



# **Nighthawk** **Imaging Services**

**“We Soar Above The Competition”**

**1069 Thunderbolt Dr**  
**Report**





**RE: Thunderbolt Career & Tech** - 1069 Thunderbolt Dr. Walterboro, SC 29488

We arrived in Walterboro, SC area survey at around 4:30 P.M. local time on 03/01/2022 to perform a series of roof moisture inspections. The purpose of our visit was to conduct a series of roof moisture inspections to determine the overall condition of the roof insulation and determine if there was extensive moisture content in the roof insulation. We began with the daylight airborne flight at about 5:30 P.M. local time with winds calm at 1-2 MPH. Daylight aerial imagery was captured to use as part of the assessment process in comparing the daylight images to the thermal data. We followed up the aerial daylight photography with a cursory walk-on review of the roof to familiarize ourselves with the project.

The weather had been ideal for the infrared surveys - it had been sunny for most of the day with the temperature in the low to mid-seventies. This allowed for good solar loading and transfer of thermal energy into the roof system. We began the thermal flight that evening at approximately 7:15 P.M. local time. Multiple flight passes were made over the project site with the thermal imaging system in a grid-like pattern to determine if there was excessive moisture entrapped in the roof system.

Following the aerial thermal survey, we performed a walk-on roof top infrared inspection to verify the findings of the aerial survey. We began our rooftop moisture survey at the NE corner of the building. A number of smaller wet areas of insulation were found quickly as we began to search across the roof surface in a grid pattern. Many of the roof locations that were believed to be wet were verified with a secondary type of moisture detection equipment. This type of non-destructive testing equipment is based on the electrical conductance of the roof insulation. The electronic testing did confirm or closely correspond to the results of our thermal survey. The wet regions of insulation were generally small in size. We were tasked to mark wet regions of the foam insulation that were 1 foot square and larger. We have also marked many of the areas that were smaller than 1 foot square but there were too many to practically mark and locate on the CAD drawings. Wet locations that we found were marked on the roof surface with red paint and on the roof drawings in red.

### **Conclusion:**

We documented our inspection of the facility by taking both infrared and visual aerial photos of the entire roof assembly and plotting the results on the scaled roof drawing. Analysis of the imagery and data indicates that we found numerous (over about 275) areas of wet and/or damp roof insulation. We have used the computer to calculate the total roof area of wet roof insulation. There are however other areas or defects such as cracks, blisters, and the like, that contractors will need to consider when preparing their roof bids responsibly. The total roof area was 51,291 sq ft, and the wet regions of insulation totaled approximately 660 sq ft.

- Roofing contractors and/or consultants need to verify the type, depth of insulation, and the total square footage of roof insulation needing to be replaced.

If you have any questions, please feel free to call me at 330-541-7885.

