City of Miami Beach- Historic City Hall- Visual Roof Inspection- 2018					
Date of Inspection:	**1/04/2018**	**Time:**	**1:00pm**	**Type:**	**Visual Inspection**
Property Name:	**City of Miami Beach- Historic City Hall**				
Property Address:	**1130 Washington Ave Miami Beach, FL**	**Manager:**	**Lily Alvarez**		
Manager E-Mail:	lilyalvarez@miamibeachfl.gov	**Contact Phone:**	**(786) 559-6847**		

Building/ Roof Sections:	**All Roof Sections**	**Year Installed or Age of Roof:**	**>15+ years**	**System Type:**	**Modified Bitumen- Granulated Insulated and Non-Insulated Brick surfaced Balconies on the 8th floor Barrel tile roofing systems outside mansards and equipment rooms**
General Roof Condition:	**Poor**	**Leaks:**	**Yes**	**Location Leaks:**	**Courtroom 2-1 Chapel Breakroom Offices on the 7th floor**
Warranty:	**None Reported**	**Roofing Contractor Name:**	**N/A**		
Building Contact:	**Oniel Toledo**	**Contact Cell:**	**786 559-6847**	**Contact E-Mail:**	**Same as above**

Inspection Warranty

The contents of this report are based on the visible conditions present on the day of the inspection. No warranty is made that these conditions will not change before suggested repairs or replacements are implemented.

There is no warranty that there are other “latent” or hidden conditions that exist that are beyond the scope of this inspection or the machinery utilized to obtain the results listed in this report. Observations made that are outside the scope of this report and our field of expertise should be checked by the appropriate vendors and/or consultants whose expertise is in that field.

The report is the property the City of Miami Beach and RMS. The report is accurate to the best of our knowledge and ability, but is not to be used as a substitute either now or in the future for plans and specifications for used by contractors or other parties contracted to handle the repairs/replacement suggested in the report. By providing this report to other parties, the client agrees to assume all liability for use of the contents of the report and to hold RMS harmless from any liability associated with use by other parties.

The conclusions and suggested scope of work and this report are not considered to be a working specification. This report is not to be used as a specification as many intricate details that are required for a proper specification have not been included.

Visual Observations

Roof Management Solutions performed a visual inspection several roof sections and office decks of the City of Miami Beach Historic City Hall. I was accompanied on my inspection by Toledo Oniel on January 4, 2018. Our focus were roof leaks within the facility. The configuration of the various roof assemblies are summarized on a detailed "SkyMeasure©" Roof report that RMS has supplied the City of Miami Beach.

The weather was fair and sunny on the days of the inspection. A photographic and captioned journal of each roof area/deck area is enclosed with the roof report. As per the purchase order, there was no cores or moisture surveys performed on the roof. Our report findings are comprised of a "visual" inspection of the roof areas our technician was taken.

Roof Section Assembly

The Old City Hall roof is a combination of barrel tile mansards and copula's at various "pitches" around the building perimeter and on equipment roof areas. The total estimated square footage of all tile roof areas is 5,896 SF. The flat roof areas are comprised of a modified bitumen roofing system on three roof areas that total approximately 3,858 SF. The age of these roofing systems was not available to our inspector.

Our inspector was escorted to both the Courtroom 2-1 and an area that serves as a wedding chapel. Stained ceiling tiles were observed both in the courtroom and the chapel area (photos #4- #8). After looking at active leak sites, our inspector was taken up to the roof over the courtroom. The roof section over the courtroom is comprised of both a modified bitumen system and an equipment room that has a barrel tile roof.

- **Membrane Flashings**

  The roof perimeter wall flashings on this roof section consist of a granulated modified bitumen membrane. The flashings are old and do show signs of advanced age and UV degradation.

- **Roof Field Membrane**

  The granulated modified field membrane was observed to be in fair- poor condition. The roof surface is aged and there was broken tile debris throughout. The tile debris must have been created because of hurricane IRMA. Our inspector noted that some of the broken tile was driven into the flashings. An emulsion coating was spread over most of the roof field as an attempt to mitigate the leaks. An inspection of a mechanical room over the courthouse leaks does show rust of the duct work from the ocean that is close by. The flashings along the outside wall of the equipment roof are badly weathered.

