

Attachment D
Roof Management Reports



ROOFING MADE SIMPLE

Roof Management Report

CITY OF VICTORVILLE

AVENAL TREATMENT PLANT



Measurements are from aerial survey and do not include roof slope or parapet walls.
This image is for internal use and not to be used for bidding.

Prepared for:

Eddie Gleason
City of Victorville
egleason@victorvilleca.gov
(760) 955-5256

Prepared by:

Kody Berry
Technical Manager
kody@weatherweld.com
(909) 477-1842

Scan QR Code



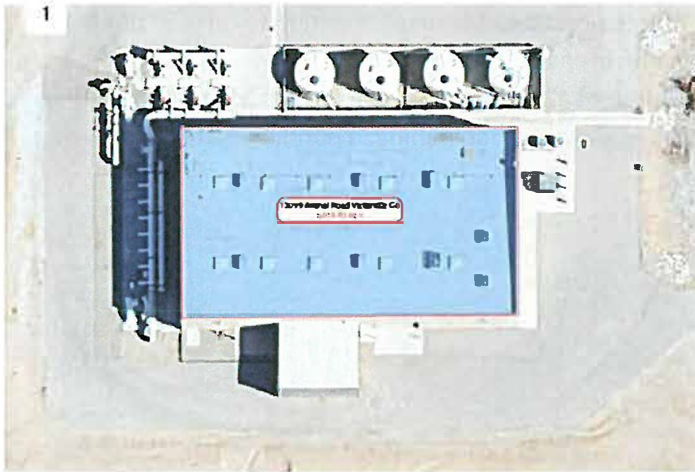
Video / More Information / Next Steps

Kody Berry

WEATHERWELD

2/19/2024 | 10 Photos

City of Victorville - Avenal Treatment Plant



This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.

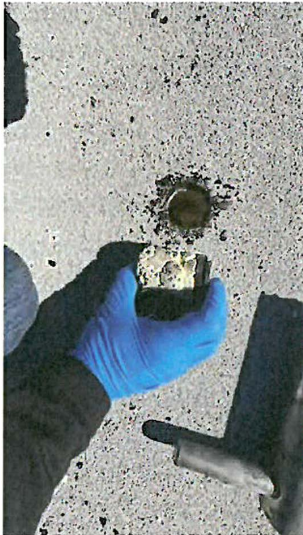
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: City of Victorville, Avenal Treatment Plant

Date: 2/19/2024, 7:54am

Creator: Kody Berry

2



The roof was core tested to determine the components of the roofing system from the deck up.

The roof assembly for this building consists of a:

- Metal Deck
- ISO Insulation
- Built Up Roof

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: City of Victorville, Avenal Treatment Plant

Date: 2/12/2024, 1:05pm

Creator: Kody Berry

3



This type of roof consist of multiple layers of rolls that are made of waterproof with asphalt. Because this type of roof relies on adhesive or asphalt waterproofing in between seams, it is difficult to keep this type of roof water tight as the roof system ages. On the roof of this type with the amount of penetrations, and considering the age of the roof, a permanent solution is required in order to keep this building watertight in the long term.

Project: City of Victorville, Avenal Treatment Plant

Date: 2/12/2024, 1:01pm

Creator: Kody Berry

7



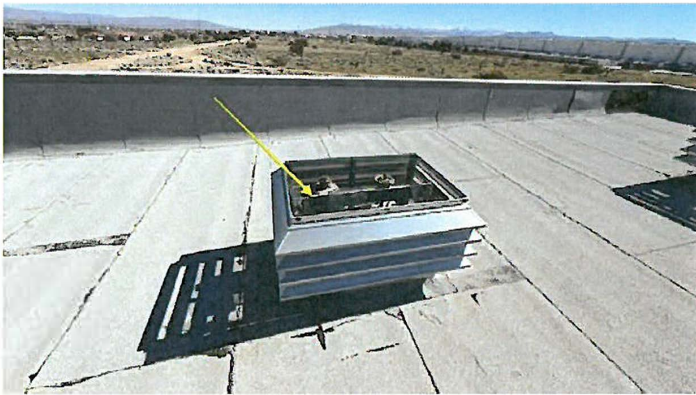
There are several areas on this roof that have delamination of roofing material that have caused openings, allowing water to enter the building. This is typically caused by building movement, expansion or contraction in the roof system, lack of attachment between roof system components, or material incompatibility. This can also occur in high wind areas if the roof material was incorrectly attached or adhered.

Project: City of Victorville, Avenal Treatment Plant

Date: 2/12/2024, 1:02pm

Creator: Kody Berry

8



Covers, pans, or missing components from rooftop equipment could be allowing water to enter the building. It is recommended to ensure all rooftop equipment is functioning properly, and all covers are sealed and water-proofed during regular maintenance.