**Jesse Gray**  
**Nighthawk Imaging Services LLC.**

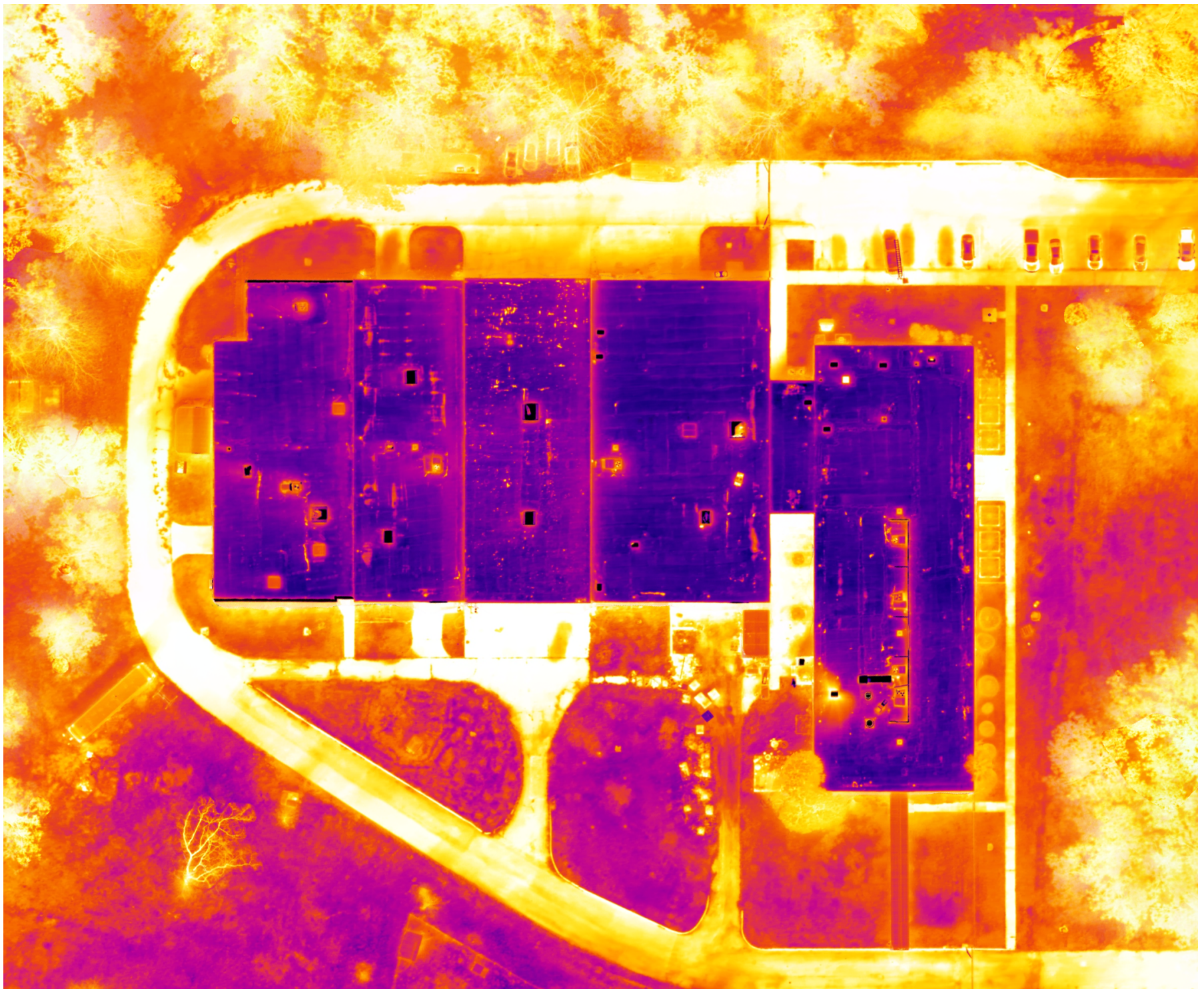




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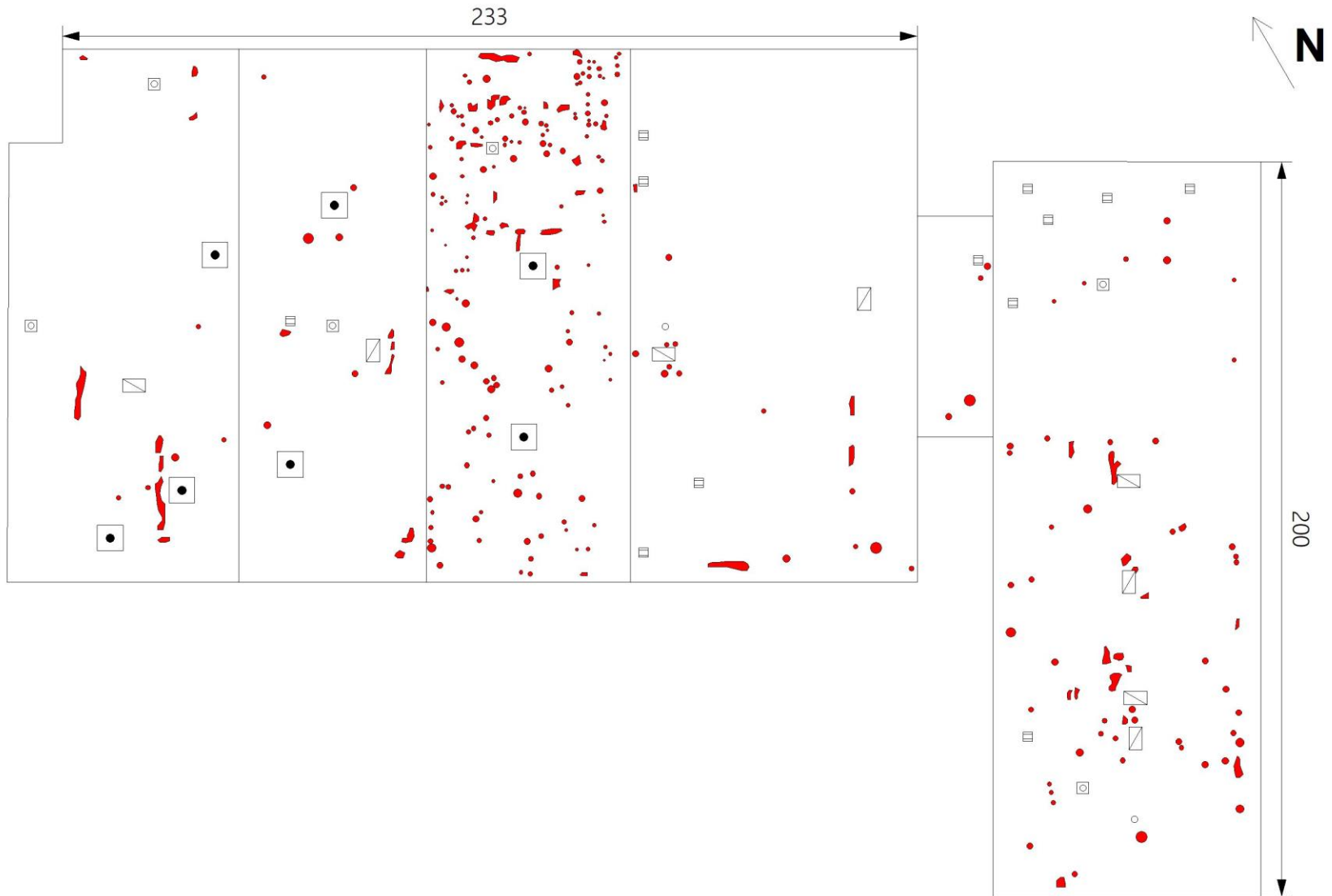










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**Legend:**

-  HVAC
-  Exhaust Fan
-  Skylight
-  Vent Stack
-  Abandoned Curb
-  Wet: 659 Sq. Ft. - 276 Areas

