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Section 1.0

CERTIFICATION

1.0 Certification

1.1 **Certification:** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Thomas Kitchen, P.E.
API - 653 Certification #1891

Section 2

INTRODUCTION

2.0 Introduction

2.1 Mid Atlantic Environmental, Inc. conducted an inspection on Tank #6 at the Red Hill Underground Storage Facility, Pearl Harbor, Hawaii. This inspection was conducted in accordance with the scope of work identified by Contract Number N00604-97-R-0013, PRL 96-21, titled "Emergency Repair for Red Hill Tanks."

2.2 Inspection Support

2.2.1 Access to the inside surface of the tank was provided through the use of the booms and power climber basket shown on NAVFAC Drawing Number 7927650.

2.2.2 Personnel support was provided by Dames and Moore. This support included:

2.2.2.1 Hole watch,

2.2.2.2 Boom operator,

2.2.2.3 An assistant, either in the basket or on the tank bottom.

2.3 Inspection

2.3.1 Inspect the interior of the tank to identify and make repair recommendations for any of the following defects:

2.3.1.1 Deterioration and damage to the coating on the interior of the tank shell plates and welds.

2.3.1.2 Pits on the interior of the tank shell plates and welds.

2.3.1.3 Holes through the tank shell plates and welds.

2.3.1.4 Non-visible holes and cracks in the tank shell plates and welds that are identifiable by the nondestructive test or the visible seepage of fuel and/or water back into the tank.

2.3.1.5 Suspect areas, such as blisters in the tank shell plates.

3.0 References

3.1 **American Petroleum Institute**:

3.1.1 API Standard 650, Welded Steel Tanks for Oil Storage.

3.1.2 API Recommended Practice 651, Cathotic Protection of Aboveground Petroleum Storage Tanks.

3.1.3 API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms.

3.1.4 API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

3.2 **American Society of Mechanical Engineers Codes:**

3.2.1 ASME Boiler and Pressure Vessel Code; Section V, Non Destructive Examination.

3.2.2 ASME Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications.

3.3 **Code of Federal Regulations:**

3.3.1 29 CFR 1910, Permit-Required Confined Spaces for General Industry.

3.4 **National Association of Corrosion Engineers:**

3.4.1 NACE Recommended Practice, RP0184-91, Repair of Lining Systems.

3.4.2 NACE Recommended Practice, RP0193-93, External Cathotic Protection of On-Grade Metallic Storage Tank Bottoms.

3.4.3 NACE Recommended Practice, RP0288-94, Inspection of Linings on Steel and Concrete.

3.5 **National Fire Protection Association:**

3.5.1 NFPA-30, Flammable and Combustible Liquids Code.

Section 4

TANK DESCRIPTION

4.0 TANK DESCRIPTION

The tank is a vertical cylinder, 257 feet high and 100 feet in diameter with both upper and lower domes. Each dome is a 50 foot radius hemisphere. The tank is underground and encased in concrete. Tank shell, upper and lower domes are 1/4 inch carbon steel plate, except the 20 foot flat bottom which is 1/2 inch thick.

Owner/Operator:	Fleet and Industrial Supply Center	
Location:	Pearl Harbor, HI	
Tank Number:	6	
Service:	Fuel Storage	
Capacity:	300,000 Bbl	
Diameter:	100 feet	
Shell Height:	155 feet	
Configuration:	Vertical	
Fill Height:	235 feet above flat bottom	
Foundation:	Concrete	
Construction:	Bottom:	Butt Welded
	Lower Dome:	Butt Welded
	Shell:	Butt Welded
	Upper Dome:	Butt Welded
Age:	56 years	
Specific Gravity:	1.00	
Seismic Zone:	Zone 1	
Construction Code:	Unknown	

Section 5

REPAIR HISTORY

RED HILL TANK NO. 6
PRODUCT: JP-5

DATE	REMARKS
7/23/52	Cleaned. Welded leak in collector ring. Labor Cost: $2310.80. Material: $675.10
6/63	Opened and cleaned tank to check for leaks. Cut collector ring and all telltale pipes. Pressurized tank at 1-1/2 lbs. pressure maximum.
10/17/63	Installed smoke tracer system at telltales.
11/18/63	2-1/2 lbs. air pressure test made on telltale pipes #3, #4, and #10 at 42' level. Welded fittings of subject telltale pipes were checked for leaks--okay. Air pressure test secured after 1 hour and 15 minutes. Black oil or JP-5 seems to be coming back into the tank from either the 18" line or the 32" line, causing coating of oil on surface of water. Decision made to drain tank down. A check was made on 32" line which runs in the lower tunnel up to Tank No. 6 to see if the blank needs to be reversed.
11/19/63	Resumed draining--from 0745 to 1725.
11/20/63	Five lengths of hoses were connected to the water hydrant line to hose down the bottom of the tank to remove the black oil or JP-5. Resumed draining; secured.
11/21/63	Unplugged 6" drain on bottom of tank. There was 4" of water left at bottom. Tried clearing drain with 1-1/2" water hose. No results. J. Novit closed valve by sump pit, then opened the valve on Tank #10 so that the water would go down, then up to tank #6 drain to release the sludge that is plugged in the 6" drain. Drain was unplugged. 18" line was flushed out. Drain line was closed so that tank could be filled with water.
11/22/63	Gas detector tests made by Pearl Harbor NSYD Safety Officer on tank. Also checked telltales 3, 4 and 10 from top of catwalk. Checked out okay. Made checks of tank bottom (around water level) and telltale of lower tunnel of tank. Recommended blower to be utilized during welding operations.
11/26/63	Safety Inspector checked out 40 foot water level for inspection. Okayed area for drilling holes in telltales but not for hot work. One hole each drilled on telltales 3, 4, and 10. Area rechecked by Safety Inspector. Gas test on telltales okay. Welded 3/4" nipples on telltales 3, 4, and 10 at 40 foot level for testing purposes.

