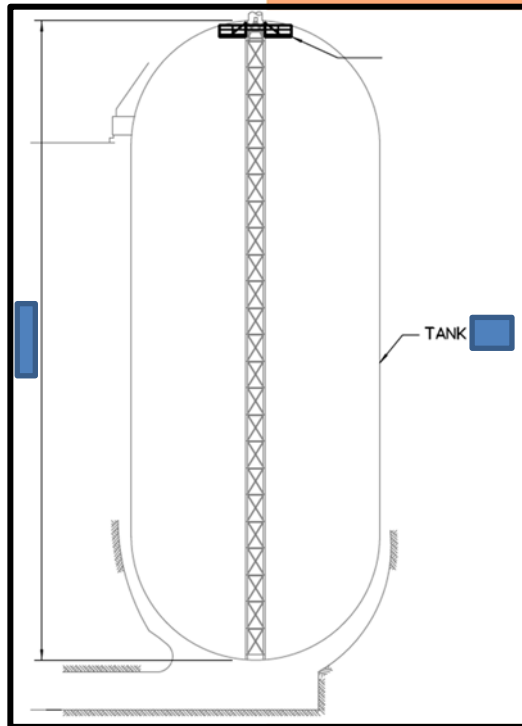


Preliminary Engineering Report  
For  
Red Hill Tank #1 – Center Tower and Catwalk  
Inspection



Red Hill  
Halawa Valley, Hawaii

Prepared for  
(b) (6)

Dated: March 23, 2022

(b) (4)

(b) (4)

(b) (4)

Reference #21-187

Consulting Civil Engineers, Structural Engineers & Land Surveyors  
US (SBA) SDB & DBE Certified

March 23, 2022

Mr. (b) (6)  
APTIM Federal Services LLC  
Red Hill Tanks  
Honolulu, Hawaii

Subject: Red Hill Tanks Project - Inspection of Tank # 1  
Preliminary Report for Center Tower and Catwalk

Dear Mr. (b) (6)

Based on our ongoing inspection of Tank 1 “Center Tower” and “Catwalk” and our finding on March 21 we would recommend the following action be implemented immediately

#### Center Tower

1. Suspend any usage of booms attached to the center tower.
2. Inspect and replace all tower bolts that are impacted by the “corrosion jacking phenomenon” as it may have compromised the integrity of the bolts. There are an estimated (b) (6) bolts that will need to be replaced.
3. Use of center basket and the ST-17 basket suspended on the outside of the tower is acceptable for inspections and repair of fasteners.
4. Use of lifelines connected to the center tower and the tank walls are acceptable for use as tie offs during this repair operation.
5. Normal usage of tower booms can be resumed once the tower fasteners have been replaced and inspected.

#### Catwalk

1. The use of catwalk should be limited to the staff necessary for carrying out center tower repairs.
2. Anyone using the catwalk should be tied off to the lifelines connected to the center tower and the tank walls at all times.
3. Once the center tower repairs are complete and the boom operations have been restored normal use, repairs to the bottom of the catwalk can be done using the boom baskets.
4. After the catwalk repairs are complete and are inspected, then the horizontal lifelines are only required to be used if necessary to have 100% tie-off when accessing the boom baskets or transitioning between the center tower and catwalk.

(b) (4)

**Red Hill Tanks**

**Tank 1 – Preliminary Center Tower and Catwalk Inspection Report**

March 23, 2022

Page 2 of 2

(b) (4)

Once the repairs to the center tower and catwalk are complete and inspected, (b) (4) will issue a final report for the center tower and catwalk by mid-April.

This report does not address portions of the buildings other than those areas mentioned, nor does it provide any warranty either expressed or implied for any portion of the existing buildings.

If there are any comments or questions on any items above, please do not hesitate in calling.

Sincerely,

STRUCTURAL CONSULTANT

(b) (4)

(b) (6)

(b) (6), SE  
President

(b) (6)

Attachments: Photographic Record

(b) (4)

(b) (4)

# Photographic Record

(b) (4) job #: 21-187

Project name: Red Hill Tanks – Tank #1  
Tower and Catwalk Preliminary Report

Site visit date: March 23, 2022

Photos by: (b) (6)

(b) (4)