**Building:** 1069 Thunderbolt Dr. Walterboro, SC  
**Roof Area:** 51,291 Sq. Ft.  
**Date:** March 2022

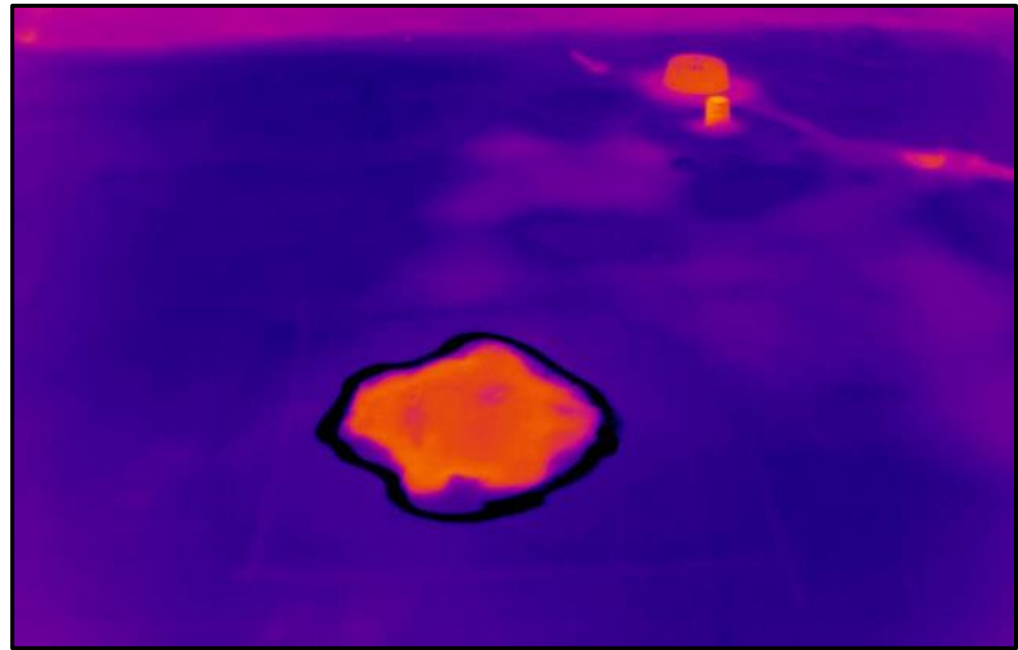


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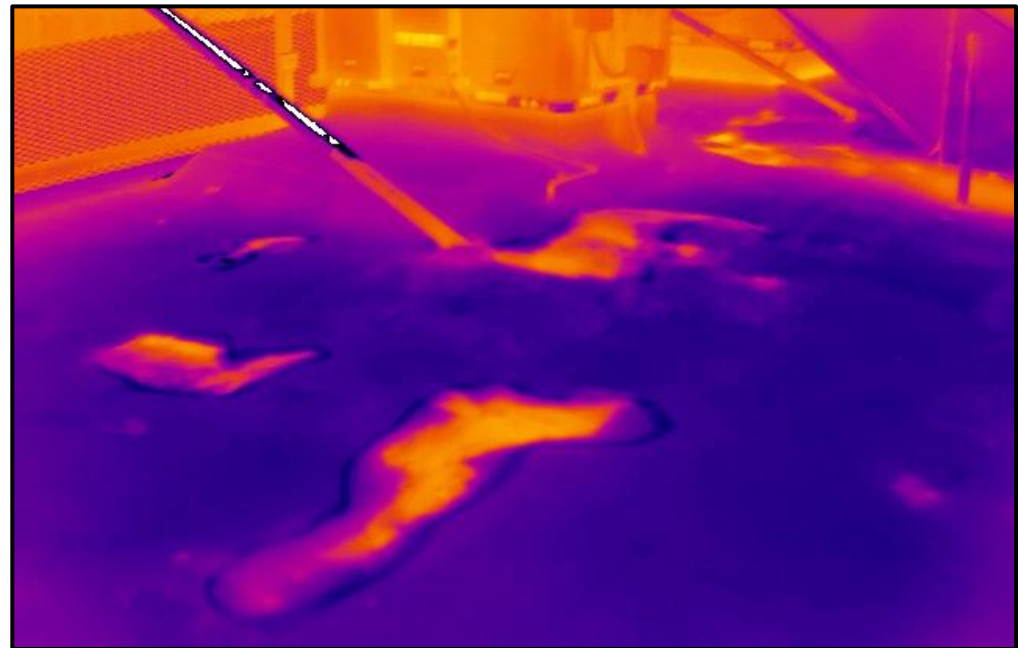
Daylight Image 1



