

# Appendix C

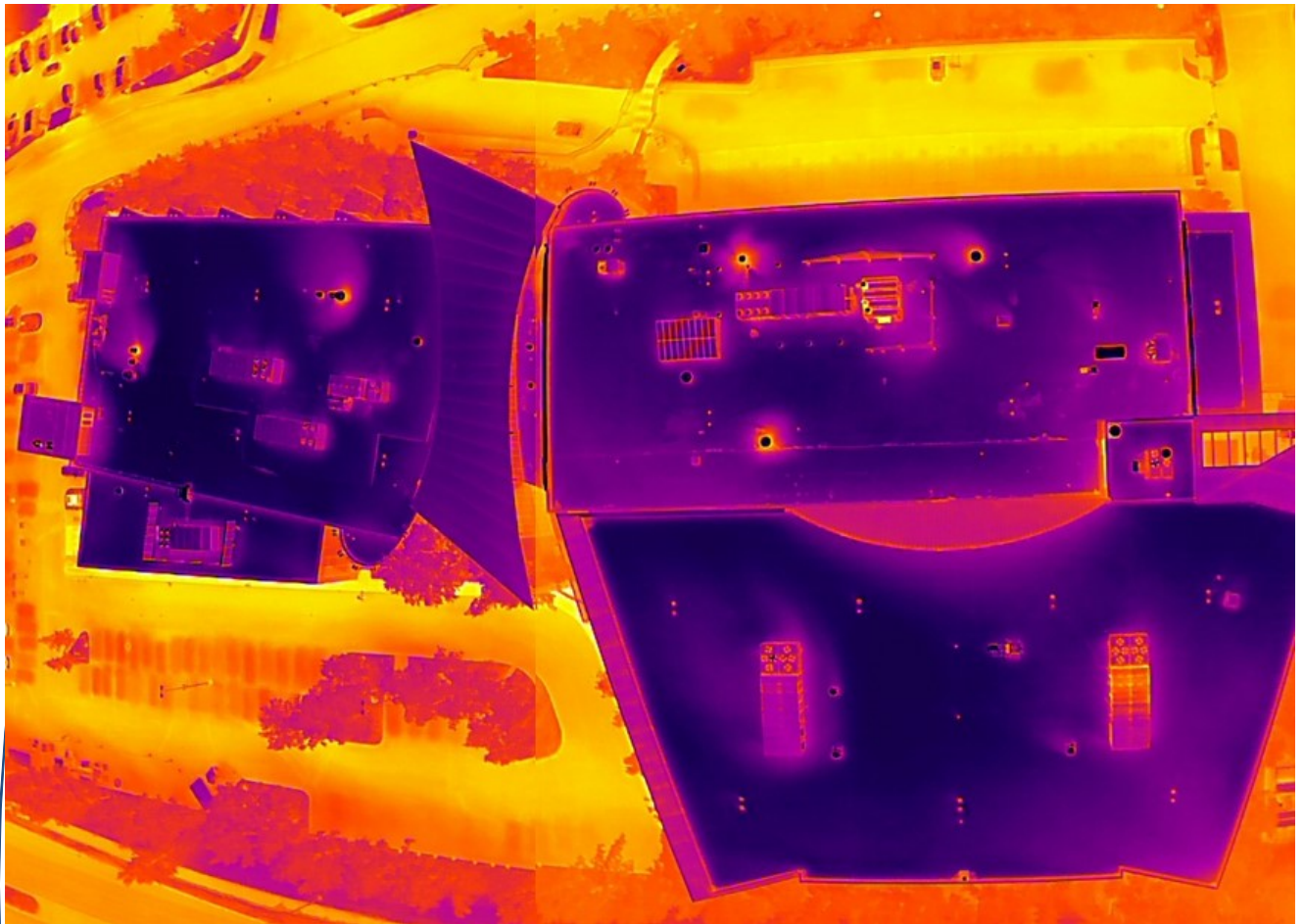
## Thermal Imaging Report

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6/18/2025

# AK Native Primary Care Center Bldgs. I, II, III Roof IR Report

Thermographic Imaging of the ANPCC Roof for  
Moisture Detection & Heat Loss.



