

EXHIBIT 2



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WASHINGTON COUNTIES RISK POOL - LEWIS COUNTY

345 WEST MAIN STREET
CHEHALIS, WA 98532

BUILDING ENVELOPE EVALUATION

McLarens File No.: 003.007499.MI

Claim No.: Multiple

MKA Project No.: 2020.0577

June 24, 2020

Prepared For:

MR. JOEL I. BOOTH

MCLARENS

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I. LETTER REPORT, DATED JUNE 24, 2020

June 24, 2020

Sent via email to: joel.booth@mclarens.com

MR. JOEL I. BOOTH
MCLARENS
19324 40th Avenue West, Suite C
Lynnwood, WA 98036

**RE: WASHINGTON COUNTIES RISK POOL - LEWIS COUNTY
MCLARENS FILE NO.: 003.007499.MI
DATE OF LOSS: JULY 19, 2019
CLAIM NO.: STP16262; 2020004350; KY20K2152403-A
MKA PROJECT NO.: 2020.0577
BUILDING ENVELOPE EVALUATION**

Dear Mr. Booth:

In response to your request, *Madsen, Kneppers & Associates, Inc. (MKA)* has performed an evaluation of claimed damage to the Lewis County Courthouse located at 345 West Main Street in Chehalis, Washington. The purpose of this evaluation was to determine the cause and extent of damage to the exterior cladding that reportedly was discovered on July 19, 2019.

The opinions in this letter are based on the following:

- Preliminary visual site visit performed on March 12, 2020 as well as an invasive site investigation performed on April 27, 2020.
- Review of renovation drawings for a circa 2000 renovation to the entryways.
- Information obtained from the Lewis County Assessors website.
- Discussions with the Insured and/or Insured's Representatives.

Event Background

In July, 2019, personnel were reportedly cleaning a portion of the south elevation of the building with a pressure washer and discovered that a portion of the exterior cladding was loose and had bowed away from the building slightly.



As a result of this event, MKA was asked to perform the following activities:

- Document the condition of the building and determine the cause and extent of damage.
- Determine an appropriate scope of repair including code upgrade requirements.

Property Description

The Lewis County Courthouse (Courthouse) is located at 345 West Main Street in Chehalis, Washington. According to the Lewis County Assessor's Office records, the Courthouse government building was originally constructed in 1978, with additions including a jail in 1985 and expansion of the government building in 1995.

The Courthouse is composed of several construction types but MKA only reviewed the 1995 addition, which consists of a 4-story steel-framed addition, with light gauge steel stud infill and interior framing, containing a total of 14,404 square feet. The site is relatively level ([see Photographs 1 through 4](#)).

Building Envelope Components

The exterior walls, roofs, and floors are constructed of structural steel framing supported by concrete foundations. The windows are vinyl framed units original to the 1995 addition.

The exterior wall cladding consists of painted Exterior Insulated Finish System (EIFS). The rest of the typical wall assembly from exterior to interior is as follows:

- Double layer of exterior gypsum sheathing.
- Light gauge steel framing.
- Fiberglass Batt insulation.
- Visqueen vapor barrier.
- Interior gypsum wall board (GWB) with presumed paint finish.

Site Observations

On March 12, 2020, MKA performed a visual survey of the building to identify the current conditions and meet with the Insured's representatives, Tawni Shepherd, Safety Officer for Lewis County and Steve Walton, Risk Manager/PDR Director for Lewis County. As a result of this site visit, a scope of investigation was developed by MKA to further evaluate the as-built conditions of the cladding system consisting of eight locations for invasive testing ([see Exhibit A](#)).



