BURG SIMPSON ELDREDGE HERSH & JARDINE P.C.
8310 South Valley Highway, Suite 270
Englewood, CO 80112
Phone: (303) 792-5595
Fax: (303) 708-0527
Craig S. Nuss – 033839
Penny J. Manship – 034985
pmanship@burgsimpson.com

Attorneys for the Plaintiff

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA

IN AND FOR THE COUNTY OF MARICOPA

GALLERY COMMUNITY ASSOCIATION, an Arizona non-profit corporation,

Plaintiff,

v.

K. HOVNANIAN AT GALLERY, LLC, an Arizona limited liability company; et al.

Defendants.

K. HOVNANIAN AT GALLERY, LLC, an Arizona limited liability company; et al.

Third-Party Plaintiffs,

v.

ARTISTIC STAIRS, LTD., an Arizona limited liability company; et al.

Third-Party Defendants.

Case No. CV2020-008714

Assigned to Hon. Michael Kemp

AFFIDAVIT OF JEFFREY J. FELDERMAN, P.E. IN SUPPORT OF PLAINTIFF'S RESPONSE TO DEFENDANTS' MOTION FOR PARTIAL SUMMARY JUDGMENT REGARDING CLAIMS OF UNSUPPORTED DEFECTS

I, Jeffrey J. Felderman, P.E., swear and affirm the following, and would testify to the same under oath in Court:

1. I am over 18 years old and I have personal knowledge of the facts stated in this affidavit.

2. I am a registered professional engineer in the State of Arizona, license no. 61679. A copy of my professional resume is attached to this affidavit as Exhibit A. I earned a Bachelor of Science degree in Civil Engineering from the University of Wyoming in 1987.

3. Since 2010, I have been the senior vice president of SBSA, Inc. f/k/a SBSA, LLC a Charles Taylor Company, n/k/a Charles Taylor Engineering Technical Services, a professional engineering firm, registered for practice in the State of Arizona, no. 16794. My areas of expertise include forensic and structural engineering. I have been qualified to testify in court in these areas of expertise.

4. SBSA performed a number of engineering visual examinations, intrusive examinations, and analyses in this case, and generated a number of reports. A true and correct copy of excerpts from SBSA's June 23, 2021, Construction and Design Compliance Report ("CDC Report") are attached as Exhibit B to this affidavit. The findings, opinions, and conclusions expressed in this report were reached within a reasonable degree of engineering probability.

5. As part of SBSA's work in this case, SBSA's team of forensic engineers spent approximately 136 hours on site investigating the Gallery community's (the "Project") condition and approximately 30 hours reviewing and analyzing the construction plans and related documentation regarding how the construction was performed.

6. For all of its work on this case to date, SBSA has billed Plaintiff approximately $ 197,000.

7. As is relevant to the Project's proposed stucco repairs, SBSA's forensic investigation included, among other things, the following:

   a. Visual examinations of various Project components on 9 separate days, and 5 days of intrusive examinations (where an exterior element, such as stucco, is removed so that otherwise hidden interior elements can be examined), including, without limitation:

i. visual examinations of all exterior elevations at all four Project buildings;

ii. intrusive examinations of the stucco systems at 100% of the buildings;

iii. approximately 44 intrusive openings into the buildings, of which approximately 26 openings were made into the stucco where OSB sheathing or solid wood framing was present or should have been present.

b. Photo-documentation, including thousands of photographs documenting the observed conditions, defects, and resulting damage to the Project's stucco systems and adjacent building components.

c. Preparation of 36 pages of Observation Drawings documenting the findings from the intrusive examinations, including cross-references to photographs documenting the observed distress and defects.

d. Examination of the Project's disclosed and discovered construction plans and specifications.

e. Review of Defendants' expert reports, including their own observations, measurements, analyses, and conclusions.

f. Review of the relevant documentation generated during construction regarding how the Project was constructed, what materials and construction techniques and practices were employed, and what problems were encountered.

g. Preparation of voluminous evaluative and repair reports correlating observed defects with their locations and needed repairs.

8. The following construction defects and deficiencies identified in the CDC Report require repairs which each separately require removal and replacement of some portion of the Project's stucco systems:

a. Non-compliant Lateral Force Resisting System (LFRS)

b. Missing Weep Mechanisms in Stucco

c. Non-Compliant WRB for Stucco System

d. Non-Compliant EPS Foam Board for Stucco System

e. Non-Compliant Slope of Horizontal Stucco Surfaces

f. Deficient Self-Adhered Membrane under Horizontal Stucco System

g. Missing Control/Movement Joints in Stucco

h. Missing Sheet Metal Flashing at Fenestrations

i. Non-Compliant Flashing to Stucco Interface

j. Non-Compliant Isolation Joints at Dissimilar Materials

9. A true and correct copy of SBSA's Defect Matrix is attached to this affidavit as Exhibit C. The Defect Matrix constitutes an attachment to the CDC Report and was cross-referenced in the CDC Report. The Defect Matrix summarizes SBSA's findings that each of the above-listed defects requiring stucco repairs exists at 100% of the four Project buildings.

