Folsom City Council
Staff Report

MEETING DATE:	2/10/2026
AGENDA SECTION:	Old Business
ITEM TITLE:	Resolution No. 11545 – A Resolution Authorizing the City Manager to Execute Amendment No. 3 to the Agreement (Contract No. 173-21 24-006) with HydroScience Engineers, Inc. for $84,000 from the Water Operating Fund (Fund 520) for Additional Design and Engineering Services During Construction for the Tower Tank Rehabilitation Project (Project WA2402) and Appropriation of Funds
FROM:	Utilities Department

RECOMMENDATION / CITY COUNCIL ACTION

The Utilities Department recommends that the City Council pass and adopt Resolution No. 11545 – A Resolution Authorizing the City Manager to Execute Amendment No. 3 to the Agreement (Contract No. 173-21 24-006) with HydroScience Engineers, Inc. for $84,000 from the Water Operating Fund (Fund 520) for Additional Design and Engineering Services During Construction for the Tower Tank Rehabilitation Project (Project WA2402) and Appropriation of Funds.

BACKGROUND / ISSUE

The Utilities Department identifies water infrastructure rehabilitation and replacement projects through water master plans, ongoing water condition assessment programs, and regulatory changes. Through these efforts, portions of the water system have been identified as needing rehabilitation or replacement in order to improve the reliability of the water distribution system. These efforts led to the Utilities Department identifying the Tower Tank Rehabilitation Project as a priority project.

The Tower Tank Rehabilitation Project involves improvements and repairs to five of the City's water storage tanks due to aging infrastructure. The water tanks being rehabilitated include Tower Tank, Foothills Tanks No. 1 and No. 2, South Tank, and East Tank No. 2. The work at all five

tanks was scheduled to occur during the low water demand periods (October through April) as identified below:

- East Tank No. 2 - Completed (Fiscal Year 2024-25)
- South Tank - Completed (Fiscal Year 2024-25)
- Tower Tank – Out of service for construction (Fiscal Year 2025-26)
- Foothills Tank No. 1 – In Service and Awaiting Construction (Fiscal Year 2025-26)
- Foothills Tank No. 2 – Out of service for Construction (Fiscal Year 2025-26)

During construction, multiple unforeseen conditions occurred at East Tank No. 2, Tower Tank, and Foothills Tank No. 2. The majority of the unforeseen conditions were related to structural deficiencies and their associated improvements. Structural deficiencies could only be identified once each of the tanks was taken offline and drained, and 30-foot-tall scaffolding erected to allow a licensed structural engineer to perform condition assessment of roof rafters, beams, girders, and connection plates. Photos of the condition of various structural components for each of the tanks listed above can be seen in Attachment No. 3. The project has also been impacted by site constraints, utilities, electrical improvements, property owner constraints, rock removal and other ancillary items.

Foothills Tank No. 1 was originally scheduled to be completed in the Spring of 2026, but due to the other deficiencies identified at Foothills Tank No. 2, this work is now proposed to be completed later this year. The City has not been able to inspect Foothills Tank No. 1 because this tank needs to remain in service to meet water demands while other tanks are out of service. Since Foothills Tank No. 1 is two years older than Foothills Tank No. 2, the project team anticipates that the additional unforeseen structural rehabilitation work at Foothills Tank No. 1 will be similar to that identified at Foothills Tank No. 2.

Additional effort by HydroScience Engineers, Inc. associated with construction administration services related to submittal review, responding to Requests for Information (RFI's), additional project management and progress meeting attendance has also been identified as part of Amendment No. 3 for this project.

This Resolution will authorize the City Manager to execute Amendment No. 3 to the Agreement (Contract No. 173-21 24-006) with HydroScience Engineers, Inc. for $84,000 from the Water Operating Fund (Fund 520) for additional design and engineering services during construction for the Tower Tank Rehabilitation Project (Project WA2402) and Appropriation of Funds.

POLICY / RULE

Section 2.36.120 of the Folsom Municipal Code states, in part, that contracts for supplies, equipment, services, and construction with an estimated value of $77,426 or greater shall be awarded by the City Council.

ANALYSIS

Additional engineering services recommended to be provided by HydroScience Engineers, Inc. as part of the Tower Tank Rehabilitation Project include the following:

- Design modifications.
- Review of additional submittals and resubmittals.
- Review of additional Requests for Information (RFIs).
- Additional project management.
- Attending additional progress meetings.
- Additional effort required to update as-built drawings upon completion of construction.