Infrared Image 1



Daylight Image 2

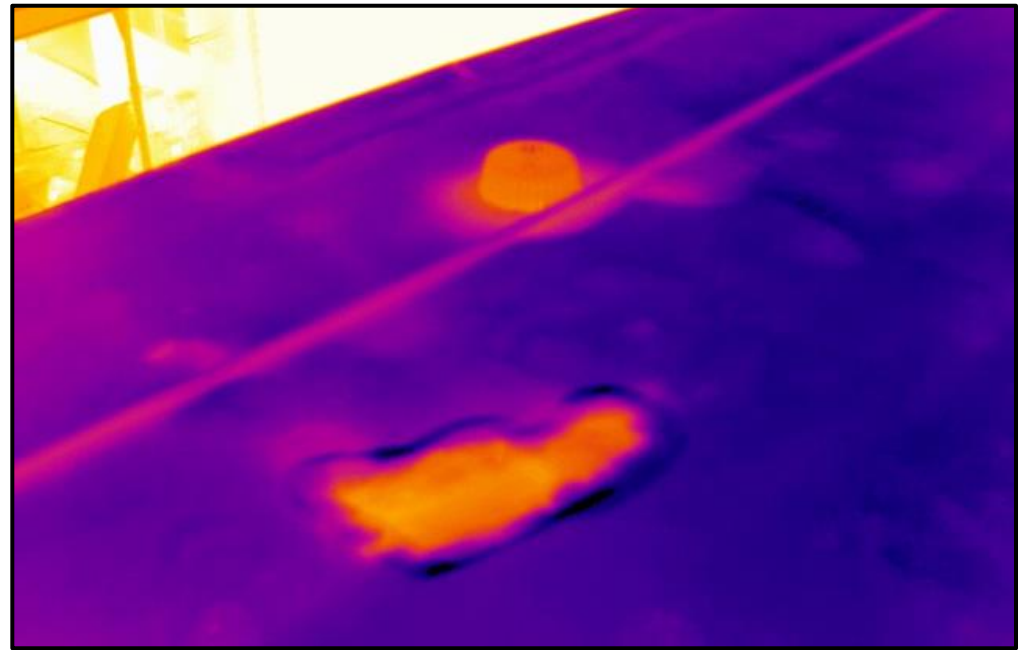


Infrared Image 2





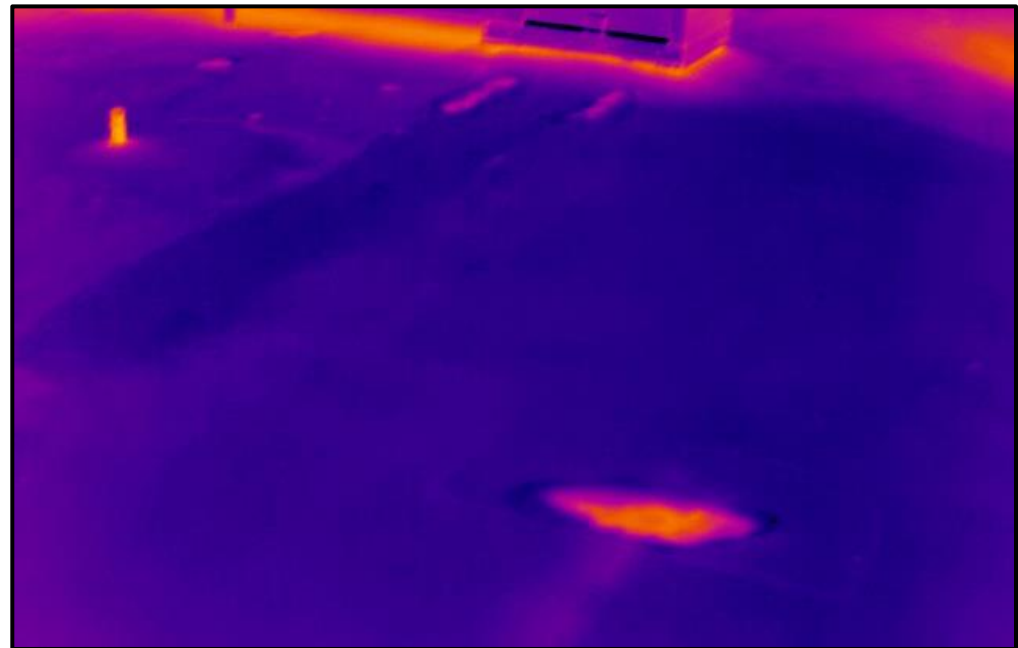
Daylight Image 3



Infrared Image 3



Daylight Image 4