- **Drainage**

  There appears to be sufficient drainage built into the modified roofing systems. All have overflow scuppers and while there is evidence of standing water it is localized.

- **Barrel Tile**

  An inspection of the barrel tile roof areas reveals wind damage and uplift that is random on all elevations. The tiles were installed by the concrete paddy method which has limited ability to withstand high winds and negative pressure. Flying tile on a roof creates damage by embedment of the tile into the roof membrane and flashings. It appears that the leaks in the chapel and break room are over the tile mansard and may be the result of metal edge issues or storm damage coupled with age. In order to determine if this is the issue, a further investigation using lifts to the mansard for closer examination is necessary.

- **8th Floor Balconies**

  There are small brick surfaced balconies all along the 8th floor. They are composed of brick over concrete. The outer perimeter of the balcony is comprised of a concrete balustrade railing. At the termination to the tile, there is a bead of concrete and caulking. According to Oniel when there is a rain, these balconies leak into the units below. Drainage is accomplished by floor drains. The leak is either a waterproofing problem or a drain issue. It is suggested that the drains, perimeters, both inside and outside be water tested to determine if each of the balconies leak and what is the cause of the leak. Because the building is old, and the balconies have not been replaced, a total renovation of all the balcony tiles may be the best solution.

- **9th Floor Roof**

  This is a modified bitumen roofing membrane. Drainage is internal and all flashings are copper. Slope is good to divert water off the roof. Granule loss to the membrane is moderate. This would indicate that the age of the roof is at least 12 years. Equipment on the roof consists of air conditioning equipment on stands. The roofing system appears to be a direct cement down to the concrete deck with no insulation, but this would have to be confirmed with core cuts. Pitch pans on the roof are too small and all flashings on this roof appears to be in good condition. The outside parapet of appears to be a concrete balustrade system. The pitch pans that surround both the lightening protection system and the electrical boxes require maintenance and to re-position the electrical boxes. According to O'neil there are leaks. Our inspection revealed several maintenance concerns all pointing to the pitch pans. It would probably make sense to provide an overall PM program with a white roof coating rather than tear off.

Recommendations

Based on the results of our inspection of these various areas of leakage on many roofing levels it is the opinion of RMS that all the insulated and older modified bitumen roofing systems be removed and replaced with a current code compliant modified bitumen system that is sloped to drain.

The modified bitumen system on the 9th Floor roof should be re-coated and restored to "like new" condition. This would involve securing all the seams with specialized mastic and mesh and coating all the flashings and roof field with a multicoat application of elastomeric roof coating. The pitch pans should be replaced and all the drains should be "scoped" or water tested to insure they are not leaking. Particular attention to the concrete railings are necessary as well.

The entire barrel tile system should be repaired with closely matching tile. All cracked, split, chipped, and missing tile should be replaced. The area over the breakroom and chapel must be more carefully examined and repaired along the edge of the mansard.

The 8th floor balconies do require water testing to determine if all the water leakage is either the drains, perimeters, or tile system field. When a determination is made, and it implicates the floor tile and the perimeters, the entire balcony must be replaced with new exterior non slip tile and waterproofing system between the tile and the concrete slab. A structural engineer should be retained to determine if the concrete balustrade is structurally sound.

Estimated Costs

An estimated budget to repair and re-seal the broken, split, cracked, and missing barrel tile as necessary would be approximately $30,000. This would not include the leak over the break room and chapel. Until those areas require more investigation with a time and material estimate as the extent of the leaks cannot be readily determined. If these tile roof areas are over 25-30 years old a more suitable solution would be to tear off all the mansards and copula's and replace them with new code compliant tiles and underlayment.

The cost to replace the insulated and older modified bitumen roof areas on the upper most roof (middle) and the south roof plus a complete restoration and coating of the north roof would be approximately $80,000 to $100,000.

