**CONTRACT FOR ENGINEERING SERVICES**
**Dunham Engineering, INC.**

This Contract, dated _____, 2016, is between the **City of Bryan**, a Texas home-rule municipal corporation, (the City) and Dunham Engineering Inc., a corporation (the Engineer), whereby the Engineer agrees to provide the City with certain professional services as described herein and the City agrees to pay the Engineer for those services.

## 1. Scope of Services

In consideration of the compensation stated in paragraph 2, the Engineer agrees to provide the City with the professional services as described in Attachment A, the Scope of Services, which is incorporated herein by reference for all purposes, and which services may be more generally described as follows: Rehabilitation of the existing 2,000,000 gallon elevated storage tank located at Luza Street more specifically described in Attachment A.

## 2. Payment

In consideration of the Engineer's provision of the professional services in compliance with all terms and conditions of this Contract, the City shall pay the Engineer according to the terms set forth in Attachment B. Except in the event of a duly authorized change order, approved by the City in writing, the total cost of all professional services provided under this Contract may not exceed Eighty thousand and No/100 Dollars ($80,000.00).

## 3. Time of Performance

A. All design work and other professional services provided under this Contract must be completed by the following date: May 01, 2017. The City Engineer may agree to an extension of the time for completion. Any extension of the time for completion approved by the City Engineer, however, shall only be effective upon the execution of an instrument in writing stating the terms of the extension and signed by both the City Engineer and the Engineer. The Schedule is more fully defined in Attachment C.

B. **Time is of the essence of this Contract.** The Engineer shall be prepared to provide the professional services in the most expedient and efficient manner possible in order to complete the work by the times specified.

## 4. Warranty, Indemnification, & Release

A. As an experienced and qualified design professional, the Engineer warrants that the information provided by the Engineer reflects high professional and industry standards, procedures, and performances. The Engineer warrants the design preparation of drawings, the designation or selection of materials and equipment, the selection and supervision of personnel, and the performance of other services under this Contract, is pursuant to a high standard of performance in the profession. The Engineer warrants that the Engineer will exercise diligence and due care and perform in a good and workmanlike manner all of the services pursuant to this Contract. Approval of the City shall not constitute, or be deemed, a release of the responsibility and liability of the Engineer, its employees, agents, or associates for the exercise of skill and diligence to promote the accuracy and competency of their designs, information, plans,

specifications or any other document, nor shall the City's approval be deemed to be the assumption of responsibility by the City for any defect or error in the aforesaid documents prepared by the Engineer, its employees, associates, agents, or subcontractors.

B. The Engineer shall promptly correct any defective designs or specifications furnished by the Engineer at no cost to the City. The City's approval, acceptance, use of, or payment for, all or any part of the Engineer's services hereunder or of the Project itself shall in no way alter the Engineer's obligations or the City's rights hereunder.

C. In all activities or services performed hereunder, the Engineer is an independent contractor and not an agent or employee of the City. The Engineer and its employees are not the agents, servants, or employees of the City. As an independent contractor, the Engineer shall be responsible for the professional services and the final work product contemplated under this Contract. Except for materials furnished by the City, the Engineer shall supply all materials, equipment, and labor required for the professional services to be provided under this Contract. The Engineer shall have ultimate control over the execution of the professional services. The Engineer shall have the sole obligation to employ, direct, control, supervise, manage, discharge, and compensate all of its employees or subcontractors, and the City shall have no control of or supervision over the employees of the Engineer or any of the Engineer's subcontractors.

D. The Engineer must at all times exercise reasonable precautions on behalf of, and be solely responsible for, the safety of its officers, employees, agents, subcontractors, licensees, and other persons, as well as their personal property, while in the vicinity of the Project or any of the work being done on or for the Project. It is expressly understood and agreed that the City shall not be liable or responsible for the negligence of the Engineer, its officers, employees, agents, subcontractors, invitees, licensees, and other persons.

E. **Responsibility for damage claims (indemnification): Engineer shall defend, indemnify and save harmless the City and all its officers, agents, and employees from all suits, actions, or claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person or persons or property resulting from the Engineer's negligent performance of the work, or by or on account of any claims or amounts recovered under the Workmen's Compensation Law or any other law, ordinance, order or decree, and his sureties shall be held until such suit or suits, action or actions, claim or claims for injury or damages as aforesaid shall have been settled and satisfactory evidence to the effect furnished the City. Engineer shall defend, indemnify and save harmless the City, its officers, agents and employees in accordance with this indemnification clause only for that portion of the damage caused by Engineer's negligence.**

F. Release. The Engineer releases, relinquishes, and discharges the City, its officers, agents, and employees from all claims, demands, and causes of action of every kind and character, including the cost of defense thereof, for any injury to, sickness or death of the Engineer or its employees and any loss of or damage to any property of the Engineer or its employees that is caused by or alleged to be caused by, arises out of, or is in connection with the Engineer's negligent performance of the work. Both the City and the Engineer expressly intend that this release shall apply regardless of whether said claims, demands, and causes of action are covered, in whole or in part, by insurance.

## 5. Engineer's Insurance

The Engineer agrees to maintain, on a primary basis, for the duration of this contract the insurance coverages and limits as described below. See Attachment D for insurance example. The Engineer must deliver to the City a certificate(s) of insurance evidencing that such policies are in full force and effect within 5 business days of notification of the City's intent to award a contract. Failure to meet the insurance requirements and provide the required certificate(s) and any necessary endorsements within five business days **may cause the contract to be rejected.** The City reserves the right to obtain complete, certified copies of all required insurance policies at any time.

The requirements as to types and limits, as well as the City's review or acceptance of insurance coverage to be maintained by Engineer, is not intended to nor shall in any manner limit or qualify the liabilities and obligations assumed by the Engineer under the Agreement.

A. **Commercial General Liability Insurance** – Limit of liability not less than $1,000,000 per occurrence Engineer agrees to maintain a standard ISO version Commercial General Liability occurrence form, or its equivalent providing coverage for, but not limited to, Bodily Injury and Property Damage, Premises/Operations, Products/Completed Operations, Independent Engineers.

B. **Professional Liability Insurance** – Limit of liability not less than $1,000,000 per occurrence Engineer agrees to maintain Professional (Errors & Omissions) Liability to pay on behalf of the insured all sums which the insured shall become legally obligated to pay as damages by reason of any act, malpractice, error or omission of the Engineer or any person employed or acting on the Engineer's behalf (including but not limited to sub-contractors). For policies written on a "claims-made" basis, Engineer agrees to maintain a retroactive date prior to or equal to the effective date of this contract and that continuous coverage will be maintained or a supplemental extended reporting period will be purchased with a minimum reporting period not less than two years after the completion of this contract. The Engineer is solely responsible for any additional premium for the supplemental extended reporting period.

   No "claims made" policies are acceptable without prior approval by the City Attorney. If approved, coverage must be maintained for two years after the completion of this contract.

C. **Business Automobile Liability Insurance** – Limit of liability not less than $1,000,000 per occurrence Engineer agrees to maintain a standard ISO version Business Automobile Liability, or its equivalent, providing coverage for all owned, non-owned and hired automobiles. Should the Engineer not own any automobiles, the business auto liability requirement shall be amended to allow the Engineer to agree to maintain only Hired & Non-Owned Auto Liability. This amended coverage requirement may be satisfied by way of endorsement to the Commercial General Liability, or separate Business Auto policy.

D. **Workers' Compensation Insurance & Employers' Liability Insurance** – Statutory & $500,000/$500,000/$500,000. The Engineer agrees to maintain Worker's Compensation Insurance & Employers Liability. In the event any work is sublet, the Engineer shall require the subcontractor similarly to provide the same coverage and shall himself acquire evidence of such coverage on behalf of the subcontractor.

E. **Additional Insured Endorsements** The Engineer agrees to endorse the City as an Additional

Insured on each insurance policy required to be maintained, with the exception of the worker's compensation, employer's liability and professional liability policy.

F. **Waiver Of Subrogation** Waiver of subrogation in favor of the City of Bryan for each required policy. When required by the insurer or should a policy condition not permit Engineer to enter into a pre-loss agreement to waive subrogation without an endorsement, then Engineer agrees to notify the insurer and request the policy be endorsed with a Waiver of Transfer of rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy, which includes a condition specifically prohibiting such an endorsement, or voids coverage should Engineer enter into such an agreement on a pre-loss basis.

G. **Deductibles, Coinsurance Penalties, & Self-Insured Retention** Engineer shall agree to be fully and solely responsible for any costs or expenses as a result of a coverage deductible, coinsurance penalty, or self-insured retention; including any loss not covered because of the operation of such deductible, coinsurance penalty, or self-insured retention.

