

ROOF ASSESSMENT REPORT
FOR



**US Army Corps
of Engineers.**

NATIONAL ROOFING PROGRAM

1557 Suehiro Road
Honolulu, HI 96819

September 7, 2021

020CHS-097 - 9th MSC-HI006

ROOF ASSESSMENT REPORT

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OVERALL MAP



FACILITY SUMMARY TABLE

Facility Name	Section Quantity	Average Condition	Total Replacement Cost
USARC	17,952	Red	\$910,166
USARC	64,257	Red	\$3,257,830
USARC	18,549	Red	\$940,434

Facility Overview - 1556 USARC



Exterior Overview



Exterior Overview



Exterior Overview



Exterior Overview



Exterior Overview



Exterior Overview



Exterior Overview

Total Sections: 3

Total Sq Ft: 64257

Total Cost: \$3,257,830

Material	Name	Quantity	Est Install	CI	Cost
B301001 STEEP SLOPE ROOF SYSTEMS	Sector 1	42,822	1992	30	\$2,171,075
	Sector 2	15,905	1992	30	\$806,384
B301002 LOW SLOPE ROOF SYSTEMS	Sector 3	5,530	2019	87	\$280,371

Comments

Building was constructed in approximately 1992. It is concrete construction with a stucco exterior. Roof systems on sectors 1 and 2 are standing seam metal panels which have received a coating over structural purlins. Due to its condition, it is recommended to be budgeted for replacement within the next year.

Sector 3 roof is a PVC single ply roof system. Warranty is in effect under Sika Sarnafil until 3-30-2036. Roof was observed to be in good condition.

Section: Sector 1

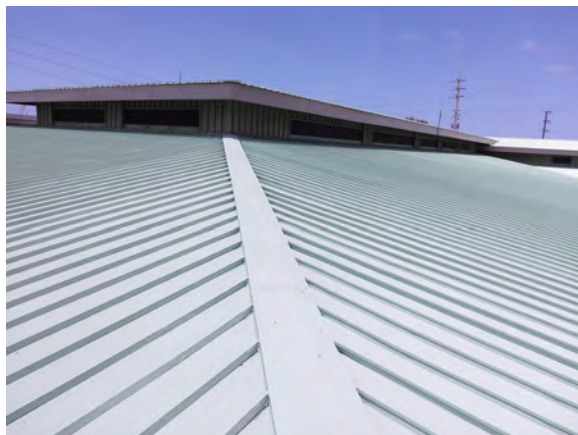
Composition

Size: 42822 SF

Year: 1992

Material Category: B301001 STEEP SLOPE ROOF SYSTEMS

Component Subtype: Formed Metal - Metal Standing Seam



Overview

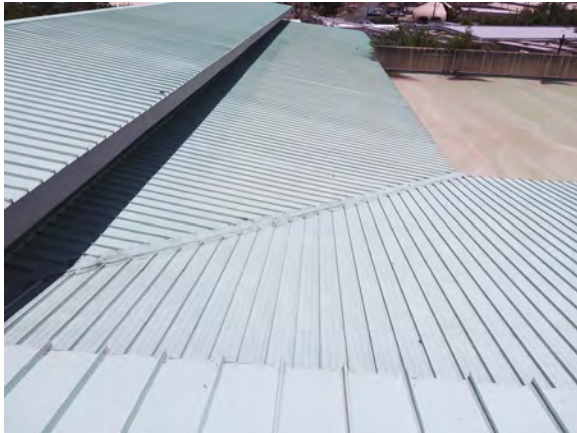


Overview

Overview

Overview

Overview



Overview

Overview

Inspection

Inspection Date: 5/24/2021

Inspector: Henderson, Tommy

Inspected Condition: Red



Panel was not terminated at edge. No edge detail was observed. Water intrusion is possible due to void at eave.



Coating on roof is moderately deteriorated. Blisters and unadhered reinforcement are visible in several areas.



Holes caused by corrosion are visible in several locations.