Until more investigation is completed on the 8th floor balconies, a budget figure to correct the leaks coming from these balconies could not be ascertained at this time.

RMS can supply the City of Miami Beach a proposal to provide specifications and project management for the following: barrel tile repair (or replacement), restoration of the 9th floor roof, replacement of the uppermost modified roof areas and the south lower roof section with a new code compliant roofing system with a 20 year warranty. Repair to the tile roof areas would typically provide the City of Miami Beach with a 1 year labor warranty.

Inspector's Signature:	*Howard Lustgarten*	**Date: 2/28/2018**
Print Name:	**Howard Lustgarten**	

CITY OF MIAMIBEACH

Historic City Hall
1130 Washington Avenue
Miami Beach, FL 33139

Roof Inspection Photos
January 2018*

Prepared with pride by
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*due to 'technical difficulties' the auto-date on the photos is incorrect; please disregard

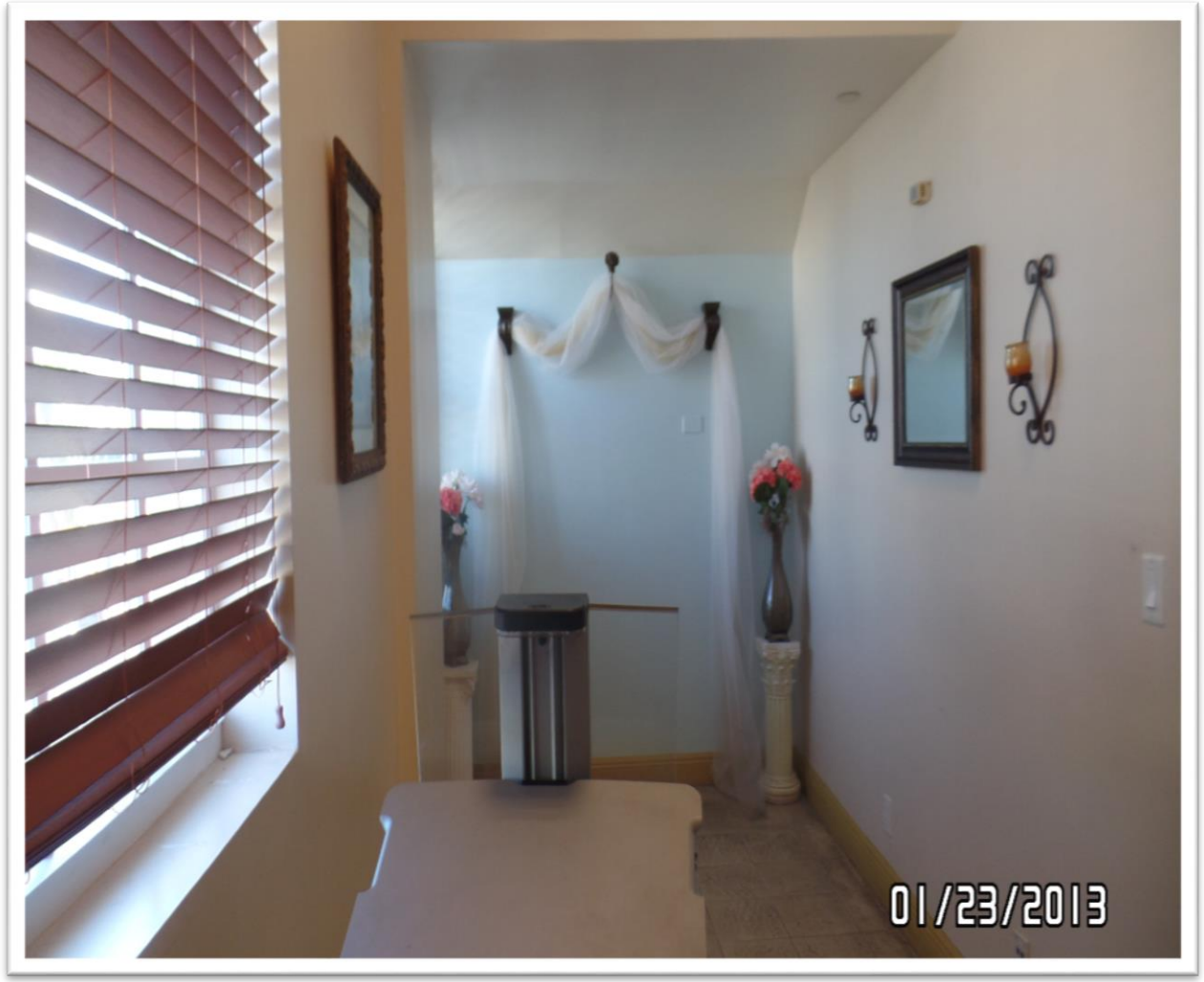
1. BUILDING FACADE

2. MIAMI BEACH HISTORIC CITY HALL

3. COURTROOM

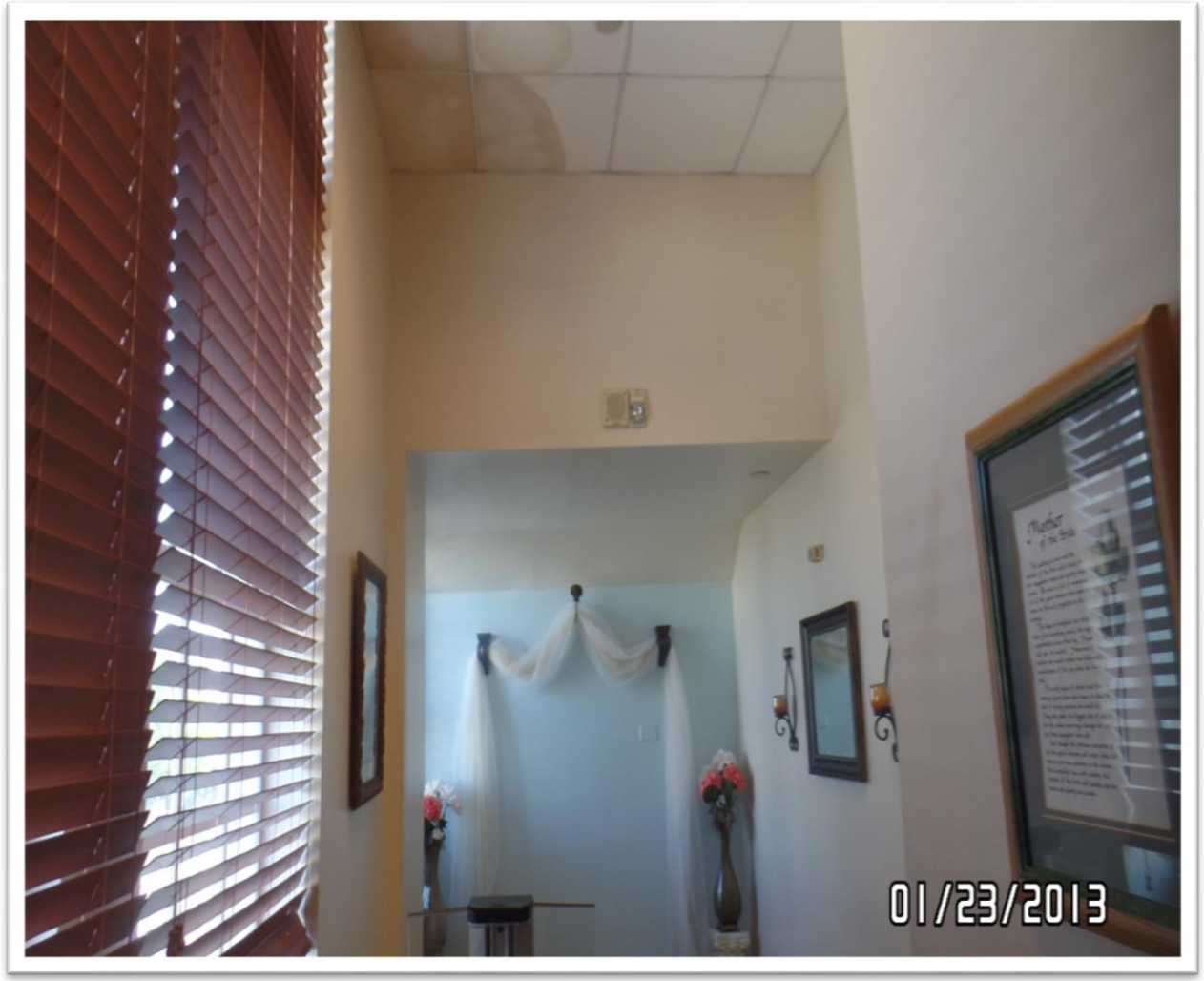
4. LEAK IN CEILING_1 IN COURTROOM 2-1

5. LEAK IN CEILING_2 OVER MARRIAGE CHAPEL



6. LEAK IN CEILING OVER CHAPEL

7. LEAK IN CEILING_3 OVER CHAPEL AT THE FRONT OF THE BUILDING



8. LEAK IN CEILING_4 AT MARRIAGE CHAPEL

9. MISSING RIDGE TILES
ON CENTER PENTHOUSE OVER COURTROOM 2-1