H. **Subcontractor's Insurance** The Engineer shall agree to cause each subcontractor employed by Engineer to purchase and maintain insurance of the type specified, provided the Engineer's insurance does not afford coverage on behalf of the subcontractor.

I. **Certificate Of Insurance** Engineer shall furnish the City with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements. The certificate must be from a company with an A.M. Best rating of "A-VI" or better and/or otherwise acceptable to the City. Certificates must be submitted using the ACORD form and all endorsements must be included with the submittal. Engineer has the affirmative obligation to advise City at the address listed below within 5 business days of the cancellation or substantial change of any required insurance policy, and failure to do so shall be construed as a breach of this contract.

Failure of the City to demand such certificate(s) or other evidence of full compliance with these insurance requirements or failure of the City to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

In the event the City is notified that a required insurance coverage will cancel or non-renew during the contract period, the Engineer shall agree to furnish prior to the expiration of such insurance, a new or revised certificate(s) as proof that equal and like coverage is in effect. The City reserves the right, but not the obligation, to withhold payment to Engineer until coverage is reinstated. If the Engineer fails to maintain the required insurance, the City shall have the right, but not the obligation, to purchase the required insurance at Engineer's expense.

Certificates and notices should be given to the City at the following address:

**City of Bryan**
**Attn: Risk Management Department**
**300 S. Texas Ave.**
**Bryan, TX 77803**

**RIGHT TO REVIEW AND ADJUST** The City reserves the right to review these requirements and to modify insurance coverage and their limits when deemed necessary and prudent. Furthermore,

the City reserves the right, but not the obligation, to review and reject any insurer providing coverage because of poor financial condition.

**6. Termination**

A. The City may terminate this Contract at any time upon **thirty (30)** calendar days written notice. Upon the Engineer's receipt of such notice, the Engineer shall cease work immediately. The Engineer shall be compensated for the services satisfactorily performed prior to the termination date.

B. If, through any cause, the Engineer fails to fulfill its obligations under this Contract, or if the Engineer violates any of the agreements of this Contract, the City has the right to terminate this Contract by giving the Engineer **five (5)** calendar days written notice to the Engineer. The Engineer will be compensated for the services satisfactorily performed before the termination date.

C. No term or provision of this Contract shall be construed to relieve the Engineer of liability to the City for damages sustained by the City because of any breach of contract by the Engineer. The City may withhold payments to the Engineer for the purpose of setoff until the exact amount of damages due the City from the Engineer is determined and paid.

**7. Miscellaneous Terms**

A. This Contract has been made under and shall be governed by the laws of the State of Texas. The parties agree that performance and all matters related thereto shall be in Brazos County, Texas.

B. Notices shall be mailed to the addresses designated herein or as may be designated in writing by the parties from time to time and shall be deemed received when sent postage prepaid U.S. Mail to the following addresses:

| | |
|---|---|
| The City of Bryan | The Engineer: |
| Attn: Jayson E. Barfknecht, P.E., Ph.D | Attn: Jimmy D. Dunham, P.E. |
| P.O. Box 1000 | 12815 FM 2154, Ste 150 |
| Bryan, Texas 77805 | College Station, TX 77845 |

C. No waiver by either party hereto of any term or condition of this Contract shall be deemed or construed to be a waiver of any other term or condition or subsequent waiver of the same term or condition.

D. This Contract represents the entire and integrated agreement between the City and the Engineer and supersedes all prior negotiations, representations, or agreements, either written or oral. This Contract may only be amended by written instrument approved and executed by the parties.

E. This Contract and all rights and obligations contained herein may not be assigned by the Engineer without the prior written approval of the City.

F. The Engineer, its agents, employees, and subcontractors must comply with all applicable federal and state laws, the charter and ordinances of the City of Bryan, and with all applicable rules and

regulations promulgated by local, state, and national boards, bureaus, and agencies. The Engineer must obtain all necessary permits and licenses required in completing the work and providing the services required by this Contract.

G. The parties acknowledge that they have read, understood, and intend to be bound by the terms and conditions of this Contract.

Party of the First Part
**CITY OF BRYAN, TEXAS**

**Approved as to Form:**

_____
Janis Hampton, City Attorney

**Approved for Processing:**

_____
Jayson Barfknecht, P.E., Ph.D
Director of Public Works

_____
Kean Register, City Manager

**Approved:**

By:_____
Jason P. Bienski, Mayor

Attest:

By:_____
Mary Lynne Stratta, City Secretary

**Date:** _____

Party of the Second Part
**ENGINEER:**

By:_____
Printed Name: Travis C. Tatum, P.E.
Title: President/Owner
Date: _____
Firm's License No.: F-2253

_____
Witness

DUNHAM ENGINEERING, INC.

www.DunhamEngineering.com Texas Registration Number: F- 002253

12815 FM 2154, Suite 150, College Station, Texas 77845 Phone: (979) 690-6555 Fax: (979) 690-7034

Letter of Agreement

This is an Agreement made as of _____, 2016 between the City of Bryan, Texas hereinafter known as the OWNER and Dunham Engineering, Inc., of College Station, Texas hereinafter known as the ENGINEER.

The OWNER intends for the ENGINEER to perform professional engineering services in the design and construction inspection of the WORK.

The WORK is defined as the rehabilitation of an existing 2,000,000 gallon elevated water storage tank located at Luza St. in Bryan, Texas. The WORK is further defined as follows:

- Repaint exterior of elevated water tank by over-coating existing acrylic system with a new compatible acrylic coating system.
- Repair interior wet area coating system of elevated water tank above the high water line by performing touchup of problem areas with epoxy.
- Repair interior dry area coating system of elevated tank by performing touch-up of problem areas with epoxy.
- Perform touchup painting on exterior of concrete block communications building at base of structure.

Total estimated contractor cost is $570,000.00.

PHASE I - DESIGN

The ENGINEER agrees to prepare the design, produce engineering plans and specifications, prepare the contract documents, advertise for bids to selected contractors and recommend award of a lump sum construction contract to complete the WORK for the OWNER.

The ENGINEER agrees to provide a draft set of contract documents to the OWNER for review and approval no later than 30 days from the date of the Agreement.

The ENGINEER agrees to finalize the documents and advertise the WORK to selected contractors for bid within 30 days after receipt of OWNER'S comments and approval.

The OWNER agrees to advertise the WORK as required in the local newspaper to meet state requirements for advertising a public works project.

The ENGINEER agrees to assist the OWNER in opening and reviewing bids and recommending a contractor for award.

PHASE II- CONSTRUCTION

The ENGINEER agrees to periodically inspect the contractor during the construction period to insure contract compliance.

The ENGINEER agrees to process Contractor progress payments and recommend payment by the OWNER.

The ENGINEER agrees to prepare and process Contract Change Orders as required during the course of the construction contract.

The ENGINEER agrees to conduct a final inspection of the WORK and to recommend final payment for the CONTRACTOR when the WORK is completed

The ENGINEER agrees to schedule and conduct a one year warranty inspection of the WORK prior to the end of the warranty period and to coordinate completion of any required warranty repairs.

In consideration of the above services, the OWNER agrees to compensate the ENGINEER in accordance with the following schedule:

Phase I - Design
Total fee of $50,000. Partial payments due as follows:

50% due when draft documents provided to OWNER.
50% due when final documents provided to OWNER .

Phase II – Construction Management
Total fee of $30,000. Partial payments due as follows:

25% when contractor starts work
25% when contractor is 50% complete
25% when contractor is 75% complete
25% when contractor completes work

Jimmy D. Dunham, P. E.
DUNHAM ENGINEERING, INC.
16 May 2016

OWNER

## SCHEDULE OF EVENTS

- July 12, 2016 – Anticipated approval for design/project management services.
- August 1, 2016 – Bid documents submitted for review (50% complete).
- August 29, 2016 – Bid documents submitted for final review (100% complete).
- September 6, 2016 – Web site post date.
- September 19, 2016 @ 10:00 a.m. CST – Mandatory pre-bid meeting to be held in the Purchasing Office, 1309 E. M. L. King Street, Bryan, TX.
- October 3, 2016 @ 10:00 a.m. CST – Deadline for written requests for clarifications to the RFB.
- October 7, 2016 – Deadline to Issue Final Addendum.
- October 12, 2016@ 2:00 p.m. CST – Sealed bids delivered to the Office of the Purchasing Department, City of Bryan, 1309 E. M. L. King Street, Bryan, TX. Bids received after the time and date set for the opening of the bid will not be accepted and will be returned unopened.
- October 25, 2016 – Anticipated date of award.

DUNHAM ENGINEERING
Inspection. Design. Results.