MKA conducted the intrusive investigation on April 27, 2020. The investigation consisted of a total of eight opening locations at the exterior envelope. The following is a list of MKA's general observations about the as-constructed original assemblies. These observations are typical unless otherwise noted elsewhere in this report:

Exterior Envelope:

- Paint was typically weathered and test patches of new paint were observed ([see Photograph 5](#)).
- Organic growth was present on exterior surfaces on the north elevation ([see Photograph 6](#)).
- A weather-resistive barrier (WRB) was not installed on any elevation ([see Photographs 7 and 8](#)).
- Original insulation was a fiberglass batt with visqueen installed on the interior face of the steel stud framing ([see Photograph 9](#)).
- Windows were original vinyl flanged units ([see Photograph 10](#)).
- Penetration flashing was not observed at the windows and evidence of water intrusion, including staining and gypsum sheathing deterioration, was typically observed at the windows ([see Photograph 10](#)).

The following is a list of observations specific to the intrusive investigation openings observed by MKA. See [Exhibit A](#) for a diagram showing opening locations. All of MKA's moisture readings were recorded using a Model BD-2100 moisture meter manufactured by Delmhorst¹:

Opening 1 – south elevation, remove cladding inside corner above vents ([see Photographs 11-16](#)):

- New caulking was observed at the wall to soffit intersection.
- Delamination of the gypsum sheathing was observed at the bottom of the opening only.
- Staining of the gypsum sheathing was observed on the outside corner.
- Moisture readings at the gypsum sheathing were normal (.1% to .2%).

Opening 2 – south elevation, remove cladding at window sill to wall overhang ([see Photographs 17-24](#)):

- Gypsum sheathing was deteriorated and delaminated across opening.
- No provisions for incidental water, such as weeps, were provided at the bottom of the cladding.
- Advanced fastener corrosion was observed.
- Delamination of the second layer of gypsum sheathing was observed.
- Moisture readings at the gypsum sheathing were normal to wet (.1% to 4.6%).

¹ Gypsum scale: Normal (0% - 0.5%), Elevated (0.5%+ - 1.0%), Wet (1.0 %+).



- The paper facer at the sheathing was delaminated from the gypsum core resulting in the detachment of the EIFS.

Opening 3 – south elevation, remove cladding from window head to sill ([see Photographs 25-33](#)):

- Gypsum sheathing was deteriorated and delaminated across the opening.
- Fastener corrosion was observed.
- Delamination of the paper facer was observed at the second layer of gypsum sheathing.
- Surface corrosion was observed on steel stud framing.
- Moisture readings at the gypsum sheathing were normal (.1% to .2%).
- The paper facer at the sheathing was delaminated from the gypsum core resulting in the detachment of the EIFS.

Opening 4 – south elevation, remove cladding at window head and soffit ([see Photographs 34-40](#)):

- Gypsum sheathing was deteriorated and delaminated across opening.
- No provisions for incidental water, such as weeps, were provided at the bottom of the cladding.
- Delamination of the paper facer was observed at the second layer of gypsum sheathing.
- Viscous was observed on interior side of wall.
- Surface corrosion was observed on steel stud framing.
- Moisture readings at the gypsum sheathing were normal to wet (.1% to 4.6%).
- Staining and paint delamination were noted at on the interior finish at the window head adjacent to the opening,
- EIFS was not fully secured to the gypsum sheathing.

Opening 5 – east elevation, remove 2'x2' section cladding in field of wall ([see Photographs 41-44](#)):

- New paint test squares were observed in the field of wall.
- The insulation board was well adhered to gypsum sheathing.
- No deterioration was noted at the gypsum sheathing.
- No corrosion was noted on the steel stud framing.
- Moisture readings at the framing were normal (.1%-.2%).

Opening 6 – east elevation, remove cladding at inside corner and below soffit ([see Photographs 45-49](#)):

- New paint test squares were observed in field of the wall.
- Insulation board was observed to be well adhered to the gypsum sheathing above the soffit to wall transition.
- The paper facer at the sheathing was delaminated from the gypsum sheathing core below the soffit to wall transition, resulting in the insulation board not being adhered.
- Insulation was observed to be in like new condition.