The total cost to provide additional engineering services by Hydroscience Engineers, Inc. as part of the Tower Tank Rehabilitation Project is $84,000. This resolution will authorize the City Manager to execute Amendment No. 3 to the Agreement (Contract No. 173-21 24-006) with HydroScience Engineers, Inc. for additional design and engineering services during construction for the Tower Tank Rehabilitation Project for a new not-to-exceed amount of $591,556 and appropriation of funds.

FINANCIAL IMPACT

The City Council approved the following Resolutions for design and engineering services during construction for the Tower Tank Rehabilitation Project (Project WA2402):

- Resolution No. 11167 on February 13, 2024 in the amount of $398,950
- Resolution No. 11242 on August 27, 2024 for Amendment No. 1 in the amount of $70,844
- Resolution No. 11470 on October 14, 2025 for Amendment No. 2 in the amount of $37,762

The Utilities Department recommends that Amendment No. 3 to the agreement (Contract No. 173-21 24-006) for additional Design and Engineering Services During Construction be executed with HydroScience Engineers, Inc. for an additional $84,000 for a new not-to-exceed contract total of $591,556. This project budget will require an appropriation in the amount of $84,000 for this amendment.

Assuming adoption of Resolution No. 11543, for an Additional Contingency for the Agreement (Contract No. 174-21 24-052) with Euro Style Management for construction on the same project (WA2402), which is being presented to City Council at the same meeting on February 10, 2026, and assuming adoption of Resolution No. 11544 for Amendment No. 1 to the agreement (Contract No. 173-21 24-039) with West Yost & Associates, Inc. for work on the same project (WA2402), which is being presented to City Council at the same meeting on February 10, 2026, this will bring the total project budget from $9,960,506 to $10,044,506. Sufficient funds are available in the Water Operating Fund (Fund 520) for the appropriation.

ENVIRONMENTAL REVIEW

This project is replacement and/or improvement of existing infrastructure with negligible or no expansion of use and therefore is categorically exempt from environmental review under the California Environmental Quality Act as noted in Title 14 – California Code of Regulations, Chapter 3 – Guidelines for Implementation of the California Environmental Quality Act, Article 19 – Categorical Exceptions, Section 15301 (Existing Facilities) and 15302 (Replacement or Reconstruction).

ATTACHMENTS

1. Resolution No. 11545 – A Resolution Authorizing the City Manager to Execute Amendment No. 3 to the agreement (Contract No. 173-21 24-006) with HydroScience Engineers, Inc. for $84,000 from the Water Operating Fund (Fund 520) for Additional Design and Engineering Services During Construction for the Tower Tank Rehabilitation Project (Project WA2402) and Appropriation of Funds

2. Tower Tank Rehabilitation Project Map

3. Water Storage Tank Photos

4. Structural Inspection Reports (Tower Tank and Foothills Tank No. 2)

Submitted,

_____

Marcus Yasutake, Director
UTILITIES DEPARTMENT

Attachment 1

RESOLUTION NO. 11545

A RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE AMENDEMNT NO. 3 TO THE AGREEMENT (CONTRACT NO. 173-21 24-006) WITH HYDROSCIENCE ENGINEERS, INC. FOR $84,000 FROM THE WATER OPERATING FUND (FUND 520) FOR ADDITIONAL DESIGN AND ENGINEERING SERVICES DURING CONSTRUCTION FOR THE TOWER TANK REHABILITATION PROJECT (PROJECT WA2402) AND APPROPRIATION OF FUNDS

WHEREAS, the City has identified this project as a priority to maintain integrity and operation of the water distribution system; and

WHEREAS, the rehabilitation work identified to enhance the City's water distribution system and to continue to provide reliable water service to the City includes rehabilitating Tower Tank, Foothills Tanks No. 1 and No. 2, South Tank, and East Tank No. 2; and

WHEREAS, HydroScience Engineers, Inc. by reason of their experience and abilities for performing these types of services, are qualified to perform the required additional design and engineering services during construction for this project; and

WHEREAS, assuming adoption of Resolution No. 11543 for an additional contingency for the Agreement (Contract No. 174-21 24-052) with Euro Style Management for construction on the same project (WA2402) which is being presented to City Council at the same meeting on February 10, 2026, where the total project budget was increased from $6,573,657 to $9,377,107; and

WHEREAS, assuming adoption of Resolution No. 11544 for Amendment No. 1 to the agreement (Contract No. 173-21 24-039) with West Yost & Associates, Inc. for work on the same project (WA2402), which is being presented to City Council at the same meeting on February 10, 2026, where the total project budget was increased from $9,377,107 to $9,960,506; and

WHEREAS, an additional appropriation of funds in the amount of $84,000 is needed for a revised project budget of $10,044,506 and sufficient funds are available in the Water Operating Fund (Fund 520) for this appropriation; and

WHEREAS, the agreement will be in a form acceptable to the City Attorney:

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Folsom authorizes the City Manager to execute Amendment No. 3 to the Agreement (Contract No. 173-21 24-006) with HydroScience Engineers, Inc. for additional design and engineering services during construction for the Tower Tank Rehabilitation Project (Project WA2402) in the amount of $84,000 and the new contract not-to-exceed amount, including Amendment No. 3 is $591,556.

