



DATE: April 19, 2021

TO: Mayor and Members of the City Council

VIA: Peter Pirnejad, City Manager

FROM: Paul Nagengast, Project Advisor, Regional Government Services

SUBJECT: LEVEE PROTECTION PLANNING & IMPROVEMENTS PROJECT (CIP 327-657) – CONCRETE CAP REVISION FOR SHEET PILE WALL INSTALLATION

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### RECOMMENDATION

It is recommended that the City Council review the report and after discussion, by Minute Order, direct staff on whether or not to proceed with various concrete cap design revisions for the sheet pile wall installation in relation to the Levee Protection Planning & Improvements Project (CIP 327-657), hereinafter referred to as "Project."

### EXECUTIVE SUMMARY/ANALYSIS

Since possible concrete cap revisions are being evaluated by the Project team to determine a better cost estimate, this report has been written utilizing information currently available. Staff will provide any latest verbal updates pertinent to the concrete cap design revisions at the City Council meeting.

While constructing the wooden forms for the concrete and reinforcing steel as part of the concrete caps that cover the tops of the sheet pile walls, the contractor observed that the forms were not in a straight line and would produce a wave or bow in the finished concrete caps. It was determined that due to the amount of tolerance specified for the installation of the sheet piles in the Project contract specifications, the sheet piles were not consistently in the same position as the Project contract plan detail for a concrete cap indicated. To reiterate, the construction complies with the plans and specifications, but upon observation it is the opinion of the Construction Manager, Tanner Pacific, Inc. (TPI), the Project Manager (Paul Nagengast), and the contractor

that the concrete cap side facing the trail may not have the desired finish that might be expected. This is an aesthetic opinion and not a structural or design deficit.

In order to provide efficiencies in the installation of the sheet piles to save time and money, the sheet piles were specified to be within 6" of its desired location. Typically, this 6" as a tolerance to install the sheet piles provides the contractor the ability to install the sheet piles without having to slow down his operations, thus less efficient, to meet more stringent tolerances. The Project plan detail for the concrete cap does not provide for the 6" tolerances and actual in-field construction of the forms at one location north of Shorebird Park reflects the wave or bow as the forms move with the sheet pile locations. See attached Figure 1 indicating wave or bow in the concrete cap near Station 186+00. While the wave or bow is not affecting the structural integrity of the concrete cap and sheet pile wall, aesthetically the wave would detract from other linear components of the Project once the trail, and lane striping are completed.

Time is of the essence because the Contractor is using up specified time built in the Project timeline (float) for these types of design or other unforeseen circumstances impacting contractors' schedule. Should all the float time be used up, the contractor may begin to accumulate compensable delay days. The Project is still early in the construction schedule, and any impacts to the float should be kept to a minimum to provide for other potential Project impacts to the schedule.

### FISCAL IMPACT

As a point of clarification, staff circulated a memorandum about the concrete caps to the City Council on April 9, 2021. The intent of the memorandum was to give the City Council early notification of a potential change order. The memorandum was not to get authorization to execute the change order, rather to signal to the City Council that pending their perspectives about the aesthetics, staff would assemble a more detailed change order. When and if that change order were to exceed the signing authority of the City Manager it would be brought before the City Council for approval.

Given the City Managers' signing authority for change orders is not to exceed \$250,000, for the \$60,218,000 construction contract with Shimmick Construction Company, Inc., that equates to 0.42% of the contract total. Given the size of the City Managers' authority in relation to the size of the construction contract, as well as the overall Project budget of \$85,000,000, it becomes difficult to keep the Project on track without instituting a quicker means, other than regular City Council meetings, to get the necessary direction from City Council to execute change orders. Therefore, staff feels it is necessary to call special meetings as needed to accelerate the decision-making process for change orders exceeding the City Managers' authority that cannot wait weeks to schedule and be placed on a regular City Council meeting agenda.