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### Abstract:

A noninvasive assessment of the ANPCC Bldg I, II, II + Atrium Roof IR Assessment using aerial infrared thermography and roof top surveys with a handheld IR Camera was completed for the purpose of identifying and mapping moisture trapped inside the roofing insulation layers or heat loss signatures at the parapet walls.

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## Thermography Report

Project: SCF ANPCC, Anchorage ALASKA

|                               |                       |
|-------------------------------|-----------------------|
| Thermography date:            | June 18th, 2025       |
| Thermographer:                | Emmett Leffel         |
| ITC Level II                  | #140923361            |
| Drone Operator                | Alaska Remote Imaging |
| Outdoor temperature:          | 57°F                  |
| Indoor temperature:           | 70°F                  |
| Temp diff In-Out $\Delta t$ : | 13°F                  |
| Weather:                      | Clear Sky             |
| Sun Set:                      | 11:41PM               |

### Summary:

The thermographic images of the Southcentral Foundation ANPCC I, II, III roofs on June 18<sup>th</sup> revealed small puddling in roofing areas that were already a concern, and significant moisture loading across large percentages of the roof area caused by an apparent over pressurization of the building. The roof was substantially dry when thermal imaged and properly solar loaded to isolate moisture in the roofing. The roof was also imaged under two different conditions that was helpful in identifying moisture and air leakage signatures and locations in the roof and building envelope. Thermal images of roof and building are presented in the normal Iron pallet with brighter collars representing warm and darker collars representing colder surfaces. Any puddling or wet insulation would appear as a hot puddle or pooling layer in the roof.

The roof insulation did have thermographic anomalies consistent with wet or damp insulation. Two conditions have developed over time in the ANPCC roofs; the degradation to the dens decking from moisture loading of the roof layers over vast areas, and the small puddles in the roofing insulation layers. Significant areas of horizontal and vertical pvc surfaces on all three roofs have significant delamination between the substrate and pvc roof material, leading to the ballooning of the PVC roof with the building pressurized under normal occupied conditions. Significant air leakage occurred at the upper parapet wall and roof to wall joints. Air leakage signatures were apparent at the upper parapet walls and building corners.

The HVAC penetrations and curbs also have increased air leakage and heavy moisture signatures when viewed thermally. These moisture loading signatures were also apparent on the roof to penthouse wall joints.

Building over pressurization and air leakage pathways are primary causes of the PVC Roof failures. PVC roofs do not perform well in cold climates because of the freezing thaw cycles, especially buildings with leaky air barrier systems and heavy maintenance cycles. We recommend core sampling per the Roof Plan on page 4 per ASTM C1153 recommendations to confirm IR findings and assess the wetting conditions demonstrated in this report.