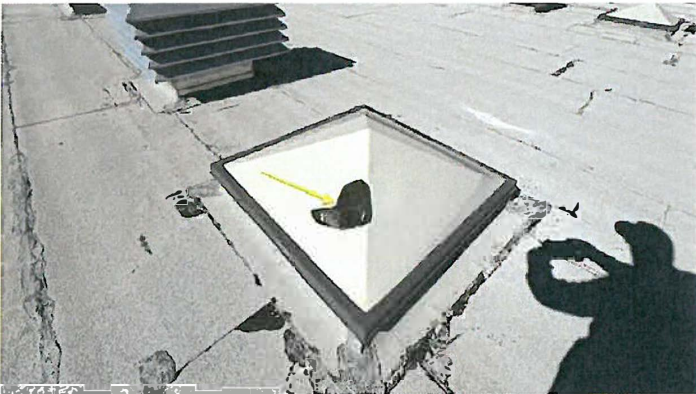
If replacement is required, it is recommended that rooftop accessory or equipment installation is coordinated with the roofing contractor to be performed in sequence with roof system installation.

Project: City of Victorville, Avenal Treatment Plant

Date: 2/12/2024, 1:02pm

Creator: Kody Berry

9



Based on visual observation, it appears the skylights are deteriorating and could be contributing to water leaks into the building. It is recommended to remove existing skylights and install new curb mounted skylights that are safety rated. These can be specified with the roofing project, and the skylights will be the last item to install after the roof system is completed.

Project: City of Victorville, Avenal Treatment Plant

Date: 2/12/2024, 1:13pm

Creator: Kody Berry



ROOFING MADE SIMPLE

Roof Management Report

CITY OF VICTORVILLE

EL EVADO TREATMENT PLANT



Measurements are from aerial survey and do not include roof slope or parapet walls.
This image is for internal use and not to be used for bidding.

Prepared for:

Eddie Gleason
City of Victorville
egleason@victorvilleca.gov
(760) 955-5256

Prepared by:

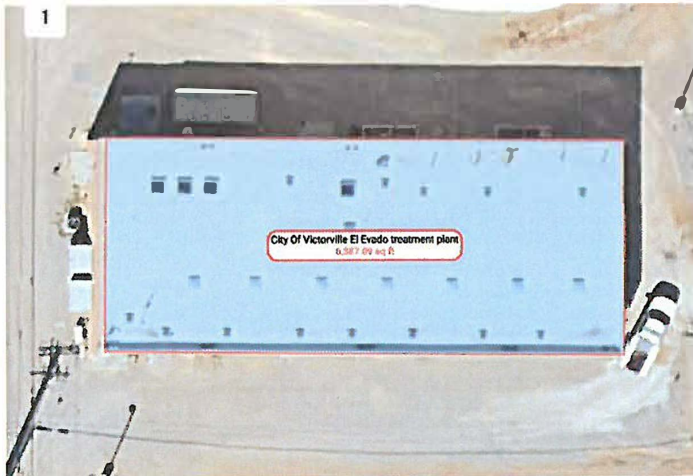
Kody Berry
Technical Manager
kody@weatherweld.com
(909) 477-1842

Scan QR Code



Video / More Information / Next Steps

City of Victorville - El Evado Treatment Plant



This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.

Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: City of Victorville, El Evado Treatment Plant
Date: 2/19/2024, 8:28am
Creator: Kody Berry



The roof was core tested to determine the components of the roofing system from the deck up.

The roof assembly for this building consists of a:

- Metal Roof Deck
- ISO Insulation
- Single Ply Membrane

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: City of Victorville, Balsam Treatment Plant
Date: 2/12/2024, 1:44pm
Creator: Kody Berry

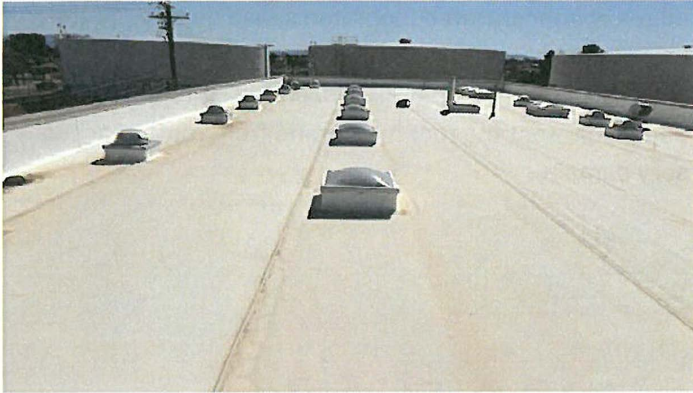


The omission or lack of a substrate board installed between the insulation and the single ply membrane is a cause for concern.

Insulation boards are not designed to withstand traffic. This puts unnecessary stress on roof membranes, such as a single ply. Most industry standards require a substrate board between insulation and single ply membranes. This is a cause of premature failure of single ply membranes.

Project: City of Victorville, Balsam Treatment Plant
Date: 2/12/2024, 1:44pm
Creator: Kody Berry

4



Single ply membranes installed on roofs consist of thin synthetic membranes that are typically between 30 and 80 mils thick.

For reference, these materials range in thickness between a dime and a nickel.

Thin wide sheets of plastic material are fastened or adhered to the roof deck at edges of the sheets then welded at the edges with a 500° hot air welder.