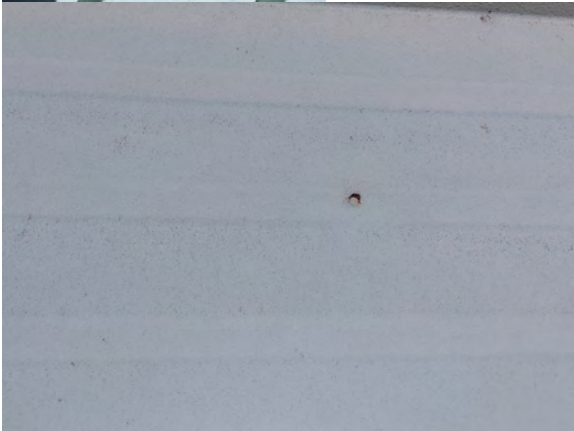
Adjacent trees that overhang the roof can cause algae growth, a build up of debris, and general deterioration of the roof membrane.



Underside of roof area with batten insulation observed.



Holes caused by corrosion are visible in several locations.



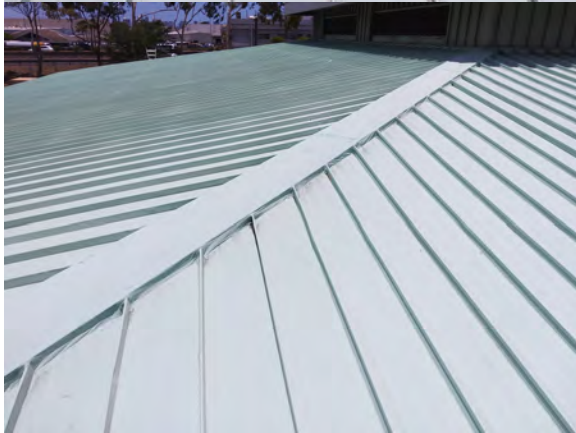
Panel was observed to have a hole caused by corrosion. This may allow water intrusion.



Vegetation growing in the gutter, usually in conjunction with a buildup of dirt and ponding water.



Blistering was observed in the coating on the roof panels in multiple locations.



The coating reinforcement at transitions is loose at multiple areas.



Gutter outlet/downspout is blocked and preventing drainage and causing gutter to remain full.

Summary

Current Estimated Condition: Poor

Remaining Service Life: 0 years

Estimated Replacement Year: 2021

Replacement Cost: \$2,171,075

Comment:

Roof is a 12" wide standing seam metal panel with a 2" rib over batten insulation fastened to structural purlins. Rusting and corrosion was observed through panels in some locations. Coating is in poor condition and is blistering in multiple areas. Due to its condition, it is recommended to be budgeted for replacement within the next year.

Section: Sector 2

Composition

Size: 15905 SF

Year: 1992

Material Category: B301001 STEEP SLOPE ROOF SYSTEMS

Component Subtype: Formed Metal - Metal Standing Seam



Overview

Overview

Inspection

Inspection Date: 5/24/2021

Inspector: Henderson, Tommy

Inspected Condition: Red



Panel was not terminated at edge. No edge detail was observed. Water intrusion is possible due to void at eave. Visible corrosion was also observed.



The coating reinforcement at transitions is loose at multiple areas.



Holes and cracks caused by corrosion are visible in several locations.



Panel was not terminated at edge. No edge detail was observed. Water intrusion is possible due to void at eave. Visible corrosion was also observed.



Coating on roof is moderately deteriorated. Blisters and unadhered reinforcement are visible in several areas.



Panels at eave were noted to be loose and clips may have disengaged. Further investigation is needed to confirm the cause.
35-SF

Summary

Current Estimated Condition: Poor

Remaining Service Life: 0 years

Estimated Replacement Year: 2021

Replacement Cost: \$806,384

Comment:

Roof is a 12" wide standing seam metal panel with a 2" rib over batten insulation fastened to structural purlins. Panels at eave have visible corrosion and rust has penetrated panels in some locations. Coating is in poor condition and is blistering in multiple areas. Due to its condition, it is recommended to be budgeted for replacement within the next year.

Section: Sector 3

Composition

Size: 5530 SF

Year: 2019

Material Category: B301002 LOW SLOPE ROOF SYSTEMS

Component Subtype: Single Ply Membrane



Overview

Overview

Inspection

Inspection Date: 5/24/2021

Inspector: Henderson, Tommy

Inspected Condition: Green -



Active Sika Sarnafil Warranty Plaque



Sealants at sealant tray of counterflashing are deteriorating and should be budgeted for replacement.



Debris was observed at scuppers and live vegetation is present. Roof should be kept clean to prevent damage to membrane.