RED HILL TANK NO. 6
PRODUCT: JP-5

DATE	REMARKS
11/27/63	Connected water hose and welding leads to telltale #10 to weld 3/4" nipple to 3/4" telltale line at bottom of 40 foot level. Welding completed. 7-1/2 lbs. air pressure test made for one hour on telltale #10 to check all areas around 10 ft. level. Rechecked telltale #10 an hour later. When opened, water and air came shooting out for about 10 minutes. Valve was closed. Temporarily secured. When 7-1/2 lbs. air pressure was applied to telltale #10 from inside at bottom of 40 foot level, the pressure did not indicate any reading at the telltale pipe which extends to the catwalk. Conclusion: 3/4" telltale is plugged in between. (Cleared on 12/2/63.) Switched over from telltale #10 to telltale #4. Air pressure of 8-1/2 lbs. was put into telltale #4 for about one hour. Telltale #4 in lower tunnel is clear and the air pressure coming out is at 7 lbs. All other telltales--no air. Telltale #4 air pressure at bottom is 8-1/2 lbs.; top of catwalk is 1-1/2 lbs. Shut off air pressure. 8 lbs. air pressure turned on into telltale #3 for one hour from 40 foot level. Telltale #3 at top of catwalk shows 3 lbs.
12/2/63	Safety Inspector okayed telltales 3, 4, and 10 at bottom for hot work. Welded 3" nipple on telltale #3 at 43-1/2 foot level for testing purposes. 7-1/2 lbs. pressure on telltale #3 for 1/2 hour. Pressure okay after 10 minutes. Pressurized telltale #3 with 8 lbs. of air. There was 1-3/4 lbs. of pressure on telltale #3 showing from top of catwalk. With pressure on, telltale #3 checked around fittings and joints for leaks. Negative. 10 lbs. air put into telltale #4. From top of catwalk telltale #4 read 1-3/4 lbs. Checked telltale #4 at lower tunnel; line clear and okay. Fittings and joints around telltale #4 checked for leak--okay. 10 lbs. air pressure put in telltale #10 from bottom of 43-1/2 foot level. Air pressure at top of catwalk from telltale #10 is 6-1/4 lbs. Plugged at first, but 10 lbs. air pressure cleared it. Air pressure on telltale #10 at lower tunnel good, but 1/2 gallon of oil and water came out before it was cleared. Checked for leaks at 43-1/2 foot level. Negative.
12/3/63	Tank was filled from 43'-5" to 50'-7". Air pressure put into telltale #10 from top of catwalk to determine whether any water or oil left in back of walls or shell. Checked water level. All okay. Went down to bottom of 50'-7" level to drill 5/8" holes in telltales #3, 4 and 10. 3" nipple welded over holes for testing purposes.

RED HILL TANK NO. 6
PRODUCT: JP-5

DATE	REMARKS
12/4/63	Air pressure test on telltale #10 for 1 hour (50-7" level). Telltale #10 is clear. Reading at bottom of 50'-7" level is 10 lbs. and the reading at top of catwalk is 7 lbs. Telltale at lower tunnel is clear (no water). Checked around 50'-7" level for leaks on welds and joints, using liquid soap around all these areas. No leaks reported. 10 lbs. air pressure put into telltale #4. Will be held for 40 minutes. At bottom of telltale #4, 10 lbs. air is being used, 3 lbs. at catwalk, and bottom of lower tunnel telltale #4 is clear (no water). Air pressure was turned on telltale #3. Air pressure reading at bottom of 50'-7" level was 10 lbs; air pressure reading at catwalk for telltale #3 was 4 lbs. Telltale #3 at lower tunnel is clear; however, when valve was opened, water and oil came out and filled one-half quart. Three manifolds made of black pipe (12' long with 3 nipples on each one) will be threaded on the nipple that extends out from telltale #3, 4 and 10 so that tests may be made without welding any nipples. This manifold is good up to the 60' level.
1/7/64	Started calibrating sounding equipment.
2/24/64	Started checking tank for leak. Tank appears to be leaking at 85' level.
3/1/64	Cleaned tank.
4/13/64	Removed two manifolds at 60' level.
6/25/69	Manhole cover removed from tank. Vent closed.
1/20/70	Emptied and cleaned for conversion.
1/21-2/3/70	Cleaned tank. Washed down sludge from tank and also elevator (224 hours). Labor Cost: $732.48
2/2/72	Topped off with Navy Distillate. Converted to Navy Distillate. Emptied and cleaned for conversion. Telemeter system installed.
7/8/74	Started transferring to Tank 16. Tank emptied.
7/22/74	Tank washed down for conversion to JP-5 from Navy Distillate. Blank installed on 32" line inside tank.
7/23/74	Welded flange to mainline. 32" line blanked inside of tank. Drain line slightly plugged. Tank buttoned. Manhhole cover removed.

RED HIL TANK NO. 6
PRODUCT: JP-5

DATE	REMARKS
10/74	Tank converted from Navy Distillate to JP-5 storage.
4/78	Manhole cover removed.
4/11/78	Removed 6" valve on drain line.
4/12/78	Cleaned tank.
3/23/81	Tank removed from service and turned over to the contractor for initial repairs and lining.
1/15/82	Tank inspected and accepted. Started refilling tank for leak test.
3/16/83	NSC Pearl formally accepted tank in a letter to ROICC Pearl.
8/15/88	Tank emptied in order to perform required maintenance and repairs on the 6" Drain Line valve, and the Skin and Motor operated valves on the 16" and 32" pipeline.

Section 6

TESTING CONDUCTED

6.0 Testing Conducted

6.1 General: The internal inspection was conducted to gather the data necessary for the assessment of the interior of the tank. This data takes into account previous inspection information. An evaluation was conducted on the tank by means of visual inspection, NDE, including Ultrasonic, Dye Penetrant, and Vacuum Box testing. These results have been evaluated and are contained in the body of this report. A complete description of unusual conditions, as well as corrective action procedures is also included in the body of this report. All repair data is included in the body of this report.

6.2 Visual: To verify that the angle of vision and level of lighting were adequate for the visual inspection, a 1/32 inch wide black line on an 18% neutral grey background was used as a test guide.

Section 7
TESTING RESULTS

7.0 TESTING RESULTS

7.1 Results of Internal Visual Inspection:

7.1.1 A total of five (5) defects were identified on the interior of the tank. These repairs are identified and described in section 9 of this report.

7.1.2 Blisters in the coating of the lower dome was widespread. Because these defects would require work outside the scope of work for this contract, they were ignored for the time being. Pictures of these blisters are included with this report.