# REPORT OF INSPECTION

# CITY OF BRYAN

PREPARED BY:

**DUNHAM ENGINEERING, INC.**
TEXAS REGISTRATION NO. F-2253
12815 FM 2154, SUITE 150
COLLEGE STATION, TEXAS 77845
www.DunhamEngineering.com
(979) 690-6555

JULY 2014

DUNHAM ENGINEERING, INC.

www.DunhamEngineering.com Texas Registration Number: F- 002253

12815 FM 2154, Suite 150, College Station, Texas 77845 Phone: (979) 690-6555 Fax: (979) 690-7034

July 11, 2014

City of Bryan
Box 1000
Bryan, Texas 77805

Attn: Jeff Bodish, Water Production Supervisor

Enclosed please find the reports for the City's steel water tanks. The reports were prepared in accordance with AWWA D101 – Inspection and Repair of Steel Water Tanks. A summary of the results follows:

- Water Storage Tank @ North Well Field
  - Structure is 22+ years old and fair condition with poor interior coating system.
  - The top hatch is undersized to meet current TCEQ regulations.
  - Budget $325,000 including engineering fee to rehab structure in 2015.

- Elevated Water Storage Tank on Royal St.
  - Structure is 58 years old with 15 year old coatings and is in good structural condition.
  - Both the interior and exterior protective systems are in good condition and are providing adequate corrosion protection.
  - There is a small leak at the top of the riser pipe.
  - Budget $350,000 including engineering fee to rehab structure in 2016.

- Elevated Water Storage Tank on Luza St.
  - Structure is 34 years old with 13 year old coatings and is in good structural condition.
  - Both the interior and exterior protective systems are in good condition and are providing adequate corrosion protection.
  - Budget $650,000 including engineering fee to rehab structure in 2017.

- Elevated Water Storage Tank on North Texas.
  - Structure is 16 years old with 16 year old coatings and is in good structural condition.
  - Both the interior and exterior protective systems are in good condition and are providing adequate corrosion protection.
  - Budget $850,000 including engineering fee to rehab structure in 2018.

Please call if you have any questions. We'll be happy to meet with you & City staff to discuss above.

Jimmy D. Dunham, P. E.

CITY OF BRYAN
SUMMARY OF STEEL WATER STORAGE TANKS

| Tank Location | Type | Age of Tank/Coatings Years | Condition of Tank/Coatings | Capacity gallons | Recommended Rehab year/cost (000) |
|---|---|---|---|---|---|
| Welded Steel @ North Well | Ground | 22+/22+ | fair/poor | half-million | 2015 - $325k |
| Royal St. | Elevated | 58/15 | good/good | 1 million | 2016 - $350k |
| Luza St. | Elevated | 34/13 | good/good | 2 million | 2017 - $650k |
| North Texas | Elevated | 16/16 | good/good | 1 million | 2018 - $850k |

Based on Inspections performed by Dunham Engineering in July 2014.
Engineering fees are included in rehab cost for year recommended.

Report of Inspection
Ground Storage Tank @ North Well Field
Bryan, Texas

Conducted by Jimmy D. Dunham, P.E., Jeremie White & Andrew Sciba
July 9, 2014

## 1. CONSTRUCTION

The welded steel ground storage tank has a nominal capacity of 500,000 gallons with a diameter of 80′ and a height of 14′. The tank is constructed of two welded steel rings each 7′ tall. The exterior weld seams are in good condition with no cracks noted.

## 2. FOUNDATION

The concrete ring foundation is level and in good condition. The top of the concrete is approx. 2" above grade. The walls of the tank in the lower ring of steel are plumb. No major cracks were noted in the concrete.

## 3. LEVEL CONTROL

The liquid level sight gauge on the side of the tank is operational. The float gauge operates properly and the float cable access holes in the roof are properly sealed from insects.

## 4. OVERFLOW PIPE/FILL PIPE

The 24″ diameter overflow pipe exits the bottom of the side wall and ends in a functional gravity hinged flap valve.

A 36" diameter fill pipe enters the tank at the midpoint of the wall.

## 5. MANWAY

The 24″ diameter manway is in good condition with no leaks or cracks noted. The manway cover was not opened and no leaks were noted. The weld seam on the neck is in good condition with no cracks noted.

## 6. LADDERS

The exterior ladder starts at ground level and stops at the roof. No loose rungs or bolts were noted. The interior ladder is in good condition with minor corrosion in the upper portion.

## 7. TOP HATCH

The 24″ square hatch has a cracked hinge but locks properly.

## 8. TOP VENT

The 24″ diameter top vent is not properly screened but is in good condition. The screen wire is torn in several locations.

## 9. ROOF

The roof is properly sloped and in good condition. Approx. 10% of the roof surface area is rusting. The interior plate is not welded or caulked at the seams. Several of the interior plate seams are corroded.

The roof is supported by rafters, beams and columns that are in good condition.

## 10. INTERIOR

The tank was partially drained for the inspection and access was gained through the top hatch and down the interior ladder. No floating debris or insects were noted. The water quality was clear.

## 11. PROTECTIVE COATINGS

The exterior coating is in good condition with the exception of the roof coating. Approx. 10% of the roof exterior surface area is rusting.

The interior coating is in poor condition with more than 15% of the total interior surface area rusting. The area above the high water line is cracked and peeling in several locations.

## 12. CONCLUSIONS

a. The tank is in good condition with the exception of the interior protective coating system. The interior coating system is more than 20 years old and no longer providing adequate corrosion protection to the steel.

b. The top hatch & manway are undersized per TCEQ.

13. **RECOMMENDATIONS**

a. Replace the interior coating system now to prevent further corrosion damage to the interior steel.

b. The top hatch and manway should be increased in size to meet current TCEQ standards when the coatings are replaced.

c. The overflow pipe should be moved to the exterior to prevent a potential leak in the pipe from draining the tank.

d. Budget $325,000 including engineering fees to rehabilitate tank within 12 months. Delaying the replacement of the interior coating system could require replacement of interior rafters which could increase the cost of the project to $450,000.

Exterior view

Exterior view & overflow outlet

Exterior view and fill line

Manway - undersized

Top hatch – undersized and broken hinge

Roof vent

Screen wire torn in several locations

Rust on roof

Rust on roof

Interior roof support system

Rafter @ wall with cracked coating

Cracked and peeling coating on wall – overflow inlet

Cracked and peeling interior coating

Report of Inspection
Elevated Water Storage Tank @ Royal St.
Bryan, Texas

Conducted by Jimmy D. Dunham, P.E., Jeremy White & Andrew Sciba
July 3, 2014

## 1. CONSTRUCTION

The one million gallon welded steel structure is 58 years old and in good structural condition.

## 2. FOUNDATION

The individual concrete footings supporting each of the legs are level and in good condition. The bolts are firmly embedded in the concrete and the nuts are tight on the bolts. The base plates are level.

## 3. RODS & STRUTS

The wind rods and riser rods are straight with no excessive bending noted. The struts are level and in good condition. No problems were noted with their connections other than minor corrosion. The lower level of wind rods have been damaged by equipment (mowers) hitting the rods and scraping the paint.

## 4. RISER

The wet riser pipe is plumb and shows no sign of leaks. The manway was not opened and is in good condition with no evidence of leaks. There is evidence of a minor pinhole leak at the weld seam on the junction of the pipe to the bowl.

## 5. LADDERS

The ladders are in good condition with no loose rungs or bolts noted. The cable style safety climb devices are in good condition. The ladder gate is locked.

6. **BALCONY**

The balcony is in good condition and drains properly. No cracks were noted in the handrail welds. The manway was not opened.

7. **TOP HATCH**

The top hatch is in good condition but not locked. The hatch requires a pry bar to open.

8. **OBSTRUCTION LIGHTS**

The fixture is in good condition.

9. **TOP VENT**

The vent is properly screened and in good condition.

10. **ROOF**

The roof is in good condition with no holes noted. Rigging holes are properly capped.

11. **OVERFLOW PIPE**

The pipe is in good condition with no cracked pipe support welds. The flap valve operates properly. The pipe feeds into the storm water system and the flap valve was not inspected.

12. **LEVEL INDICATOR**

A functional pressure gauge is located on the base of the riser. The water level was approx. 8′ below overflow during the inspection.

13. **INTERIOR**

The water level in the bowl was approx. 80% full during the inspection. The water quality was clear with no floating debris or evidence of insects noted.

## 14. PROTECTIVE COATINGS

The protective coating systems are 15 years old and in good condition. Less than 2% rust was observed on the exterior acrylic coating system. A one square foot area on a leg was cleaned with water to reveal coating in good condition and tightly adhered to the steel. The interior epoxy coating system is also in good condition with less than 1% rust observed.