Typical problems with thin plastic synthetic membranes consist of the following

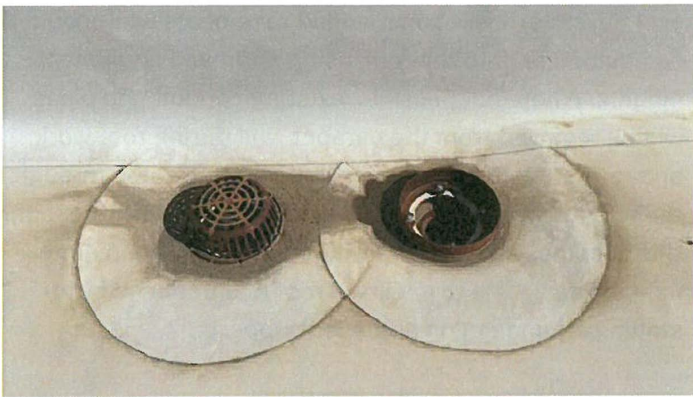
- Uv deterioration of plastic membrane

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:08pm

Creator: Kody Berry

5



Water drains from this roof through flush mount drains, which can often lead to leaks. These leaks happen because the attachment of the roofing material solely depends on the tightness of the drains compression ring and bolts. Over time, changes in temperature can cause the roof material to separate from the drain, resulting in leaks. WeatherWeld is designed to prevent these leaks by sealing directly to the sides of the drain bowl, creating triple redundancy. Missing drain screens need replacement.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:07pm

Creator: Kody Berry

6



Synthetic membranes often prematurely fail due to UV exposure.

Typically, synthetic membranes require protection in the form of paint, or some type of coating in order to remain UV stable.

In the case of single ply membranes, deterioration of the field membrane due to UV exposure is one of the leading causes of premature failures of this type of membranes. As the roof membrane reaches the end of their useful life, deterioration of the synthetic membranes becomes visible.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:08pm

Creator: Kody Berry

7



Rooftop accessories for equipment that is directly placed on the roof membrane can cause premature failure. Sharp edges or concentrated loads can cause damage to the roof membrane. It is recommended to install approved rooftop supports with proper flashings or roof protection pads to protect the roof membrane from rooftop accessory damage.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:07pm

Creator: Kody Berry

8



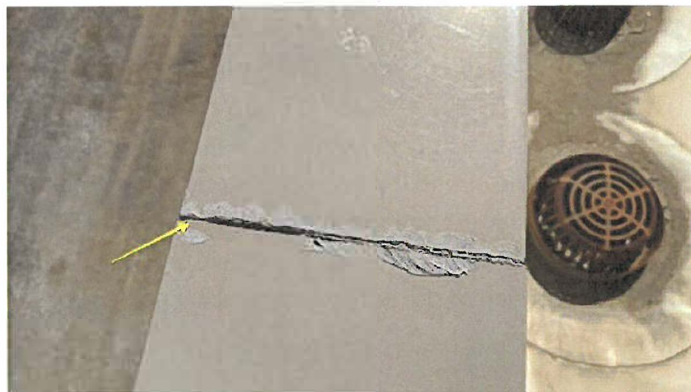
Equipment and pipes that are bolted to parapet walls are a potential source of roof leaks into the building. Whenever possible, it is recommended to relocate wall-mounted equipment onto the roof, using approved equipment mounts. Where not possible, existing conduit and pipes will be removed from the parapet wall during roof work, and re-mounted. Anytime equipment penetrates through the roof membrane either on a wall or the field of the roof, this becomes an area that will require constant maintenance. The goal is to minimize roof maintenance by installing equipment on approved supports.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:07pm

Creator: Kody Berry

9



Perimeter flashings show signs of separation or delamination at sheet metal joints. This could be caused by improper fastening, flashing deterioration, wind, or adhesive failures. This condition is a direct funnel of water into the building.

It is recommended that existing sheetmetal coping be removed and replaced with new flashing during roof work.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:08pm

Creator: Kody Berry

10



Based on visual observation, it appears the skylights are deteriorating and could be contributing to water leaks into the building. It is recommended to remove existing skylights, and install new curb mounted skylights that are safety rated. These can be specified with the roofing project, and the skylights will be the last item to install after the roof system is completed.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:08pm

Creator: Kody Berry

11



Rooftop penetrations such as pipes and vent/exhaust fans are installed in the field of the roof. These types of penetrations are difficult to keep water-tight and require consistent use of repair materials as seen in this photo. Existing roof penetrations will be encapsulated with WeatherWeld during roof work, making a seamless transition between the penetration and the field the roof. All rooftop penetrations will have sheet metal storm collars installed above flashings where applicable.

Project: City of Victorville, El Evado Treatment Plant

Date: 2/12/2024, 2:10pm

Creator: Kody Berry

CITY OF VICTORVILLE

BALSAM TREATMENT PLANT



Measurements are from aerial survey and do not include roof slope or parapet walls.
This image is for internal use and not to be used for bidding.

Prepared for:

Eddie Gleason
City of Victorville
egleason@victorvilleca.gov
(760) 955-5256

Prepared by:

Kody Berry
Technical Manager
kody@weatherweld.com
(909) 477-1842

Scan QR Code



[Video / More Information / Next Steps](#)

Kody Berry

WEATHERWELD

2/19/2024 | 10 Photos

City of Victorville - Balsam Treatment Plant

1



This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.

Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/19/2024, 8:14am

Creator: Kody Berry

2



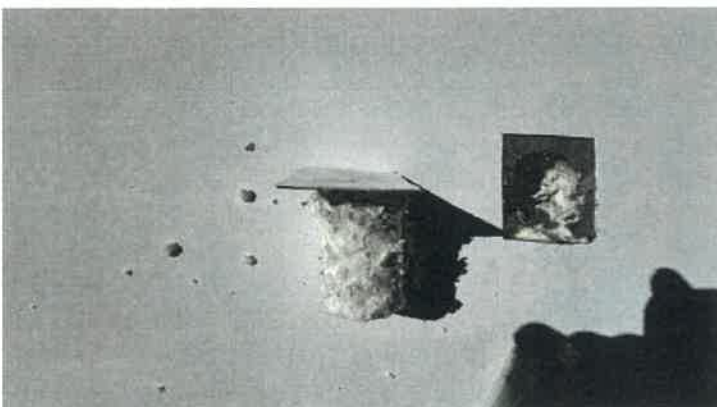
View from the ground looking up towards the perimeter of the roof.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:36pm

Creator: Kody Berry

3



The roof was core tested to determine the components of the roofing system from the deck up.

The roof assembly for this building consists of a:

- Metal Deck
- ISO Insulation
- Single Ply Roof Membrane

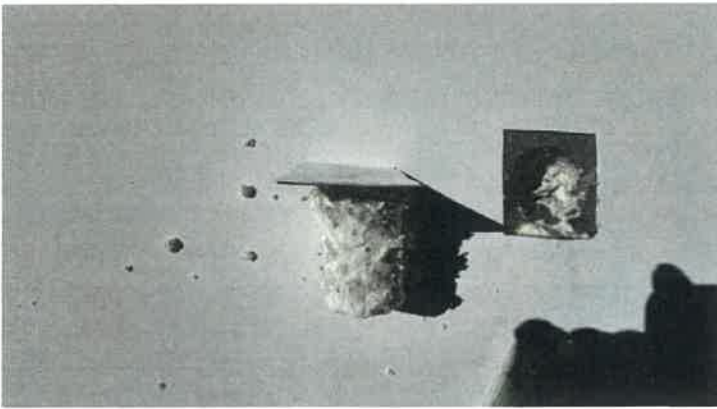
This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:44pm

Creator: Kody Berry

4



The omission or lack of a substrate board installed between the insulation and the single ply membrane is a cause of concern. Insulation boards are not designed to withstand traffic. This puts un-needed stress on roof membranes, such as a single ply.

Most industry standards require a substrate board between insulation and single ply membranes.

This is a cause of premature failure of single ply membranes.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:44pm

Creator: Kody Berry

5



Single ply membranes installed on roofs consist of thin synthetic membranes that are typically between 30 and 80 mils thick.

For reference, these materials range in thickness between a dime and a nickel.

Thin, wide sheets of synthetic plastic material are fastened or adhered to the roof assembly or deck underneath, then welded at the edges with a 500° hot air welder, creating miles of welded joints.

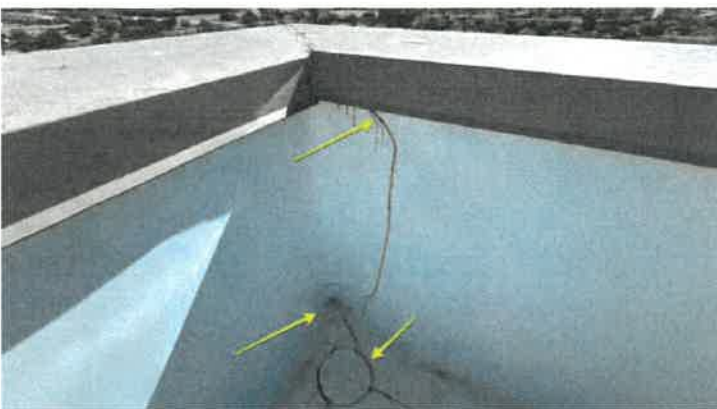
Typical problems with thin plastic synthetic membranes consist of the following

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:38pm

Creator: Kody Berry

6



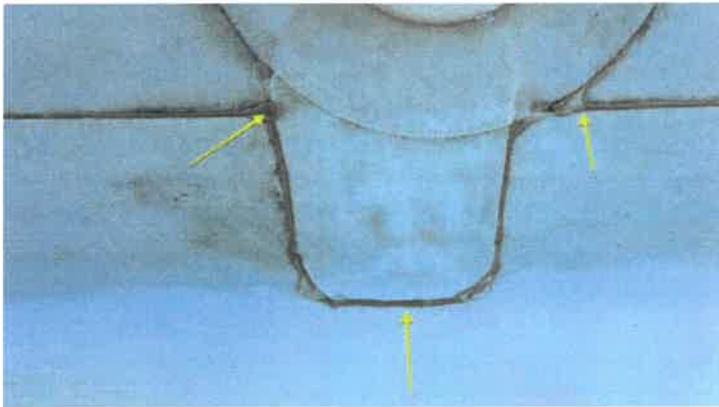
Synthetic sheet based membranes, such as single ply, rely on cuts, seams, and welds to conform roll based sheets to non-flat surfaces. In this case, a roll had to be cut and seamed by hand with a hot air welder to conform to this detail. As you can see in the photo, the work is sloppy, does not meet industry standards, and could be causing leaks into the building.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:40pm

Creator: Kody Berry

7



Synthetic sheet-based membranes, such as single ply, require patches to be installed at every sheet intersection. This creates hundreds or even thousands of spot repairs that must be installed on the roof before the project is considered finished.