Summary

Current Estimated Condition: Good

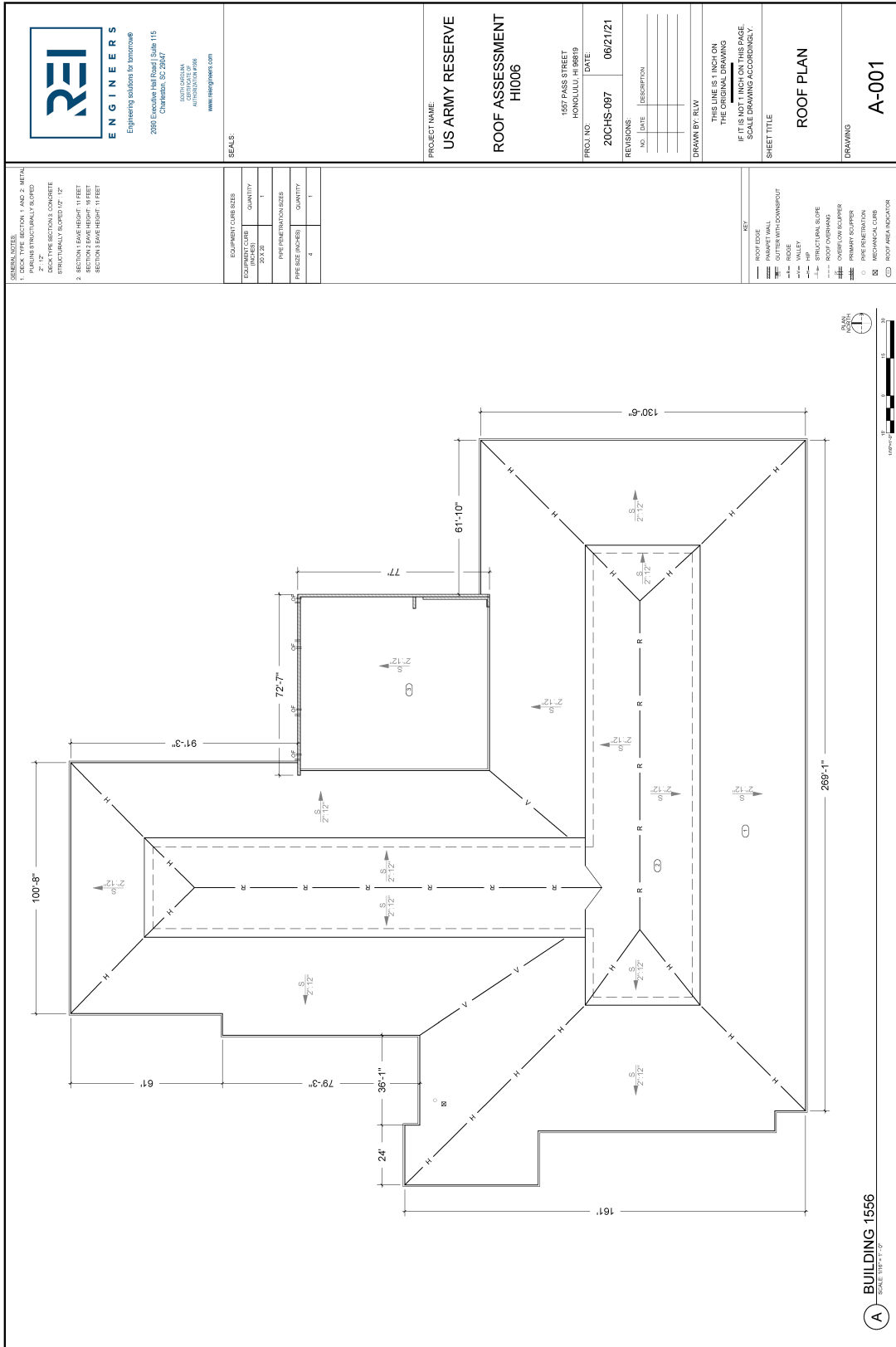
Remaining Service Life: 14 years

Estimated Replacement Year: 2035

Replacement Cost: \$280,371

Comment:

Roof is a PVC single ply roof system under Sika Sarnafil warranty and is in good condition. Deficiencies noted in this report should be corrected to extend life cycle of roof system. These repairs may be covered under warranty. Note: A small leak was reported by onsite personnel, but it was not active at time of visit.