10. MISSING DRAIN GRATE COVER AND BROKEN BARREL TILES ON ROOF OVER COURTROOM AREA 2-1

11. BROKEN AND MISSING BARREL TILES ON PENTHOUSE ROOF_1

12. BROKEN AND MISSING TILES ON PENTHOUSE ROOF_2

13. BROKEN AND MISSING TILES ON PENTHOUSE ROOF_3

14. CRACKS, HOLES AND DETERIORATION IN BASE FLASHING SYSTEM DUE TO AGE AND UV EXPOSURE

15. TILE IMPALED IN BASE FLASHING SYSTEM FROM HURRICANE IRMA- SOUTH ROOF

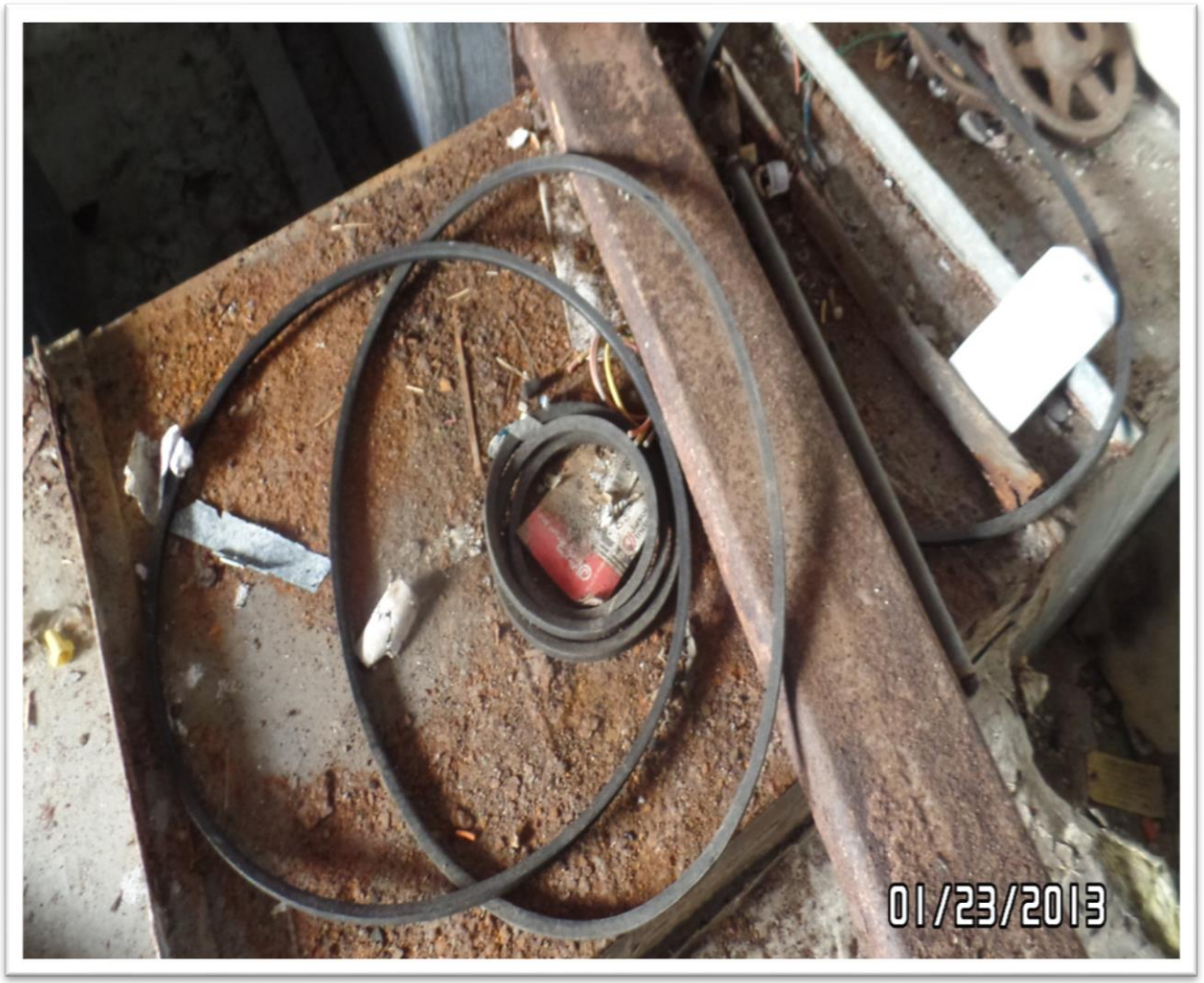
16. HOLE IN BASE FLASHING SYSTEM OF SOUTH ROOF

