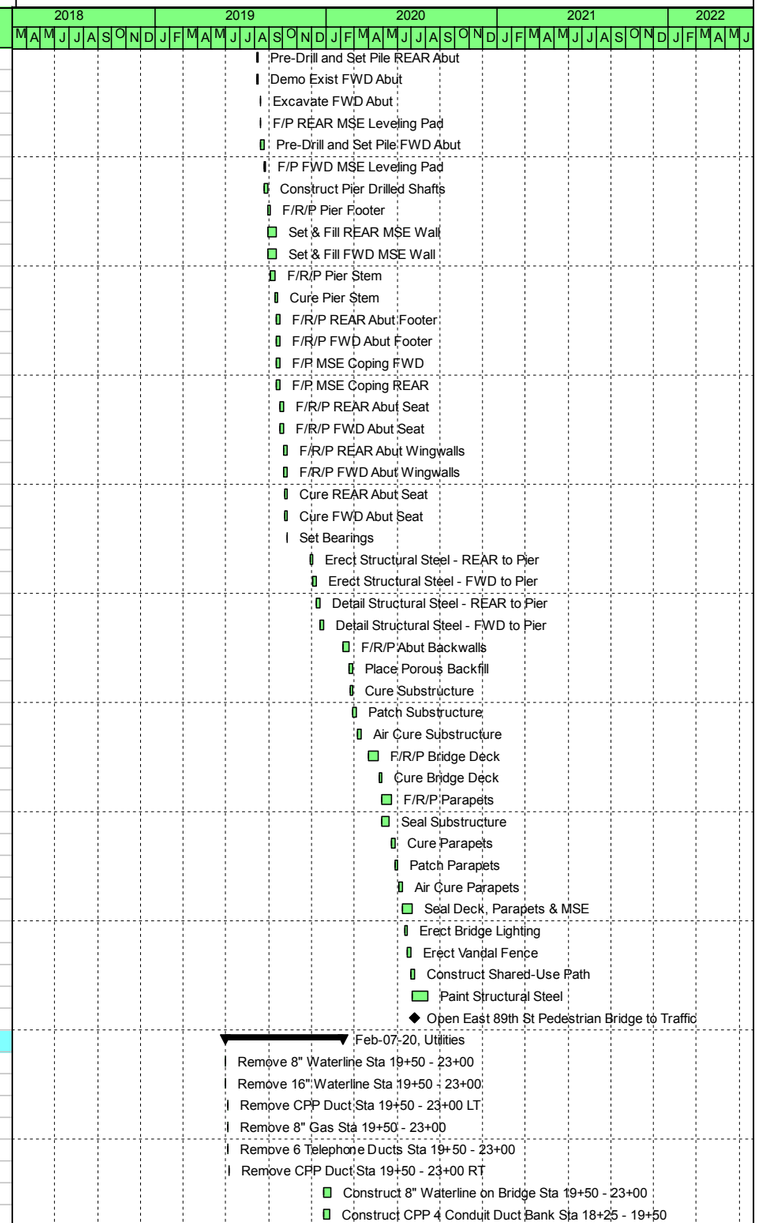
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR89-2010	Begin Work East 89th Street - Phase 1	0	Dec-19-18		214	173000-5D	D	PPA	E89th
CR89-2000	Construct Temp Road - E89th St to Kennedy Ave	2	Apr-19-19	Apr-23-19	236	173000-5D	D	PPA	E89th
CR89-2020	Complete Work East 89th Street - Phase 1	0		Apr-23-19	236	173000-5D	D	PPA	E89th
Utilities									
CR89-U230	Relocate CEI OH & Poles Sta 14+00 - 18+50 RT	10	Dec-19-18	Jan-11-19	214	173000-5D	D	PPA	E89th
CR89-U260	Relocate CEI 6x4" FD Sta 14+50 - 17+75	5	Jan-16-19	Jan-24-19	214	173000-5D	D	PPA	E89th
CR89-U250	Relocate UNNAMED Co-Located OH Cable Sta 14+00 - 18+50 RT	10	Jan-25-19	Feb-15-19	214	173000-5D	D	PPA	E89th
CR89-U240	Relocate UNNAMED Co-Located OH Telecom Sta 14+00 - 18+50 RT	10	Feb-20-19	Mar-08-19	214	173000-5D	D	PPA	E89th
CR89-U220	Relocate CPP OH & Poles Sta 13+50 - 18+50 LT	10	Mar-13-19	Apr-02-19	214	173000-5D	D	PPA	E89th
CR89-U200	Relocate 6" Gas Sta 14+50 - 17+50 LT/RT	6	Apr-03-19	Apr-11-19	240	173000-5D	D	PPA	E89th
Phase 1									
DP1-1000	Begin Work Phase 1	0	Apr-19-19		245	173000-6D	D	P1	
DP1-2000	Complete Work Phase 1	0		Jun-15-19	258	173000-6D	D	P1	
Buckeye Road									
CRBK-2010	Mill & Remove Pavement Sta 26+00 - 36+12 RT	2	Apr-19-19	Apr-20-19	257	173000-6D	D	P1	Buckeye
CRBK-2000	Begin Work Buckeye Rd - Phase 1	0	Apr-19-19		257	173000-6D	D	P1	Buckeye
CRBK-2020	Excavate/Embank Roadway Sta 26+00 - 36+12 RT	2	Apr-23-19	Apr-24-19	257	173000-6D	D	P1	Buckeye
CRBK-2180	Perform Pavement Repairs Sta 32+60 - 36+12 RT	3	Apr-23-19	Apr-25-19	290	173000-6D	D	P1	Buckeye
CRBK-2030	Construct Drainage Sta 26+00 - 36+12 RT	3	Apr-25-19	Apr-27-19	257	173000-6D	D	P1	Buckeye
CRBK-2040	Undercut Subgrade Sta 26+00 - 36+12	3	May-10-19	May-14-19	257	173000-6D	D	P1	Buckeye
CRBK-2050	Place Granular Subgrade Sta 26+00 - 36+12 RT	2	May-14-19	May-15-19	257	173000-6D	D	P1	Buckeye
CRBK-2060	Place Aggregate Base Sta 26+00 - 36+12 RT	2	May-16-19	May-17-19	257	173000-6D	D	P1	Buckeye
CRBK-2070	Construct Full Depth Pavement & Curb Sta 26+00 - 36+12 RT	6	May-18-19	May-28-19	185	173000-6D w/Shutdown 12/1-3/31	D	P1	Buckeye
CRBK-2080	Install Underdrain	2	May-29-19	May-30-19	258	173000-6D	D	P1	Buckeye
CRBK-2500	Remove Pavement & Excavate Roadway Sta 25+30 - 26+00 RT	1	May-31-19	May-31-19	258	173000-6D	D	P1	Buckeye
CRBK-2520	Construct Drainage & Undercut Subgrade Sta 25+30 - 26+00 RT	1	Jun-01-19	Jun-01-19	258	173000-6D	D	P1	Buckeye
CRBK-2530	Replace Subgrade & Place Aggregate Base Sta 25+30 - 26+00 RT	1	Jun-04-19	Jun-04-19	258	173000-6D	D	P1	Buckeye
CRBK-2560	Construct Full Depth Pavement Sta 25+30 - 26+00 RT	3	Jun-05-19	Jun-07-19	185	173000-6D w/Shutdown 12/1-3/31	D	P1	Buckeye
CRBK-2090	Erect Lighting	3	Jun-08-19	Jun-12-19	259	173000-6D	D	P1	Buckeye
CRBK-2100	Prep/Form/Pour Sidewalk	5	Jun-08-19	Jun-14-19	258	173000-6D	D	P1	Buckeye
CRBK-2110	Install Signal Foundations	3	Jun-08-19	Jun-12-19	260	173000-6D	D	P1	Buckeye
CRBK-2170	Resurface Roadway Sta 32+60 - 36+12 RT	1	Jun-08-19	Jun-08-19	262	173000-6D	D	P1	Buckeye
CRBK-2120	Erect Signs	1	Jun-13-19	Jun-13-19	259	173000-6D	D	P1	Buckeye
CRBK-2130	Apply Pavement Markings	1	Jun-13-19	Jun-13-19	187	173000-6D w/Shutdown 12/1-3/31	D	P1	Buckeye
CRBK-2140	Seed & Landscape	1	Jun-15-19	Jun-15-19	258	173000-6D	D	P1	Buckeye
CRBK-2150	Open Buckeye Rd to Traffic - Phase 1	0		Jun-15-19	258	173000-6D	D	P1	Buckeye
Utilities									
CRBK-U330	Install 1" Water Service to SouthEast Public Plaza	1	Mar-14-19	Mar-15-19	293	173000-6D	D	P1	Buckeye
CRBK-U300	Remove CPP Ductbank Sta 25+50 - 36+15 RT	5	May-01-19	May-07-19	257	173000-6D	D	P1	Buckeye
CRBK-U310	Construct CPP 2x4" Duct Bank & Pull Box at SouthEast Public Plaza	2	May-08-19	May-09-19	282	173000-6D	D	P1	Buckeye
CRBK-U320	Construct Add'l 4x4" Duct Bank & Pull Boxes Sta 29+50 - 31+00 RT	2	May-08-19	May-09-19	257	173000-6D	D	P1	Buckeye
Lisbon Road									
CRLR-1030	Undercut & Replace Subgrade	2	May-21-19	May-22-19	284	173000-5D	D	P1	Lisbon
CRLR-1100	Begin Work Lisbon Road - Phase 1	0	May-21-19		284	173000-5D	D	P1	Lisbon
CRLR-1040	Place Aggregate Base	1	May-23-19	May-23-19	284	173000-5D	D	P1	Lisbon
CRLR-1070	Complete Work Lisbon Road - Phase 1	0		May-23-19	284	173000-5D	D	P1	Lisbon
Evarts Road									
CREA-1030	Undercut Subgrade Sta 10+50 - 11+50	1	Apr-25-19	Apr-25-19	355	173000-5D	D	P1	Evarts
CREA-1130	Begin Work Evarts Road - Phase 1	0	Apr-25-19		355	173000-5D	D	P1	Evarts
CREA-1040	Place Granular Subgrade Sta 10+50 - 11+50	1	Apr-26-19	Apr-26-19	355	173000-5D	D	P1	Evarts
CREA-1050	Place Aggregate Base Sta 10+50 - 11+50	1	May-02-19	May-02-19	355	173000-5D	D	P1	Evarts
CREA-1100	Complete Work Evarts Road - Phase 1	0		May-02-19	355	173000-5D	D	P1	Evarts
Tennyson Road									
CRTR-1010	Begin Work - Close Tennyson Road - Phase 1	0	Apr-19-19		190	173000-5D	D	P1	Tenny



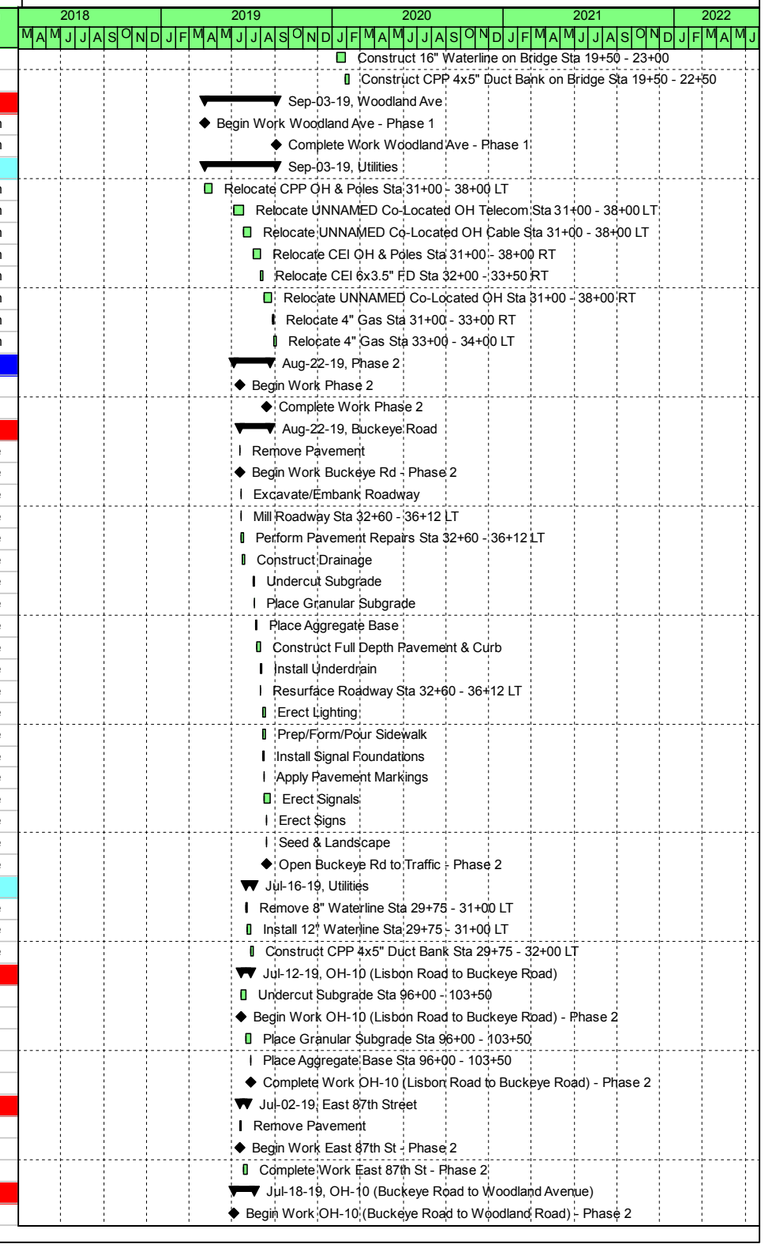
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRTR-1000	Remove Pavement	3	Jun-06-19	Jun-11-19	247	173000-5D	D	P1	Tenny
CRTR-1020	Complete Work - Tennyson Road - Phase 1	0		Jun-20-19	247	173000-5D	D	P1	Tenny
Utilities									
CRTR-U110	Relocate CEI OH & Poles	8	Apr-19-19	May-08-19	190	173000-5D	D	P1	Tenny
CRTR-U130	Relocate UNNAMED Co-Located OH Cable	8	May-09-19	May-22-19	190	173000-5D	D	P1	Tenny
CRTR-U120	Relocate UNNAMED Co-Located OH Telecom	8	May-23-19	Jun-05-19	190	173000-5D	D	P1	Tenny
CRTR-U100	Remove 6" Waterline	5	Jun-12-19	Jun-20-19	247	173000-5D	D	P1	Tenny
OH-10 (Buckeye Road to Woodland Avenue)									
CR10-8200	Excavate/Embank Roadway Sta 105+00 - 110+00	8	Apr-19-19	May-08-19	230	173000-5D	D	P1	OH10
CR10-8280	Begin Work OH-10 Sta 105+00 - 110+00 - Phase 1	0	Apr-19-19		230	173000-5D	D	P1	OH10
CR10-8210	Construct Drainage Sta 105+00 - 109+00	5	May-09-19	May-16-19	341	173000-5D	D	P1	OH10
CR10-8320	Complete Work OH-10 Sta 105+00 - 110+00 - Phase 1	0		May-31-19	341	173000-5D	D	P1	OH10
Utilities									
CR10-U310	Install 16" DIP Waterline Sta 105+00 - 109+00 RT	5	May-09-19	May-16-19	230	173000-5D	D	P1	OH10
CR10-U340	Construct CPP 6x5" Duct Bank Sta 106+50 - 109+75 LT	3	May-17-19	May-22-19	341	173000-5D	D	P1	OH10
CR10-U410	Install 16" DIP Waterline Sta 109+00 - 112+00	3	May-17-19	May-22-19	239	173000-5D	D	P1	OH10
CR10-U400	Install 12" DIP Waterline Sta 109+00 - 112+00	3	May-23-19	May-28-19	239	173000-5D	D	P1	OH10
CR10-U430	Construct CPP 3x5" Duct Bank Sta 107+00 LT/RT	3	May-23-19	May-28-19	341	173000-5D	D	P1	OH10
CR10-U450	Construct CPP 3x5" Duct Bank Sta 109+50 LT/RT	3	May-29-19	May-31-19	341	173000-5D	D	P1	OH10
OH-10 (Woodland Avenue to East 93rd Street)									
CR10-8400	Excavate/Embank Roadway Sta 112+00 - 119+28	10	Apr-19-19	May-10-19	339	173000-5D	D	P1	OH10
CR10-8490	Begin Work OH-10 Sta 112+00 - 119+28 - Phase 1	0	Apr-19-19		339	173000-5D	D	P1	OH10
CR10-8410	Construct Drainage Sta 111+50 - 119+28	9	May-23-19	Jun-06-19	339	173000-5D	D	P1	OH10
CR10-8500	Complete Work OH-10 Sta 112+00 - 119+28 - Phase 1	0		Jun-19-19	339	173000-5D	D	P1	OH10
Utilities									
CR10-U420	Install Sanitary Sewer Sta 111+00 - 112+00 LT	2	Apr-09-19	Apr-11-19	256	173000-5D	D	P1	OH10
CR10-U380	Install Sanitary Sewer Sta 112+00 - 116+50 LT	6	May-14-19	May-22-19	339	173000-5D	D	P1	OH10
CR10-U350	Construct CPP 6x5" Duct Bank Sta 109+75 - 113+00 LT	5	May-29-19	Jun-05-19	239	173000-5D	D	P1	OH10
CR10-U360	Construct CPP 6x5" Duct Bank Sta 113+00 - 120+00 RT	6	Jun-07-19	Jun-19-19	339	173000-5D	D	P1	OH10
CR10-U460	Construct CPP 3x5" Duct Bank Sta 113+00 LT/RT	3	Jun-07-19	Jun-12-19	339	173000-5D	D	P1	OH10
CR10-U470	Construct CPP 3x5" Duct Bank Sta 116+00 LT/RT	3	Jun-13-19	Jun-19-19	339	173000-5D	D	P1	OH10
East 89th Street Pedestrian Bridge over NS & GCRTA									
CB89-1000	Install Track Crossing	2	Apr-02-19	Apr-03-19	180	173000-5D	D	P1	E89thB
CB89-1280	Begin Work East 89th St Pedestrian Bridge - Phase 1	0	Apr-02-19		180	173000-5D	D	P1	E89thB
CB89-1010	Install RTA Protective Canopy	10	May-02-19	May-21-19	166	173000-5D	D	P1	E89thB
CB89-1040	Remove Exist Bridge Fence and Light Poles	1	May-22-19	May-22-19	166	173000-5D	D	P1	E89thB
CB89-1020	Mill Wearing Surface	1	May-23-19	May-23-19	166	173000-5D	D	P1	E89thB
CB89-1050	Remove Exist Parapet	2	May-24-19	May-28-19	166	173000-5D	D	P1	E89thB
CB89-1060	Remove Exist Bridge Sidewalk	1	May-29-19	May-29-19	166	173000-5D	D	P1	E89thB
CB89-1030	Remove Brick Pavers	2	Jun-11-19	Jun-12-19	166	173000-5D	D	P1	E89thB
CB89-1070	Remove Exist Bridge Deck	4	Jun-13-19	Jun-20-19	166	173000-5D	D	P1	E89thB
CB89-1080	Remove Exist Structural Steel - REAR Abut to Pier 3	8	Jun-21-19	Jul-05-19	166	173000-5D	D	P1	E89thB
CB89-1090	Remove RTA Protective Canopy	6	Jul-09-19	Jul-17-19	168	173000-5D	D	P1	E89thB
CB89-1270	Remove Exist Structural Steel - FWD Abut to Pier 3	8	Jul-09-19	Jul-19-19	166	173000-5D	D	P1	E89thB
CB89-1100	Demo Exist Pier 1	3	Jul-18-19	Jul-23-19	168	173000-5D	D	P1	E89thB
CB89-1120	Demo Exist Pier 3	3	Jul-23-19	Jul-25-19	166	173000-5D	D	P1	E89thB
CB89-1110	Demo Exist Pier 2	1	Jul-24-19	Jul-24-19	168	173000-5D	D	P1	E89thB
CB89-1150	Demo Exist REAR Abut	3	Jul-25-19	Jul-30-19	168	173000-5D	D	P1	E89thB
CB89-1130	Demo Exist Pier 4	3	Jul-26-19	Jul-31-19	166	173000-5D	D	P1	E89thB
CB89-1660	Install Excavation Bracing	2	Jul-26-19	Jul-30-19	181	173000-5D	D	P1	E89thB
CB89-1170	Excavate REAR Abut	2	Jul-31-19	Aug-01-19	168	173000-5D	D	P1	E89thB
CB89-1560	Excavate Pier Footer	4	Jul-31-19	Aug-06-19	181	173000-5D	D	P1	E89thB
CB89-1140	Demo Exist Pier 5	3	Aug-01-19	Aug-06-19	166	173000-5D	D	P1	E89thB
CB89-1190	Mobilize Drill Equipment	1	Aug-02-19	Aug-02-19	168	173000-5D	D	P1	E89thB



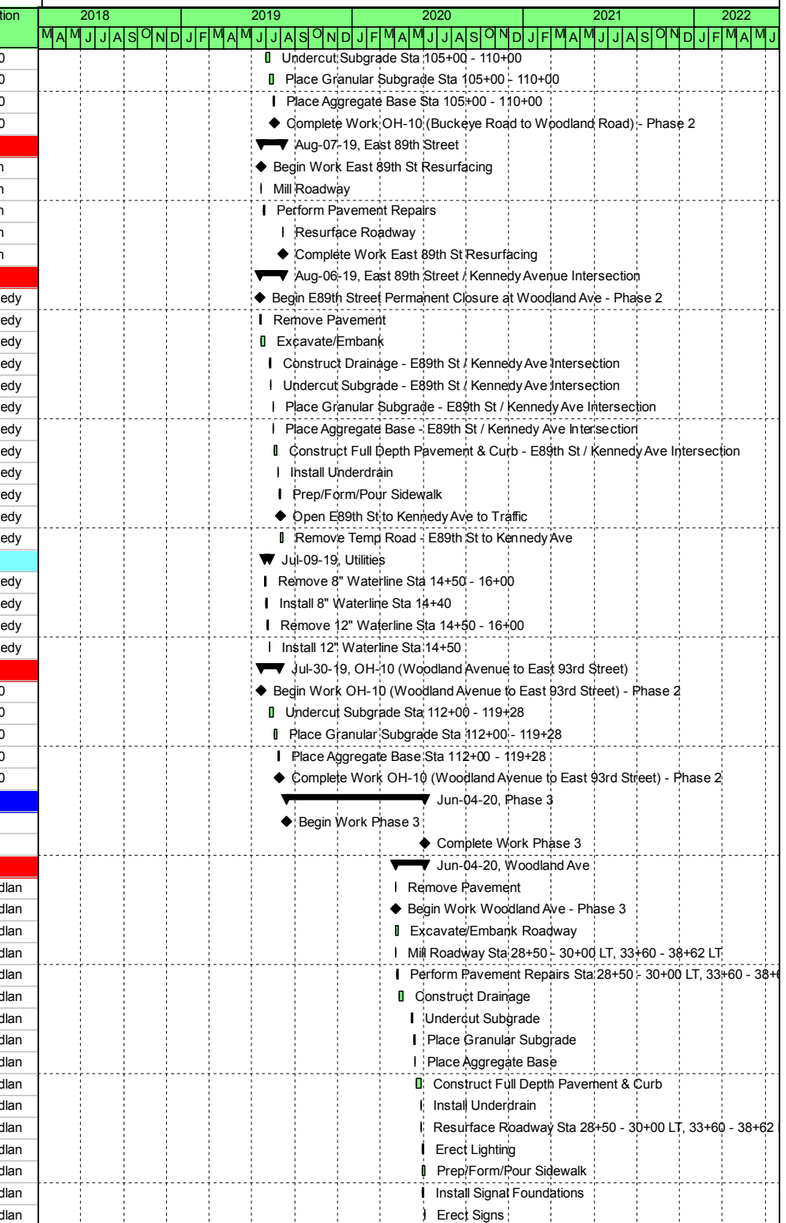
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CB89-1200	Pre-Drill and Set Pile REAR Abut	4	Aug-06-19	Aug-09-19	168	173000-5D	D	P1	E89thB
CB89-1160	Demo Exist FWD Abut	3	Aug-07-19	Aug-09-19	166	173000-5D	D	P1	E89thB
CB89-1180	Excavate FWD Abut	2	Aug-13-19	Aug-14-19	166	173000-5D	D	P1	E89thB
CB89-1230	F/P REAR MSE Leveling Pad	2	Aug-13-19	Aug-14-19	172	173000-5D	D	P1	E89thB
CB89-1210	Pre-Drill and Set Pile FWD Abut	4	Aug-15-19	Aug-21-19	166	173000-5D	D	P1	E89thB
CB89-1250	F/P FWD MSE Leveling Pad	2	Aug-22-19	Aug-23-19	166	173000-5D	D	P1	E89thB
CB89-1390	Construct Pier Drilled Shafts	4	Aug-22-19	Aug-28-19	172	173000-5D	D	P1	E89thB
CB89-1400	F/R/P Pier Footer	4	Aug-29-19	Sep-04-19	172	173000-5D	D	P1	E89thB
CB89-1240	Set & Fill REAR MSE Wall	10	Aug-29-19	Sep-17-19	163	173000-5D	D	P1	E89thB
CB89-1260	Set & Fill FWD MSE Wall	10	Aug-29-19	Sep-17-19	163	173000-5D	D	P1	E89thB
CB89-1410	F/R/P Pier Stem	6	Sep-05-19	Sep-13-19	172	173000-5D	D	P1	E89thB
CB89-1420	Cure Pier Stem	7	Sep-14-19	Sep-20-19	342	173000-7D Cure	D	P1	E89thB
CB89-1300	F/R/P REAR Abut Footer	4	Sep-17-19	Sep-25-19	163	173000-5D	D	P1	E89thB
CB89-1340	F/R/P FWD Abut Footer	4	Sep-17-19	Sep-25-19	163	173000-5D	D	P1	E89thB
CB89-1290	F/P MSE Coping FWD	4	Sep-17-19	Sep-25-19	466	173000-5D	D	P1	E89thB
CB89-1670	F/P MSE Coping REAR	4	Sep-17-19	Sep-25-19	466	173000-5D	D	P1	E89thB
CB89-1310	F/R/P REAR Abut Seat	4	Sep-25-19	Oct-03-19	163	173000-5D	D	P1	E89thB
CB89-1350	F/R/P FWD Abut Seat	4	Sep-25-19	Oct-03-19	163	173000-5D	D	P1	E89thB
CB89-1330	F/R/P REAR Abut Wingwalls	5	Oct-03-19	Oct-11-19	342	173000-5D	D	P1	E89thB
CB89-1370	F/R/P FWD Abut Wingwalls	5	Oct-03-19	Oct-11-19	342	173000-5D	D	P1	E89thB
CB89-1320	Cure REAR Abut Seat	7	Oct-04-19	Oct-10-19	322	173000-7D Cure	D	P1	E89thB
CB89-1360	Cure FWD Abut Seat	7	Oct-04-19	Oct-10-19	322	173000-7D Cure	D	P1	E89thB
CB89-1430	Set Bearings	1	Oct-10-19	Oct-11-19	163	173000-5D	D	P1	E89thB
CB89-1440	Erect Structural Steel - REAR to Pier	3	Nov-27-19	Dec-04-19	140	173000-5D	D	P1	E89thB
CB89-1450	Erect Structural Steel - FWD to Pier	3	Dec-04-19	Dec-10-19	140	173000-5D	D	P1	E89thB
CB89-1570	Detail Structural Steel - REAR to Pier	5	Dec-10-19	Dec-18-19	140	173000-5D	D	P1	E89thB
CB89-1580	Detail Structural Steel - FWD to Pier	5	Dec-18-19	Dec-27-19	140	173000-5D	D	P1	E89thB
CB89-1460	F/R/P Abut Backwalls	5	Feb-07-20	Feb-20-20	140	173000-5D	D	P1	E89thB
CB89-1380	Place Porous Backfill	2	Feb-20-20	Feb-26-20	281	173000-5D	D	P1	E89thB
CB89-1630	Cure Substructure	7	Feb-21-20	Feb-27-20	783	173000-7D Cure	D	P1	E89thB
CB89-1650	Patch Substructure	5	Feb-27-20	Mar-06-20	396	173000-5D	D	P1	E89thB
CB89-1640	Air Cure Substructure	10	Mar-07-20	Mar-16-20	784	173000-7D Cure	D	P1	E89thB
CB89-1470	F/R/P Bridge Deck	12	Apr-01-20	Apr-22-20	122	173000-5D w/Shutdown 12/1-3/31	D	P1	E89thB
CB89-1480	Cure Bridge Deck	7	Apr-23-20	Apr-29-20	351	173000-7D Cure	D	P1	E89thB
CB89-1490	F/R/P Parapets	10	Apr-29-20	May-20-20	179	173000-5D	D	P1	E89thB
CB89-1540	Seal Substructure	9	Apr-29-20	May-15-20	233	173000-5D Paint/Shutdown 11/1-3/31	D	P1	E89thB
CB89-1500	Cure Parapets	7	May-21-20	May-27-20	351	173000-7D Cure	D	P1	E89thB
CB89-1620	Patch Parapets	3	May-27-20	Jun-02-20	218	173000-5D	D	P1	E89thB
CB89-1520	Air Cure Parapets	10	Jun-03-20	Jun-12-20	423	173000-7D Cure	D	P1	E89thB
CB89-1530	Seal Deck, Parapets & MSE	10	Jun-12-20	Jul-02-20	145	173000-5D Paint/Shutdown 11/1-3/31	D	P1	E89thB
CB89-1610	Erect Bridge Lighting	2	Jun-18-20	Jun-23-20	216	173000-5D	D	P1	E89thB
CB89-1510	Erect Vandal Fence	4	Jun-23-20	Jun-30-20	216	173000-5D	D	P1	E89thB
CB89-1590	Construct Shared-Use Path	3	Jun-30-20	Jul-07-20	160	173000-5D w/Shutdown 12/1-3/31	D	P1	E89thB
CB89-1550	Paint Structural Steel	20	Jul-02-20	Aug-06-20	207	173000-5D Paint/Shutdown 11/1-3/31	D	P1	E89thB
CB89-1600	Open East 89th St Pedestrian Bridge to Traffic	0		Jul-07-20	218	173000-5D	D	P1	E89thB
Utilities									
CB89-U100	Remove 8" Waterline Sta 19+50 - 23+00	1	May-30-19	May-30-19	166	173000-5D	D	P1	E89thB
CB89-U110	Remove 16" Waterline Sta 19+50 - 23+00	1	May-31-19	May-31-19	166	173000-5D	D	P1	E89thB
CB89-U150	Remove CPP Duct Sta 19+50 - 23+00 LT	1	Jun-04-19	Jun-04-19	166	173000-5D	D	P1	E89thB
CB89-U140	Remove 8" Gas Sta 19+50 - 23+00	1	Jun-05-19	Jun-05-19	166	173000-5D	D	P1	E89thB
CB89-U160	Remove 6 Telephone Ducts Sta 19+50 - 23+00	1	Jun-06-19	Jun-06-19	166	173000-5D	D	P1	E89thB
CB89-U170	Remove CPP Duct Sta 19+50 - 23+00 RT	1	Jun-07-19	Jun-07-19	166	173000-5D	D	P1	E89thB
CB89-U120	Construct 8" Waterline on Bridge Sta 19+50 - 23+00	5	Dec-27-19	Jan-10-20	140	173000-5D	D	P1	E89thB
CB89-U190	Construct CPP 4 Conduit Duct Bank Sta 18+25 - 19+50	3	Dec-27-19	Jan-08-20	208	173000-5D	D	P1	E89thB



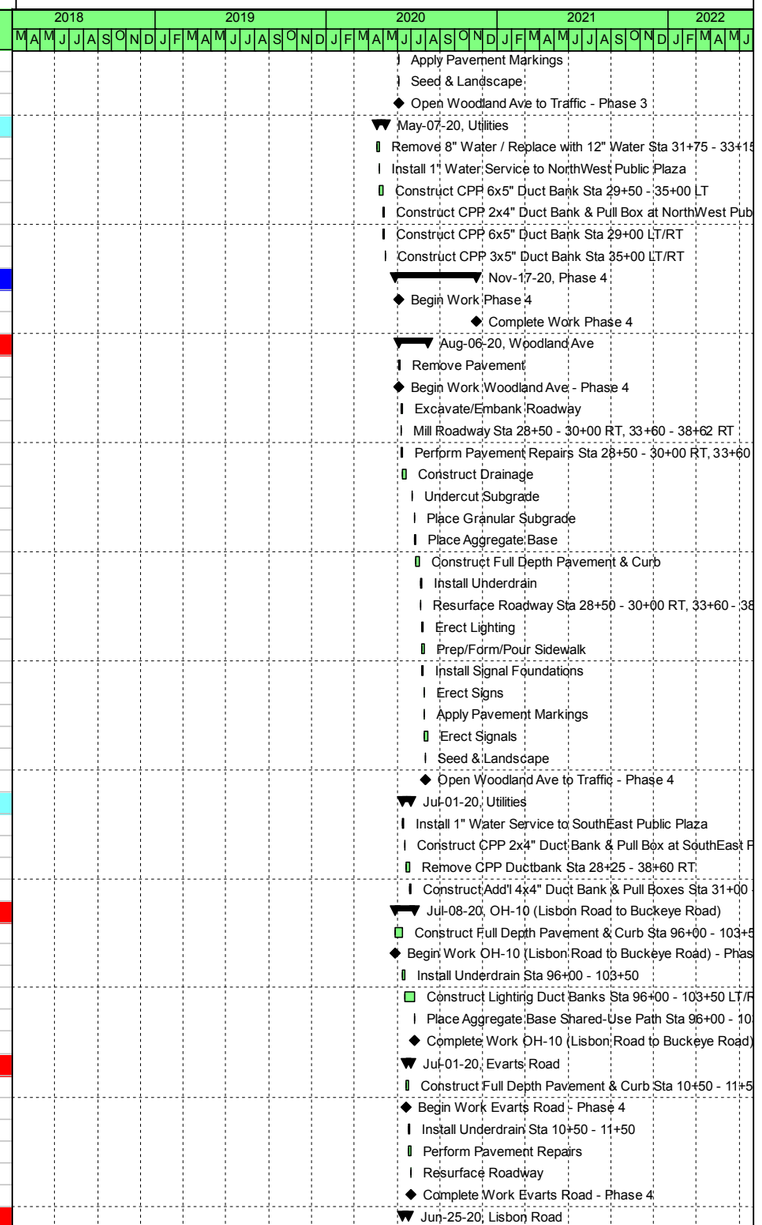
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CB89-U130	Construct 16" Waterline on Bridge Sta 19+50 - 23+00	8	Jan-10-20	Jan-30-20	140	173000-5D	D	P1	E89thB
CB89-U180	Construct CPP 4x5" Duct Bank on Bridge Sta 19+50 - 22+50	4	Jan-30-20	Feb-07-20	140	173000-5D	D	P1	E89thB
Woodland Ave									
CRWA-3000	Begin Work Woodland Ave - Phase 1	0	Apr-03-19		214	173000-5D	D	P1	Woodlan
CRWA-4000	Complete Work Woodland Ave - Phase 1	0		Sep-03-19	190	173000-5D	D	P1	Woodlan
Utilities									
CRWA-U130	Relocate CPP OH & Poles Sta 31+00 - 38+00 LT	10	Apr-03-19	Apr-18-19	214	173000-5D	D	P1	Woodlan
CRWA-U140	Relocate UNNAMED Co-Located OH Telecom Sta 31+00 - 38+00 LT	10	Jun-06-19	Jun-26-19	190	173000-5D	D	P1	Woodlan
CRWA-U150	Relocate UNNAMED Co-Located OH Cable Sta 31+00 - 38+00 LT	10	Jun-27-19	Jul-12-19	190	173000-5D	D	P1	Woodlan
CRWA-U160	Relocate CEI OH & Poles Sta 31+00 - 38+00 RT	10	Jul-16-19	Jul-31-19	190	173000-5D	D	P1	Woodlan
CRWA-U120	Relocate CEI 6x3.5" FD Sta 32+00 - 33+50 RT	4	Aug-01-19	Aug-07-19	190	173000-5D	D	P1	Woodlan
CRWA-U170	Relocate UNNAMED Co-Located OH Sta 31+00 - 38+00 RT	10	Aug-08-19	Aug-23-19	190	173000-5D	D	P1	Woodlan
CRWA-U100	Relocate 4" Gas Sta 31+00 - 33+00 RT	3	Aug-27-19	Aug-29-19	190	173000-5D	D	P1	Woodlan
CRWA-U110	Relocate 4" Gas Sta 33+00 - 34+00 LT	2	Aug-30-19	Sep-03-19	190	173000-5D	D	P1	Woodlan
Phase 2									
DP2-1000	Begin Work Phase 2	0	Jun-18-19		258	173000-6D	D	P2	
DP2-2000	Complete Work Phase 2	0		Aug-13-19	258	173000-6D	D	P2	
Buckeye Road									
CRBK-3000	Remove Pavement	2	Jun-18-19	Jun-19-19	258	173000-6D	D	P2	Buckeye
CRBK-3010	Begin Work Buckeye Rd - Phase 2	0	Jun-18-19		258	173000-6D	D	P2	Buckeye
CRBK-3020	Excavate/Embank Roadway	2	Jun-20-19	Jun-21-19	258	173000-6D	D	P2	Buckeye
CRBK-3160	Mill Roadway Sta 32+60 - 36+12 LT	1	Jun-20-19	Jun-20-19	281	173000-6D	D	P2	Buckeye
CRBK-3180	Perform Pavement Repairs Sta 32+60 - 36+12 LT	3	Jun-21-19	Jun-26-19	217	173000-6D w/Shutdown 12/1-3/31	D	P2	Buckeye
CRBK-3030	Construct Drainage	5	Jun-22-19	Jun-29-19	258	173000-6D	D	P2	Buckeye
CRBK-3040	Undercut Subgrade	3	Jul-17-19	Jul-19-19	258	173000-6D	D	P2	Buckeye
CRBK-3050	Place Granular Subgrade	2	Jul-19-19	Jul-20-19	258	173000-6D	D	P2	Buckeye
CRBK-3060	Place Aggregate Base	2	Jul-23-19	Jul-24-19	258	173000-6D	D	P2	Buckeye
CRBK-3070	Construct Full Depth Pavement & Curb	6	Jul-25-19	Aug-01-19	186	173000-6D w/Shutdown 12/1-3/31	D	P2	Buckeye
CRBK-3080	Install Underdrain	2	Aug-02-19	Aug-03-19	258	173000-6D	D	P2	Buckeye
CRBK-3170	Resurface Roadway Sta 32+60 - 36+12 LT	1	Aug-02-19	Aug-02-19	264	173000-6D	D	P2	Buckeye
CRBK-3090	Erect Lighting	5	Aug-06-19	Aug-10-19	258	173000-6D	D	P2	Buckeye
CRBK-3100	Prep/Form/Pour Sidewalk	5	Aug-06-19	Aug-10-19	258	173000-6D	D	P2	Buckeye
CRBK-3110	Install Signal Foundations	3	Aug-06-19	Aug-08-19	260	173000-6D	D	P2	Buckeye
CRBK-3130	Apply Pavement Markings	1	Aug-09-19	Aug-09-19	187	173000-6D w/Shutdown 12/1-3/31	D	P2	Buckeye
CRBK-3190	Erect Signals	8	Aug-09-19	Aug-22-19	406	173000-5D	D	P2	Buckeye
CRBK-3120	Erect Signs	1	Aug-13-19	Aug-13-19	258	173000-6D	D	P2	Buckeye
CRBK-3140	Seed & Landscape	1	Aug-13-19	Aug-13-19	258	173000-6D	D	P2	Buckeye
CRBK-3150	Open Buckeye Rd to Traffic - Phase 2	0		Aug-13-19	258	173000-6D	D	P2	Buckeye
Utilities									
CRBK-U200	Remove 8" Waterline Sta 29+75 - 31+00 LT	2	Jul-01-19	Jul-02-19	258	173000-6D	D	P2	Buckeye
CRBK-U210	Install 12" Waterline Sta 29+75 - 31+00 LT	5	Jul-03-19	Jul-10-19	258	173000-6D	D	P2	Buckeye
CRBK-U220	Construct CPP 4x5" Duct Bank Sta 29+75 - 32+00 LT	4	Jul-11-19	Jul-16-19	258	173000-6D	D	P2	Buckeye
OH-10 (Lisbon Road to Buckeye Road)									
CR10-8010	Undercut Subgrade Sta 96+00 - 103+50	5	Jun-21-19	Jul-01-19	247	173000-5D	D	P2	OH10
CR10-8100	Begin Work OH-10 (Lisbon Road to Buckeye Road) - Phase 2	0	Jun-21-19		247	173000-5D	D	P2	OH10
CR10-8020	Place Granular Subgrade Sta 96+00 - 103+50	5	Jul-02-19	Jul-10-19	247	173000-5D	D	P2	OH10
CR10-8040	Place Aggregate Base Sta 96+00 - 103+50	2	Jul-11-19	Jul-12-19	247	173000-5D	D	P2	OH10
CR10-8150	Complete Work OH-10 (Lisbon Road to Buckeye Road) - Phase 2	0		Jul-12-19	247	173000-5D		P2	OH10
East 87th Street									
CR87-2010	Remove Pavement	3	Jun-19-19	Jun-21-19	213	173000-5D	D	P2	E87th
CR87-2000	Begin Work East 87th St - Phase 2	0	Jun-19-19		213	173000-5D	D	P2	E87th
CR87-2020	Complete Work East 87th St - Phase 2	5	Jun-26-19	Jul-02-19	213	173000-5D	D	P2	E87th
OH-10 (Buckeye Road to Woodland Avenue)									
CR10-8300	Begin Work OH-10 (Buckeye Road to Woodland Road) - Phase 2	0	Jun-04-19		341	173000-5D	D	P2	OH10