## 15. CONCLUSIONS

a. The structure is approx. 58 years old and in good condition.

b. No water quality or TCEQ deficiencies were noted.

c. There is a pinhole leak in the weld seam at the top of the riser pipe.

## 16. RECOMMENDATIONS

a. Over-coat the exterior system within two years (no later than 2016) to extend the life of the coating system. Budget $250,000 to over-coat before 2016 or $450,000 to replace coating system after 2016. Replacing coating requires complete shroud to sandblast entire structure to protect environment from nuisance blast.

   Note: The exterior coating system is a dry-fall acrylic and was selected by City 15 years ago for the purpose of being able to over-coat as opposed to complete removal. The City can take advantage of the cost savings if over-coating is done while coating is still tightly adhered.

b. The leak on the riser pipe @ junction to bowl should be repaired at the same time as over-coating. Perform touch-up on the interior coating when welding repairs are completed.
   Budget $50,000 for welding repairs and touch-up to interior coating while over-coating is being performed.

c. Recommended budget figure to over-coat exterior and repair weld seam at riser and touch-up interior coating prior to 2016 including engineering fees is $350,000.

d. Delaying past 2016 will require removal of the coating systems and significantly increase the project cost to $700,000.


www.
bryantx.
.org
KICKER

Level foundations

Legs plumb

Exterior coating is dirty

Coating cleaned with water to reveal tightly adhered paint

Riser manway

View of support structure and leak at top of riser pipe

Ladder gate

Rust on interior of strut

Rust on strut connection

Damaged coating on ladder rung

Riser-bowl junction

Rust on wind rod turnbuckle

Balcony manway & logo lights

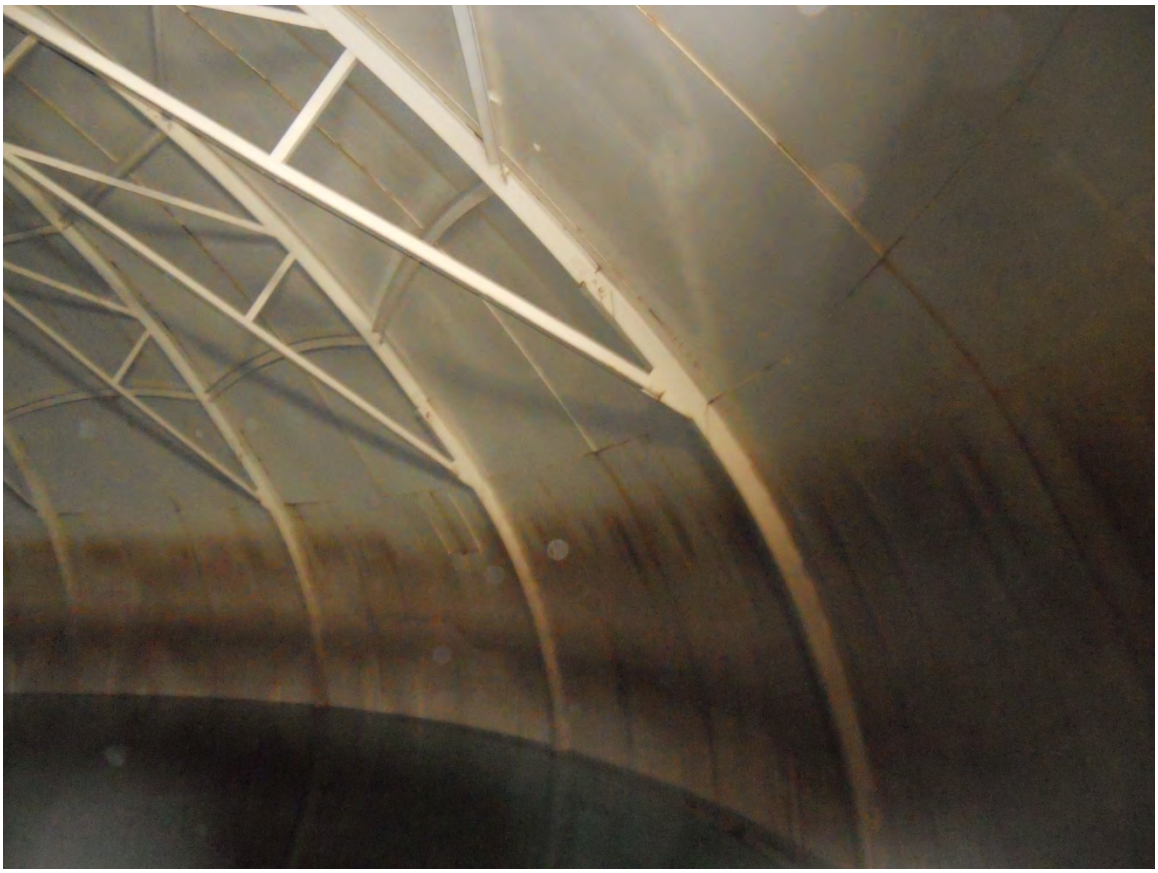
Roof ladder & lights

Top vent & rigging nipples

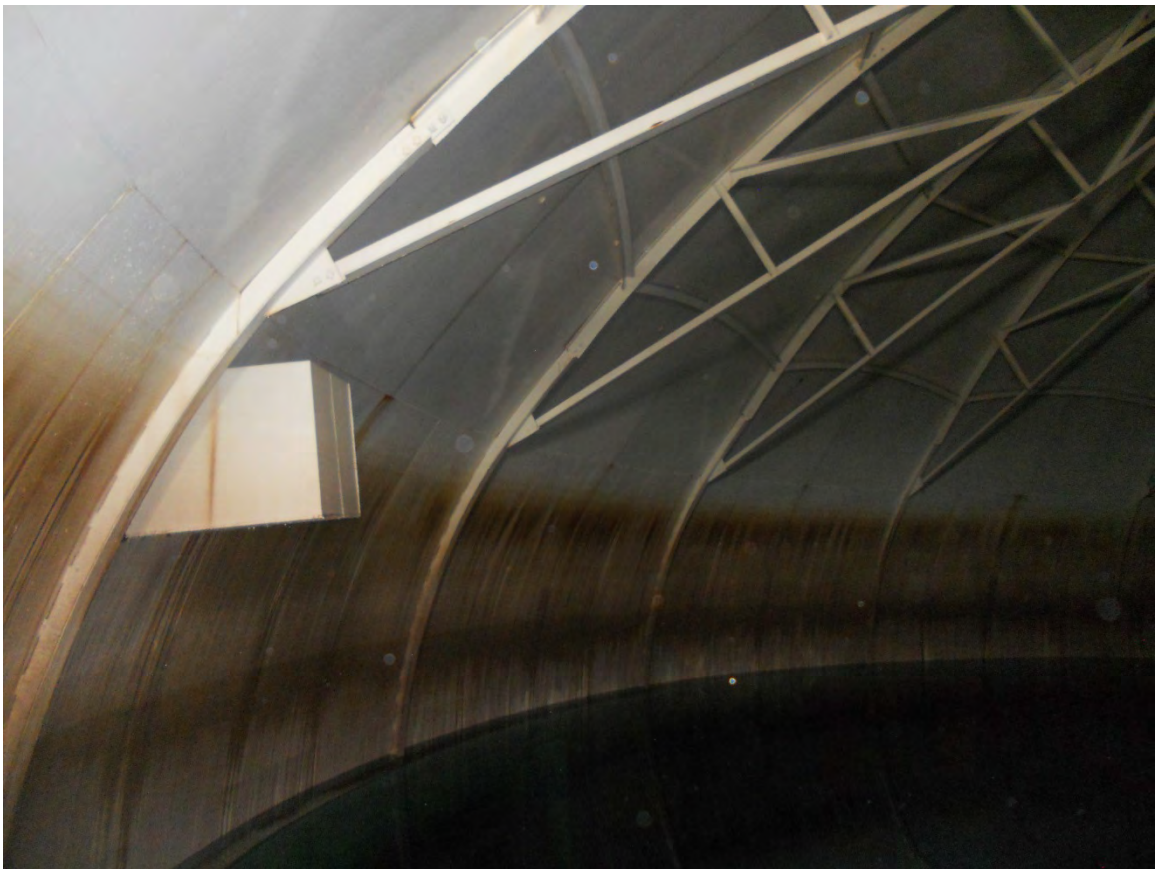
Coating cracked on roof and rigging nipples

Top hatch

Interior roof support system



Truss rafters @ wall



Overflow inlet box

Truss rafter

Interior water compartment with water above balcony level

Report of Inspection
Elevated Water Storage Tank @ Luza St.
Bryan, Texas

Conducted by Jimmy D. Dunham, P.E., Jeremie White & Andrew Sciba
July 8, 2014

## 1. CONSTRUCTION

The two million gallon welded steel structure was built by PDM in 1979 and is 35 years old. It was rehabilitated 13 years ago and is in good condition.