BE IT FURTHER RESOLVED that the Finance Director is authorized to appropriate $84,000 for this agreement. The appropriation will be from the Water Operating Fund (Fund 520) fund balance in the amount of $84,000.

PASSED AND ADOPTED this 10th day of February, 2026, by the following roll-call vote:

AYES: Councilmember(s):
NOES: Councilmember(s):
ABSENT: Councilmember(s):
ABSTAIN: Councilmember(s):

_____
Justin Raithel, MAYOR

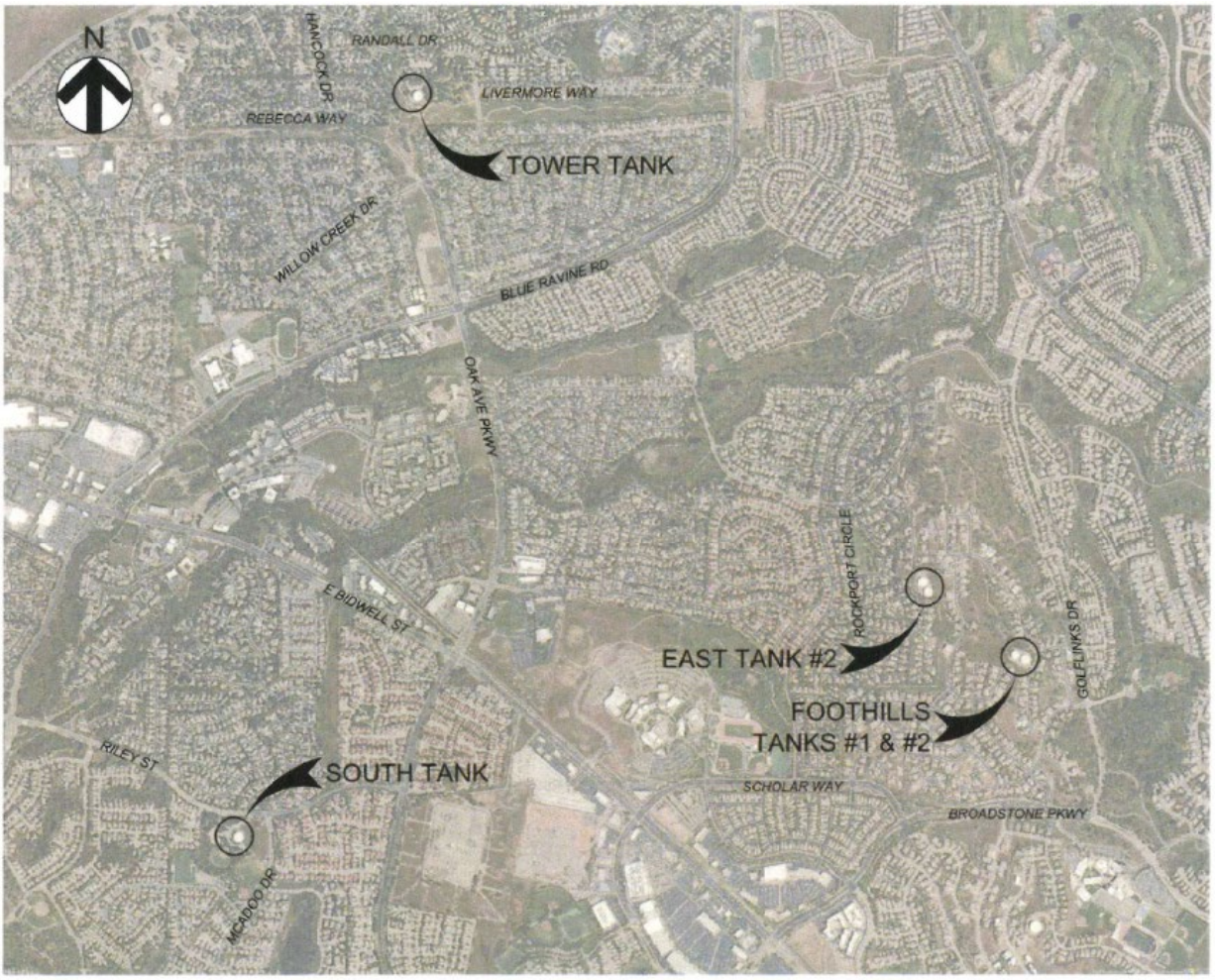
ATTEST:

_____
Christa Freemantle, CITY CLERK

Attachment 2

ATTACHMENT 2

TOWER TANK REHABILITATION PROJECT MAP



LOCATION MAP

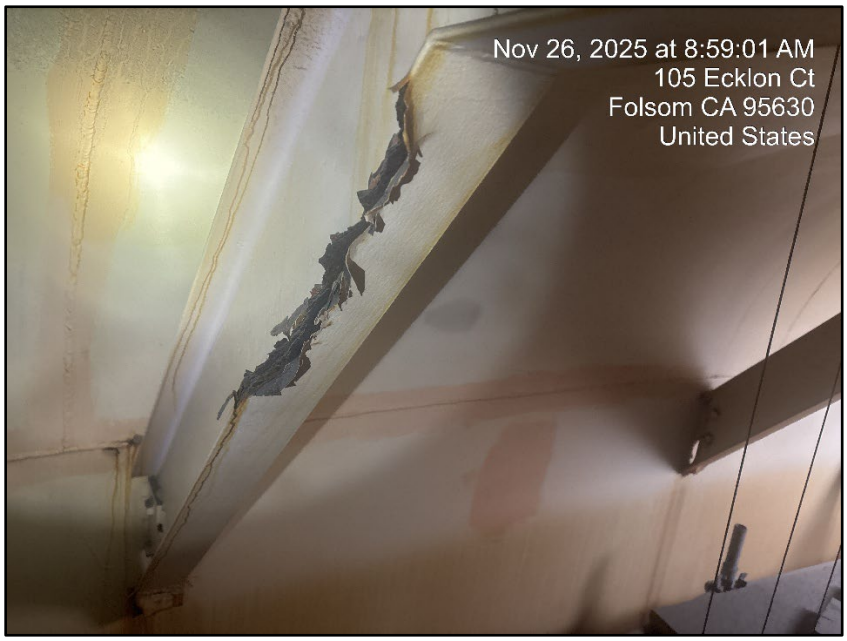
NTS

Attachment 3

ATTACHMENT 3

WATER STORAGE TANK PHOTOS

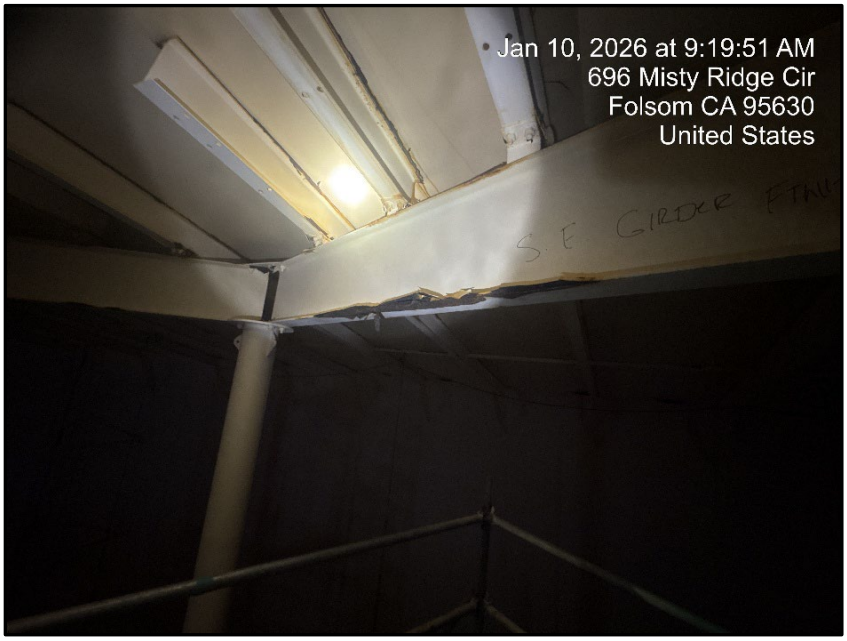
1. Photo No. 1 – Tower Tank steel rafter cantilever leg bottom showing bottom flange deterioration, corrosion and paint coating failure