- Moisture readings at the gypsum sheathing were normal (.2%-.4%).

Opening 7 – north elevation, remove cladding between windows (see [Photographs 50-53](#)):

- Organic growth was observed on all horizontal trim accents prior to demolition.
- No delamination or deterioration of gypsum sheathing was observed.
- Moisture readings at the gypsum sheathing were normal (.1%-.2%).

Opening 8 – north elevation, remove cladding from inside corner at control joint (see [Photographs 54-57](#)):

- No delamination or deterioration of gypsum sheathing was observed.
- No corrosion of steel stud framing was observed.
- Moisture readings at gypsum sheathing were normal (.1%-.2%).

Analysis

The deterioration of areas of the wall assembly components at the Lewis County Courthouse are the result of long term water intrusion due to the as-built cladding and envelope detailing of the building along with long-term deterioration of sealants joints.

The cladding at this facility is EIFS, which is comprised of a layer of polystyrene insulation board that is adhesively attached to the exterior gypsum sheathing. EIFS cladding typically is a surface barrier wall system. The defining feature of this type of system is that they are intended to protect the wall assembly from both sun and water at the outermost surface of the wall.

A surface barrier wall system relies solely on a surface material or coating to keep water out, along with sealant joints that close gaps between the different materials at window, doors, and at other transitions. In order for a surface barrier wall system to be successful, the surface must remain uncracked, non-absorptive, and all joints must exclude all water. In addition, the coating is typically vapor permeable, but not water permeable, so water in the wall must exit through a designed drainage channel; it cannot exit through the coating itself in liquid form. A designed drainage path includes wall assembly details such as drip flashings at penetrations, weep screeds, drainage planes behind the cladding, etc.

Typically, preventing all water penetration into a wall is unavoidable and it must be allowed to drain out. As such, a surface barrier system is generally problematic due to the combination of imperfect workmanship and the inevitable degradation of the coating and sealants. With leakage, the wall components become significantly more susceptible to deterioration as the surface barrier limits the ability of any liquid moisture in the wall assembly to exit as there was



no designed path provided, e.g. drip flashing at penetrations, weep screeds, drainage plane, etc. Moreover, as this building's roof design does not contain overhangs, the exterior walls are subjected to considerable wetting during weather events.

Given the amount of staining and deterioration observed, water has been intruding into the south elevation wall assembly components for an extended period of time. The combination of exterior and interior vapor retarders/barriers prevented the wall assembly from drying to the outside or inside sufficiently, further increasing the potential rate of deterioration once water accessed the wall assembly. The trapped water behind the EIFS has resulted in deterioration of the gypsum sheathing and corrosion of the fasteners throughout the south elevation, resulting in detachment of the EIFS system from the gypsum sheathing. The areas of deterioration observed in the sheathing are indicative of repeated gradual exposure and absorption of water that has occurred over an extended number of years. No visible damage from a specific loss event was observed.

On the east and north elevations, the conditions of the gypsum substrate are generally in serviceable condition with only localized deterioration of the gypsum sheathing in isolated locations along the east elevation. Based on our investigation, there is no evidence to suggest that the adhesive and/or mechanical attachment of the EIFS system on the east elevation and north elevation has been significantly compromised.

Conclusion

At the Lewis County Courthouse building, water has been intruding behind the finish coat of the cladding, primarily through deteriorated sealant joints around windows, transitions and joints on the south elevation, which has caused the observed deterioration of the underlying gypsum sheathing. The long term deterioration on the south elevation has resulted in detachment/debonding of portions of the EIFS assembly, creating a potential fall hazard. However, the conditions observed at the south elevation were not observed on the north elevation and were observed at only localized areas on the east elevation where the EIFS is still well attached/adhered to the gypsum substrate.