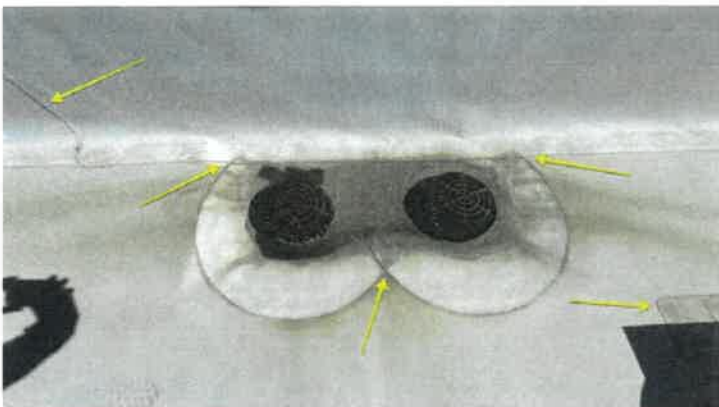
This is also one of the largest failure points or causes of premature failure of a single ply membrane. These areas require weakening the membrane with a hot air welder to install patches.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:40pm

Creator: Kody Berry

8



Water drains from this roof through flush mount drains, which can often lead to leaks. These leaks happen because the attachment of the roofing material solely depends on the tightness of the drains compression ring and bolts. Over time, changes in temperature can cause the roof material to separate from the drain, resulting in leaks. WeatherWeld is designed to prevent these leaks by sealing directly to the sides of the drain bowl, creating triple redundancy.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:39pm

Creator: Kody Berry

9



The perimeter of this building consists of a concrete parapet wall that is roofed to the top the wall.

The WeatherWeld applications are designed to encapsulate the entire parapet, eliminating base flashing or wall leaks.

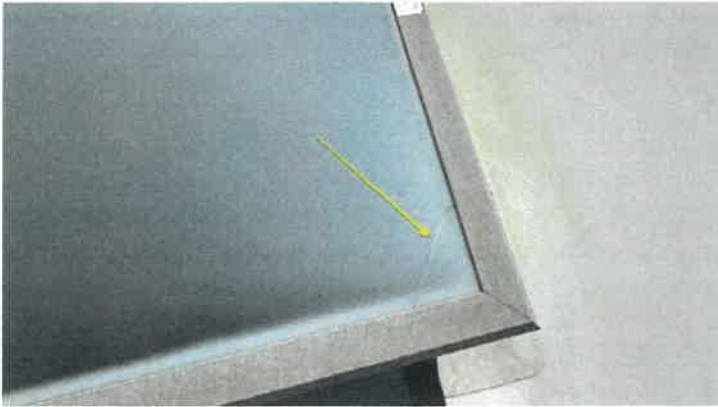
Existing sheetmetal coping will be removed and replaced with new flashing during roof work.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:38pm

Creator: Kody Berry

10



Based on visual observation, it appears the skylights are deteriorating and could be contributing to water leaks into the building. It is recommended to remove existing skylights and install new curb mounted skylights that are safety rated. These can be specified with the roofing project, and the skylights will be the last item to install after the roof system is completed.

Project: City of Victorville, Balsam Treatment Plant

Date: 2/12/2024, 1:39pm

Creator: Kody Berry

Kody Berry

WEATHERWELD

2/19/2024 | 8 Photos

City of Victorville - Well 203

City of Victorville - Well 203



This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.

Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: City of Victorville, Well 203

Date: 2/19/2024, 9:15am

Creator: Kody Berry



This building has a tile mansard roof wrapping around the perimeter of the building with a flat roof section above. The tile is broken or missing in several areas exposing the waterproofing, felt, and the structure underneath to the elements.

It is recommended to remove the entire tile roof section and replace with a durable roof system that matches the aesthetic requirements.

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:26pm

Creator: Kody Berry



The roof was core tested to determine the components of the roofing system from the deck up.

The roof assembly for this building consists of a:

- Plywood Roof Deck
- Gravel Surfaced Built Up Roof

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:33pm

Creator: Kody Berry

4



Based on visual observation, it appears the skylights are mounted low and could be contributing to water leaks into the building. It is recommended to remove existing skylights, install new curb of sufficient height, and install new safety rated skylights with vandalism/fall protection bars. These can be specified with the roofing project, and the skylights will be the last item to install after the roof system is completed.

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:36pm

Creator: Kody Berry

5



This building has flush mount plastic roof drains installed.

Plastic roof drains are not approved by any roofing manufacturer because the inability to attach with the compression ring. Existing plastic roof drains will be removed, and replaced with cast iron flush mount drains with integrated overflows.