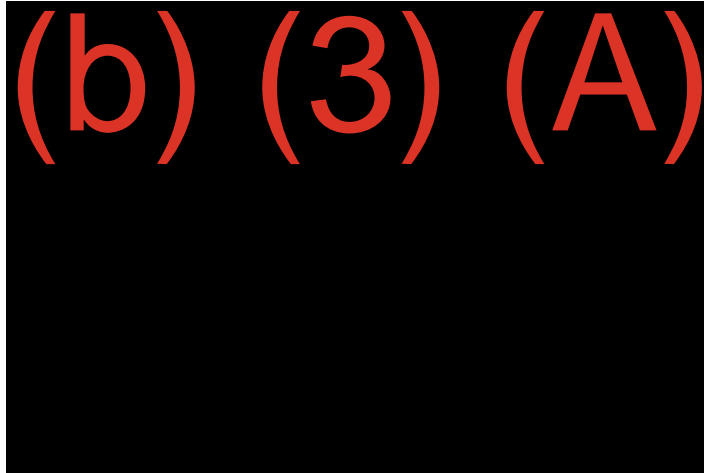


Photo 1: Jacking Corrosion of Center tower bolts

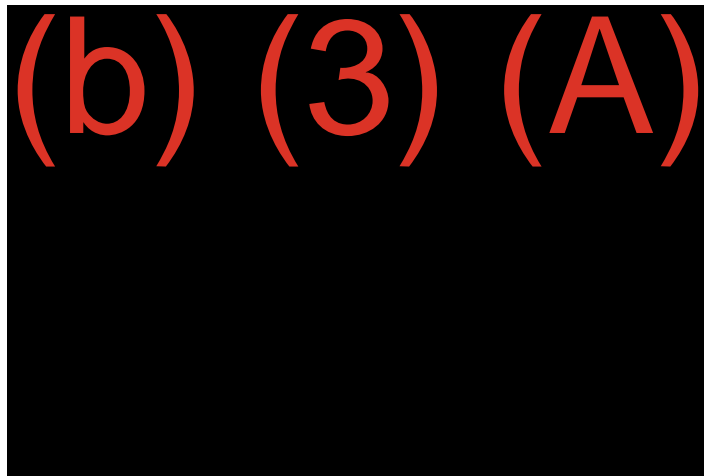


Photo 2: Jacking Corrosion of Center tower bolts

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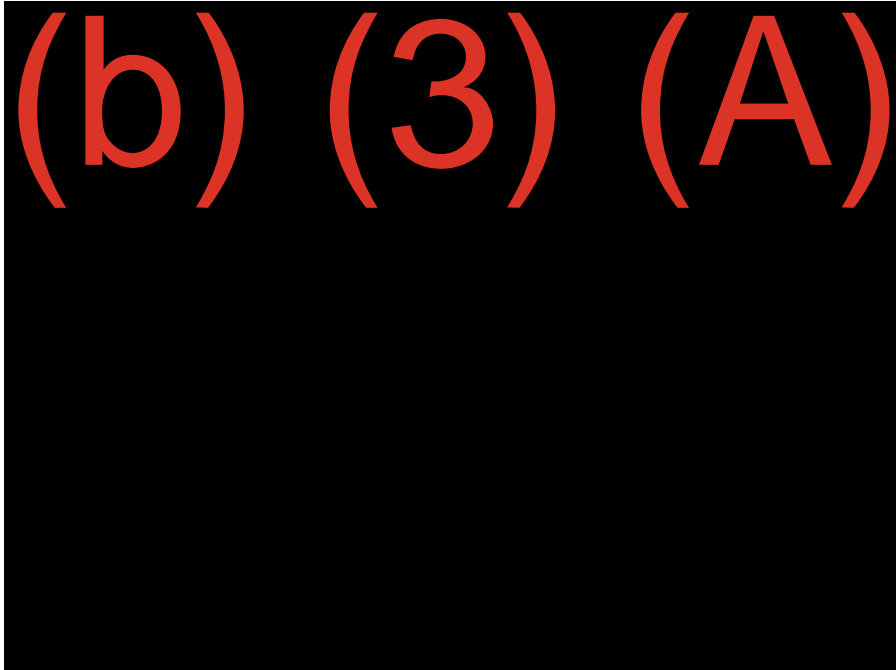


