

TO: James L. App, City Manager

FROM: Doug Monn, Public Works Director

SUBJECT: Repairs – Golden Hill Road Water Tank & Merry Hill Water Tank

DATE: May 17, 2011

NEEDS: For City Council to consider appropriating funds for design, specifications and bid documents associated with needed structural repair of the Golden Hill Road Tank No. 1 and Merry Hill Tank.

FACTS: 1. City staff inspected Golden Hill Road Tank No. 1 and Merry Hill Tank and determined that both structural repair of supportive members. Photos are attached.

Golden Hill Road Tank No. 1

- The roof vent has serious corrosion and metal loss.
- There is severe metal loss on the rafters, flanges, shear area of the roof support column and attachment bolts.
- Due to the metal loss, the roof structure is compromised and its seismic resiliency is poor.

Merry Hill Tank

- The roof plate has a significant amount of corrosion.
 - Piping connections have aged and do not have the flexibility for seismic movement.
 - The interior and exterior coatings are old and deteriorating in areas that are structurally critical.
 - There are no plans to replace this tank. The proposed work is to extend its useful life. This work is budgeted in the approved CIP for FY 2010 – 2011.
2. In conjunction with addressing the corrosion issues found at the two tanks, staff requires the assistance from a qualified engineer to determine the extent of the corroded surface and its effect on the strength of structural members in order to determine which member can be repaired and which may require replacement.
3. Once the scope of work is defined, bid specifications would be prepared and the scope of work advertised for bid in accordance with the Public Works Contract Code.

**ANALYSIS &
CONCLUSION:**

Section 6106 of the Public Contract Code outlines the requirements for evaluating proposals and negotiating final scope and fee with an engineering firm. The code states that engaging the services of a professional consultant must be based on qualification(s) of the individuals making the proposal(s). Once a firm is selected, the City may then negotiate the final scope and fee and enter a contract with the most qualified firm.

Due to the nature of the work required to perform maintenance to the tanks, Staff issued a Request for Qualifications (RFQ) to several firms. No fees were requested for the RFQ. Five firms responded:

AECOM	Penfield and Smith
Cannon	Robert W. Miles
Harper & Associates	

AECOM has previously provided design for repair of the tanks subsequent to the San Simeon Earthquake and as a result demonstrated the most knowledge in being able to evaluate and provide alternatives for rehabilitation of the structural roof members and associated coating. They also provided the best experience in preparing bid documents specifically in accordance to Public Works Contract Code. Staff therefore negotiated a final scope and fee with AECOM.

POLICY

REFERENCE: Water Maintenance Manual

FISCAL

IMPACT: Staff negotiated a scope of work and fee with AECOM. Their fee to perform the work is \$53,362. It is proposed that a budget of \$58,700 be adopted for this project as follows:

AECOM fee	\$ 53,362
10% contingency	<u>5,336</u>
Total	\$ 58,698

The proposed \$58,700 budget is broken-out for each tank as follows:

Merry Hill Tank	\$ 11,700
Golden Hill Tank	<u>\$ 47,000</u>
Total	\$ 58,700

The adopted CIP budget has allocated \$100,000 towards the repairs of Merry Hill Tank. There is no budget allocated for Golden Hill Tank. The City Council will need to allocate \$47,000 for Golden Hill Tank.

The Merry Hill Tank repair budget allocation was approved in the CIP Budget for FY 2010-11 for \$100,000. It is proposed that the budget for the Golden Hill Tank repair be allocated from Fund 600 of the Water Operations Budget.

- OPTIONS:**
- a. Adopt Resolution No. 11-xx allocating \$47,000 from Fund 600 to Budget No. 600.910.5452.697 for the Golden Hill Tank repair and awarding a contract to AECOM in the amount of \$53,362 to prepare bid documents for the Merry Hill and Golden Hill Road tank repairs.
 - b. Amend, modify, or reject the above option.