7.6 Engineering Data (cont'd)

Section 8

REPAIR SPECIFICATIONS

8.0 REPAIR SPECIFICATIONS

8.1 Typical Repair Procedures:

REPAIR TYPE #	TYPE OF DAMAGE	REPAIR PROCEDURE (SEE NOTE 4)	APPROX. SIZE
1	RUSTED AREA, PITTING	REMOVE RUST AND ADJACENT COATING. MEASURE & RECORD DEPTH OF PITS. CLEAN TO BARE METAL, RECOAT.	0.25 SQ. M.
2	DEEP GOUGE IN LINER PLATE	MEASURE & RECORD DEPTH OF GOUGE. CHECK WITH UT FLAW DETECTOR FOR CRACKS. RESURFACE WITH WELD, GRIND SMOOTH, RECOAT.	0.1 SQ. M.
3	LEAK - POROUS/DEFECTIVE WELD	CLEAN SURFACE, VACUUM TEST FOR LEAK, WELD PATCH PLATE OVE R LEAK, CLEAN TO BARE METAL, RETEST WITH VACUUM BOX, RECOAT	0.1 SQ. M.
4	LEAK - DOUBLER PLATE	CLEAN SURFACE, VACUUM TEST FOR LEAK REMOVE DOUBLER PLATE, CLEAN SURFACE AND GRIND, WELD PATCH PLATE OVER LEAK, CLEAN TO BARE METAL, RETEST WITH VACUUM BOX, RECOAT.	0.25 SQ. M.
5	LEAK - BLISTER/RUST THROUGH FROM BACK SIDE	REMOVE RUST AND ADJACENT COATING, MEASURE & RECORD THICKNESS. WELD PATCH PLATE OVER LEAK. CLEAN TO BARE METAL. RETEST WITH VACUUM BOX, RECOAT	0.2 SQ. M.
6	LEAK - HOLE	CLEAN SURFACE, VACUUM TEST FOR LEAK. WELD PATCH PLATE OVER LEAK. CLEAN TO BARE METAL, INCLUDING WELD. RETEST WITH VACUUM BOX, RECOAT	0.1 SQ. M.
7	BLISTER/DENT	REMOVE COATING TO BARE METAL. MEASURE & RECORD THICKNESS, RECOAT.	0.1 SQ. M.
8	COATING FAILURE	REMOVE COATING TO BARE METAL, RECOAT.	1.0 SQ. M.
9	BUTT WELD FAILURE BETWEEN LINER PLATES	DRILL HOLES IN LINER PLATE AT BOTH SIDES OF THE DAMAGE. PURGE WITH NITROGEN DURING HOTWORK. REMOVE WELD, REWELD, INSTALL THREADED PLUGS IN HOLES AND SEALWELD. CLEAN TO BARE METAL, INCLUDING WELD. RETEST WITH VACUUM BOX, RECOAT.	300mm
10	FILLET-WELD FAILURE BETWEEN BACKER STRIPS IN UPPER DOME AND LINER PLATES	REMOVE DEFECTIVE WELD AND REWELD. CLEAN TO BARE META, INCLUDING WELD. RETEST WITH VACUUM BOX, RECOAT.	300 mm
11	FILLET-WELD FAILURE BETWEEN 3.5 MM STEEL COVER PLATE AND LINER PLATES IN UPPER DOME	DRILL HOLES IN STEEL COVERS AND PURGE WITH NITROGEN DURING HOT WORK. REMOVE DEFECTIVE WELD AND REWELD. INSTALL THREADED PLUGS IN HOLES AND SEALWELD. CLEAN TO BARE METAL, INCLUDING WELD, RETEST WITH VACUUM BOX, RECOAT	300 mm

GENERAL NOTES:

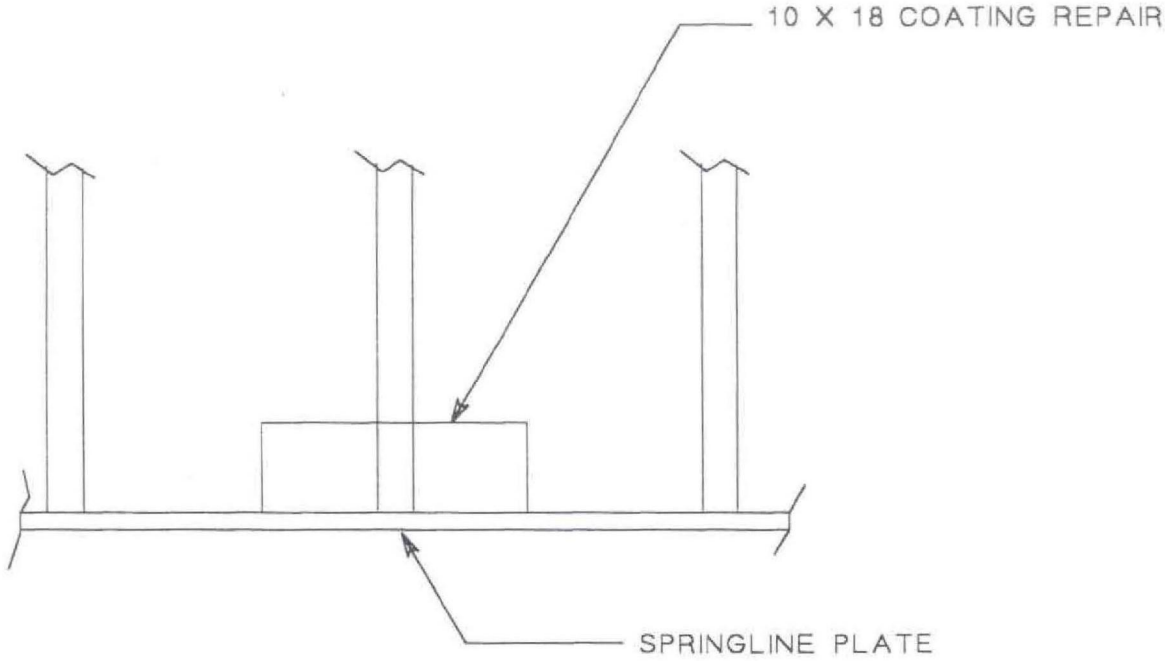
1. PATCH PLATES FOR UPPER DOME, DOME EXTENSION, BARREL OF TANK AND LOWER DOME TO BE 6mm THICK. PATCH PLATES FOR BOTTOM PLATE TO BE 11mm THICK.
2. ALL WELDS TO BE CONTINUOUS.
3. SANDBLAST PATCH PLATES BEFORE WELDING IN PLACE AND BREAK EXPOSED EDGE BY GRINDING CHAMFER OF 1.5 mm MINIMUM.
4. THE REPAIR PROCEDURE IS THE SAME, REGARDLESS OF THE LOCATION OF THE DAMAGE IN THE UPPER DOME, TANK BARREL, OR LOWER DOME.