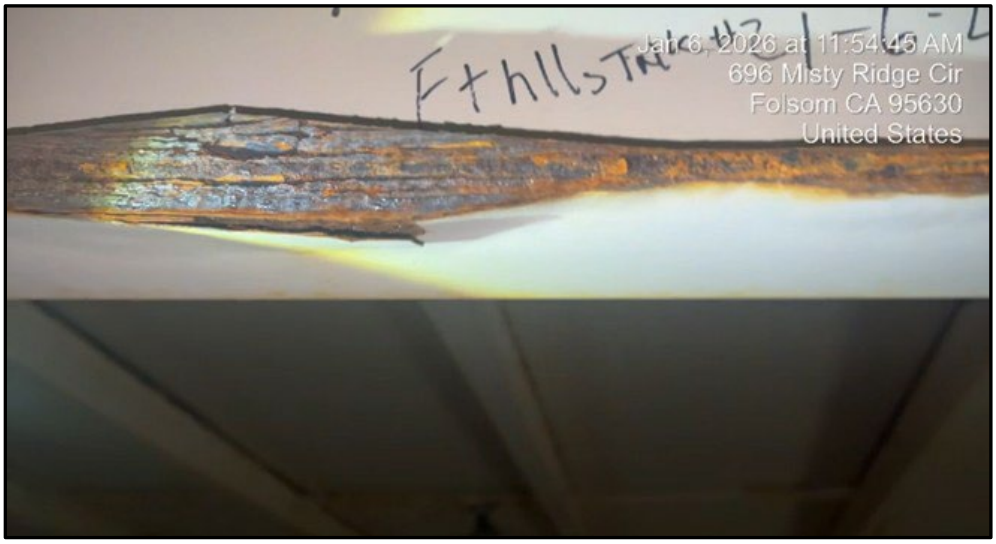
2. Photo No. 2 – Tower Tank steel rafter top flange deterioration and corrosion (top flange compromised for length of orange paint shown along the web of the steel I-beam)

3. Photo No. 3 – Tower Tank steel rafter after removal from Tower Tank showing top flange corrosion and loss of steel material

4. Photo No. 4 – Foothills No. 2 south-east steel girder bottom flange damage and loss of material (4-Ft in length)



5. Photo No. 5 – Foothills No. 2 northern steel girder bottom flange showing deterioration, corrosion and loss of steel material