Prepared by: Ditas Esperanza, P.E., Capital Projects Engineer

Attachments: 1) Resolution
2) Photos of water tanks

RESOLUTION NO. 11-XXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES
ALLOCATING FUNDS AND AUTHORIZING A CONTRACT TO PREPARE BID
DOCUMENTS FOR REPAIR OF GOLDEN HILL ROAD AND MERRY HILL WATER TANKS

WHEREAS, City staff inspected Golden Hill Road Water Tank No. 1 and determined that repairs are needed to correct the following problems: the roof vent has serious corrosion and metal loss; there is severe metal loss on the rafters, flanges, shear area of the roof support column and attachment bolts; and due to the metal loss, the roof structure is compromised and its seismic resiliency is poor; and

WHEREAS, staff inspected Merry Hill Water Tank and determined that repairs are needed to correct the following problems: the roof plate has a significant amount of corrosion; piping connections have aged and do not have the flexibility for seismic movement; and the interior and exterior coatings are old and deteriorating in areas that are structurally critical; and

WHEREAS, in order to repair these tanks, bid documents must be prepared; and

WHEREAS, staff issued a Request for Qualifications (RFQs) for preparation of bid documents; and

WHEREAS, staff reviewed the responses to the RFQs, and negotiated a scope of work and fee with AECOM in the amount of \$53,362; and

WHEREAS, a budget of \$61,400 from Fund 600 is recommended for preparation of the bid documents (\$53,362 plus contingencies).

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of El Paso de Robles does hereby allocate \$47,000 from Fund 600 to Budget No. 600. 910.5452.697 to prepare bid documents for repairs needed at Golden Hill Road Water Tank No. 1.

SECTION 2. The City Council does hereby award a contract to AECOM in the amount of \$53,362 to prepare bid documents for the water tank repairs, and authorizes signature by the City Manager.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 17th day of May 2011 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

Duane Picanco, Mayor

ATTEST:

Caryn Jackson, Deputy City Clerk



ADVANTAGE TECHNICAL SERVICES, Inc.
Specialty Engineering & Inspection Company
(805)595-2262

CORRESPONDENCE ID# n/a

Attachment A

PROJECT: Supplemental Inspection Tank #1

LOCATION: Golden Hills Tank #1

CLIENT: The City of El Paso De Robles

DATE: 8/9/2010

Pursuant to a recommendation by ATS, Inc that was made in the dive inspection report from 5/510, City operations personnel removed the roof vent and found serious corrosion and associated metal loss. Personnel coated the surfaces with epoxy and caulk. Subsequently, William Bellis, P.E. of ATS, Inc. provided supplemental inspection on August 9th, 2010. Severe metal loss was identified on the rafters at important structural locations including rafter flanges and webs in the shear area of the roof support column and around the attachment bolts. Bolting edge distance to the ends of the rafters has been reduced. It appears that the degree of metal loss has impacted the structure to a degree that would cause the structure to not conform to current code requirements. Seismic resilience of the roof structure is estimated to be poor. ATS recommends that this condition be inspected quarterly and repaired within a maximum of two years. Rafter replacement is a common method of repair for this condition.



Roof vent area overall view.

PROJECT: Supplemental Inspection Tank #1

DATE: 8/9/10



ADVANTAGE TECHNICAL SERVICES, Inc.