## 2. FOUNDATION

The individual concrete footings supporting each of the legs are in good condition. The anchor bolts are firmly embedded in the concrete and the nuts are tight on the bolts. The base plates are level. Minor corrosion is present on the base plates.

## 3. RODS & STRUTS

The wind rods and riser rods are all straight with no excessive bending noted. The upper set of riser rods are slightly bowed with no significant problems. The riser rods were used for rigging purposes in the last rehab project.

The struts are level and in good condition. No problems were noted with their connections.

## 4. RISER

The fill pipe is plumb with no leaks noted. The pressure gauge located on the pipe is operational. The bellows expansion joint is in good condition.

The interior lights of the dry riser compartment are not working.

## 5. HATCHES & MANWAYS

The top hatch and riser access hatch are in good condition. The manway in the bottom of the bowl was not opened. No leaks were observed.

The painter's access hatch is in good condition.

6. **TOP VENT**

The vent is properly screened and in good condition.

7. **OBSTRUCTION LIGHTS**

The fixture is in good condition.

8. **ROOF**

The roof is in good condition. There are no cracked welds or holes in the roof. The rigging nozzle caps are all in place. The rafters are in good condition with minor rust observed.

9. **OVERFLOW PIPE**

The pipe is plumb and in good condition. The pipe support welds on the interior of the dry riser are not cracked. The flap valve functions properly.

10. **INTERIOR**

The tank was 80% full and the water quality was clear with no insects or floating debris observed.

11. **PROTECTIVE COATINGS**

The coating systems are thirteen years old and in good condition. Minor rust was observed.

The exterior coating system of acrylic is in good condition and tightly adhered to the steel. A square foot section of steel was cleaned with water to reveal coating in good condition.

The interior coating system of epoxy is in good condition with minor rust observed on the roof support system.

12. **LADDERS**

The ladders are in good condition. No loose rungs or bolts were noted. The cable style safety climb devices are in good condition.

## 13. CONCLUSIONS

a. The structure is 35 years old and in good condition

b. No water quality deficiencies or TCEQ violations were observed.

c. The coating systems are 13 years old and providing adequate protection to the steel.

## 14. RECOMMENDATIONS

a. Over-coat the exterior system within four years (no later than 2018) to extend the life of the coating system. Budget $400,000 to over-coat before 2018 or $915,000 to replace coating system after 2018. Replacing coating requires complete shroud to sandblast entire structure to protect environment from nuisance blast.

   Note: The exterior coating system is a dry-fall acrylic and was selected by City 15 years ago for the additional purpose of being able to over-coat as opposed to complete removal. The City can take advantage of the cost savings if over-coating is done while coating is still tightly adhered.

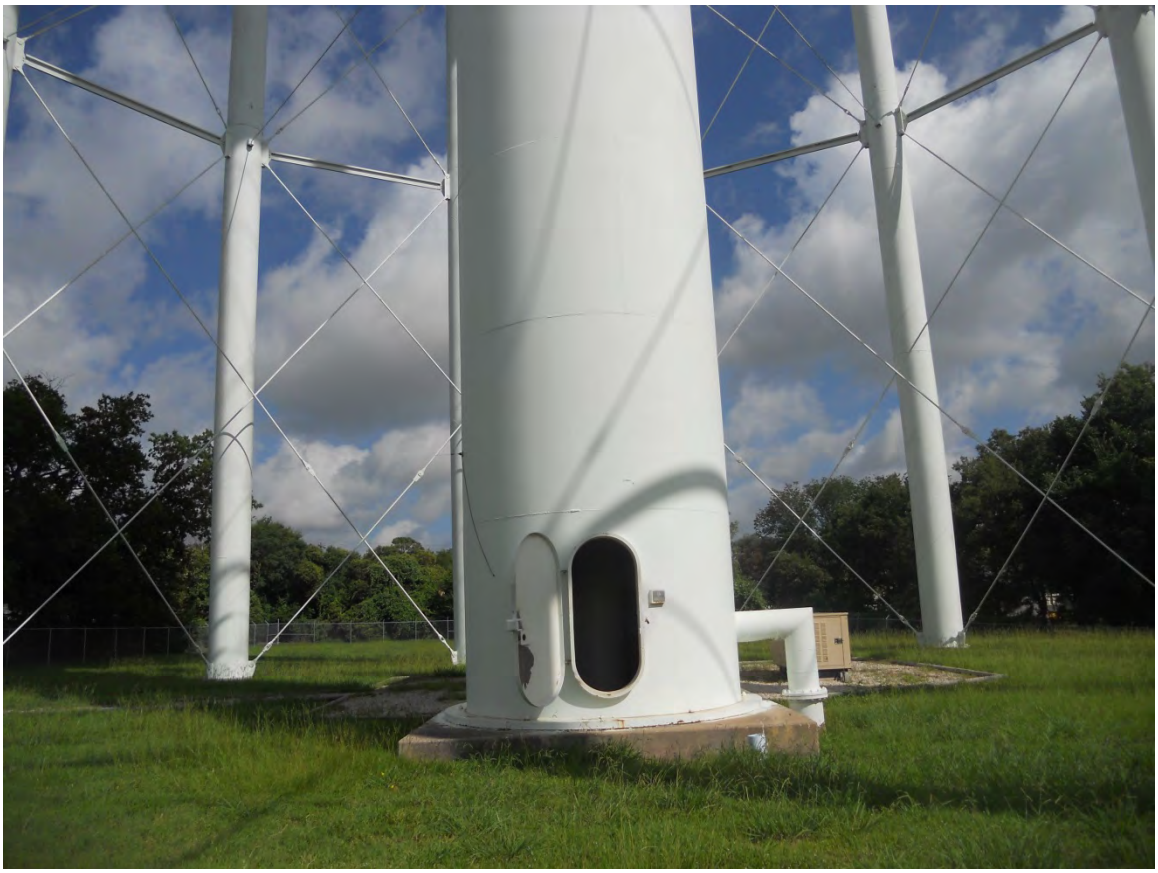
b. Perform touch-up on the interior coating system at the same time. Budget $150,000 for touch-up before 2018 or budget $350,000 to replace entire coating system after 2018. Performing touch-up is not required and is only recommended to be done for economic reasons if over-coating is being performed.

c. Recommended budget figure to over-coat exterior and touch-up interior prior to 2018 including engineering fee is $650,000.

d. Waiting past 2018 will require removal of the coating systems and significantly increase the project cost to $1,300,000.

Exterior view

Typical foundation



Dry riser access

Interior view of dry riser with piping and ladder

Exterior coating with dirt and debris

Same area cleaned with water and rag

Support structure

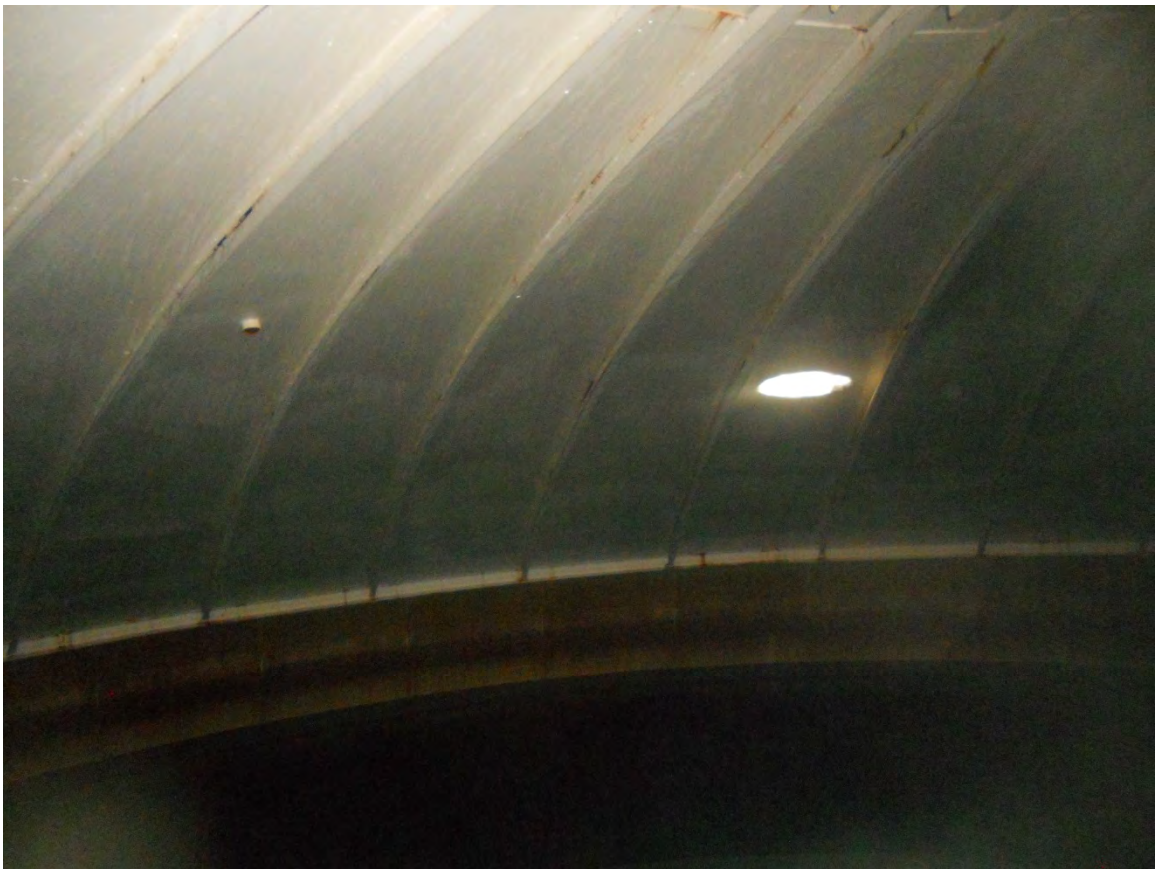
Turnbuckles with rust from damaged coating

