



Constructability and You!

April 25, 2023



Who is doing the Reviews?

- On large projects, typically done by Construction Manager (CM)
 - Typically, one or two people involved in regular Design Review Meetings
 - More senior person with considerable construction experience
- Commission has internal personnel under Quality Control unit as well
 - Expanding that group
- May use our General Consultant as well
- The Designer is also expected to review for constructability

Stage to include Constructability

- Typically want our Construction Manager on board for final design
 - Need enough time to make major changes if there is a major constructability Issue
 - Reviews need done prior to submitting a permit, we don't want to have to make major changes
- Look to advertise for CM near the end of Preliminary design, allowing us to go through the selection process and be on board for final design
 - We will take into account where CM/CI contracts are in process, not just how many a firm has during selection

Our Expectations for Review

- Construction Access
 - Been an ongoing issue on many projects
- Schedule
 - Do an independent schedule to compare to designer
- Cost Estimate
 - Independent of designer as well
- Earthwork
 - By stage, make sure stage volumes work, not just overall volumes
 - Borrow items accounted for and by stage
- Major Construction Items
 - Structures and foundations, noise walls, SWM basins, stage lines

Benefits

- Constructability Reviews can have many benefits
 - Reduce Errors
 - Reduce Omissions
 - Reduce Change Orders
 - Provide design changes to improve construction in general
 - Access, area to work, time savings
 - Build early relationship with CM and Design team
 - CM team is more familiar with project when involved earlier

Results

- Mon Fayette Expressway Redesign
 - Internal Reviewer and CM Involved Early
 - Redesign was roughly cost neutral however eliminated several items that were going to be difficult to construct
 - Reduced environmental impacts, reduced a utility impact
 - Reduced need to do long term maintenance
- Constructability review on a new Maintenance Shed
 - Internal review
 - Design changes resulted in roughly \$12M savings

Results (Con't)

- Several other projects weren't so successful
 - Access has still been an issue
 - Quantities of Earthwork still missed, especially waste quantities
 - Missed the need to relocate lighting on a project

Moving Forward

- Continue to focus on having reviews early in design stage
- Continue to have CM's on board by final design stage on major projects for constructability when possible
- Constructability reviewers will be responsible as well as designer for constructability mistakes

Questions