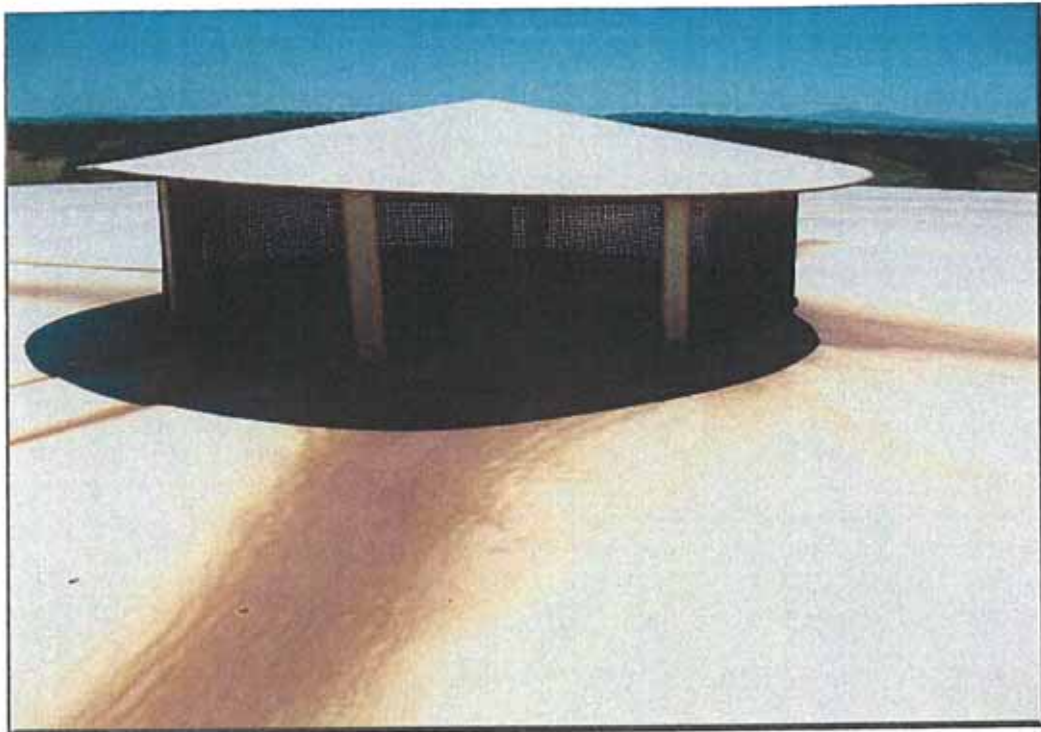
Specialty Engineering & Inspection Company
(805) 596-2262



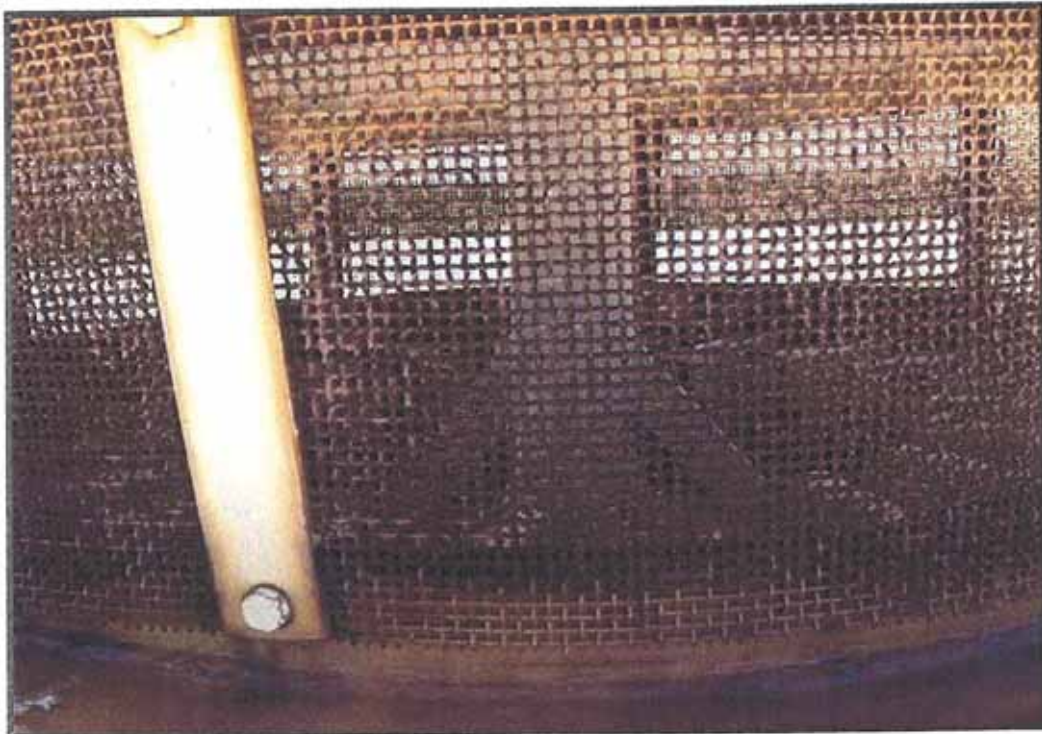
Severe metal loss due to corrosion at rafter ends has significantly reduced edge distance of structural bolting.