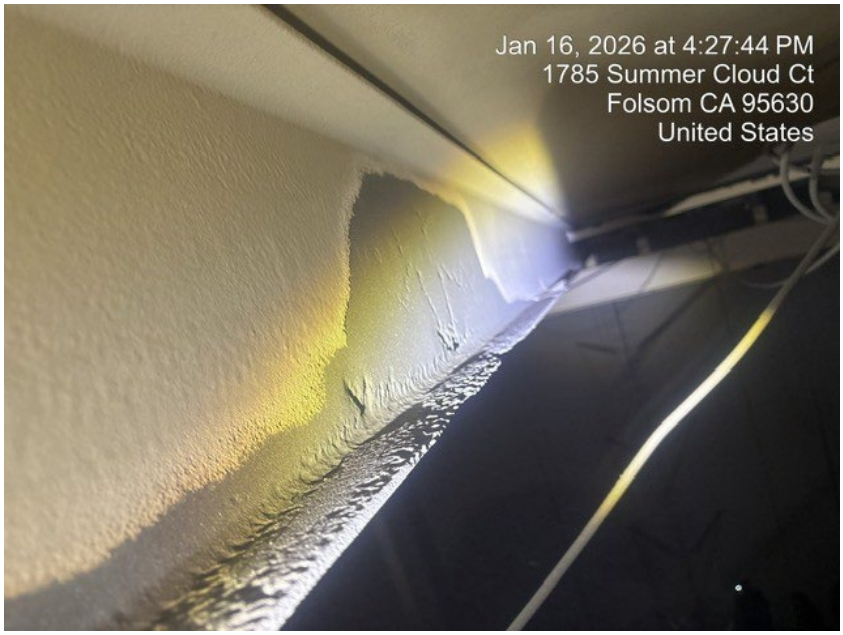


6. Photo No. 6 – Foothills No. 2 – steel rafter bottom flange deterioration and corrosion (various locations)

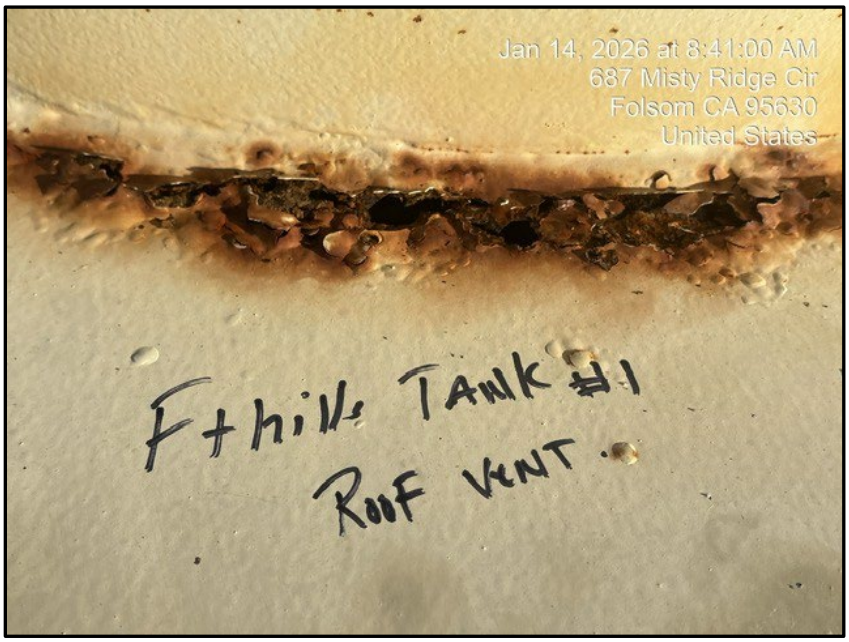
7. Photo No. 7 – Foothills Tank No. 2 rafter end at crows nest (center support) showing loss of coating, corrosion and loss of steel material

8. Photo No. 8 – Significant rafter deterioration and loss of material showing pitting and corrosion and loss of paint coating.

9. Photo No. 9 – Foothills Tank No. 1 rafter bottom flange corrosion



10. Photo No. 10 – Foothills Tank No. 1 roof vent corrosion and loss of steel material



Attachment 4

Construction Observation Log

VE SOLUTIONS

To: JP Davis

From: Brad Friederichs

Date: 12/15/2025

Project: Folsom Tower Tank Rehabilitation

Present: Alex (GC), Jesse (WYA)

Project No.: 24001

Project Status:

Observe blasted areas of corroded areas on beams. Prepare a count and mark damaged beams.

Directions:

1. 46 beams in the outer ring and 9 beams in the inner ring are damaged and need to be replaced.
2. Remove all existing flat strap bracing including grinding and removing welded piece on top of the flange at existing beams to remain.
3. All beams including existing beams to have ¾" diameter rod bracing at 6 ft cc max on each side of the beam. Weld the rod to the beam web with a butt weld. Rod to be placed no more than 1" below the top flange.
4. The beams framing into the center column are severely corroded. Repair involves design and construction of a new 7 ft diameter center cone detail as stated in plan detail 4/S300. This is a design-build item. The contractor will design a new cone and submit details for review.
5. The seams of the roof plates overlap approximately 2". In some areas, the overlapped plates have spread due to layup issues during construction or the pressure of corrosion in the joint. For all joints, clean surfaces and paint inside the joint as much as possible. Apply Sika 1A in lieu of seam welding to any remaining gap. This does not negatively impact the structural integrity of the tank roof.
6. The existing W16 girder on the north side of the tank is twisted on one end. Disconnect the roof beams (provide temporary support) and straighten the beam as much as is feasible. Install ¼" plate stiffeners at the end. Reattach the roof beams to the girder by bolting or welding.

PO Box 2592 • Carmichael, CA 95609-2592 • e-mail: bradf@vesolutions.net

VE SOLUTIONS, INC.

January 18, 2026

Mr. JP Davis
West Yost & Associates
2020 Research Park Dr., Ste 100
Davis, CA 95618

RE: Foothills Tank No. 2 – Detailed Roof Structural Inspection Report

PURPOSE AND SCOPE

This report presents the findings of a comprehensive structural inspection conducted on January 16, 2026, to evaluate the condition of the roof framing system for Foothills Tank No. 2 in Folsom, California. The inspection focused on assessing the extent and severity of corrosion damage to structural steel members and identifying necessary repairs to maintain the structural integrity in accordance with the California Building Code.

FACILITY DESCRIPTION

The tank roof structure consists of a radial beam and circumferential girder support system with a central steel cone support (commonly referred to as a "crows nest"). The structural configuration includes:

• 32 radial W8×10 steel beams at the inner radius
• 64 radial W8×10 steel beams at the outer radius
• 7 circumferential W16×26 steel girders providing support
• Central inverted plate steel cone column supported structure

INSPECTION FINDINGS

1. Radial Beams (W8×10)

Significant corrosion damage was observed on a substantial number of the radial beams. A total of approximately 61 beams exhibit deterioration beyond economical repair and require complete replacement:

• 19 of 32 beams at the inner ring (59%)
• 42 of 64 beams at the outer ring (66%)

The corrosion pattern and paint failure characteristics suggest the deterioration resulted from inadequate surface preparation and/or inappropriate coating materials during the original construction. Evidence indicates the following contributing factors:

• Insufficient mechanical preparation (cleaning/abrasion) of steel surfaces prior to coating

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• Poor adhesion between primer and steel substrate, evidenced by widespread delamination
• Potential use of water-based primer incompatible with the service environment

The flanges show the most severe section loss, compromising the beams' flexural capacity. Photographic documentation (see attached images) clearly shows advanced corrosion with significant metal loss on the flanges.