Damaged coating on turnbuckles

Bottom bowl manway

Roof access hatches & vent

Obstruction light fixture



Interior roof support system

Interior roof support system

Interior water compartment

Report of Inspection
Elevated Water Storage Tank on North Texas
Bryan, Texas

Conducted by Jimmy D. Dunham, P.E., Jeremie White, Andrew Sciba & Trey Burns
July 11, 2014

## 1. CONSTRUCTION

The one million gallon welded steel structure is 16 years old and in good structural condition. The steel tank is supported by a concrete wall and foundation.

## 2. FOUNDATION

The concrete foundation supporting the concrete walls and steel tank is level and in good condition. No uneven settlement was observed.

## 3. WALLS

The concrete walls are plumb and no cracks were observed.

## 4. FILL PIPE

The stainless steel pipe is plumb but has a history of minor leaks in the welded joints. Several pinhole size leaks are present. The expansion joint is in good condition with no cracks observed.

## 5. LADDERS

The ladders are in good condition with no loose rungs or bolts noted. The bar style safety climb devices are in good condition.

The handrail on the second floor in front of the staircase opening is not properly attached to the concrete floor. The bolts are no longer embedded in the concrete.

6. **LIGHTS**

The lights on the interior wall ladder are operational. The lights on the second floor are not working.

7. **TOP HATCH**

The top hatch is in good condition. It is bolted shut but not locked.

8. **OBSTRUCTION LIGHTS**

The fixture is in good condition.

9. **TOP VENT**

The vent is properly screened and in good condition.

10. **ROOF**

The roof is in good condition with no holes noted. Minor rust is present.

11. **OVERFLOW PIPE**

The pipe is in good condition with no cracked pipe support welds. The flap valve operates properly.

12. **LEVEL INDICATOR**

A functional pressure gauge is located on the base of the fill pipe.

13. **INTERIOR**

The water level in the bowl was approx. 70% during the inspection. The water quality was clear with no floating debris or evidence of insects noted.

14. **PROTECTIVE COATINGS**

The protective coating systems are sixteen years old and in good condition. Minor rust was observed on the exterior of the roof and on the interior rafter support plate & overflow inlet pipe supports.

## 15. CONCLUSIONS

a. The structure is 16 years old and in good condition with the exception of the fill pipe which has a history of leaks in the welded joints. The joints have been repaired several times but pinhole sized leaks are still present.

b. No water quality deficiencies were noted.

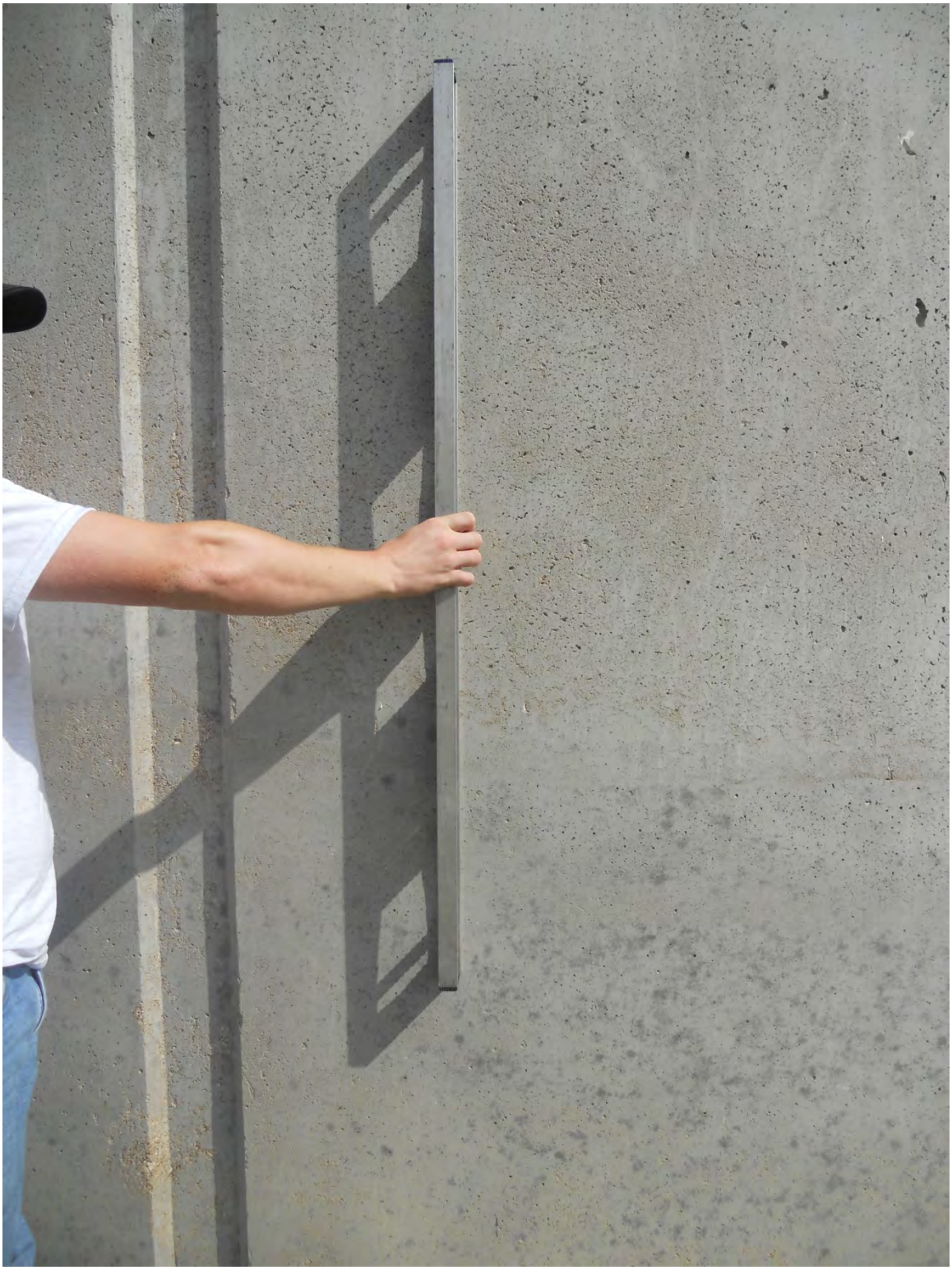
## 16. RECOMMENDATIONS

a. The handrail on the second floor protecting the circular staircase opening is not properly anchored to the concrete floor. The bolts need to be replaced and properly installed now.