Severe metal loss due to corrosion at area of high shear load has significantly reduced the strength of the roof structure.



The roof vent consists of a steel cover over a steel riser pipe. Rust stains are evident from the substantial amount of rust on the screen and other surfaces of the vent.



This view of the underside of the vent hood shows that the screen is in poor condition. Coatings are starting to fail in spots within this area with significant corrosion on most surfaces.

Advantage Technical Services, Inc. 805-595-2282

GOLDEN HILL TANK



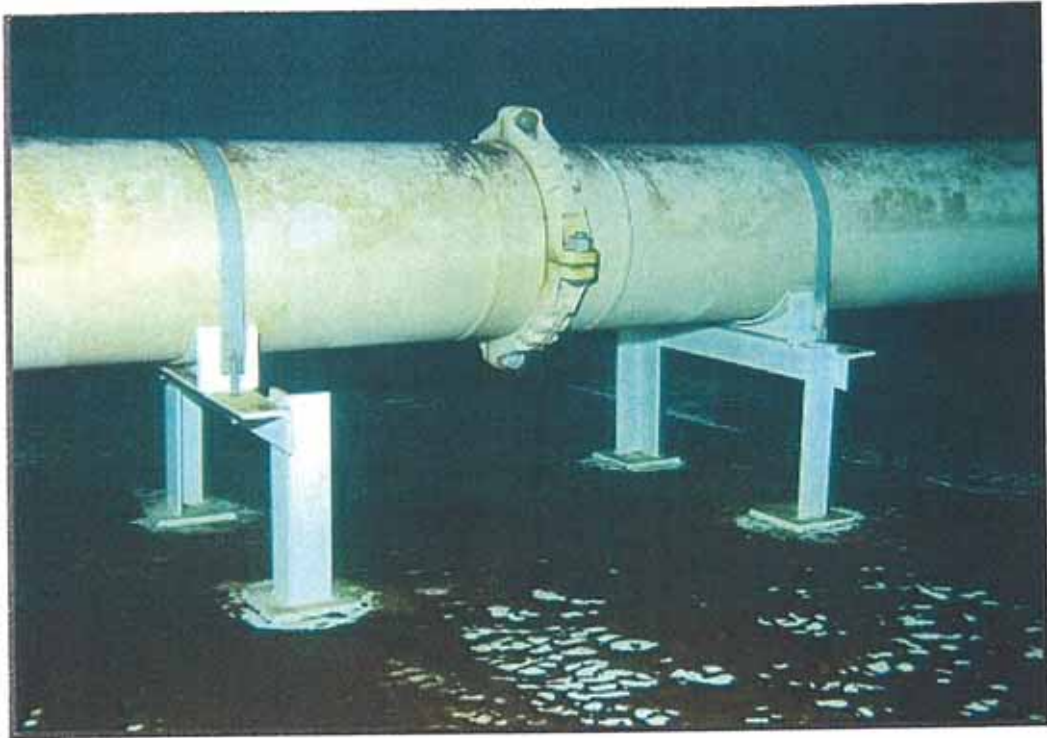
Upper center column, rafters and roof plate. Significant corrosion was present on edges of much of the structure but staining from inaccessible areas above the rafters is the source of much of the rust color.