This resultant deterioration of the wall assembly components is due to the cladding system used along with long-term deterioration and deferred maintenance of the sealants around openings, joints and transitions. While damage was concentrated at the south elevation, the north and east elevations need to be regularly maintained, including painting and replacement of sealants, to prevent long-term degradation of the cladding system. .



Limitations

This letter report has been prepared for McLarens to be distributed as they deem fit.

The opinions in this report are limited to visual observations of areas of reported damage claimed by the Insured as well as information provided to us. If any additional information is provided to MKA after the issuance of this report, we reserve the right to review such information and, if necessary, modify our opinions accordingly. No warranty, either expressed or implied, is given about the general or specific condition of the property as it affects the owner or prospective future owner.

Reliance upon information, observations or opinions contained in this report should not be made by any party except the intended recipients.

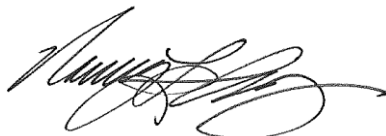
Please do not hesitate to call, if you have any questions regarding the above.

Sincerely,

MADSEN, KNEPPERS & ASSOCIATES, INC.



David A. VanDerostyne, PE, SE
State of Washington Engineer License Number: 37193



Nancy Lokocz AIA

DAV/NDL/kra

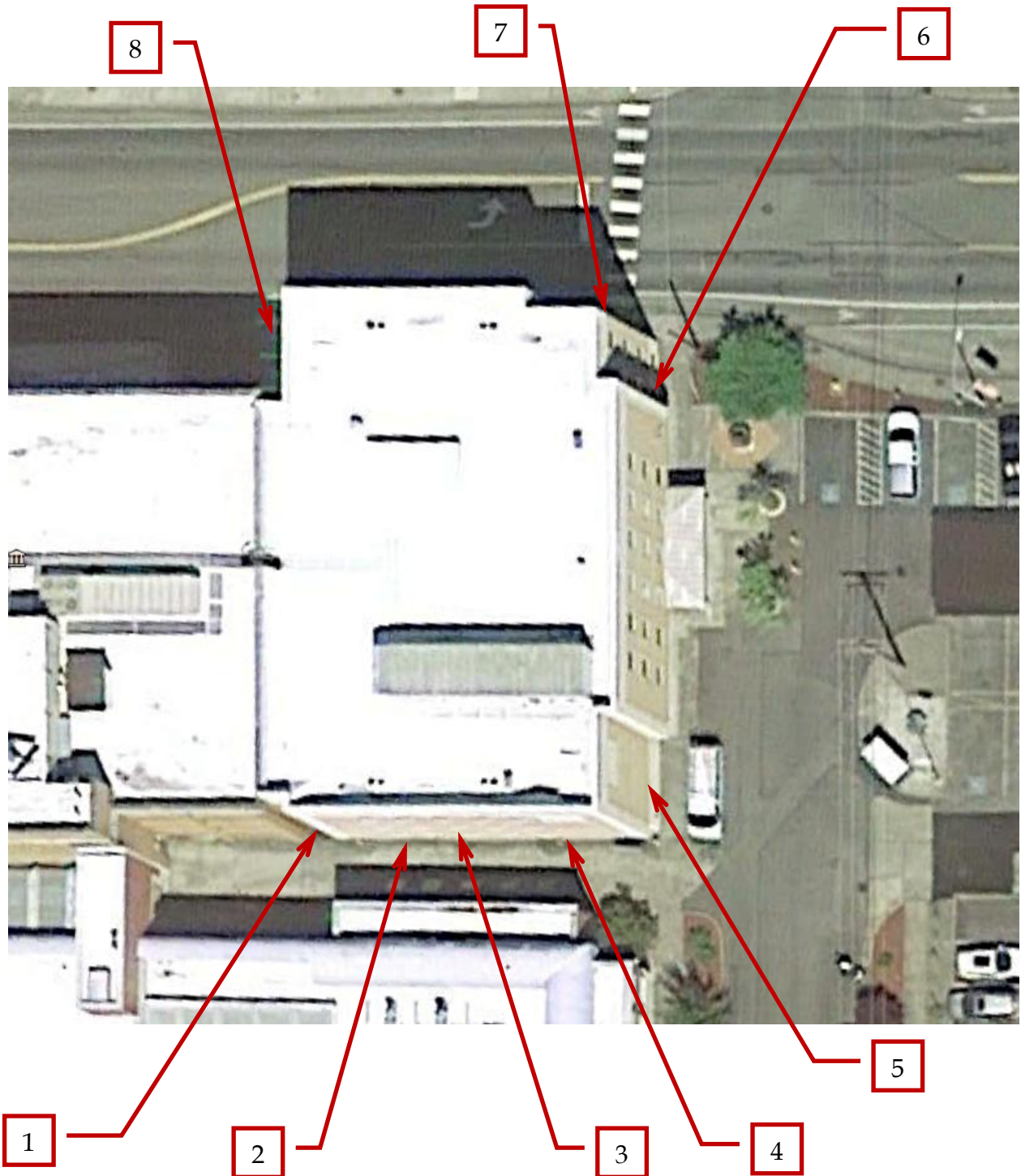


II. EXHIBITS

EXHIBIT A

BUILDING OVERVIEW

*Washington Counties Risk Pool – Lewis County
Chehalis, Washington*



Aerial view of building and map of locations.

III. PHOTOGRAPHS

Washington Counties Risk Pool – Lewis County
MKA Project No. 2020.0577
345 West Main Street, Chehalis, Washington



1. [Aerial view of addition courtesy of Google Maps.](#)



2. [North elevation of courthouse addition circa 1995.](#)

Washington Counties Risk Pool – Lewis County
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345 West Main Street, Chehalis, Washington



3. [East elevation of courthouse addition circa 1995.](#)



4. [South elevation of courthouse addition circa 1995.](#)

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5. Original weathered finish with new test squares of paint for color selection.