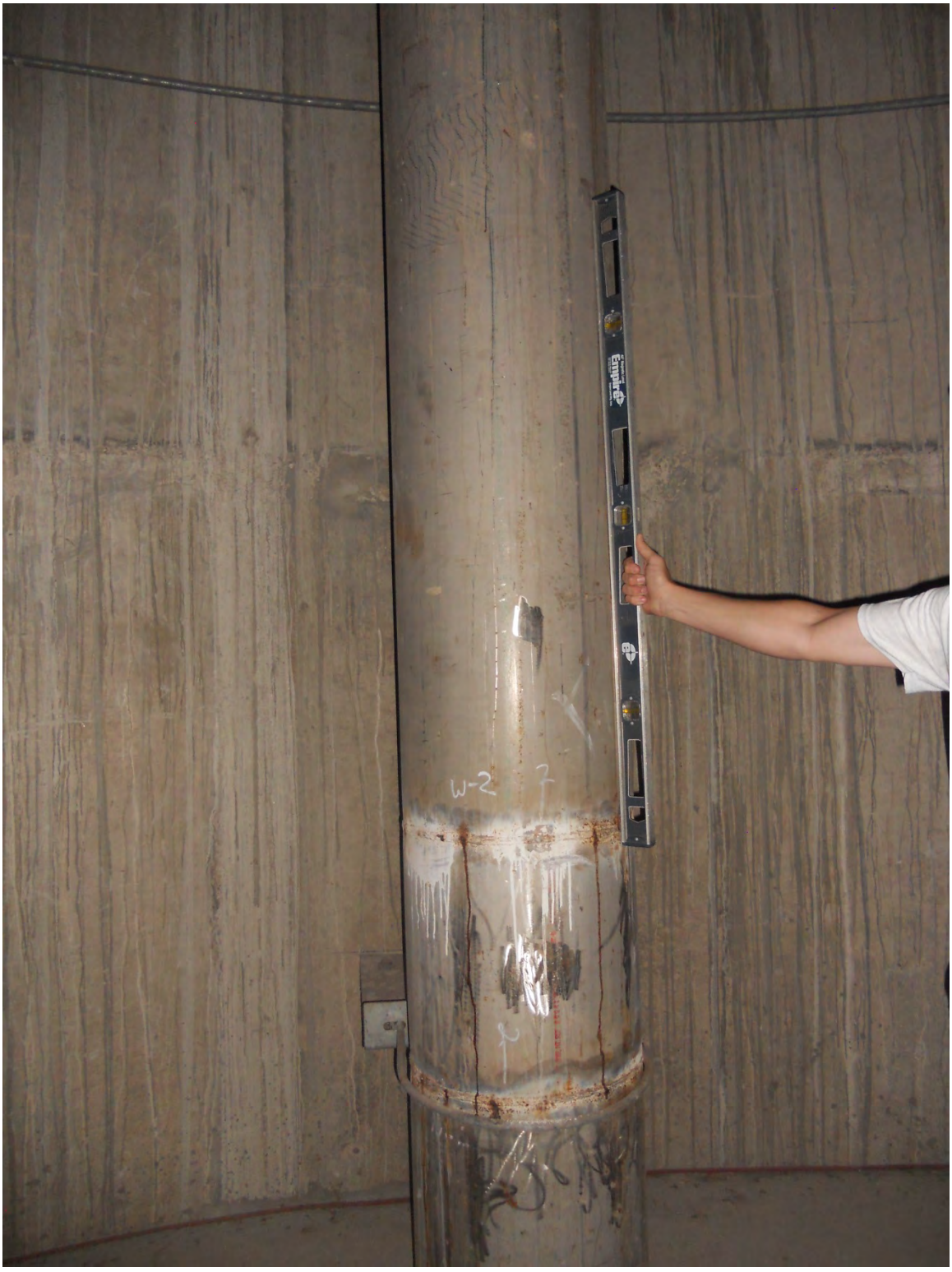
b. The protective coating systems should be replaced in 6 years. Budget $850,000 to replace the coating systems and fill pipe including engineering fee no later than 2010.

Exterior view

Foundation level



Wall plumb




Fill pipe plumb is but weld joints have been repaired several times and currently several pinhole sized leaks are present in joints at second floor