Recommendation: Replace all 61 deteriorated beams with new W8×10 sections. Ensure proper surface preparation per SSPC-SP standards and specify appropriate coating systems for potable water tank interiors. Paint all new and existing structural steel and roof plates above the water line.

Additional Structural Deficiency: The existing lateral bracing configuration for the top (compression) flanges is inadequate. Currently, only one top flange brace per beam provides support at approximately 16-foot spacing, which exceeds recommended limits for compression flange stability. This deficiency increases the risk of lateral-torsional buckling under design loads.

Recommendation: Install ¾-inch diameter steel rod bracing at 6-foot centers near the top flanges, similar to the bracing configuration implemented at Tower Tank. This modification will provide adequate lateral support in accordance with the CBC.

2. Circumferential Girders (W16×26)

Six of the seven W16×26 circumferential girders exhibit localized corrosion damage requiring structural repair (see attached images). The majority of deterioration occurs on the bottom (tension) flanges, with the damage concentrated in discrete areas rather than distributed along the full member length.

Repair Strategy: Cover plate reinforcement provides the most practical and economical solution for restoring the lost section capacity. The specific repair requirements vary based on damage location relative to the support points:

For damage located within the outer quarter-points of the span (areas of high shear, lower moment):

• Repair required when flange area loss exceeds 20%
• Install 3/8-inch × 6-inch steel cover plates
• Extend plates minimum 12 inches beyond damaged area each direction
• Fillet weld plates to both sides of bottom flange and across the end per AWS D1.1 standards

For damage located in the middle half of the span (area of maximum moment):

• Repair required when flange area loss exceeds 5%
• Install 3/8-inch × 6-inch steel cover plates using same detailing as above

These repair thresholds are based on CBC provisions for section loss and ensure adequate structural capacity with appropriate safety factors maintained.

3. Center Column Support System

Multiple beam webs at the central support exhibit corrosion damage requiring reinforcement (see attached images). Many of these deficiencies will be addressed through the replacement of deteriorated radial beams as previously described. For beams being retained in place with damaged web connections, vertical stiffener plates will be required to restore shear transfer capacity at the support.

Design Deficiency: The existing "crows nest" center support consists of an inverted plate steel cone structure positioned directly below the roof vent opening. It is supported by a single steel column. This configuration creates a significant operational problem: the enclosed cone limits adequate air circulation into and out of the tank interior. Limited air exchange occurs only through the narrow gaps between radial beams, resulting in poor ventilation that likely contributed to the accelerated corrosion observed throughout the structure.

Optional Recommendation: Replace the existing solid cone structure with an open "halo beam" support system (see attached images). This would consist of a circular steel beam supported by radial columns, allowing unrestricted air flow while maintaining equivalent structural support for the radial beams. This modification will:

- Significantly improve air circulation and ventilation
- Reduce moisture accumulation on steel surfaces
- Extend the service life of protective coatings
- Minimize future corrosion and maintenance requirements

CONCLUSIONS AND RECOMMENDATIONS

The inspection has identified substantial structural deterioration requiring comprehensive repair to maintain in order for the structure to comply with the CBC. The primary findings and recommended actions include:

1. Replace 61 corroded radial beams (19 inner ring, 42 outer ring) with new W8×10 sections
2. Install supplemental top flange bracing at 6-foot centers on all radial beams
3. Repair six deteriorated circumferential girders using welded cover plates
4. Reinforce corroded beam web connections at center support with vertical stiffeners
5. Optional: Replace solid cone center support with open halo beam system to improve ventilation

If the City elects to proceed with these repairs, VE Solutions Inc. will prepare details showing proper installation procedures, material requirements, welding details, and quality control provisions. The work that involves replacement in-kind will not be detailed but only stated in a document. These documents will provide the contractor with clear technical direction to execute the work in accordance with the CBC.

Please contact me if you have questions regarding these findings or require additional information to support project planning and budgeting decisions.