6. Organic growth observed on north elevation on horizontal trim surfaces.

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7. [No WRB installed at any opening; south elevation shown.](#)



8. [No WRB installed at any opening; north elevation shown.](#)

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9. [Insulation was non-faced fiberglass batt, and visqueen was installed on the interior of the steel stud framing.](#)



10. [Vinyl framed flanged windows attached to steel through gypsum sheathing.](#)

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11. Opening 1 – remove cladding at inside corner above vents.



12. Opening 1 – new sealant observed at inside corner of wall and at wall to soffit intersection.

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13. Opening 1 –the paper facer of the gypsum sheathing was delaminated primarily at the base of the opening.



14. Opening 1 – gypsum sheathing paper facer was adhered at the top of opening, but was delaminated at the bottom of opening.



15. Opening 1 –the gypsum sheathing was stained at the outside corner of opening.



16. Opening 1 – moisture content readings of the gypsum sheathing were normal (0.1% - 0.2%).

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17. Opening 2 – remove cladding from window sill to soffit.



18. Opening 2 – gypsum sheathing was deteriorated across the opening area.

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19. Opening 2 – no weeps or gap for drainage of incidental moisture was provided as part of the cladding assembly.



20. Opening 2 – insulation board fastener deterioration was noted.



21. Opening 2 – the gypsum sheathing core was deteriorated below the window sill.



22. Opening 2 –the gypsum sheathing core was cracked and deteriorated.



23. Opening 2 – the paper facer at the second layer of gypsum sheathing was delaminated.



24. Opening 2 – moisture content readings of the gypsum sheathing were normal to wet (0.1% - 4.6%).

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25. Opening 3 – remove cladding from third floor window sill to second floor window head.



26. Opening 3 – previous repair observed at control joint between second and third floors.

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27. Opening 3 – gypsum sheathing was deteriorated across the opening area.