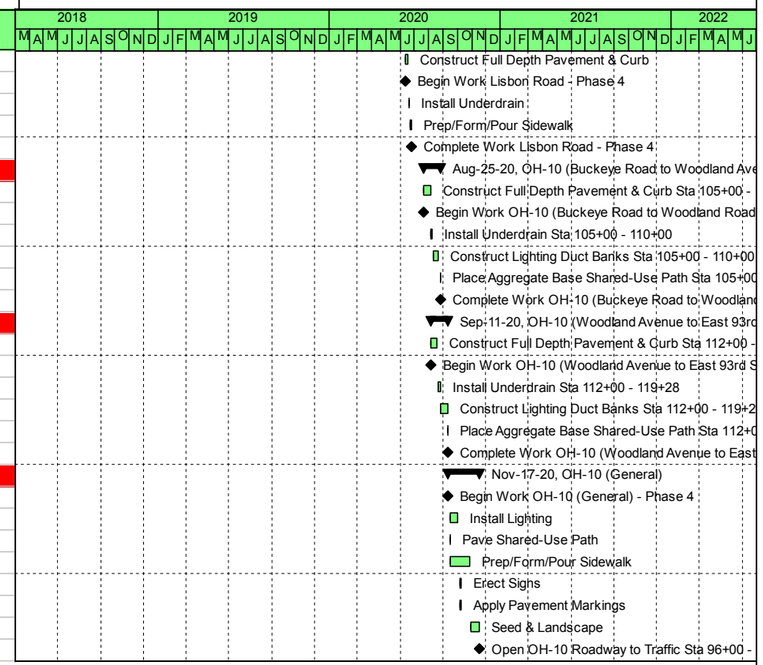
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CR10-8220	Undercut Subgrade Sta 105+00 - 110+00	4	Jul-02-19	Jul-09-19	326	173000-5D	D	P2	OH10
CR10-8230	Place Granular Subgrade Sta 105+00 - 110+00	4	Jul-10-19	Jul-16-19	326	173000-5D	D	P2	OH10
CR10-8240	Place Aggregate Base Sta 105+00 - 110+00	2	Jul-17-19	Jul-18-19	326	173000-5D	D	P2	OH10
CR10-8340	Complete Work OH-10 (Buckeye Road to Woodland Road) - Phase 2	0		Jul-18-19	326	173000-5D	D	P2	OH10
East 89th Street									
CR89-3000	Begin Work East 89th St Resurfacing	0	Jun-21-19		436	173000-5D	D	P2	E89th
CR89-3010	Mill Roadway	1	Jun-21-19	Jun-21-19	436	173000-5D	D	P2	E89th
CR89-3040	Perform Pavement Repairs	2	Jun-26-19	Jun-27-19	324	173000-5D w/Shutdown 12/1-3/31	D	P2	E89th
CR89-3020	Resurface Roadway	2	Aug-06-19	Aug-07-19	303	173000-5D w/Shutdown 12/1-3/31	D	P2	E89th
CR89-3030	Complete Work East 89th St Resurfacing	0		Aug-07-19	415	173000-5D	D	P2	E89th
East 89th Street / Kennedy Avenue Intersection									
CR89-1000	Begin E89th Street Permanent Closure at Woodland Ave - Phase 2	0	Jun-19-19		208	173000-5D	D	P2	Kennedy
CR89-1010	Remove Pavement	2	Jun-19-19	Jun-20-19	208	173000-5D	D	P2	Kennedy
CR89-1020	Excavate/Embank	3	Jun-21-19	Jun-27-19	208	173000-5D	D	P2	Kennedy
CR89-1030	Construct Drainage - E89th St / Kennedy Ave Intersection	2	Jul-10-19	Jul-11-19	208	173000-5D	D	P2	Kennedy
CR89-1040	Undercut Subgrade - E89th St / Kennedy Ave Intersection	1	Jul-12-19	Jul-12-19	208	173000-5D	D	P2	Kennedy
CR89-1050	Place Granular Subgrade - E89th St / Kennedy Ave Intersection	1	Jul-16-19	Jul-16-19	208	173000-5D	D	P2	Kennedy
CR89-1060	Place Aggregate Base - E89th St / Kennedy Ave Intersection	1	Jul-17-19	Jul-17-19	208	173000-5D	D	P2	Kennedy
CR89-1070	Construct Full Depth Pavement & Curb - E89th St / Kennedy Ave Intersection	5	Jul-18-19	Jul-25-19	152	173000-5D w/Shutdown 12/1-3/31	D	P2	Kennedy
CR89-1080	Install Underdrain	1	Jul-26-19	Jul-26-19	208	173000-5D	D	P2	Kennedy
CR89-1090	Prep/Form/Pour Sidewalk	3	Jul-30-19	Aug-01-19	208	173000-5D	D	P2	Kennedy
CR89-1110	Open E89th St to Kennedy Ave to Traffic	0		Aug-01-19	208	173000-5D	D	P2	Kennedy
CR89-1130	Remove Temp Road - E89th St to Kennedy Ave	2	Aug-02-19	Aug-06-19	406	173000-5D	D	P2	Kennedy
Utilities									
CR89-U100	Remove 8" Waterline Sta 14+50 - 16+00	2	Jun-28-19	Jul-01-19	208	173000-5D	D	P2	Kennedy
CR89-U140	Install 8" Waterline Sta 14+40	1	Jul-02-19	Jul-02-19	208	173000-5D	D	P2	Kennedy
CR89-U110	Remove 12" Waterline Sta 14+50 - 16+00	2	Jul-03-19	Jul-05-19	208	173000-5D	D	P2	Kennedy
CR89-U150	Install 12" Waterline Sta 14+50	1	Jul-09-19	Jul-09-19	208	173000-5D	D	P2	Kennedy
OH-10 (Woodland Avenue to East 93rd Street)									
CR10-9040	Begin Work OH-10 (Woodland Avenue to East 93rd Street) - Phase 2	0	Jun-20-19		339	173000-5D	D	P2	OH10
CR10-8420	Undercut Subgrade Sta 112+00 - 119+28	5	Jul-10-19	Jul-17-19	329	173000-5D	D	P2	OH10
CR10-8430	Place Granular Subgrade Sta 112+00 - 119+28	5	Jul-18-19	Jul-25-19	329	173000-5D	D	P2	OH10
CR10-8440	Place Aggregate Base Sta 112+00 - 119+28	2	Jul-26-19	Jul-30-19	329	173000-5D	D	P2	OH10
CR10-8520	Complete Work OH-10 (Woodland Avenue to East 93rd Street) - Phase 2	0		Jul-30-19	329	173000-5D	D	P2	OH10
Phase 3									
DP3-1000	Begin Work Phase 3	0	Aug-14-19		202	173000-5D	D	P3	
DP3-2000	Complete Work Phase 3	0		Jun-04-20	140	173000-5D	D	P3	
Woodland Ave									
CRWA-1010	Remove Pavement	2	Apr-02-20	Apr-03-20	111	173000-6D	D	P3	Woodlan
CRWA-1000	Begin Work Woodland Ave - Phase 3	0	Apr-02-20*		111	173000-6DPaint/Shutdown 11/1-3/31	D	P3	Woodlan
CRWA-1020	Excavate/Embank Roadway	4	Apr-04-20	Apr-09-20	111	173000-6D	D	P3	Woodlan
CRWA-1160	Mill Roadway Sta 28+50 - 30+00 LT, 33+60 - 38+62 LT	1	Apr-04-20	Apr-04-20	138	173000-6D	D	P3	Woodlan
CRWA-1180	Perform Pavement Repairs Sta 28+50 - 30+00 LT, 33+60 - 38+62 LT	3	Apr-07-20	Apr-09-20	141	173000-6D w/Shutdown 12/1-3/31	D	P3	Woodlan
CRWA-1030	Construct Drainage	6	Apr-10-20	Apr-17-20	111	173000-6D	D	P3	Woodlan
CRWA-1040	Undercut Subgrade	2	May-08-20	May-09-20	111	173000-6D	D	P3	Woodlan
CRWA-1050	Place Granular Subgrade	2	May-12-20	May-13-20	111	173000-6D	D	P3	Woodlan
CRWA-1060	Place Aggregate Base	2	May-14-20	May-15-20	111	173000-6D	D	P3	Woodlan
CRWA-1070	Construct Full Depth Pavement & Curb	6	May-16-20	May-26-20	112	173000-6D w/Shutdown 12/1-3/31	D	P3	Woodlan
CRWA-1080	Install Underdrain	2	May-27-20	May-28-20	122	173000-6D	D	P3	Woodlan
CRWA-1170	Resurface Roadway Sta 28+50 - 30+00 LT, 33+60 - 38+62 LT	1	May-27-20	May-27-20	112	173000-6D w/Shutdown 12/1-3/31	D	P3	Woodlan
CRWA-1090	Erect Lighting	3	May-29-20	Jun-02-20	180	173000-6D	D	P3	Woodlan
CRWA-1100	Prep/Form/Pour Sidewalk	4	May-29-20	Jun-03-20	180	173000-6D	D	P3	Woodlan
CRWA-1110	Install Signal Foundations	3	May-29-20	Jun-02-20	122	173000-6D	D	P3	Woodlan
CRWA-1120	Erect Signs	1	Jun-03-20	Jun-03-20	180	173000-6D	D	P3	Woodlan



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRWA-1130	Apply Pavement Markings	1	Jun-03-20	Jun-03-20	122	173000-6D w/Shutdown 12/1-3/31	D	P3	Woodlan
CRWA-1140	Seed & Landscape	1	Jun-04-20	Jun-04-20	180	173000-6D	D	P3	Woodlan
CRWA-1150	Open Woodland Ave to Traffic - Phase 3	0		Jun-04-20	180	173000-6D	D	P3	Woodlan
Utilities									
CRWA-U230	Remove 8" Water / Replace with 12" Water Sta 31+75 - 33+15 LT	3	Apr-18-20	Apr-23-20	111	173000-6D	D	P3	Woodlan
CRWA-U220	Install 1" Water Service to NorthWest Public Plaza	1	Apr-24-20	Apr-24-20	119	173000-6D	D	P3	Woodlan
CRWA-U240	Construct CPP 6x5" Duct Bank Sta 29+50 - 35+00 LT	5	Apr-24-20	May-01-20	111	173000-6D	D	P3	Woodlan
CRWA-U210	Construct CPP 2x4" Duct Bank & Pull Box at NorthWest Public Plaza	2	May-02-20	May-05-20	195	173000-6D	D	P3	Woodlan
CRWA-U250	Construct CPP 6x5" Duct Bank Sta 29+00 LT/RT	2	May-02-20	May-05-20	111	173000-6D	D	P3	Woodlan
CRWA-U260	Construct CPP 3x5" Duct Bank Sta 35+00 LT/RT	2	May-06-20	May-07-20	111	173000-6D	D	P3	Woodlan
Phase 4									
DP4-1000	Begin Work Phase 4	0	Jun-05-20		140	173000-5D	D	P4	
DP4-2000	Complete Work Phase 4	0		Nov-17-20	176	173000-5D	D	P4	
Woodland Ave									
CRWA-2010	Remove Pavement	2	Jun-05-20	Jun-06-20	180	173000-6D	D	P4	Woodlan
CRWA-2000	Begin Work Woodland Ave - Phase 4	0	Jun-05-20		180	173000-6D	D	P4	Woodlan
CRWA-2020	Excavate/Embank Roadway	4	Jun-09-20	Jun-12-20	180	173000-6D	D	P4	Woodlan
CRWA-2160	Mill Roadway Sta 28+50 - 30+00 RT, 33+60 - 38+62 RT	1	Jun-09-20	Jun-09-20	202	173000-6D	D	P4	Woodlan
CRWA-2180	Perform Pavement Repairs Sta 28+50 - 30+00 RT, 33+60 - 38+62 RT	3	Jun-10-20	Jun-12-20	132	173000-6D w/Shutdown 12/1-3/31	D	P4	Woodlan
CRWA-2030	Construct Drainage	5	Jun-13-20	Jun-19-20	180	173000-6D	D	P4	Woodlan
CRWA-2040	Undercut Subgrade	2	Jul-02-20	Jul-03-20	180	173000-6D	D	P4	Woodlan
CRWA-2050	Place Granular Subgrade	2	Jul-07-20	Jul-08-20	180	173000-6D	D	P4	Woodlan
CRWA-2060	Place Aggregate Base	2	Jul-09-20	Jul-10-20	180	173000-6D	D	P4	Woodlan
CRWA-2070	Construct Full Depth Pavement & Curb	6	Jul-11-20	Jul-18-20	107	173000-6D w/Shutdown 12/1-3/31	D	P4	Woodlan
CRWA-2080	Install Underdrain	2	Jul-21-20	Jul-22-20	292	173000-6D	D	P4	Woodlan
CRWA-2170	Resurface Roadway Sta 28+50 - 30+00 RT, 33+60 - 38+62 RT	1	Jul-21-20	Jul-21-20	107	173000-6D w/Shutdown 12/1-3/31	D	P4	Woodlan
CRWA-2090	Erect Lighting	3	Jul-23-20	Jul-25-20	300	173000-6D	D	P4	Woodlan
CRWA-2100	Prep/Form/Pour Sidewalk	5	Jul-23-20	Jul-29-20	299	173000-6D	D	P4	Woodlan
CRWA-2110	Install Signal Foundations	3	Jul-23-20	Jul-25-20	292	173000-6D	D	P4	Woodlan
CRWA-2120	Erect Signs	1	Jul-28-20	Jul-28-20	300	173000-6D	D	P4	Woodlan
CRWA-2130	Apply Pavement Markings	1	Jul-28-20	Jul-28-20	228	173000-6D w/Shutdown 12/1-3/31	D	P4	Woodlan
CRWA-2190	Erect Signals	8	Jul-28-20	Aug-06-20	229	173000-5D	D	P4	Woodlan
CRWA-2140	Seed & Landscape	1	Jul-30-20	Jul-30-20	299	173000-6D	D	P4	Woodlan
CRWA-2150	Open Woodland Ave to Traffic - Phase 4	0		Jul-30-20	299	173000-6D	D	P4	Woodlan
Utilities									
CRWA-U310	Install 1" Water Service to SouthEast Public Plaza	1	Jun-13-20	Jun-13-20	192	173000-6D	D	P4	Woodlan
CRWA-U300	Construct CPP 2x4" Duct Bank & Pull Box at SouthEast Public Plaza	2	Jun-16-20	Jun-17-20	323	173000-6D	D	P4	Woodlan
CRWA-U330	Remove CPP Ductbank Sta 28+25 - 38+60 RT	5	Jun-20-20	Jun-26-20	180	173000-6D	D	P4	Woodlan
CRWA-U320	Construct Add'l 4x4" Duct Bank & Pull Boxes Sta 31+00 - 33+00 RT	3	Jun-27-20	Jul-01-20	180	173000-6D	D	P4	Woodlan
OH-10 (Lisbon Road to Buckeye Road)									
CR10-8060	Construct Full Depth Pavement & Curb Sta 96+00 - 103+50	9	May-28-20	Jun-11-20	89	173000-5D w/Shutdown 12/1-3/31	D	P4	OH10
CR10-8140	Begin Work OH-10 (Lisbon Road to Buckeye Road) - Phase 4	0	May-28-20		88	173000-5D	D	P4	OH10
CR10-8050	Install Underdrain Sta 96+00 - 103+50	3	Jun-12-20	Jun-17-20	215	173000-5D	D	P4	OH10
CR10-8070	Construct Lighting Duct Banks Sta 96+00 - 103+50 LT/RT	10	Jun-18-20	Jul-07-20	215	173000-5D	D	P4	OH10
CR10-8090	Place Aggregate Base Shared-Use Path Sta 96+00 - 103+50 RT	1	Jul-08-20	Jul-08-20	215	173000-5D	D	P4	OH10
CR10-8110	Complete Work OH-10 (Lisbon Road to Buckeye Road) - Phase 4	0		Jul-08-20	215	173000-5D	D	P4	OH10
Evarts Road									
CREA-1070	Construct Full Depth Pavement & Curb Sta 10+50 - 11+50	4	Jun-19-20	Jun-25-20	89	173000-5D w/Shutdown 12/1-3/31	D	P4	Evarts
CREA-1150	Begin Work Evarts Road - Phase 4	0	Jun-19-20		145	173000-5D	D	P4	Evarts
CREA-1060	Install Underdrain Sta 10+50 - 11+50	1	Jun-26-20	Jun-26-20	220	173000-5D	D	P4	Evarts
CREA-1110	Perform Pavement Repairs	2	Jun-26-20	Jun-30-20	89	173000-5D w/Shutdown 12/1-3/31	D	P4	Evarts
CREA-1090	Resurface Roadway	1	Jul-01-20	Jul-01-20	89	173000-5D w/Shutdown 12/1-3/31	D	P4	Evarts
CREA-1140	Complete Work Evarts Road - Phase 4	0		Jul-01-20	218	173000-5D	D	P4	Evarts
Lisbon Road									



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar	Area	Phase	Location
CRLR-1060	Construct Full Depth Pavement & Curb	4	Jun-12-20	Jun-18-20	89	173000-5D w/Shutdown 12/1-3/31	D	P4	Lisbon
CRLR-1120	Begin Work Lisbon Road - Phase 4	0	Jun-12-20		89	173000-5D	D	P4	Lisbon
CRLR-1050	Install Underdrain	1	Jun-19-20	Jun-19-20	221	173000-5D	D	P4	Lisbon
CRLR-1090	Prep/Form/Pour Sidewalk	3	Jun-23-20	Jun-25-20	221	173000-5D	D	P4	Lisbon
CRLR-1110	Complete Work Lisbon Road - Phase 4	0		Jun-25-20	221	173000-5D	D	P4	Lisbon
OH-10 (Buckeye Road to Woodland Avenue)									
CR10-8260	Construct Full Depth Pavement & Curb Sta 105+00 - 110+00	9	Jul-22-20	Aug-04-20	84	173000-5D w/Shutdown 12/1-3/31	D	P4	OH10
CR10-8330	Begin Work OH-10 (Buckeye Road to Woodland Road) - Phase 4	0	Jul-22-20		140	173000-5D	D	P4	OH10
CR10-8250	Install Underdrain Sta 105+00 - 110+00	3	Aug-05-20	Aug-07-20	187	173000-5D	D	P4	OH10
CR10-8270	Construct Lighting Duct Banks Sta 105+00 - 110+00 LT/RT	8	Aug-11-20	Aug-21-20	187	173000-5D	D	P4	OH10
CR10-8290	Place Aggregate Base Shared-Use Path Sta 105+00 - 110+00 RT	1	Aug-25-20	Aug-25-20	187	173000-5D	D	P4	OH10
CR10-8310	Complete Work OH-10 (Buckeye Road to Woodland Avenue) - Phase 4	0		Aug-25-20	187	173000-5D	D	P4	OH10
OH-10 (Woodland Avenue to East 93rd Street)									
CR10-8460	Construct Full Depth Pavement & Curb Sta 112+00 - 119+28	9	Aug-05-20	Aug-19-20	84	173000-5D w/Shutdown 12/1-3/31	D	P4	OH10
CR10-8510	Begin Work OH-10 (Woodland Avenue to East 93rd Street) - Phase 4	0	Aug-05-20		140	173000-5D	D	P4	OH10
CR10-8450	Install Underdrain Sta 112+00 - 119+28	3	Aug-20-20	Aug-25-20	176	173000-5D	D	P4	OH10
CR10-8470	Construct Lighting Duct Banks Sta 112+00 - 119+28 LT/RT	10	Aug-26-20	Sep-10-20	176	173000-5D	D	P4	OH10
CR10-8480	Place Aggregate Base Shared-Use Path Sta 112+00 - 119+28 RT	1	Sep-11-20	Sep-11-20	176	173000-5D	D	P4	OH10
CR10-9050	Complete Work OH-10 (Woodland Avenue to East 93rd Street) - Phase 4	0		Sep-11-20	176	173000-5D	D	P4	OH10
OH-10 (General)									
CR10-8780	Begin Work OH-10 (General) - Phase 4	0		Sep-11-20	176	173000-5D	D	P4	OH10
CR10-8730	Install Lighting	10	Sep-15-20	Oct-02-20	185	173000-5D	D	P4	OH10
CR10-8710	Pave Shared-Use Path	2	Sep-15-20	Sep-16-20	121	173000-5D w/Shutdown 12/1-3/31	D	P4	OH10
CR10-8720	Prep/Form/Pour Sidewalk	20	Sep-17-20	Oct-28-20	176	173000-5D	D	P4	OH10
CR10-8740	Erect Signs	3	Oct-06-20	Oct-08-20	185	173000-5D	D	P4	OH10
CR10-8750	Apply Pavement Markings	3	Oct-06-20	Oct-08-20	139	173000-5D w/Shutdown 12/1-3/31	D	P4	OH10
CR10-8760	Seed & Landscape	10	Oct-29-20	Nov-17-20	176	173000-5D	D	P4	OH10
CR10-8770	Open OH-10 Roadway to Traffic Sta 96+00 - 119+28 - Phase 4	0		Nov-17-20	176	173000-5D	D	P4	OH10



CPM Schedule Narrative

This preliminary CPM Schedule has been prepared in accordance with all project issued addenda.

Throughout the development of the CPM schedule our team has considered the following aspects of the Project:

- Safety
- Constructability
- Utility coordination and relocation
- Design buildable units and document review time
- Long lead materials and fabrication durations
- Maintenance of traffic restrictions
- Third party coordination and permitting
- Removal of unregulated materials
- Final completion date and critical path to completion

Critical Path

The Project's Critical Path begins on February 27, 2018 with the anticipated award date. Immediately following award, TGR will begin preparation of the Project Management Plan (PMP) with submittal within thirty (30) days of the Project award. The Department will then have fifteen (15) days to review and approve the plan. TGR is anticipating receipt of an executed contract and Notice to Proceed (NTP) by March 27, 2018.

Upon receiving the NTP and approval of the PMP, HDR will begin preliminary design work in preparation of the Traffic Management Plan (TMP) and Buildable Unit (BU) #8, Maintenance of Traffic: Areas A, C and D. The development of the TMP will assist in the design of BU #8. The timely design of this BU is vital to begin third party utility relocations in the E. 55th Street Area.

Upon BU #8 being completed and Released for Construction, the E. 55th Street Northbound Long Term Closure A will be put in place in Pre-Phase A to begin temporary relocation of utilities to the east side of E. 55th Street so as not to restrict access for bridge construction activities. Upon completing these utility relocations, construction of the DWO Drop Structure and 48" sewer will begin at the corner of I-490 and E. 55th Street. This work will occur with use of the E. 55th Street Southbound Long Term Closure A and the I-490 Long Term Closure A.

Pre-Phase B will include partial construction of the temporary run-around by starting at Francis Avenue. While the run-around is being constructed at Francis Avenue, access will be maintained to Property Parcel (PP) #2005 via Bower Avenue.

Upon completion of the south end of the temporary-run around, a portion of Bower Avenue will be removed to enable the construction of the remainder of the temporary road to the north in Pre-Phase C. This will enable access to PP #2005 to be maintained via Francis Avenue, E. 57th Street, and Bower Avenue. Northbound and Southbound traffic along E. 55th Street will utilize the run-around upon its completion which will permit the initiation of the I-490 Long Term Closure B detour to begin Pre-Phase D.

Pre-Phase D will include the construction of new Regulator S-10A and the KSRS Drop Structure. Upon placing the new Regulator S-10A system in service the old system will be abandoned and the construction of Retaining Walls (RW) #1 & 2 located at the new E. 55th Street bridge may commence. Construction of the E55th Street bridge will immediately follow in Phase 1.

Bridge construction will begin with substructure installation. Once the structural steel is erected, utilities that were temporarily relocated previously will be placed in their permanent position along the new E. 55th Street bridge. Completion of the bridge superstructure and roadway on the west side of E. 55th Street will enable traffic to be moved from the temporary run-around to the newly constructed west side of E. 55th Street.

The roadway including underground utilities on the east side of E. 55th Street will be constructed in Phase 2. Sub-phases will be required to maintain access to PP #2005. The north side will be constructed first at which point access to PP #2005 will continue via Francis Avenue, E. 57th Street, and Bower Avenue. Once the north side of E. 55th Street is completed, the new permanent driveway to PP #2005 will be active and the remainder of Bower Avenue will be removed which will enable the start of RW #3A construction along Quadrant Road and roadway construction on OH-10 from E. 55th Street to the Kingsbury Run Bridge in Phase 3.

Phase 3 construction will include the start of RW #3A and Quadrant Road excavation, drainage, underground utility installation, and construction of the subgrade. Phase 4 will start with aggregate base and move into paving, underdrain and lighting installation, erection of signs, seeding and landscaping, and pavement markings along Quadrant Road, I-490, and OH-10 from E. 55th Street to the Kingsbury Run Bridge. This work will be concluded by the substantial completion date, November 1, 2021, at which point OH-10 from I-77 to E93rd Street will be open to traffic in its final configuration with access to E. 55th Street and all cross-streets.

The opening of OH-10 to traffic permits the removal of the I-490 Long Term Closure B detour and the subsequent construction of the I-90 Westbound Lane reconfiguration in Phase 5. The performance of this work along I-90 and the successful completion of the Engineer's Punchlist will allow for TGR to demobilize prior to the Final Completion Date of June 30, 2022.

TGR will successfully meet the required Substantial Completion Date of November 1, 2021 and Final Completion Date of June 30, 2022.

Calendars

Multiple Project calendars have been developed to account for administrative activities, working periods, restrictions and concrete cure. The following calendars are utilized in this schedule:

173000-7D Admin/Fab — This seven (7) day calendar is used for procedures and submittals, review activities with calendar day durations, material procurement and long lead item fabrication activities.

173000-7D Cure — This seven (7) day calendar is used for concrete cure activities.

173000-6D — This six (6) day calendar is used for most cross-street construction activities with maintenance of traffic duration restrictions. It includes weather days per C&MS 108.06 that are evenly dispersed as non-work days. It includes union-recognized holidays as non-workdays.

173000-5D — This five (5) day calendar is used for most construction activities. It includes weather days per C&MS 108.06 that are evenly dispersed as non-work days. It includes union-recognized holidays as non-workdays.

173000-5D Admin/Workdays — This five (5) day calendar is used for review activities with workday durations. It includes union-recognized holidays as non-workdays.

173000-5D Clearing — This five (5) day calendar is used for clearing activities. It includes weather days per C&MS 108.06 that are evenly dispersed as non-workdays as well as an environmental shutdown from April 1st through September 30th. It includes union-recognized holidays as non-workdays.

173000-5D w/Shutdown 12/1 — 3/31 — This five (5) day calendar is used for construction activities that should not occur during the winter months, such as paving and bridge deck pours. It includes weather days per C&MS 108.06 that are evenly dispersed as non-workdays as well as a winter shutdown from December 1st through March 31st. It includes union-recognized holidays as non-workdays.

173000-5D Paint/Shutdown 11/1 — 3/31 — This five (5) day calendar is used for structural steel painting and concrete sealing activities that should not occur during the winter months. It includes weather days per C&MS 108.06 that are evenly dispersed as non-workdays as well as a winter shutdown from November 1st through March 31st. It includes union-recognized holidays as non-workdays.

173000-3D Weekend Shutdown — This three (3) day calendar is used for weekend construction activities, such as set up of the I-490 Closure Detour. It includes union-recognized holidays as non-workdays.

Work Breakdown Structure

The preliminary CPM Schedule Work Breakdown Structure (WBS) is organized for easy navigation. The WBS includes the following sections:

- Project Summary
- Design - Buildable Units (BUs)
- Procedures and Submittals
- Material Procurement
- Fabrication
- Construction

Project Summary

The preliminary CPM Schedule begins with the project summary which provides an executive level overview of the project. This includes project milestones and level of effort activities for design BUs, construction, and maintenance of traffic restrictions.

Design - Buildable Units

The design activities include interim and final design; review periods for over-the-shoulder, IQF and third Party; and as-built drawing preparation, review and submittal. These activities are represented for each of the following BUs:

Figure 1. Buildable Units

NO.	PROPOSED BUILDABLE UNITS	PROJECT AREA				
		PROJECT WIDE	A	B	C	D
1	Roadway (Kinsgbury to E. 79th)			▶		
2	Roadway (E. 55th to Kingsbury and E. 79th to E93rd)		▶		▶	▶
3	Traffic Control	▶				
4	CPP Proposed and Lighting	▶				
5	NEORSD Regulator and Sludge Main		▶			
6	Waterline (Main and Relocations)	▶				
7	MOT for BU#1			▶		
8	MOT For BU#2		▶		▶	▶
9	E. 55th Street Bridge over OH-10		▶			
10	E. 59th Ped Bridge over Quadrant Road		▶			
11	Walls (1, 2, 3a, 3b, and 4)		▶			
12	OH-10 Bridge over Kingsbury Run Ravine			▶		
13	OH-10 Bridge over GCRTA Blue-Green Lines			▶		
14	Norfolk Southern Railroad Bridge over OH-10				▶	
15	E. 89th Ped Bridge over NS & GCRTA					▶

Procedures and Submittals

Procedure and submittal activities include project scope required submittals such as the PMP, DIOP and TMP; Utility Relocation Plan preparation and review by project area; and working drawing submittals required for each structure such as erection and demolition procedures.

Material Procurement and Fabrication

Material procurement and fabrication activities, organized by structure, include preparation of shop drawings, order placement and fabrication of key long lead materials which include:

- Piling
- Bearings and structural steel
- Architectural fence
- MSE wall
- Lighting
- Bridge water and force main piping

Construction

The project has been well-defined into four (4) geographic areas that correlate with the CPM Schedule's WBS as you move east through the site. Each area can be considered its own project within the overall project. Although the areas can be viewed as separate projects geographically, the sequencing of phases within and across each of the areas is vital to the success of the Project. TGR's CPM Schedule successfully accommodates the connection of utility relocation, continuity of operations, leveling of resources, and phasing milestones across multiple areas.

Area A: East 55th Street Area including I-490, E. 55th Street, Quadrant Road

The critical path of the Project is located in Area A. As a result, it is essential to thoroughly understand the potential risks to the schedule in this area. Utility relocation is a primary focus throughout this area. Subsurface Utility Exploration (SUE) along E. 55th Street, as well as frequent and timely third party coordination, will aid the relocation process. An emphasis on long lead materials to construct the E. 55th Street Bridge will also be significant which will require sound management of fabricators. Construction will conform to the specified maintenance of traffic restrictions for this area.

PRE-PHASE A

Pre-Phase A begins with building demolition. Upon completion of the necessary third party and public utility relocation plans, overhead and underground utility relocations will begin along Bower Avenue, E. 55th Street, I-490 and the Quadrant Road bowl area with the use of off-peak lane closures and long term stationary closures as permitted within the limits of the scope. Several utilities along E. 55th Street, including CPP circuits along I-490 at E. 55th Street, will require temporary relocations

prior to being placed in their permanent configuration to accommodate construction. Temporary utility relocations along E. 55th Street will be placed along the east side of the street so as not to restrict access for bridge construction activities. Construction of temporary bypass mains, such as 12" and 30" water and 16" sludge force main, will occur prior to the construction of the temporary run-around in subsequent phases. Utility relocations will also occur on local surrounding streets such as E. 57th Street, Francis Avenue, and E64th Street. Once BU#5 is complete, the 30" sanitary sewer along Bragg Road will begin concurrently with the construction of the DWO drop structure along I-490 at E. 55th Street. Construction of the 30" sanitary sewer located in the Quadrant Road bowl area that connects to the future Regulator on E. 55th Street will also commence in this phase.

PRE-PHASE B

Pre-Phase B includes activities that directly affect GCRTA Property Parcel (PP) #2005. The phased construction of the E. 55th Street temporary run-around at Francis Avenue will occur during Pre-Phase B. While the run-around is being constructed at Francis Avenue, access will be maintained to PP #2005 via Bower Avenue. In order to maintain positive drainage on PP #2005, drainage will need to be constructed at E. 55th Street under off-peak lane closures. The construction of Retaining Wall (RW) #3 along OH-10 will also begin in this pre-phase. Upon its completion, crews will move to RW #2 in Pre-Phase D. The construction of RW #4, adjacent to Kingsbury Run Bridge, will begin in this pre-phase.

PRE-PHASE C

Pre-Phase C includes the removal of a portion of Bower Avenue and the second phase of construction of the E. 55th Street temporary run-around. Once Francis is re-opened to traffic, Bower Avenue at E. 55th Street will be closed and removed for E. 55th Street run-around construction to begin. Access will be maintained to PP #2005 via Francis Avenue, E. 57th Street, and Bower Avenue.

PRE-PHASE D

Pre-Phase D will begin the setup and implementation of the I-490 Allowable Long Term Stationary B (730 day) closure. Once the detour is in place the drainage outfall for Area A will be constructed from E. 55th Street to the west along the north side of I-490. Concurrently, once E. 55th Street northbound and southbound traffic are utilizing the temporary run-around, the Regulator S-10A and KSRS drop structure will be constructed and linked to the previously constructed 30" sanitary and DWO drop structure. RW #1 & 2 will also begin in this pre-phase. The portions of walls located at the E55th Street bridge may begin once the Regulator is operational and the existing sewers are abandoned. Wall construction throughout the project will share resources to balance demand and continue operations efficiently

PHASE 1

Phase 1 includes the concurrent construction of the new E. 55th Street Bridge, reconstruction of the west side of E. 55th Street, and the reconstruction of I-490 from the west terminus to E. 55th Street. Upon placing the new Regulator S-10A system in service the old system will be abandoned and the construction of the new E. 55th Street Bridge may commence with the wall and substructure installation. Utilities that were temporarily relocated previously from the west side of E. 55th Street will be placed in their permanent position along the new E. 55th Street bridge once the structural steel has been erected. Utilities on the west side of E. 55th Street will become active. Facilities for those utilities on the east side will be in place but reconnection of these utilities will occur in Phase 2. Safety will be emphasized by waiting to begin excavation of I-490 in the vicinity of the bridge until the utilities are relocated to the new bridge thus reducing the potential for fall hazards and improving crew efficiency by working at ground level. Reconstruction of I-490 will include pavement removal, excavation, drainage, and the installation of new subgrade. Upon completion of Phase 1, E. 55th Street traffic will be relocated from the run-around to the newly completed west side of E. 55th Street.

PHASE 2

Phase 2 includes the completion of E. 55th Street construction, connection of utilities, the removal of Bower Avenue and the start of Retaining Wall #3A along Quadrant Road. The east side of E. 55th Street will be completed in two sub-phases in order to maintain access to PP #2005. The north end will be completed first while Francis Avenue is utilized to access PP #2005. Upon completion of the north end of E. 55th Street, access to PP #2005 will be provided via the new driveway on E. 55th Street. A temporary traffic signal will be utilized during this sub-phase to aid the ingress and egress of vehicles to PP #2005 while the south end is constructed. Once the north drive is active, Francis Avenue will be closed to begin Retaining Wall #3A and removal of the remainder of Bower Avenue in Phase 3. Upon the completion of Phase 2, E. 55th Street traffic will be placed in its permanent configuration with access to OH-10 restricted until work is complete.

PHASE 3

Phase 3 includes the start of construction of RW #3A. OH-10 east of E. 55th Street, Quadrant Road, the continued construction of I-490, and the removal of the remainder of Bower Avenue. The construction of OH-10 from E. 55th Street to Kingsbury Run Bridge and Quadrant Road will consist of excavation, drainage, underground utility and subgrade installation. Resources will be balanced as the construction of RW #3 progresses thus opening up additional areas where roadway work may be performed.

PHASE 4

Phase 4 includes the completion of I-490, OH-10, and Quadrant Road; reconstruction of E. 59th Street and PP #2005; construction of the E. 59th Street Pedestrian Bridge; and resurfacing of local streets. Paving operations will be scheduled among the various locations to capitalize on the continuity of operations and efficiency of the work forces. Sidewalk, lighting, traffic signals, seeding and landscaping, and pavement markings will be performed in this phase. The construction of the E. 59th Street Pedestrian Bridge will begin following the installation of Quadrant Road RWs #2 & 3B. Quadrant Road and OH-10 from I-77 to E93rd Street will be open to traffic in its final configuration with access to E. 55th Street and all cross-streets at the completion of this phase.

PHASE 5

Phase 5 includes the removal of the I-490 Allowable Long Term Stationary B (730 day) closure and the I-90 Westbound Lane reconfiguration. Upon removal of the I-490 closure detour, the I-90 Westbound lane reconfiguration work will be performed.

Area B: GCRTA Area including Kinsman Road, E. 75th Street, E. 79th Street and bridges over Kingsbury Run Ravine and GCRTA Blue-Green Lines

The potential risks of Area B that were considered include utility relocation, long lead materials and working around GCRTA. Utility relocations will be mitigated through the use of SUE at cross-street locations as well as frequent and timely third party coordination of relocation plans. Coordination with GCRTA requires early and regular correspondence as well as timely requests for track permitting. Advanced planning of GCRTA work accompanied with hourly schedules for weekend outages provides construction efficiency and secures resource availability. Construction will conform to the specified maintenance of traffic restrictions for this area.

PRE-PHASE

Pre-Phase begins with building demolition, area-wide clearing and grubbing, utility relocations, and the construction of drainage outfalls and the start of OH-10. Upon completion of the necessary third party relocation plans, utility relocations will begin along Kinsman Road, E. 75th Street, and local streets conflicting with the new alignment of OH-10. Utility relocations along Grand Avenue (West) will lead into the modified access for PP #2277 in subsequent phases. Construction of the drainage outfalls at Kingsbury Run and Blue-Green will commence following the completion of Area B's Roadway BU. OH-10 will begin with earthwork, drainage and underground utility construction from Kingsbury Run to Blue-Green and Blue-Green to E. 75th Street. This will promote positive drainage from Kinsman Road and E. 75th Street, respectively, during their reconstruction in Phase 1. OH-10 underground utilities that occur at cross-streets (Kinsman Road, E. 75th Street) including storm sewer, waterline and CPP ducts will be constructed using off-peak lane closures prior to the cross-street being constructed in its specific phase. This will be advantageous to meeting the demanding maintenance of traffic restrictions. The early scheduling of this work will allow Kinsman Road to be completed prior to the E. 55th Street Long Term Closure B, thus avoiding concurrent closures per the Project Scope.

PHASE 1

Phase 1 includes utility relocations, the reconstruction of the south side of Kinsman Road, the west side of E. 75th Street, the start of Kingsbury Run Bridge, Blue-Green Bridge, Property Parcel #2277 and the continued construction of OH-10. The required modifications to the Kinsman Road Bridge will be performed in the respective phases of the Kinsman Road reconstruction. The dead-end turnarounds at Berwick Road and E. 73rd Street will be constructed with Kinsman Road and E. 75th Street, respectively, to capitalize on the continuity of operations and efficiency of the work forces. Utility relocations will occur at Property Parcel #2277, Rawlings Avenue, and E. 79th Street. Upon completion of the necessary utility relocations, phased construction of PP #2277 will begin. The work will result in access to PP #2277 via Rawlings Avenue at which point Grand Avenue may be closed to complete utility relocations and waterline improvements in Phase 2. The construction of the OH-10 bridge over Kingsbury Run and the OH-10 bridges over Blue-Green will begin in this phase upon completion of their BUs. Concurrent construction will enable the sharing of resources for efficient construction.

PHASE 2

Phase 2 includes additional utility relocations, the reconstruction of the north side of Kinsman Road, and the east side of E. 75th Street, and the continued construction of OH-10. Utility relocations will continue along Grand Avenue (West). Upon the completion of Phase 2, Kinsman Road and E. 75th Street traffic will be placed in their permanent configuration with access to OH-10 restricted until work is complete. The completion of Kinsman Road and E. 75th Street permits the start of E. 79th Street in Phase 3 to avoid concurrent long term closures. OH-10 construction will continue with the drainage and underground utility construction from E. 75th Street to Grand Avenue (West).

PHASE 3

Phase 3 includes the reconstruction of the east side of E. 79th Street, the construction of Rawlings Avenue (East of E. 79th Street), the completion of PP #2277, and the continued construction of OH-10. Upon completion of the utility relocations and waterline improvements along Grand Avenue (West) in Phase 2, the phased construction of PP #2277 will be finalized in this Phase. Construction of new Rawlings Avenue will occur concurrently with OH-10.

PHASE 4

Phase 4 includes the reconstruction of the west side of E. 79th Street, resurfacing of Holton Avenue, and the paving and completion of OH-10. Paving operations will be coordinated with Area D and the opening of Kingsbury Run and Blue-Green bridges to capitalize on the continuity of operations and efficiency of the work forces. Sidewalk, shared-use path, lighting, traffic signals, seeding and landscaping, and pavement markings will also be performed in this phase. E. 79th Street traffic will be placed in its permanent configuration at the completion of this phase with access to OH-10 restricted until work is complete. OH-10 from Kinsman Road to Rawlings Avenue will be open to traffic in its final configuration with access to included cross-streets at the completion of this phase. OH-10 west of Kinsman Road and east of Rawlings Avenue will remain closed to traffic until the completion of Areas A and C, respectively.

Area C: Norfolk Southern Railroad Bridge Area from Grand Avenue to Lisbon Road

The potential risks of Area C include utility relocation and working around Norfolk Southern (NS). Relocations of underground fiber optic utilities will be mitigated through regular communication as well as frequent and timely third party coordination of relocation plans. Coordination with NS track work forces requires early and regular correspondence as well as timely requests for track permitting and flaggers. Consistent coordination with NS and those utilities occupying NS right of way throughout the duration of the Area is key.

PRE-PHASE

Pre-Phase begins with building demolition and area-wide clearing and grubbing. Upon completion of the necessary third party relocation plans, underground utility relocations will begin along the NS Cleveland Line corridor. Similar to Area A, multiple fiber optic underground utilities will require temporary relocations in this pre-phase prior to being placed in their permanent configuration to accommodate construction of the track realignment and bridge. The new drainage outfall, parallel to the NS tracks, will be constructed in this pre-phase once BU#2 is completed and the pipeline crossing permits are obtained from the railroads.

PHASE 1A

Phase 1A includes the relocation of Main #2 to the north. TGR will excavate and construct the track sub-ballast for Main #2 and #1 while NS forces will construct a portion of new track and shift a portion of existing Main #2 to the proposed location.

PHASE 1B

Phase 1B will be completed by NS forces as existing track from Main #1 and #2 will be shifted to proposed Main #1. A portion of new track will also be constructed for Main #1.

PHASE 1C
Phase 1C includes the top-down construction of the west side of the new bridge over OH-10 and the demolition of the west side of the existing bridge over Grand Avenue by TGR upon the removal of existing track by NS forces. Additional relocations of underground fiber optic utilities will be required to start this phase. Some utilities that were temporarily relocated previously will be placed in their permanent position along the new NS bridge during this phase once the structural steel has been erected. Embankment operations will commence after the demolition of the existing bridge over Grand Avenue followed by sub-ballast installation.

PHASE 2A
Phase 2A includes the removal and shifting of existing track as well as the construction of new track for Main #1 and #2. This track work will place Main #1 back in service across the new western half of the NS bridge over OH-10 and the previously constructed embankment where the existing bridge over Grand Avenue was once located.

PHASE 2B
Phase 2B completes the relocation of Main #2 along the new alignment adjacent to Main #1 while both tracks will be utilizing the western half of the new NS bridge and embankment. This work will be accomplished by NS forces constructing new track as well as shifting existing track from existing Main #2. Main #1 and #2 will be in service at the completion of this phase.

PHASE 2C
Phase 2C includes the top-down construction of the east side of the new bridge over OH-10 and the demolition of the east side of the existing bridge over Grand Avenue by TGR upon the removal of existing track by NS forces. The remaining utilities that were temporarily relocated during the pre-phase will be placed in their permanent position along the new NS bridge during this phase once the structural steel has been erected. Safety will be emphasized by waiting to begin excavation of OH-10 in the vicinity of the bridge until all utilities are relocated to the new bridge upon the completion of this phase thus reducing the potential for fall hazards and improving crew efficiency by working at ground level. Embankment operations will commence after the demolition of the existing bridge over Grand Avenue followed by sub-ballast installation.

PHASE 3
Phase 3 will begin the construction of OH-10 from Grand Avenue to Lisbon Road. The roadway excavation will begin following the installation of all utilities on the new NS bridge over OH-10. Excavation will be followed by drainage and underground utility installation, construction of a new subgrade, base, and full-depth pavement. Sidewalk, lighting, seeding and landscaping, and pavement markings will also be performed in this phase. OH-10 from Kinsman Road to E93rd Street will be open to traffic in its final configuration with access to all cross-streets at the completion of this phase.

PHASE 3A
Phase 3A includes the removal and shifting of existing track as well as the construction of new track for Main #1 and #2 upon the completion of the new bridge and embankment. This track work will place Main #2 back in service across the final alignment of the completed NS bridge over OH-10 and the previously constructed embankment where the existing bridge over Grand Avenue was once located.

PHASE 3B
Phase 3B will complete the relocation of Main #1 along the final alignment adjacent to Main #2 while both tracks will be utilizing the final alignment of the completed NS Bridge and embankment. This work will be accomplished by NS forces shifting existing track from existing Main #1 and #2. Main #1 and #2 will be in service at the completion of this phase.

Area D: Buckeye Road /Woodland Avenue including E. 89th Street Pedestrian Bridge

The potential risks of Area D include utility relocation and working around Norfolk Southern (NS) and GCRTA at the E. 89th Street Bridge. Utility relocations will be mitigated through the use of SUE at cross-street locations as well as frequent and timely third party coordination of relocation plans. Coordination with NS and GCRTA requires early and regular correspondence as well as timely requests for track permitting and flaggers. Similar to Area B, advanced planning of GCRTA work accompanied with hourly schedules for weekend outages provides construction efficiency and secures resource availability. Construction will conform to the specified maintenance of traffic restrictions for this area.

PRE-PHASE
Pre-Phase begins with building demolition, area-wide clearing and grubbing, utility relocations, drainage outfall construction, the start of OH-10 construction, and the construction of Grand Avenue (East). Upon completion of the necessary third party relocation plans, utility relocations will begin along Buckeye Road, Grand Avenue (East), Lisbon Road, Evins Avenue, Evarts Road, E. 87th Street and E. 89th Street. Construction of the drainage outfall at Buckeye Road will commence following the necessary Buckeye Road utility relocations. This will enable the OH-10 subgrade to be well-drained either side of Buckeye Road. OH-10 will begin with earthwork, drainage and underground utility construction. OH-10 underground utilities that occur at cross-streets (Buckeye Road, Woodland Avenue) including storm sewer, waterline and CPP ducts will be constructed using off-peak lane closures prior to the cross-street being constructed in its specific phase. This will be advantageous to meeting the demanding maintenance of traffic restrictions. The construction of new Grand Avenue (East) will also be required in this pre-phase in order to maintain access to existing Lisbon Road and Grand Avenue during the reconstruction of Buckeye Road in Phase 1. Evarts Road from Grand Avenue to Tennyson Road will be permanently closed until the completion of OH-10. Two-way traffic will be maintained on E. 89th Street from Evarts to Buckeye Road.

PHASE 1
Phase 1 includes utility relocations, the reconstruction of the south side of Buckeye Road, and the continued construction of OH-10. Overhead and underground utility relocations will continue on Tennyson Road and Woodland Avenue. The south side of Buckeye Road will be reconstructed first to enable positive drainage at the construction phase line. The south side of Buckeye Road will be reconstructed in sub-phases in order to maintain access to existing Lisbon Road and Grand Avenue. This was made possible by the pre-phase construction of Grand Avenue (East). Similar to Pre-Phase, construction of the drainage outfall at Woodland Avenue will enable the OH-10 subgrade to be well-drained east of Woodland Avenue. OH-10 from Buckeye Road to E93rd Street will begin with earthwork, drainage and underground utility construction. The reconstruction of the E. 89th Street bridge will also begin in this phase.