17. MISSING RIDGE CAP TILES

18. BROKEN ROOF TILES FROM EITHER FLYING DEBRIS OR WIND UPLIFT

19. ROOF SECTION OVERVIEW SHOWING AN EMULSION COATING AT PARAPET WALL

20. INSIDE PENTHOUSE OF COURTROOM 2-1 IN AREAS OF ROOF LEAKS. THE ROOM IS VERY CLUTTERED



21. AREA OF RUST AND DETERIORATION WITHIN THE SOUTH EQUIPMENT PENTHOUSE

22. RUSTED DUCT SECTIONS WITHIN EQUIPMENT ROOM PENTHOUSE OVER COURTROOM 2-1

23. RUSTED METAL DUCTWORK IN EQUIPMENT ROOM

24. TYPICAL PATIO AREA AT THE REAR OF THE BUILDING

25. MASONRY CRACKS IN CONCRETE COLUMNS OF 8TH FLOOR WEST

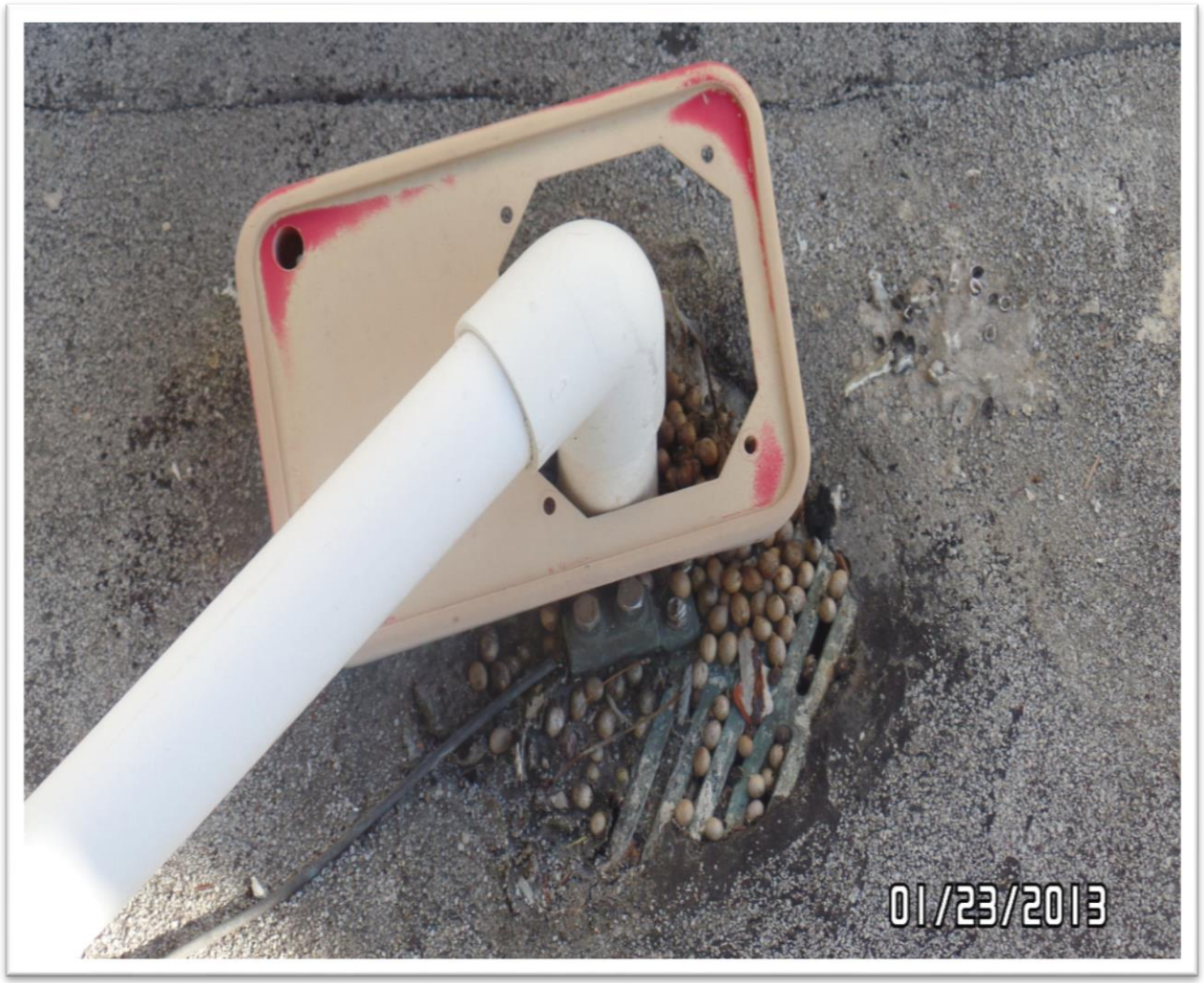
26. FLASHING OPENINGS AT PERIMETER OF BALCONY ON THE 8TH FLOOR WEST

27. TILE AT OUTSIDE WALL IS SHOWING SIGNS OF WATER LEAKAGE

28. RUST COMING FROM WATER INTRUSION OF THE 8TH FLOOR BALCONY DECK

29. CRACKS IN THE OUTSIDE BALCONY FLASHING PERIMETER

30. UPPER ROOF NORTH SIDE



31. BLOCKED INTERNAL DRAIN WITH SEEDS ON THE 9TH FLOOR ROOF

32. TILE DEBRIS AND WEATHERED MODIFIED BITUMEN MEMBRANE

33. FAILING CAULKKING AND PITCH PAN FILLER THAT IS TYPICAL ON THIS ROOF SECTION

34. ELECTICAL BOX SURROUNDED BY A FAILING PITCH PAN

35. OVERVIEW OF MECHANICAL VENTS MOUNTED ON 9TH FLOOR ROOF

36. TYPICAL INTERNAL DRAIN