28. Opening 3 –the gypsum sheathing core was deteriorated.

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29. Opening 3 – corroded fasteners were observed across the opening.



30. Opening 3 – the paper facer at the second layer of gypsum sheathing was delaminated



31. Opening 3 – surface corrosion of steel stud framing was observed.



32. Opening 3 –the paper facer of the gypsum sheathing was delaminated and deteriorated.



33. Opening 3 – moisture content readings of the gypsum sheathing were normal (0.1% - 0.2%).



34. Opening 4 – remove cladding at window head and soffit.

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35. Opening 4 – gypsum sheathing was deteriorated and delaminated across opening.



36. Opening 4 – staining of second layer of gypsum sheathing was observed.



37. Opening 4 – second layer of gypsum sheathing was removed to observe wall cavity.



38. Opening 4 – visqueen installed at interior of steel studs behind interior wallboard and finish.

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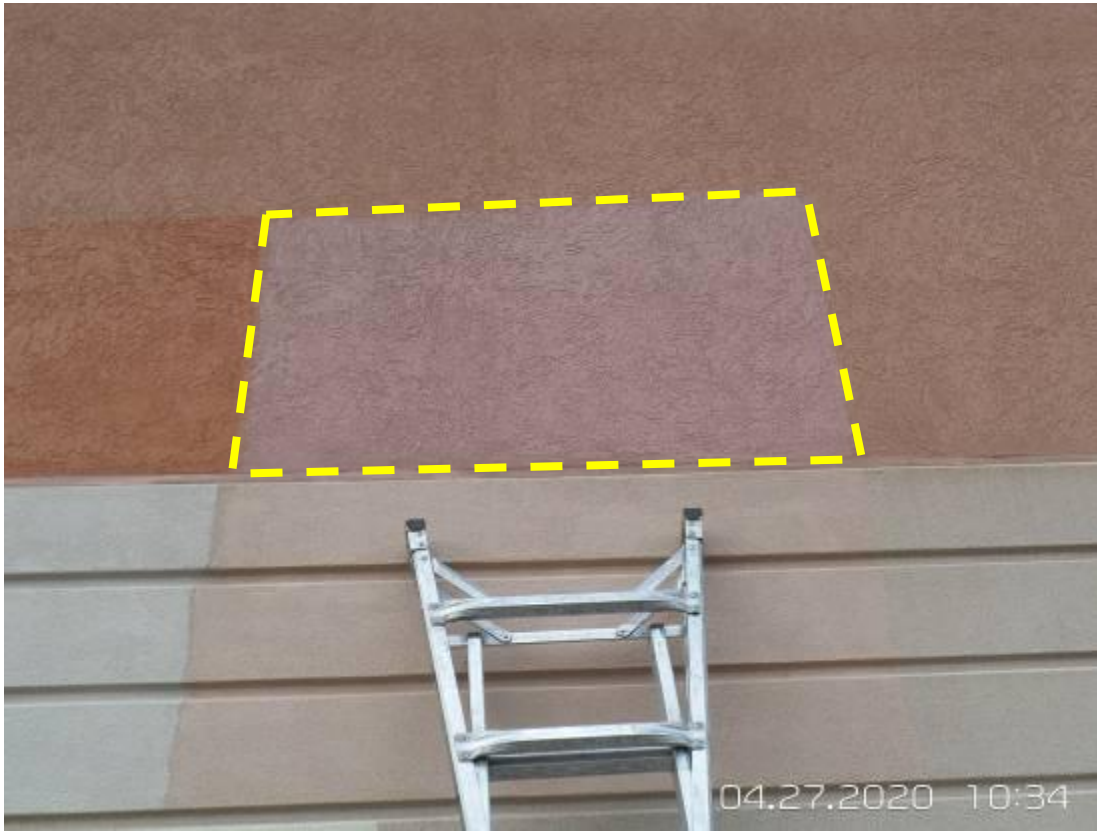


39. Opening 4 – moisture content readings of the gypsum sheathing were normal to wet (0.1% - 6.7%).



40. Opening 4 – staining and peeling paint at the interior finish above window head.

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41. Opening 5 – remove 2'x2' section of cladding in the field of wall.



