



City of Broken Arrow

Legislation Details (With Text)

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Title:	Consideration, discussion, and possible approval of design and bidding considerations regarding the Hillside Drive Retaining Wall Replacement Project (ST2034)		
Sponsors:			
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Attachments:	1. ST2034 SCH A, 2. ST2034 Sch B, 3. ST2034 Plan & Aerial View Exhibit3		

Date	Ver.	Action By	Action	Result
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Broken Arrow City Council Meeting of: 05-05-2020

Title:

Consideration, discussion, and possible approval of design and bidding considerations regarding the Hillside Drive Retaining Wall Replacement Project (ST2034)

Background:

In late fall 2019, the Wallace Engineering performed a re-design and prepared subsequent construction plans for the replacement of the Hillside Drive Retaining Wall system. On December 11 and December 18, the City advertised the retaining wall for bids. The bid documents restricted the perspective bidders to potential contractors who were on the Oklahoma Department of Transportation (ODOT) pre-qualification list. On January 3, 2020, the City opened bid on the project. Ultimately, only two bids were received and opened with both bids coming in significantly over the City's construction budget. The apparent low bidder for the base bid alone was \$1,990,000.00 which is \$490,000.00 over the City's project budget of \$1,500,000.00.

On February 4, 2020, the governing body rejected all bids, but not before the Council approved for Engineering and Construction staff to contact bidders in order to evaluate bids and determined areas of critical concern that impacted the proposed cost. Staff discovered several relevant points of information during the discussions with the design engineer and the two bidders. These points are as follows:

- 1) All concurred that a similar type wall to existing conditions, MSE wall, constructed with a properly sized drainage field and media placed behind the wall which also accounted for the existing geotechnical conditions would be an adequate and economical solution to the existing problem.
- 2) The limited right-of-way along with the height and backslope of proposed excavation factored heavily into bid prices. Bidders were concerned with the safety of their workers being placed between the excavation and the proposed formed wall. Added slope protection was included in the bid prices which increased the cost significantly.

- 3) Safety is not as big of a concern with modular block wall, or MSE wall, construction. Construction of the MSE wall is one level at a time and does not force workers to be placed into a deep, confined location exposed to the danger of slope failure.
- 4) The construction contract time of 150 days was considered short and became a major concern which factored into higher bid prices.
- 5) Use of the Oklahoma Department of Transportation (ODOT) pre-qualification list eliminated some smaller contractors which could perform the work adequately but for various reasons have not become pre-qualified through ODOT.

After studying the information above, staff developed the following plan of action with respect to the project:

- 1) Reach out to outside experts to review current conditions and make recommendations for a solution which would meet the City's budget constraints.
- 2) Increase the construction contract time from 150 days to 180 days.
- 3) Provide additional permanent right-of-way or temporary construction easement at the top of the wall.
- 4) Remove the ODOT pre-qualification requirement from the future re-bid of the project.

Staff reached out to several retaining wall design experts to discuss the project. The proposed concrete wall design, as well as the coinciding geotechnical report were provided for their peer review and to make recommendations. The experts in question made no recommendations to change the concrete wall design. A consensus was reached that an MSE wall design either a small block as is currently in place or a large block wall could be designed to adequately withstand the loads, hydrostatic pressures, and existing geotechnical conditions found at the current Hillside Drive wall location. It was also a consensus the cost of a properly designed MSE wall would be significantly less than the previously designed, bid and rejected concrete retaining wall.

With this information and in hopes of developing a design which would fit within the City's budget constraints, the Engineering and Construction staff teamed with a consultant, whose expertise lies in MSE wall design, to create set of construction plans for replacement of the existing Hillside Drive retaining wall. Instead of the small block style similar to the existing wall, a large block style design was chosen for several reasons. The large blocks are a heavier, more substantial design. Large blocks are also able to withstand vehicular impacts with little or no damage to the block itself.

With both the concrete wall design and the MSE large block wall design in hand, the Engineering and Construction Department proposes to bid the ST2034 Hillside Drive Retaining Wall Replacement project as one bid package with Schedule A and Schedule B options. This method allows perspective bidders to bid either Schedule A, the concrete wall, or Schedule B, the MSE large block wall, with only one Schedule possibly being awarded. Bidding the project as such, it is anticipated to increase the pool of perspective bidders thereby providing more competitive bidding. It will also provide construction options which should fall within the City's budget and meet accepted engineering design criteria as well as safety standards.

Another way to increase the perspective bidders pool, thereby increasing the probability of more competitive bidding, is to consider removing the ODOT pre-qualification requirement.

Staff recommends bidding the Hillside Drive Retaining Wall project with a Schedule A and a Schedule B option. We also recommend removing the ODOT pre-qualification restriction.

Cost: \$0

Funding Source: N/A

Requested By: Ethan J.L. Edwards, Director of Engineering and Construction

Approved By: City Manager's Office

Attachments: Cross sections, plan view, aerial details of wall

Recommendation:

Approve and authorize design and bidding considerations regarding the Hillside Drive Retaining Wall Replacement Project with a Schedule A and a Schedule B option as well as no ODOT pre-qualification requirement (ST2034)