Section 9

RECOMMENDED REPAIRS

TANK #6									
Repair #		Actual	Coated Area	Plate size	Weld lgth				
		repair	Square inches			Location	Quadrant	Course	Plate
1		8	180			Upper Dome	D	A	20
2		8	36			Lower Dome	D	2	19
3		8	180			Upper Dome	D	EXT	21&22
4		8	36			Upper Dome	D	EXT	16
5		8	80			Cylinder	C	25 & 26	13

DEFECT INSPECTED BY TK & JF 7/1/98



TYPE 8 REPAIR

MID ATLANTIC ENVIRONMENTAL	
EMERGENCY REPAIRS FOR RED HILL TANKS	
Tank #6 RECOMMENDED REPAIR DRAWING	
Repair No.: 001	File8r001
UPPER DOME	Quadrant: D
Course: A	PLATE: 20
Drawn by: Tom Kitchen	Date: 71/98

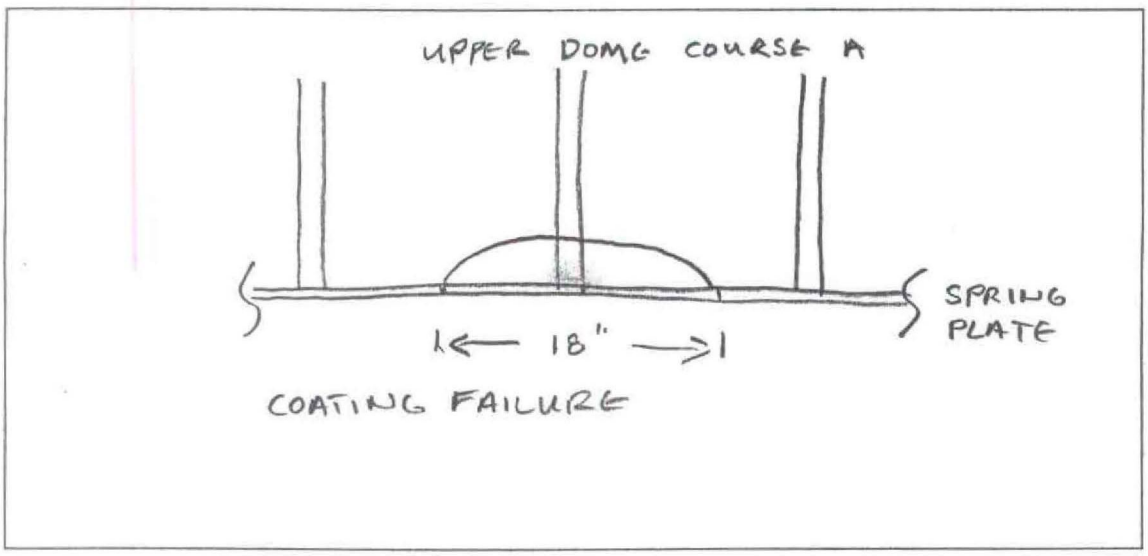
RDHLCC0000621

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 001 Type: 8 Location: D 20 A



Sketch of Repair Area

Weld Repair

WPS No.: N/A

Welder ID: _____

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: EPOXY

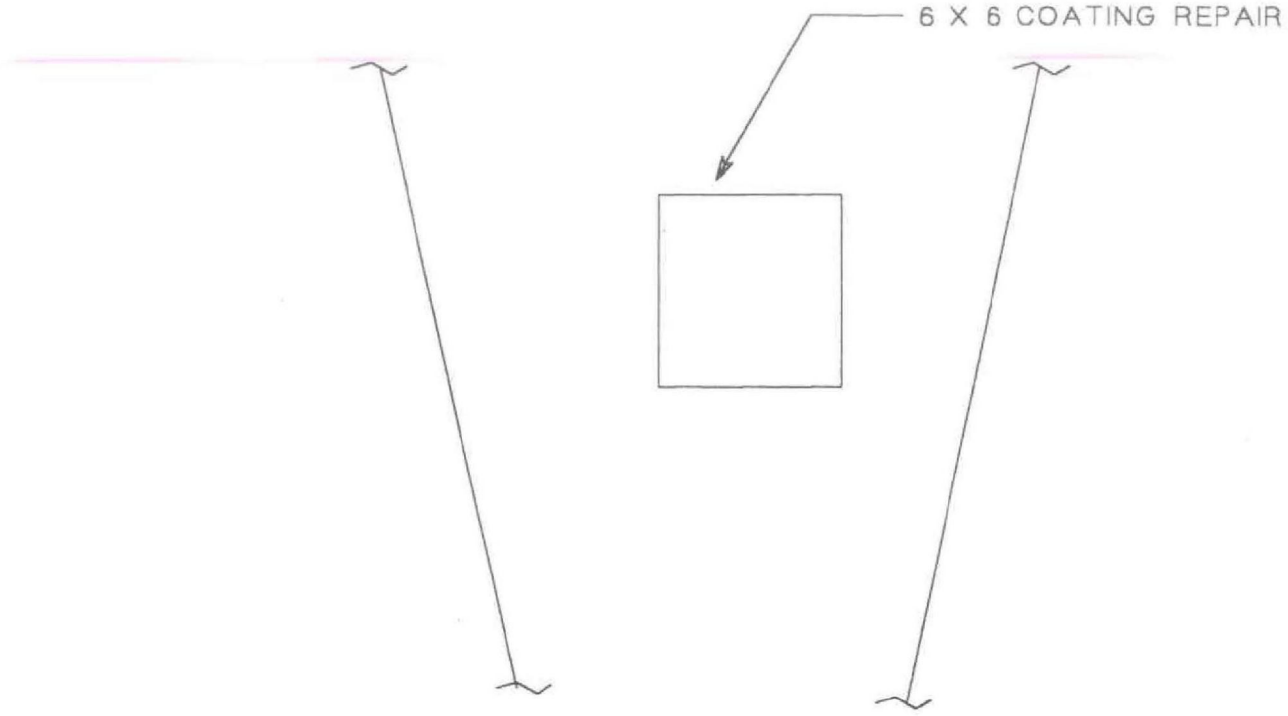
Surface Preparation: ✓ Primer Coat: ✓ Intermediate Coat: ✓ Final Coat: ✓