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:30pm

Creator: Kody Berry

6



There are several areas on this roof that have delamination of roofing material, leaving openings that allow water to enter the building. This is typically caused by building movement, expansion or contraction in the roof system, lack of attachment between roof system components, or material incompatibility. This can also occur in high wind areas if the roof material was incorrectly attached or adhered.

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:29pm

Creator: Kody Berry

7



There are several areas on this roof that have delamination of roofing material, leaving openings allowing water to enter the building. This is typically caused by building movement, expansion or contraction in the roof system, lack of attachment between roof system components, or material incompatibility. This can also occur in high wind areas if the roof material was incorrectly attached or adhered.

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:29pm

Creator: Kody Berry

8



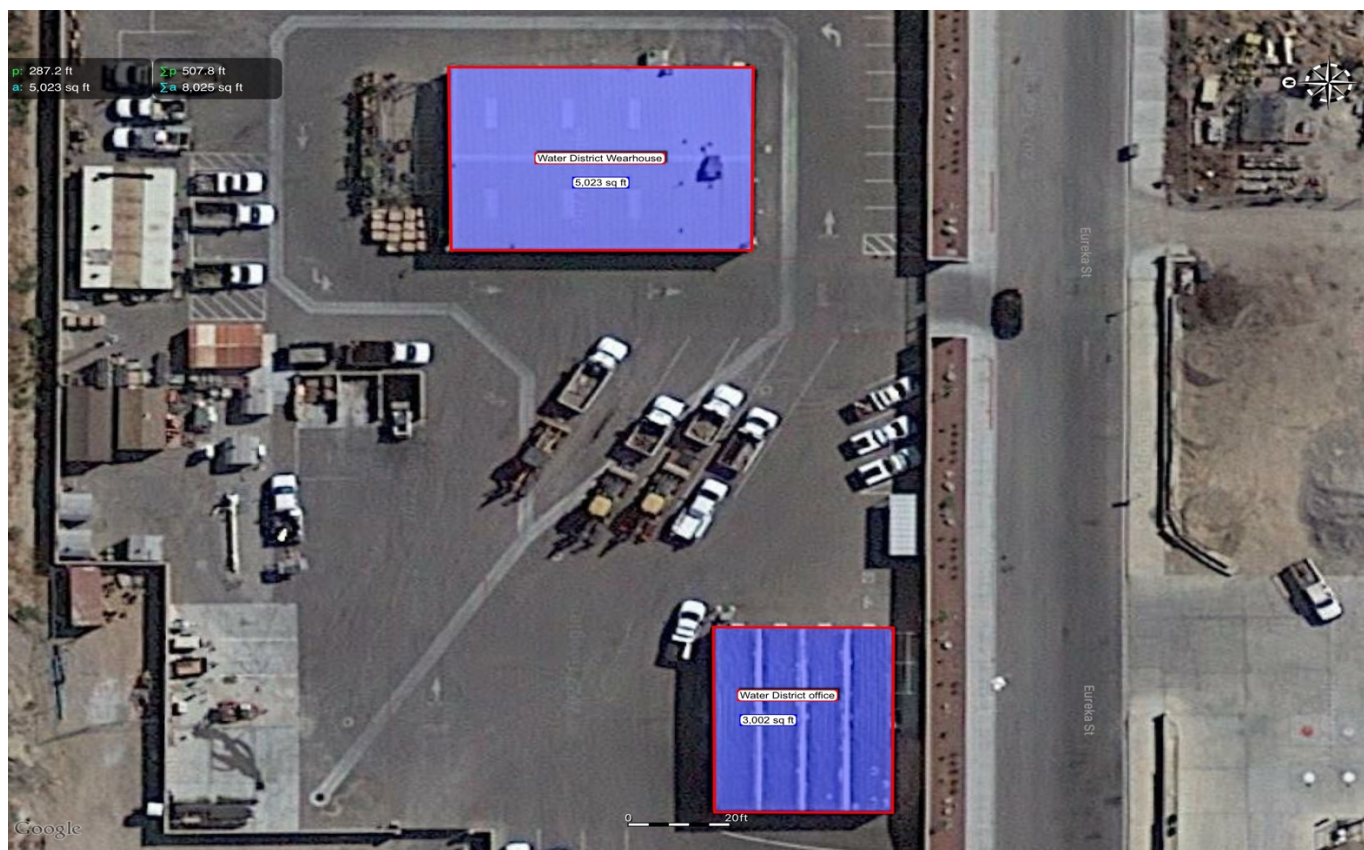
Roofing materials show signs of deterioration. This photo shows an area of the roof that has deteriorated completely, allowing water to funnel directly into the building. It is recommended to remove and replace all deteriorated roof areas during roof work to ensure that building remains watertight

Project: City of Victorville, Well 203

Date: 2/12/2024, 2:36pm

Creator: Kody Berry

CITY OF VICTORVILLE WATER DISTRICT MODULAR A OFFICE & WAREHOUSE



Prepared For:

Eddie Gleason

egleason@victorvilleca.gov

Prepared By:

Michael Jones

REPORT SUMMARY

OWNER: City of Victorville
ADDRESS: 14343 Civic Drive
Victorville, CA 92392
CONTACT: Cornell Williams
PHONE: 951-492-8766