PHASE 2

Phase 2 includes the reconstruction of the north side of Buckeye Road, the E. 89th Street and Kennedy Avenue intersection, and the continued construction of OH-10. The E. 89th Street and Kennedy Avenue intersection will be reconstructed concurrently with the north side of Buckeye Road during this phase to avoid conflict with the Woodland Avenue Long Term Closure in Phase 3. Access will be maintained at all times to the Ken Johnson Recreation Center. E. 89th Street may be resurfaced concurrently with the Buckeye Road paving operations. Upon the completion of Phase 2, Buckeye Road traffic will be placed in its permanent configuration with access to OH-10 restricted until work is complete. OH-10 work will include construction of the subgrade and road base. The Cumberland Avenue closure at E. 89th Street may not be used and access along E. 89th Street will be permanently restricted north of Kennedy Avenue at the completion of this phase.

PHASE 3

Phase 3 includes the reconstruction of the north side of Woodland Avenue and the continued construction of OH-10.

PHASE 4

Phase 4 includes the reconstruction of the south side of Woodland Avenue, resurfacing of Evarts Road, and the paving and completion of OH-10. Paving operations will be coordinated among the various locations to capitalize on the continuity of operations and efficiency of the work forces. After finishing Area D, paving will move to Area B. Sidewalk, shared-use path, lighting, traffic signals, seeding and landscaping, and pavement markings will also be performed in this phase. Woodland Avenue and OH-10 from Lisbon Road to E93rd Street will be open to traffic in their final configurations with access to all cross-streets at the completion of this phase. OH-10 west of Lisbon Road will remain closed to traffic until the completion of Area C.

PART F.7

Appendix 7 - Conceptual Plans

F7. Conceptual Plans

Conceptual Plans are provided in Volume 2 of TGR's proposal.

PART F.8

Appendix 8 - Work History (Form D-1)

Request for Proposals & Selection Criteria
CUY IR 490/SR 010 02.09/19.28
PID 96833

FORM D-1: WORK HISTORY FORM

(Form Revised 11/10/2016)

PROJECT NAME, LOCATION, AND DESCRIPTION	NAME OF FIRM AND NATURE OF FIRM'S RESPONSIBILITY	FIRM'S PROJECT MANAGER	PROJECT OWNER'S NAME AND ADRESS; OWNER'S PROJECT MANAGER'S NAME, PHONE NUMBER AND EMAIL	ACTUAL OR ESTIMATED COMPLETION DATE	COST OF PROJECT	COST OF WORK FOR WHICH FIRM WAS RESPONSIBLE
ODOT 133000 Cleveland Innerbelt CCG2 **Design-Build** Cuyahoga County Cleveland, OH	Trumbull-Great Lakes-Ruhlin, a Joint Venture Prime Contractor	Adam Belasik	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Kirk Gegick, PE 216-584-4032 kirk.gegick@dot.state.oh.us	June 2017	$273 million	$273 million
ODOT 143005 IR-271 **Design-Build** Summit County Macedonia, OH	The Great Lakes Construction Co. Prime Contractor	Jason Fischer, PE	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Thomas Powell, PE 330-786-4834 thomas.powell2@dot.state.oh.us	September 2016	$46 million	$46 million
ODOT 130184 IR-77 Cuyahoga County Independence, OH	The Ruhlin Company Prime Contractor	Mark Myers	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Jeffery Hebebrand, PE 216-584-2155 jeffery.hebebrand@dot.state.oh.us	June 2016	$27 million	$27 million
ODOT 133026 IR-71 MLK Interchange **Design-Build** Hamilton County Cincinnati, OH	HDR Engineering, Inc. Lead Designer	Jake Stremmel, PE	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Kristen M. Haus, PE 513-933-6521 kristen.haus@dot.state.oh.us	November 2017	$80 million	$6.3 million (design)
ODOT 103000 Cleveland Innerbelt CCG1 **Design-Build** Cuyahoga County Cleveland, OH	HDR Engineering, Inc. Independent Quality Firm	James Breitinger, PE	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Dave Lastovka, PE 216-581-2100 Dave.Lastovka@dot.state.oh.us	June 2016	$283 million	$14 million

Request for Proposals & Selection Criteria
CUY IR 490/SR 010 02.09/19.28
PID 96833

PROJECT NAME, LOCATION, AND DESCRIPTION*	NAME OF FIRM AND NATURE OF FIRM'S RESPONSIBILITY	FIRM'S PROJECT MANAGER	PROJECT OWNER'S NAME AND ADRESS; OWNER'S PROJECT MANAGER'S NAME, PHONE NUMBER AND EMAIL	ACTUAL OR ESTIMATED COMPLETION DATE	COST OF PROJECT	COST OF WORK FOR WHICH FIRM WAS RESPONSIBLE
Norfolk Southern Bridge B-154.16 Grand River Bridge Lake County Painesville, OH	HDR Engineering, Inc. Lead Designer	Jon Winer, PE	Norfolk Southern Corporation 1200 Peachtree Street NE Atlanta, GA 30309 Howard Swanson 404-527-2529 howard.swanson@nscorp.com	Design: June 2016 Construction: Spring 2017	$26 million (Estimated)	$625,000
ODOT 130001 SR-58 Grade Separation Lorain County Wellington, OH	TranSystems Corporation of Ohio Lead Designer	David Weglicki, PE	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Robert Shenal, PE 419-207-7054 robert.shenal@dot.ohio.gov	August 2014	$12.3 million	$2.5 million
ODOT 143000 SR 823 Portsmouth Bypass **Design-Build** Cuyahoga County Portsmouth, OH	TranSystems Corporation of Ohio Major Design Sub-Consultant	Nabil Farah, PE	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Tom Barnitz, PE 741-774-8877 tom.barnitz@dot.state.oh.us	Preliminary Engineering: 2001 - 2008 P3 Project Completion; 2018	$776 million	$4.8 million
Founder – Diversity & Inclusion Opportunity Committee Cleveland, OH	Integral Management Diversity Outreach Advisor	June E. Taylor	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Jim Barna, PE 614-466-899 0 Jim.Barna@dot.state.oh.us	June 2015	n/a	Volunteered/Gratis
ODOT 163000, Opportunity Corridor Section 2 Cuyahoga County Cleveland, OH	Integral Management DIOP Workforce Development Lead	Jason Fischer, PE	Ohio Department of Transportation 1980 W Broad Street Columbus, OH 43223 Julie Meyer, PE 216-312-0539 julie.meyer@dot.ohio.gov	September 2018	$35 million	$300,000

PART F.9

Appendix 9 - Documentation of Commitment from NSLE Businesses

PART F.10

Appendix 10 - Draft Diversity, Inclusion and Outreach Plan (DIOP)

Trumbull-Great Lakes-Ruhlin a Joint Venture

OHIO DEPARTMENT OF TRANSPORTATION

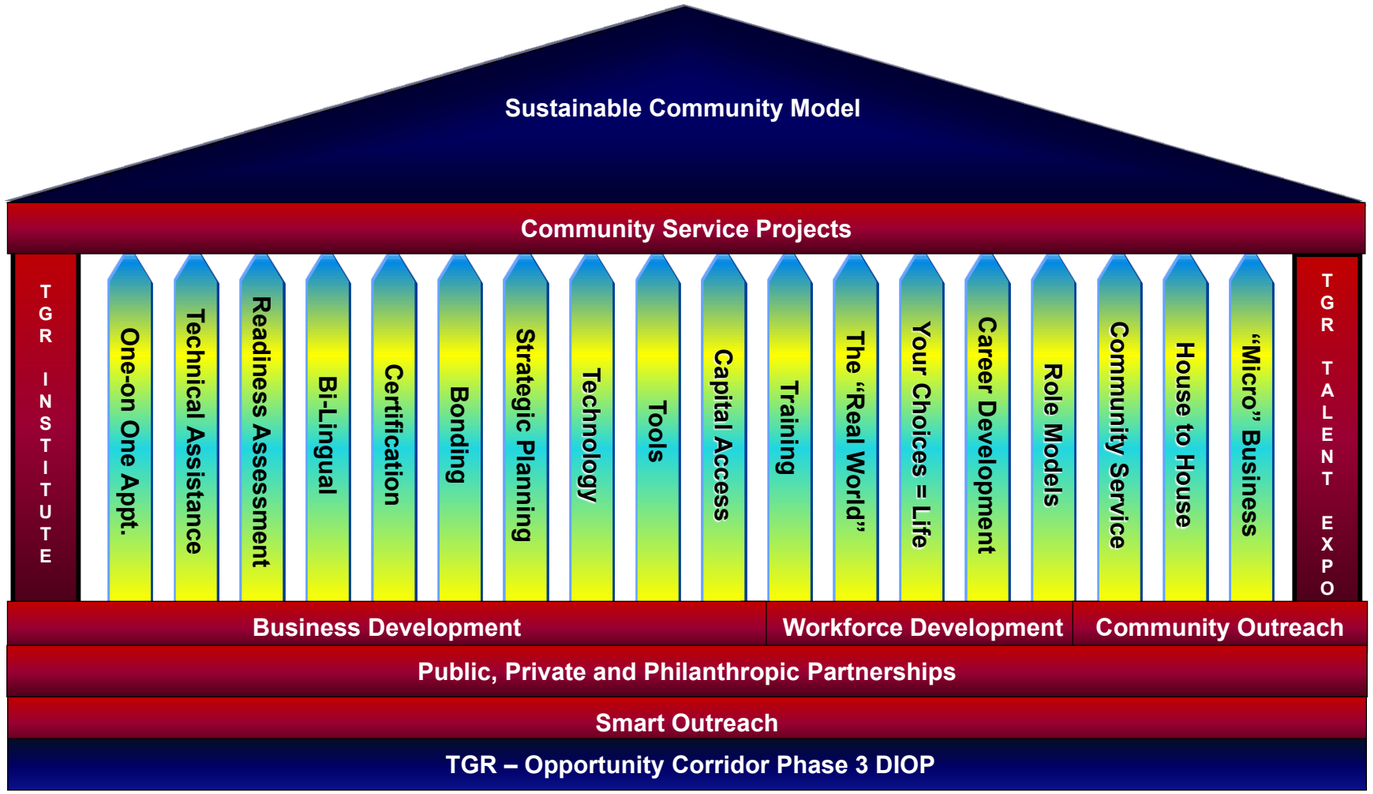
Trumbull-Great Lakes-Ruhlin *a joint venture*

Opportunity Corridor Project 3

DRAFT Diversity, Inclusion and Outreach Plan (DIOP)

12/21/2017

A Diversity & Inclusion National Model



This diagram represents a transformative infrastructure model, developed by TGR Diversity & Inclusion team members Andrew Jackson and June Taylor, that will improve the neighborhoods, lives and economics within The Opportunity Corridor of Northeast Ohio.

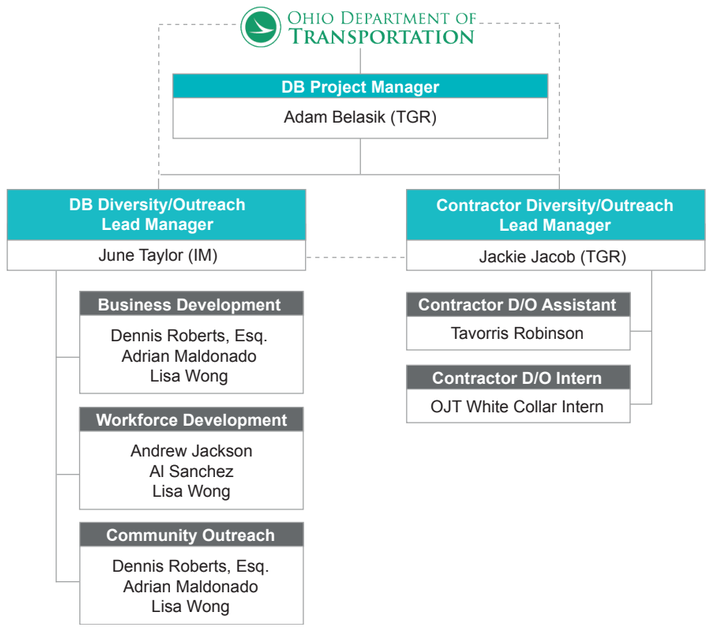
TGR Diversity, Inclusion and Outreach Plan

The TGR Diversity and Inclusion Team will be led by DB Diversity/ Outreach Lead Manager, June Taylor, Integral Management (IM). June will report directly to DB Project Manager, Adam Belasik. June will author and actively manage the Diversity, Inclusion and Outreach Plan (DIOP) and will communicate with ODOT and the Opportunity Corridor Inclusion & Advisory Committee (OCIAC) personnel, during the life of the project, to verify all the project scope requirements and the DIOP are executed.

June will be assisted by Contractor Diversity/Outreach Lead Manager, and TGR team member, Jackie Jacob. Jackie will report directly to DB Project Manager, Adam Belasik. Jackie will assist June during the life of the project. Jackie will be responsible for monitoring and reporting all of the Diversity and Inclusion scope and DIOP requirements.

June and Jackie will work with the following Outreach Team Partners: Andrew Jackson, Dennis Roberts and Tavorris Robinson. In addition, local leaders and Outreach Team Partners, Adrian Maldonado, Al Sanchez and Lisa Wong, will lead outreach efforts for specifically the Hispanic and Asian Pacific American communities. Working collaboratively, the aforementioned Outreach Team Partners will effectively target all of the disparaged groups identified in ODOT's 2015-2016 Disparity Study.

Figure 1. Outreach Team Organization



Outreach

We will use a technique, created by outreach partner Dennis Roberts, new to the industry, known as SmartOutreach. SmartOutreach is defined as a set of techniques and methods to strategically engage individuals, groups and community organizations.

Examples of those techniques include:

- Door-to-door canvassing (including CMHA buildings)
- Grassroots organizing with community leaders (e.g., area church and religious leaders, local elected officials and other non-profit leaders)
- Community street engagement in high-traffic areas (e.g., malls and plazas)
- Commercial canvassing (microbusinesses)

We also have access to a proprietary database that allows us to identify neighborhood residents at a very micro/individual level. With laser accuracy, our data sets, and subsequent analysis of the datasets, make our outreach efforts more strategic and, hence, Smart. This is complemented by our demographic/census-based data, which allow us to more readily target households that may have employment and other workforce-related needs. Thus, our approach is more streamlined and results oriented.

See pages 16 and 17 of this Draft DIOP for our pursuit phase outreach efforts on this project. We will continue to update this spreadsheet throughout the life of this project.

Language Interpreters

One of the most difficult barriers for Hispanic and Asian Pacific American business owners and individual job seekers to overcome is communicating and understanding the English language. Therefore, as necessary, we will provide Spanish and/or Asian language interpreter(s) at all meetings/events listed in our DIOP. We will also have these interpreters on call to assist our team during our outreach efforts.

OC3 NSLE "TGR Navigator"

Each NSLE business on the project will be assigned a TGR team member as their key contact person. This key contact person will maintain regular communication, troubleshoot, when necessary, and otherwise verify that the NSLE does not "fall between the cracks." This will enhance the likelihood that the NSLE is successful on the project.

"TGR Quick Pay" for NSLE Businesses

The ability to be paid quickly will enhance the viability of these businesses' survival in the construction industry. That is why we have implemented our Quick Pay Policy, as part of our DIOP, which will improve the cash flow of these businesses. Cash flow is an essential part of a successful business.

TRUCKING AND MATERIAL SUPPLIERS

TGR will implement an accelerated pay plan approach. TGR will pay approved/accepted invoices it receives from OC3 NSLE truckers and material suppliers 10 days after it receives an invoice. Standard industry practice is to pay these businesses 30 days from when an invoice is received or 10 days after receipt of an ODOT pay estimate.

With this accelerated pay plan, our OC3 NSLE truckers and material suppliers will receive their money three weeks faster. Invoices are received prior to the work being included on an ODOT estimate, therefore vendors are paid quicker.

CONTRACTORS

Payments to NSLE contractors for owner-approved/accepted work will be paid 12 days after receipt of an approved/accepted invoice. Depending on the timing of ODOT estimates, NSLE contractors will receive payment for their work up to six to 34 days sooner than ODOT's typical pay cycle with our proposal.

ODOT estimates are written once a month on this project and then prime contractors are required by law to pay their subcontractors within 10 days — a total of 40 days. Our proposal will allow NSLE contractors to get paid as fast as 13 days from the completion of their work. See example at right.

SUB-CONTRACT WORK EXAMPLE			
ODOT Method	**Days**	**TGR Method**	**Days**
NSLE Work Performed	1	NSLE Work Performed	1
ODOT Estimate (days depends on timing of work performed)	1 to 29		
ODOT Review of TGR Billing and DPM	5	NSLE Emails TGR Invoice for Work Performed	1
TGR Receipt of ODOT Payment	3	TGR Verifies Work is Complete	11
TGR Payment to NSLE Owner	10	TGR Quick Pay	1
Total Number of Days NSLE Waiting for Payment	19 to 47	Total Number of Days NSLE Waiting for Payment	13

Community Engagement

Our Diversity and Inclusion Team will meet with the OCIAC monthly, gathering information on how to improve our DIOP efforts on the project and throughout the community. An update of the DIOP goals will be presented at these monthly meetings.

As required by the scope, our Diversity and Inclusion Team will host a DIOP kickoff workshop with the required attendees within 60 days of the award of the contract, as detailed in the Scope of Services, Section 5.4. This meeting will allow all project stakeholders to participate in reviewing the Draft DIOP, while agreed-upon modifications can be included in the Final DIOP. The DIOP will be reviewed for "as-needed" updates throughout the life of the project.

A matrix of responsibilities and meetings, as they relate to OC3 Scope of Services, Section 5 — Diversity, Inclusion and Outreach, PN 98 and PN 99, will be created by Jackie Jacob and approved by ODOT as a tool to easily track our successful execution of the DIOP. See a sample matrix on pages 18 and 19 of this Draft DIOP.

Third Party Quarterly Audits

Maria Hernandez of Verge Inc., a small business and workforce development veteran, working under the Independent Quality Firm, TranSystems, will monitor requirements quarterly for compliance. These requirements include our DIOP, OC3 Scope of Services, Section 5 — Diversity, Inclusion and Outreach, PN 98 and PN 99. Maria's familiarity with OC2 while leading the translation and training/facilitation efforts for the 3 workforce workshops at the Spanish American Committee Building, will serve as an asset for this project.

The above quarterly audits will be in addition to the responsibilities of Contractor Diversity/Outreach Lead Manager, Jackie Jacob, for monitoring and reporting data as required by the OC3 Scope of Services, Section 5 — Diversity, Inclusion and Outreach, PN 98 and PN 99. Some of the monitoring and reporting required include:

- 20 percent project workforce by City of Cleveland residents
- 4 percent of resident construction workforce hours by Low-Income, City of Cleveland resident
- 20,000 hours OJT "Blue Collar" worker
- 10,000 hours OJT "White Collar" worker from the City of Cleveland Wards 4, 5 or 6

BUSINESS DEVELOPMENT

Business Development

Our business development started during the pursuit phase of this project. Below is detailed information that describes our Business Development during both the pursuit and post-award phases.

Pursuit Phase

On December 15-16, 2016, TGR met, on an individual basis with more than 60 companies for a two-day event. The event/meetings were set up for the convenience of the attendees, and each of the disparaged groups participated. During the meetings, information was gathered about how TGR could help these companies secure work on OC3 as well as other unrelated construction projects throughout Greater Cleveland. A survey sheet was distributed to the attendees. TGR received positive feedback; in fact, many attendees indicated it was the first time that they (i.e., minority groups) felt like they were actually included as part of the pursuit phase of any major construction project in the state.

We included the Minority Business Assistance Center of Cleveland (MBAC) as a partner for our two-day event. MBAC was present to help businesses get their EDGE certification paperwork completed, receiving approval prior to the project bid date. "This is the first time a tier one contractor has invited the Urban League to partner on an event so that our clients could obtain certification and a better understanding of the construction project from the contractor's perspective," said Darrell Johnson, Director, MBAC, and the Urban League of Cleveland. Because of this groundbreaking engagement with these companies, we learned about these business owners' challenges and shared ways to help these businesses. Challenges included:

- Accessing capital
- Selecting the best business sectors and improving the businesses' systems and infrastructure

Two companies submitted their certifications at this event:

1. T. Rice Communications
2. PTS Enterprises of Ohio, LLC

Many companies who attended the event were interested in EDGE certification. Companies in business for less than one year are ineligible for certification at this time, however, MBAC maintains contact with the ineligible companies and is committed to following up with them after one year so they may complete the certification process and be prepared to bid during the next opportunity.

On February 9, 2017, TGR sponsored the half-day Estimating 101 Educational Workshop. TGR executive team member, Vice President Mark Grdina presented to educate small businesses about estimating practices in our industry. This unprecedented workshop was well received by the targeted disparaged groups. Approximately 15 African American, 8 Hispanic and 10 small businesses participated in the event.

> ***"This is amazing. I learned things that I did not know before and I have been in business since 2006. To have a contractor like TGR who is looking out for the little guys is great. They don't want us to fail."***
>
> *Patty McGee, President of DOC Enterprises*
> *(referring to the estimating workshop)*

On February 10, 2017, our estimating team held our second face-to-face meeting with 61 NSLE companies to discuss specific scope packages. Due to the nature of DB projects, plans are not available until several weeks prior to the bid date of a project. Hosting this second face-to-face meeting on this date, in particular, allowed our estimators to:

- Provide scope requirements and plans to each company
- Get to know the NSLE businesses more intimately
- Create one of the largest NSLE databases of firms in Northeast Ohio
- Create more manageable and size-appropriate scope packages for the NSLE firms

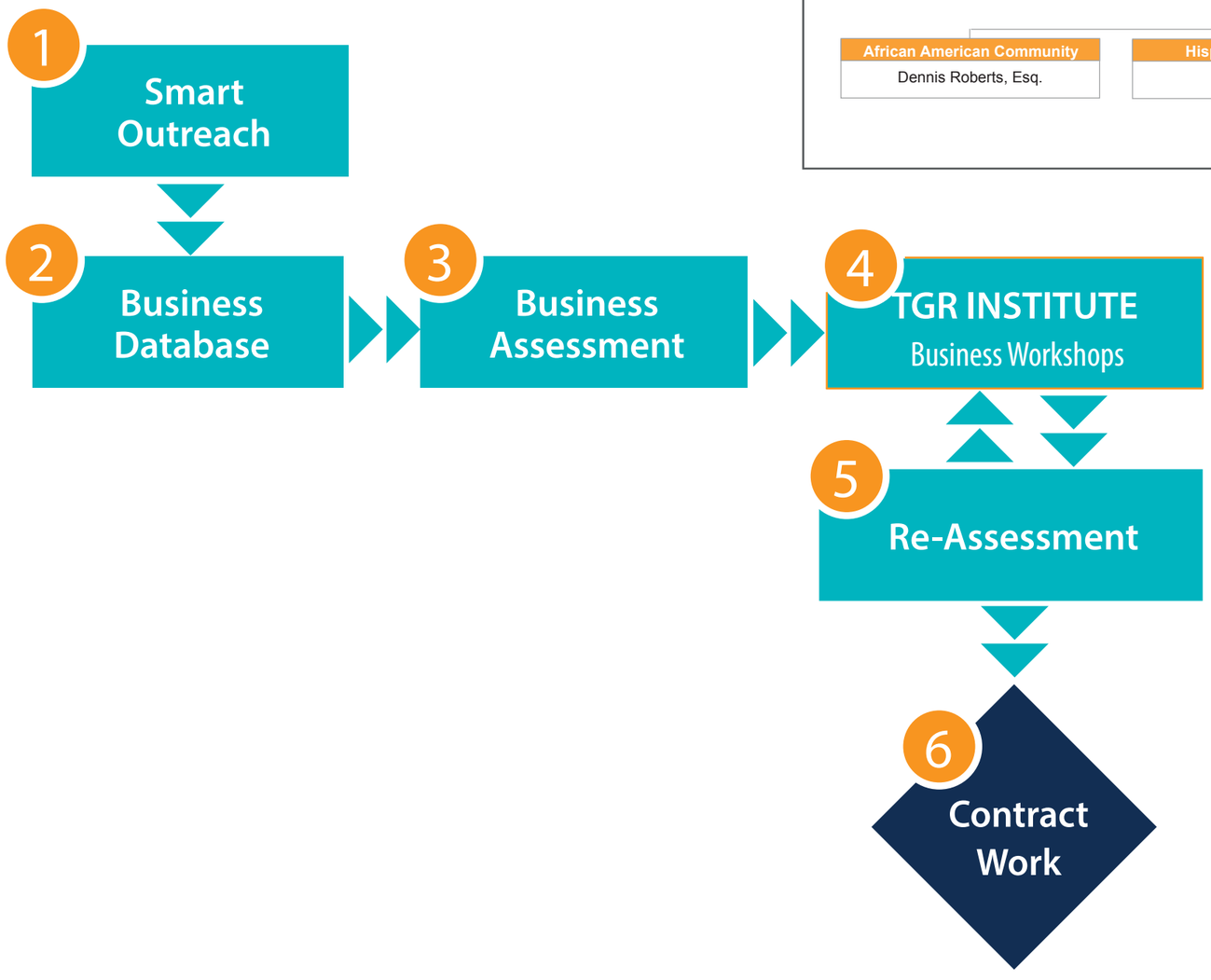
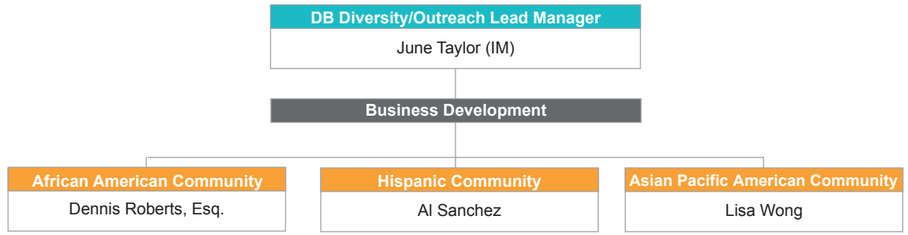


Figure 2. TGR Capacity Building Model

Figure 3. Business Development Team



Post-Award Phase

1 SMART OUTREACH

Frequency: Start of project through March 2021

SmartOutreach is a set of techniques and methods used to strategically engage targeted individuals, groups and community organizations.

2 DATABASE CREATION

Frequency: Start of project through March 2021

A database will be created to verify the company and owner information is accurate. This database will also allow documentation of their progress through the TGR Institute.

3 ASSESSMENT

Frequency: Start of project through March 2021

At this stage, the company, owner and management team are assessed to determine at what level of the TGR Institute they will enter. This assessment will be performed by our team members and the Urban League.

Proper assessment is critical for the success of these businesses and their owners.

Assessment will include the following disciplines:

- Estimating skills
  - Plan reading
  - Specification understanding
- Business skills
  - Math competency
  - Communication skills
  - Costumer service
  - Accounting skills (i.e., financial reporting)
  - Payroll understanding (Certified payrolls)

4 THE TGR INSTITUTE

Frequency: Workshops to be held from April 2019 through June 2019, January 2020 through March 2020 and January 2021 through March 2021. These sessions will allow more businesses to learn and grow during the slow period of the year, during the life of OC3. Our reassessment step will identify businesses that will need to go through multiple workshops. These sessions will also allow businesses to have more flexibility in their schedules.

The TGR Institute will consist of tailored workshops in three major tracks, which will complement the business owner or the business infrastructure. Workshops will be led by industry professionals and local consultants.

The three categories are identified below, along with their specific workshops listed under each category. Multiple levels of workshops will be available and recommended for companies with different needs. Less experienced companies will require more workshops and time to get the proper training and to graduate from the program. If, during the assessment stage, it is determined that additional workshops are needed, they will be added to the list below:

Construction Track

Workshops (Two-hour durations each)

1. The Start: Construction Estimating for Success
2. Your Numbers: Bidding, Estimating & Getting the Job
3. Your Plan: Planning, Scheduling & Communicating
4. Your Team: Assignments, Payments, & Achievements
5. The ODOT Way: Understanding ODOT's Specifications & Procedures
6. The Safe Way: OSHA, Worker & Workplace Safety

Business Track

Workshops (Two-hour durations each)

1. Your Money: The Foundation of Your Future
2. Accounting: Invoicing, Payables, and Receivables
3. Your Risk: Insurance, Bonding and Worker's Compensation
4. Your IT Department: Technology, Computers, & Software

Access To Capital Track

Workshops (Two-hour durations each)

1. Banking: Credit Lines, Loans, Private Equity
2. Choices: Job vs. Entrepreneurship

5 REASSESSMENT

Frequency: At the end of each track session, each participating company will be reassessed

Our experience has shown that businesses that attend the above workshops may need to attend additional workshops in order to strengthen owner skills and business competencies. Reassessment at this stage will maintain that these business owners have learned the skills necessary to advance to the next stage. Advancing to the next stage prior to properly completing the workshop sessions most likely will lead to the company not being able to effectively compete in the marketplace.

6 EMPLOYMENT

Frequency: One time, after the reassessment step has determined the business no longer needs additional workshops to be competitive in the open market

At this stage, the business is able to stand on its own and has the competencies necessary to reach out to the industry if they have questions about running a business.

Mentoring

PROTÉGÉ-SPECIFIC MAJOR MENTORING GOALS

TGR will mentor the following companies from the three identified disparaged groups. In addition to guiding them through the TGR Institute, we will help them attain the goals listed in Figure 4.

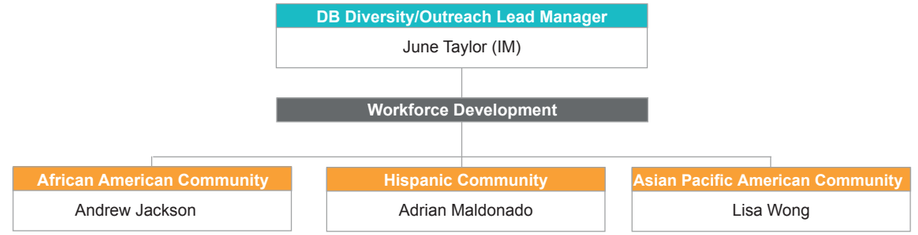
Each of the businesses that we have selected to mentor on this project have different needs and we have identified specific objectives to help them obtain more work with ODOT which will help ODOT's DBE capacity building long term goals.

Figure 4. Mentoring Commitments

FIRM NAME	FIRM TYPE	PROPOSED GOAL
Moody Engineering	African American Design Consultant	▸ Obtain Bicycle Facilities Pre-qualification
VDP Safety & Uniforms, Ltd.	African American Contractor	▸ Increase market exposure in the heavy civil construction industry throughout Ohio
Cordero Cement	Hispanic Contractor	▸ Obtaining ODOT pre-qualification ▸ Obtain DBE certification ▸ Understanding doing business with ODOT (certified payrolls, construction drawings and specifications, the ODOT Manual Operating Procedures)
Utilitech	Hispanic Contractor	▸ Obtaining ODOT pre-qualification ▸ Obtain DBE certification ▸ Understanding doing business with ODOT (certified payrolls, construction drawings and specifications, the ODOT Manual Operating Procedures)
Advanced Engineering Consultants	Asian Pacific American Design Consultant	▸ Obtain Basic Traffic Signal Pre-qualification

WORKFORCE DEVELOPMENT

Figure 6. Workforce Development Team



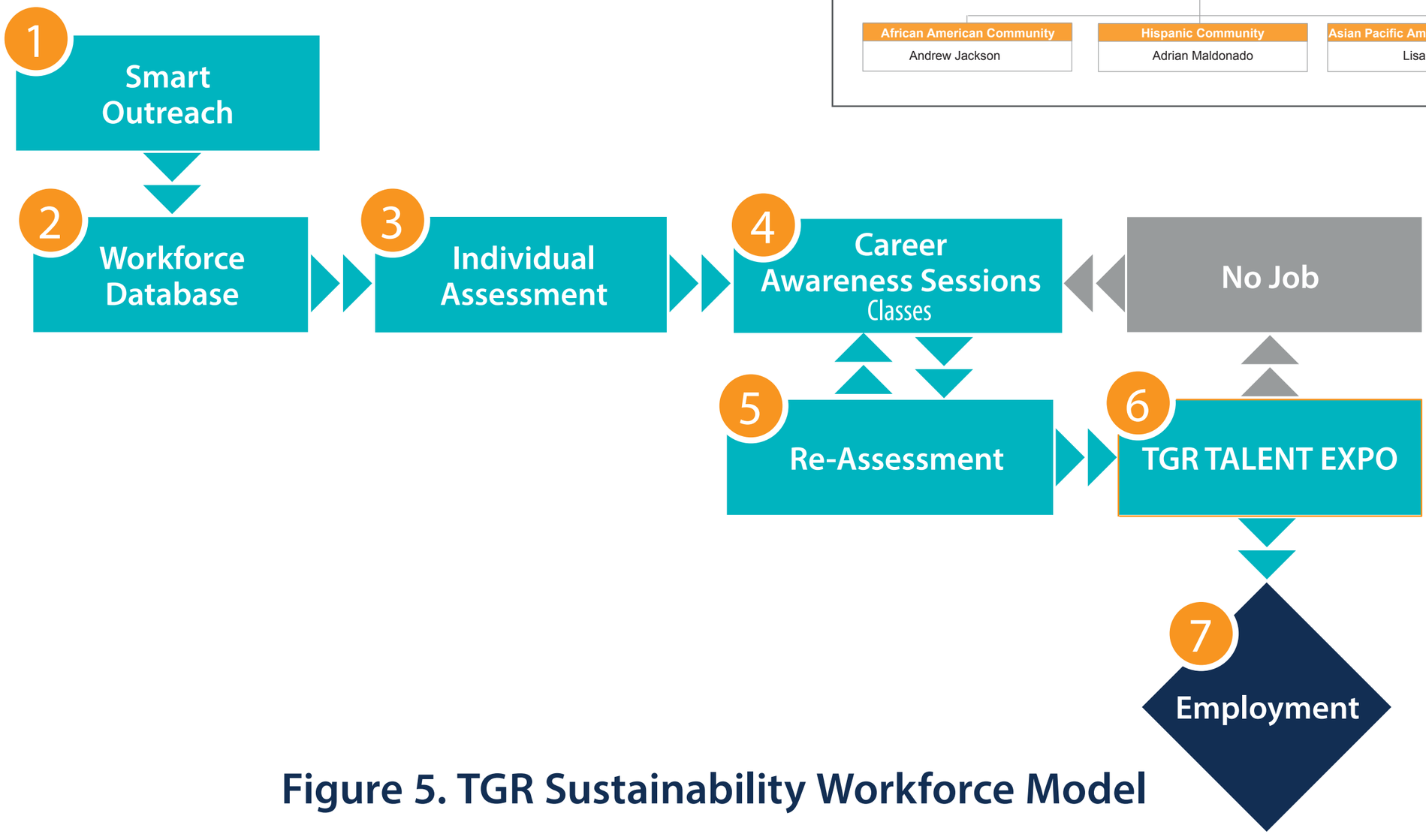


Figure 5. TGR Sustainability Workforce Model

Workforce Development

1 SMART OUTREACH

Frequency: Start of project through June 2020

SmartOutreach is a set of techniques and methods used to strategically engage targeted individuals, groups and community organizations.

2 DATABASE CREATION

Frequency: Start of project through June 2020

A database will be created to verify the company and owner information is accurate. This database will also allow documentation of their progress through the TGR Institute.

3 ASSESSMENT

Frequency: Start of project through June 2020

At this stage, the individual is assessed to determine what Career Awareness Sessions should be designed based upon their education, training and skills that are lacking. This assessment will be performed by our team members, along with the Urban League of Greater Cleveland.

Assessment will include the following disciplines:

- Communication skills
- Language competency
- Personal finance
- Education level
- Background check

4 CAREER AWARENESS SESSIONS (CAS)

Frequency: Weekly, two-hour sessions will begin in October through November 2018 and 2019 in preparation for the spring 2019 and 2020 TGR Talent Expos

CAS will include the following. (Similar to the Business Development Workshops, CAS topics will be edited if, during the assessment step, different topics are needed.)

1. English as a second language
2. Life skill coaching
3. Communication skills
4. Personal finance
5. GED/HS diploma
6. Resume writing
7. CDL training
8. Your Choices = Your Life

5 REASSESSMENT

Frequency: At the end of each CAS. For each individual that participates in the program — determining if they are ready for the TGR Talent Expo

Through our experience, we have learned that individuals who attend the above CAS may need to attend additional sessions in order to strengthen their individual skills. **Reassessment at this stage will confirm that they have been exposed to the type of skills employers are looking for in today's workforce.** This reassessment will help achieve their long-term success.

6 TGR TALENT EXPO

Frequency: TGR will host TGR Talent Expos in Spring 2019 and 2020. Our team will invite local government agencies and businesses to set up booths for attendees to visit and present themselves for employment. Invited organizations and companies include, but not limited to, the Ohio Department of Transportation, the City of Cleveland, Sherwin Williams, First Energy, Spectrum (Time Warner Cable), Progressive Insurance, Jack Casino of Cleveland, Hard Rock Rocksino, Bernie Moreno Companies, Dominion East Ohio, the Cleveland Clinic, University Hospitals, Cleveland State University, and Cuyahoga Community College, MetroHealth System, Lubrizol, Lincoln Electric, The Great Lakes Construction Co., The Ruhlin Company, Trumbull Corporation, the Albert M. Higley Co., and other local construction companies.

The Workforce Development section of the DIOP is structured to expose individuals and residents in Wards 4, 5, 6, 7, 13, and 14 to the skills and behaviors required to be 21st-century-prepared citizens, making them ready, willing and able to work.

7 EMPLOYMENT

Successful employment will be followed up by a three month review for feedback on our Career Awareness Sessions. This feedback will be used to modify and improve the classes offered during the Career Awareness Sessions.

On-the-Job Training (OJT)

Our Workforce Development section of this DIOP will provide our team with an extensive database of talent to choose from. This will allow us to hire individuals to achieve the project specific goals of:

- 20,000 hours of Type 1, Blue Collar jobs;
- 10,000 hours of residents from Wards 4, 5 and 6 of Type 2, White Collar/Professional jobs;
- 20% project specific workforce hours from residents of the City of Cleveland (Resident Construction Worker Hours) and
- 4% of "Resident Construction Worker Hours" from low-income city of Cleveland residents.

Specific OJT opportunities that we anticipate will include, but not limited to:

- **Type 1** — Union laborers, operators, carpenters, iron workers, cement masons and Teamsters
- **Type 2** — Engineering interns, timekeeper, security personnel, administration assistants, receptionist, local neighborhood ambassadors, and diversity administrative assistants. These trainees will be properly trained in professional, technical, administrative, or sales/sourcing/purchasing coordination positions.

Great Lakes' OC2 CAS have identified that in the African American community, approximately 90% are unemployable due to having a felony record. The TGR CAS will address this issue to assist them to be more employable.

Great Lakes' OC2 CAS have identified in the Hispanic Community approximately 95% of the attendees are employable, however, their inability to speak English is their employment barrier. Our aggressive approach to have interpreters available throughout the project will help address this issue.

Our team will submit monthly reports detailing OJT utilization and planned assignments for the following year until Final Acceptance. CR1 Reports will be submitted to the District Contractor Compliance Officer or Project Manager designee.

FANNIE M. LEWIS LAW RESIDENT VERIFICATION

CITY OF CLEVELAND RESIDENT

Jackie Jacob is currently using the following method to verify project workers are City of Cleveland residents on OC2. Jackie's assistants will use this same process on OC3.

1. Employee is looked up on the city council website to see if they have a ward with their address
2. The address is looked up with the city of Cleveland boundary line map to be sure they are in the city boundaries
3. The address on the certified payroll is cross checked with the address originally submitted on their application

LOW INCOME WORKER

Team partner Great Lakes has worked on many City of Cleveland projects which contain the Fannie M. Lewis law and are very familiar with the requirements of this law. TGR will complete the "Cleveland Low Income Worker Verification Application", found on the City's website, along with supporting documentation, to receive verification from the City of Low Income Employees.

COMMUNITY OUTREACH

Community Outreach

Smart Outreach

Our SmartOutreach team of Dennis Roberts, Esq., Adrian Maldonado and Lisa Wong will ask the local schools and community organizations in Wards 4, 5, 6, 7, 13 and 14, to identify projects needed to advance our community outreach.

The success of educating a local community on workforce development and diversity and inclusion begins with commitment, followed by an intense passion for helping the local youth. The goal of our Community Outreach Model is two-fold:

- We will expose the youth to educational and career opportunities in engineering, transportation and construction.
- We will expose K-12 urban youth to positive role models and behaviors, as well as educational, STEM, and immersion related activities so that, eventually, they can become more employable.

Figure 7. Sample Community Outreach Model

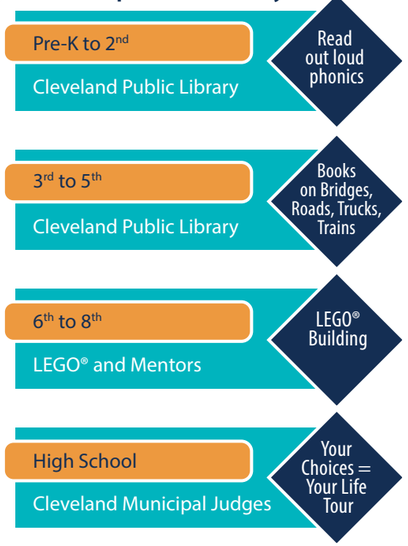
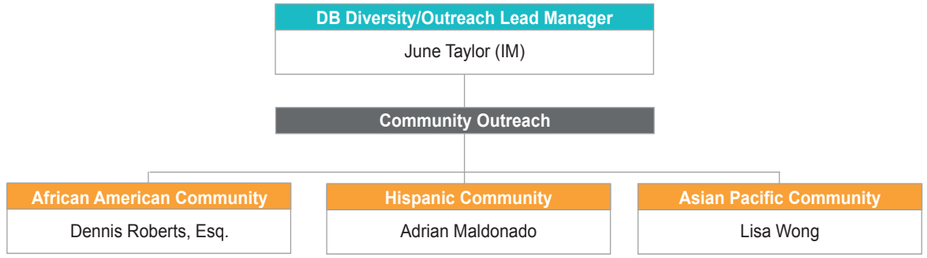


Figure 8. Community Outreach Team



Youth Education Programs

TGR will actively participate in the following local youth education programs, with special emphasis on providing quality youth programming during the summer months of the year.

#	ORGANIZATION	DESCRIPTION	FREQUENCY
1	Cleveland Public Library	▸ Pre-K Through Grade School in Wards 4, 5, 6, 7, 13 and 14 — Students will be exposed to books that contain roads, bridges and transportation as the main theme.	▸ Monthly two-hour commitments during regular school year (2019, 2020, 2021)
2	Big Brothers Big Sisters of Greater Cleveland	▸ Your Choices = Your Life	▸ Summer 2019, 2020, 2021 (June, July, August), monthly two-hour commitments
3	Boys & Girls Clubs of Cleveland	▸ Your Choices=Your Life	▸ Summer 2019, 2020 (June, July, August) monthly two-hour commitments

Community Service Projects

Figure 9. Proposed Community Service Projects

#	PROJECT	DESCRIPTION
1	TGR Talent Expo (Spring 2019)	The fair will take place at Max Hayes High School. We will help prepare students for these fairs and invite local businesses such as, but not limited to: First Energy, Cleveland Clinic Foundation, The Cleveland Indians, The Cleveland Cavaliers, The Cleveland Browns, The City of Cleveland and Local Unions.
2	TGR Talent Expo (Spring 2020)	The fair will take place at Max Hayes High School. We will help prepare students for these fairs and invite local businesses such as, but not limited to: First Energy, Cleveland Clinic Foundation, The Cleveland Indians, The Cleveland Cavaliers, The Cleveland Browns, The City of Cleveland and Local Unions.
3	"Your Choices = Your Life" Initiative	 This initiative will bring both judges and the prosecutor's office to area high school students to talk about how their life choices will impact their long-term life opportunities. Judge Michael J. Ryan, Juvenile Division, Juvenile Justice Center will partner with other African-American Judges and tour area high schools in Wards 4, 5, 6, 7, 13 and 14, as well as The Big Brothers/Big Sisters of Cleveland to educate minority youth on the pitfalls of making bad choices at an early age.
4	Buckeye Neighborhood Basketball Court Restoration	The Cleveland Cavaliers have agreed to partner with TGR on a community service project located in the City of Cleveland's Buckeye Neighborhood. Local councilman Kenneth L. Johnson is in support of the community service project to construct two basketball courts. The project details will be determined and agreed upon by all parties in 2018; the selected project will be completed in 2019. Work at this location will include grading, drainage, pavement, striping, lighting and the needed basketball equipment. The exact location for these basketball courts has not been determined. Since we do not have a contract with ODOT at the time of this proposal, land owners are not willing to commit to a site. The final site will be in partnership by all major local stakeholders. See Figure 10 for an illustration of the proposed basketball courts. (The Cleveland Cavaliers have given permission for use of its logo in this proposal.) The Cleveland Cavaliers have agreed to refinish the hardwood basketball court at the Kenneth L. Johnson Recreation Center.
5	West Side Ward 14 Park	TGR has reached out and identified a local, west side Ward 14, non-profit partner to create a park for the local community. Work at this proposed location will include grading, drainage, seeding, lighting, fencing and playground equipment. The exact location has not been established at the time of this proposal. The final site will be agreed upon by all major local stakeholders. This will be a very exciting project for everyone. See Figure 11 for an illustration of the proposed park.