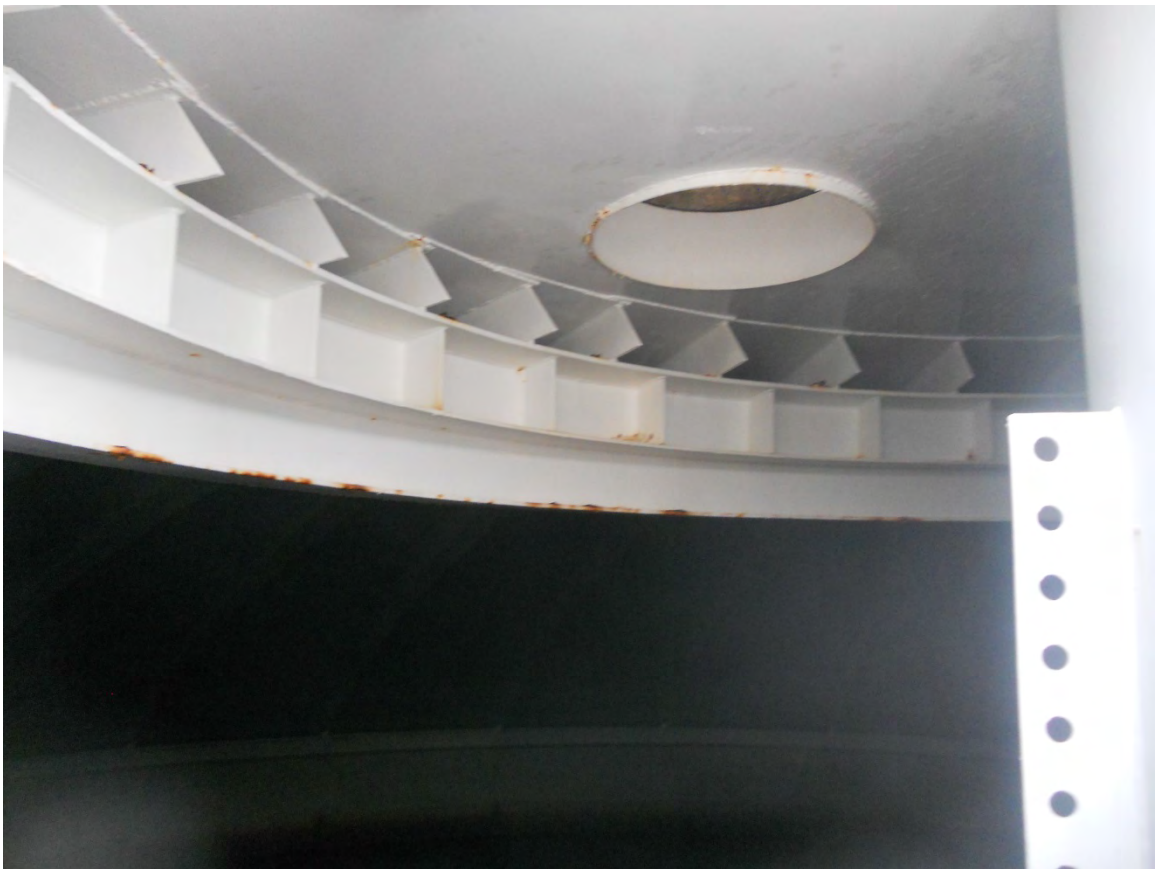

Close-up of leaking welds on fill pipe joints on second floor

Handrail on second floor protecting circular staircase opening is loose

Anchor bolts not embedded in concrete properly

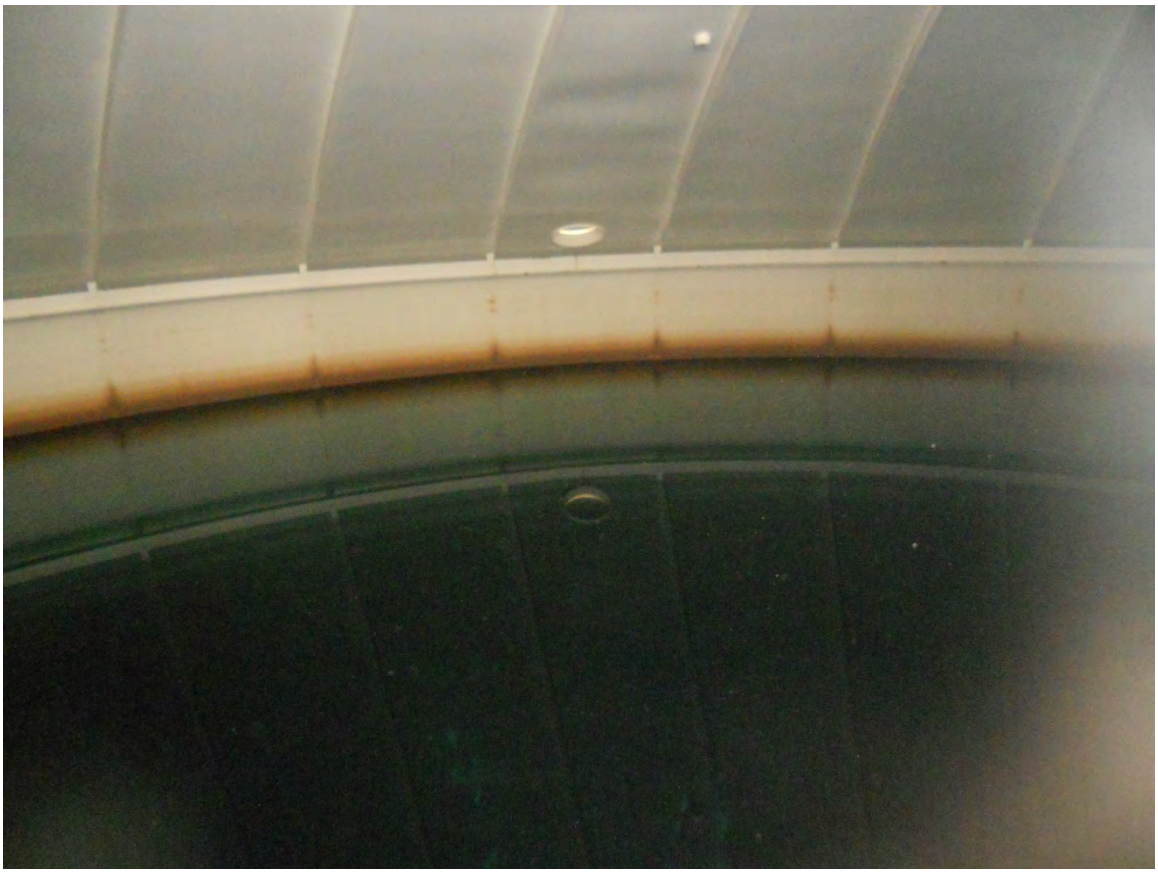
Manway in bottom of bowl

Roof with top hatch, top vent and riser access hatch opening

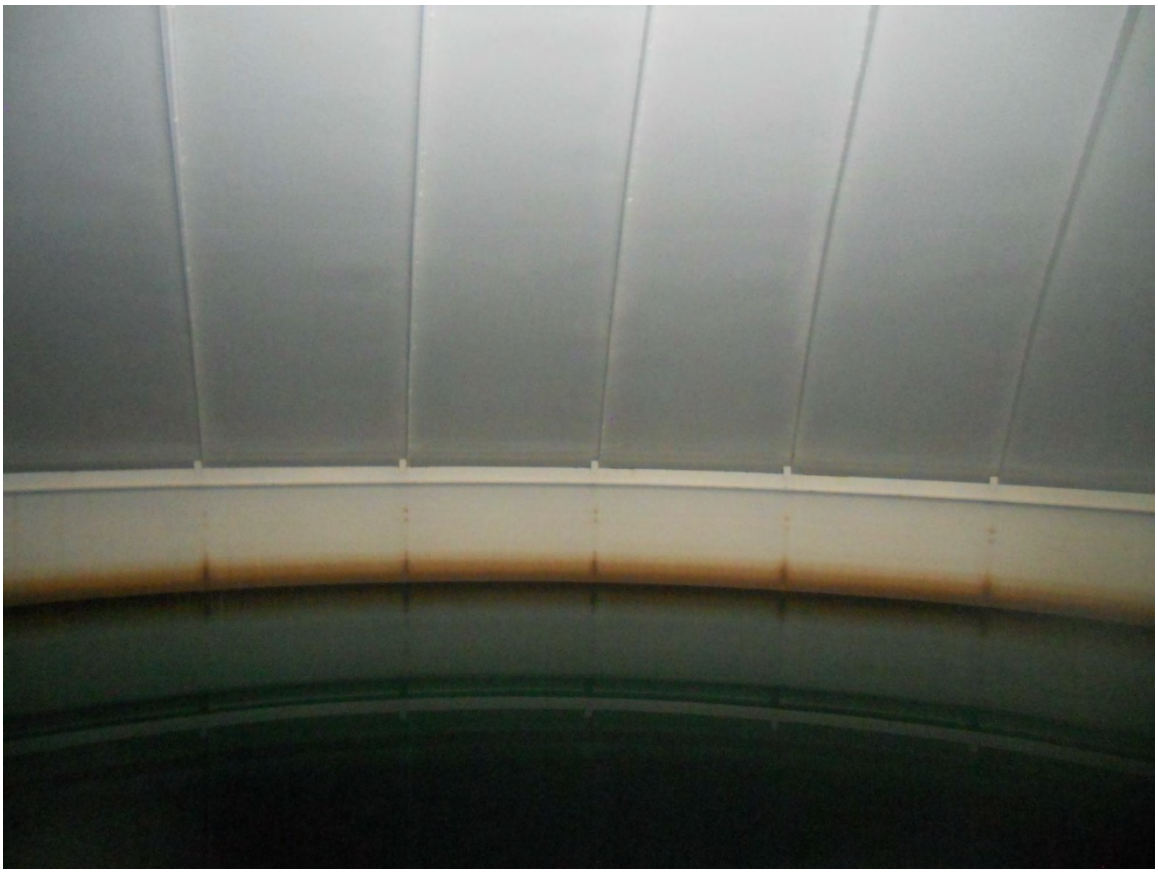


Interior roof support & vent opening

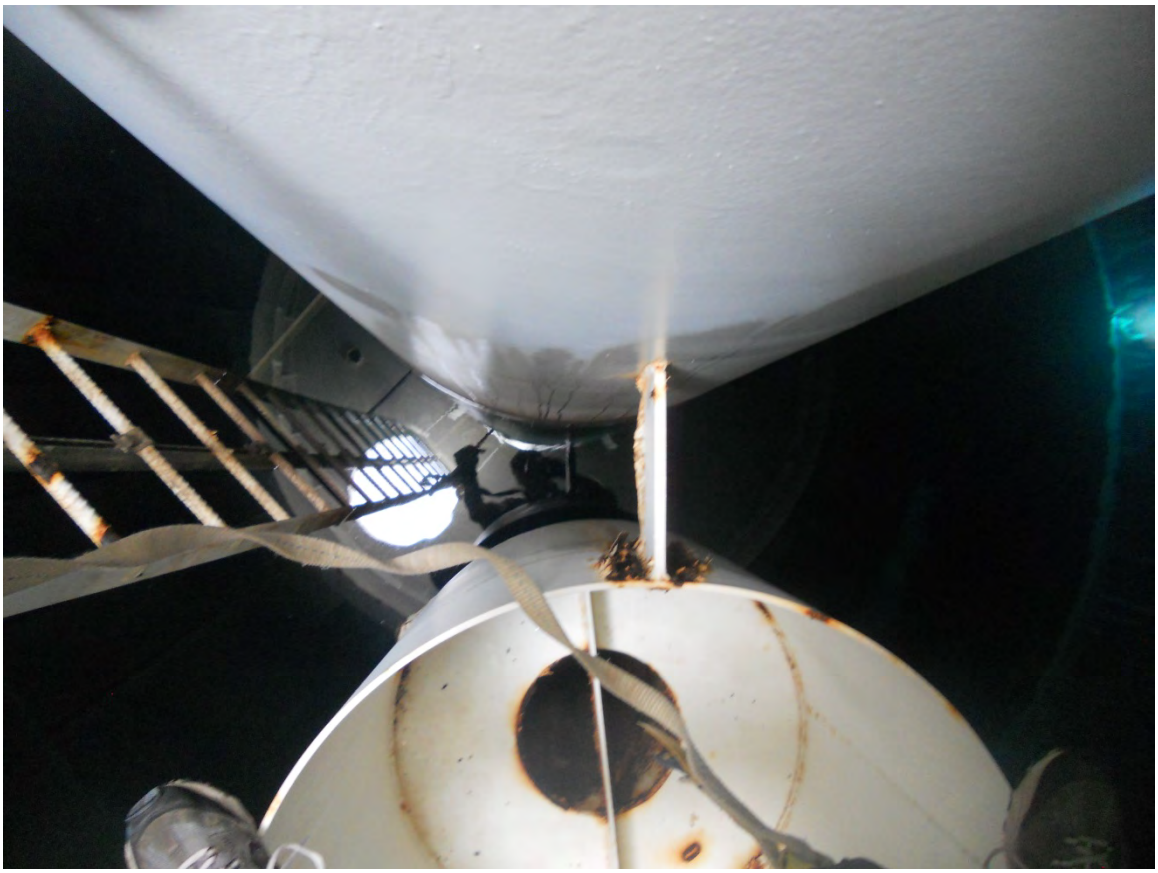
Roof support system



Interior water compartment



Interior water compartment



Overflow inlet pipe support rusting