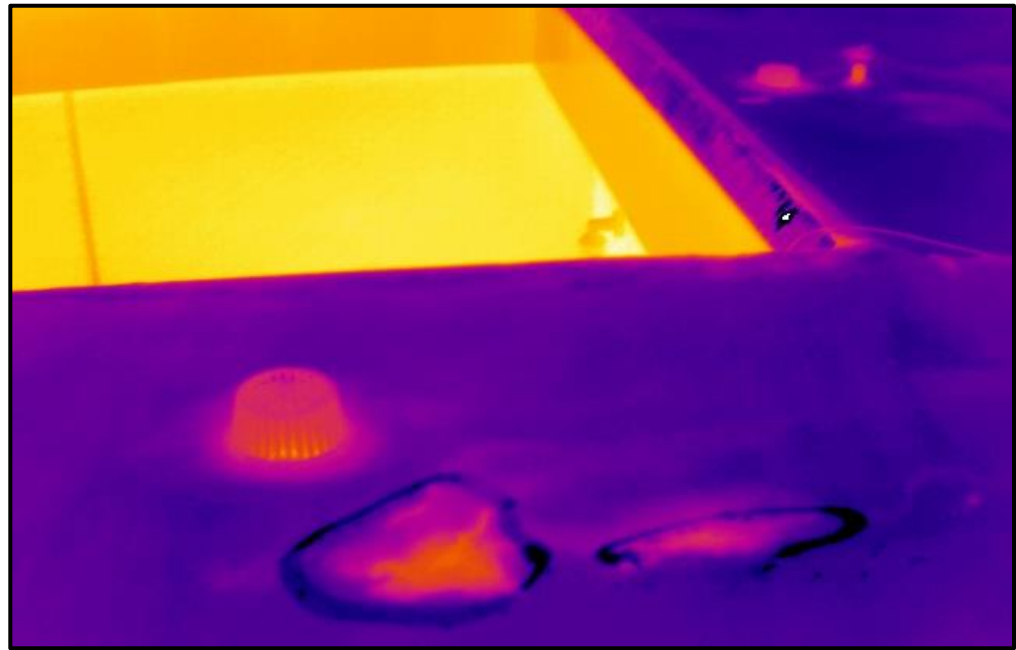


Infrared Image 4





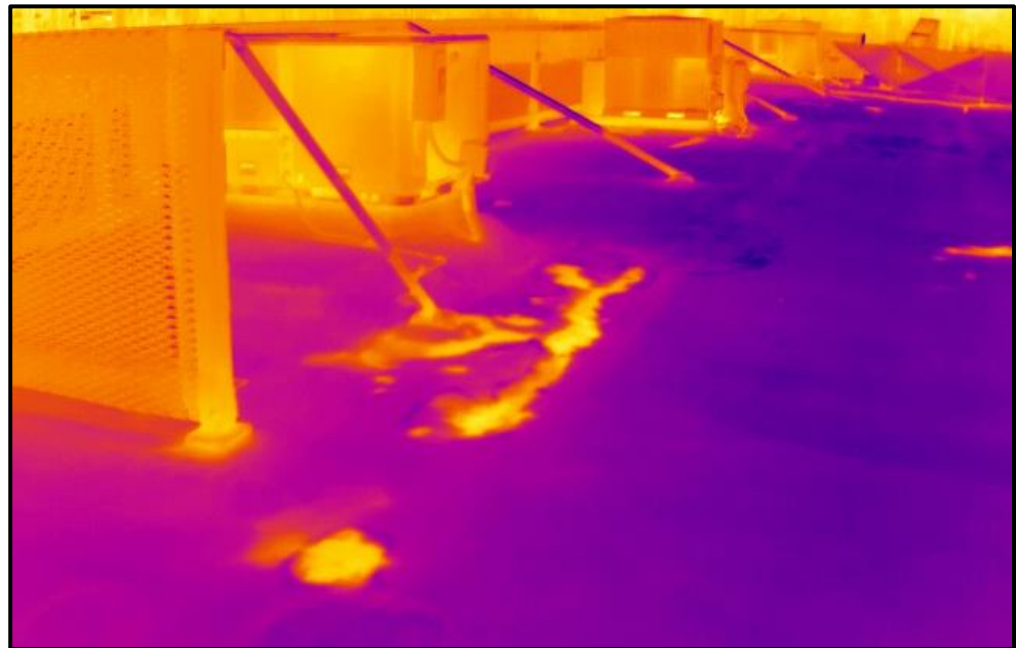
Daylight Image 5



Infrared Image 5



Daylight Image 6

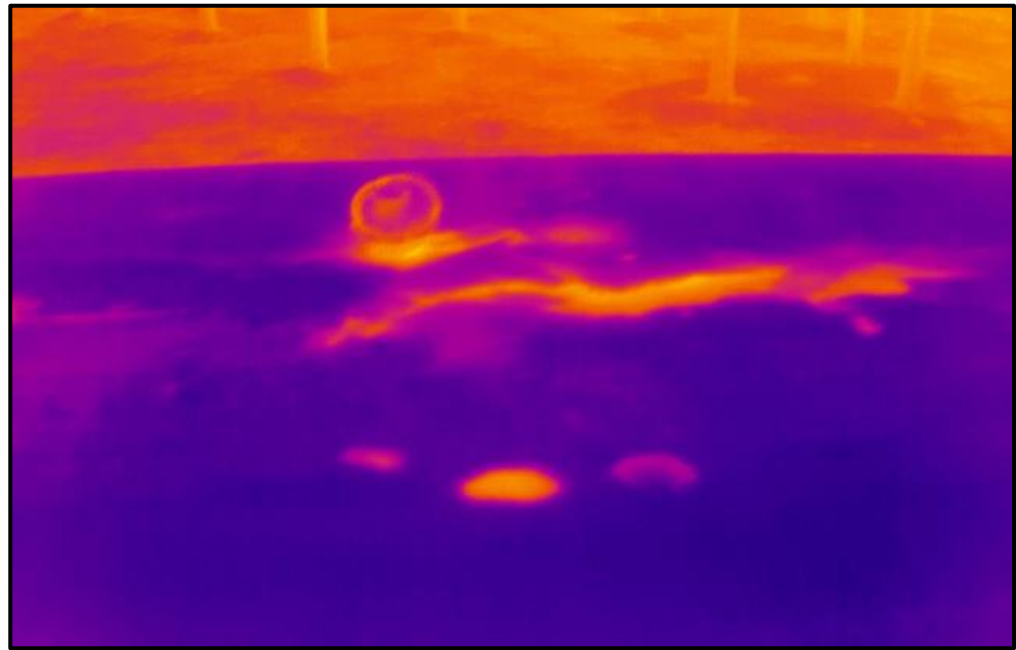