Figure 10. Proposed Buckeye Neighborhood Basketball Courts

Figure 11. Proposed West Side Ward 14 Park

Business Contact List

Company Name	Phone	TGR Estimator
360 Construction	216.883.5560	Guttman
A & A	216.283.8040	Layer
A&D Enterprises	216.406.0359	Jones
AEC	216.225.8082	Stremmel
AKA Team	216.751.2000	Jones
All Aspects Contracting	440.315.0904	Guttman/Layer
Allstate Industrial Inc.	216.939.8195	Belasik
Alternalite Electric	216.337.0841	Belasik/Layer
American Abatement	216.281.9438	Layer
American Roadway Logistics	330.659.2013	Guttman
APBN	724.964.8252	Guttman
Athos	216.573.1433	Guttman
B & B Wrecking	216.857.0478	Layer
B.G. Trucking & Construction	234.759.3440	Jones
Ballast Fence	216.662.2436	Guttman
Barbicas	330.733.9101	Jones
Barr/dba National Engineering & Architectural Services. Inc.	216.860.0558	Ciammaichella
Baumann Enterprises	216.701.2564	Layer
Black Horse Bridge Construction, Inc.	234.678.8731	Jones
BNext Design	216.688.1800	Belasik
BNext Signs	216.688.1800	Belasik
Boone Enterprises	216.921.2337	Belasik
Brown Transfer, LLC	216.870.8204	Jones
Buick GMC of Beachwood	216.514.2700	Belasik
C&K Industrial Services	216.538.8645	Layer
Canal Construction	330.615.7343	Jones
CemBase	330.405.4105	Jones
Chieftain	216.485.8034	Jones
Clarke Family	440.786.2120	Jones
Cleveland Central Enterprise	216.441.3070	Jones
Cleveland Environmental	216.518.1122	Layer
Coleman Development	216.441.7615	Layer
Cook Paving & Construction Co. Inc	216.267.7705	Jones
Cordero Concrete Construction	216.269.6604	Jones
Corrosion	330.923.5193	Guttman
Cosmos Technologies Inc.	412.321.3951	Stremmel
Creekside Landscaping Services	440.838.8875	Jones
Cuyahoga Fence	216.830.2200	Guttman
Cuyahoga Bridge & Road	330.769.2999	Guttman
Cuyahoga Concrete Company	216.771.4502	Guttman
Cuyahoga Supply	440.439.9393	Guttman
Davis Diggers	440.205.5500	Jones
Denise's Flagging	216.403.2429	Jones
Design & Construction Group	614.563.1604	Stremmel
Direct Health Solutions Hr, LLC	216.242.2990	Belasik
DOC Enterprises LLC	216.789.0090	Jones
Down to Earth	216.518.1804	Jones
Ebony	419.841.3455	Jones
Eclipse Co. LLC	440.543.3493	Jones
Forest City Erectors	330.425.7185	Layer
Ginger Cunningham and Associates	614.638.5137	Taylor
Great Lakes Petroleum	216.478.0501	Belasik
GRL	216.831.6131	Ciammaichella
Howard Concrete Pumping	216.407.8168	Guttman
Howse Solutions	216.352.4282	Belasik
HR Construction Services	216.402.0068	Jones
Hydracrete	216.375.0578	Guttman
Imagine That Entertainment	216.282.7172	Taylor
Interstate Safety & Service Co.	216.641.6776	Jones
Irizar Electric LLC	216.459.9030	Layer
Irkalla Group Consulting	440.940.6554	Belasik
Ivy Development	419.466.0337	Guttman
JADCO	440.582.8534	Guttman
JAG'D	330.506.1263	Guttman
JD Williamson	330.633.1258 ext 229	Guttman
John Leohner Company, Inc.	740.756.7036	Jones
Jones Technologies Enterprises	216.561.2772	Grdina
JT Dillard,LLC dba Zaymat Distributors	216.402.0818	Guttman
K.L.E Construction	330.786.5264	Guttman
Karen Lenehan	216.695.5067	Belasik
Katanas Corp./Lighting Demolition & Excavating	216.403.0147	Layer
Kerry's Trucking	440.799.5979	Jones
Key Cable	419.837.6181	Layer
KLN Logistics	440.816.1505	Jones
Kram & Associates	614.402.5670	Jones
Kurtz Brothers	216.986.7000	Jones
Lake Erie Electric	440.835.5565	Layer
Lefco Worthington	216.432.4422	Guttman
Leggon Construction	216.571.7322	Belasik
Lumber One Supply	216.386.1887	Guttman
Lux Led Solutions	614.800.8914	Layer
Main Street Lighting	312.953.3803	Layer
McKinley Industries	330.774.2468	Layer
McKinney	440.439.4900	Guttman
MCW Contractors	216.318.4677	Layer
Midland Concrete & Sand	216.781.0770	Jones
Miller Cable	419.639.2091	Layer
MJP Trucking LLC	440.655.8540	Jones
MJR Construction Co./dba M Rivera Construction	216.389.2392	Belasik
Moody Engineering LLC	614.280.9355	Stremmel
Next Level Media Group	216.262.1678	Taylor
North Electric, Inc.	216.377.4927	Layer
Ohio Bridge Stripping	330.343.9043	Guttman
One View Communications	216.245.9550	Belasik
Osborne Concrete & Stone	216.771.5200	Jones
Parrilla's Tree Services	440.277.1875	Belasik
Perk	216.391.1444	Jones
Peterson Electric	419.706.6281	Layer
PGT	440.237.1155	Jones
Phipps	216.883.2012	Guttman
PowerMike & Co.	440.232.9620	Layer
Powertool and Supply	330.792.1487	Belasik
Premise Solutions	216.385.7301	Belasik
Pro Construction	216.383.1520	Jones
PSI Intertek	216.447.1335	Ciammaichella
Pyramid	330.398.6202	Guttman
Quintana and Son Inc	216.785.9333	Jones
Ramos Trucking	216.337.0859	Jones
RAR	440.735.1946	Jones
Rath Builders	419.782.7284	Jones
Resource International	216.772.9042	Ciammaichella

Company Name	Phone	TGR Estimator
Reumac	330.666.0575	Jones
RMI	330.452.1643	Jones
Rockport	216.432.9465	Guttman
Roma Designs	216.299.6003	Jones
Royal Landscape Gardening	216.883.7000	Jones
RWJ Wiring Inc.	216.261.7959	Layer
S.B. Morabito Trucking Co.	216.441.3070	Jones
Sammons Safety Services LLC	330.571.3520	Belasik
Simplified Alternatives	216.731.1499	Jones
Smart Strategic Business Solutions	216.245.7761	Belasik
Soil Testing & Engineering	614.761.4700	Ciammaichella
Solar Testing Laboratories	216.741.7007	Ciammaichella
Somat Engineering of Ohio	216.479.0300	Ciammaichella
Star Concrete & Construction	216.661.6365	Jones
Suburban	440.237.7765	Guttman
Tech Ready Mix	216.361.5000	Guttman
Terrace	216.739.3170	Layer
The CADD Department	216.269.5901	Stremmel
The Construction Green Team	216.512.0180	Belasik
The Shelly Co.	330.405.5184	Jones
Timeline Photography	216.584.4451	Belasik
Trafftech	216.361.8808	Layer
Trice Communications	216.526.3724	Guttman
Turn-Key Tunneling	614.275.4832	Jones
Ullman Oil	440.759.0101	Belasik
Union Industrial Contractors	330.998.7871	Guttman
Urban Recycling & Demolition	216.235.4050	Jones
US Utility	419.837.9538	Layer
Utilitech	216.240.8172	Jones
Vallejo	216.741.3933	Jones
Val's Crane & Equipment Rental	330.208.2683	Jones
Van Curen Services	440.338.5005	Jones
VDP Safety & Uniforms	404.645.9990	Belasik
Vermilion Tree Care	800.686.4430	Jones
Williams Trenching, Inc.	330.722.1079	Jones
Worldwide Painting	216.906.0834	Guttman
Zenith	216.587.9510	Layer

Sample Commitment Matrix

	Career Awareness Sessions 3pm - 5pm	Entrepreneur Sessions (Pre-Bid & Construction)	Community Outreach Event	ACE Mentoring (Fall Start)	Boys & Girls Club (Fall/Spring Start)	CMSD Program (Spring Start)	Community Meetings (PIP) With ODOT	Kickoff Event	Face to Face Meetings	Community Service Project	Business Outreach / Match Maker Sessions	St. Martin De Porres Work Study Program	Quarterly Newsletter (PIP)	OCIAC Meetings	Misc. Events: CMSD Stem Fair, Max Hayes Shaddowing, PBS Idea Stream, Tri-C Pres & Tours
									TransSystems 12/3/2015						
Week of April 11									Coleman 4/18/2016						
Week of April 18									Lightning Demo 4/18/2016						
Week of May 2									AEC 5/3/2016						
Week of May 9									R.P. Madison 5/3/2016					OCIAC May16 5/18/2016	
Week of June 13									Dr[illegible]6/15/[illegible]6						
Week of June 27									G&T Associ[illegible] [illegible]2016						
Week of July 11			Karamu House 7/14/2016					Karamu House 7/[illegible]/2016	Consulting Eng. 7/5/2016						
Week of July 18									The CADD Dept. 7/[illegible]						
Week of July 25									Co[illegible]s Tech 7/[illegible]16						
Week of August 1															
Week of August 8															
Week of August 15									[illegible]n 8/16[illegible]16						
Week of August 22															
Week of August 29															
Week of September 5	Antioch Baptist 9/7/2016											Start Date:K. Davis 9/9/2016			
Week of September 12	Antioch Baptist 9/14/2016														
Week of September 19	Antioch Baptist 9/21/2016								KONE 9/15/2016						
Week of September 26	CornUcopia 9/28/2016								RWJ Wiring 9/21/2016		GLC Hinckley 2pm 9/30/2016				
Week of October 3	CornUcopia 10/5/2016			ACE Mentoring #1 10/4/2015					ARL 9/27/2016	Church Landscaping 10/1/2016					

	Career Awareness Sessions 3pm - 5pm	Entrepreneur Sessions (Pre-Bid & Construction)	Community Outreach Event	ACE Mentoring (Fall Start)	Boys & Girls Club (Fall/Spring Start)	CMSD Program (Spring Start)	Community Meetings (PIP) With ODOT	Kickoff Event	Face to Face Meetings	Community Service Project	Business Outreach / Match Maker Sessions	St. Martin De Porres Work Study Program	Quarterly Newsletter (PIP)	OCIAC Meetings	Misc. Events: CMSD Stem Fair, Max Hayes Shaddowing, PBS Idea Stream, Tri-C Pres & Tours
Week of October 10	Metro Health 10/12/2016								zScape 10/13/2016						
Week of October 17	Metro Health 10/19/2016			ACE Mentoring #2 10/18/2016					Denise's Flagging 10/13/2016						
Week of October 24	CornUcopia 10/26/2016	Urban League 10/27/2016									GLC Hinckley 2pm 10/21/2016				
Week of October 30	Metro Health 11/2/2016	Urban League 11/3/2016		ACE Mentoring #3 11/1/2016											
Week of November 7	Metro Health 11/9/2016	Urban League 11/10/2016													
Week of November 14	El Barrio 11/16/2016														
Week of November 21									[illegible]state [illegible]ty 11/21/2016		GLC Field Off. 2pm 11/18/2016				
Week of November 28	El Barrio 11/30/2016			ACE Mentoring #4 11/29/2016					MJP Trucking 12/14/2016						
Week of December 5	CornUcopia 12/7/2016								Suburban Maint. 12[illegible]						
Week of December 12	CornUcopia 12/14/2016		BBC 12/13/2016						B&[illegible]/Recki 12[illegible]/2016		GLC[illegible]ckley 2pm[illegible]/14/2[illegible]				
Week of Dec 19, Dec 26, Jan 2									Ballast Fence 12/21/2015						
Week of January 9									Ivy Development [illegible]4/2017						
Week of January 16	Spanish Am Com. 1/11/2017			ACE Mentoring #5 1/17/2017					Fore[illegible]ty 1/18[illegible]17		GLC Hinckley 2pm 1/20/2017			OCIAC - Jan17 1/18/2017	
Week of January 23				ACE Mentoring #6 1/24/2017					RAR Contracting 1/25/2017						
Week of January 30									Courtad 1/26/2017						
Week of February 6	Spanish Am Com. 2/8/2017				George Carver 2/7/2017										
Committed Sessions:	25 Sessions	6 Sessions	4 Events	7 Sessions	9 Sessions	12 Sessions	6 Meetings	1 Event	30 Meetings	2 Project	16 Sessions	1 Student	4 Newsletters	On Going	4 Activities
Sessions Completed	17 Sessions	3 Sessions	2 Event	6 Sessions	0 Sessions	4 Sessions	0 Meetings	1 Event	26 Meetings	1 Project	6 Sessions	1 Student	1 Newsletter	3 Meetings	1 Activities

PART F.11

Approved ATCs

OHIO DEPARTMENT OF TRANSPORTATION

CENTRAL OFFICE • 1980 WEST BROAD STREET • COLUMBUS, OH 43223
JOHN R. KASICH, GOVERNOR • JERRY WRAY, DIRECTOR

December 7, 2016

Mr. Bryon Breese, P.E., DBIA
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Re: Alternate Technical Concept
CUY IR 490/SR 010 02.09/19.28
Project Number: 3000(17) PID: 96833
TGR ATC #003 - Use of weathering steal on all structures that cross the GCRTA and Nortfolk Southern

Dear Mr. Breese:

Your firm's Alternate Technical Concept (ATC) Proposal, Use of weathering steal on all structures that cross the GCRTA and Nortfolk Southern, for the above referenced project has been reviewed and evaluated by the Department.

Based on the Department's review, the ATC is partially approved subject to the following conditions:

- The use of weathering steel on the E. 89th Street Pedestrian Bridge is not approved.
- The use of weathering steel on OH-10 Eastbound over GCRTA Blue and Green Lines and OH-10 Westbound over GCRTA Blue and Green Line is approved.

Reasons for this Aaction include, but are not necessarily limited to:

- Under the 89th St Ped Bridge, poor airflow and high moisture are experienced at this area due to the trench condition Notice: These reasons are not a modification to the bid documents and shall not obligate the Department or writer in any way.

Thank you for your continued interest in the project.

Respectfully,

Eric Kahlig, P.E.
Project Procurement Manager

c: File

OHIO DEPARTMENT OF TRANSPORTATION

CENTRAL OFFICE • 1980 WEST BROAD STREET • COLUMBUS, OH 43223
JOHN R. KASICH, GOVERNOR • JERRY WRAY, DIRECTOR

December 14 2016

Mr. Bryon Breese, P.E., DBIA
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Re: Alternate Technical Concept
Opportunity Corridor – Project 3
CUY IR 490/SR 010 02.09/19.28
PID 96833
Project 3000 (17)
TGR - Alternate Technical Concept # 04: SIP Deck Forms

Dear Mr. Breese

Your firm's Alternate Technical Concept (ATC) Proposal, the use of stay-in-place (SIP) forms on all bridge structures within the project limits for the above referenced project has been reviewed and evaluated by the Department.

Based on the Department's review, the portions of the ATC is approved subject to the following conditions:

1) The request to install stay-in-place forms on E 55th Street over Opportunity Corridor Blvd is denied.
2) The request to install stay-in-place forms on Opportunity Corridor over Kingsbury Run Valley is denied.
3) The request to install stay-in-place forms on Norfolk Southern mainline over Opportunity Corridor is denied.
4) The request to install stay-in-place forms on the Opportunity Corridor over GCRTA Blue/Green Lines is approved for the spans over the Blue and Green Lines only. Stay-in-place forms are prohibited on any other portions of the bridges. In addition, the following requirements apply:
   a) stay-in-place forms shall be shop-galvanized
   b) cutting or drilling stay-in-place forms after being shop-galvanized is prohibited, except as needed for installation using screws.
   c) flutes of stay-in-place forms shall be filled with concrete. Synthetic materials such as expanded polystyrene are not allowed for filling the flutes.
   d) removable deck form work shall be used within eight feet of deck expansion joints and four feet of through-deck drainage systems.
5) The request to install stay-in-place forms on the E 89th Street over GCRTA Red Line and Norfolk-Suouthern Nickleplate Line is approved subject to the following requirements:
   a) stay-in-place forms shall be shop-galvanized
   b) cutting or drilling stay-in-place forms after being shop-galvanized is prohibited, except as needed for installation using screws.
   c) flutes of stay-in-place forms shall be filled with concrete. Synthetic materials such as expanded polystyrene are not allowed for filling the flutes.
   d) removable deck form work shall be used within eight feet of deck expansion joints and four feet of through-deck drainage systems.
6) The attached note: "Item 511E34447 Class QC2 Concrete with QA/QC, Bridge Deck, as per plan" must be included in the final construction plans.

The ATC may be included in the DBT's Technical Proposal provided that all conditions have been met. Failure to clearly demonstrate that all conditions have been met may render the DBT's Technical Proposal non-responsive.

Thank you for your continued interest in the project.

Respectfully,

Eric Kahlig, P.E.
Project Procurement Manager

c: File

Item 511E34447 Class QC2 Concrete with QA/QC, Bridge Deck, as per plan

Description. In addition to the work requirements of 511, either provide traditional bridge deck forms conforming to CMS 508 or design, build, provide and construct galvanized steel Stay-In-Place (SIP) fabricated metal forms conforming to CMS 508 and these additional requirements.

Design, build, construct and remove SIP or removable forms at overhangs, and within eight feet of all expansion joints and four feet of all through deck drainage systems.

Design. Submit Construction Plans according to 501.05.B.3. Design SIP forms to support the self weight of SIP forms, reinforcement, wet concrete for the deck, any construction equipment loads, and at least a 50 PSF load for construction live loads. Meet the deflection requirements of 508.

Design SIP forms that have the depth of the form corrugation filled with * .

Include the following information in the construction plan: _____

A. Design calculations.

B. Physical properties of the SIP forms (gage, section modulus, weight, depth and pitch)
C. Cross section view and dimensions of: SIP forms, support angles, channel closures, safety stops, clips, plates and hardware.
D. Include An Overall layout plan with
   1. Working points or control elevations necessary to set support angles.
   2. Typical and specific cross sections or details: Support connections to the structural members, SIP form connections to supports, form laps and closure sections.
   3. Minimum bearing lengths (edge distances) of SIP forms to the support angles.
   4. Welding details: size, length, locations, electrodes and process.
E. Worker safety restrictions.
F. Installation inspection check lists.

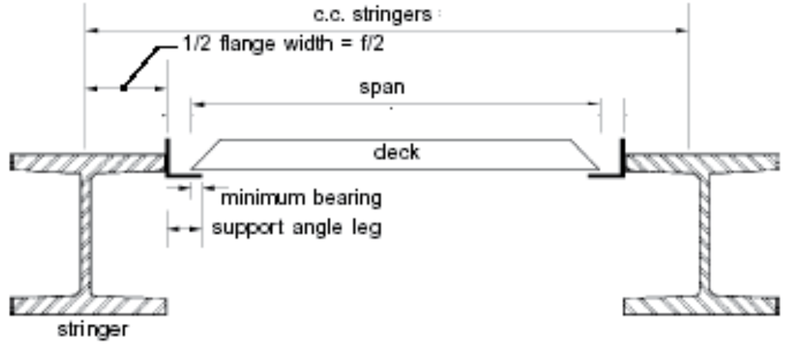
Materials. Submit 501.06 Test Reports and written acceptance letters to the Engineer. Materials inspection and acceptance is performed by the Engineer at the project site. Furnish form, support materials and hardware conforming the following:

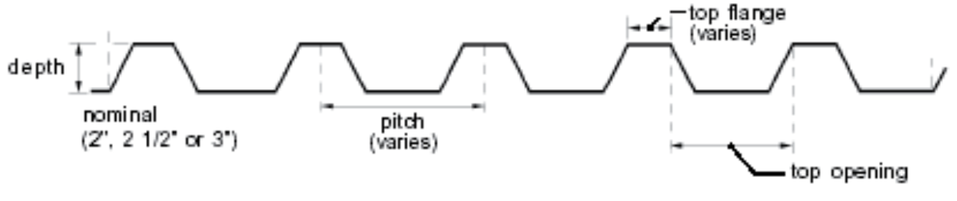
A. Form and support material, ASTM A653 having a coating designation of G235, and conforming to the mechanical properties the design requires.
B. Provide deck forms with a 2 inch minimum form depth.
C. Provide minimum material thickness as follows: SIP forms (20 gage), Support angles(12 gage) and Support bars (12 gage).
D. Supply deck, self drilling fasteners with Cadmium plating per ASTM B766 with minimum thickness of 5, ten thousandths.(0.0005 inch). The heads of these fasteners will be a highly visible color, red or other, to aid inspection.

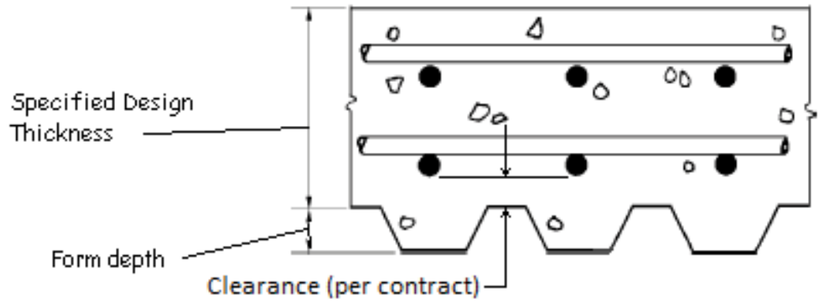
Welding. Do not weld SIP forms or their supports to the steel bridge members. SIP Supports may be welded to anchors cast into precast concrete bridge members. Perform welding per 513.21

Installation Limitations.

A. Field cut SIP forms using mechanical cutting methods. Thermal cutting is not permitted.
B. Place forms on form supports. Do not install SIP forms directly to the bridge's structural members.
C. Adjust the screed elevations by prorating the concrete dead load deflection to account for the additional permanent dead loads associated with concrete filled stay in place forms.
D. Set the height of the form supports to develop the adjusted screed elevations, deck thickness and plan profile.
E. Place SIP forms on form supports to achieve minimum bearing length per manufactures design.
F. Connect SIP forms to form supports before using the SIP as a working surface and before the end of each work shift.
G. Provide safety stops to eliminate hazards from sudden uplift and lateral movement. After the deck concrete meets the loading requirements of C&MS 511.17, remove the visible portion of all safety stops.
H. Coatings damaged caused by mechanical cutting or field welding need not be repaired unless specified by the SIP form manufacture.







Inspection. The Engineer will check SIP materials meet design requirements and evaluate installation based on construction plan.

Basis of Payment. The department will not separately pay for SIP forms. The cost of this work is included for payment in the price bid for the item for which the SIP forms are used.

Designer Notes:

** (Concrete or Styrofoam) The designer must determine if superstructure members can accommodate the additional dead load associated with SIP forms plus future wearing surface. If the superstructure can not accommodate the additional dead load from the *Concrete filled forms as estimated below, the designer must specify that the form corrugations be filled with *Styrofoam or provide a plan note stating SIP forms can not be used.*

Detailed information on forms can be obtained from United Steel Deck Inc. www.njb-unite.com or 1-800-631-1215

Estimate the SIP form self weight and additional weight in depth of concrete filled form corrugations based upon the following chart

SIP forms do not contribute to the load capacity of the concrete deck.

Clear span = Distance between the flanges.(feet and inches)	*Estimated depth of form(inches)*	*Estimated weight of form (psf)*	*Estimated weight of fill concrete(psf)*	*Estimated total weight form + concrete fill (psf)*
Less than 6'-0"	*2"*	*2 psf*	*13 psf*	*15 psf*
6'-0" to 7'-3"	*2.5"*	*3 psf*	*15 psf*	*18 psf*
7'-3" to 9'-0"	*3"*	*4 psf*	*17 psf*	*21 psf*
9'-0" to 12'-0"	*4.5"*	*5 psf*	*19 psf*	*24 psf*

OHIO DEPARTMENT OF TRANSPORTATION

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February 13, 2017

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Re: Alternate Technical Concept
CUY IR 490/SR 010 02.09/19.28
Project Number: 3000(17) PID: 96833
TGR ATC #005 – Median Width: UPDATE

Dear Mr. Breese:

Upon review of our responses, we noted that our response for your ATC #005 (Median Width) needs further clarification.

The following potion of the response was unclear and needs amended:

- *"The median width reduction between Quadrant Roadway and Kinsman Boulevard is <u>not</u> approved. Reasons for this action include, but are not necessarily limited to:*
    - ***A minimum of 10 foot median widths are required to maintain tree plantings and boulevard appearance and for pedestrian and vehicular considerations at the Kinsman Road intersection."***

The above particular portion of the response needs amended to the following:

- The median width reduction between Quadrant Roadway and Kinsman Boulevard is <u>conditionally approved</u> with the following restriction:
    - A minimum of 10 foot median widths are required to maintain tree plantings and boulevard appearance and for pedestrian and vehicular considerations at the Kinsman Road intersection.

The resonse for the remaining portions of the ATC remains unchanged:

- The median width reduction from I-490/I-77 Ramp Gores to Quadrant Roadway is approved.
- The median width reduction between E. 79 Street and Buckeye Road is approved.

The ATC may be included in the DBT's Technical Proposal provided that all conditions have been met. Failure to clearly demonstrate that all conditions have been met may render the DBT's Technical Proposal non-responsive.

Thank you for your continued interest in the project.

Respectfully,

Eric Kahlig

Eric Kahlig, P.E.
Project Procurement Manager

c: File

OHIO DEPARTMENT OF TRANSPORTATION

CENTRAL OFFICE • 1980 WEST BROAD STREET • COLUMBUS, OH 43223
JOHN R. KASICH, GOVERNOR • JERRY WRAY, DIRECTOR

February 28, 2017

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Re: Alternate Technical Concept
CUY IR 490/SR 010 02.09/19.28
Project Number: 3000(17) PID: 96833
TGR ATC #07-Rev1-Realignment of Pedestrian Bridge at E. 59th Street

Dear Mr. Breese:

Your firm's Alternate Technical Concept (ATC) Proposal, Realignment of Pedestrian Bridge at E. 59th Street, for the above referenced project has been reviewed and evaluated by the Department.

The Department does not view this as a significant change from ATC #07.

Based on the Department's review, the ATC is approved subject to the following conditions:

- The ATC must continue meet the primary intent of the Pedestrian Bridge, to ensure connectivity of the residents near the northeast corner of the Quadrant Rd and OH-10 via a pedestrian bridge. Any alignment and pathway needs to be designed to minimize the walking distances.
- As referenced in the original ATC#07 approval, Aesthetic treatments required by the Contract Documents for the Pedestrian Bridge over OH-10 at E. 59th Street shall apply.

The ATC may be included in the DBT's Technical Proposal provided that all conditions have been met. Failure to clearly demonstrate that all conditions have been met may render the DBT's Technical Proposal non-responsive.

Thank you for your continued interest in the project.

Respectfully,

Eric Kahlig

Eric Kahlig, P.E.
Project Procurement Manager

c: File

OHIO DEPARTMENT OF TRANSPORTATION

CENTRAL OFFICE • 1980 WEST BROAD STREET • COLUMBUS, OH 43223
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January 3, 2017

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Re: Alternate Technical Concept
CUY IR 490/SR 010 02.09/19.28
Project Number: 3000(17) PID: 96833
TGR ATC #009-Aesthetic Treatments on Norfolk Southern Railroad Pier

Dear Mr. Breese:

Your firm's Alternate Technical Concept (ATC) Proposal, Aesthetic Treatments on Norfolk Southern Railroad Pier, for the above referenced project has been reviewed and evaluated by the Department.

Based on the Department's review, the ATC is approved subject to the following conditions:

- If aesthetic elements are constructed separately from the structural load bearing elements, aesthetic treatments elements must be cast-in-place and made integral with the structural elements by utilizing proper connecting anchorage.
- If aesthetic elements are constructed separately from the structural load bearing elements, all aesthetic treatment elements must be a minimum thickness of six inches (6") and must reinforced with epoxy coated reinforcing steel.
- Pier ends shall be semi-circular.
- Structural load bearing elements must be completely encased by the cast-in-place aesthetic treatments to ensure consistent appearance and uniformity.

The ATC may be included in the DBT's Technical Proposal provided that all conditions have been met. Failure to clearly demonstrate that all conditions have been met may render the DBT's Technical Proposal non-responsive.

Thank you for your continued interest in the project.

Respectfully,

Eric Kahlig, P.E.
Project Procurement Manager

c: File

PART F.12

Draft Design Quality Management Components of the Project Management Plan (PMP)

Design Quality Management Plan

OHIO DEPARTMENT OF TRANSPORTATION

OHIO DEPARTMENT OF TRANSPORTATION

Project: 173000

PID No. 96833

Revision Number	Description	Date
0	Initial DQMP	4/21/2017

Trumbull-Great Lakes-Ruhlin
a joint venture

Table of Contents

List of Figures

Appendices

1. General and Administration

1.1. Purpose of Design Quality Management Plan

This chapter of the TGR PMP for the CUY-IR 490/SR 010-02.09/19.28 project (OC3) is the Design Quality Management Plan (DQMP) for the Designer staff and IQF staff for the project. This chapter describes the design and review procedures that HDR (the Designer) follows, mandated in their corporate Quality Management Systems (QMS) manual, which are based on the fundamental principles and guidelines set forth by the ISO 9001:2008 series of international standards for quality management. This DQMP was prepared in accordance with ODOT's project scope Section 2 — Quality Management as provided in the RFP. Design Team members, including subconsultants, will use the Quality Control/Quality Assurance (QC/QA) process and interface with the IQF. The goals of the DQMP are to:

- Develop comprehensive procedures for design quality work activities
- Develop a communications protocol that efficiently and effectively provides for continuous improvement
- Provide adequate design quantity and quality of staff, training and resources
- Establish a culture of quality among team members that continually reinforces quality as a core value

1.2. Design Quality Policy

The TGR team is committed to quality at all levels. Our Design Team members and IQF staff will be expected to perform their work with the objective of building a high-quality facility that meets or exceeds contract requirements. Quality will be approached from the perspective of the entire life cycle of the facility, incorporating input and direction from design, construction, and operations and maintenance partners. Team members will know that they have a role in quality, and that by strictly adhering to the quality procedures they can help the team do the work right the first time, avoid unnecessary delays, and provide the best product to the public and stakeholders.

1.3. Coordination with Other Documents

This DQMP will be coordinated with the other components of the Project Management Plan. The DQMP will interface with the authors of those plans directly and through the DB Project Manager for review purposes and to communicate changes. The goal is to achieve consistent terminology, integrated processes, and efficiency by reducing "gaps" or "overlaps" between documents.

1.4. Applicability of DQMP

This DQMP applies to members of the Design Build Team. Use of this DQMP by members of the Design Build Team, regardless of firm affiliation, will provide for uniform QC processes and facilitate consistent internal reviews of QC documentation.

1.5. Documentation

The Design Team will utilize the DB Team's document control system (SharePoint) to store and record documentation that including, but is not limited to, correspondence, design inputs, design outputs (drawings, technical reports, specifications, and calculations), design QA review and comment data, internal design quality audits, progress reports, Contract Document requirements, submittals, administrative documents, design nonconformance reports, design corrective action requests, preventive emails, information related to the production, completion, compliance, and acceptability of the work, and other documents generated under the Contract Documents.

ProjectWise will be used to actively integrate design activities by HDR and subconsultants. Documents for submissions will be stored in folders mirroring SharePoint. Upon approval from DB QC Manager, a one point of transfer for SharePoint will be performed between HDR Document Controls and Design-Builder.

1.6. Terms and Definitions

Design Quality Management Plan, Design Quality Assurance, and Design Quality Control are defined in this document as follows:

DESIGN QUALITY MANAGEMENT PLAN (DQMP)

The Design Quality Management Plan defines and outlines specific actions, procedures and documentation to be used to achieve the project goals and compliance with project requirements. This plan also identifies who will be responsible for these actions and when they should occur. Interfaces and points of coordination are defined, and specific responsibilities are clearly set forth.

DESIGN QUALITY ASSURANCE (DQA)

Quality Assurance refers to those plans/policies, procedures and methods to be employed at the project management levels to monitor and verify that effective quality control procedures are in place and are being implemented.

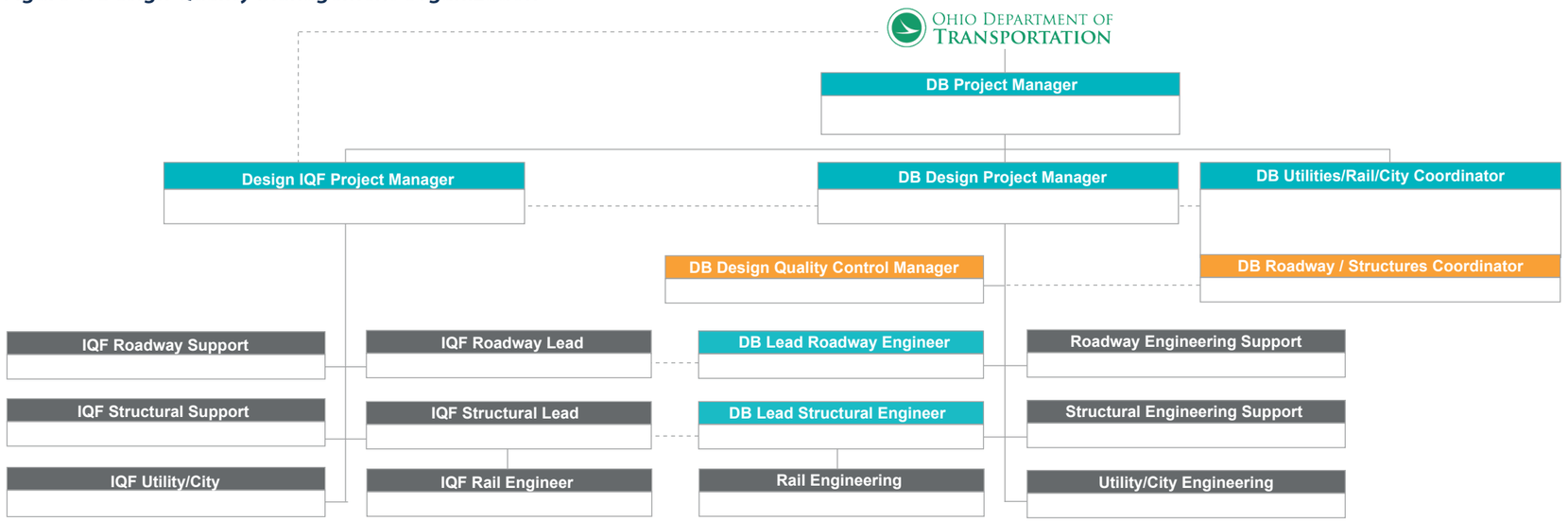
DESIGN QUALITY CONTROL (DQC)

Quality Control refers to those actions, procedures and methods that should be routinely employed at the production and administrative levels under the jurisdiction of the DB Design Project Manager, to produce the desired result of quality professional services.

2. Design Quality Organization

The TGR Design Team, comprising HDR and its design subconsultants, will perform design work in accordance with the Project Scope, ODOT design manuals, guidelines and standards. Our Design Team and subconsultants know that quality of design is imperative to ODOT. Our Design Quality Management Plan (DQMP) will include specific QC processes and procedures that will be followed by design staff assigned to the project, including the roles and responsibilities of designers, checkers and reviewers. The following organizational chart specifically shows the line of authority and reporting responsibilities for design work.

Figure 1. Design Quality Management Organization



2.1. Major Participants

2.1.1. ODOT

The Ohio Department of Transportation (ODOT) is the project owner.

2.1.2. TGR (DESIGN-BUILDER)

TGR is the Design-Builder of the project and is responsible for delivery of the design and construction in accordance with the contract documents. TGR will implement and monitor the quality of the project throughout both the design and construction phases.

2.1.3. HDR (DESIGNER)

HDR is the lead design consultant for the project and will lead design efforts including subconsultants to HDR. HDR will be responsible for QC and work with the IQF, ODOT and third parties in the development of the design.

2.1.4. TRANSYSTEMS (IQF)

TranSystems is the Independent Quality Firm that will confirm that the DQMP process was documented and effectively implemented by the Designer.

2.2. Design Team Personnel – Roles and Responsibilities

Quality Control begins with assigning the most appropriate person to a given task from the outset. Each member of the project team is individually responsible for controlling the quality of the product. The duties and responsibilities of the Design Quality Control staff are:

2.2.1. DB DESIGN PROJECT MANAGER (DB DESIGN PM)

The DB Design PM, Ken Fertal, is the project engineer responsible for the overall management, production and delivery of the design. The DB PM is responsible for overseeing the implementation of the DQMP.

2.2.2. DB DESIGN QUALITY CONTROL MANAGER (DB DESIGN QCM)

The DB Design QCM, Dan Domalik, PE, CMQ-OE, CQA, is responsible for the overall management of the QC program and the implementation of the DQMP processes and procedures. The DB Design QCM shall have no responsibilities in the production of the Design Work. However, he has the authority to hold design submissions to the IQF when necessary to preserve quality of the Design Work, including conformance with contract requirements. He is responsible for facilitating continuous improvement of the design and review process.

2.2.3. DISCIPLINE DESIGN LEADS (DDLS)

Responsible for the overall coordination and management of the design functions related to a specific discipline of engineering. The DDL is responsible for the production activities and QC functions for his or her respective discipline. DDLs include the following:

2.2.3.1. DB LEAD STRUCTURAL ENGINEER (KEY PERSON)

Joanne Shaner is the discipline lead and Engineer of Record for the structure designs. She is responsible for planning, scheduling, and coordinating structural design work for the Project. This position is required for the duration of design-related activities on the Project and shall be co-located whenever design activities are being performed.

2.2.3.2. DB LEAD ROADWAY ENGINEER (KEY PERSON)

Dennis Jennings is the discipline lead and Engineer of Record for the roadway-related designs. He is responsible for planning, scheduling, and coordinating roadway design work for the Project. This position is required for the duration of design-related activities on the Project and shall be co-located whenever design activities are being performed.

2.2.4. ORIGINATORS
Originators report directly to DDLs and comprise the technical staff that is directly responsible for producing the designs, calculations, studies, reports and plans. Originators are responsible for reviewing their own work for completeness, technical accuracy, content and form prior to having such work undergo the QC Review procedures. The originator of a document shall not rely on personnel performing design QC functions to uncover or resolve errors in the work product. The originator shall work closely with Checkers and QC Reviewers to address any comments developed through the QC processes. DDLs may be an originator.

2.2.5. CHECKERS
The detailed design Checkers are engineers or specialists in the design discipline and type of work being checked. They shall have the technical qualifications necessary to serve as an Originator. They shall not be the same individual who originated that design document and will not be directly involved in the production of the design item being checked. These individuals are tasked with checking the design for accuracy, correctness and compliance with the design criteria and standards. An individual may serve as both an originator and a checker, but not on the same document.

2.2.6. BACKCHECKERS
The Backcheckers review the checker's proposed edits and/or comments and resolve any differences. Backcheckers then make, supervise, and/or implement the agreed-upon changes. Backcheckers are typically the originators of the document.

2.2.7. UPDATERS
Updaters are individuals directly responsible for incorporating changes to the design documents based on comments made by a Checker and agreed to by the Backchecker

2.2.8. VERIFIERS
The Verifier will be a person who confirms that the comments have been addressed and changes have been made. They are typically the Checker of the design document. They shall not be the Originator or the Backchecker.

2.2.9. QC REVIEWERS
Quality control (QC) reviewers are individuals assigned to perform technical reviews of a particular design package or deliverable in accordance with the procedures outlined in this DQMP. The quality control reviewer will be an individual who was not involved in the production or development of the design package or deliverable being reviewed. QC reviewers are responsible for performing a review of deliverables to verify that contractual requirements are being met. QC reviewers generally do not perform a detailed numbers check of the documents they review. At a minimum, QC reviewers shall have the technical knowledge and qualifications necessary to serve as an originator for the work element being reviewed. Please see DCPR-11 and Table 3.1 below for additional information.

2.2.10. INTERDISCIPLINARY REVIEWERS (IDR)
IDRs are engineers involved in the project and of a different discipline than that being reviewed. IDRs perform cross-discipline reviews to confirm design recommendations are accurately implemented across engineering disciplines in order to ensure the integrity of the comprehensive design plans.

2.3. Independent Quality Firm – Roles and Responsibilities
The IQF's role is to verify that the design work meets the requirements of the Contract Documents and the requirements assigned to the IQF per the scope of work. The IQF shall have authority independent of and equivalent to the DBT Construction Project Manager and the DBT Design PM.

The IQF will have the authority required and responsibility to stop any and all design work if quality requirements are not being met.The IQF shall owe a duty of care to ODOT in carrying out its obligation in relation to the project. The duties and responsibilities of the IQF staff are:

2.3.1. DESIGN IQF PROJECT MANAGER (DIQFPM)
Responsible for management of the Design Quality Assurance process related to design components. He will ensure that design work meets applicable requirements of the Contract Documents and identify and recommend measures to prevent quality problems or to improve design quality. The DIQFPM shall review design submittals to verify they are in accordance with therequirements of the Contract Documents and that their development was in accordance with the PMP and responsible for approving design deliverables (including Working Drawings and Engineered Drawings) prior to delivery to the Department. IQF approval of the design deliverables shall indicate that the IQF believes the deliverable meets requirements of the Contract Documents.

2.3.2. IQF STRUCTURES LEAD
Responsible for review and verification of the quality of structural design work. He will report to the DIQFPM.

2.3.3. IQF ROADWAY LEAD
Responsible for review and verification of the quality of non-structural design work. He will report to the DIQFPM.

3. Buildable Units

The Project will be broken down into Buildable Units (BUs) for tracking purposes. BUs will be assigned a unique identification in the project schedule that will be carried through design, the quality control process, the independent quality assurance process, and through construction. The proposed BUs are as follows:

Figure 2. Buildable Units

No.	Proposed Buildable Units	Project Area				
		Project Wide	A	B	C	D
1	Roadway (Kinsgbury to E. 79th)			▶		
2	Roadway (E. 55th Street to Kingsbury and E. 79th to E. 93rd)		▶		▶	▶
3	Traffic Control	▶				
4	CPP Proposed and Lighting	▶				
5	NEORSD Regulator and Sludge Main		▶			
6	Waterline (Main & Relocations)	▶				
7	MOT for BU#1			▶		
8	MOT For BU#2		▶		▶	▶
9	E. 55th Street Bridge over OH-10		▶			
10	E. 59th Ped Bridge over Quadrant Road		▶			
11	Walls (1, 2, 3a, 3b, and 4)		▶			
12	OH-10 Bridge over Kingsbury Run Ravine			▶		
13	OH-10 Bridge over GCRTA Blue-Green Lines			▶		
14	Norfolk Southern Railroad Bridge over OH-10				▶	
15	E. 89th Ped Bridge over NS & GCRTA					▶

Each BU will be tracked using its assigned identification, reflecting the stage of completion of the buildable unit.

Once a BU is approved for construction, the DIQFPM will sign and stamp the drawings as “Released For Construction.” The drawings will be uploaded to SharePoint by the IQF to show the BU is ready for construction.

Submittal materials and comments will be uploaded to SharePoint as they are generated.

4. Design Development and Planning

The purpose of this section is to describe the general Quality activities that occur during the course of design development for a design package.

Design and development for OC3 will consist of the following general activities:

4.1. Planning the Work

The DQMP, including appendices and other design-related documents contained or identified for use in the Scope of Services, will be distributed to members of the Design Team. These documents will be updated as needed throughout design.

4.2. Prepare Design Documents, Technical Reports/ Memorandums

The Design Team prepares the design documents, using the established design criteria for the Project as contained in the Contract Documents.

Discipline-specific Task Force meetings will be held as necessary to resolve technical issues within a particular discipline and to coordinate work between Buildable Units. These meetings may include other disciplines and construction counterparts as required depending on the topics to be discussed.

4.3. Check and Review Design Documents

The design documents are checked and reviewed in accordance with the detailed QC procedures contained in Appendix A. These procedures are identified as Design Control Procedures (DCPR) and are referenced by number as follows: DCPR-01, DCPR-02, etc.

4.4. Revise

Comments will be evaluated and incorporated into the documents, as appropriate. Responses to comments and final disposition of comments will be recorded on the Review Comment Summary and Resolution (RCSR) form. Final comment resolution will reflect agreement between the designer and the reviewer. (Note: Clarify (“C”) and Resolve (“R”) comments are to be rectified prior to Draft RFC submittals. Only final dispositions of Accept (“A”) and Dismiss (“D”) comments are permitted at that stage.)