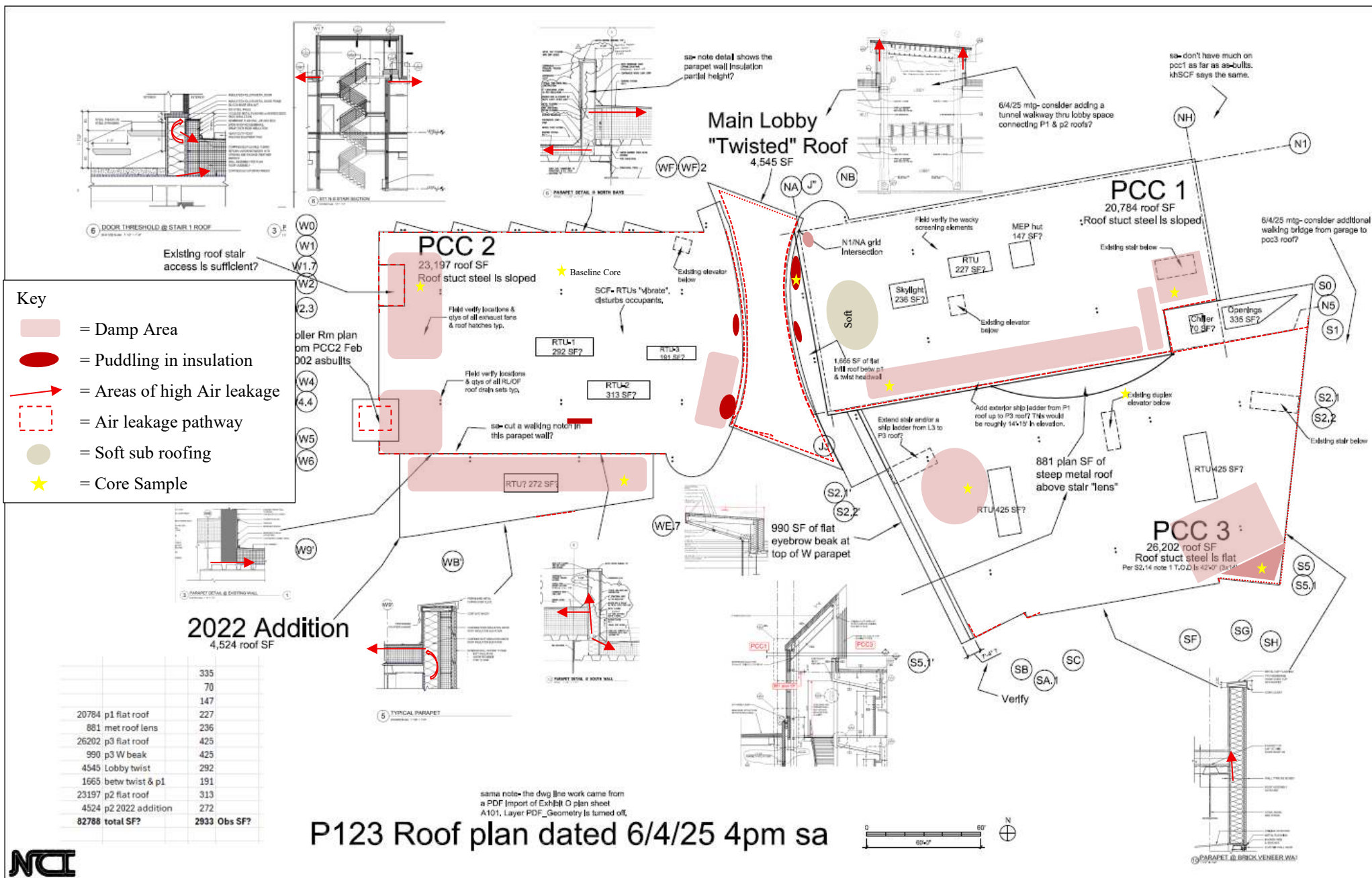
### References:

- ASTM C1153 – 10 (Reapproved 2015) Standard Practice for Location of Wet Insulation in Roofing Systems using Infrared

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# AK Native Primary Care Center Bldgs I,II, III Roof IR Report 6-18-2025 & 6-20-2025 Thermographic Imaging of the ANPCC Roof for Moisture Detection & Heat Loss.

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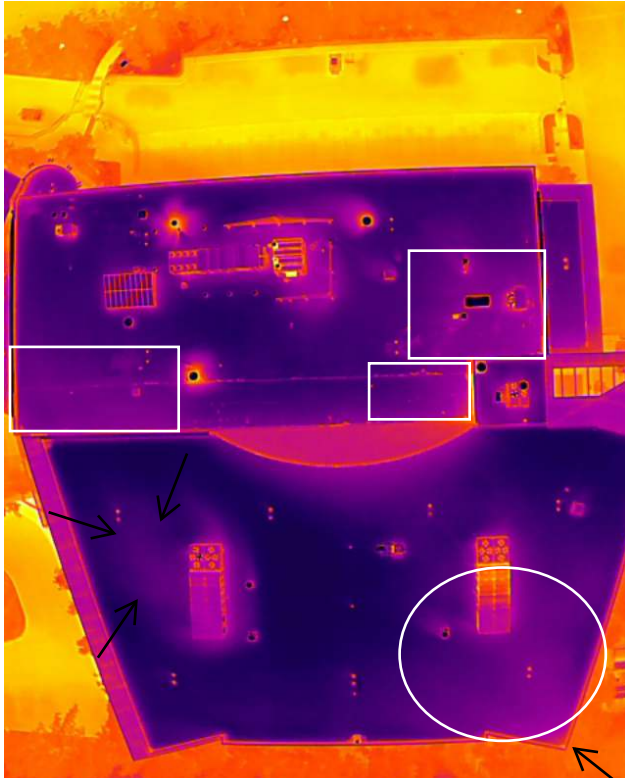