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

DEFECT INSPECTED BY TK & JF 6/28/98



TYPE 8 REPAIR

MID ATLANTIC ENVIRONMENTAL	
EMERGENCY REPAIRS FOR RED HILL TANKS	
Tank #6 RECOMMENDED REPAIR DRAWING	
Repair No.: 002	File:6r002
LOWER DOME	Quadrant: D
Course: 2	PLATE: 19
Drawn by: Tom Kitchen	Date: 7/1/98

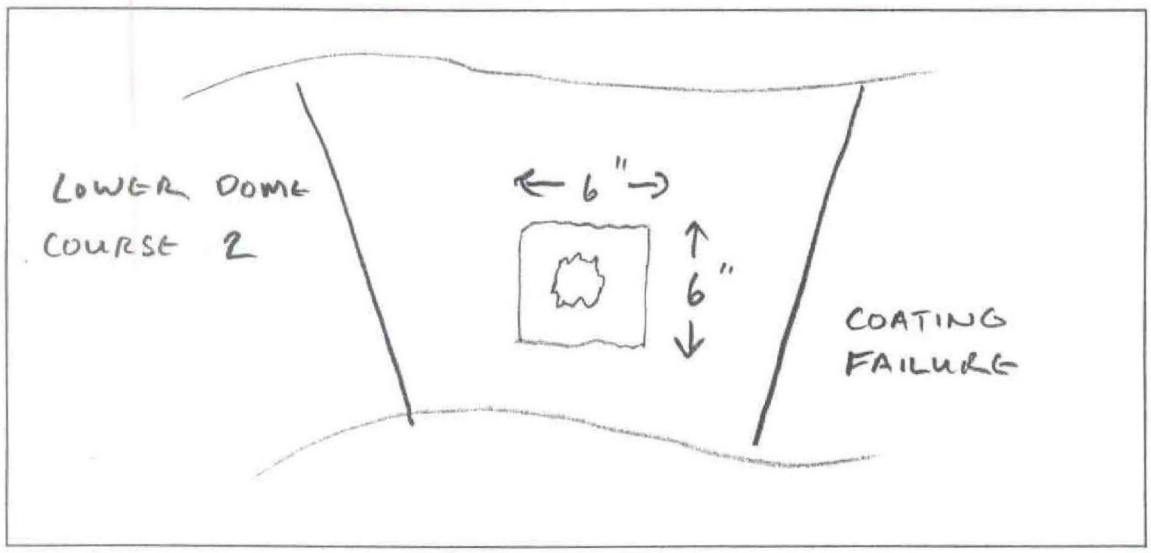
RDHLCC0000623

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 002 Type: 8 Location: D-19-2



Sketch of Repair Area

Weld Repair

WPS No.: N/A

Welder ID: _____

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: EPOXY

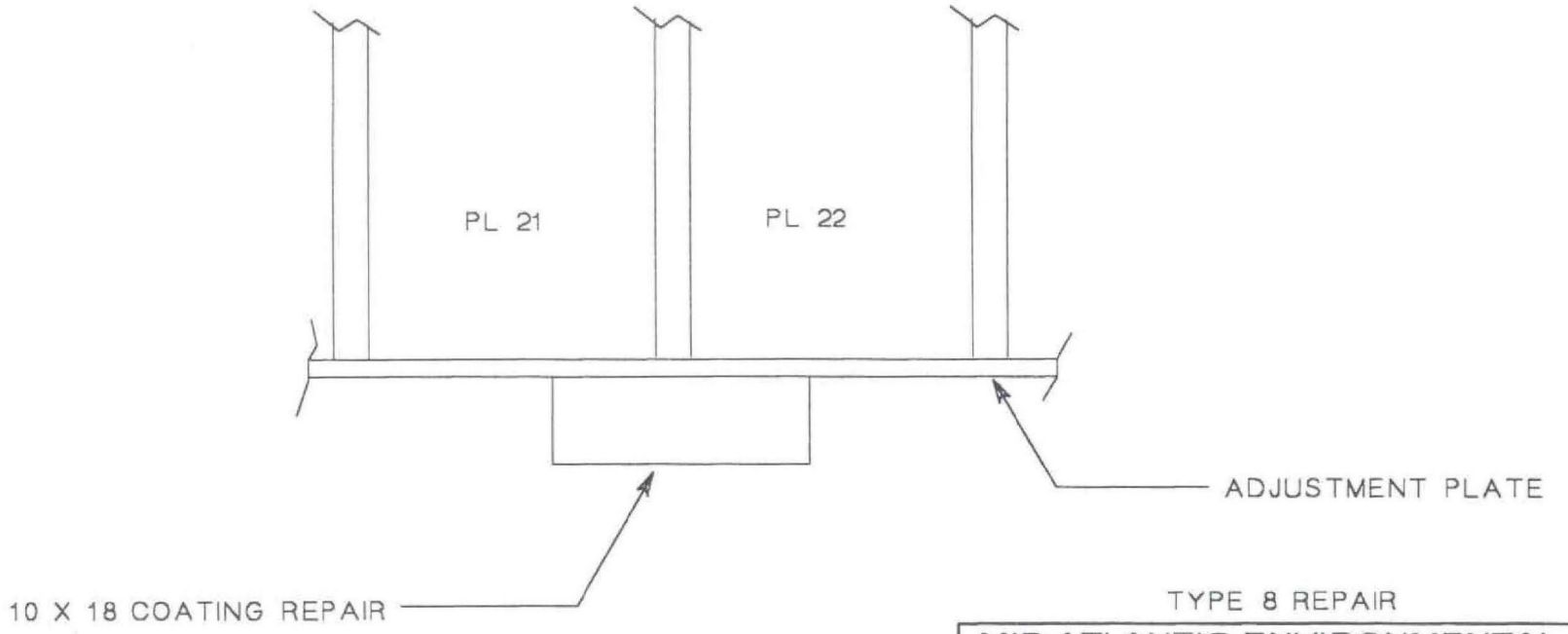
Surface Preparation: ✓ Primer Coat: ✓ Intermediate Coat: ✓ Final Coat: ✓

