SCHEDULE ANALYSIS
Presenter – John Lewis (BLN)

• NW INDIANA NATIVE WITH 20+ YEARS OF CONSTRUCTION EXPERIENCE
  • 8 YEARS EXPERIENCE IN COMMERCIAL CONSTRUCTION (MOSTLY IN AZ)
  • 13 YEARS EXPERIENCE IN HEAVY HIGHWAY (CONSTRUCTION MANAGEMENT, SCHEDULING & ESTIMATING)
  • TRANSITIONED INTO THE DESIGN / CONSULTANT FIELD IN 2019
• CAREER HIGHLIGHTS ARE MOSTLY IN INDIANAPOLIS
• WHITE SOX FAN FOR LIFE!
DPW Contractual
Requirements for Schedules

- Initial Schedule is to be submitted (10) days after the effective date of the agreement
  - Must be presented in a bar graph type schedule and shall reflect the Contract Completion Date as well as the estimated times required to prosecute major or critical items of the work required
    - SCHEDULE MUST SHOW THE CRITICAL PATH *(stay tuned for details)*
  - It is the responsibility of the INSPECTOR to review the proposed progress schedule to determine conformity to the contract documents. **NO WORK IS TO BEGIN WITHOUT AN APPROVED SCHEDULE!**

- Progress Schedule Updates:
  - To be submitted monthly and to be included any request for progress payments/invoices
  - It is the responsibility of the INSPECTOR to review the original and revised project schedules for general conformity to the contract documents; schedules need to be discussed at monthly project meetings
  - **PAYMENTS ARE TO BE WITHHELD UNTIL MONTLY PROGRESS SCHEDULE IS ISSUED & APPROVED!**
What is a CPM schedule?

The critical path method, or CPM for short, in construction is a method of project scheduling that breaks down required activities using a diagram to calculate the duration required to complete each activity. The CPM is sometimes referred to as critical path scheduling.
Key Definitions:

- **Baseline Schedule** - A fixed project timeline that does not allow for variance. It is utilized for tracking progress on a project, including the accomplishment of contract milestones and budgetary compliance.

- **Critical Path** – The longest path of activities which determines the scheduled completion date of the project.

- **Activity** – A discrete, identifiable task or operation that takes time, has a definable start and stop date, furthers the work’s progress, and can be used to plan, schedule, and monitor a project.

- **Constraint** – A restriction imposed on the start or finish dates of an activity that modifies or overrides the activity’s logic relationships.

- **Milestone** – An activity with no duration that is typically used to represent the beginning or end of the project or an interim phase. Includes, but is not limited to, intermediate completion dates and the contract completion date.
Key Definitions:

- **Relationships** – The interdependence among activities. Relationships link an activity to predecessors and successors
  - Predecessor – An activity that is defined by schedule logic to precede another activity. A predecessor may control the start or finish date of its successor
  - Successor – An activity that is defined by schedule logic to succeed another activity. The start or finish date of a successor may be controlled by its predecessor.
  - Open End – The condition that exists when an activity has either no predecessor or no successor, or when an activity’s only predecessor relationship is a finish-to-finish or only successor relationship is a start-to-start
    - Big No No!!!
- **Float:**
  - Free Float – The amount of time an activity can be delayed and not delay a successor
  - Total Float – The amount of time an activity can be delayed and not delay the contract completion date
Baseline Schedule
### INDOT VINCENNES BRIDGE REPAIRS

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**Diagram:**
- **Legend:**
  - Blue: Administrative Activities
  - Green: Civil Work Activities
  - Red: Construction Activities
  - Orange: Utility Work Activities
  - Yellow: Safety Activities
  - Gray: Electrical Work Activities

**Timeline:**
- **Start Date:** 01-Dec-15
- **Finish Date:** 26-May-16
- **Duration:** 6 months

**Key Events:**
- Winter Shutdown
- Cura Superstructure Removal
- FRP Sleeper Sid
- FRP Approach Sid
- FRP Bent 1
- FRP Bent 2
- Frame / Rotator Superstructure
- Place Superstructure
- Install Expansion Joints
- Install FRP Approaches
- Install Non-FRP Approaches
- Install Guardrail
- Pavement Markings

**Timeline Highlights:**
- **01-Dec-15:** Start of the project
- **26-May-16:** Completion of the project
- **03-Nov-16:** Key event: Rt 41 Over CSX
- **05-Oct-15:** Key event: C0020 Overtake

**Notable Points:**
- The project includes various activities such as structural, electrical, and safety tasks.
- Key milestones include the completion of the winter shutdown and the installation of the superstructure.
- The timeline highlights the phased approach to the project, ensuring smooth progression from start to finish.
Updated Progress Schedule
Three Week Look Ahead Schedule
### B-39938 (I-70 OVER WHITE RIVER)

#### 3 WEEK LOOK AHEAD

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#### DAILY ACTIVITIES

**PIER 4**
- HAND DEMO AT PIER CAP
- CONTINUE PIER COLUMN SOUNDING & DEMO
- WATERBLAST BENT SURFACE
- REBAR REPAIR
- INSTALL FIBER WRAP/SHOTCRETE
- REPAIR BEARING SEATS

**NIGHT SHIFT**

#### BENT 29

- WELDING AND INSTALLING HEADER BEAMS
- INSTALL BEAMS & JACKING
- INSTALL CROSS BRACING
Brief Overview

• Schedules are a critical component of a successful construction project, and are also a contractual requirement of the contractor
  • Do not allow a project to begin without and approved baseline schedule!
  • Do not approve any pay estimates without receiving an updated construction schedule

• Key Things to Remember When Reviewing A Schedule:
  • Ensure all milestone events are considered (This includes the Project Start & Completion dates as well as any other major contractual dates)
  • Ensure the schedule is presented in a bar graph type showing the relationships of each activity and the critical patch of the project
  • If you are unsure of anything don’t hesitate to ask someone for assistance!
Questions or Comments?

SCAN HERE FOR MY CONTACT INFORMATION