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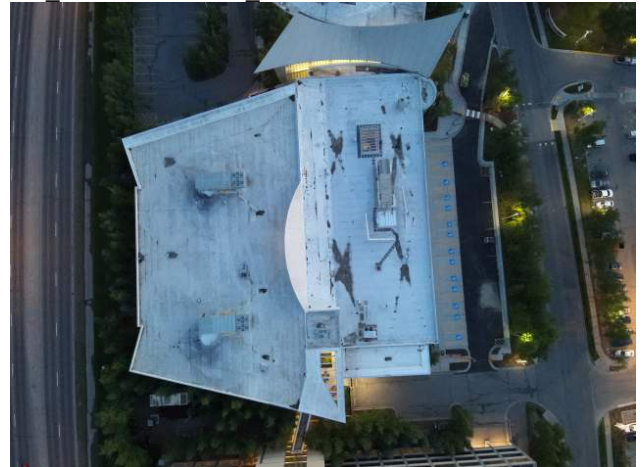


PCC 2 above, and PCC 1 & 3 below, have very similar signatures and reflect their age and level of degradation over time caused by excessive air leakage and building pressurization. White squares and circles reflect areas of moisture loading. Black arrows are call outs related to moisture signatures, puddles or air leakage pathways in the IR pictures.

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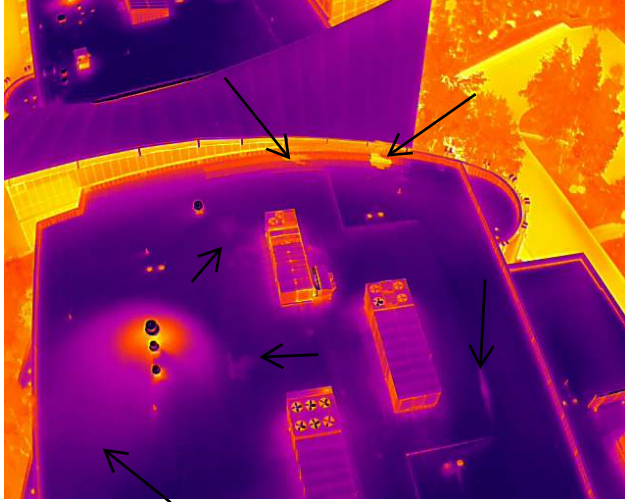
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AK Native Primary Care Center Bldgs I,II, III  
Roof IR Report 6-18-2025 & 6-20-2025  
Thermographic Imaging of the ANPCC Roof for Moisture  
Detection & Heat Loss.

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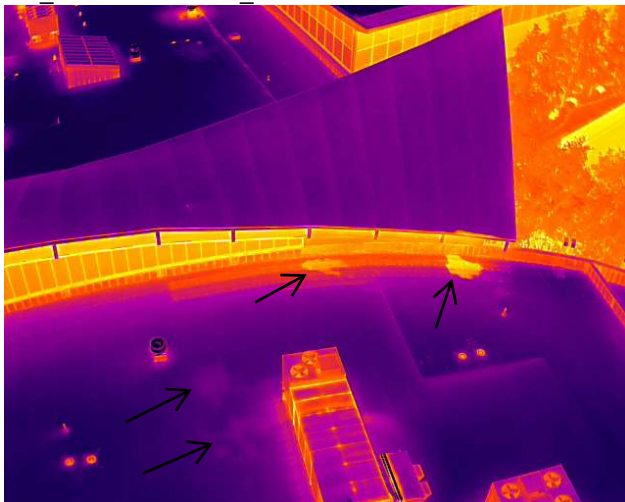