PROJECT: City of Victorville Water District
ADDRESS: 13575 Hesperia Road
Victorville, CA



<u>BUILDING:</u>	<u>Modular A Office</u>
SQ. FT.:	3,002 Square Feet
ROOF TYPE:	Standing Seam Roof
WW SPEC:	NCN-1B-16-30-A
BUDGET (+/- 15%):	\$60,040.00
DOES THIS ROOF NEED TO BE REPLACED?	Yes



<u>BUILDING:</u>	<u>Warehouse Building</u>
SQ. FT.:	5,023 Square Feet
ROOF TYPE:	Corrugated Metal Roof
WW SPEC:	R-16-30-M-A
BUDGET (+/- 15%):	\$65,299.00
DOES THIS ROOF NEED TO BE REPLACED?	No

TOTAL ESTIMATED BUDGET FOR PROJECT (+/- 15%)

\$125,339.00

BUILDING SUMMARY



OWNER: City of Victorville
ADDRESS: 14343 Civic Center Drive, Victorville CA
CONTACT: Eddie Gleason
PHONE: (760) 955-5256

ROOFTOP INSPECTION

INSPECTION DATE: 02/17/2022 **CORE SAMPLE:** No
INSPECTION TYPE: Visual **DECK CONDITION:** Fair
ROOF LEAK DATA: Yes **SOURCE:** Owner

PROJECT: Water District
BUILDING: Modular A Office
ADDRESS: 13575 Hesperia Road
 Victorville, CA



BUILDING INFORMATION

AGE	SQ. FT.	ACCESS	SLOPE	HEIGHT
15+	3,002	Ladder	1/4"-12"	13

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	Plywood	1	Mechanical	1/4"
INSULATION:	N/A	-	-	-
EXISTING:	Standing Seam		Mechanical	-

DETAILS

PERIMETER: Edge Metal
 FLASHING: N/A
 DRAINAGE: Edge

ROOFTOP EQUIPMENT/ACCESSORIES

	TYPE	QTY.
MECHANICAL EQUIPMENT:	N/A	-
PENETRATIONS:	Pipe and Vent	Few
PERIMETER GUTTER:	N/A	-

EXISTING ROOF TYPE / RATING

DECK: Fair
 FIELD – EXISTING ROOF: Poor
 FIELD SEAMS – EXISTING ROOF: Poor
 PERIMETER – EXISTING ROOF: Fair
 PENETRATIONS – EXISTING ROOF: Poor
 WALLS – EXISTING: N/A
 GUTTERS: N/A
 SKYLIGHTS: N/A
 COUNTER FLASHINGS: N/A
 DEBRIS ON ROOF: No
 PONDING WATER: No
 OTHER: N/A

BUDGET/SCOPE OF WORK

APPROXIMATE TOTAL(+/-15%)

\$60,040.00

WEATHERWELD ROOF SYSTEM

NCN-1B-16-30-A

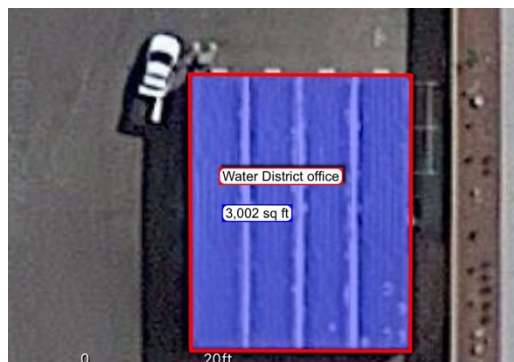
WARRANTY LENGTH

40 Years

INSPECTION PHOTOS



Modular A at the Water District for City of Victorville consists of portable buildings that have been joined together under one roof.



The building has a plywood roof deck and a standing seam metal roof and is about 3,000 square feet.

INSPECTION PHOTOS



Standing seam metal consists of sheet metal panels with seams that are crimped and sealed every 12-15 inches. Sheet metal panels are attached to the substrate using sheet metal screws with rubber washers. The panels on this building are thin gauge sheet metal and should be removed down to the plywood deck in order to start over with this roof and install a strong seamless roof



There is a cap on the joint where the buildings are joined which is a source of leaks. The picture above shows repairs made with temporary mastic, which is not solving the problem.

INSPECTION PHOTOS



The building drains to the edge and has a few vent penetrations which also have been repaired with temporary mastic. Penetration flashing will be encapsulated during roof work.