42. Opening 5 – insulation board was adhered to gypsum sheathing, no deterioration of the gypsum sheathing was noted at the opening.

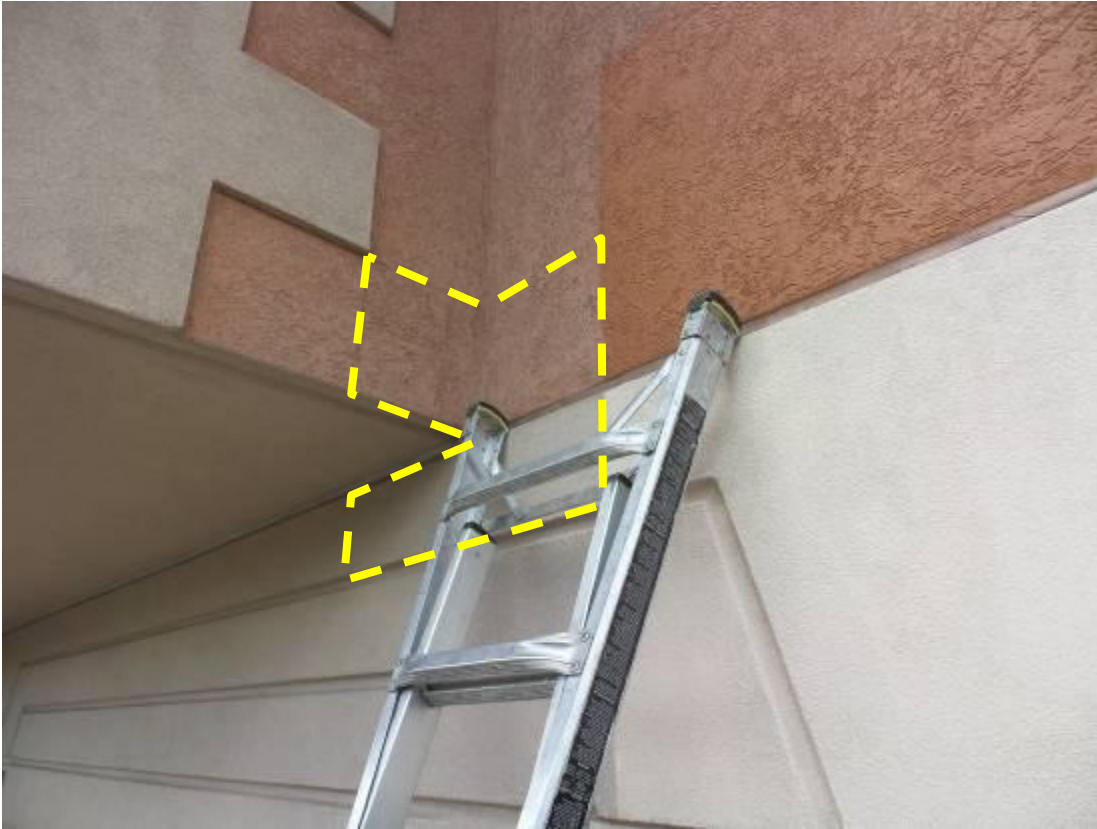


43. Opening 5 – no corrosion was observed on the steel stud framing.



44. Opening 5 – moisture content readings of the gypsum sheathing were normal (0.1% - 0.2%).

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45. Opening 6 – remove cladding at inside corner and below soffit.



46. Opening 6 – insulation board was adhered to the gypsum sheathing above the soffit; however, the insulation board was not adhered below the soffit (see circled area).