Sincerely yours,

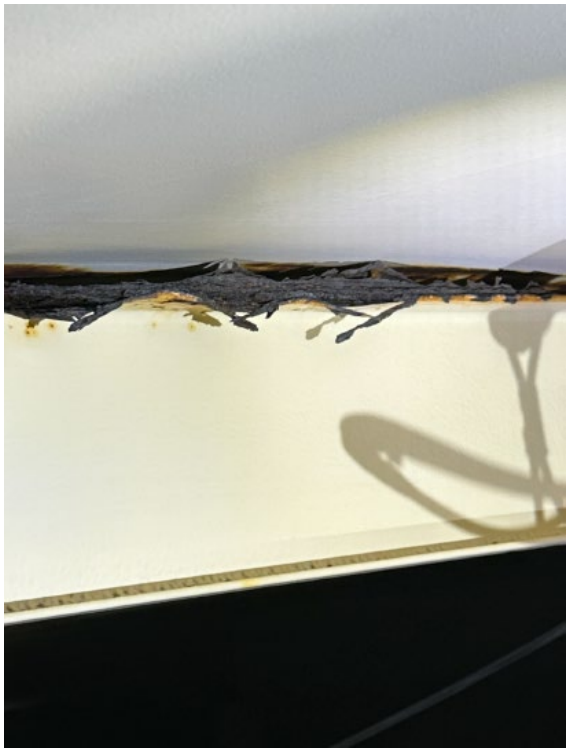
Brad Friederichs, P.E.
California License No. S2780

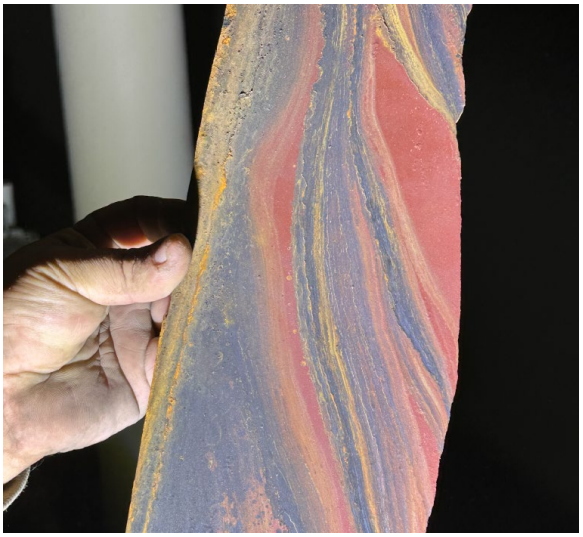
Attachments: Photographic documentation of observed conditions

SITE PHOTOGRAPHS

1/16/2026

W8x10 Beam Deterioration

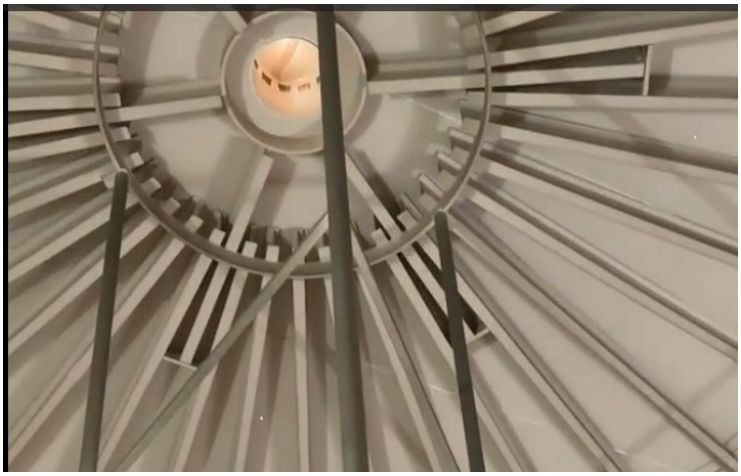




W8x10 Top Flange CorrosionPaint Showing Primer Debonded from Steel

W16x26 Girder Flange Corrosion

W8 Beam at Center Support



New Halo Type Support

VE SOLUTIONS, INC.

February 3, 2026

Mr. JP Davis
West Yost & Associates
2020 Research Park Dr., Ste 100
Davis, CA 95618

RE: Foothills Tank No. 2 – Supplemental Roof Structural Inspection Report

SUPPLEMENTAL INSPECTION FINDINGS

On January 31,2026 it was requested that I do another inspection since the contractor had installed scaffolding inside the tank and was able to sand blast the areas that we previously observed from a distance. As well the sand blasting removed paint that was restricting observation of the corrosion damage to the beams. The additional blasting revealed more extensive corrosion of the structural roof beams in comparison to what was seen on previous site visit.

As a result, a total of 81 beams W8 roof beams exhibit deterioration that is beyond economical repair and require complete replacement:

The total beam replacement is:

- 21 of 32 beams at the inner ring (66%)
- 60 of 64 beams at the inner ring (94%)

The damaged beams to be replaced have been marked with green tape.

All of the other recommendations of the previous report are in effect and still valid.

Sincerely yours,

Brad Friederichs, P.E.
California License No. S2780

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CITY OF
FOLSOM
DISTINCTIVE BY NATURE