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November 13, 2015

MEMORANDUM

PROJECT:	**PIN 100241.01 Knox County**
	SR 115 (U.S. 129, Alcoa Highway) From North of Maloney Road to Woodson Drive S.P. 47026-3279-14, NH-115(54)
SUBJECT:	**CONSTRUCTABILITY REVIEW MEETING NOTES**
DATE:	Tuesday October 28, 2015 Wednesday October 29, 2015
NOTES BY:	Jay Norris, P.E., Assistant Director, TDOT Construction Division JCN

A Constructability Review meeting was held on the SR 115 (U.S. 129, Alcoa Highway) Project with Construction Industry Representatives, the Consultant Design Team, TDOT Headquarters Construction, and TDOT Region 1 Operations and Project Development staff. The scope of the review was to integrate construction expertise early into the project development process for the 1.69 mile project that includes three bridges, nine retaining walls, complex construction phasing, and numerous utility relocations.

The construction field review plans, utility layout and traffic control phasing were reviewed as part of the meeting.

SPECIFIC QUESTIONS:

1. Will the phasing provided by the utility plans coincide with the contractors suggested phasing of construction (maintenance of traffic)?

2. Does the contractor have enough means to begin bridge construction for Bridges 1, 2 & 3 in light of the existing utility and rights of way proposed for the project?

3. KUB currently has electric included with roadway plans with the ability to opt out of contract and perform the work themselves after bid. What concerns are presented if KUB Electric is moved in conjunction with the roadway contractor's grading operation?

4. In reviewing the maintenance of traffic plans, do the plans presented allow for motorists to travel as needed, but allow all work to be accomplished as designed? Are there any concerns that 2 lanes of traffic in each direction may not be able to be accomplished during the course of the contract?

5. What are the timeframes for each phase of work? Can this work be done in 24 months?

6. Are any cross or longitudinal drains included that seem impossible under traffic due to depths or maintenance of water flow at locations within the project?

7. Understanding the businesses are required to have their entrances open and unobstructed, do any business accesses along the corridor pose issues to the construction of the roadway?

8. How would the contractor minimize impacts to ingress/egress to neighborhood access especially Mt. Vernon Road and Montlake Dr?

9. How would the contractor sequence construction of the large box culvert and channel at Sta. 10+880?

10. How would the contractor sequence the construction of the main storm sewer system that runs along Alcoa Highway and eventually into the reservoir?

11. How could the contractor get creative and balance the earthwork and minimize the amount of borrow needed.

12. What are the greatest challenges of the project? What are the greatest opportunities for improvement?

ITEMS OF DISCUSSION:

The following is a summary of the items discussed.

A. Project Phasing, Timing and Constructability

- Challenges associated with work involving excavation and embankment in regards to traffic control phasing and availability of material will be reviewed as it relates to the estimated roadway quantities. Access to the area of excavation and the feasibility of use for embankment further complicates the phasing and duration of construction.

- Phasing of traffic should consider center pier construction early in the traffic control sequencing. This is considered a critical path item of work.

- Consider adding shoring at specific locations for safety of traveling public.

- Consideration of revised access to Montlake Drive during phasing would assist in constructability of the roundabout and Bridge 3 over SR 115.

- The proposed full-depth paving schedule on SR 115 increases complexity and phasing of traffic. Full-depth paving construction may require undercut.
- A Smart Work Zone should be considered due to traffic volumes and anticipated project duration.
- Consider allowing long weekend closures for traffic phase shifts and tying in grades.
- Constructability of the deep structures as related to phasing of traffic may require one lane closures.
- Consider specifying pre-cast drainage structures for some drainage work.
- Consideration of jack and bore is needed at several locations.
- The ½ mile stream encapsulation will require diversion or suspended pipe quantities to be set up on the project.
- Construction access along with temporary paving is needed at numerous locations to accommodate phasing of traffic.
- A Metric to English Conversion table would aid in the understanding of the payment of quantities.
- A calculation of excavation and embankment as related to phasing of construction would benefit the contractor in completing the estimate.
- Consideration of utilizing the existing 1800 mm CMP to be replaced as a temporary phasing measure was discussed.

B. Retaining Wall, Bridge Constructability

- The construction of the retaining walls is considered a critical path item of work. The number of anchors and soil subsurface will extend the construction duration.
- Shoring considerations are needed for the wall and drainage construction based on concern for loose rock on the east side of SR 115.
- Additional borings would assist in constructability and planning of schedule.
- Bridge 3 pier construction will require close coordination with the phasing of traffic.
- Accessibility for wall construction requires coordination with phasing of traffic control plans. Retaining wall preparation should be considered early in phasing.

- It was discussed that a breakdown of bid items on walls (to include additional sub-items) would reduce risk to the project and contractor.

- Construction of the Phase 1 Bridge directly relates to the ramp work, and utility relocations.

- Consider adding item for tie back anchor grout

- There may be conficts with Bridge 2 Pier and traffic phasing.

C. Utility Relocation and Coordination with Other Work

- The KUB plans address potential conflicts along the corridor with temporary items, and re-location outside of the bridge construction.Overhead clearance for mobilization of construction equipment is a potential challenge.

- A potential gas conflict is apparent at Bridge #1.

- Concern was expressed over the need to ensure coordination of utility sequencing with traffic control phasing was thoroughly vetted in the Project Development Phase.

- The phasing of the KUB lines as related to the Phase 1 Construction Limits should be identified in the Traffic Control phasing notes.

SUMMARY:

The attendees were in agreement that the project appears constructible as shown; however, could be improved upon by incorporation of the Items of Discussion. All Contractors reviewing the project saw this as a two phased project. Phase 1 would be utility relocation, wall, bridge and frontage road construction. Phase 2 would consist of widening Alcoa Highway. Based on findings during the review, the construction duration would likely extend beyond the 24 months initially anticipated for this project. The consensus of the group was that this project would take between 3 and 4 years to construct.