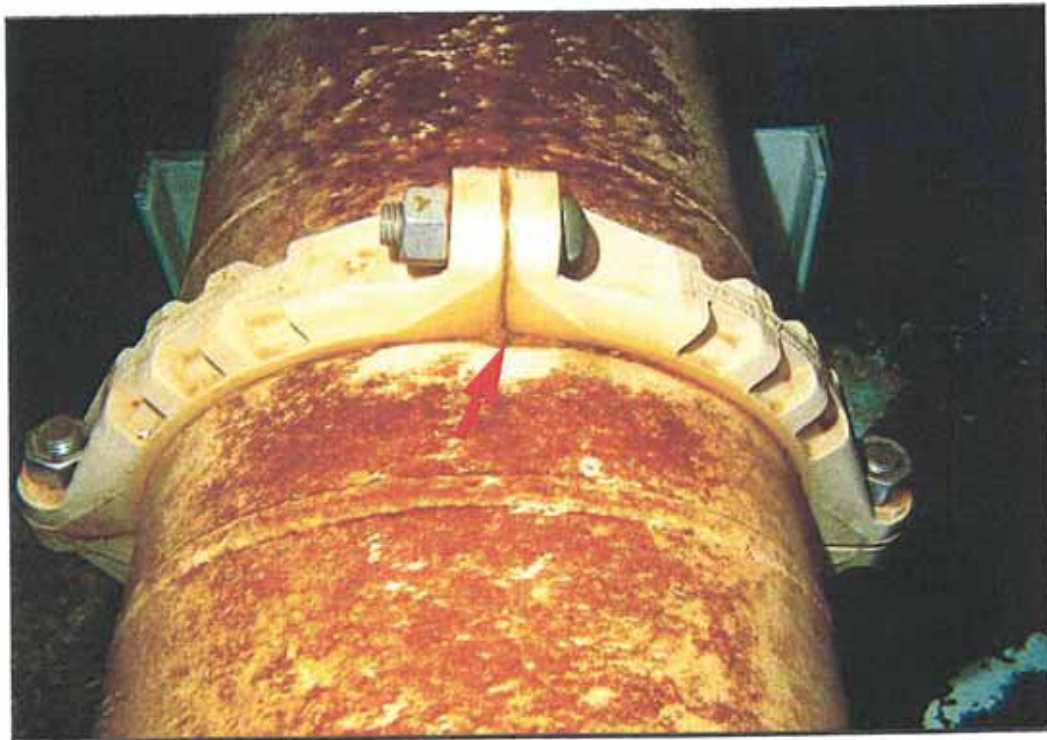
Close view of the area shown in the top photo. Significant corrosion is present around the bolts and attachment clips.

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GOLDEN HILL TANK



The outlet piping on the tank interior. This view shows supports and coupler.



Outlet piping coupler, close view. Numerous corrosion points are present around the difficult access areas (arrow) including saddles, straps and supports.

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GOLDEN HILL TANK



This view of the underside of the vent hood shows that the screen is in good condition and is "bug proof". Coatings are starting to fail in spots in this area with significant corrosion on the underside of the cover.



Vent area as viewed from inside the tank. Some concentrated corrosion is present on the rafters and the roof plate.

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MERRY HILL TANK



This photo of the interior bottom and shell shows the typical condition found. The coatings are cracked and corrosion is present in this area all around the tank.



This photo shows the same area as in the top photo with the sediment removed. The rust is propagating from the cracks in the coating (arrows).

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MERRY HILL TANK



This is a view of the lower portion of the center column and base plate. Some rust points are visible on the column "clips" and sediment is visible on and around the base plate.



This view of the lower column shows some rust nodules that are present. The column has caulking in place to isolate inaccessible areas at the un-welded faying surfaces of the "floating" support.

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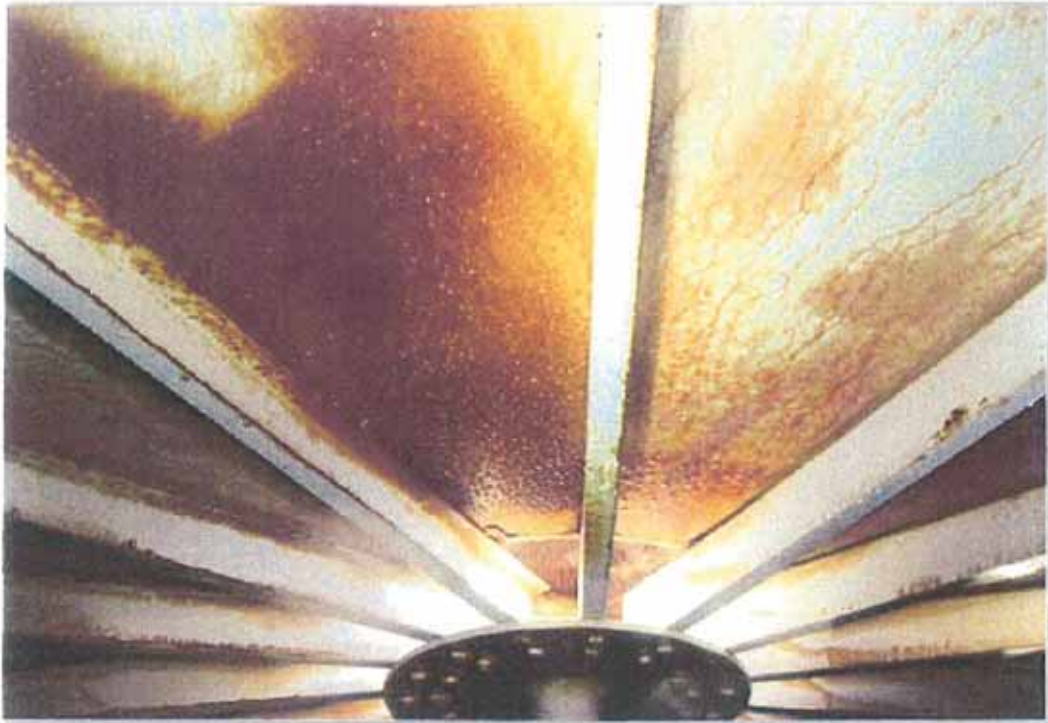
Roof plate and rafters as viewed from the water surface.
This view is typical of the conditions found with general corrosion and staining
on the roof plate and scattered-concentrated corrosion on the structure.