4.5. Certify

The Engineer of Record will provide documentation that the design has been completed and checked in accordance with the contract requirements and the DQMP. This includes verifying that recommendations contained in specialty reports (pavement design, geotechnical analysis and design, etc.) have been incorporated into the plans.

4.6. Document Management

QC documentation will be maintained on HDR’s Projectwise.

4.7. IQF Review

Design plans and documents will be submitted to the IQF for verification that the submittals are in accordance with the requirements of the contract. Submission procedures for various reviews are shown in Section 6 of this DQMP. IQF will review the submittal and provide comments electronically on the project SharePoint site.

4.8. Comment Resolution Meeting

After the IQF completes their review, the Design Team has the ability to request a comment resolution meeting with the IQF and TGR.

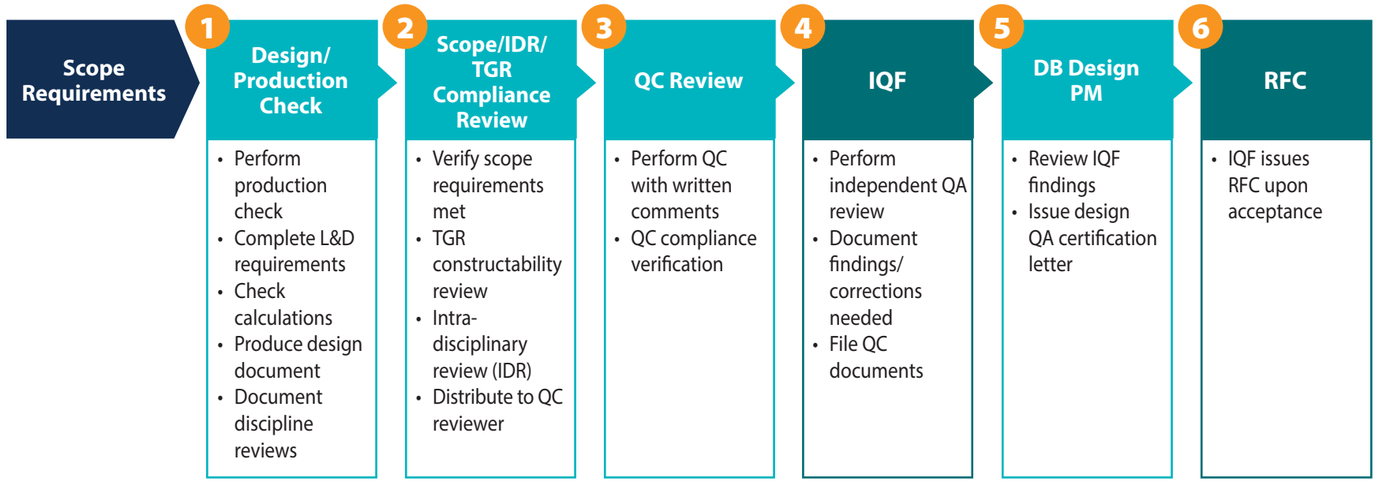
4.9. Revise

The Design Team will make the necessary revisions to the design documents as agreed in the Comment Resolution Meeting and advance the design to the next level.

4.10. ODOT and Applicable Agency Submittals

Upon IQF acceptance and verification that the submittal is in compliance with the Contract Documents the Design-Builder will upload the submittal to SharePoint for ODOT and any applicable agencies to view. In addition to the electronic format uploaded, hardcopy format will be provided to ODOT and applicable agencies in conformance with project scope. The Design Team and TGR will schedule comment resolution meetings with the involved agencies and ODOT, as necessary.

Figure 3. Key Design Quality Management Components



5. Design Submittal Process

The three primary submittal types are (1) interim design, (2) final design, and (3) Release for Construction (RFC) submittal. Design submittals will be in electronic and/or hardcopy format as required by scope and shall be made in accordance with procedures described below.

The Design Team will schedule a submittal meeting with the IQF for each of these submittals. ODOT and any other applicable agencies will be notified of these meetings by the IQF. The Design Team will provide an overview of the submittal, including a summary of included information. A Letter of Transmittal shall be included with each design submittal, detailing the drawings and documents to be submitted. The DB Design QCM will review the deliverable for completeness as part of the submittal meetings. Submittals will not be accepted if the deliverable is considered incomplete.

5.1. Interim Design Submittal

The intent of the Interim Design Submittal is to provide a formal opportunity for the IQF and other approved project stakeholders to review the construction documents to ensure that the design is progressing appropriately and in compliance with the contract documents. Upon confirmation that the Interim Design is in compliance with the contract documents, the IQF will submit the Interim Design package to the approved project applicable agencies requiring review and upload electronic copies to ODOT's Sharepoint site.

5.2. Final Design Submittal

The Final Design Submittal package is prepared when the design for a given Buildable Unit is 100% complete. The IQF quality assurance review will verify that the design conforms to the contract documents. The intent of the 100% Compliance submittal package is to streamline the RFC process by including an additional opportunity for the Design Team to revise and update the plans and allow for closure of any significant open comments prior to certification. Upon receipt of the IQF certification that the 100% Design or Compliance Submittal is in compliance with the contract documents, the IQF will submit the Final Design package to the approved project applicable agencies requiring review and upload electronic copies to ODOT's Sharepoint site.

5.3. Released for Construction (RFC)

Upon compliance of final design review documents, the DDL shall schedule a meeting with the IQF, department, and 3rd parties to submit the ready for construction plans. This meeting is not to be considered another design review. The DDL will not transmit individual RFC packages to the Department for acceptance. The Design IQF PM shall sign and stamp on the Design Documents "Released for Construction" after scope and contractual requirements are met.

5.4. Other Submittals

5.4.1. POST RFC DESIGN CHANGES

The appropriate DDL will discuss significant proposed changes, via an Notice of Design Change (NDC), to previously Released for Construction documents with the Department to gain concurrence of whether the Department would like an opportunity for review, i.e., the changes in the document(s) return to the Final Submission step. Minor changs can be sent to the Department for information only.

Changes to previously RFC documents will be in a format that can enable changes to be readily apparent. The revised design document will be checked and/or reviewed, as described on the QC Process Documentation Form for the proposed change, commensurate with the degree and nature of the change. Proposed changes shall be reviewed and approved by the professional of record who produced the original work, if available; otherwise, approval will be provided by the alternate professional of record. The QC Process Documentation form will document the required checks and/or reviews. For drawings, revisions will be identified in the revision block and the current revision identified by a revision cloud and revision triangle. Previous revision clouds and revision triangles will be removed if the drawing is subsequently revised.

Changes to text documents previously provided to the Department will be in a format that enables such changes to be readily apparent and traceable. The serialization of revised documents shall correlate to the serialization of the original document. Revisions to previously Released for Construction Microsoft Word documents will be identified using the "track changes" function. Additions to the document will be underlined and deletions will be in "revision balloons" in the right-hand margin. A clean copy of the text document and a copy showing the edits will be provided. The version of a text document will be identified in a revision block on the cover of the document, i.e. reports and studies, or in the footer, i.e. specifications.

Design changes shall be identified, received, tracked, reviewed, responded to, approved by authorized personnel, and distributed prior to their implementation in accordance with a defined procedure. Design changes shall follow the same process for checking and review as the original design. The DIQFPM shall certify in writing that the design change was designed, checked, reviewed by the IQF, and is compatible with the design of related elements.

5.4.2. AS-BUILT AND RECORD DOCUMENTS

"Record Documents" are the documents produced by the Design Team that incorporate As-Built information, requests for information, and approved field design changes provided by TGR. The Design-Builder shall obtain Department approval of a Record Documents Organization Plan (termed As-Built Organization Plan in the Contract). As-Built information will be accumulated by the Design-Builder and provided to the Design Team in order to prepare Record Documents. The Record Documents shall be organized according to the Approved Record Documents Organization Plan. Record Documents may be produced as the project progresses to provide for accurate and timely documentation of the constructed project. Record Documents shall be prepared and be submitted in both hard copy and electronic (PDF and CADD) format, including MicroStation files, conforming to Department CADD standards.

The appropriate DDL shall prepare formal Record Documents submittals from As-Built documents provided by construction field personnel that incorporate updates to the Released for Construction Documents including any design changes, actual field As-Built changes, actual survey information and Requests for Information. This shall include as-constructed information on utilities relocated (public or private) as part of the project provided to the DDL.

Neither As-Built nor Record Documents will be signed and sealed by a professional of record; however, the Project Manager shall sign and date the title sheet of the Record Documents plans to certify that the project was completed in accordance with the plans, Contract Documents, governmental approvals, and applicable laws.

5.4.3. DESIGN QUALITY RECORDS

The DQMP, design inputs, design outputs, QC records (review markups, signature sheets and forms, signed check prints, comment matrices, etc.), and internal QA records (audits, management reviews), corrective and preventive actions related to design will be maintained in separate and uniquely named folders in Sharepoint per Section 1.5 of this DQMP. A folder within the DBT's ProjectWise will be accessible by the IQF to facilitate QA and oversight activities.

5.4.4. DESIGN CONTRACT CHANGES

Contract deviations for general or specific variances

from Contract requirements must receive the Department's approval. The DB Design PM will be responsible for design contract changes. Design contract changes shall be identified, received, tracked, reviewed, responded to, approved by the DB Design PM, and distributed to the appropriate DDL(s). Design contract changes will generally follow the same process for checking and review as the original design. Proposed changes shall be reviewed and approved by the professional of record who produced the original work if available; otherwise, approval will be provided by the alternate professional. The QC Process Documentation form will document the required checks and/or reviews.

5.4.5. THIRD-PARTY COMMUNICATIONS

The DB Design PM shall provide copies of correspondence between the TGR Team and other agencies, including the City of Cleveland, regulatory agencies, railroads, and utility owners, to the Department via the ODOT SharePoint site at the time of submittal to the applicable agency.

5.4.6. REQUEST FOR INFORMATION (RFI)

During construction, an inquiry may be received from TGR regarding design intent, a request for clarification and/or some detail of construction that is below the level of detail shown or indicated on the documents.

5.4.7. CONSTRUCTION SUBMITTALS

During construction, TGR may transmit a submittal such as a shop drawing review to the Design Team.

5.4.8. MAJOR DESIGN DECISIONS

Separate submittals for concurrence with major design decisions made after the interim design submittal are required. Major design decisions involve significant utility relocation, unforeseen acquisition of ROW, traffic operation or geometric decisions that involve two or more viable solutions, and any other decision that impacts the public, operation of the facility or future maintenance.

When the DBT becomes aware of additional decisions during the course of the design, they must advise the District Project Manager in writing.

6. Design Quality Control

The purpose of this section is to describe the design QC procedures that may be applied during the course of design development for a design package. This section also details the IQF's verification process of the Designer's work product.

6.1. Designer's Internal Quality Control

Documents that directly constitute the deliverable will undergo a Quality Control Review by one or more individuals prior to submittal to the IQF. DQMP procedures are based upon two responsible and qualified individuals concurring on the correctness of the work product. To accomplish this, our process identifies four levels of quality control:

- Checking
- Inter-Disciplinary Review (IDR)
- Constructibility Review (CR)
- Quality Control Reviews (QCR)

Each work product shall have a Production Check and a QCR performed before it is used for further design development and prior to each scheduled phase submittal.

6.1.1. CHECK

Production checks are scheduled by the DDL. Checking is the most detail-oriented of QC procedures to be implemented. Plans intended to be in the RFC construction documents shall be subject to the checking procedures contained herein. A color-coded checking procedure shall be used to document that information contained in plan documents, calculations, specifications and reports to be submitted has been checked.

The intent of checking is to provide a consistent process for, but not limited to, the following. The DCPRs provided in Appendix A provide additional requirements:

- Verifying the accuracy and completeness of the document;
- Style checking to verify compliance with appearance needs, such as CADD, file type, and spelling; and,
- Verifying and documenting corrections and/or changes that have been made. A consistent approach promotes uniform QC among Design Team members.

Checkers will use a check print stamp to document the steps of the checking process. An example check print stamp that may be used on the project is illustrated in Figure 4.

Figure 4. Check Print Stamp

First Page Only: Design Package No. or Description			
No.	_____	Date	_____
CHECK PRINT			
Dwg. Only: Checked against calcs. and calc. check confirmed by	_____	Date	_____
Originator	_____	Date	_____
Checker	_____	Date	_____
Backchecker	_____	Date	_____
Updater	_____	Date	_____
Verifier	_____	Date	_____

The following describes the check print stamp protocol.

- The checker and verifier must be independent from the originator, backchecker and updater.
- The checker and verifier do not have to be the same person, but it is preferred.
- Originator, checker and backchecker are always required. Updater and verifier are required based on checker's red lines.

6.1.2. INTER-DISCIPLINARY REVIEW (IDR)

The DB Design QCM identifies the DDL to engage in the IDR. An Inter-Discipline Design Review (IDR) may be used for any design reports, plans, and specifications that involve more than one discipline. The objective of the IDR is to coordinate design between and within disciplines in order to verify there are no conflicts, omissions, or misalignments between integrated or adjacent work. The IDR may be performed concurrent with the QCR, but it must be completed and any revisions incorporated prior to the submission to the IQF.

6.1.3. CONSTRUCTABILITY REVIEW (CR)

A Constructability Review is a review conducted by a member of the design-builder to assess the design in relation to feasibility and accessibility. CRs are in addition to Task Force Meetings in which coordination between the Design Team and construction team takes place on a periodic basis.

6.1.4. QUALITY CONTROL REVIEW (QCR)

QCRs are scheduled by the DB Design QCM as described in the project CPM. The DB Design PM, in coordination with each DDL, is responsible for managing the implementation of the QCR process on deliverables. The quality reviewers will be experienced engineers or other qualified professionals from the Qualified QC Reviewers/ QA Officers List and are peer-level reviews for design approach, suitability, and conformance with clients' design criteria standards and scope. The DB Design PM or DDL is responsible to verify that the work product is ready for the QCR and contains a complete work product; the project scope; client directives; design criteria; assumptions; technical standards; checked computations; and that previous comments have been executed. The member performing the QCR shall not have participated in the production for the design or plan details being reviewed.

6.2. IQF Design Reviews

The IQF will perform design reviews throughout the duration of the design. Four types of reviews are identified in the project scope of work, defined as follows:

6.2.1. DESIGN SUBMITTAL REVIEW PROCESS

A formal design review will occur at the Interim Design Submittal and the Final (100%) Design Submittal as described earlier. Upon receipt of certificates of compliance, TGR will schedule a submittal meeting with the IQF. ODOT and any other applicable agencies will be notified in advance of each submittal meeting by TGR. TGR team will provide an overview of the submittal, including a summary of included information. As part of this meeting, the DIQFPM will review the deliverable for completeness per the scope requirements. Submittals will not be accepted if the deliverable is considered incomplete.

1. IQF Review. Quality Assurance for the various submittals will be provided by the IQF in the form of design reviews in order to provide the Department with the confidence that the design meets the applicable requirements of the Contract Documents. To accomplish this, the IQF will review the design submittals to verify that:

- the designs and design documents as developed by TGR comply with the requirements of the Contract Documents, Scope, Design Criteria and the DQMP
- there are no conflicts between the Buildable Unit being reviewed and any previously approved designs

The IQF design reviews will be conducted under the supervision of the DIQFPM by a team of professional engineers licensed in the State of Ohio. To ensure consistent, efficient reviews, the IQF review team is comprised of both a primary reviewer and a secondary reviewer in each design discipline (Drainage, Geotechnical, Lighting, MOT, Roadway, Structures, Traffic), with each member of the team having extensive experience in the discipline they will be reviewing. Prior to the design submittal being received, the DIQFPM will ensure that the appropriate reviewers are available so that the design components related to the different disciplines are reviewed concurrently. Each of the concurrent reviewers will provide comments to the DIQFPM. The DIQFPM (or a suitable design assurance team member) will review the comments provided by the discipline reviewers to assure that:

- Key features related to the design submittal have been adequately addressed by the design assurance team,
- Designs do not conflict with previously approved design components from related BUs
- Designs are consistent with adjacent designs that are submitted nonconcurrently due to differing construction schedules.

This will be accomplished by reviewing the progress drawings of the adjacent design and the geometric design buildable unit drawings. The first area approved will set the precedent for the adjacent design review. If there are conflicting comments from the various discipline reviewers, a conference call or meeting will be held between the DIQFPM and the affected discipline reviewers to resolve the conflicting comments. If during the quality assurance review a significant number of comments are being generated or a significant design issue is found, the IQF will reject the submittal and call for a meeting with the DM and leads for the Buildable Unit submission. The DIQFPM and the reviewer(s) will work with the Design Team representatives to achieve an acceptable resolution to the issues encountered. If during the course of the meeting the IQF determines that the review can continue with the set of plans as submitted, the review will be resumed and completed with comments provided.

The IQF comments from the quality assurance review will be returned to the Design Team using the comment review form developed for this Project. This comment review form is located on the project SharePoint site as administered by the IQF. After receiving the comments, the Design Team may request a comment resolution meeting to discuss any issues contained in the comments that need clarification or further explanation. The meeting will help to assure a basic understanding of the comments and the proposed resolution. This comment resolution meeting will be chaired by the DIQFPM and may be attended by the Department and other agencies. The DIQFPM will prepare and distribute minutes of each comment resolution meeting. Review comments will be addressed by the Design Team, and the proposed disposition of comments reviewed by the IQF. It should be noted that "C" and "R" comments are to be rectified prior to Draft RFC submittals. Only final dispositions of "A" and "D" comments are permitted at that stage.

After reaching a successful resolution of any issues and IQF verification that the design submittal is in compliance with the Contract documents, the IQF will upload electronic copies to the document management system and submit the required certification to TGR indicating that the plans are ready for distribution to the Department and applicable agencies requiring review.

6.2.2. OVER THE SHOULDER REVIEWS (OTSR)

OTSRs are informal examinations performed by the IQF and the Department of Design Documents during the design process. OTSRs will mainly assess whether the requirements and design criteria of the Contract Documents are being followed and whether design PMP processes and procedures are being followed. The Design-Builder shall schedule OTSRs with the IQF and invite the Department during the course of the development of each design package, prior to interim and final submittals. The Design-Builder shall invite affected utilities, railroads, and City departments to each OTSR to provide opportunity to comment as requested or as otherwise deemed necessary by the Department.

6.2.3. INTERIM REVIEWS

The Design-Builder will schedule a submission meeting with the IQF to present each design submittal. Other agencies, including the Department, shall be notified in advance of each meeting, and shall be accommodated to attend each meeting at its sole discretion. At submission meetings, the Design-Builder shall provide an overview of the submittal, including a summary of included information. The IQF shall not accept submissions with missing information. After the submission meeting and upon approval that a design submittal is compliant with the contract documents, the IQF shall submit the design documents to applicable agencies requiring review. Interim review durations are found in the scope documents. Comment resolution meetings

will be conducted for the purpose of making sure review comments are addressed by the DB Designer and verified by the IQF.

6.2.4. FINAL REVIEWS

Final reviews will occur when the design for specific buildable units is 100 percent complete. The process for submittal of the final review design documents is identical to the interim review submittal process described above.

6.2.5. RELEASED FOR CONSTRUCTION REVIEW (RFC REVIEW)

RFC reviews will be completed before construction of the buildable unit can commence. After review of Final Design submittals, the DBT shall resolve outstanding issues and comments and prepare a full set of Design Documents stamped "Submitted for RFC." The Design-Builder shall schedule a submission meeting with the IQF to present the submittal. Other agencies, including the Department, shall be notified in advance of the submission meeting and invited to attend each meeting at its discretion. The IQF shall not accept submissions with missing information.

The Design IQF PM shall sign and stamp on the Design Documents "Released for Construction" after scope and contractual requirements are met.

6.3. Summary of APPENDIX A - Design Control Procedures

APPENDIX A provides detailed work instructions to the Designer and IQF for application of each of the design control procedures, including those procedures for design QC. The design control procedures contained in APPENDIX A are as follows:

- Quality Records
- Checking of Reports and Studies
- Checking of Calculations
- Checking of Drawings
- Checking of Input to Computer Programs
- Checking of Specifications
- Spreadsheet Checking
- Revisions to Released For Construction Documents
- Computer Software
- Constructability, Interdisciplinary and Quality Control Reviews
- Request for Information
- Internal Design Quality Assurance Audits
- As-Built and Record Documents
- Corrective and Preventive Actions
- Construction Submittals

7. Third Party Review

This section describes the process by which the Designer and IQF will submit review documents to third party and other agencies for review. It also describes the process for reviews of designs submitted by third party agencies to the design-build team for a compliance check with the team's design.

7.1. Review of Submitals by Local Agencies and Utilities

Upon IQF approval and verification that a design submittal is in compliance with the Contract Documents, the IQF shall submit Design Documents to applicable agencies requiring review and upload electronic copies to the Department's document management system. Submission requirements, beyond those stated in the Contract Documents, to agencies other than the Department shall be determined by and complied with by the DBT. The durations listed in the table below shall be in the CPM Schedule for interim and final reviews and comments/approvals as follows. The DBT shall supply an electronic version (in PDFformat) along with a full size (22" x 34") and/or half size (11" x 17") paper prints of each plan submission simultaneously to the parties indicated below:

Figure 5. Third Party Review Times

Submittal	Review Times	Half size (full size)
City of Cleveland Engineering & Construction	10 workdays	4
GCRTA	As stated in Railroad Agreement	2
Norfolk Southern	As stated in Railroad Agreement	3
NEORSD	20 workdays	2
City of Cleveland owned utility	20 workdays	1
Each affected utility	20 workdays	1 (1)

A comment resolution form will be provided with the submission along with instructions on how to use it and the person to whom comment forms will be returned to. Comments received from the various agency reviews will be collected by the Design-Builder and stored electronically. The DIQFPM shall prepare and distribute minutes of each submission and comment resolution meeting and shall ensure that review comments are addressed by the Design-Build Designer and verified by the IQF. Final design submittals shall include a written disposition of comments made during formal interim design submittals. The TGR team shall schedule comment resolution meetings with involved agencies and the Department, as necessary, to address the comments received, but no sooner than the review times allotted for each government entity or the Department. Comments from other agencies will be reviewed to determine their appropriateness to the project. TGR shall not implement deviations to the requirements of the Contract Documents requested by other agencies without the Department's Discretionary Approval.

The Department will not provide formal review of design submittals; however, design submittals are subject to Department audit over the course of design development. Department design audits may be limited to scope compliance; however, the depth, magnitude, type, and timing of the Department's audit of design submittals will be at the Department's sole discretion.

7.2. Review of Utility Owner Supplied Designs (Owner Managed Design)

Utility Owners prepare a complete package of their design plans, including applicable standards and special provisions and submit them to the Designer for review. The Design Team verifies that each relocated utility facility, as designed, is compatible with and interfaces properly with the design and construction of the project. A constructability review to verify that the design and construction is consistent with the Utility Agreements and contract requirements will be performed by the Designer. Comments resulting from the design and constructability review will be documented through plan markups or use of the comment resolution Form (or both). The Designer will submit utility plans and comments to the Design-Builder, and the Design-Builder will send it to the IQF and ODOT after the Design-Builder has performed its review. IQF will perform a review and provide comments using the Comment resolution Form. The comments and plan markups are returned to the utility owner and a Comment Resolution Meeting will be held to resolve comments.

8. Project Management

The DB Design PM will be responsible for the overall management and production coordination of the design disciplines in conformance with the contract documents. The project management to be followed is detailed in the Project Procedures Manual.

8.1. Quality Program for Subconsultants

Subconsultants are required to adhere to the DQMP outlined herein. They will be required to perform or participate in the Check, the QC Review, IDR, and CR. Upon their completion, an officer of the subconsultants firm will provide the DB Design QCM Certificate of Compliance Form with the required audit documentation package.

The TGR Team's DB Design QCM will conduct periodic Quality Assurance Reviews of the subconsultants' work to check for adherence to the DQMP.

8.2. Quality Control and Verification of Computer Software

Only software that is on the Approved Software List, approved and maintained by the DB Design QCM, can be used for project design tasks. Approved software is either industry standard software or validated non-industry standard software. Where practical or applicable, software shall be used that has been developed under the vendor's software quality assurance plan. Documentation of software validation is maintained in ProjectWise.

8.3. Non-industry Standard Software Programs

Computer programs (other than industry standard programs) used for design calculations may be validated to demonstrate that the program produces valid solutions in accordance with the Design Control Procedure for Computer Software. Changes to computer programs shall be controlled so that they are verified and approved by individuals authorized by the DB Design PM. Once validated, checking of the input may be conducted in accordance with the Design Control Procedure for Checking Input to Computer Programs. Design Team firms may have an alternate equivalent validation procedure. In this case the alternate procedure will be maintained in ProjectWise and accompany the associated validation.

8.4. Industry Standard Software Programs

The DB Design PM will approve the list of Industry Standard design software prior to its use. A list of approved design software may be maintained in the Design Control Procedure for Computer Software. Industry Standard software does not have to be independently validated by the Design Team prior to use on the project. In order to verify the software performs as intended, the checker will verify the input is correct and accurate and may perform a reasonableness check of the output in accordance with the Design Control Procedure for Checking Input to Computer Programs. The checker will also check supporting work, such as diagrams and input assumptions. Bridges will be load rated and the load rating checked in accordance with the Design Control Procedure for Checking Calculations.

9. Design Quality Improvement

9.1. Design Quality Control Improvement Process

The DB Design QCM will be responsible to establish, document, and implement a program for quality improvement. The DB Design QCM will use corrective and preventive actions to facilitate, in part, continuous improvement. Feedback from the Design Team Design-Builder and/or Department will be used to identify opportunities for improvement. When opportunities for improvement are identified, formal and informal meetings may be used to communicate such opportunities. When preventive action emails are used, these emails will be retained in ProjectWise. If changes to the DQMP are required, the DB Design QCM will initiate the changes, discuss with and seek informal acceptance of the change by Department, and communicate the change to the Design Team for implementation.

The DB Design QCM shall implement the necessary corrective actions in a timely manner to improve deficiencies found during the audit. The DB Design QCM's follow-up activities shall verify the implementation and effectiveness of the corrective action taken. Corrective actions shall identify the root causes, if applicable, of deficiencies and shall be developed, implemented, and tracked to prevent the recurrence of future deficiencies. Corrective actions shall be monitored through review of documents, surveillance, or follow-up audits. Records of corrective actions shall be kept together with the respective audit records and submitted to the Department upon request.

9.2. Corrective and Preventive Actions

The Corrective and Preventive Action process is described in the Design Control Procedure. The DB Design QM will use the Corrective Action Request form to address findings requiring corrective action. When required, the DB Design QM will investigate the root cause of the nonconformance and take steps to correct the deficiency, i.e. additional targeted training. The corrective action will include follow-up to verify the steps taken have resulted in the desired outcome. The need for corrective action may be identified by the DB Design QM or other management staff.

The DB Design QM, or other management staff, may identify potential QC process nonconformances. When this occurs, the DB Design QM will determine a course of action and will distribute the process clarification via a "preventive action" email to the DDLs. Preventive action emails will be stored in ProjectWise.

The documentation of design Corrective and Preventive Actions is a Quality Record and will be retained in ProjectWise. The documentation of Corrective and Preventive Actions will be made available to the QAF and Department upon request. Documentation of Corrective Actions will be retained in ProjectWise as a PDF.

The DB Design QM's proposed corrective and preventive actions that are suggested in response to requests from the Department shall be documented in a format and medium required by the Department.

9.3. Review of the Quality Management System

The Design-Builder's senior management shall conduct a management review of the Quality Program at least quarterly and more frequently if necessary or if requested by the Department, to provide for its continuing suitability and effectiveness in satisfying the requirements of the Contract Documents and the Design-Builder's stated quality policy and objectives. The DB Design PM and/or DB Design QCM will participate in the management reviews when requested.

APPENDIX A

Design Control Procedures

Subject: ***DESIGN QUALITY RECORDS***

Procedure No. ***DCPR-01***
Page *1 of 4*
Revision *0*

1.0 PURPOSE - To provide a system for identification, collection, accessing and storing all Design Quality Records.

2.0 SCOPE - This procedure applies to all design quality records produced by the Design Team for this Project.

2.1 DEFINITIONS

Design Quality Record – consists of the documentation of the checking and reviews, including check prints, review forms and certifications.

3.0 RESPONSIBILITIES - It is the responsibility of each individual within the Design Team to generate legible and complete Design Quality Records.

DB Design QCM is responsible for establishing the requirements for the control and maintenance of the Design Quality Records generated.

4.0 PROCEDURE

4.1 Identification and Maintenance

A. Design Quality Records are legible, dated and identifiable to the product, person or event to which they pertain.

B. Design Quality Records are indexed (design package number), filed and stored in ProjectWise to facilitate easy access.

D. Access to Design Quality Records is controlled by the DB Design QCM to maintain the integrity of the records while permitting access to those who need the records.

E. Design Quality Records are identified as exhibited in Figure DCPR-01.

4.2 Storage and Maintenance

A. The electronic files of the Design Quality Records stored in ProjectWise will be the official set of quality records.

B. Design Quality Records that are filed electronically are backed up on a regular basis to secure off-site server in the case of loss due to theft or damage.

4.3 Electronic Copies of Quality Records

Electronic copies of the Design Quality Records will be created and stored on ProjectWise during the Project in a uniquely named folder.

4.4 Retention and Disposition

A. Design Quality Records will be electronically retained in ProjectWise for the period of time defined in Figure DCPR-01, at a minimum.

B. Requests for access to the Design Quality Records are to be made to the DB Design QCM during the Design Phase, Construction Phase and thereafter.

5.0 FIGURES
QC Process Documentation Form

6.0 FIGURES
Figure DCPR-01 Design Quality Records

Form DCPR-01 QC Documentation Form

Owner: _____ Date: Date

Project: _____ DPI: _____

Package Name: _____

Package Initiator: _____ Initials: _____

DB Design Manager: _____ Initials: _____

DB Design QCM: _____ Initials: _____

Design Package Status:
☐100% ☐RFC

Buildable Unit Status:
☐Interim ☐RFC
☐Final

Includes a Change Order?
☐Yes
☐No

Checking of Reports and Studies Required?	☐ Yes	☐ No	
Checking of Calculations Required?	☐ Yes	☐ No	
Checking of Drawings Required?	☐ Yes	☐ No	
Checking of Spreadsheet Required?	☐ Yes	☐ No	
Checking of Input Required?	☐ Yes	☐ No	
Checking of Specifications Required?	☐ Yes	☐ No	
Load Rating Required?	☐ Yes	☐ No	
Constructability Review Required?	☐ Yes	☐ No	Name:
Quality Control Review Required?	☐ Yes	☐ No	Name:
Interdisciplinary Review Required?	☐ Yes	☐ No	

***Interdisciplinary Reviewers*:**	**IDR Reviewer or Delegate**	**QCR Reviewer or Delegate**
☐ Civil Roadway		
☐ Utilities		
☐ Drainage		
☐ Structural		
☐ Signals		
☐ MOT		
☐ ITS		
☐ Erosion Control		
☐ Lighting		
☐ Pavement marking		
☐ Signage		
☐ TMP		
☐ Other		
☐ Other _____		

Figure DCPR-01

DESIGN QUALITY RECORDS

DQMP	Element	Quality Record(s)	Minimum Retention Period (after completion of construction)
	Design Validation Reviews	QC Review Forms (CR, IDR, & QCR) and Comment Sheets.	7 Years
	Design Verification	Quality Check Prints of drawings, calculations and software input/output, studies, reports, & specifications.	2 years
	Design Changes/ Revisions	Documentation Form NDC, Plan, Spec., or other revised document.	7 Years
	Deliverable Certifications	Internal Design QA Checklist, Periodic Audit Agenda, Periodic Audit Form, Periodic Audit Report.	7 Years
	Corrective and Preventive Action	Corrective Action Request, Corrective Action Status Log.	7 years
	Construction Submittals	RFI & Construction Submittals Documents	7 years

1.0 PURPOSE - To provide guidelines for preparation and checking of reports and studies.

2.0 SCOPE – Studies and reports shall be subject to the checking procedures contained within this section when this procedure is indicated on the *QC Process Documentation* form. When required, these checking activities shall be completed prior to the deliverable to being submitted.

2.1 DEFINITIONS

Originator. Originators comprise the technical staff that is directly responsible for producing the designs, calculations, studies, reports, specifications, estimates, and plans that are necessary to develop a deliverable. Originators are responsible for reviewing their own work for completeness, technical accuracy content and form prior to having such work undergo the formal quality checking process. The Originator of a document shall not rely on Checkers to uncover or resolve errors in the work product. The Originator shall work closely with the Checker to address and resolve any comments developed through the quality checking process.

Checker (Reviewer). Checkers are individuals who are directly responsible for performing a detailed suitability, concept and math check of design documents that are generated by Originators. Checkers shall have the technical knowledge and qualifications necessary to serve as the Originator for the work element being checked. The Checker of a particular design document shall not be the same individual who originated that design document. An individual can serve as both an Originator and a Checker, but not both on the same document.

Backchecker. Individual who verifies that corrections and additions marked-up by the Checker are correct. The Originator may serve as the Backchecker.

Updater. Updaters are individuals directly responsible for incorporating changes to the design documents based on comments made by a Checker and agreed to by the Backchecker.

Verifier. Individual who reviews the updated document and compares the backchecked and approved check prints the final document to verify all corrections or changes were incorporated in the updated document.

Check Set. The document that is provided to the Checker for checking or review.

3.0 RESPONSIBILITIES:

The following personnel have the responsibilities as follows:

Originator: Responsible for creating a review document affixing the Check Print Stamp and providing the review forms; responding to comments; reaching concurrence with the Reviewer for proposed changes that will not be incorporated; and, printing revised documents (i.e., reports) for the Reviewer. The Originator shall provide the Design BU No. or description with the percent review (e.g. interim, draft) in the top of the Check Print Stamp. If a subsequent Check Print is printed, then this information will be provided on the subsequent Check Print.

Checker (Reviewer): Responsible for checking the report or study; reaching concurrence with the Originator for proposed changes that will not be incorporated.

DDL: Responsible for assigning a Checker and Verifier.

Updater: Responsible for incorporating the changes agreed to by the Backchecker in the document. The Updater may be the Originator and/or the Backchecker.

Verifier: verifying that all changes have been properly incorporated.

4.0 PROCEDURES

4.1 Applicability

This procedure shall apply to Reports and Studies that are required to be checked based on the *QC Process Documentation* form.

Studies and reports have unique formats and are subjective; therefore, the checking procedure for studies and reports will more closely resemble a "peer" type independent technical review.

Checking/Review of studies and reports shall be accomplished as follows:

1. A **copy** of the completed study or report shall be made and the Check Print Stamp shown in Figure DCPR- 2 shall be placed on the cover. The Originator shall fill out the first line of the Check Print Stamp indicating the design package number and percent complete. The Originator shall number and date and the check print. The Originator shall initial the "**Originator"** and date the Check Print Stamp indicating the document is ready for review.
2. The Review copy is then given to the Reviewer. The Reviewer reviews the document to see that the methods, procedures, assumptions, theories, conclusions and recommendations are appropriate as well as check the structure and grammar of the document. The Reviewer will strike a Yellow across the text of each page to indicate it has been reviewed and mark all changes or corrections in Red. All numbers and calculations will be checked in Yellow to indicate correctness. The Checker may add non-record comments or instructions to the Check Set using **blue** or a blue cloud. The Checker will initial and date the "**Checker"** line on the Check Print Stamp upon completion of the check/review.
3. The Review copy will be returned to the Backchecker for concurrence of all corrections or changes to be made. The Backchecker will review all changes or corrections marked in red by the Checker and place a red check mark next to each change or correction that is to be incorporated. The Backchecker will place a red "X" next to a change or correction not to be incorporated. If a change or correction is not to be incorporated, the Backchecker will discuss the change or correction with the Checker and attempt to reach a resolution. If agreement cannot be reached, the issue shall be brought to the DDL associated with the Check Set for resolution. Unresolved disagreements involving technical issues shall be resolved by the Engineer of Record. If the disagreement is resolved such that the change or correction will be incorporated, the red "X" will be changed to a red check mark. The Backchecker will then initial and date the "**Backchecker"** line on the Check Print Stamp.
4. The Updater will incorporate the comments and will confirm the edit, as they are incorporated, by highlighting the corrections in Yellow. The Updater will initial and date the **"Updater"** line on the Check Print Stamp when all the edits are complete. The Updater will print out or provide the electronic version of the revised document to the Verifier.
5. A revised copy of the study or report and the QC check copy will be provided to the Verifier to verify the Updater incorporated the changes correctly by placing a **Green** check mark on the QC check copy. The Verifier will place a green check mark adjacent to edits that were agreed not to be included to indicate closure of the comment. The Verifier verifies that all of the required steps of the checking process have been performed and documented on the Check Print. Once the Verifier is satisfied that all the corrections to the document have been made, the Verifier will initial and date the **"Verifier"** line on the Check Print Stamp and provide the final document to the Originator.

4.1 Appendices in Reports and Studies

Appendices in reports and studies may contain a large volume of calculations and/or computer input/output, which will be checked in accordance with *DCPR-03 Calculation Checking, DCPR-06 Checking of Input to Computer Programs* and/or *DCPR-08 Spreadsheet Checking*. To facilitate identifying who the Originator and Checker are, the appendix cover sheet can identify the Originator and Date and the Checker and Date for the entire appendix in lieu of providing this information on each appendix sheet on the clean set. This replaces the requirement to provide this information on each sheet in the appendix as required by *DCPR-03 Calculation Checking*. If the QC Checker(s) is (are) other than those shown on the Check Print Stamp affixed to the cover of the report or study (i.e. checking the narrative), then an additional Check Print Stamp will be affixed to the applicable QC set Appendix cover.

4.2 Revision Blocks

The revision designation in the revision block for reports and studies will generally be alphabetic prior to final review by the Department. This will provide for the tracking the incorporation of comments. Once final review and comment closure has been occurred, the report or study will be submitted as a "Revision 0" unless it is signed and sealed by the professional of record. When a professional of record signs and seals a report or study, the revision block will be empty. If changes are made to a report or study after RFC, the revision block will contain a numeric designation to track the version of the document.

5.0 FORMS

None

6.0 FIGURES

Figure DCPR-02A Check Print Stamp
Figure DCPR-02B Flow Chart for Checking Reports and Studies

Figure DCPR-02A

CHECK PRINT STAMP

First Page Only: Design Package No. or Description

_____

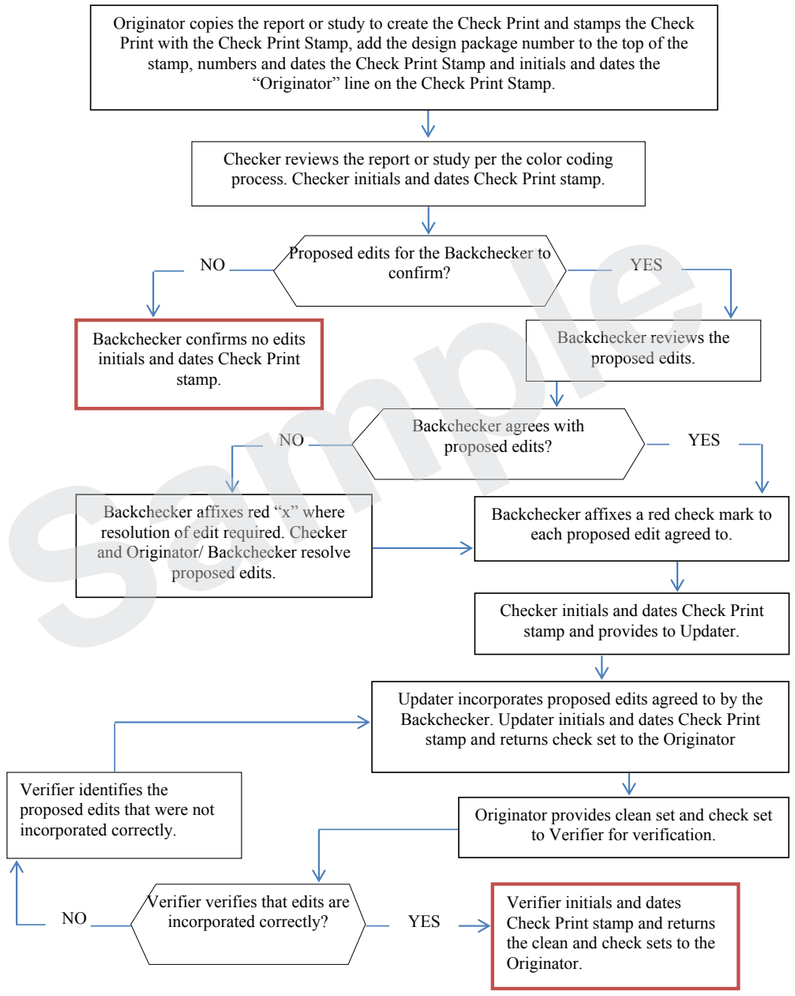
No. _____ Date _____

CHECK PRINT

Dwg. Only: Checked against calcs. and calc. check confirmed by _____ Date _____

Originator _____ Date _____
Checker _____ Date _____
Backchecker _____ Date _____
Updater _____ Date _____
Verifier _____ Date _____

Figure DCPR-02B Flow Chart for Checking Reports and Studies



1.0 PURPOSE - To provide guidelines for preparation and checking of engineering calculations.

2.0 SCOPE - This procedure identifies the requirements and guidelines for design calculations checking. The intent is to provide a consistent process for verifying the accuracy and completeness of design calculations, and for verifying and documenting corrections and/or changes that have been made.

2.1 DEFINITIONS

Calculation – a mathematical process requiring the manual or electronic use of numerical data via formulas, equations and/or computer programs to achieve a numerical solution or interpretation of that data.

Calculation Originator (Originator) – the individual who develops the original calculations, often the Design Lead or technical staff working under his/her direct supervision.

Calculation Checker (Checker, Verifier) – an individual possessing necessary qualifications and assigned by the DB Design PM or DDL to perform checking of the mathematical computations of a calculation. The Calculation Checker shall be independent of the Calculation Originator.

Updater - the person responsible to update the calculations. This person is generally the Originator.

3.0 RESPONSIBILITIES:

The following personnel have the responsibilities as follows:

Originator: Responsible for creating a review document affixing the Check Print Stamp and providing the check print to the Checker. The Originator shall provide the Design Package No. or description with the percent review in the top of the Check Print Stamp. If a subsequent Check Print is printed, then this information will be provided in the subsequent Check Print.

Checker: Responsible for checking the calculation (including the appendices in a report or study) and reaching concurrence with the Backchecker for proposed changes that will not be incorporated.

Backchecker: Responsible for responding to comments and reaching concurrence with the Checker for proposed changes that will not be incorporated. The Backchecker may be the Originator.

Updater: Responsible for incorporating the changes in the document. The Updater may be the Originator and/or Backchecker.

Verifier: Responsible for verifying that all changes have been properly incorporated

Design Manager or DDL: Responsible for assigning a Reviewer.

4.0 PROCEDURES

4.1 Applicability

This procedure shall apply to Design Calculations that are required to be checked based on the *QC Process Documentation* form.

4.2 Load Rating

A bridge load rating will be performed for each new bridge, widened bridge and bridge with a reconstructed deck. Bridge load ratings will be checked by the Detail Check Method. Prior to the final submittal, a licensed professional engineer in the state of Ohio will sign and seal each bridge load rating.

The signed and sealed load rating will be provided to the DB Design QCM for review during the Review of QC Documentation and be submitted to Department as part of the RFC submittal.

4.3 Detail Check Method

The Detail Check Method involves a complete check by the Calculation Checker of the calculations, associated means and methods, and resulting final outcome developed by the Calculation Originator.

The DB Design PM or DDL shall assign a qualified individual as the Calculation Checker. Checking shall be done by an individual who is not the Calculation Originator.

The Detail Check Method can be applied by using Yellow Line Method (performed on copies of the calculation sheets)

The Calculation Checker shall review, check and agree with:

- assumptions,
- methods (standard or client specific),
- code requirements,
- formulas and mathematical hand computations,
- appropriate use of computer programs,
- spreadsheet accuracy,
- validity of computer models used for analysis,
- accuracy of computer program input, and
- resulting outcome, including sketches, graphs and figures.

The DB Design PM, DDL or Checker shall verify that any Project changes that may have occurred before, during and/or after the calculation checking process have been incorporated into the design calculations and ultimately into the final deliverables, and that appropriate back-checking has been performed.

4.3.1 Yellow Line Method

In the Yellow Line Method, checking is performed on copies of the original calculation sheets referred to as a “Check Set” of calculations. The original calculation sheets are kept by the Calculation Originator. Checking is performed with color coding to identify the various stages of the checking process.

The color coding scheme is as follows:

- *Yellow* is used by the Calculation Checker to indicate agreement.
- *Red* is used by the Calculation Checker to indicate corrections and additions.
- *Red* is also used by the Calculation Originator to indicate approval (✓) or disapproval (x) of Calculation Checker’s corrections and additions.
- *Yellow* is used by the Calculation Updater to indicate that changes to the original calculation sheet have been made.
- *Green* checkmark (√) is used by the Calculation Verifier to verify that the correct change has been made to the original calculation sheet.
- *Blue or blue cloud* is used for non-record comments or instructions.