Further, due to the size of the change order authorization and the need to maintain float in the Project, staff is forced to bring matters to the City Council without all the details the City Council might prefer when making a decision. In the case of the concrete cap, the estimated cost range is as large as it is at this time, because a significant portion of the sheet wall in Phase 2 and all of Phase 3 may need to be installed prior to realizing full cost implications, making it impossible to know exactly how many sections of the wall will need the revised detail. Furthermore, the contractor knows that the closer to the bridge they go the more obstructions they will encounter making it more likely they will encounter variances within the permitted 6" tolerance. Therefore, staff will be asking City Council to approve work within ranges and as staff assembles more information, staff will keep the City Council informed.

The Schaaf & Wheeler design team have been reviewing various proposed changes to the steel reinforcement and forming for the concrete caps to find a workable solution to achieve a linear cap with the specified 6" tolerances for the sheet pile installation.

As of the writing of this report, estimated additional costs to provide a revised concrete cap for the linear appearance is between \$500,000 and \$1,000,000. The high end of the range reflects a worst-case scenario where the entire length of sheet piles used on the Project require a revised concrete cap detail to address tolerances of up to 6". The low end of the range (and could be lower dollar amount) reflects a scenario (at the time of writing this report) where there are sheet piles installed with tolerances up to only 2" and the existing Project plan detail can be used for these sheet piles. For example, it is possible Phase 1 sheet piles may exhibit very low tolerances of 2" or less along extended lengths of sheet pile wall installation. If it is determined the sheet piles in Phase 1, are within 2" of tolerances, it may be decided the Project plan cap detail can be used, and no additional cost associated with 2" tolerances would be necessary.

The contractor is determining what costs are associated with having to complete sheet pile installation prior to ordering the reinforcing steel to address various installed tolerances versus one type of cap detail only to address any tolerances up to 6" for the entire Project length of sheet pile installation. Additional information will be provided at the April 19, 2021 City Council meeting.

Since the exact dollar amount to revise a concrete cap detail to address various tolerances exhibited by the installed sheet piles is not known at this time, City Council is requested to determine if there is a dollar value threshold associated with their decision to not move forward with cap revisions. If City Council would not approve an additional \$1,000,000 worst-case scenario, then City Council should direct staff to install the concrete cap per the Project plan cap detail and the wave or bow displayed in the finished product is acceptable. However, if that threshold is any number up to \$1,000,000, City Council should direct staff to proceed with the design cap detail revisions and return with a complete detailed report in the future for City Council

approval if the proposed contract change order work is greater than \$250,000. Staff and the project team will work closely with the contractor to limit the extent of this aesthetic alteration.

In an effort to provide the City Council more time the City Manager has authorized the work for the 1000-linear feet section (note above when brought to staff attention and see Figure 1) that has been formed north of Shorebird Park. By doing this the contractor is kept on schedule and the City Council is afforded more time to make the necessary direction on the remaining Project wall. This in no way binds the City Council in approving a change order for the remainder of the wall nor does it circumvent the City Councils' signing authority by breaking the work into smaller sections. This is a single section of the levee sheet pile wall and the only section of wall that is currently formed for the concrete caps and ready for concrete to be placed in the forms.

If the City Council chooses to challenge the designer's design details, then the recommended course of action would be to rule on the concrete cap and upon completion of the Project address this challenge. Otherwise, the float in the Project may be compromised resulting in cost over-runs due to delays.

## CONCLUSION

It is recommended that the City Council, review the report and after discussion direct staff on whether or not to proceed with various concrete cap design revisions for the sheet pile wall installation. Should City Council direct staff to proceed with a design revision to the concrete cap detail, staff will provide a complete detailed report to the City Council for approval at a future meeting if costs are greater than \$250,000.

## CITY COUNCIL VALUE/PRIORITY AREA

This item is directly related to the Levee Project under the "Facilities and Infrastructure" Value/Priority Area. The key outcome is to make substantial progress toward an improved levee project on time and budget to protect the community and critical infrastructure from storms and high tide.

Attachment:

- Figure 1 - Photograph of Wave or Bow of Cap Looking at Sta 186+00 (North of Shorebird Park)