Facility Overview - 1557 USARC



South Elevation



North Elevation



East Elevation



West Elevation

Total Sections: 1

Total Sq Ft: 18549

Total Cost: \$940,434

Material	Name	Quantity	Est Install	CI	Cost
B301001 STEEP SLOPE ROOF SYSTEMS	Sector 1	18,549	1997	49	\$940,434

Comments

Building was constructed in approximately 1997. It is of concrete construction with a stucco exterior. Roof is a standing seam metal panel over purlins on a metal deck. Roof coating is in poor to fair condition and is blistering in several areas. Due to its condition, it is recommended to be budgeted for replacement within 2 to 4 years.

Section: Sector 1

Composition

Size: 18549 SF

Year: 1997

Material Category: B301001 STEEP SLOPE ROOF SYSTEMS

Component Subtype: Formed Metal - Metal Standing Seam



Overview



Overview



Overview



Overview



Overview

Overview

Inspection

Inspection Date: 5/25/2021

Inspector: Henderson, Tommy

Inspected Condition: Red +



Seam at reinforcement at ridge line is open and unadhered which may allow water intrusion.



Rust at transition was observed. Coating was incomplete and further investigation is needed to determine cause of corrosion.



Blistering was observed in the coating on the roof panels in multiple locations.



Seam at reinforcement in valley is open and unadhered which may allow water intrusion.

Fastener is backing out through reinforcement and is rusting at several areas.

Minor debris was observed on roof. Roof should be periodically inspected and cleaned.

Coating is in fair condition and should continue to be monitored for deterioration.



The coating reinforcement at transitions is loose at multiple areas.

Seam at reinforcement at ridge line is open and unadhered which may allow water intrusion. Fastener was also observed to be backing out at same area. 2-Locations

Penetration was installed where rib of panel was removed. This is not a recommended installation. It should be monitored to prevent premature failure.