4.3.2 Checking Sequence

The detailed check process shall include the following steps, which reference the recommended color coding system described in 4.3.1 above.

Step 1. The Originator is responsible for reviewing the calculation for completeness and for correctness with regard to sketches, spelling, drafting standards, etc. Upon determination that a calculation is complete and ready for detailed checking, the Originator will copy the original calculation and stamp the Check Print with the Check Print Stamp, indicate that this is Check Print No. 1 and date the Check Print Stamp. When ready to provide the check set to the Checker, the Originator will initial and date the "**Originator**" line on the Check Print Stamp.

Step 2. The Checker will review the items on the Check Print, including lines, numbers and text, as applicable, and will mark through or highlight in **yellow** each item that is agreed with. Items that the Checker disagrees with are circled or crossed through in **red** and the correct information is written in red directly adjacent to the marked item. Other information to be added to the calculation is also written in red. The Checker may add comments to the Check Print to clarify corrections or additions but which are not to be added to the calculation. These comments should be marked in **blue** or blue cloud. When completed, the Checker will initial and date the "**Checker**" line on the Check Print Stamp.

Step 3. The Check Print is provided to the Backchecker, who is usually the Originator, to first check that the corrections and additions indicated by the Checker are correct.

Depending on the nature of the corrections and additions, the DB Design PM or DDL will determine if another qualified person is needed to assist the Backchecker with backchecking the Checker's corrections or additions. This may occur if the Checker's corrections and additions require specialized expertise or affect the engineered performance of the detailed component. In these cases, the DB Design PM or DDL may assign the Design Originator or other qualified individual to serve as the Backchecker.

The Backchecker will check all items marked in red by the Checker and place a **red** check mark next to each red correction or addition that is agreed with. Comments or corrections not to be incorporated will be marked with a red 'X'. Any disagreements found during this process must be resolved to both the Checker and the Backchecker's satisfaction. If agreement cannot be reached, the issue shall be brought to the attention of the DB Design PM, DDL or the Engineer of Record, and the DB Design QCM. Unresolved disagreements involving technical issues shall be decided by the Engineer of Record. If the disagreement is resolved such that the comment or correction will be incorporated, the red "X" will be changed to a red check mark.

When completed, the Backchecker will initial and date the "**Backchecker**" line on the Check Print Stamp.

Step 4. All marked-up corrections or additions that have been checked (as indicated with a red check mark (√) on the Check Print next to the red mark-up) will be made. After making changes, the Updater responsible for incorporating the changes, will mark through or highlight the marked changes in **yellow**, as the update is made, to indicate that the change has been made. When all corrections or additions are made, the Updater will initial and date the "**Updater**" line on the Check Print Stamp.

Step 5. Check Print No.1 together with a plot or print of the corrected sheet is returned to the Checker, who will compare the corrected sheet against Check Print No.1. The Checker will place a **green** check mark (√) next to each red check mark on Check Print No.1 indicating the change was made correctly. Incorrect or unincorporated changes will be noted in red on Check Print No.1 to indicate need for further correction. The Checker will place a green check mark adjacent to edits that were agreed not to be included to indicate closure of the comment.

Depending on the extent of required further correction, the Checker may re-mark further corrections in red on the corrected sheet for better clarity, in which case, the corrected sheet will be stamped Check Print No.2, and the Checker will initial and date the "Checker" line on the Check Print No.2 Check Print Stamp. When finished, Check Print No.1 and Check Print No.2 (if used for re-marking), will be returned to the Updater for a second round of corrections.

Step 6. Once the second round of corrections has been backchecked, resolved and made, the Updater will mark through or highlight the re-marked changes in yellow on Check Print No.1 (or on Check Print No.2 if used for re-marks) to indicate that the change has been made. When all corrections are made, the Updater will re-initial and date the "Updater" line on Check Print No.1 (or on Check Print No.2 if used for remarks).

Step 7. The Verifier will compare the corrected sheet against Check Print No.1 (or Check Print No.2 if used for re-marks) to verify that the re-marks were incorporated correctly. The Verifier will place a green check mark (√) next to the red re-marks indicating the change was incorporated correctly.

This process is to be repeated until all of the corrections and additions marked on Check Print No.1 (and subsequent Check Prints if used for re-marks) have been incorporated to the Checker's satisfaction. The Verifier verifies that all of the required steps of the checking process have been performed and documented on the Check Print. When the Verifier is satisfied that all corrections and additions have been made, the Verifier initials and dates the "**Verifier**" line on the Check Print No.1 Check Print Stamp and on all subsequent Check Print Stamps.

Check Print No.1 and all subsequent Check Prints of the same sheet may be grouped together, with the most current on top. Check Prints may also be grouped together by Check Print number or as directed by the DB Design PM, Design Quality Control Manager or DDL. At the discretion of the DDL, Check Print numbers may be sequential across submittals. This produces a continuous check print number sequence for a given calculation.

Once a calculation has been checked, it does not need to be checked again unless changes to the calculation have been made.

4.4 Resolution of Disagreements

Upon resolution in favor of the Originator, the Checker, as the Verifier, shall place a green check mark next to the Originator's red "X" mark indicating acceptance of the Originator's objection and that the edit was not made. If the resolution has been settled in favor of the Checker, the Originator shall place a single strikethrough through the red "X" and provide a red check mark next to the proposed edit.

4.5 Revisions to Checked Calculations

When a calculation is revised, the originator of the revision shall void the original calculation by recording "SUPERSEDED" on the cover sheet and identifying the superseding calculation. A new calculation cover sheet shall be added to the revised calculation with the appropriate revision number and likewise identifying the superseded calculation. The revised calculation shall then be checked in accordance with these procedures.

5.0 FORMS

Figure DCPR-3A Calculation Cover Sheet

6.0 FIGURES

See Figure DCPR-5A Check Print Stamp
Figure DCPR-03B Flow Chart for Checking of Calculations

Form DCPR-03A

Calculation Cover Sheet

Client: _____

Project: _____

Project Number: _____

Calculation No: _____ Rev. _____

Title: _____ Page ____ of ____

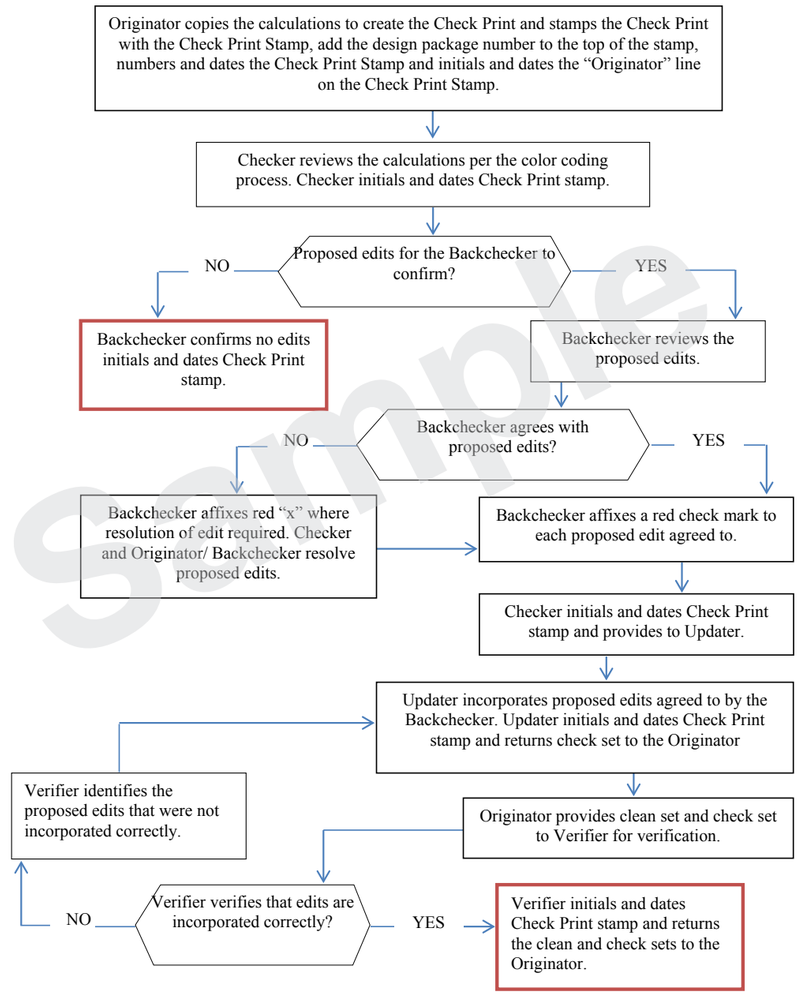
Purpose:

Supersedes Calculation No.: _____

Superseded by Calculation No.: _____

Rev 0

Figure DCPR-03B Flow Chart for Checking of Calculations



Subject: ***N/A***

Procedure No. ***DCPR-04***
Page *1 of 1*
Revision *0*

THIS DCPR IS NOT USED – DCPR-04

Subject: ***CHECKING OF DRAWINGS***

Procedure No. ***DCPR-05***
Page *1 of 9*
Revision *0*

1.0 PURPOSE - To provide a uniform, orderly, efficient method for checking drawings before they are submitted for a Design Review, issued to the Design-Builder for construction and/or subsequent revisions necessitated during the construction phase.

2.0 SCOPE - This procedure identifies the requirements and guidelines for checking drawings that are developed as part of a set of final construction documents, for preliminary or non-construction purposes, or for inclusion in a study or report. The intent is to provide a consistent process for verifying the accuracy and completeness of drawing information, and for verifying and documenting corrections and/or changes that have been made. A consistent approach facilitates uniform QC among multiple offices, subconsultants and disciplines.

2.1 DEFINITIONS

Design Originator – the individual who prepares the design calculations, sketches or other information used by the Drawing Originator.

Design Quality Management Plan (DQMP) – a document setting out the specific quality practices, resources and sequences of activities that are used to fulfill requirements for quality relevant to a particular product, project or contract.

DDL – an individual assigned to manage a specified element of work, usually associated with a specific technical discipline within a multidiscipline project.

Drawing – a representation of an object or form chiefly by means of lines, dimensions and other data. Drawings may be electronic or hard copy representations. Drawings are categorized as follows:

Non-Construction Drawings are drawings used for purposes other than construction, such as studies and reports, and include conceptual layouts, maps, graphs, pictures and charts.

Construction Drawings are drawings that are part of a set of documents used for construction, including construction phase modification drawings and exhibits that will be used for construction, and/or as a basis for producing shop drawings.

Drawing Checker – an individual possessing necessary qualifications and assigned by the DB Design PM or DDL to perform drawing checking. The Drawing Checker shall be independent of the Drawing Originator and shall not have developed any portion of the drawing being checked. The Design Originator may serve as the Drawing Checker as long as the Design Originator does not develop any part of the drawing and that any design calculations or accompanying design sketches prepared by the Design Originator, which are used by the Drawing Originator in developing the drawing, are checked by a different individual as part of the calculation checking process.

Drawing Backchecker (Drawing Correction Checker) – an individual assigned by the DB Design PM or DDL to verify that corrections and additions marked-up by the Drawing Checker are correct. The Drawing Originator may serve as the Drawing Backchecker. Depending on the nature of the corrections and additions, the Design Originator or other qualified person may serve as the Drawing Backchecker.

Drawing Originator – an individual assigned by the DB Design PM or DDL to create a drawing. This person is generally shown as the Originator on the drawing check print stamp.

Drawing Verifier (Verifier) – an individual assigned by the DB Design PM or DDL to review the updated document and compare with the backchecked and approved check prints (plan drawing, or calculation sheet) to verify all corrections or changes were incorporated in the updated document.

Drawing Updater (Drawing Technician) – an individual assigned by the DB Design PM or DDL to make changes to a drawing. The Drawing Updater may be the same as the Drawing Originator.

Detailed Check – Sometimes referred to as “Red Line” or “Yellow Line” check. For additional information see section 3.4 below.

3.0 PROCEDURES

3.1 Applicability

This procedure shall apply to Construction Drawings that are required to be performed based on the *QC Process Documentation* form that are developed as part of a design project, and may also apply to Non-Construction Drawings at the discretion of the DB Design PM or DDL.

3.2 Construction Drawings

All drawings that are to become part of a set of final construction documents shall receive a complete check using the Detailed Check Method (see Section 3.4). Detailed checking shall be completed prior to issuing drawings as information to others, including internal or external parties. Contemporaneously with detailed checking, Construction Drawings may also have a Quality Control Review (QCR), Interdisciplinary Review (IDR), and/or a Constructability Review (CR), as specified in this DQMP. These reviews are described in DCPR-11.

3.3 Non-Construction Drawings

3.3.1 Report Drawings

Drawings, sketches, figures or graphs included as part of a study or report and **generally considered a reference document** (i.e. a manufacturer’s cut sheet, page from a code book) are not required to have a detailed check as specified for Construction Drawings, unless it is determined necessary and directed by the DB Design PM or DDL. Drawings, sketches, figures or graphs developed as part of a study or report are required to have a detail check performed on them.

3.3.2 Concept Drawings

Drawings showing the final proposed concept or layout of a facility, which are to be submitted to a client and/or will be used as a basis for final design or for developing Construction Drawings, shall be checked as specified for Construction Drawings.

When checked, concept drawings shall be shall be checked using the Detailed Check Method (see Section 3.4) and reviewed for conformance to design standards, design economy, suitability, maintainability, and constructability, in accordance with Project requirements. Concept Drawings shall also be reviewed to determine that previous client comments and directives and previous QC Review comments have been addressed. Project specific checklists should be used where appropriate to determine if required information is provided and checked.

3.4 Detailed Check Method

The Detailed Check Method (sometimes referred to as “Red Line” or “Yellow Line” check) involves a complete check by the Drawing Checker of the information shown on a drawing for accuracy and completeness.

The Drawing Originator along with the DDL will determine when a drawing or set of drawings is ready for checking. The DB Design PM or DDL shall assign a qualified individual as the Drawing Checker. Checking shall be done by an individual who was not the Drawing Originator.

The DB Design PM or DDL shall review the Project scope with the Drawing Checker; advise the Drawing Checker of the schedule.

The Drawing Checker shall obtain a current set of supporting data that will be used in performing the detailed check. Supporting data may consist of prints of other reference or supplemental drawings, equipment data sheets and copies of any design calculations or design sketches that were used in developing the drawing.

The Drawing Checker shall review the drawings for:

- errors, ambiguities and omissions,
- conformance to the associated design calculations and sketches,
- adequacy and accuracy of dimensional data and notation,
- proper interface with other design elements or disciplines,
- consistency with other Project documents or drawings,
- overall constructability,
- conformance with Project drafting standards,
- conformance with general Project requirements,
- conformance with previous client review comments,
- conformance with applicable codes, laws and regulations, and
- conformance with previous review comments.

Once an element on a drawing has been checked, it does not have to be checked again at a later stage of development. The “mantra” for checking will be “check the change”.

3.5 Detailed Check Process

3.5.1 Check Print

The detailed check is performed on a plot, copy or print of the drawing, referred to as the original Check Print. A Check Print Stamp (refer to Figure DCPR-05A) is placed on each Check Print to be checked. The Check Print Stamp is designed to show the status and history of the checking process, and to verify that each step in the detailed check process described below has been followed. The individual responsible for each step of the detailed check process shall initial and date the Check Print Stamp to document that his/her part of the process has been completed.

3.5.2 Check Print Color Coding System

A color coding system is used for marking on a Check Print to identify various actions to be taken and to identify the various stages of the checking process.

The recommended color coding system is presented below.

Yellow is used by the Drawing Checker to indicate agreement.

Red is used by the Drawing Checker to mark-up corrections, changes and additions.

Red is also used by the Drawing Backchecker to indicate approval (√) or disapproval (*x*) of Drawing Checker's mark-ups.

Yellow is also used by the Drawing Originator or Updater to indicate that changes to the original drawing have been made.

Green checkmark (√) is used by the Drawing Verifier to verify that the changes made to the original drawing are correct.

Blue or blue cloud is used for non-record comments or instructions.

3.5.3 Checking Sequence

The detailed check process shall include the following steps, which reference the recommended color coding system described in 3.5.2 above. Figure DCPR-05B illustrates the detailed check process steps in a flowchart. A color coding example is provided in Figure DCPR-05C.

Step 1. The Drawing Originator is responsible for reviewing the drawing for completeness and for correctness with regard to the Design Originator's sketches, spelling, drafting standards, etc. Upon determination that a drawing is complete and ready for detailed checking, the Drawing Originator will plot and stamp the Check Print with the Check Print Stamp and will initial and date the "**Originator**" line on the Check Print Stamp. This print will be the Original Check Print and will be marked Check Print No. 1.

Step 2. The Drawing Checker will review the relevant items on the Check Print, including lines, numbers and text, and will mark through or highlight in **yellow** each item that is agreed with. **Highlighting the dimension value will indicate the entire dimension has been checked including the dimension leader lines and their placement. Checking for repetitive, closely spaced line work may be indicated by a yellow strike across the line work.** Items that the Drawing Checker disagrees with are circled or crossed through in **red** and the correct information is written in red directly adjacent to the marked item. Other information to be added to the drawing is also written in red. The Drawing Checker may add comments to the Check Print to clarify corrections or additions but which are not to be added to the drawing. These comments should be marked in **blue** or blue cloud. When completed, the Drawing Checker will initial and date the "**Checker**" line on the Check Print Stamp.

Step 3. The Check Print is provided to the Drawing Backchecker, who is usually the Drawing Originator, to first check that the corrections and additions made by the Drawing Checker are correct.

The Drawing Backchecker will check all items marked in red by the Drawing Checker and place a **red** check mark next to each red correction or addition that is agreed with. Comments or corrections not to be incorporated will be marked with a red 'x'. Any disagreements found during this process must be resolved to both the Drawing Checker and the Drawing Backchecker's satisfaction. If agreement cannot be reached, the issue shall be brought to the attention of the DB Design PM, DDL or the Engineer of Record, and the DB Design QCM. Unresolved disagreements involving technical issues shall be decided by the Engineer of Record. If the disagreement is resolved such that the comment or correction will be incorporated, the red "x" will be changed to a red check mark.

When completed, the Drawing Backchecker will initial and date the "**Backchecker**" line on the Check Print Stamp.

Step 4. All marked-up corrections or additions that have been checked (as indicated with a red check mark (√) on the Check Print next to the red mark-up) will be made. After making changes, the Drawing Updater responsible for incorporating the changes, will mark through or highlight the marked changes in **yellow**, as the update is made, to indicate that the change has been made. When all corrections or additions are made, the Drawing Updater will initial and date the "**Updater**" line on the Check Print Stamp.

Step 5. Check Print No.1 together with a plot or print of the corrected drawing (Corrected Print) is returned to the Drawing Checker, who will compare the Corrected Print against Check Print No.1. The Drawing Checker will place a **green** check mark (√) next to each red check mark on Check Print No.1 indicating the change was made correctly. Incorrect or unincorporated changes will be noted in red on Check Print No.1 to indicate need for further correction. The Checker will all place a green check mark adjacent to edits that were agreed not to be included to indicate closure of the comment.

Depending on the extent of required further correction, the Drawing Checker may re-mark the further corrections in red on the Corrected Print for better clarity, in which case, the Corrected Print will be stamped Check Print No.2, and the Drawing Checker will initial and date the "Checker" line on the Check Print No.2 Check Print Stamp. When finished, Check Print No.1 and Check Print No.2 (if used for re-marking) will be stapled together, with Check Print No.2 on top, and returned to the Drawing Updater for a second round of corrections.

Step 6. Once the second round of corrections has been back checked, resolved and made, the Drawing Updater will mark through or highlight the re-marked changes in yellow on Check Print No.1 (or on Check Print No.2 if used for re-marks) to indicate that the change has been made. When all corrections are made, the Drawing Updater will re-initial and date the "Updater" line on Check Print No.1 (or on Check Print No.2 if used for remarks). Another Corrected Print of the drawing will be made.

Step 7. The Drawing Verifier will compare the new Corrected Print against Check Print No.1 (or Check Print No.2 if used for re-marks) to verify that the re-marks were incorporated correctly. The Drawing Verifier will place a green check mark (√) next to the red re-marks indicating the change was incorporated correctly.

This process is to be repeated until all of the corrections and additions marked on Check Print No.1 (and subsequent Check Prints if used for re-marks) have been incorporated to the Drawing Checker's satisfaction. The Verifier verifies that all of the required steps of the checking process have been performed and documented on the Check Print. When the Drawing Verifier is satisfied that all corrections and additions have been made, the Drawing Verifier initials and dates the "**Verifier**" line on the Check Print No.1 Check Print Stamp and on all subsequent Check Print Stamps.

For each submittal, Check Print No.1 and all subsequent Check Prints of the same sheet may be grouped together, with the most current on top. Check Prints may also be grouped together by Check Print number or as directed by the DB Design PM, DB Design QCM or DDL. At the discretion of the DDL, Check Print numbers may be sequential across submittals. This produces a continuous check print number sequence for a given drawing.

3.5.4 Check Print Stamp Protocol

The following describes the check print stamp protocol.

- The Checker and Verifier must be independent from the Originator, Backchecker and Updater.
- The Checker and Verifier do not have to be the same person, but it is preferred.
- Originator, Checker and Backchecker are always required. Updater and Verifier are required based on Checker's red lines.

3.6 Revisions to Checked Drawings

The detailed check process described in Section 3.5 may be performed on drawings that undergo significant revisions after the detailed check or after the QC Review has been completed for a particular deliverable. Check Prints of the revised drawings shall be kept with previous Check Prints to document the process. The checking process will be limited to the changes.

All drawing revisions shall be fully coordinated with other associated drawings or with all work by other disciplines in the same area.

Checking of drawings for subsequent submittals may be limited to the changes since the previous submittal.

4.0 INCORPORATION OF EXTERNAL REVIEW COMMENTS

If the changes that are requested by a third party, after the detailed check, are simple in nature, the DDL with the concurrence of the DB Design QCM may abbreviate the checking process by noting the changes in red on a new Check Print. The Check Prints should be sequentially numbered. The DDL shall sign the Check Print as the Backchecker, indicating that the changes do not materially affect the design.

Changes that are more material in nature and which require review by the Designers are returned to the DDLs for review and incorporation of the changes. In this case, the normal correcting and verifying processes will be used per Section 3.5 above.

5.0 DISPOSITION OF THE CHECKED DRAWING

The completed original (or CADD file) is put under the control of the DDL in order to prevent further changes in the drawing that could invalidate the checking which has been done. Upon completion of the QC checking and QA processes, the QC records will be provided to Document Control. The Check Print(s) shall be retained by Document Control in an orderly, organized fashion. This will also serve as a record or history of the design/ drawing evolution, which will provide traceability of the final product.

6.0 FIGURES:

Figure DCPR-05A Check Print Stamp

Figure DCPR-05B Flow Chart for Checking Drawings

Figure DCPR-05C QC Check Print Color Coding Example

Figure DCPR-05A
Check Print Stamp

First Page Only: Design Package No. or Description

_____

No. _____ Date _____

CHECK PRINT

Dwg. Only: Checked against calcs. and calc. check confirmed by _____ Date _____

Originator _____ Date _____
Checker _____ Date _____
Backchecker _____ Date _____
Updater _____ Date _____
Verifier _____ Date _____

Figure DCPR-05B Flow Chart for Checking Drawings

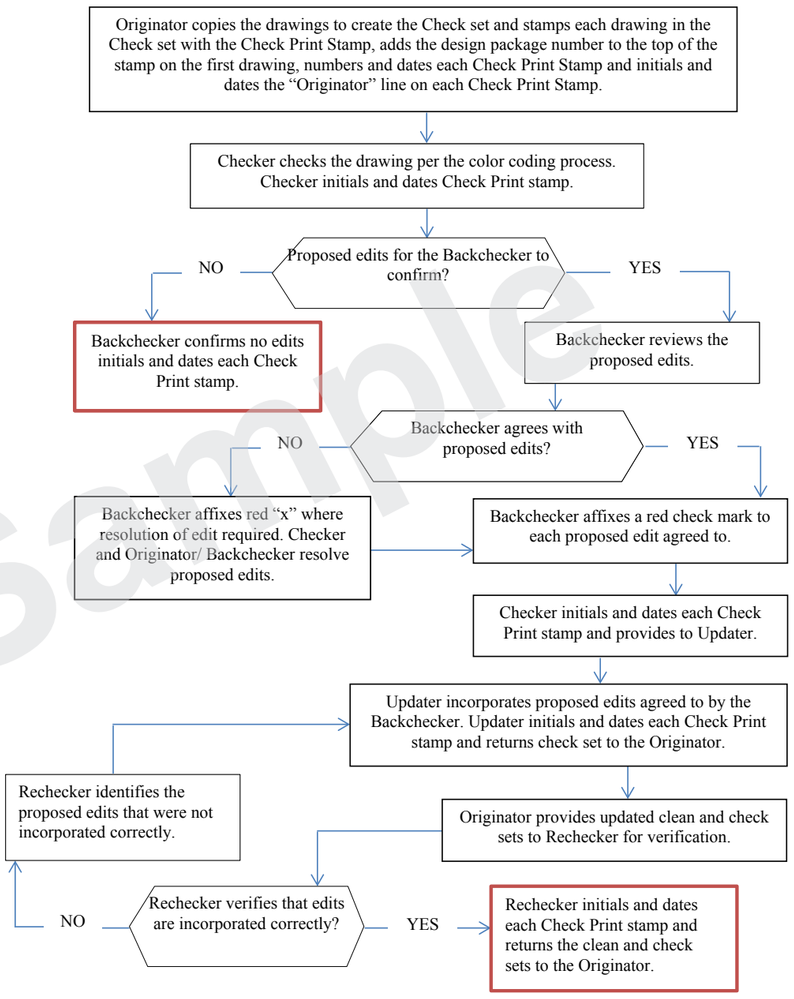


Figure DCPR-05C

QC Check Print Color Coding Example

Originator: Something wuz correct and sumthing was incorrect.

Checker: Something ~~wuz~~ ~~correct~~ and ~~sumthing~~ was incorrect.
was corect something
Turn Level 54 off.

Backchecker: Something ~~wuz~~ ~~correct~~ and ~~sumthing~~ was incorrect.
X X √
was corect something
Turn Level 54 off. √

The Originator and Checker resolved disagreements.

Updater:

The Updater prints or plots the corrected document and provides to the Verifier / Verifier along with the Check Print.

Verifier:

The Originator disagreed with the edit proposed by the Checker, but subsequently agreed and affixed a red line through the red "x" and then the Originator affixes a red check mark.

√ ~~X~~ X √
was corect something
Something ~~wuz~~ ~~correct~~ and ~~sumthing~~ was incorrect.
Turn Level 54 off. √

√ ~~X~~ √ X √ √√
was corect something
Something ~~wuz~~ ~~correct~~ and ~~sumthing~~ was incorrect.
Turn Level 54 off. √√

Since the Originator disagreed with the edit proposed by the Checker, and the Checker subsequently agreed, then the Checker, as the Verifier, affixes a green check mark to close the edit.

Subject: ***CHECKING OF INPUT TO COMPUTER PROGRAMS*** *Procedure No.* ***DCPR-06***
Page *1 of 3*
Revision *0*

1.0 PURPOSE - To provide for systematic checking of computerized design calculations to minimize the possibility of input errors.

2.0 SCOPE - This procedure is to be used for checking both non-local (batch) input and local keyed input to PC's. A 100% Input Check process will be used.

3.0 RESPONSIBILITIES - Originators must provide the input/output documents and other associated data to the Checkers in a timely and complete manner so that the checking can be quick and thorough. Checkers shall mark up the input completely in **yellow** if it is correct and **red** if in error, sign and date the checked input.

4.0 PROCEDURE - 100% INPUT CHECK

This procedure shall apply to Computer *Input* that is required to be checked based on the *QC Process Documentation* form.

When any computer program is run for design, the input and output must also be printed out at the same time. For non-local (batch) programs, the Originator makes a Check Print copy of the input for checking. If the changes to the input affect the Checker's ability to review the output for reasonableness due to cascading changes, for example, then the Originator will rerun the program and present the input and output to the Checker as Check Print 2.

4.1 Checking Sequence

Step 1. The Originator is responsible for reviewing the input and output for completeness and for correctness with regard to the basis of design, etc. Upon determination that the input and output is complete and ready for detailed checking, the Originator will copy the input and output to create the Check Print and stamps the Check Print with the Check Print Stamp, numbers and dates the Check Print Stamp and initials and dates the "**Originator**" line on the Check Print Stamp. This copy will be the Original Check Print and will be marked Check Print No. 1, and dated. If the input/output is part of a larger calculation package that is governed by the check print stamp for the overall package, then an additional check print stamp is not required.

Step 2. The Checker will check the input for accuracy on the Check Print and will mark through or highlight in **yellow** each item that is agreed with. **Checking for repetitive input may be indicated by a yellow strike across repetitive data**. Items that the Checker disagrees with are circled or crossed through in **red** and the correct information is written in red directly adjacent to the marked item. Other information to be added to the input is also written in red. The Checker may add comments to the Check Print to clarify corrections or additions but which are not to be added to the input. These comments should be marked in **blue** or blue cloud. If the Checker proposes changes to the input that would affect the review of the output for reasonableness, then the reasonableness review is not required at this time. If the Checker does not propose changes to the input that would affect the review of the output for reasonableness, then the reasonableness review is conducted. If the output does not appear reasonable, the Checker reviews input again for the possible source of the cause. If found redlines the cause and brings to the attention of the Originator to rerun the program. If the cause is not found by the Checker, the Checker and Originator resolve the issue and either the Originator changes the input or Checker agrees the output is reasonable. When completed, the Checker will initial and date the "**Checker**" line on the Check Print Stamp.

Step 3. The Check Print is provided to the Backchecker, who is usually the Originator, to confirm that the corrections and additions made by the Checker are correct. If there are no edits proposed by the Checker, the **Backchecker** initials and dates the check print stamp.

Otherwise, the Backchecker will review all items marked in red by the Checker and place a **red** check mark next to each red correction or addition that is agreed with. Comments or corrections not to be incorporated will be marked with a red "X". Any disagreements found during this process must be resolved to both the Checker's and the Backchecker's satisfaction. If agreement cannot be reached, the issue shall be brought to the attention of the DB Design PM, DDL or the Engineer of Record, and the DB Design QCM. Unresolved disagreements involving technical issues shall be decided by the Engineer of Record. If the disagreement is resolved such that the comment or correction will be incorporated, the red "X" will be crossed out and a red check mark affixed by the Backchecker. When completed, the Backchecker will initial and date the "**Backchecker**" line on the Check Print Stamp.

If resolution of disagreements results with all proposed edits by the Checker agreed not to be incorporated, then the Checker will perform the reasonableness review at this time. Since the QC stamp already has the Checker's initials and date, a second set of initials and dates will be entered.

If there are no corrections to the input, the original and checked input and output are retained to be provided to the DB Design QCM for confirmation, usually during the Review of QC documentation conducted by the DB Design QCM.

Step 4. All marked-up corrections or additions that have been agreed to by the Backchecker (as indicated with a red check mark (√) on the Check Print next to the red mark-up) will be made. The Updater responsible for incorporating the changes will mark through or highlight the marked changes in **yellow**, as the update is made, to indicate that the change has been made. When all corrections or additions are made, the Updater will initial and date the "**Updater**" line on the Check Print Stamp.

Step 5. Once all the updates have been made to the input, the Originator re-runs the program and the checking process is repeated starting with step 1. The check print provided to the Checker is marked check print No. "2". If there are no additional edits to the input the Checker reviews the output for reasonableness.

Check Print No.1 together with a **copy** of the revised input and output identified as Check Print No. 2 is provided to the Checker, who will compare the Check Print No. 2 against Check Print No.1. The Checker will highlight the corrected value on the Check Print No. 2 indicating the change was made correctly. Incorrect or unincorporated changes will be noted in red on Check Print No. 2 to indicate the need for further correction – return to Step 1. The Checker will place a green check mark adjacent to edits on Check Print No. 1 that were agreed not to be included to indicate closure of the comment. If there are no further edits, the Checker initials and dates the "**Checker**" line on the Check Print no. 2 and initials and dates the **Verifier** line on Check Print No. 1 and returns both Check Prints to the Backchecker.

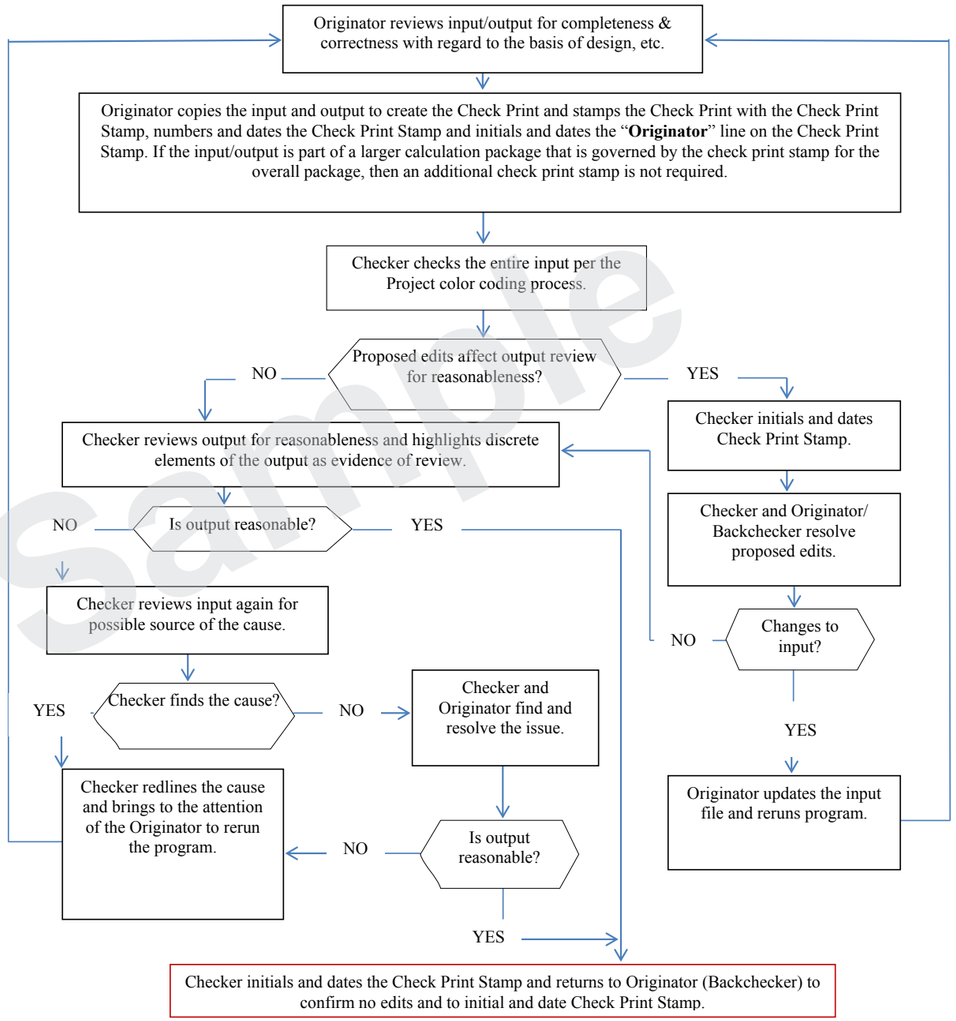
Step 6. The **Backchecker** initials and dates the Check Print stamp No. 2.

For each submittal, the latest Check Print and clean original set are provided to the DB Design QCM during the review of QC Documentation. All check prints are retained as Quality Records.

5.0 FIGURES:

See Figure DCPR-05A Check Print Stamp
Figure DCPR-06 Checking of Input to Computer Programs Flow Chart

Figure DCPR-06 Checking of Input to Computer Programs Flow Chart



1.0 PURPOSE - To provide guidelines for the checking of Specifications and Special Provisions.

2.0 SCOPE - This procedure applies to Specifications and Special Provisions. A 100% Document Check process will be used.

3.0 BACKGROUND - Checking and review of design documents are conducted to verify that the engineering for the Project meets Project requirements. Measures for the selection and review of materials, equipment, and elements of the Work included in the Project are handled with specifications that are developed during the design process. This procedure supplements design in order to verify that work is adequately specified.

4.0 RESPONSIBILITIES

Design Discipline Leader -is responsible for implementing this procedure.

Originator - has the primary responsibility for its accuracy and adequacy of the Specifications or Special Provisions. It is not intended that the Originator rely upon the checking system to find and correct his/her mistakes. The Originator of each document is responsible for making the Check Print, following that Check Print through the checking process, and obtaining the required sign-offs.

Checker/Verifier - responsible for checking the Specifications or Special Provisions and verifying edits have been properly addressed.

Backchecker - responsible to verify that corrections and additions marked-up by the Checker are correct. The Originator may serve as the Backchecker. Depending on the nature of the corrections and additions, the Originator or other qualified person may serve as the Backchecker.

Updater - responsible to make changes to a Specification. The Updater may be the same as the Originator.

5.0 PROCEDURE - 100% DOCUMENT CHECK

This procedure shall apply to Special Provisions that are required to be checked based on the *QC Process Documentation* form.

5.1 Completing the Specifications (Special Provisions)

As each specification is completed in final format and deemed ready for checking, the Originator makes a Check Print copy, and affixes, numbers and dates the Check Print Stamp, Figure DCPR-05A, on the cover sheet of each specification to be checked.

5.2 Checking

The Checker checks the Check Print of the specification for applicability and clarity. In order to document the checking process, the Checker highlights in **yellow** on each Check Print page indicating that it was checked; corrections are annotated in **red** and the sheet may be tabbed for easy location. The Checker will initial and date the "**Checker"** line on the Check Print Stamp upon completion of the check.

5.3 Backchecking

The Backchecker (Originator) reviews the Checker's corrections on the Check Print. To document the backchecking process on the Check Print, the Backchecker:

- Check marks in **red** each of the Checker's red-marked corrections if in agreement.
- The Backchecker will place a red "X" next to a change or correction not to be incorporated. If a change or correction is not to be incorporated, the Originator will discuss the change or correction with the Checker and attempt to reach a resolution. If agreement cannot be reached, the issue shall be brought to the DDL associated with the "review copy" for resolution. Unresolved disagreements involving technical issues shall be resolved by the Engineer of Record. If the disagreement is resolved such that the change or correction will be incorporated, the red "X" will be changed to a red check mark. The Backchecker will then initial and date the "**Backchecker"** line on the Check Print Stamp. The Backchecker should not obliterate the Checker's marks.

NOTE: *The Backchecker and Checker should resolve differences encountered during the checking process so they are not repeated over and over again. If the two individuals cannot achieve resolution, the appropriate DDL should be requested to resolve the differences.*

5.4 Correcting the Electronic Text File

Updating of the specification Electronic Text File can be done by the Originator, Backchecker, or by an Updater. When updating the specification to incorporate the Check Print corrections, the Updater (engineer, administrative assistant) yellow highlights each red-marked correction on the Check Print as it is incorporated. The person incorporating the edits will initial and date the **"Updater"** line on the Check Print Stamp when all the edits are complete. The Updater will make a new print of the specification and attach it to the previous Check Print.

5.5 Verifying the Corrected Check Print

The Verifier verifies that all of the required steps of the checking process have been performed and documented on the Check Print. Upon verification, the Verifier signs and dates the "Verifier" line on the Check Print Stamp on the Check Print as approved.

5.6 Disposition of the Checked Specification

The completed original is put under the control of the DB Design PM in order to prevent further changes in the specification that could invalidate the checking which has been done. The Check Print(s) shall be retained by the DB Design QCM in an orderly, organized fashion for future audit. This will also serve as a record or history of the design/ specification evolution, which will provide traceability of the final product.

6.0 FIGURES:

See Figure DCPR-05A Check Print Stamp
Figure DCPR-07A Specification Footer Examples
Figure DCPR-07B Example Specification Log
Figure DCPR-07C Flow Chart for Checking of Specifications and Special Provisions

7.0 Version Control

The footer of the specification will indicate the version and date of the specification similar to Figure DCPR-07A. In addition, a master log similar to Figure DCPR-07B may be used and retained in ProjectWise to aid in tracking the latest revision.

Figure DCPR-07A

Specification Footer Examples

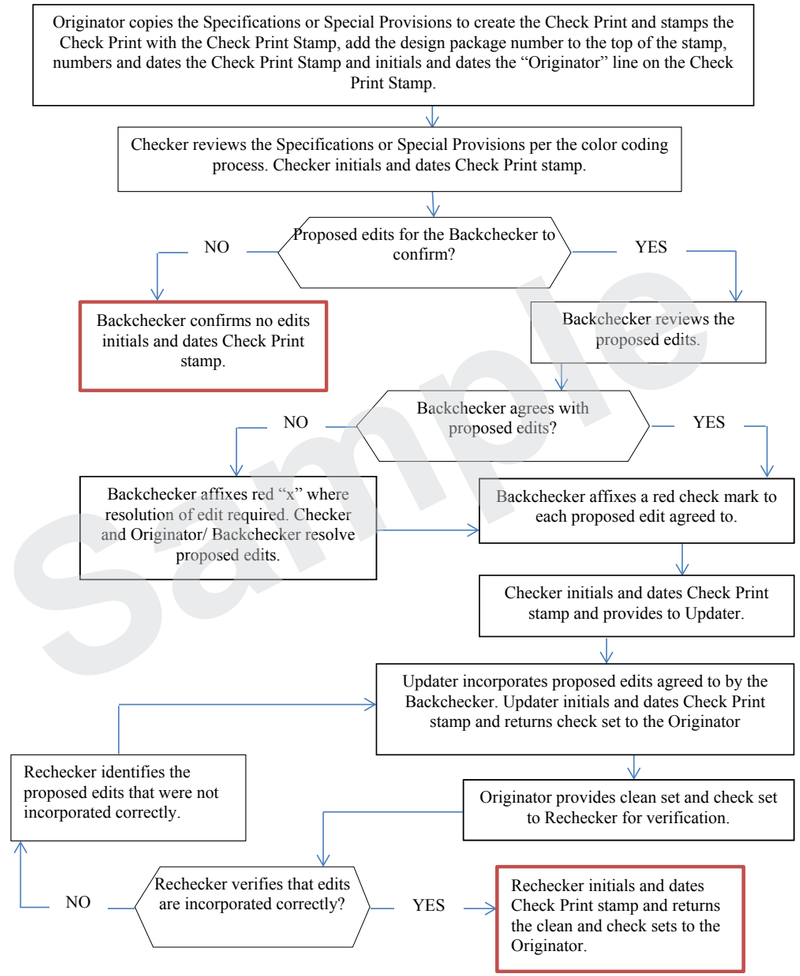
OC3 Project 100%	03 80 00 - 3 CONCRETE CUTTING AND BORING	June 12, 2014 "Design Pkg #",
OC3 Project NDC-004	03 80 00 - 3 CONCRETE CUTTING AND BORING	June 12, 2014 "Design Pkg #", Rev. 0
OC3 Project NDC-004	03 80 00 - 3 CONCRETE CUTTING AND BORING	June 12, 2014 "Design Pkg #", Rev. 0

Figure DCPR-07B Example Specification Log

OC3 Project
Sample Project Specification Log

Division	Specification Description	Rev	RFC Submittal Date
	"Design Pkg #"		
	EXISTING CONDITIONS		
	Subsurface Investigation	0	18-Nov-11
	Selective Tree and Shrub Removal	1	29-Mar-12
	CONCRETE		
	Reinforcing Steel	0	18-Nov-11
	Sidewalks and Bikeways	1	29-Mar-12
	Structural Concrete	0	18-Nov-11
	Concrete Surface Finishing for Stations	0	18-Nov-11
	Cold Formed Metal Framing	0	18-Nov-11
	Metal Railings	0	18-Nov-11
	WOOD AND PLASTICS		
	Wood Blocking and Curbing	0	18-Nov-11
	Sheathing	0	18-Nov-11
	THERMAL AND MOISTURE PROTECTION		
	Sheet Waterproofing	0	18-Nov-11
	Geosynthetics	2	12-Jul-12
	Waterproofing Membrane for Bridges	0	18-Nov-11
	Sheet Metal Flashing and Trim	0	18-Nov-11
	TRANSPORTATION		
	Traffic Signals	0	18-Nov-11
	Blank Out Sign	0	18-Nov-11
	Expansion Joints for Bridges	0	18-Nov-11
	"Design Pkg #"		
	EARTHWORK		
	Slope Protection with Slope Paving	0	27-Jan-12
	TRANSPORTATION		
	General Track Construction	0	27-Jan-12
	Track Appurtenances and Accessories	0	27-Jan-12
	"Design Pkg #"		
	Requirements for Freight Facilities	0	27-Feb-12
	"Design Pkg #"		
	Reinforced Soil Retaining Walls	0	27-Mar-12

Figure DCPR-07C Flow Chart for Checking of Specifications and Special Provision



1.0 PURPOSE - This procedure identifies the requirements for checking spreadsheets used in developing designs.

2.0 DEFINITIONS

Deliverables - documents submitted for Release for Construction.