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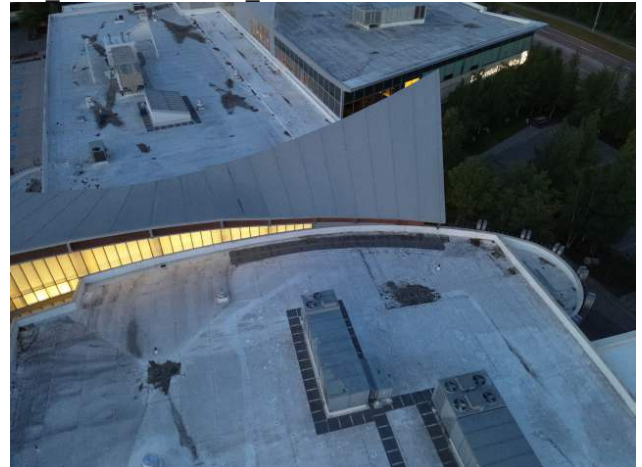


Two puddles were located in the insulation layers up against the twisted roof West wall Several other anomalous signatures were visible near the center of the roof near HVAC equipment.

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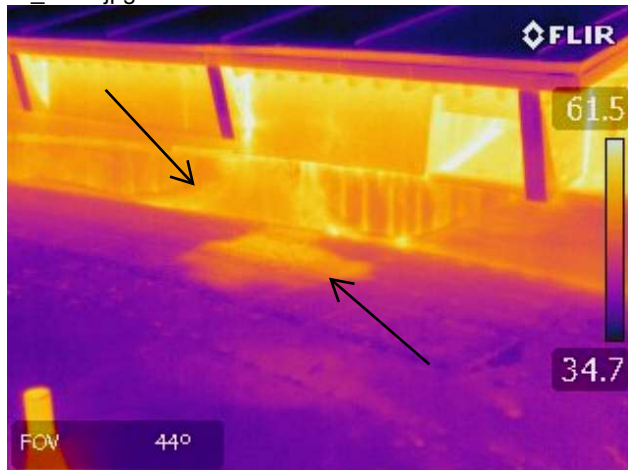




AK Native Primary Care Center Bldgs I,II, III  
Roof IR Report 6-18-2025 & 6-20-2025  
Thermographic Imaging of the ANPCC Roof for Moisture  
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IR\_3377.jpg

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DC\_3378.jpg

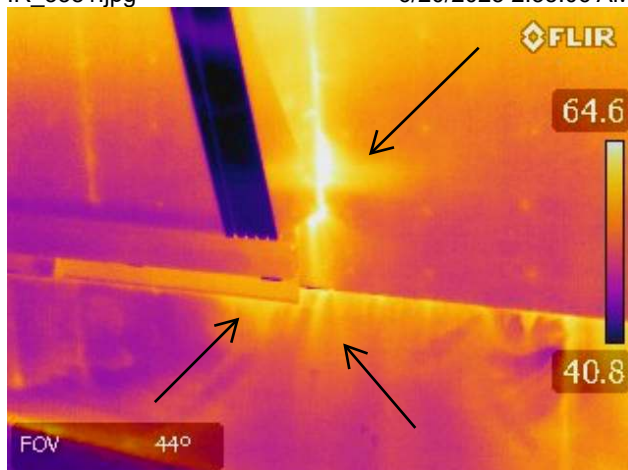
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In these images air leakage signatures at the West Twisted Roof Wall is directly tied to or above a puddle signature in the roofing below it.

IR\_3381.jpg

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DC\_3382.jpg

6/20/2025 2:35:06 AM





AK Native Primary Care Center Bldgs I,II, III  
Roof IR Report 6-18-2025 & 6-20-2025  
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PCC 2 Roof near the Twisted roof West wall.