10. In areas where the stucco assembly was placed over OSB sheathing or solid wood framing, including shear walls and deck beams, the Non-Compliant Weather Resistive Barrier ("WRB") for Stucco System defect consists of single-layer WRB building paper rather than the necessary two layers of building paper for drainage control. In addition to the lack of proper two layer asphaltic paper, the single layers were also mis-lapped.

11. In areas where the stucco assembly was placed over OSB sheathing or solid wood framing, the Non-Compliant EPS Foam Board ("EPS Foam") defect consists of inadequately sized or missing vertical grooves on the back of the EPS Foam. The grooves are required to allow water drainage due to the foam creating a capillary condition against the asphaltic paper. In addition to the inadequate or missing grooves, the ESR report installation requirements for this project required foam board with tongues and grooves that create the assembly's horizontal joints. The required minimum EPS Foam thickness was also not provided.

12. The photographs contained within the body of the CDC Report were intended to show examples of the commonality of the Project's conditions, and were not intended to document every location where a defective condition exists.

13. SBSA's Observation Drawings, which constitute an attachment to the CDC Report and were cross-referenced in the CDC Report, together with the photographs cross-referenced on the Observation Drawings, document the observed locations of distress, defects, and deficiencies. A true and correct copy of excerpts of the Observation Drawings, with my highlighting, is attached as Exhibit D to this affidavit.

14. Exhibit E to this affidavit contains nine photographs of the Project's intrusive examinations. Each of these photographs (among many others) are cross-referenced on the Observation Drawings.

15. The notes on the Observation Drawings do not contain an exhaustive list of all conditions observed at each location. In order to determine the conditions present at each location, the Observation Drawings with associated notes must be examined in conjunction with the cross-referenced photographs of each location.

16. I have reviewed the Observation Drawings with associated notes, and the cross-referenced photographs. I highlighted the portions of the Observation Drawing notes that specify intrusive examinations showing the presence of OSB sheathing, solid wood framing, or missing OSB sheathing where it should have been present for the LFRS. Where the notes on the Observation Drawings do not specify whether OSB sheathing or solid wood framing was present at a particular intrusive examination cut, I reviewed the cross-referenced photographs and highlighted the photograph numbers or photograph number ranges corresponding to the photographs which show the presence of OSB sheathing or solid wood framing behind the stucco. Each highlighted section of text or photograph numbers corresponds to one intrusive examination cut where SBSA found OSB sheathing, solid wood framing, or missing OSB sheathing where it should have been present.

17. As shown on Exhibit D, in conjunction with the photographs contained in Exhibit E, SBSA made approximately 26 intrusive examination cuts over OSB sheathing or solid wood framing, or in an area where OSB sheathing was required but missing.

18. In 100% of these locations, SBSA observed one or more of the following: missing vertical grooves on the back of the EPS Foam, missing tongues and grooves in the EPS Foam for horizontal joints, inadequate EPS Foam thickness, single-layer WRB building paper, and/or mis-lapped WRB building paper.

19. In all of its intrusive examinations of the Project, SBSA found zero locations with adequately profiled grooved EPS Foam and zero locations with tongues and grooves in the EPS Foam.

20. In addition, in 100% of the locations where SBSA visually examined the stucco assemblies without intrusive examinations, SBSA observed non-compliant slope at horizontal surfaces, missing weep mechanisms at horizontal terminations, missing control joints, missing sheet metal flashings at fenestrations, non-compliant flashing to stucco interface, and/or non-compliant isolation joints at dissimilar materials.

21. I have reviewed *Defendant's Separate Statement of Facts in Support for [sic] Summary Judgment*. Mr. Harrington's analysis of the locations and types of defects SBSA identified is flawed because Mr. Harrington appears to have relied solely on the text of the notes on the Observation Drawings, and failed to conduct a careful review, which would have included examining the cross-referenced photographs in conjunction with the Observation Drawings. By doing so, Mr. Harrington failed to understand all of the locations where SBSA performed intrusive examinations at locations with stucco over OSB sheathing or solid wood framing (or where required OSB sheathing is missing), or all such locations where only a single layer of WRB was present. Thus Mr. Harrington's non-rigorous review of the CDC Report, its attachments, and cross-referenced photographs and findings have lead him to an incorrect conclusion.

22. For example, Mr. Harrington incorrectly concluded that the Observation Drawings reference nine instances of two layers of building paper over OSB sheathing and

two instances of one layer of building paper over sheathing. Instead, the Observation Drawings and cross-referenced photographs (Exhibit D and Exhibit E) when examined together identify 26 intrusive examinations at stucco assemblies over OBS sheathing or solid wood framing where SBSA observed and documented one layer of building paper in 20 locations and two layers of building paper in six locations. And in those six locations with two layers of building paper, other defects and deficiencies were present, requiring removal and replacement of portions of the stucco assemblies to perform repairs.