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

DEFECT INSPECTED BY TK & JF 7/1/98



TYPE 8 REPAIR

MID ATLANTIC ENVIRONMENTAL	
EMERGENCY REPAIRS FOR RED HILL TANKS	
Tank #6 RECOMMENDED REPAIR DRAWING	
Repair No.: 003	File#r003
UPPER DOME	Quadrant: D
Course: EXTENSION	PLATE: 21 & 22
Drawn by: Tom Kitchen	Date: 7/1/98

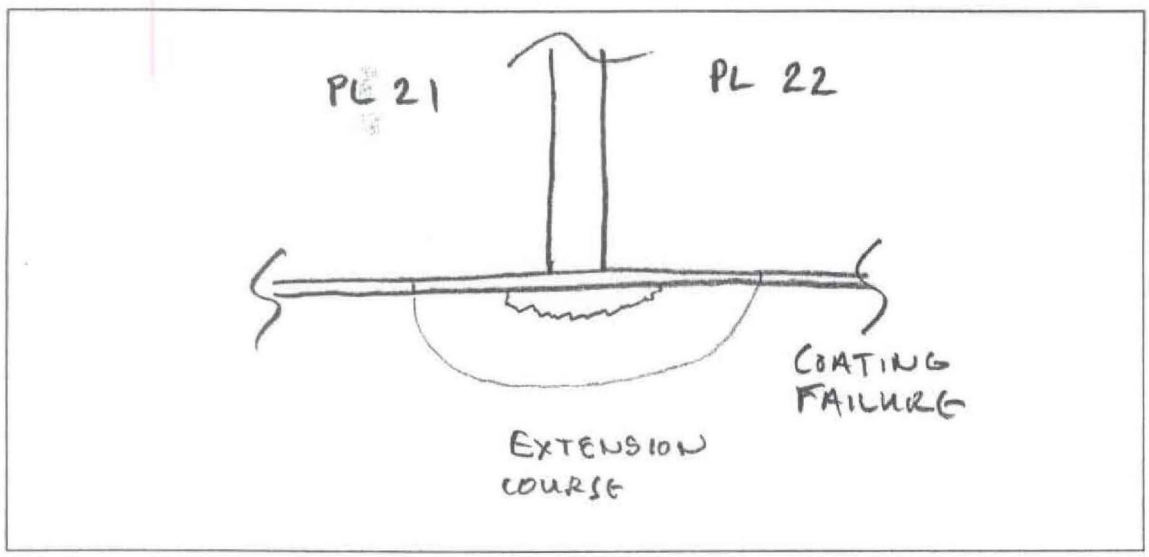
RDHLCC0000625

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 003 Type: 8 Location: D 21/22 EXT.



Sketch of Repair Area

Weld Repair

WPS No.: N/A

Welder ID: _____

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: EPOXY

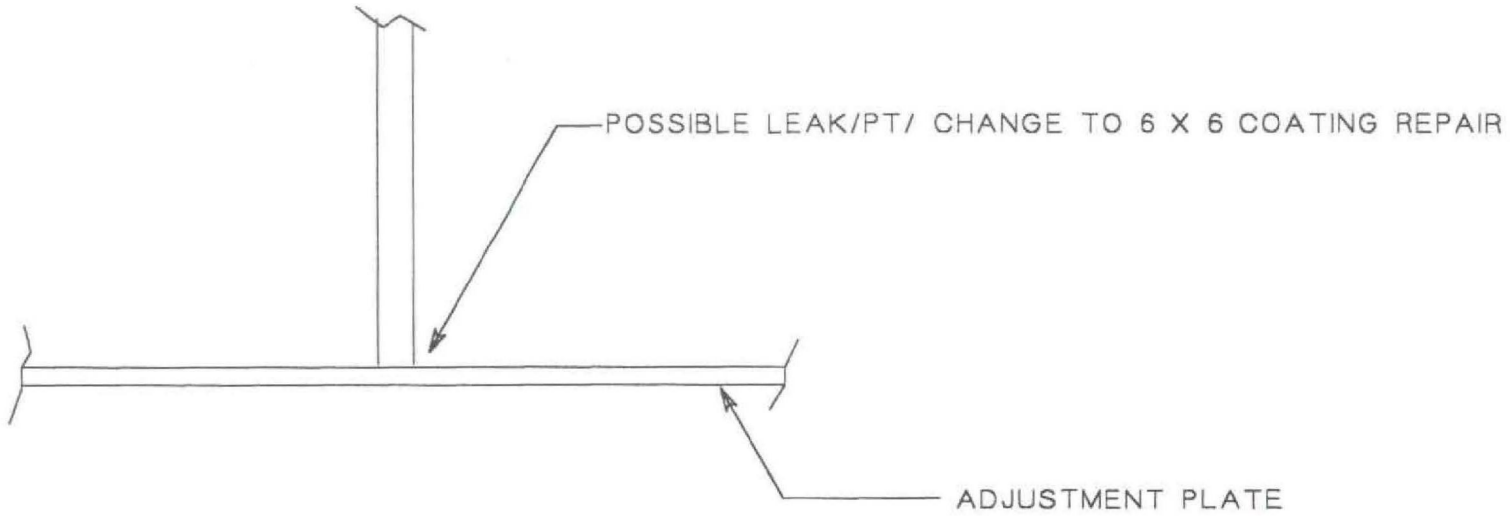
Surface Preparation: _____ Primer Coat: _____ Intermediate Coat: _____ Final Coat: _____

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

DEFECT INSPECTED BY TK & JF 7/1/98



TYPE 8 REPAIR

MID ATLANTIC ENVIRONMENTAL	
EMERGENCY REPAIRS FOR RED HILL TANKS	
Tank #6 RECOMMENDED REPAIR DRAWING	
Repair No.: 004	File: 6R004
UPPER DOME	Quadrant: D
Course: EXTENSION	PLATE: 16
Drawn by: Tom Kitchen	Date: 7/1/98