Photo 3: Sample of bolt impacted by corrosion

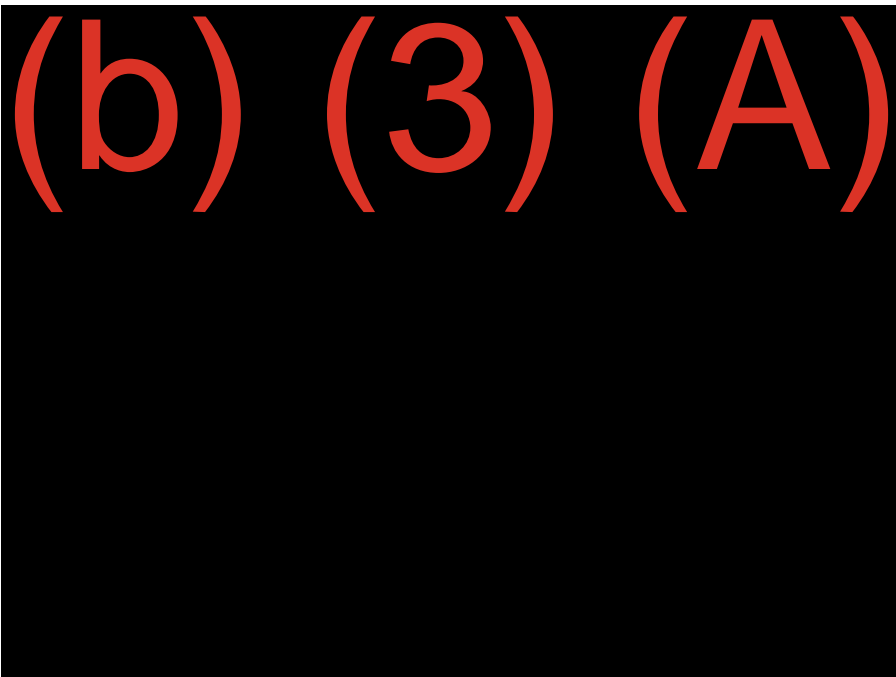


Photo 4: Bolt samples impacted by corrosion

(b) (4)