Infrared Image 6





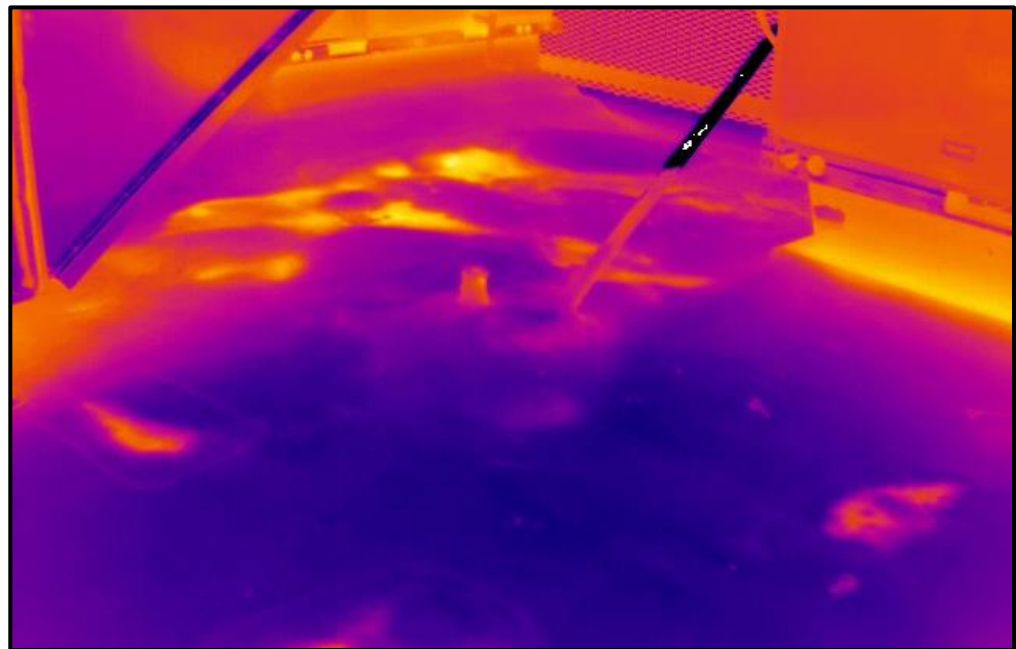
Daylight Image 7



Infrared Image 7



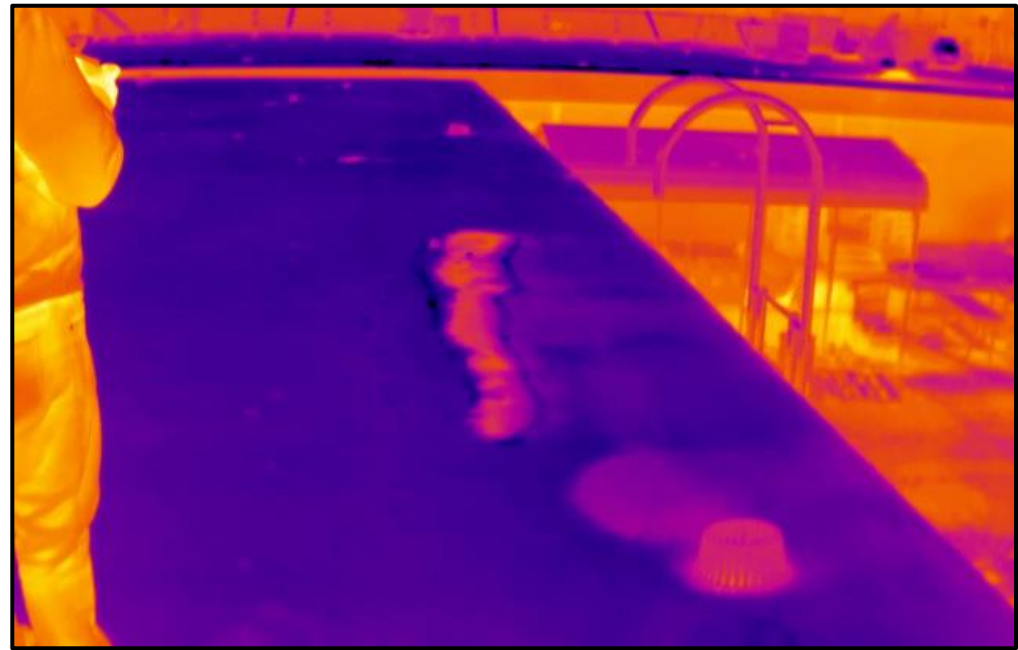
Daylight Image 8



Infrared Image 8



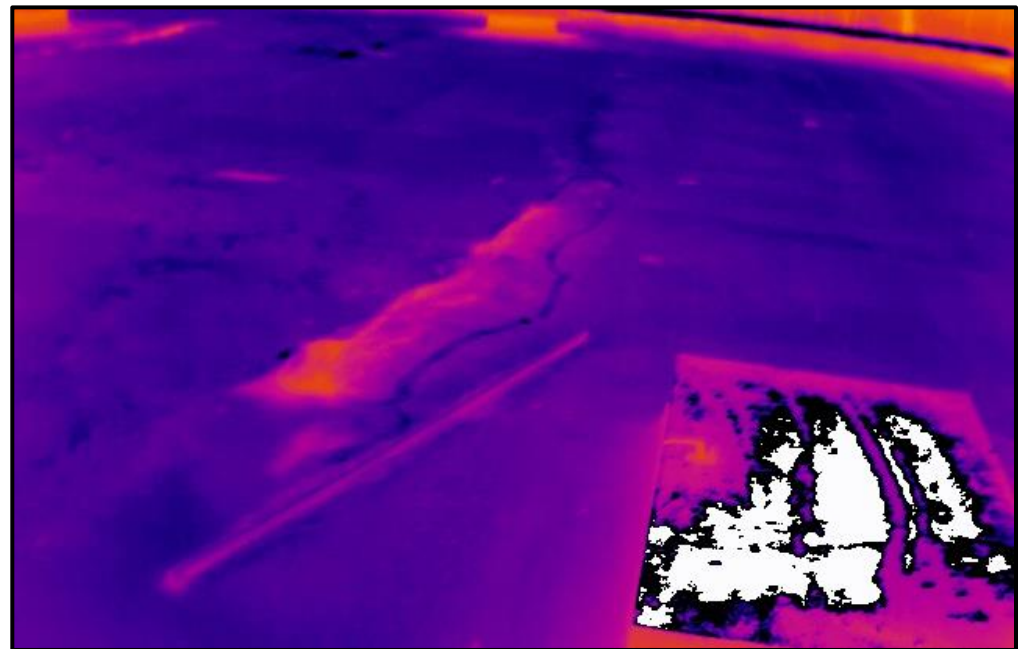
