

District Change Order Investigation Report (Remediation/Amelioration)

Attorney/Client Confidential Communication

Date: 9/28/2023

District: 02

CO Project No: 190108

PID: 93592

County/Route/Section: Woo/Luc-75-30.70/0.00

Consultant Agreement Number: 17328

Consultant: AECOM

Description of Situation:

The project encountered a rebar clearance issue on the LUC-75-0029L outside parapet in 2021. This issue was discovered when the project came across exposed rebar on the front face of the parapet during the sealing operation. The Department decided to scan for concrete cover depth around the area of exposed rebar to find the extent of problem. It was soon noticed that the problem area was larger than anticipated. ODOT then decided to scan the entire length of the LUC-75-0029L parapet. There were several locations of exposed rebar that were discovered during the scanning process. The scan was not recorded, but observations determined that a majority of the wall had 1" or less of concrete cover on the lower portion of the wall. It was determined that the bar with insufficient cover was the S5149 bar. This bar was located at the lower, sloped portion of the parapet wall.

These parapets were constructed via slipform operations. ODOT's initial assessment was that the bars moved during the slipform operation. After some review time a meeting was held. At this meeting Kokosing explained their position that a combination of the plan detail, fabrication and bending tolerances, and placement tolerances would not allow for sufficient rebar clearance.

Any corrective work would have delayed an upcoming traffic shift and thus delayed the overall project completion. Therefore, the project decided to shelve the discussion since the corrective work could not take place until the end of the project.

When revisiting the LUC-75-0029L parapet clearance issue in May 2023, a plan error in the S5149 vertical dimension was discovered. The plans call out a vertical dimension of 19.25". ODOT verified with the project designer that the vertical dimension should have been 18". The result of this plan error reduces the cover at the sloped front face of the wall to just over 1". The as bid plans show a clearance of 2". This helped explain the reason for the low clearance readings.

Date Discovered: Discovery of Issue = 4/28/2021; Discovery of Plan Error = 6/6/2023

Date Consultant Notified: 6/6/2023

Description of Consultant Involvement to Date:

The consultant has been involved and very cooperative with the issue since they were notified. They provided a repair plan that was initially rejected. However, Central Office suggested a revised repair plan involving FRP wrap that AECOM then pursued. They reached out to a supplier to get information on the material and then developed a revised repair plan, which has since been accepted by the Department.

District Evaluation

Describe the Department's inspection program. Was the project constructed in accordance with the plans? Describe the notice provided to the consultant.

It was initially felt that the parapet wall was constructed in accordance with the plans and specifications. However, exposed resteel was eventually discovered which meant the specified clearance was not met.

The consultant was notified of the plan error via email after it was discovered on 6/6/2023.

Confirm that the consultant's contract and scope of services have been evaluated. Confirm that the District's contract administration records have been reviewed for any relevant documents such as meeting minutes, E-mails, conversation records, etc. Describe any relevant findings.

There are no known conversations, emails or other relevant documents specifically related to the issue at hand.

Further describe the District evaluation including the involvement of District Construction, District Production including the Production Project Manager, other ODOT technical experts, alternatives evaluated to solve the problem, the solution chosen, and any other relevant information.

Several discussions were had with the District 2 Bridge Engineer and Office of Structural Engineering. The consultant recommended a repair to chip out and repour the concrete to thicken the front face of the parapet to create more cover. A conference call took place with the previously mentioned parties and the ODOT construction team. The original recommendation was rejected, but an alternative to utilize FRP wrap was agreed to.

Cost Analysis

Provide a cost analysis as if the project were designed without the perceived deficiency.

NOTE: Not all costs incurred result in harm to the Department – some or all of the change order costs may be restoring “what

should have been.” The analysis of costs must use “what should have been” as the standard for calculating damages to the Department.

Address the following cost components only if relevant:

Additional work performed to correct the perceived deficiency.

FRP wrap will be installed to provide additional protection to the portion of the parapet with deficient cover. Installation of the FRP wrap will include additional MOT costs, removal of previously placed epoxy-urethane concrete sealer, installation of FRP wrap, and re-sealing of parapet.

Lost work - work performed by the Contractor that must be discarded and original design costs for work that must be redesigned due to the perceived deficiency.

The existing epoxy-urethane sealer will need removed to install the FRP wrap.

Soft costs incurred such as delay and home office overhead due to the perceived deficiency.

To be determined.

Extra work that needed to be performed including “betterments” and quantity increases due to the perceived deficiency.

FRP wrap installation described previously.

Work that would not have been needed “but for” the perceived deficiency.

FRP wrap installation described previously.

Alternate designs precluded by the current situation.

None

Potential costs of the perceived deficiency mitigated by ODOT actions.

It is not believed that any action taken by ODOT would influence the price. The cost of the work to address the perceived deficiency would have remained the same.

ODOT labor costs attributable to the perceived deficiency.

ODOT will encounter some additional construction engineering and inspection costs as a result of the perceived deficiency.

Notes:

- 1. Attach relevant documentation including change orders, records of communication with the consultant, internal communications with ODOT personnel and other relevant information.**
- 2. Forward all documents to ODOT's Office of Chief Legal Counsel.**

Recommended for Further Action:

P. Sun, P.E.

September 29, 2023

District Construction Engineer

Date

Kay J...

10/2/2023

District Capital Programs Administrator

Date

Pat McElroy

District Deputy Director

9/29/23

Date