Summary

Current Estimated Condition: Fair

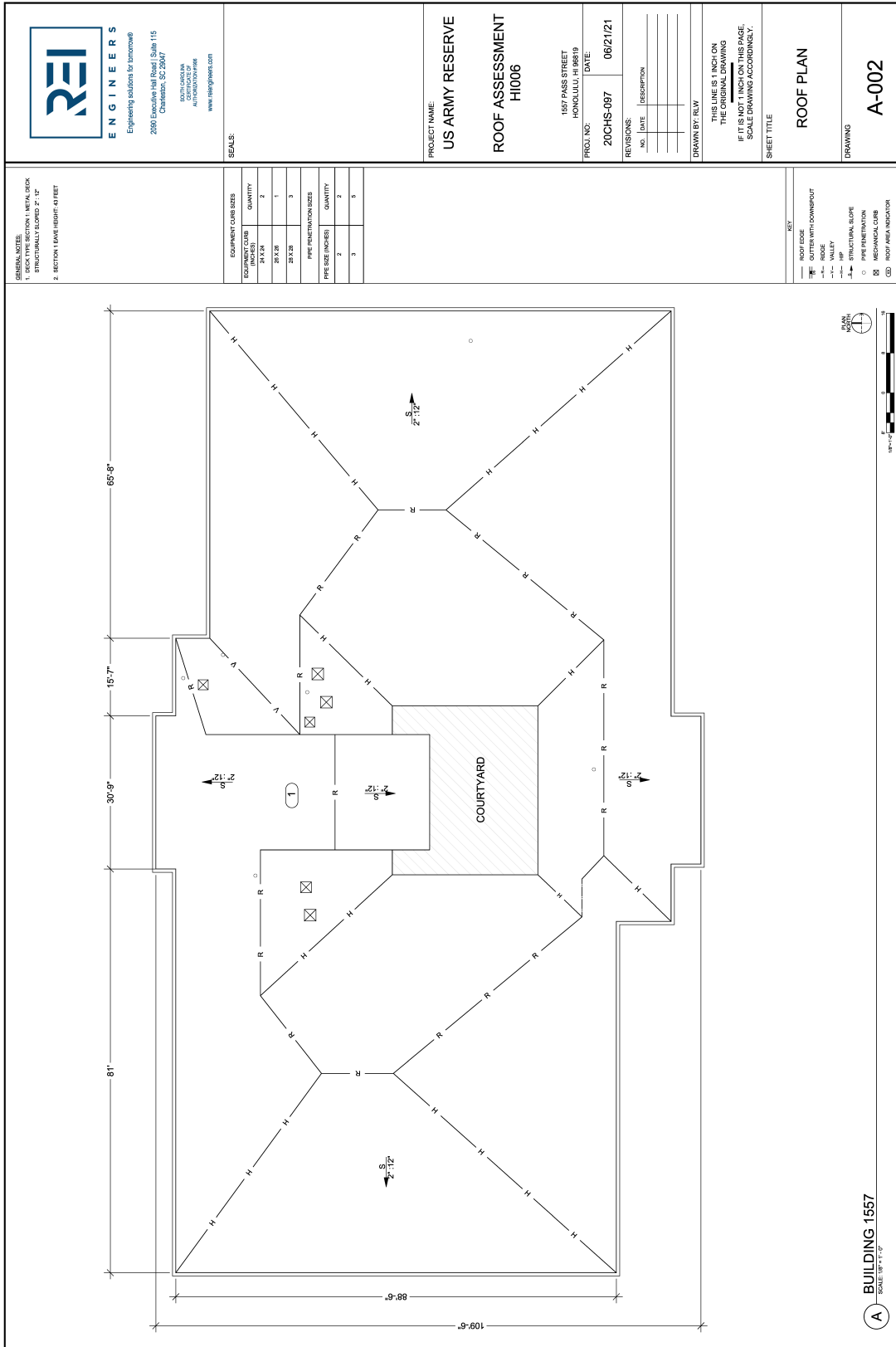
Remaining Service Life: 4 years

Estimated Replacement Year: 2025

Replacement Cost: \$940,434

Comment:

Roof is a 16" wide standing seam metal panel with 2" ribs over polyisocyanurate insulation over purlins on a metal deck. Coating is in poor to fair condition and is blistering in several areas. Due to its condition, it is recommended to be budgeted for replacement within 2 to 4 years. Deficiencies found in this report should be repaired to extend life cycle of the roof system until roof can be replaced.



Facility Overview - 1558 USARC



Exterior Elevation



Exterior Elevation



Exterior Elevation



Exterior Elevation

Total Sections: 2

Total Sq Ft: 17952

Total Cost: \$910,166

Material	Name	Quantity	Est Install	CI	Cost
B301001 STEEP SLOPE ROOF SYSTEMS	Sector 1	15,167	1997	49	\$768,967
	Sector 2	2,785	1997	49	\$141,200

Comments

Building was constructed in approximately 1997. It is of concrete construction with a stucco exterior. Roof systems on Sectors 1 and 2 are a standing seam metal panel over purlins on a metal deck. Roof coating is in poor to fair condition and is blistering in several areas. Due to its condition, it is recommended to be budgeted for replacement within 2 to 4 years.