Daylight Image 9



Infrared Image 9



Daylight Image 10

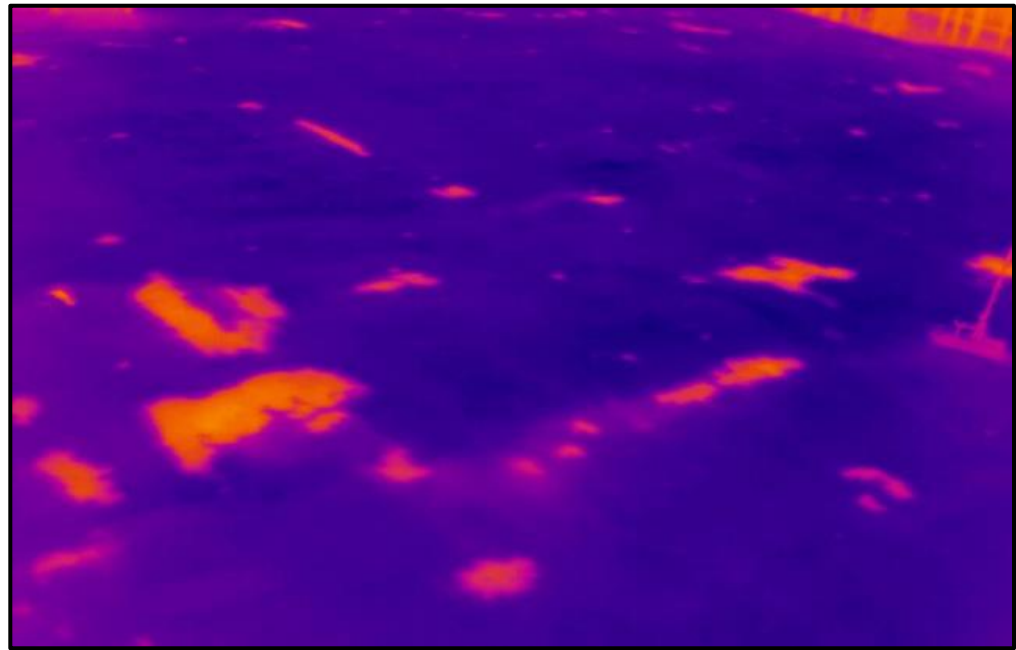


Infrared Image 10





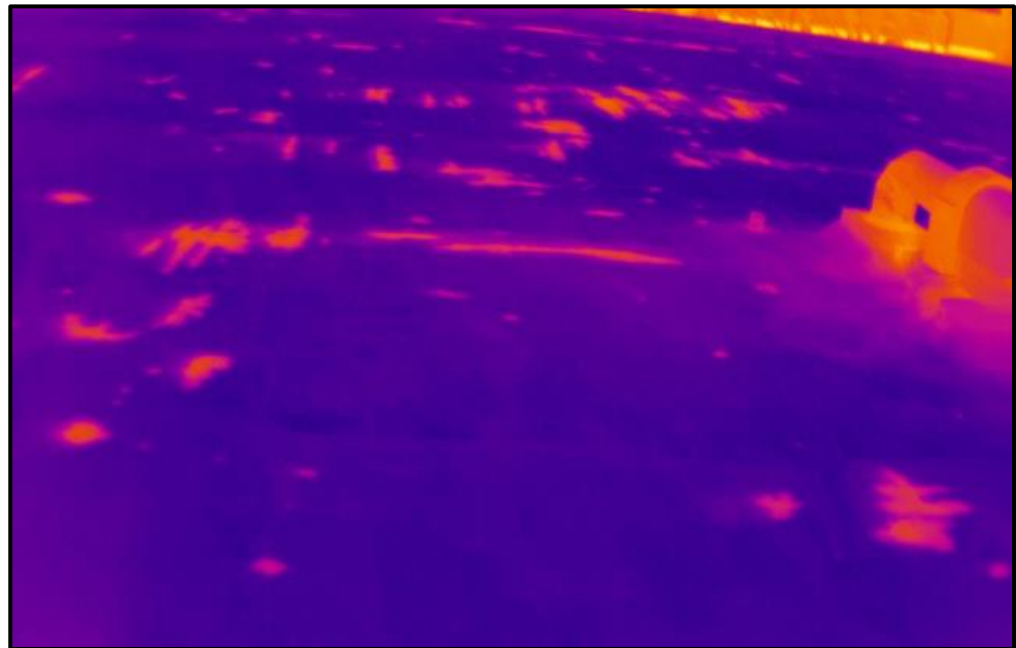
Daylight Image 11



Infrared Image 11