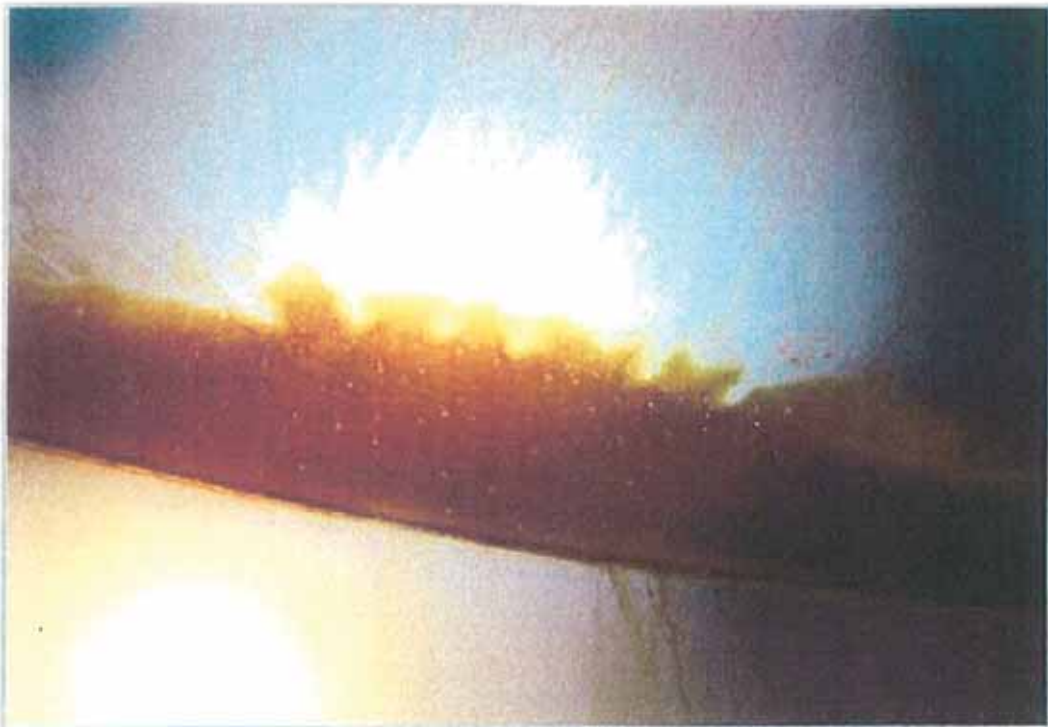
This view shows some of the aggressive corrosion that is present on the
roof structure.

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MERRY HILL TANK



Roof plate, rafters and center support as viewed from the water surface. Serious general corrosion is present on the roof plate along with scattered-concentrated corrosion on the structure.



Interior roof plate and shell. Significant general corrosion is present on the roof plate where the coating has aged beyond its useful life.

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