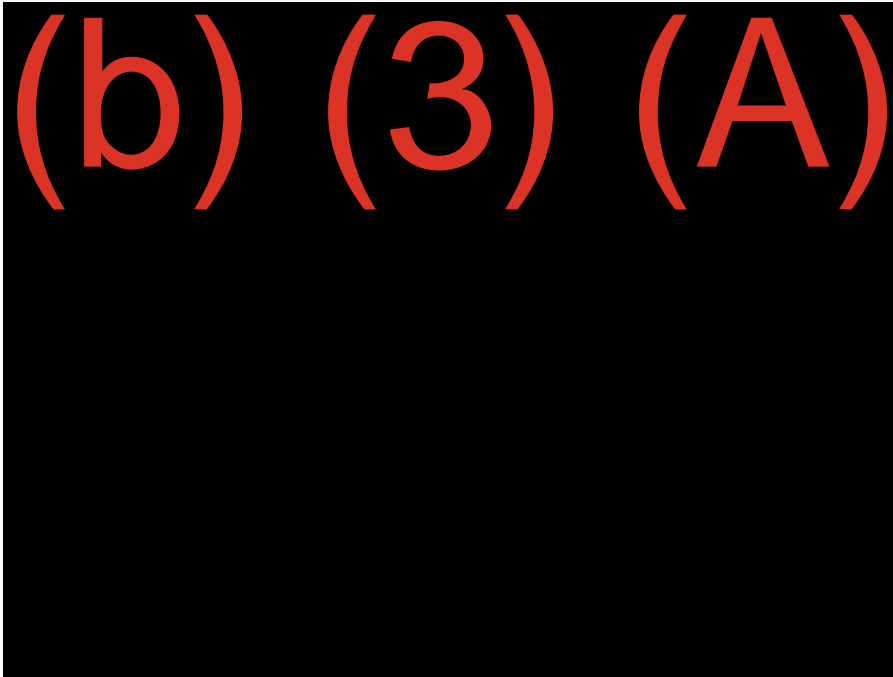


Photo 5: Catwalk missing bolts

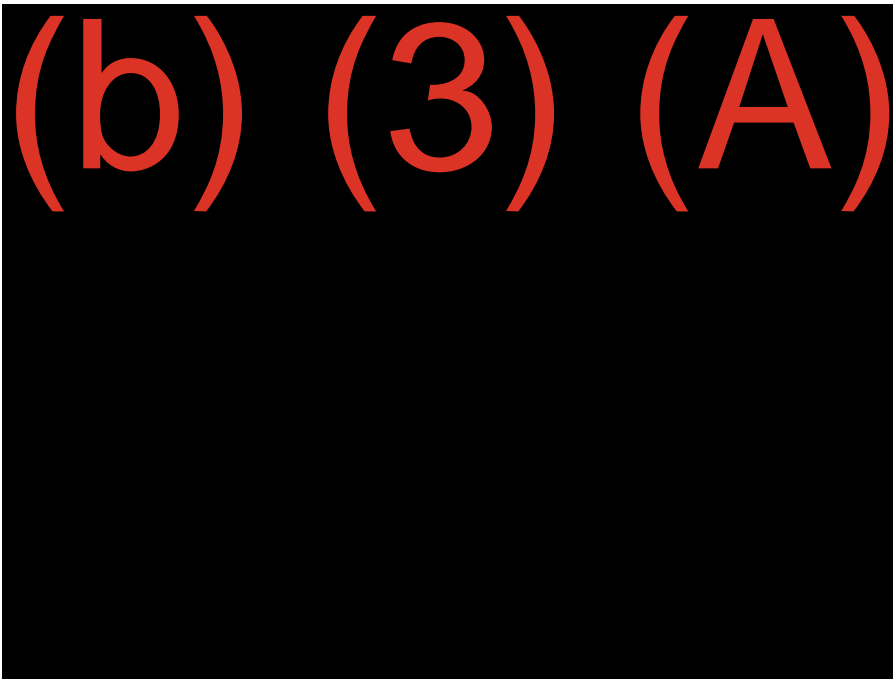


Photo 6: Catwalk support framing – Deformed lower flange of main girder

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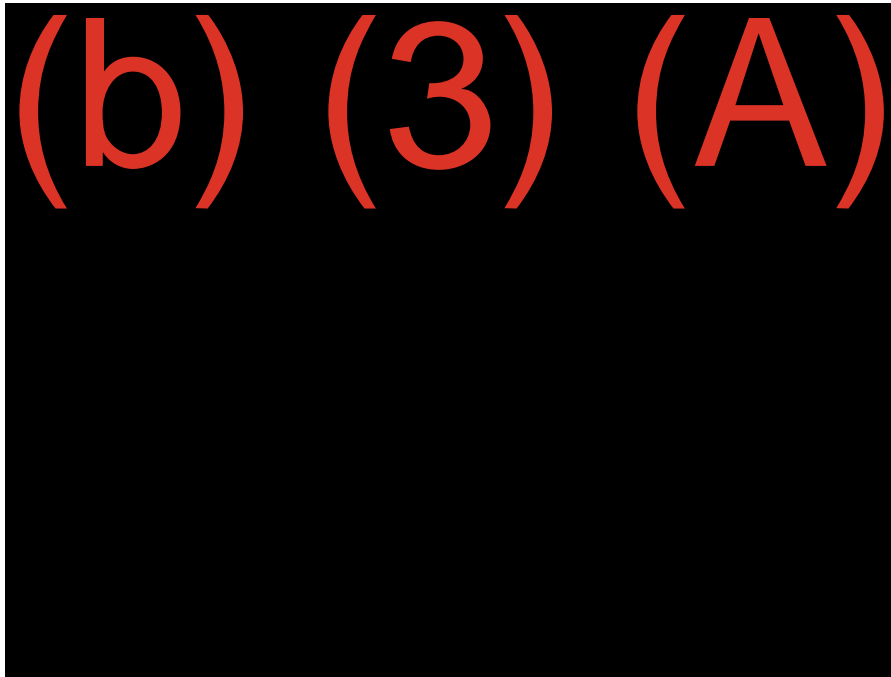


Photo 7: Catwalk Handrail connection

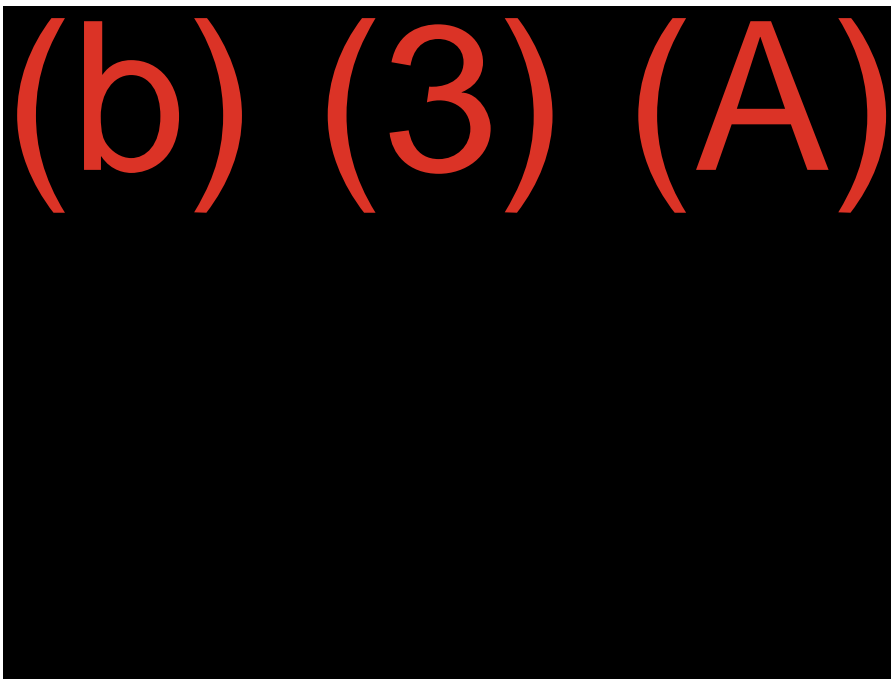


Photo 8: Close up of catwalk hand rail connection to be repaired

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