Section: Sector 1

Composition

Size: 15167 SF

Year: 1997

Material Category: B301001 STEEP SLOPE ROOF SYSTEMS

Component Subtype: Formed Metal - Metal Standing Seam



Overview

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Overview

Inspection

Inspection Date: 5/24/2021

Inspector: Henderson, Tommy

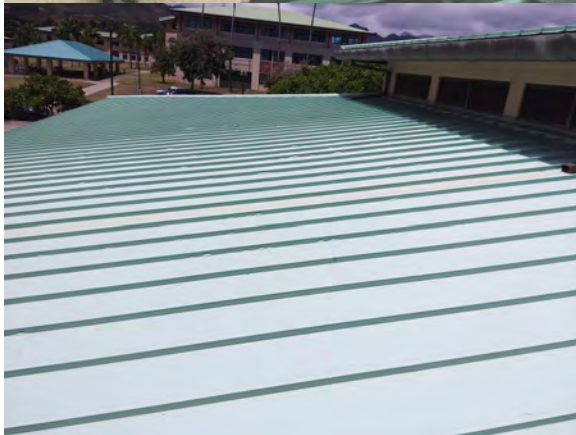
Inspected Condition: Red +



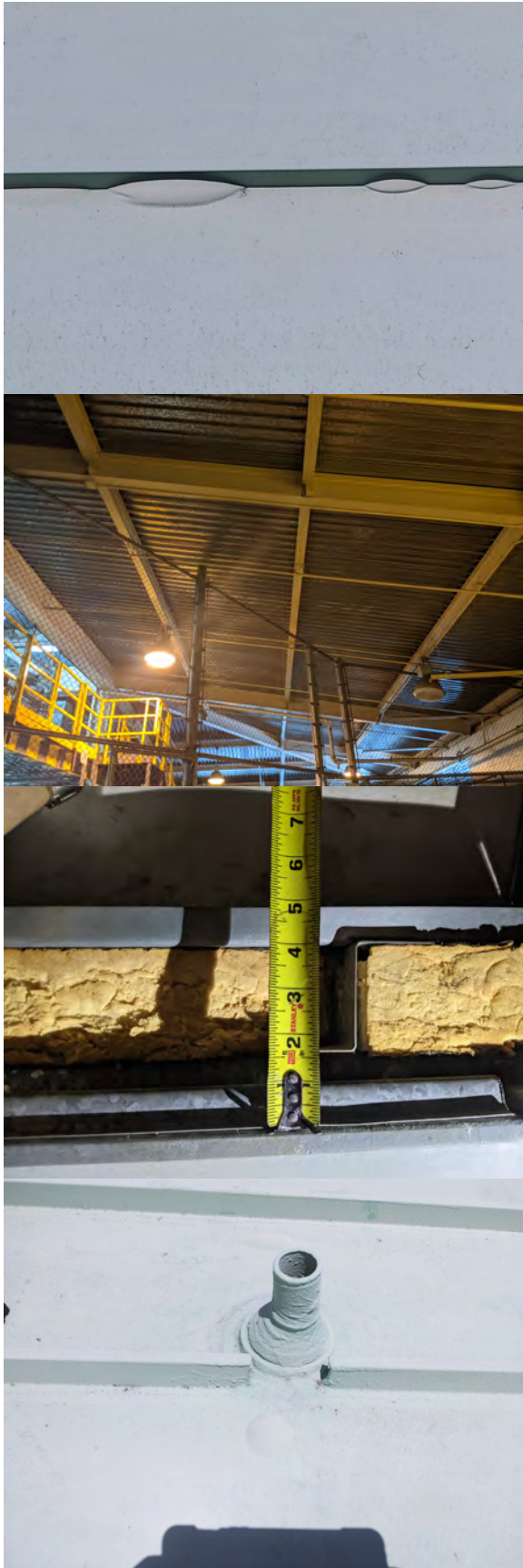
Gutter outlet/downspout is blocked and preventing drainage and causing gutter to remain full.



Downspouts on upper roof are deteriorated at connection to outlet.



Blistering was observed in the coating on the roof panels in multiple locations.



Close up of blistering.

Underside of roof showing metal decking.

View from attic space showing insulation and purlins at roof system.

Penetration was installed where rib of panel was removed. This is not a recommended installation.



Coating is in fair condition excluding deficiencies found which are recommended to be corrected to extend the life of the coating.



Underside of roof showing metal decking.



Adjacent trees that overhang the roof can cause algae growth, a build up of debris, and general deterioration of the roof membrane.

Summary

Current Estimated Condition: Fair

Remaining Service Life: 4 years

Estimated Replacement Year: 2025

Replacement Cost: \$768,967

Comment:

Roof system is a 16" wide standing seam metal panel with a 2" rib over polyisocyanurate insulation with purlins on a metal deck. Coating is in poor to fair condition and is blistering in several areas. Due to its condition, it is recommended to be budgeted for replacement within 2 to 4 years. Deficiencies found in this report should be repaired to extend life cycle of the roof system until roof can be replaced.

Section: Sector 2

Composition

Size: 2785 SF

Year: 1997

Material Category: B301001 STEEP SLOPE ROOF SYSTEMS

Component Subtype: Formed Metal - Metal Standing Seam



Overview

Overview

Inspection

Inspection Date: 5/24/2021

Inspector: Henderson, Tommy

Inspected Condition: Red +



The coating reinforcement at transitions is loose at multiple areas.

Coating is in fair condition excluding deficiencies found which are recommended to be corrected to extend the life of the coating.

Blistering was observed in the coating on the roof panels in multiple locations.

Summary

Current Estimated Condition: Fair

Remaining Service Life: 4 years

Estimated Replacement Year: 2025

Replacement Cost: \$141,200

Comment:

Roof system is a 16" wide standing seam metal panel with a 2" rib over polyisocyanurate insulation with purlins on a metal deck. Coating is in poor to fair condition and is blistering in several areas. Due to its condition, it is recommended to be budgeted for replacement within 2 to 4 years. Deficiencies found in this report should be repaired to extend life cycle of the roof system until roof can be replaced.