Design Discipline Lead (DDL) – an individual assigned to manage a specified functional group, usually associated with a specific technical discipline.

Formula Report – a report that creates a copy of embedded spreadsheet cell formulas for use in checking and documenting the accuracy of spreadsheet calculations.

Spreadsheet – an electronic file that arranges data in rows and columns to facilitate organization and manipulation of information, including macros or embedded coding.

Spreadsheet Author – an individual who develops a spreadsheet for specific project use in a single application or for repeated use.

Spreadsheet Checker – an individual possessing necessary qualifications and assigned to perform spreadsheet checking. The Spreadsheet Checker shall be independent of the Spreadsheet Author.

3.0 PROCEDURES

3.1 Applicability

This procedure shall apply to spreadsheets that are developed or used in any of the following categories when identified on the *QC Process Documentation* form:

- Are part of final design calculations;
- Are directly a part of Project deliverables; or,
- Serve as a basis for Project deliverables.

3.2 Checking of Spreadsheets

Spreadsheets shall receive a complete check in accordance with the following:

The Spreadsheet Checker shall use the Detail Check Method identified in DCPR-03, Checking of Calculations, to check input and output. Formulas used in spreadsheets shall be verified for appropriate application. The Spreadsheet Checker shall also verify the reasonableness of the spreadsheet results.

The accuracy and results of cell formulas shall be verified in one of the following alternative ways:

- Checking may be performed using any of the methods described below:
  - A Formula Report may be used to print, check and document all embedded cell formulas.
  - A spreadsheet printout with formulas displayed within the cells may also be used in lieu of a Formula Report for checking spreadsheets with short formulas that can be fully printed out.

  - Hand calculations may also be used to verify the accuracy of spreadsheet cell results. If hand calculations are used, they shall be included in the Project calculations for documentation. Hand Calculations may be performed directly on copies of the spreadsheet printout or on standard computation sheets.

- An independent spreadsheet or alternative independent calculation method may be used to verify the results of the initial spreadsheet. A printout of the independent spreadsheet or copies of calculations for alternative checking calculation methods shall be included in the Project calculations for documentation.

- For spreadsheets that are set up with data and repetitive formulas in tabular format, checking may be performed using one of various alternative methods accompanied by on-screen verification. The first formula applications may be checked using either: hand calculations, Formula Report, or spreadsheet printout with formulas displayed within the cells. Subsequent formula applications may then be checked on-screen to verify that all formulas are repeated correctly. Documentation shall be included that a visual check was made on-screen. This check documentation shall be done on a printed copy of the spreadsheet using the Detail Check method as outlined in DCPR-03, Checking of Calculations.

It is not necessary to print out and/or check the embedded cell formula(s) if the Spreadsheet Checker uses hand calculations to check a cell formula, or if the Spreadsheet Checker uses an independent spreadsheet or independent alternative calculation method.

3.3 Validated (Project) Spreadsheets
Spreadsheets that will be used repeatedly may be checked and stored in the ProjectWise as a Validated Spreadsheet template. The documentation of the checking shall also accompany the usable version of the spreadsheet in ProjectWise at the following link: TBD.

TBD

The spreadsheet template must be fully checked using one of the following methods:
- Check of all formulas using the Formula Report Excel add in;
- Check of all formulas by printing formulas viewed directly in cells; or,
- Detail check of all formulas and possible logical decisions using hand calculations.

A Validated Spreadsheet author (or designee) shall keep and maintain the original documentation for checking spreadsheet cell results. The spreadsheet author and checker will be identified and shown in locked cells. The template will be locked and protected with a password following the check. Documentation of the check must accompany the standard spreadsheet. Additional cells will be used to identify the Originator of the specific input and the Checker.

Checking of a Validated Spreadsheet is limited to the input cells since the formulas and applicability has already been checked. A brief description of the use of the spreadsheet will also be provided near the top of the spreadsheet to guide users in the application of the spreadsheet.

3.3.1 Use of Validated (Project) Spreadsheets

The requirements for using a Validated Spreadsheet are as follows:
- Users shall not modify the Validated Spreadsheet except to enter Project-specific information in the header or highlighted input data. If items other than the header information or input data are revised in any way, the spreadsheet shall be considered a Modified and checked as a non-validated spreadsheet.

- For normal operation, only the header and input cells shall be open for editing; all other spreadsheet cells shall remain locked/protected.
- The Spreadsheet Checker shall use the Detail Check Method identified in DCPR-06, Checking of Calculations, to check the header and all input data. The Spreadsheet Checker shall also verify the reasonableness of the spreadsheet results.

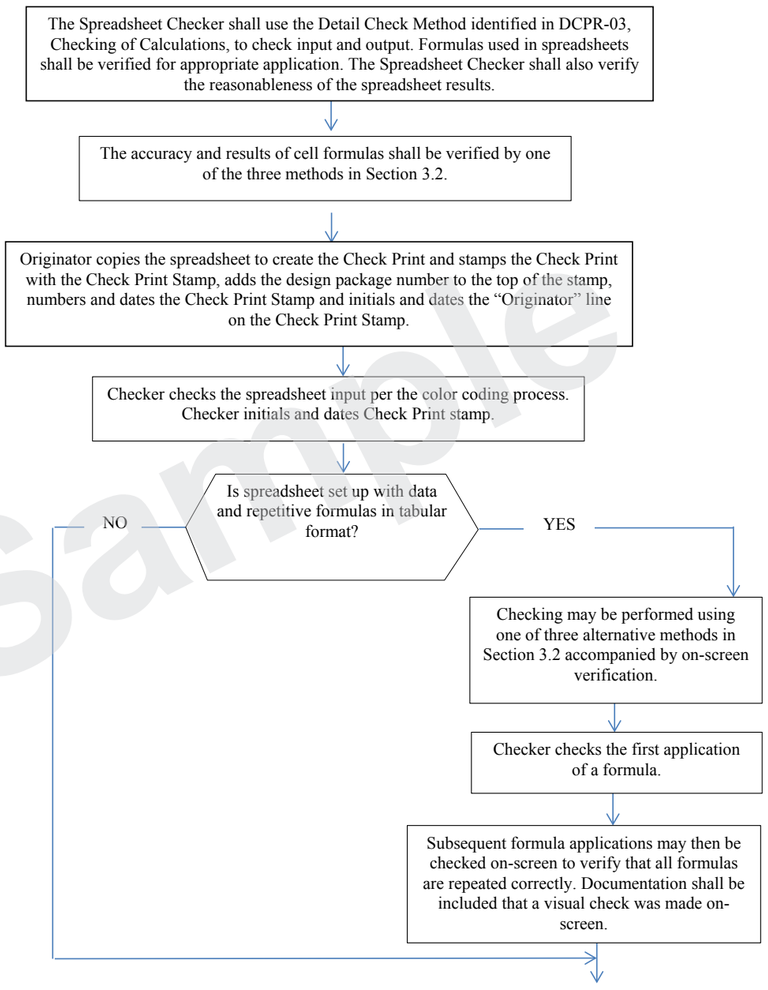
4.0 REFERENCES

DCPR-03 Checking of Calculations

5.0 FIGURES

Figure DCPR-08A Flow Chart for Checking a Spreadsheet
Figure DCPR-08B Flow Chart for Checking a Validated Spreadsheet
See Figure DCPR-05A Check Print Stamp
See Figure DCPR-05C QC Check Print Color Coding Example

Figure DCPR-08A Flow Chart for Checking a Spreadsheet



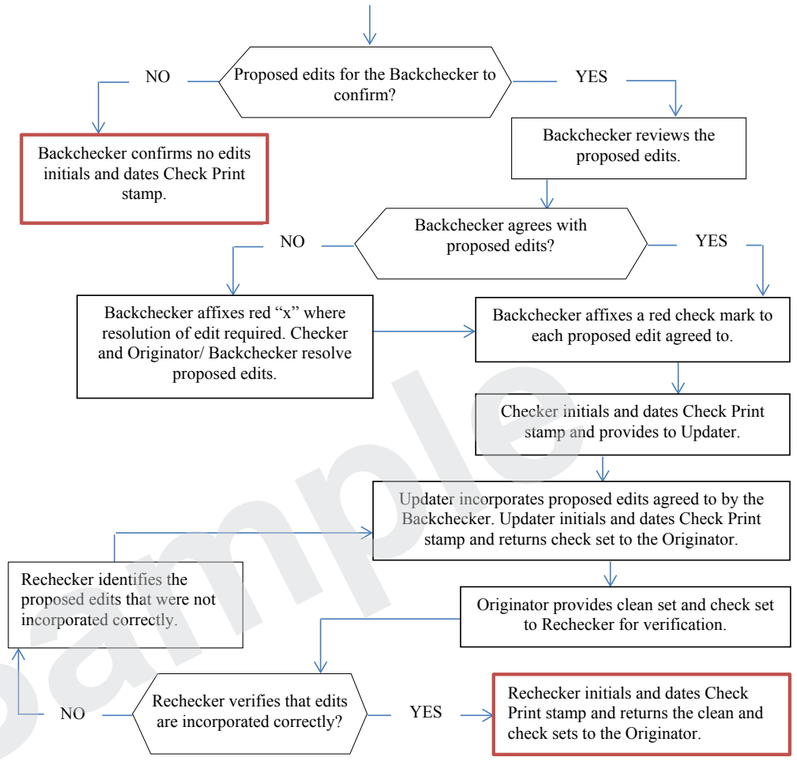
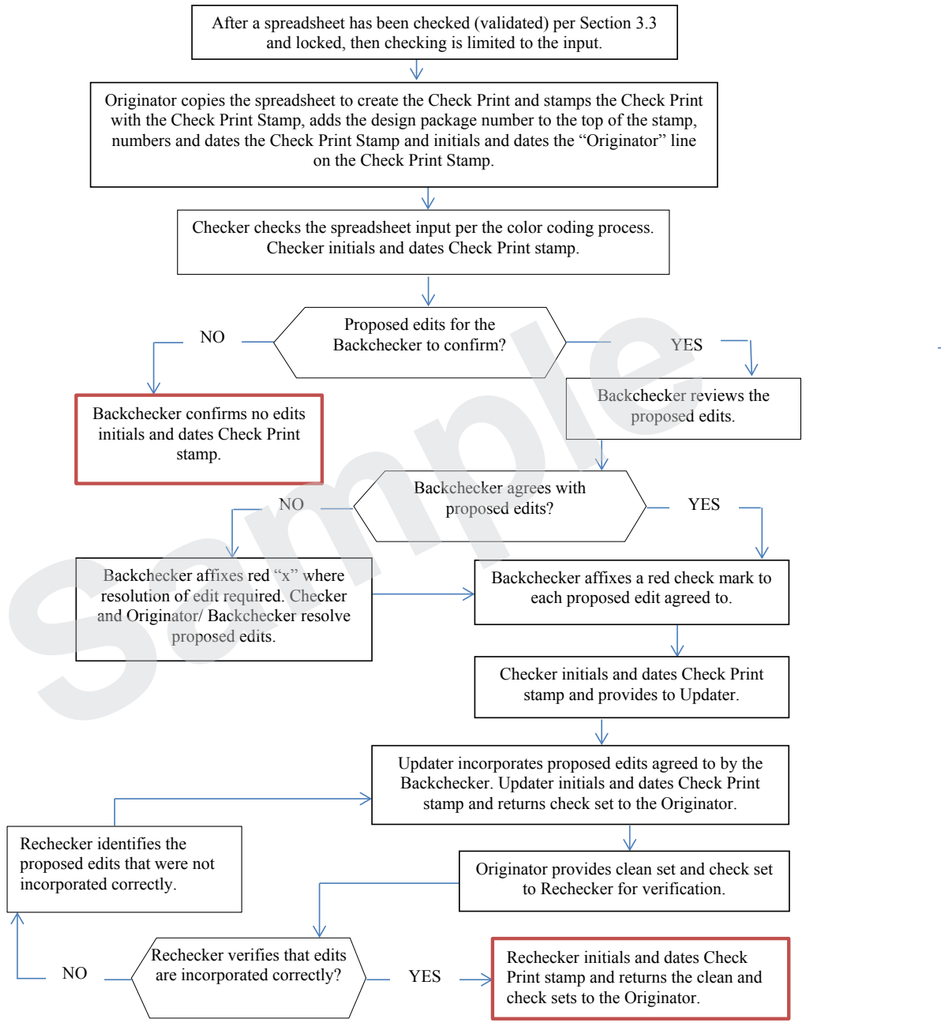


Figure DCPR-08B Flow Chart for Checking a Validated Spreadsheet



1.0 PURPOSE – The purpose of this DCPR is to define the QA/QC processes associated with revisions to Released For Construction documents.

2.0 SCOPE - The design changes handled by this DCPR include:

- Design changes initiated by the Design Team that occur after a design package has been Released For Construction require a change to the Released For Construction document.
- Design changes initiated by TGR that occur after a design package has been Released For Construction that require a change to the Released For Construction document. See the CQCP for additional information regarding Field Design Changes (FDC).

A design package may consist of drawings, report, study, and/or specifications with associated calculations, if any.

2.1 Definitions

Notice of Design Change (NDC) – form used to notify TGR of a revision to Released for Construction Document.

Released for Construction Document – a document that has been accepted by Department and released for construction by TGR.

Design Originator – the individual that prepares the design calculations, sketches or other information used by the Drawing Originator.

3.0 RESPONSIBILITIES

Originator – the individual who prepares the revised design calculations, drawings, report, study or other information used by TGR.

Design Discipline Lead (DDL). Notifies the DB Design PM of the change, identifies the source, describes the change, and provides the background or justification for the change, along with proposed details or language, as appropriate for the NDC form. The DDL also provides input to the Originator for the level of checking and review necessary. The DDL initiates the checking and review process as defined on the NDC form when the design is complete.

Design Quality Control Manager (DB Design QCM The DB Design QCM will review the QC and supporting documentation to verify compliance with this DCPR and sign the *Form DCPR-13A Internal Design Quality Audit Checklist*.

4.0 PROCEDURES - The QC process will be determined jointly by the DB Design PM and DDL associated with the submittal on a case-by-case basis. The results of the discussion of the QC requirements will be documented on the *QC Process Documentation* form. Once the Checking and Review process has been defined, the process of the applicable DCPR will apply.

4.1 Drawings – Drawings may either be added to the design package through an NDC or a previously Released for Construction drawing may be revised. New drawings will be checked in their entirety. Only changes to previously Released for Construction drawings will be checked. The checking procedures for drawings are defined in DCPR-05. When required, reviews will be conducted according to DCPR-11.

4.2 Specifications – New specifications will be checked in their entirety. Only changes to a previously

Released for Construction specifications will be checked. The checking procedures for specifications are defined in DCPR -07. The footer of the specification will identify the revision number and issue date. When required, reviews will be conducted according to DCPR-11.

4.3 Reports or Studies – Changes to a previously Released for Construction reports or studies as a result of an NDC will be checked. The checking procedures for reports are defined in DCPR-02. When required, reviews will be conducted according to DCPR-11.

4.4 Calculations – Changes to previously Released for Construction calculations as a result of an NDC will be checked. The original calculations may be changed or superseded at the discretion of the Professional of Record. The checking procedures for calculations are defined in DCPR-03 and DCPR-08. Unless there are major changes to the design, as determined by the Engineer of Record a revised load rating will not be required.

4.5 Input to software – Changes to software input previously Released for Construction as a result of an NDC will be checked. The original input/output will be superseded by the revised computer run and appended to the calculations. The procedures for checking of input to software for calculations are defined in DCPR-06.

4.6 Identification of Revisions

4.6.1 For drawings, revisions will be identified in the revision block and the current revision identified by a revision cloud and revision triangle. Previous revision clouds and revision triangles will be removed if the drawing is subsequently revised. The revision block will contain the following information:

- For new drawings (added to the package): "0" (zero) in the revision triangle; submittal date; the NDC or FDC number; and, initials.
- For existing drawings: The next revision number for the sheet in the revision triangle (i.e., 1); submittal date; the NDC or FDC number in the Comments box; and, initials.
- If a sheet is revised in its entirety, the revision block will indicate an NDC or FDC and "entire sheet". A revision cloud and triangle is not required.

4.6.2 Revisions to previously RFC MSWord documents will be identified using "track changes". Additions to the document will be underlined and deletions will be in "revision balloons" in the right-hand margin. The footer or revision box will identify the NDC number and revision number.

4.6.3 Sealing, Signing and Dating Revised documents – the following describes how revised drawings will be signed and dated. The requirements are similar for other documents.
Drawing packages will use a "seal sheet" that contains the professional seals and signatures for a specific submittal package. If a specific professional seal is not already on the seal sheet, it may be added or another seal sheet be created.

- Revisions by the original licensee: the original licensee will re-sign and re-date revisions to the previously signed, sealed and dated drawing. The seal sheet need not be amended for this scenario. The applicable sheets will be re-signed and re-dated with the date the signature is re-affixed. A new signature and date must be re-affixed since any changes to the electronic copy invalidates the signature and the date represents when the signature is affixed.
- Revisions by a second licensee taking responsibility for the changes only: A note will be placed, adjacent to the second signature and date, on a drawing revised by a second licensee to

describe the extent to which the second licensee is taking responsibility. Since the original licensee's signature is automatically invalidated when the drawing is revised, the original licensee's signature and original date must be reaffixed.

- Control of signature: If unavailable to re-affix his/her signature personally, the original licensee can request, via e-mail or some other document, that his/her original signature and date be re-affixed to a drawing, when a second licensee is taking responsibility for a revision to the drawing, under the following conditions:
    1. The original licensee has reviewed the change and determines the change does not affect the original design; and,
    2. The e-mail or other document from the original licensee clearly states that he has reviewed the revision and the revision does not affect the original design.
- The revised documents will transmitted to TGR's through SharePoint for communication to the field.

4.7 NDC Process – Requests for changes to RFC documents can originate from either the field through a Field Design Change (described in the Project QMP) or from the Design Team.

4.7.1 The outline below describes the process to develop an NDC.

- The Design Team discovers or determines that it may be necessary to change a previously released set of documents. The change may be in the form of an updated or additional drawing or an update to an existing specification, for example. This possible change is brought to the attention of the DDL or DB Design PM.
- If the DDL or DB Design PM concur that an NDC is required, the Originator obtains an NDC number from document controls.
- The Originator will complete *Form DCPR-09 Notice of Design Change* and prepare supporting documentation. The supporting documentation identifies the area on a drawing, for example, where the change is to occur so that TGR can cease operations in that location.
- The Originator will provide the Form DCPR-09 and supporting documentation to TGR through SharePoint or other appropriate individuals as identified by TGR.
- After receipt of approval from TGR, Originator will modify the document, discuss the checking and review process required with the DB Design PM and complete the *QC Process Documentation* form, obtain the DB Design PM's initials and cause the required QC to occur.
- The DDL will discuss the NDC with the Department counterpart to determine if the Department would like the opportunity to review the changes. If the opportunity for review is required, the NDC will return to the 100% completion stage.
- The Originator will provide the QC package as described in Section 5 below to the DB Design QCM for review. The DB Design QCM will review the QC documentation, provide comments as applicable, and verify that comments have been addressed or resolved. The DB Design QCM will initial the *QC Process Documentation* form and upload *Form DCPR-13A Internal Design Quality Audit Checklist* to ProjectWise.
- The DB Design QCM will provide the revised documents to the QAF as described in DCPR-13, section 4.2.1. The DB Design QCM will notify the Originator when QAF concurrence has been provided.
- The Originator will coordinate with document controls to populate the submittal folder with an electronic copy of the revised document(s) with a new seal, signature and date, if applicable, as described in section 4.6.3 above. Document controls will complete a submit form.

- Document controls will request concurrence from the DB Design QCM that the revised documents are ready to submit. Upon receipt of concurrence, document controls submits the NDC form, and revised documents to TGR through SharePoint l for further processing.

4.7.2 The outline below describes the process to make revisions to RFC documents in response to an a Field Design Change (FDC).

- TGR is responsible for completing the FDC form and providing to the Design Team. The FDC form will be kept as a design quality record and be stored in the QC folder.
- The design engineer responsible for making the design revisions will discuss the checking and review process required with the DB Design PM, complete the *QC Process Documentation* form, obtain the DB Design PM's initials and cause the required QC to occur.
- The DDL will discuss the FDC with the Department counterpart to determine if the Department would like the opportunity to review the changes. If the opportunity for review is required, the FDC will return to the 100% completion stage.
- The Originator will provide the QC package as described in Section 5 below to the DB Design QCM for review. The DB Design QCM will review the QC documentation, provide comments as applicable, and verify that comments have been addressed or resolved. The DB Design QCM will initial the *QC Process Documentation* form, and upload *Form 13A Internal Design Quality Audit Checklist* to ProjectWise.
- The DB Design QCM will provide the revised documents to the QAF as described in DCPR-13, section 4.2.1. The DB Design QCM will notify the Originator when QAF concurrence has been provided.
- The Originator will coordinate with document controls to populate the submittal folder with an electronic copy of the revised document with a new seal, signature and date, as applicable. If a major change, the FDC form signed by the DB Design PM will also be included. Document Controls will complete a submittal form.
- Document controls will request concurrence from the DB Design QCM that the revised documents are ready to submit. Upon receipt of concurrence, document controls submits the revised documents to TGR through SharePoint for further processing.

5.0 QA SUBMITTAL REQUIREMENTS – The following documents will generally be required for the DB Design QCM to review a submittal:

- Check Prints showing the check and/or review performed.
- Track changes version of an MSWord document.
- "Clean" set of documents reflecting the checked changes.
- NDC, or FDC, form and supporting documentation such as a Request for Information form and/or sketches that describe the proposed change.
- *QC Process Documentation* form.
- Forms for CR, IDR, and/or QCR if applicable based on the requirements in Section 4 above.
- Department concurrence the revised package may return immediately to RFC without the opportunity for Department review will also accompany the QC documentation.

6.0 REFERENCES

DCPR-02	Checking of Reports and Studies
DCPR-03	Checking of Calculation
DCPR-05	Drawing Check
DCPR-06	Checking of Input to Computer Programs
DCPR-07	Checking of Specifications
DCPR-08	Spreadsheet Checking
DCPR-11	Constructability Review (CR), Interdisciplinary Review (IDR) and Quality Control Review (QCR)
DCPR-13	Internal Design Quality Assurance Audits

7.0 FORMS

Form DCPR-11A & B	QC Review Form and Comment Sheets, (see DCPR-11)
Form DCPR 13A	Design Quality Audit Checklist
Form DCPR-09	Notice of Design Change

8.0 FIGURES

Figure DCPR-09A Flow Chart for NDC Process
Figure DCPR-09B Flow Chart for FDC Process

Form DCPR-09
OC3 Project

Initiated By:
DESIGN ENGINEER: _____ NDC NO.: _____

Note:
Initial submittal of this form serves as notice to TGR that revisions are in process and proceeding with construction without revised plans is at TGR's risk and could result in removal of the items constructed. Contact the engineer immediately before proceeding with construction. Complete the ACKNOWLEDGEMENT block on the lower left.

REASON FOR CHANGE ☐ Design Change ☐ Design in progress / Update ☐ Conflicting design elements ☐ Conflicting with existing features ☐ Other	Response to RFI No. Response to Submittal No.: Value Engineering: Other:	
DESCRIPTION OF REVISION:		
DRAWING / SPECIFICATION TO BE REVISED:		
PLAN SET TO BE REVISED: ESTIMATE OF DELIVERY OF RFC PLANS:		
ATTACHMENTS:		
ACKNOWLEDGEMENT Design Lead Date Design Manager Date Design IQF Manager Date TGR Design/Construction Coordinator Date **Return to:** ☒ TGR Design/Const. Coord. _____ ☒ Design Manager _____ ☒ Design Lead _____	**ROW Impacts?** ☐ Y ☐ N **Env. Impacts?** ☐ Y ☐ N **Potential Contract Change?** ☐ Y ☐ N	

COPY DISTRIBUTION:
☒ File ☒ Department ☒ TGR

Figure DCPR-09A Flow Chart for NDC Process

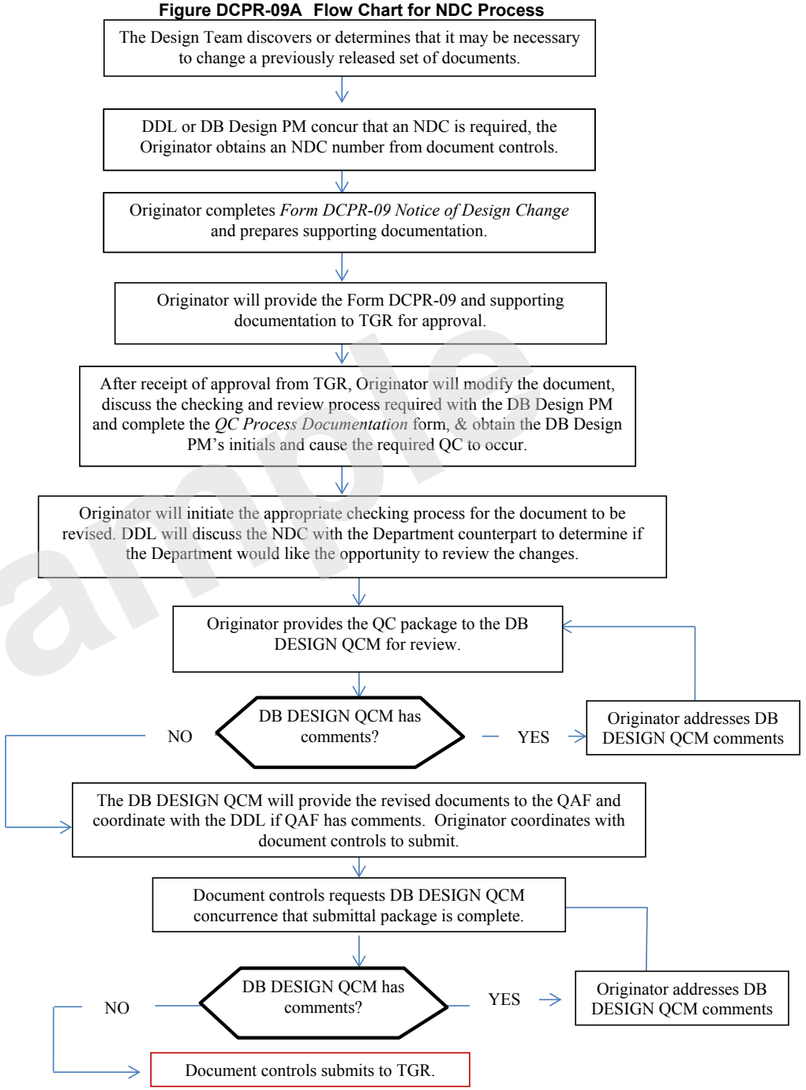
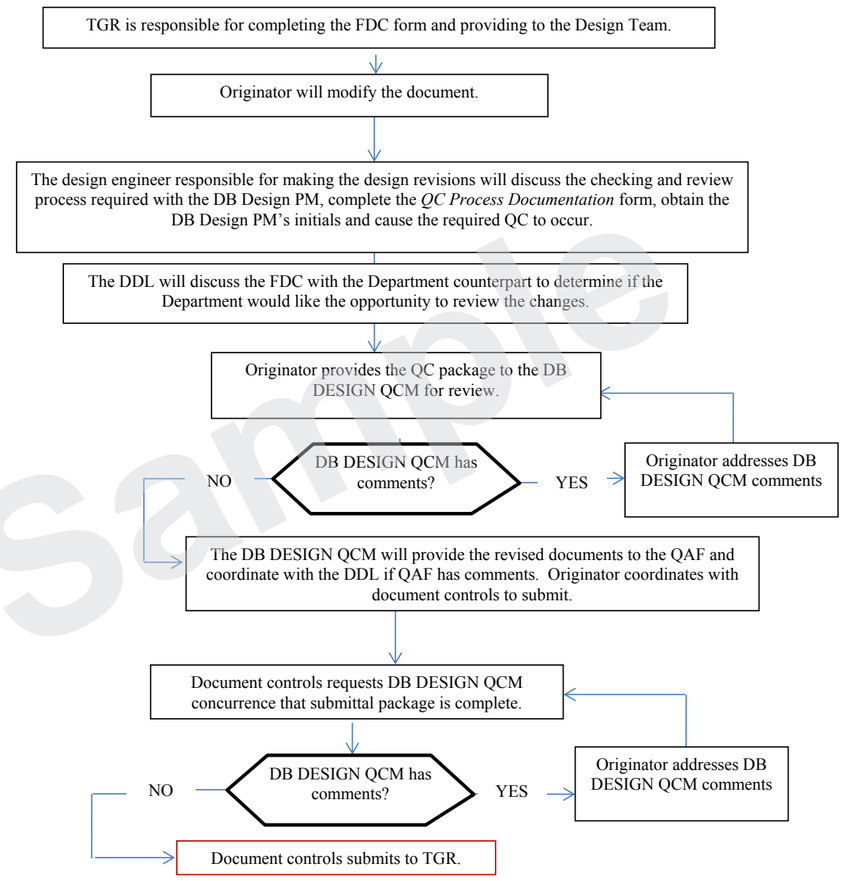


Figure DCPR-09B Flow Chart for FDC Process



1.0 PURPOSE – To identify approved computer software. To prescribe the method and documentation required before using computer software (other than industry standard programs), that may be used for performing design calculations.

2.0 SCOPE – When computer programs are used from the list of approved programs in Section 6.0, the input will be checked using the Detailed Check method and the output will be checked for reasonableness in accordance with DCPR-06 *Checking of Input to Computer Programs*.

3.0 RESPONSIBILITIES

Design Manager – The DB Design PM will develop and update the list of approved computer software based on input from the DDLs and DB Design QCM.

DDL - Provide a list of computer programs for DB Design PM approval. Identify the other than industry standard software that will be used and assess the availability of verification documentation for that software. When documentation for a particular application does not exist, appropriate assignments must be made to fulfill the requirements of this procedure.

4.0 PROCEDURE

The Detailed Check method procedure described in *DCPR-03 Checking of Calculations* and the requirements for checking input to computer programs in *DCPR-06 Checking of Input to Computer Programs* will be followed when required to be performed according to the *QC Process Documentation* form.

4.1 Validating Non-Industry Standard Software

Design Team firms will provide software validation procedure according to their respective policies. In this case the alternate procedure will be maintained in ProjectWise and accompany the associated validation.

Procured computer programs and software that are accepted as industry standard by nationally-recognized professional and trade organizations or by regulatory agencies do not require validation prior to Project use. Examples include utility programs used for word processing, drawing generation and presentations. Microsoft Excel does not require software validation; however, the output, if used in a calculation, shall be checked in accordance with *DCPR-08 Spreadsheet Checking*.

Procured computer programs and software that are approved for this Project and considered accepted as industry standard because of its widespread use are listed in Section 6. These computer programs and software do not require validation prior to its use since the validity of the computer model is verified, the input to the computer program is checked for accuracy and the resulting output is evaluated for reasonableness during the QC process in accordance with DCPR-06 *Checking of Input to Computer Programs*.

Procured computer programs or software that are not industry standards or not developed under a documented quality assurance plan, and computer programs and software developed in-house, including software add-ins and macros shall be subjected to this validation process prior to Project use.

When the same software is used by multiple offices/firms, the same version of that software is to be used across all locations and firms to reduce the likelihood of errors. Only the versions specified in the Approved List are to be used. If a new version is released of a program on the Approved List, it must be

re-verified before it can be used.

Questions regarding the applicability of this procedure to a particular software program should be directed to the Design Quality Control Manager for resolution.

One of the following four procedures shall be used to validate the output from non-industry standard software used on the Project, where applicable.

1. Hand Calculation
   a) Software may be validated by comparison to a hand calculation. The hand calculation shall use the same input assumptions as the software input.
   b) Checked calculations from a previous project can be used in lieu of an original calculation.
   c) The output from the software shall be compared to the results of the hand calculation with the corresponding answers noted as being equal. Non-rounding errors shall be noted and explained.
2. Textbook or User's Manual Problem
   a) Software may be validated by running a textbook or user's manual problem with known results.
   b) The same input assumptions used in the textbook or user's manual problem shall be used in the software being validated.
   c) The output from the software shall be compared to the results of the textbook or user's manual problem with the corresponding answers noted as being equal. Non-rounding errors shall be noted and explained.
3. Independent Software
   a) Software may be validated by running the same problem using other, independent software.
   b) The output from each program shall be compared with the corresponding answers noted as being equal. Non-rounding errors shall be noted and explained.
4. Independent Client
   a) Software may be validated by providing documentation from a similar public Agency indicating the software is approved for use.
   b) Software may be validated by providing documentation of where the software was used on a similar project that has been constructed.

Form DCPR-10 may be used to document the results of the software validation. The completed Software Validation Memo, or documentation from an alternate process, shall be filed in the Project files as a Quality Record.

Problems or errors identified during the verification process, during Project use or when announced by the vendor supplying computer program or software shall be documented and reported immediately to the Design Manager. Computer errors identified during Project use shall also be reported to the Design Manager. The Design Manager together with the Design Discipline Lead will assess the impact of the problem or errors on past or current use. The problem or error shall be resolved before continuing use of the specific computer program or software. If the error cannot be resolved, the Design Manager and the Design Discipline Lead shall determine an alternative calculation method.

5.0 REFERENCES

DCPR-03 Checking of Calculations
DCPR-06 Checking of Input to Computer Programs
DCPR-08 Spreadsheet Checking

6.0 APPROVED INDUSTRY STANDARD SOFTWARE AND VALIDATED NON-INDUSTRY SOFTWARE

The following represents the list of approved industry standard computer programs:

- MathCAD
- spColumn (formerly PCACol)
- LPILE
- Shaft 6.0
- MDX
- LEAP Bridge Suite
- LEAP Bridge Enterprise
- STAAD.PRO
- SAP 2000
- LARSA 4D Bridge +
- BRASS Culvert
- STLBRIDGE LRFD
- STLBRIDGE LFD
- RISA 3D – version 9
- RISA Base 2.0
- FB-MultiPier
- Response-2000 v1.0.5
- Enercalc – version 6
- Hilti PROFIS Anchors – version 2
- AGI 32+
- ESRI ArcView
- ESRI Spatial Analyst
- ESRI 3D Analyst
- HEC GeoRAS
- HEC HMS
- HEC RAS
- HY8
- XPSWMM
- Bentley Microstation
- Bentley InRoads
- Bently Geopak
- Bently Geopak Drainage
- Bentley Flowmaster
- Bentley Culvertmaster
- Bentley StormCAD
- Bently PondPack
- Autodesk Civil 3D
- AutoCAD
- AutoTurn 8
- SignCAD
- VISSIM
- Synchro + w/warrants
- McTrans HCS+
- Flo-2D + MapObjects
- SketchUP LAN
- Photometric Toolbox
- Axiom Site License
- Google Earth Pro
- Bluebeam
- CUHP
- SWMM
- AASHTOWare
- GRL WEAP
- UNISETTLE
- UNIPILE
- SETTLE 3D
- GROUP
- MSEW v3
- RESSA v3
- Gint v8
- GeoStudio2012 (Slope/W, Sigma/W)
- CPeT-IT
- RocLab
- IHSDM
- ISATe
- TAEG
- Adobe Acrobat (Reader/Pro)
- Merlin
- Microsoft VISIO
- Microsoft Office (Word, Excel, etc.)
- WinZip
- Altiva CadConform
- HCS2010
- AGI-32 (Lighting Analyst)
- PG Super
- Midas Civil
- LUSAS
- UT Bridge
- CSi Bridge
- ODOT CDSS
- HydroCAD

The following represents the list of approved non-industry standard computer programs:

- None

7.0 FORMS

Form DCPR-10 Software Validation Memo

8.0 FIGURES

Figure DCPR-10 Flow Chart for Approving Computer Software

Form DCPR-10 Software Validation Memo

HDR

Software Validation Memo

To: {Name}, Design Quality Control Manager	
From: [Click **here** and type name]	Project: **OC3 Project**
CC:	
Date: [Click **here** and type date]	File Folder: XX.YY_ Validated Software
RE: Software Validation for [Click **here** and type subject]	

Objective of the Validation

Description of Engineering Calculation Software and Hardware setup

Validation Method

Results and Conclusion

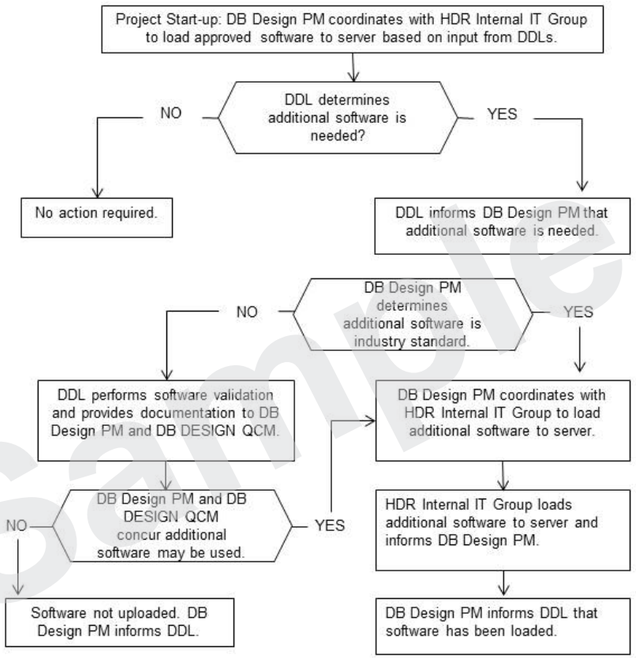
Notes:

- *Subconsultants shall modify this form to be on their company letterhead. The body of the memorandum shall remain unchanged.*
- *Attach input and output printout for each validation. The output printout should include hand notes comparing results to standard or known output*
- *Photocopies of standard examples from textbooks or software manuals are acceptable for the standard or known output.*
- *Attach vendor quality control/assurance certification in lieu of input/output if applicable.*

cc: {Name}, Design Manager
Project file: TBD_ Validated Software

Rev 0

Figure DCPR-10 Flow Chart for Approving Computer Software



1.0 PURPOSE - To establish the sequence and responsibilities for the Constructability Review (CR), Interdisciplinary Review (IDR) and Quality Control Review (QCR) before submission of a design deliverable to Department for review and comment.

2.0 SCOPE - This procedure applies to reports, studies, drawings and specifications submitted for progress review when identified as required on the *QC Process Documentation* form.

The CR is an opportunity for the Design-Builder to provide formal constructability review comments to the Design Team.

The IDR is an interdisciplinary review to promote and document the coordination between the design discipline teams. The DDLs will jointly review the documents for interferences, compatibility between design disciplines, completeness, and will resolve conflicts and suggest improvements based on sound engineering practices.

The QCR is an internal review within the discipline for design approach, suitability, and conformance with design criteria, standards, and Project requirements, and to provide confidence that good engineering practice was followed. The QCR will be performed by an engineer qualified in the discipline and who has not participated in the production of the design element being reviewed.

3.0 RESPONSIBILITIES

Design Discipline Lead (DDL) - is responsible for initiating and coordinating the review and for final resolution of review comments, if necessary.

Interdisciplinary Reviewer - is responsible for reviewing the design document, providing comments, resolving disagreements, and suggesting improvements based on sound engineering practices. The Interdisciplinary Reviewers determine if incompatibilities exist among disciplines.

Originator - is an individual with the primary technical responsibility for the design document that is being reviewed.

Quality Control Reviewer - is responsible for reviewing the design document and providing comments. The Quality Control Reviewer is responsible for coordinating the resolution of comments generated as a result of the QCR and completing the Project Requirements Checklist.

Constructability Reviewer - is responsible for reviewing the design document and providing comments. The Reviewer is responsible for coordinating the resolution of comments generated as a result of the CR.

Additional responsibilities are provided below.

4.0 PROCEDURES

This procedure shall apply to design documents that are required to be reviewed based on the *QC Process Documentation* form.

4.1 CR Procedures:

4.1.1 Actions by the DDL or a designated individual:

- Prepares a copy of the review set.
- Prepares a **Cover Form, Form DCPR-11A, and Comment Sheet, Form DCPR-11B** and indicates that it is a CR by checking the CR box on both forms.
- Fills in the review phase portion of the comment sheet.
- Provides the documents to the Design-Builder Design Coordinator.
- Reviews the comments from the Reviewer on the Comment Sheets.
- Consults with the Reviewer to resolve comments for which they are in disagreement.
- Resolves the differences, provides a Response, Status and Date on the Comment Sheets and/or review set. If the response is that the DDL will provide the information in a future submittal, so indicates as a response, and provides a status code of “O” for Open.
- Incorporates agreed to changes in the design document and presents the revised document to the Reviewer.
- Signs and dates the Cover Form. An electronic signature and date may be provided.
- Provides the Comment Sheets review set, if needed, and updated design documents to the Reviewer for signature and date on the Cover Form and initials on the Comment Sheet indicating final resolution.

4.1.2 Expected Actions by the Constructability Reviewer:

- Review the design documents and provide comments on the Comment Sheets.
- Sign the Cover Form, if necessary, indicating comments have been provided to the DDL. An electronic signature and date may be provided.
- Resolve comment responses with the Originator or DDL, if necessary.
- Review updates to the design documents, if any, and if updates are acceptable, sign and date the Cover Form and initial the Reviewer Approved box on the Comment Sheet indicating final resolution has been reached. An electronic signature and date may be provided. In lieu of hand written initials, the Reviewer may use typed initial as long as they are typed using track changes.

Note: The DDL may continue with the submittal if Form 11A is not provided by the reviewer performing the Constructability Review if a Form 11B is provided and the reviewer has initialed each comment. The DDL may also continue with submittal if the Constructability Review comments are not received in time to incorporate into the submittal. In this case, the response to the comment will indicate the comment will be addressed prior to the subsequent submittal.

4.1. 3 Constructability Reviews of Utilities Designed by Others

For procedures relating to constructability reviews of utilities designed by others, refer to the CQMP.

4.2 IDR Procedures:

4.2.1 Actions by the DDL or a designated individual:

- Prepares a copy of the review set.

- Prepares a **Cover Form, Form DCPR-11A, and Comment Sheet, Form DCPR-11B** for each intended reviewer and indicates that it is an IDR by checking the IDR box on both forms.
- Fills in the review phase portion of the comment sheet.
- Identifies the intended reviewer by discipline and by name if known.
- Uploads the review set and forms to ProjectWise.
- Sends a ProjectWise link to each of the intended reviewers.
- Reviews the comments from the Reviewers on the Comment Sheets and/or the review set.
- Consults with the Reviewers to resolve comments for which they are in disagreement.
- Resolves the differences, provides a Response, Status and Date on the Comment Review Sheets and/or review set.
- Incorporates agreed to changes in the design document.
- Signs and dates the Cover Form, if necessary, and presents the revised document to the Reviewers. An electronic signature and date may be provided.
- If the response is that the DDL will provide the information in a future submittal, so indicates as a response, and provides a status code of "O" for Open.

4.2.2 Actions by the Reviewers:

- Reviews the design documents provided to determine if incompatibilities exist among disciplines.
- Provides comments in the Comment Sheet. Comments may be annotated on the design documents provided, however, the comment form is the official document for comment resolution and closure.
- Signs and date the Cover Form, if necessary, and returns the form and comments to the DDL in ProjectWise.
- Notify the DDL that the Review is complete.
- Review updates to the design documents, if any, and if updates are acceptable, sign and date the Cover Form, if necessary, and initial the Reviewer Approved box on the Comment Sheet indicating final resolution has been reached. An electronic signature and date may be provided. In lieu of hand written initials, the Reviewer may use typed initial as long as they are typed using track changes.
- Comments in specifications or reports should have pages tabbed for easy identification.

4.3 QCR Procedures:

4.3.1 Actions by the DDL or a designated individual:

- Prepares a copy of the design document to be reviewed.
- Prepares a Cover Form, **Form DCPR-11A**, and Comment Sheet, **Form DCPR-11B**. Identifies the type of Review by marking the QCR box.
- Fills in the review phase portion of the comment sheet.
- Reviews the comments from the Reviewer on the Comment Sheets and/or the review set.
- Consults with the Reviewer to resolve comments for which they are in disagreement.
- Resolves the differences, provides a Response, Status and Date on the Comment Sheets and/or review set. If the response is that will be provided in a future submittal, so indicates as a response, and provides a status code of "O" for Open.

- Incorporates agreed to changes in the design document.
- Signs and dates the Cover Form and presents the revised document to the Reviewer. An electronic signature and date may be provided.