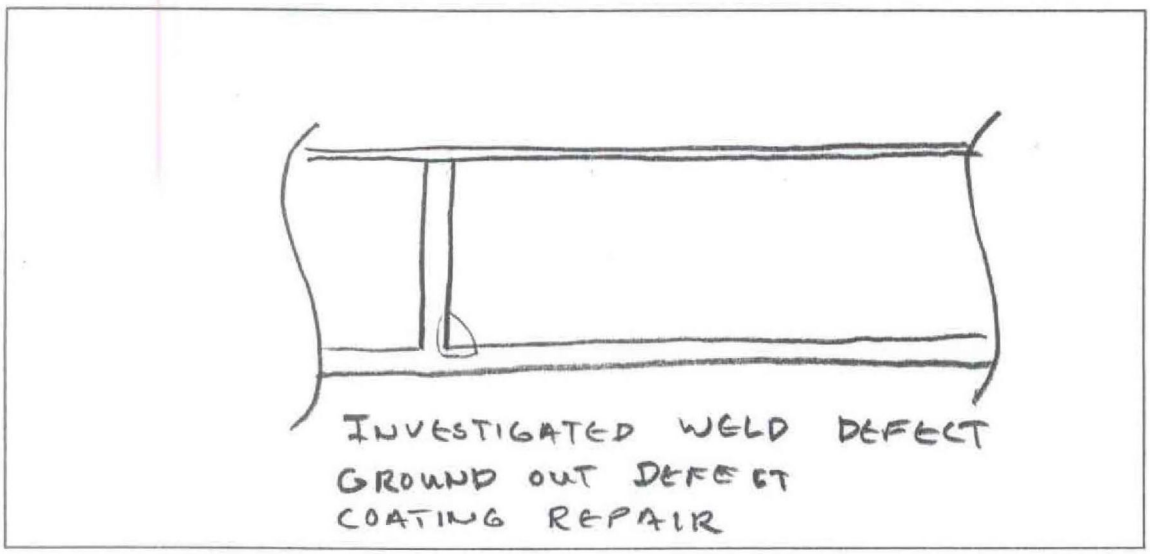
RDHLCC0000627

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 004 Type: 8 Location: D 16 EXT



Sketch of Repair Area

Weld Repair

WPS No.: N/A

Welder ID: _____

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: EPOXY

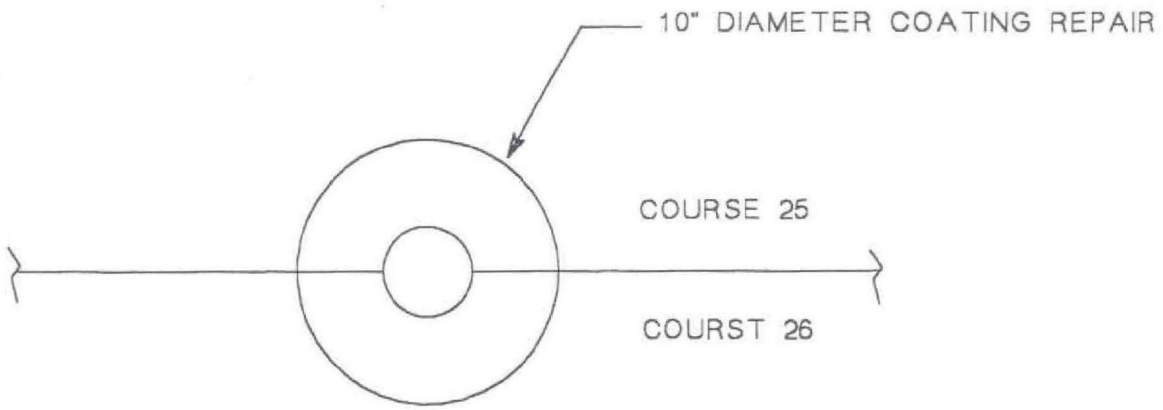
Surface Preparation: _____ Primer Coat: _____ Intermediate Coat: _____ Final Coat: _____

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

DEFECT INSPECTED BY TK & JF 7/1/98



TYPE 8 REPAIR

MID ATLANTIC ENVIRONMENTAL	
EMERGENCY REPAIRS FOR RED HILL TANKS	
Tank #6 RECOMMENDED REPAIR DRAWING	
Repair No.: 005	File: 6R005
CYLINDER	Quadrant: C
Course: 25 & 26	PLATE: 13
Drawn by: Tom Kitchen	Date: 7/1/98

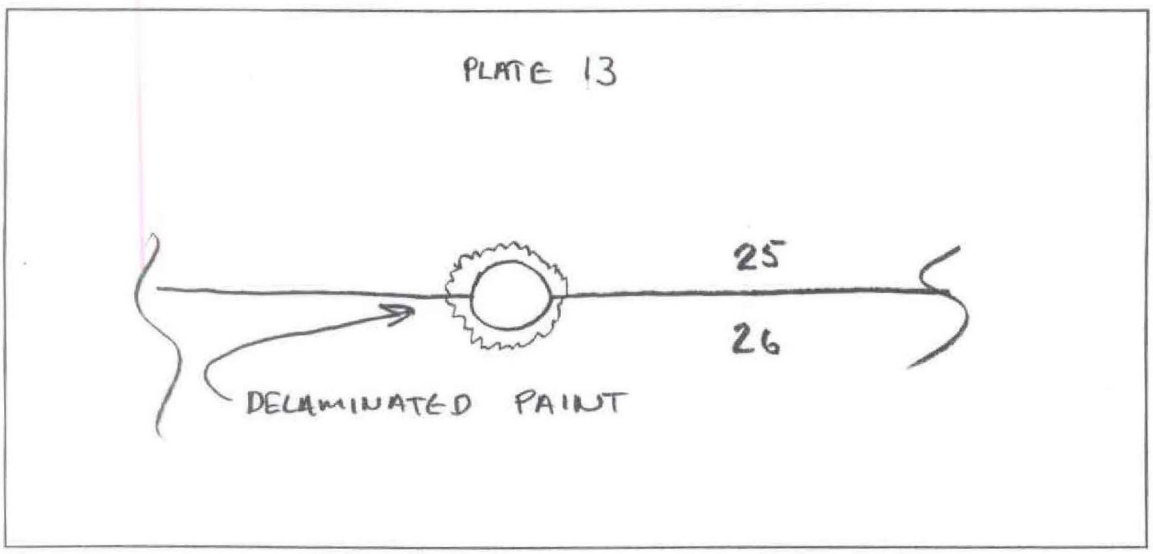
RDHLCC0000629

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 005 Type: 8 Location: C 13 25/26