BUILDING SUMMARY



OWNER: City of Victorville
ADDRESS: 14343 Civic Center Drive, Victorville CA
CONTACT: Eddie Gleason
PHONE: (760) 955-5256

ROOFTOP INSPECTION

INSPECTION DATE: 02/17/2022 **CORE SAMPLE:** No
INSPECTION TYPE: Visual **DECK CONDITION:** Fair
ROOF LEAK DATA: Yes **SOURCE:** Owner

PROJECT: Water District
BUILDING: Warehouse
ADDRESS: 13575 Hesperia Road
 Victorville, CA



BUILDING INFORMATION

AGE	SQ. FT.	ACCESS	SLOPE	HEIGHT
15+	5,023	Ladder	1/4"-12"	13

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	Metal	1	Mechanical	1/4"
INSULATION:	N/A	-	-	-
EXISTING:	Corrugated		Mechanical	-
	Metal			

DETAILS

PERIMETER: Edge Metal

ROOFTOP EQUIPMENT/ACCESSORIES

	TYPE	QTY.
DRAINAGE:	Edge	
MECHANICAL EQUIPMENT:	HVAC	1
PENETRATIONS:	Pipe and Vent	Few
PERIMETER GUTTER:	N/A	-

APPROXIMATE TOTAL (+/-15%)

\$65,299.00

WEATHERWELD ROOF SYSTEM

R-16-30-M-A

EXISTING ROOF TYPE / RATING

DECK:	Fair
FIELD – EXISTING ROOF:	Poor
FIELD SEAMS – EXISTING ROOF:	Poor
PERIMETER – EXISTING ROOF:	Fair
PENETRATIONS – EXISTING ROOF:	Poor
WALLS – EXISTING:	N/A
GUTTERS:	Fair
SKYLIGHTS:	N/A
COUNTER FLASHINGS:	N/A
DEBRIS ON ROOF:	No
PONDING WATER:	No
OTHER	N/A

WARRANTY LENGTH

40 Years

INSPECTION PHOTOS



The warehouse building at the Water District for City of Victorville is a corrugated metal building with a corrugated metal roof.



The building is about 5,000 square feet.

INSPECTION PHOTOS



Metal panels are attached to the substrate using sheet metal screws with rubber washers. There are 3 places where metal leaks: fasteners, seams, and terminations.



The rubber seals on fasteners wear out quickly due to expansion and contraction and panel movement.

INSPECTION PHOTOS

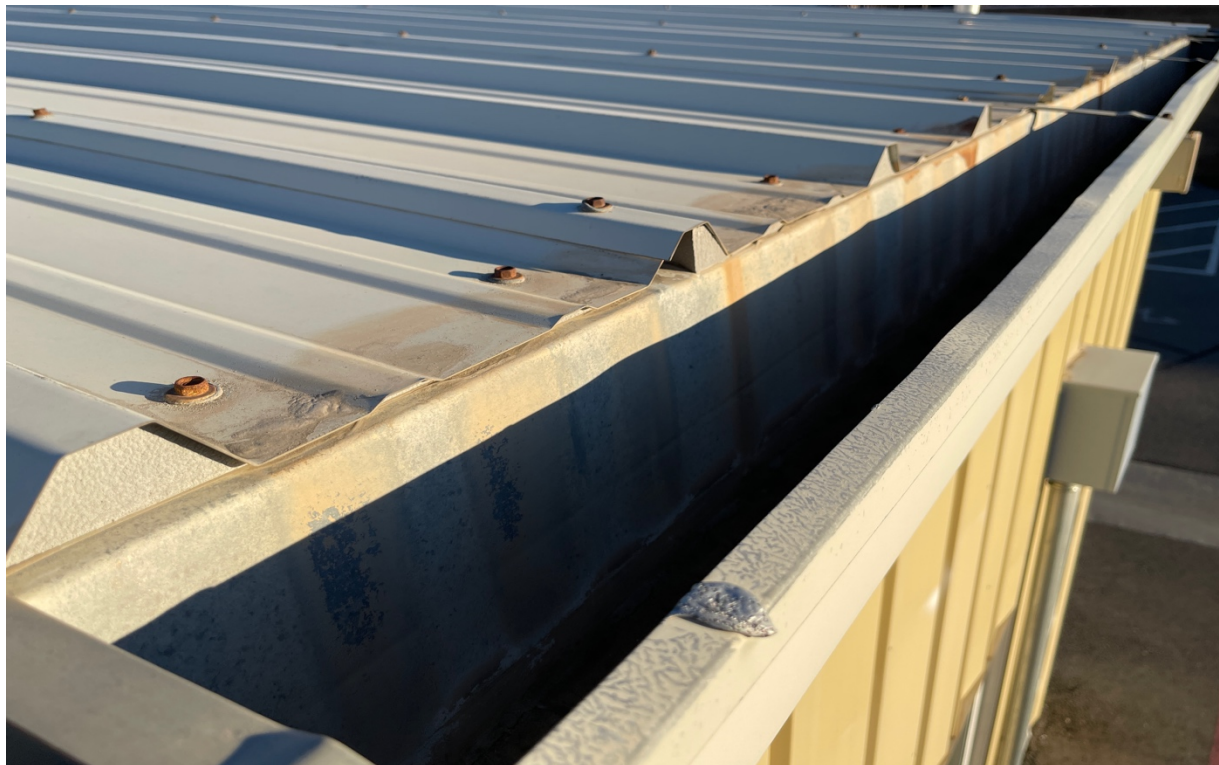


The building has a few vent penetrations which have been repaired with temporary mastic. Encapsulating these penetration flashings will create a roof that is one seamless piece and prevent leaks.



The HVAC unit is sleeper mounted and external ducts that lead into the building. This unit is going to be removed during roof work.

INSPECTION PHOTOS



The building drains to gutters that appear to be in fair condition.