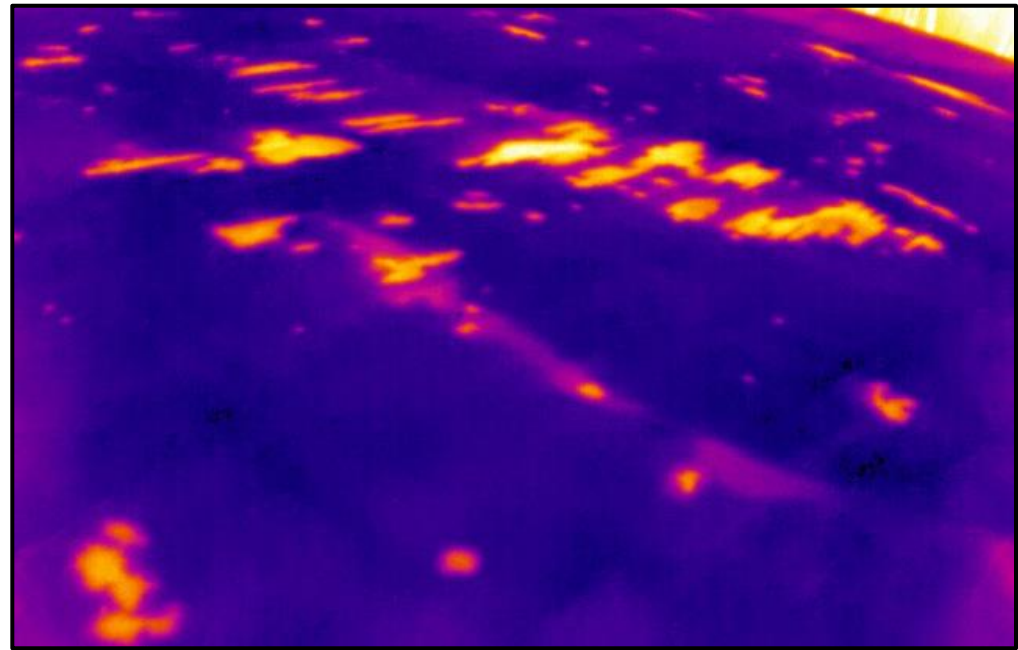
Daylight Image 12



Infrared Image 12



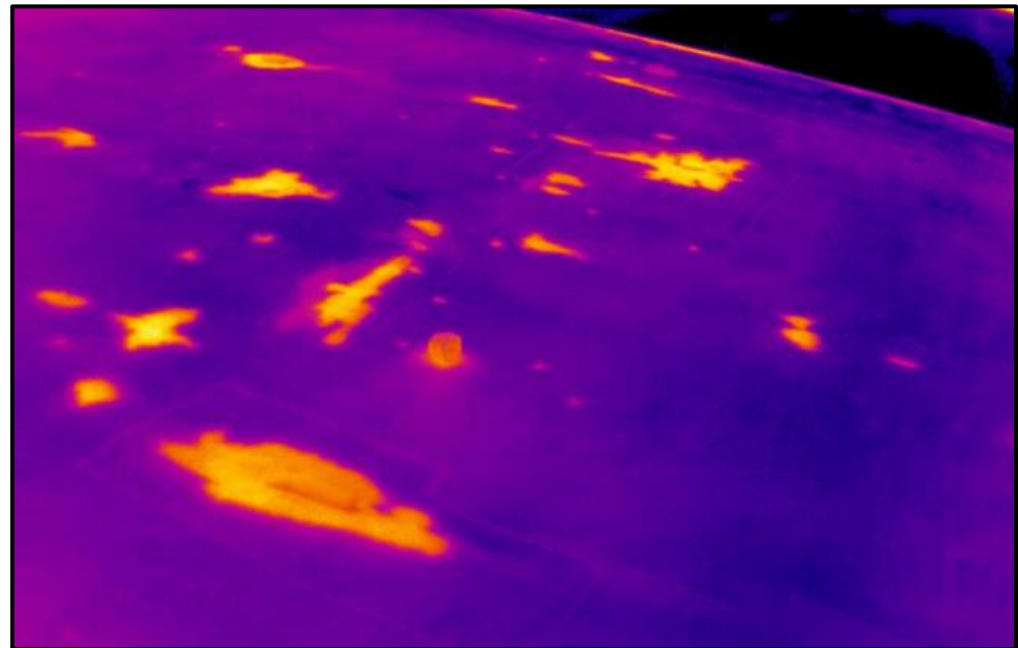
Daylight Image 13



Infrared Image 13



Daylight Image 14



Infrared Image 14