47. [Opening 6 –detail of paper facer gypsum sheathing delamination below the soffit to wall interface.](#)



48. [Opening 6 – gypsum sheathing was removed to observe the wall cavity.](#)



49. Opening 6 – moisture content readings of the gypsum sheathing was normal (0.2% - 0.4%).



50. Opening 7 – remove cladding between windows.

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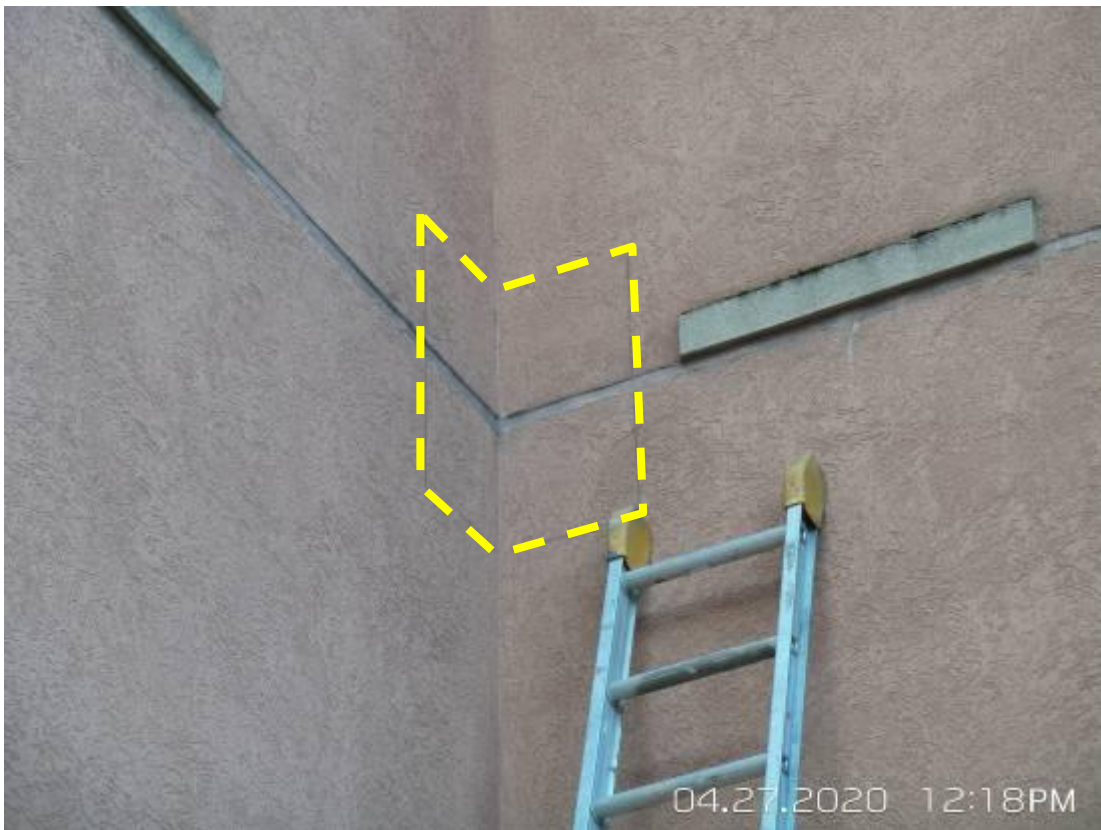
51. Opening 7 – organic growth observed on all horizontal trim accents.



52. Opening 7 – delamination of gypsum sheathing was not observed.



53. Opening 7 – moisture content readings of the gypsum sheathing were normal (0.1% - 0.2%).



54. Opening 8 – remove cladding from inside corner at control joint.



55. Opening 8 – no delamination or deterioration of the gypsum sheathing was observed.



56. Opening 8 – no corrosion of steel stud framing was observed.



57. Opening 8 – moisture content readings of the gypsum sheathing were normal (0.1% - 0.2%).