Sketch of Repair Area

Weld Repair N/A

WPS No.: _____

Welder ID: _____

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: EPOXY

Surface Preparation: _____ Primer Coat: _____ Intermediate Coat: _____ Final Coat: _____

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

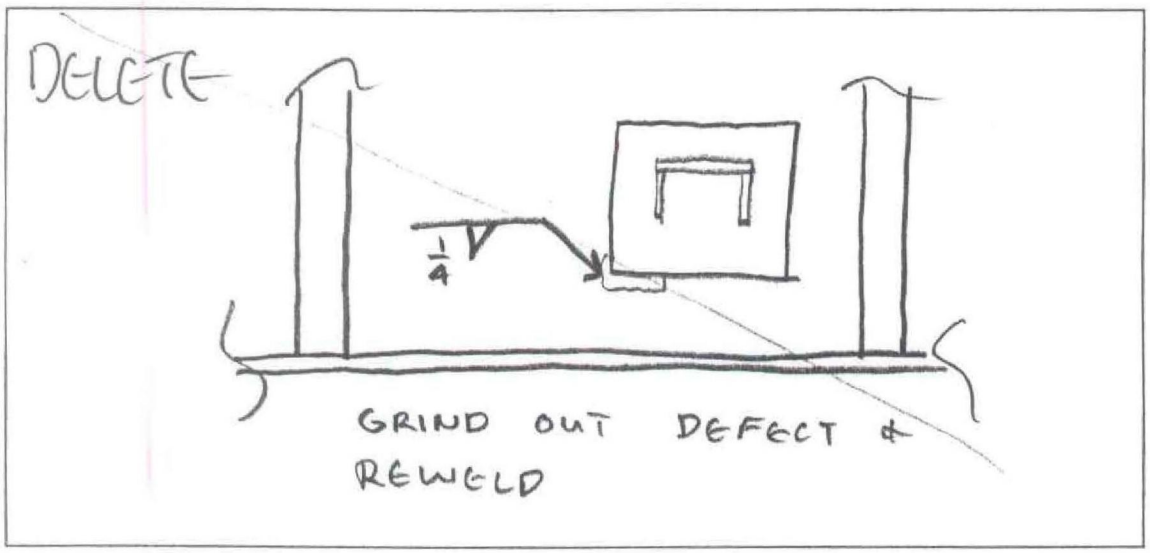
Repair Acceptable: _____ Date Accepted: _____

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 005 Type: 1 Location: D 18 A



Sketch of Repair Area

Weld Repair

WPS No.: SM 1.1-1

Welder ID: JOHN WALSH

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: _____

Surface Preparation: _____ Primer Coat: _____ Intermediate Coat: _____ Final Coat: _____

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

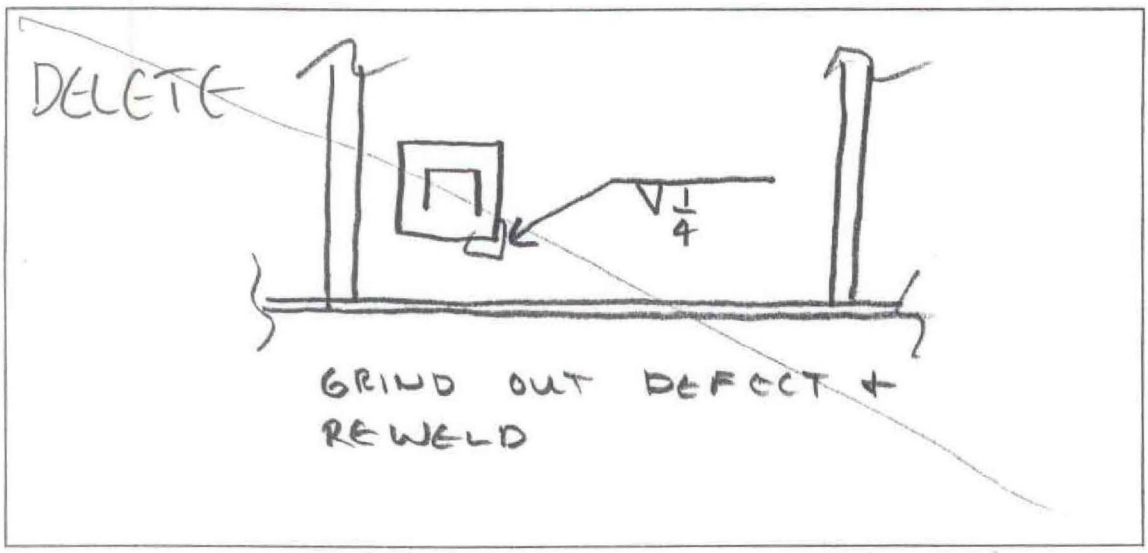
Repair Acceptable: _____ Date Accepted: _____

Dames & Moore

Emergency Repairs For Red Hill Tanks at the Fleet Industrial & Supply Center
Contract No. N62742-96-C-1356

Repair Record

Tank No.: 6 Repair No.: 006 Type: 1 Location: D 18 A



Sketch of Repair Area

Weld Repair

WPS No.: SM1.1-1

Welder ID: JOHN WALSH

NDT Performed: Visual _____ Vacuum Box _____ Dye Penetrant _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Coating Repair

Coating Type: _____

Surface Preparation: _____ Primer Coat: _____ Intermediate Coat: _____ Final Coat: _____

NDT Performed: Visual: _____ DFT: _____ Average DFT: _____

Rework Required: _____

Repair Acceptable: _____ Date Accepted: _____

Section 10

AS-BUILT DRAWINGS

Section 11

Pictures

PICTURES OF BLISTERS IN COATING OF LOWER DOME

Section 12

CONTRACT DRAWINGS