4.3.2 Actions by the Reviewer

- Reviews the design document provided for approach, suitability, conformance with client's design criteria, standards, and Project requirements.
- Complete the Project Requirements Checklist (PRC), as applicable for the specific package under review. An individual package may not have a PRC. PRCs are located at: TBD
- Provides comments in the Comment Sheet. Comments may be annotated on the design documents provided, however, the comment form is the official document for comment resolution and closure.
- Signs and dates the Cover Form, if necessary, and returns the form and comments to the Originator. An electronic signature and date may be provided.
- Reviews the Responses from the Originator on the Comment Sheets and/or the review set.
- If the resolution is the Originator will provide the information for a future submittal, so indicates as a response, and provides a status code of "O" for Open.
- If the resolution is the DDL is to incorporate the comment prior to the submittal, confirms that the change was incorporated as agreed; initials the Reviewer Approved box on the Comment Sheet. In lieu of hand written initials, the Reviewer may use typed initial if entered in track changes.
- Signs and dates the Cover Form, if necessary. An electronic signature and date may be provided.

4.4. Track Changes for Form DCPR-11B:

Form DCPR-11A will not be necessary if the following are provided in track changes on Form DCPR-11B:

- Reviewer Comments;
- Responsible Professional Response;
- Responsible Professional provided Status and Date; and,
- Reviewer Approved Initials.

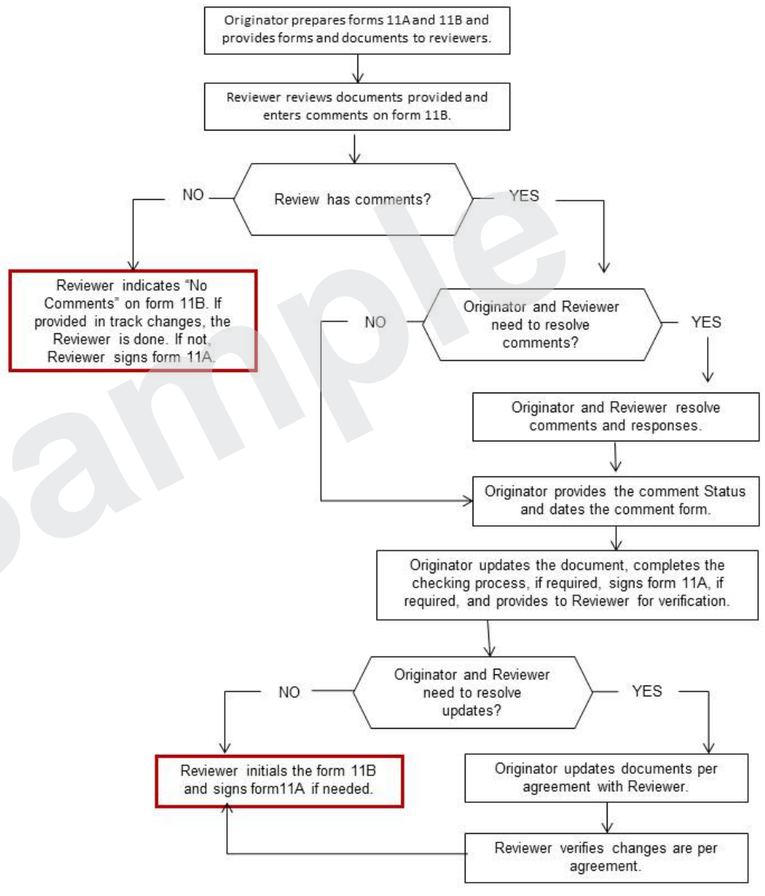
5.0 FORMS

DCPR-11A CR, IDR & QCR Cover Form
DCPR-11B CR, IDR & QCR Comment Sheet

6.0 FIGURES

Figure DCPR-11 Flow Chart for CR, IDR, QCR

Figure DCPR-11 Flow Chart for CR, IDR, QCR



NOTE: Form DCPR-11A is not required if the comments section of Form DCPR-11B is in track changes

CR, IDR & QCR COVER FORM

Client: ODOT
Project: OC3 Project
Design Package No.:
Design Manager: Ken Fertal
DDL:
Responsible Professional:

Reviewer Name:
Request Date:
Review Deadline:
Completion Date:

TYPE OF REVIEW **CR** ☐ **IDR** ☐ **QCR** ☐

Project Phase: _____ (30%, 60%, 100%, DRAFT, FINAL, RFC)

Report:
- ☐ Draft
- ☐ Final

Design:
- ☐ Design Review
- ☐ Calculations Review
- ☐ Specifications
- ☐ Other: _____
- ☐

Issue for Construction
- ☐ Plans
- ☐ Calculations
- ☐ Specifications

Signatures:

IDR Personnel Involved in Review:
- ☐ Civil – Roadway
- ☐ Utilities
- ☐ Drainage
- ☐ Structural
- ☐ Geotechnical
- ☐ Environmental
- ☐ Traffic/Signing
- ☐ MOT
- ☐ ATMS
- ☐ Other
- ☐
- ☐
- ☐
- ☐ Other

QC Reviewer _____ Date _____

Design Manager [ ], Discipline Lead [ ], or Responsible Professional [ ] _____ Date - Response to Comments _____

QC Reviewer _____ Date – Resolution Accepted and Comment Incorporation Verified _____

Subject: ***CONSTRUCTABILITY REVIEW (CR), INTERDISCIPLINARY REVIEW (IDR), and QUALITY CONTROL REVIEWS (QCR)***

Sheet/ Page No.	Comment No.	Reviewer Comment	Responsible Professional Response	Status[1]	Date	Reviewer App'd. (Initials)

(1) Status code: A = Accept, D = Dismiss, C = Clarify, R = Resolve

Subject: ***REQUEST FOR INFORMATION***

Procedure No. ***DCPR-12***
Page 1 of 3
Revision 0

1.0 PURPOSE – The purpose of this DCPR is to define the processes associated with responding to a Request for Information from the TGR Construction Company, Inc. (TGR) through SharePoint.

2.0 SCOPE – A Request for Information is initiated by the Design-Builder where a clarification to a design document or additional information is required.

2.1 DEFINITIONS

NDC - Notice of Design Change, see DCPR-09.

RFI - Request for Information initiated by the Design-Builder.

SharePoint - the software used on the Project to send and receive official correspondence and to track the workflow process. SharePoint provides a real time status and log of all RFIs from TGR to the Design Team on the Project.

As-built drawing - A conformed set of PDF drawings with as-built information redlined by TGR. These drawings are provided to the Design Team via SharePoint.

Record Drawings - Drawings produced by the Design Team from a copy of the electronic design files to reflect the as-built information provided by TGR.

3.0 RESPONSIBILITIES

Design Discipline Lead (DDL). Will review the RFI and provide an appropriate disposition. If an NDC is required, the DDL will initiate the NDC.

4.0 RFI PROCEDURE

The steps to process and check, as applicable, an RFI are as follows:

1. An RFI workflow is received from TGR via SharePoint notification directed to the appropriate DDL.
2. The DDL or his designee will review the RFI against the appropriate controlling contract documents.
3. RFIs may consist of a request for clarification of documents, clarification of design intent or may address some detail of construction that is below the level of detail shown or indicated on the documents. An example may be a request for a dimension not shown but inferable from the plans, or a request to have a construction joint in a concrete pour that is not detailed on the construction drawings.
4. The DDL will determine if the requested information or action is within the design intent of the construction documents. If it is, the DDL will indicate "approved" in the SharePoint workflow and will address any limitations to this approval in the workflow comments.

    a) If the RFI can be answered without a change to a design document, the appropriate response will be created and provided to TGR via SharePoint. This includes minor changes provided by the Design Team to TGR via redlined PDFs. If an NDC is later initiated that can include the minor changes, then the minor changes are included in the NDC. If there is no NDC initiated later to include the minor change, TGR will redline the conformed set of drawings with the as-built information. The as-built information is used by the Design Team to create the Record Drawing.

b) If a change to a design document is needed, the DDL will further state in his comments that an NDC will be forthcoming to address the needed construction document(s) changes. NDCs generated through the RFI process will be governed under NDC procedures. Refer to DCPR-09 for processes related to NDCs.

5. If the requested action is determined to be incompatible with design intent, or would otherwise negatively affect design or quality, the DDL will indicate "rejected" in the SharePoint workflow and will state the reason(s) for the rejection in the comments.
6. The actions "approve", "approve with comments", and "reject with comments" are allowed dispositions within the SharePoint workflow. These actions alert TGR that the DDL has reviewed and provided a disposition for the workflow and it is ready for TGR's further action.

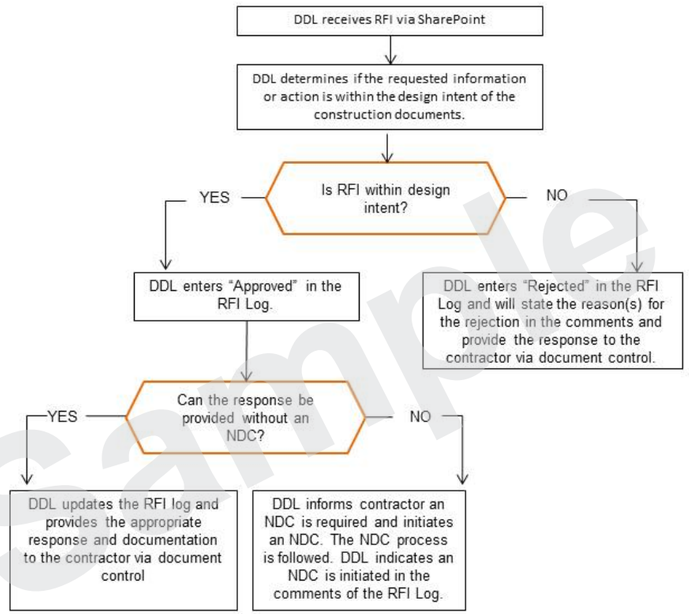
5.0 REFERENCES

DCPR-09 Notice of Design Change

6.0 FIGURES

Figure DCPR-12 Flow Chart for RFI

Figure DCPR-12 Flow Chart for RFI



1.0 PURPOSE - To establish the requirements for Internal Design Quality Audits, including the verification that the quality activities and related results comply with planned arrangements described in this DQMP. Results of these internal audits shall be maintained as Quality Records.

2.0 SCOPE - This procedure is applicable to all activities comprising the design quality system within the design organization, including its subconsultants. Audits will be performed by the DB Design Quality Control Manager (DB Design QCM) and/or designee. The performance of audits in support of the Internal Quality Assurance Program includes the following: Internal Periodic Audits to determine the compliance of DB Design PM and DDL with Project requirements, and Internal Design Quality Audits (Review of QC Documentation) to determine the compliance of the Design Team with the QC Program.

3.0 RESPONSIBILITIES

The DB Design QCM schedules and performs Internal Quality Audits to ascertain that the overall QA/QC Program is adequate, objective, and effectively implemented.

The DB Design PM and DDL are responsible for providing a receptive and cooperative response to the auditor(s) by personnel in their group; and, providing timely access, during the performance of the audit, to pertinent facilities and documents.

The Auditor(s) is responsible for planning, scheduling, and conducting the audit(s) in a professional and objective manner and, consistent with the planned audit objectives, minimizing interruptions to normal workflow of the organization being audited. The Auditor(s) is to present evaluations and findings that are valid and supported by specific written requirements of the QA/QC Program.

All Project staff members are to be familiar with their QC responsibilities and the checklist items for the audit.

4.0 PROCEDURE

4.1 Internal Periodic Audits

Internal Periodic Audit activities must be planned, documented and conducted in a manner to provide adequate review of the administrative and design project management QC contract requirements. When Internal Periodic Audits are conducted, the activity or discipline to be audited will be notified in advance. An audit kick-off meeting will be scheduled. An Internal Periodic Audit Agenda and Internal Periodic Audit Form will be provided to attendees using forms DCPR-13C and DCPR 13D, respectively. The DB Design QCM will schedule convenient times with the auditee and conduct the audit. When the audit is complete, the DB Design QCM will schedule a preliminary audit closeout meeting to discuss findings, if any, and to provide the auditee with the initial observations and the opportunity to provide additional documentation. The DB Design QCM will finalize the audit and prepare a final Internal Periodic Audit Report, form DCPR-13E.

Scheduled audits may be supplemented with an Internal Periodic Audit when DB Design QCM suspects that a serious QC problem exists, and the quality of the deliverables may be in jeopardy.

Personnel conducting audits must not have direct responsibility for performing the activities being audited.

4.2 Internal Scheduled Audits (Review of QC Documentation)

Scheduled audits will be developed on the basis of the schedule activities. These audits are referred to as "Review of QC Documentation". Personnel conducting audits will not have direct responsibility for performing the activities being audited. The audits will include, but not be limited to, checking and review documentation and other QC functions.

The DB Design QCM will sample the QC Records of the design deliverable. Sampling will be determined by the DB Design QCM based on the size of the submittal package. Small submittals may be reviewed in their entirety. Larger packages will undergo a level of sampling based on the results of previous submittals, complexity of the QC Records, and/or DB Design QCM judgment. The current submittal, or future submittals, may undergo increased sampling rates based on the outcome of the sampling. Once the DB Design QCM has determined that the DCPRs have been implemented, the sampling rate may be decreased.

Form DCPR-13A will be used to document the scheduled audit to provide objectivity and continuity of audits. At the completion of the audit, and prior to finalizing the audit results, the auditor will present the initial observations to the auditee (usually by means of Post-it® note or e-mail), including presumed non-compliances and provide an opportunity for the DB Design PM, DDL, or Project staff to address the findings. The DB Design QCM will review the responses and updated QC documentation against the audit criteria. This process will provide early feedback to the Design Team related to the proper implementation of the QC procedures. Once the QC documentation is in substantial compliance with the QC procedures, the DB Design QCM will close out the audit by completing the Internal Design Quality Audit Checklist (Form DCPR-13A). In this case, the Corrective Action Request Form (Form DCPR-15A) will not be required since nonconformances have already been addressed and closed. A post-audit meeting will not be required since the initial observations have been addressed and Form DCPR-13A has been executed. The auditor may close an audit if the QC Documentation is in substantial conformance to the audit criteria and initiate additional targeted training to address minor nonconformances. In this case, the DB Design QCM may hold a post-audit meeting to relate the need for additional targeted training and required attendees. The targeted training will be documented and kept in the Quality Records. If required, a Corrective Action Request Form (Form DCPR-15A) will be used to document the final results of the audit, to address a root cause, including non-compliant issues that require further investigation and corrective action.

Corrective Action activities, including resolution of deficiencies, are documented and retained as quality records to allow the DB Design QCM to monitor the overall quality audit program. The status of audits and findings will be recorded in ProjectWise. Deficient areas will be re-audited or otherwise verified, subsequent to the completion of a corrective action, to ascertain that corrective measures have been implemented and are effective, before the audit is closed. See DCPR-15 for additional information regarding the Corrective Action process.

4.2.1 QAF Review

The DB Design QCM will provide the QC documentation and the submittal package to the DQAM for review. The DQAM may provide comments on the QC package. If this occurs, The DB Design QCM will engage the Design Team to amend the QC documentation to the DQAM's satisfaction prior to submitting to the Department for its opportunity for review. The DQAM will initiate the review of the design package for technical requirements. For additional information on the QAF review, please refer to the DQAP.

5.0 FORMS

Form DCPR-13A Internal Design Quality Audit Checklist
Form DCPR-13B Not Used
Form DCPR-13C Internal Periodic Audit Agenda
Form DCPR-13D Internal Periodic Audit Form
Form DCPR-13E Internal Periodic Audit Report

6.0 FIGURES

Figure DCPR-13A Flow Chart of Internal Design Quality Audit (Internal Scheduled Audit)
Figure DCPR-13B Flow Chart of Internal Periodic Audit Process

Figure DCPR-13A Flow Chart of Internal Design Quality Audit (Internal Scheduled Audit) (Review of QC Documentation)I

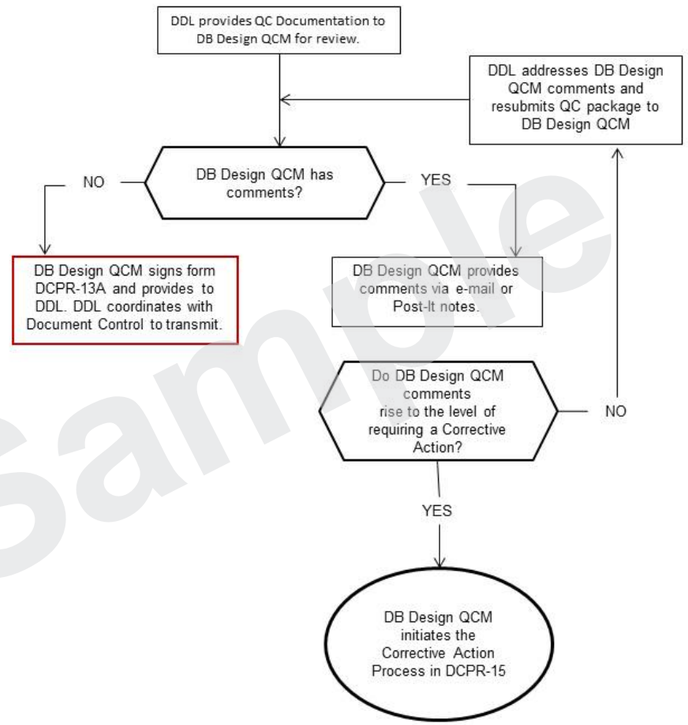


Figure DCPR-13B Flow Chart of Internal Periodic Audit Process

Subject: ***INTERNAL DESIGN QUALITY ASSURANCE AUDITS***

Form DCPR-13A

INTERNAL DESIGN QUALITY AUDIT CHECKLIST Page 1 of ___

OC3 PROJECT

DESIGN PACKAGE AUDIT NO.: _____

AUDIT STAGE: [ ] ___% Submission
[ ] Post - Final Package Review (Released-for-Construction Certification Process)

AUDITOR: _____ DATE(S) OF AUDIT: _____
NAME OF FIRM AUDITED: _____

NAME OF RESPONSIBLE PARTY (DDL, DB Design PM, etc.): _____

PROJECT SEGMENT/ TASK / ITEM(s) AUDITED: _____

	AUDIT ITEM	REFERENCE	METHOD OF VERIFICATION	CONFORMS YES	CONFORMS NO	REMARKS
1.	Plan reviews completed? CR, IDR, QCR?	DCPR-11,	Review package to verify that comment sheets are attached.	___	___	
2.	Are calculation check prints available?	DCPR-03	Review originals and check prints at 100%; S/S at RFC	___	___	
	Structures Load Rating	DCPR-03	Prior to RFC: Detail design check; S/S	___	___	
3.	Is checking of computer input being accomplished?	DCPR-06 DCPR-10	Review originals and check prints Software on approved list?	___	___	
4.	Is checking of Spreadsheet verified?	DCPR-08	Review check prints.	___	___	

INTERNAL DESIGN QUALITY AUDIT CHECKLIST Page 2 of ___
OC3 PROJECT

	AUDIT ITEM	REFERENCE	METHOD OF VERIFICATION	CONFORMS YES	CONFORMS NO	REMARKS
5.	Are drawing check prints (redlines) available?	DCPR-05	Review record set and check prints.	____	____	_____
6.	Are check prints of specifications available?	DCPR-07	Review record set and check prints.	____	____	_____
7.	Are procedures for marking up check prints being followed?	DCPR-03, 05	Review check prints or redlines.	____	____	_____
8.	Are record prints properly signed and dated?	DCPR-03, 05	Review record set CP Stamp.	____	____	_____
9.	Are current design changes incorporated?	DCPR-09	Review Notice of Design Change Log & revision block in dwg(s).	____	____	_____
10.	Are Quality Review prints and/or comments available?	DCPR-11	Review documentation of CR, IDR, and QCR Reviews.	____	____	_____
11.	Are all review comments addressed or incorporated in the final documents?	DCPR-11 DQMP	Review documentation of CR, IDR, and QCR Reviews. Review 4.5.1.1 QAF/ODOT Comment Logs.	____ ____	____ ____	_____ _____
12	Has procedure for checking Reports been followed?	DCPR-02	Review record set and check prints.	____	____	_____
13.	Third-party comments	DQMP 4.5.1.2	Review Comments	____	____	_____

INTERNAL DESIGN QUALITY AUDIT CHECKLIST Page 3 of ___
OC3 PROJECT

	AUDIT ITEM	REFERENCE	METHOD OF VERIFICATION	CONFORMS YES	CONFORMS NO	REMARKS
14.	Project Requirements Checklist(s)	DQMP 5.2.4	Review PRCs.	____	____	_____
15.	Other: _____	_____	____	____	____	_____

ADDITIONAL COMMENTS ATTACHED [ ]

CERTIFICATIONS

This checklist is, to the best of my knowledge, a true and accurate assessment of QC activities and compliance of the Design Package submitted:

_____, Auditor Date: _____

INTERNAL DESIGN QUALITY AUDIT CHECKLIST Page ___ of ___

OC3 PROJECT

ADDITIONAL COMMENTS:

Form DCPR-13B

NOT USED

Form DCPR-13C
INTERNAL PERIODIC AUDIT AGENDA

OC3 PROJECT
Project: 173000 PID No. 96833

Meeting Date: mm/dd/yyyy
Start Time – Estimated Completion Time: 8:00 am to 9:00 am EST
Location of Meeting: {ABC} Conference Room
Meeting Leader: {Name}
Agenda: {enter name of periodic audit}

	Topic(s)	Discussion Leader
	1. Introductions 2. Scope and Objectives 3. Methods and Procedures 4. Document Location, Personnel, Access 5. Tentative Exit Meeting Date and Time 6. General Discussion	

Attachments:

Subject: ***INTERNAL DESIGN QUALITY ASSURANCE AUDITS***

Form DCPR-13D
INTERNAL PERIODIC AUDIT FORM

OC3 PROJECT
Project: 173000 PID No. 96833

Lead Auditor: {Name} **Lead Responder:** {Name}

Audit #: PA{#} **Audit Date:** {mm/dd/yyyy} **Audit Time:** {time} **Location:** {location}

Item #	Reference	Requirement	Objective Evidence	Method of Verification	Status	Comments
1						
2						
3						
4						
5						
6						

Method of Verification Code: I = Interview R = Review
Status Codes: C = Compliance OFI = Opportunity for Improvement D = Deficiency

Form DCPR-13E
INTERNAL PERIODIC AUDIT REPORT

OC3 PROJECT
Project: 173000 PID No. 96833

Audit Number: PA {#}
Audit Date: mm/dd/yyyy

Preamble
{text}

Findings
{text}

	Total Audit Items	Conforming	OFI	Deficient	Comments
Audit Items					

Summary and Conclusion
{text}

1.0 PURPOSE – The purpose of this DCPR is to define the QA/QC processes associated with preparing Record Documents from As-Built Documents.

2.0 SCOPE – As-built drawings are necessary to document the as-constructed work in the field. They are intended to identify constructed items that did not generally meet the Released for Construction documents including materials and equipment as specified.

2.1 DEFINITIONS

As-Built Document – a document that is created to reflect the actual construction condition that is different than the design shown on the latest Released for Construction drawing.

Released for Construction Document – a document that has been accepted by Department and released for construction by TGR.

Originator – the individual who creates the Record Drawing Set by incorporating changes represented on the As-Built Document provided.

Checker - the individual who checks the Record Drawing Set against the As-Built Document provided.

Backchecker - the individual who reviews the Checkers proposed edits.

Verifier - verifies edits to the record document are correct.

Record Document - The document produced by the Design Team from As-built documents provided by TGR and other information such as Requests for Information.

Updater – the individual who updates the design file based on approved as-built information.

3.0 RESPONSIBILITIES

Originator – incorporating design changes and initiating the checking process by affixing the check print stamp to a check print. For final Record Drawings, is responsible for copying the final design file in preparation for documenting as-built information.

Checker - is responsible for Checking the record document against the As-Built Document provided. Reconciles disagreements with the Backchecker.

Backchecker - is responsible for reviewing the Checkers proposed edits and either agreeing with them or reconciling differences.

Updater – the Updater is responsible for incorporating design changes and initiating the checking process.

Design Discipline Lead (DDL). Will provide the changes to the Updater and Check that the changes have been incorporated correctly.

4.0 CHECKING PROCEDURE

The procedure for the checking of Record Documents (drawings, reports, and calculations) will generally follow the steps described in *DCPR-02 Checking of Reports and Studies, DCPR-03 Checking of Calculations, DCPR-05 Checking of Drawings and/or DCPR-07 Checking of Specifications and Special Provisions*, as applicable.

The Originator will incorporate approved changes to the latest Released for Construction design file based on approved as-built information. The Originator will print the revised sheet, affix a Check Print Stamp, indicate that the sheet is an As-Built check sheet by indicating “As-Built Check Sheet” in the top

line of the Check Print Stamp, number and date the Check Print Stamp, initial and date the "Originator" line on the Check Print Stamp and provide to the Checker for checking.

The Checker will perform the checking of the document, initial and date the "Checker" line on the Check Print Stamp and return the check prints to the Originator. If additional changes are required, the Updater will incorporate the changes, initial and date the "Updater" line on the Check Print Stamp, print a corrected sheet and provide the corrected sheet and the check print to the Verifier for verification.

4.1 Field Verification – The Design Team will not provide field verification or review of as-built documents.

5.0 RECORD DRAWINGS

These drawings are produced after the construction of a major element of the Project is complete. The following describes the process to develop Final Record Drawings.

- TGR will transmit the As-built drawings to the DB Design PM and the CADD Manager(s).
- The CADD Manager or his designee becomes the Originator.
- The Originator will copy the appropriate design files to become the basis of the Record Drawings. Information in the original electronic files will not be changed.
- The CAD files used for this purpose shall be the latest drawings Issued for Construction by the Design Team, i.e., including previous NDCs.
- All previous revision clouds and triangles and all previous revision information in the revision block will be removed.
- Sheet files will be updated with the as-built information provided.
- The updated drawing will be checked against the as-built documents provided per *DCPR-05 Checking of Drawings*.
- The revision block Revision box will indicate "Record Drawing" and the date the As-built information was provided. No revision clouds or triangles will be shown on the drawing to indicate the as-built information that was incorporated.
- The following disclaimer will appear on each Record Drawing:

This record drawing has been prepared, in part, based upon information furnished by TGR. While this information is believed to be reliable, the HDR Engineering, Inc. assumes no responsibility for the accuracy of the furnished information or for any errors or omissions that may have been incorporated into this record drawing as a result of incorrect information provided to HDR Engineering, Inc. Those relying on this record document are advised to obtain independent verification of its accuracy.

- Information in shop drawings will not be incorporated in the Record Drawings.
- Hard copy plots (11"x17") will be printed in black and white.

6.0 FINAL RECORD DRAWINGS SUBMITTAL REQUIREMENTS

The Final Record Drawings submittal will be comprised of:

- A hard copy of the As-Built Drawing Set.
- A hard copy of the Record Drawing Set.
- Electronic version of the Record Drawing Set in MicroStation.
- Cover sheet signed and dated by the Project Manager.

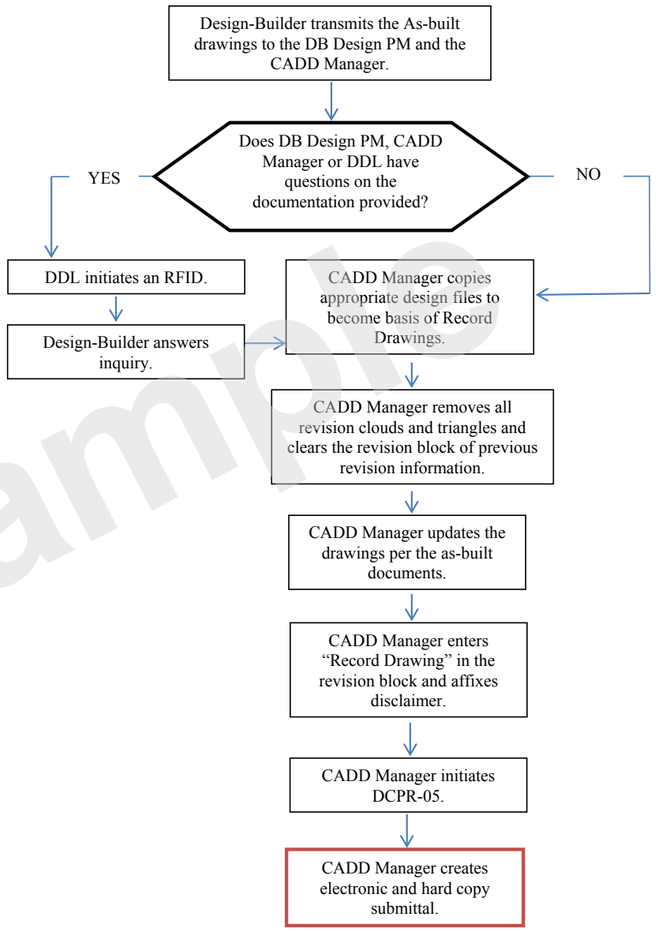
7.0 REFERENCES

DCPR-02 Checking of Reports and Studies
DCPR-03 Checking of Calculations
DCPR-05 Checking of Drawings
DCPR-07 Checking of Specifications and Special Provisions

8.0 FIGURES

Figure DCPR-14A Flow Chart of Final Record Drawings

Figure DCPR-14A Flow Chart of Final Record Drawings



1.0 PURPOSE – This procedure identifies the responsibilities and describes the process for identifying, tracking, resolving and reporting conditions adverse to Quality. This process includes a method for tracking conditions adverse to quality from the time of discovery through resolution and verification of corrective action measures. This procedure is applicable to activities which affect the quality of processes performed by the Design Team.

2.0 DEFINITIONS

Condition Adverse to Quality – an all-inclusive term used in reference to the following: failures, malfunctions, deficiencies defective items, and non-conformances.

Corrective Action – Measures taken to rectify conditions adverse to quality and to preclude recurrence where necessary.

Preventive Action – Measures taken to preclude conditions adverse to quality.

Root Cause – The most basic reason for the condition, which, if eliminated or corrected would have prevented the condition from occurring.

3.0 RESPONSIBILITIES

The DB Design PM shall assure the cooperation and the appropriate degree of responsiveness of each responsible organization requested to provide effective corrective action.

The Design Quality Control Manager (DB DESIGN QCM) shall be responsible for the implementation of this procedure and for assuring that conditions adverse to quality are properly identified, documented, reported, evaluated and verified prior to closure. The DB DESIGN QCM will investigate to determine the extent of the condition and recommend the effective corrective action measures to be implemented.

4.0 PROCEDURES

4.1 General

Conditions adverse to quality may be reported to the DB Design PM and the appropriate Design Discipline Lead.

Conditions adverse to quality require action to prevent recurrence, investigation and evaluation regarding similar work, and a root cause determination. Each condition will be tracked from its identification to verification of the completion of all corrective action measures and closure. Form DCPR-15A Corrective Action Request will be used to document the corrective action process. The status of each corrective action will be entered and maintained on the Corrective Action Status Log, form DCPR-15B.

Corrective action shall extend to the performance of subconsultants. Corrective action measures shall emphasize root cause determination and steps taken for prevention of recurrences.

The DB DESIGN QCM may use preventive actions to facilitate, in part, continuous improvement or to prevent a condition adverse to quality. Feedback from the Design Team, TGR or management will be used to identify opportunities for improvement. When opportunities for improvement are identified, formal and informal meetings may be used to communicate such opportunities. Preventive Actions may be communicated by the DB DESIGN QCM using Preventive Action e-mails or during Design Team meetings, for example.

4.2 Corrective Action Process

The DB DESIGN QCM may identify the adverse condition during an audit, surveillance or while

performing normal work activities. The DB DESIGN QCM will inform the DB Design PM of the adverse condition, when applicable. The DB DESIGN QCM will document the adverse condition by completing Form DCPR-15A Corrective Action Request and entering Corrective Action Number into form DCPR-15B Corrective Action Status Log.

Following review and Corrective Action number assignment, the DB DESIGN QCM will inform the appropriate person of the Corrective Action request, collaborate to determine a root cause and corrective action, identify other affected individuals if appropriate, and determine a projected completion date.

The DB Design QCM will implement the corrective action, verify the action was successful, close the Corrective Action Request and update the Corrective Action Status Log.

The status of Corrective Actions will be addressed in Management Reviews, as applicable.

4.3 Preventive Action Process

The DB Design QCM, or other management staff, may identify a potential QC process nonconformance or opportunity for improvement. The need for a preventive action may arise out of an audit. The DB Design QCM may also receive a request for a clarification of a process or procedure from the Design Team or Independent Quality Assurance Manager. When the need to communicate a Preventive Action occurs, the DB Design QCM will determine a course of action and will distribute the preventive action or process clarification via a "Preventive Action" e-mail to the Design Discipline Leads. Preventive Action e-mails will be stored in ProjectWise. The effectiveness of the Preventive Action will be assessed by the DB Design QCM during subsequent Reviews of QC Documentation or other design QC activity, as applicable. If required, the DB Design QCM re-issue the Preventive Action e-mail or commence with a Corrective Action if required in his judgment. A log of Preventive Actions may not be kept at the discretion of the DB Design QCM since "Preventive Action" e-mails will be stored in ProjectWise.

The status of Preventive Actions will be addressed in Management Reviews, as applicable.

5.0 FORMS

Form DCPR-15A Corrective Action Request
Form DCPR-15B Corrective Action Status Log

6.0 FIGURES

Figure DCPR-15A Flow Chart of Corrective Action Request Process
Figure DCPR-15B Flow Chart of Preventive Action Process

Figure DCPR-15A Flow Chart of Corrective Action Request Process

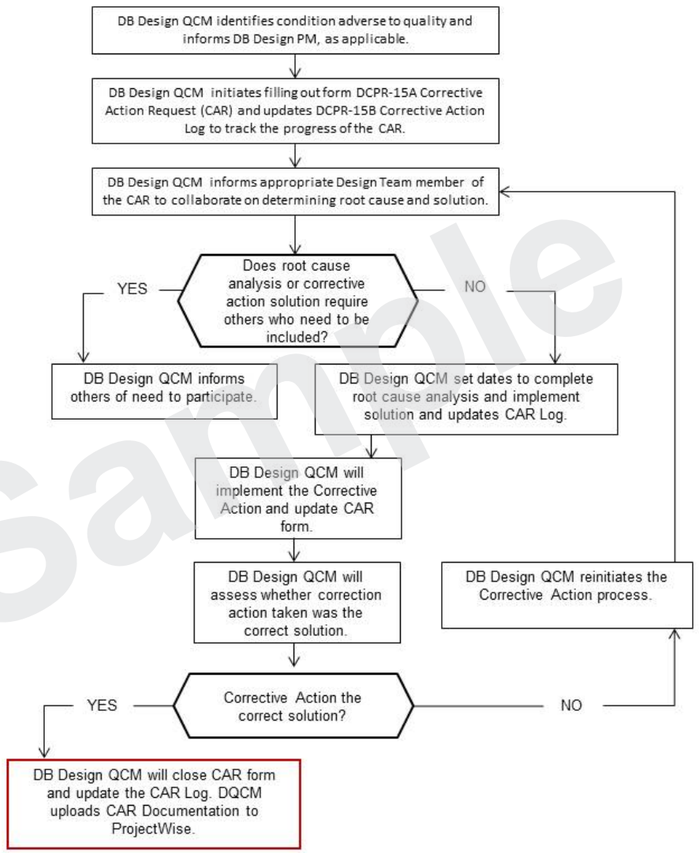
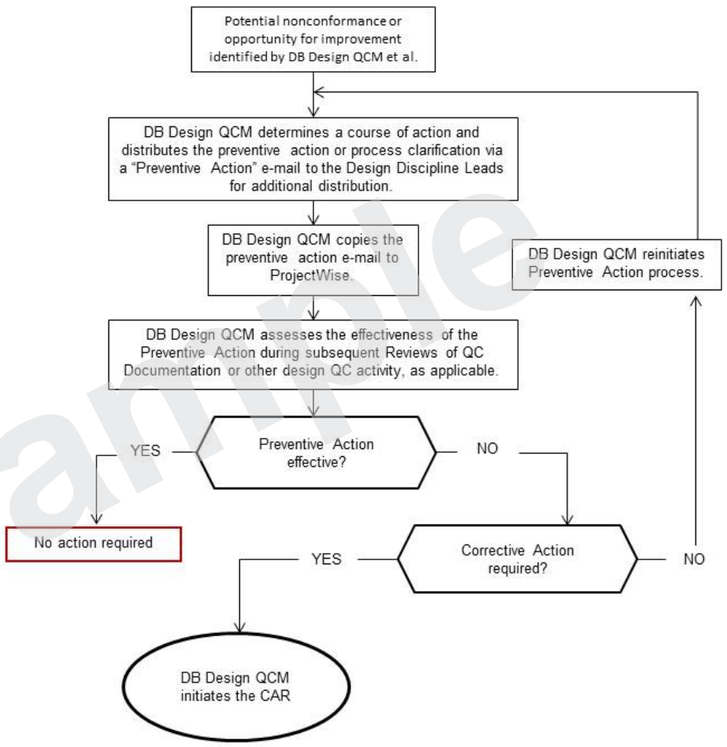


Figure DCPR-15B Flow Chart of Preventive Action Process



Form DCPR-15A
CORRECTIVE ACTION REQUEST

AUDITED ITEM/ DESIGN PACKAGE NO.:	**AUDIT NO.:**
AUDITOR:	**CHECKLIST ITEM NO.:**
DATE(S) OF AUDIT:	**REFERENCE:**
REQUIREMENT:	
FINDING: FINDING ACKNOWLEDGED BY: DATE:	
ROOT CAUSE ANALYSIS:	
RECOMMENDED CORRECTIVE ACTION:	
SCHEDULED COMPLETION DATE:	CORRECTIVE ACTION RESPONSIBILITY ASSIGNED TO:
CORRECTIVE ACTION TAKEN: CORRECTIVE ACTION COMPLETION DATE: SIGNATURE:	
(To determine if Refresher Training, for example, was effective, verification to occur on a subsequent submittal) CORRECTIVE ACTION VERIFIED BY: DATE: COMMENTS:	

Form DCPR-15B

CORRECTIVE ACTION STATUS LOG

CAR Number	Date of Issue	Subject	Responsible Party	Root Cause Determined by Date	Proposed Completion Date	Date of Verification and Closure

1.0 PURPOSE – The purpose of this DCPR is to provide guidelines for the processing and conducting Construction Submittals from the TGR.

2.0 SCOPE – Prior to construction, TGR may transmit a submittal to the Design Team for review. An example of a submittal is a shop drawing review.

2.1 DEFINITIONS

TGR - TGR Construction Company, Inc.

SharePoint - the software used on the Project to send and receive official correspondence and to track the workflow process. SharePoint provides a real time status and log of all submittals from the TGR to the Design Team on the Project.

3.0 RESPONSIBILITIES

Design Discipline Lead (DDL). Will review the submittal and provide an appropriate disposition.

4.0 SHOP DRAWING REVIEW PROCEDURE

The steps to process a submittal from the TGR is as follows:

1. Submittal workflows are received from the TGR via SharePoint notification directed to the appropriate DDL.
2. The DDL or his designee will review the submittal against the appropriate controlling contract documents for general conformance with the plans and specifications.
3. The actions “furnish as submitted”, “furnish as noted”, “revise and resubmit”, “rejected”, and “engineer’s review not required” are allowed dispositions within the SharePoint workflow. This action alerts the TGR that the DDL has reviewed and provided a disposition in the workflow and it is ready for the TGR’s further action.
4. The Shop Drawing review stamp will be used to document review.
5. If the submittal is non-conforming the DDL will indicate the areas of nonconformance in the comments and will indicate “rejected” and “revise and resubmit” on the Sop Drawing stamp. TGR will then be obligated to correct the submittal and re-submit.
6. If the submittal is conforming without exceptions the DDL will indicate “furnished as submitted” on the Shop Drawing stamp.
7. If the review by the Design Team is not required, the DDL will indicate “engineer’s review not required” on the Shop Drawing stamp.
8. If the submittal is conforming but has minor exceptions consisting of clarifications or minor corrections, the DDL will so note the exceptions either on the submittal sheets or in the comments as appropriate. Changes that are better shown graphically may be marked up on the submittal sheets. Items that are better described in narrative may be put in the workflow comments. Comments shall have the same force and effect whether marked graphically or described in narrative form. No re-submittal of the submittal is required in this case. The DDL will indicate “furnish as noted” on the Shop Drawing stamp.

5.0 FIGURES

Figure DCPR-16A Example Shop Drawing Stamp

Figure DCPR-16A Example Shop Drawing Review Stamp

A. FURNISH AS SUBMITTED ☐
B. FURNISH AS NOTED ☐
C. REVISE AND RESUBMIT ☐
D. REJECTED ☐
E. ENGINEER'S REVIEW NOT REQUIRED ☐

This review is for general conformance with design concept only. Any deviation from plans or specifications not clearly noted by the Contractor has not been reviewed. Review by the Engineer shall not serve to relieve the Contractor of contractual responsibility for any error or deviation from contract requirements.

HDR ENGINEERING, INC.

BY: _____ DATE: _____

SHOP DRAWING TRANSMITTAL NO. _____

PROJECT: Opportunity Corridor Section 3 Project: 173000 PID No. 96833

APPENDIX B

Independent Quality Assurance Procedures

Trumbull-Great Lakes-Ruhlin *a joint venture*	***Form XX-X Detailed Roadway Subm***
	CUY IR 490/ SR010 02.09/19.28 **Project Segment _____**
	Prepared by (BU):
	Approved by (Lead Road. Eng.):

Submission Requirements for Interim and Final Reviews for Detailed Roadway

Note -use ODOT L&D Vol. 3, as of Setting Date, xx,xx, 20xx.

Design Review Submissions should include:	Interim	Final
1. Title Sheet	Yes	Yes
2. Schematic Plan sheet including all information per Section 1303.	Yes	Yes
3. Typical Sections sheets including all information per x.x.x.of the Final Project Scope.	Yes	Yes
4. General Note sheet listing utility companies as per Appendix B, Note G102.	No	Yes
5. Plan and Profile sheets including all information as per Section 1309. Estimated quantities are not required. Proposed work should be identified, if not obvious.	Yes	Yes
6. Cross Sections DGN as per Section X.X.X.X of the Final Project Scope; except: Earthwork and seeding calculations.	Yes	Yes
7. Intersection Details sheets showing:		
A. Turning radii.	Yes	Yes
B. Proposed elevations.	No	Yes
C. Joints for concrete pavement.	No	Yes
D. Proposed drainage system.	No	Yes
8. Interchange Detail sheets including:		
A. Interchange layout.	Yes	Yes
B. Proposed elevations.	No	Yes
C. Joints for concrete pavement.	No	Yes
D. Grading details.	No	Yes
9. Drive Detail sheets showing P&P info.	Yes	Yes
10. Storm Sewer Profile sheets.	Yes	Yes
11. Noise wall details.	No	Yes
12. Retaining Wall Plan and Detail Sheets.	Yes	Yes
13. Fencing Plan.	No	Yes
14. Disposition of Interim Review comments.	No	Yes
15. Geotechnical Reports	Yes	Yes
16. Contract Specifications Book	Yes	Yes
17. SWPPP Plans	Yes	Yes
18. Calculations	No	Yes
19. Estimated Quantities	No	No*

*All quantities for each Buildable Unit are due within XX days of the RFC date. Quantities that require sampling or testing must be provided within 30 days of the RFC date or prior to construction.

Trumbull-Great Lakes-Ruhlin
a joint venture

Form XX-X Interim Bridge Submission

CUY IR 490/ SR010 02.09/19.28

Project Bridge Name _____

Prepared by (BU Struc. lead):

Approved by (Lead Struc. Eng.):

Submission Requirements for Interim Review for Bridges

NOTE:

Completed?	Component	Calculations	Plans	Comments
☐ Yes	Bridge Site Plan	Complete, including horizontal and vertical clearance checks	Basic information required to verify horizontal and vertical clearances	
☐ Yes	Bridge Deck	Complete	Basic Deck Cross Section; Rebar details not required	
☐ Yes	Deck Drainage	Spread calculations and scupper/	Not required	
☐ Yes	Girders	Major components designed; not all detail designs complete	Framing plan w/ nominal details; Girder elevation showing basic elevation, not all details complete or shown	
☐ Yes	Bearings	Specify Bearing Type at a minimum	Not Required	
☐ Yes	Piers	Major components complete; rebar sized but details not yet required;	Basic pier outlines drafted; rebar details not required	
☐ Yes	Abutments	Basic Abutment/ Wingwall sections designed; rebar sized but details not yet complete	Basic plan/elevation views of abutment; rebar details not required	
☐ Yes	Foundation Plan	Geotechnical Report	Basic foundation layout	
☐ Yes	Constructability Issues	Discussion of constructability of bridge	None	
☐ Yes	Retaining Wall Plan	Basic wall geometry completed, including horizontal clearance checks	Basic plan view shown	
☐ Yes	Retaining Wall Elevation	Top/wall and footing elevations computed	Wall elevation shown; nominal details (i.e., top/wall elevations & footing elevations) shown	
☐ Yes	Retaining Wall Sections	Design complete; rebar sized but details not required	Basic section outlines drafted; bar details not required	
☐ Yes	Buildable Unit Interim Design Certificate	-	-	

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