23. Based on my experience and expertise in the examination of the built environment on hundreds of projects, because SBSA found conditions requiring removal and replacement of portions of the stucco at 100% of the areas where SBSA performed intrusive examinations over OBS sheathing or solid wood framing at various locations over the expanse of all four Project buildings, these same defective conditions are, to a reasonable degree of engineering probability, likely to exist throughout other areas of the Project not subject to intrusive examination.

24. This is true in part because the stucco assembly is constructed with rolls of asphalt paper, sheets of foam, and rolls of lathe, and correctly applying them requires consideration of the layout from bottom to top on each building elevation to create a properly lapped system. Based on finding an improperly lapped system in one or more areas, the means and methods of construction, the products used, and their assembled state in other locations on the same building can be inferred.

25. SBSA recommended removal and replacement of all of the Project's stucco not because of one defect in isolation but because the combined effect of all of the identified defects would result, at best, in a patchwork of small stucco locations where repairs are not required. Based on my experience and expertise, because of the significant quantity of stucco areas requiring removal and replacement, it would not be practical, reasonable, or efficient to attempt to remove and replace only the large areas of stucco where repairs must be performed.

26. SBSA's above-described investigation, reports, and data comprise information of a type reasonably relied on by other forensic engineers in forming opinions like those SBSA has formed in this case relating to damages, defects, and deficiencies at the Project and the scope of reasonable and necessary repairs.

I declare under penalty of perjury under the laws of the State of Arizona that the foregoing is true and correct.

Executed on November 4, 2022, in Golden, Colorado.

By: _____
Jeffrey J. Felderman, Affiant

STATE OF COLORADO)
)
COUNTY OF JEFFERSON)

Subscribed and sworn to before me on this 4th day of November, 2022, by Jeffrey J. Felderman. Witness my hand and official seal. My commission expires: May 13, 2026

[SEAL]

Notary Public, State of Colorado _____

HANNA BEARD
NOTARY PUBLIC - STATE OF COLORADO
NOTARY ID 20224019335
MY COMMISSION EXPIRES MAY 13, 2026

EXHIBIT 1A

EXHIBIT 1A

Charles Taylor Engineering Technical Services

CONTACT DETAILS:
Jeff.Felderman@charlestaylor.com
M: +1 720 480 6122

Golden, Colorado

Jeffrey J. Felderman, P.E.

Senior Vice-President – Construction & Design Compliance

AREAS OF EXPERTISE:

Design-Structural Engineering, Damage Assessment, Construction Defect Analysis, Building Envelope, Repair Method Analysis and New Design of Commercial and Residential Structures

QUALIFICATIONS:

1983: B.S. Civil Engineering, University of Wyoming

PROFESSIONAL MEMBERSHIP:

State of Colorado Registered Professional Engineer – #28944
State of New Hampshire Registered Professional Engineer – #8400
State of New Mexico Registered Professional Engineer - #20799
State of New York Registered Professional Engineer – #090132
State of Texas Registered Professional Engineer - #121224
State of Wyoming Registered Professional Engineer – #14434
State of Montana Registered Professional Engineer – #40714
State of Arizona Registered Professional Engineer – #61679

EXPERIENCE:

September 2020 – Present: Senior Vice President – Construction & Design Compliance, Charles Taylor Engineering Technical Services- Building and Construction
Commercial, industrial, and residential building evaluations, structural investigation, and repair design. Forensic investigations of buildings including construction and design defects. Project and team management, resource allocation, and scheduling.

January 2010 – September 2020: Senior Vice President – Construction & Design Compliance, SBSA, Inc., Golden, Colorado
Commercial, industrial, and residential building evaluations, structural investigation, and repair design. Forensic investigations including damage due to expansive and collapsing soils, and construction and design defects. Project and team management, resource allocation, and scheduling.

December 2009: Project Manager, Professional Investigative Engineers, Golden, Colorado
Review of on-going and as-built construction to verify compliance with structural and civil code requirements. Forensic investigations of buildings including construction and design defects.

2007 – 2009: Senior Project Manager, Structural Consultants, Inc., Denver, Colorado
Designed and managed projects using BIM, design/build, design/bid/build, and integrated project delivery systems. Designed structures that were constructed of concrete, steel, masonry, cold-formed steel and wood. Supervised and mentored a staff of engineers and AutoCAD/Modeling technicians.

2004 – 2007: Associate Principal, Monroe & Newell Engineers, Inc., Denver, Colorado
Part of managed team leading 55 employees in three office locations. Developed new business and maintained current client relationships. Involved in all aspects of projects from schematic design to construction administration.

1992 – 2004: Senior Structural Engineer and Project Manager, Monroe & Newell Engineers, Inc., Denver, Colorado
Designed structures that were constructed of concrete, steel, masonry, cold-formed steel, and wood. Supervised and mentored a staff of engineers and AutoCAD technicians. Coordinated the preparation of contract documents, specifications, and quality control.

1987 – 1992: Engineer, Kimball Chase, Inc., Portsmouth, New Hampshire
Designed and prepared contract documents for commercial, industrial and waterfront projects. Provided bridge repair recommendations on 20 interstate bridges for the Maine Department of Transportation Bridge Program.

DEPOSITION TESTIMONY IN THE LAST 4 YEARS:

The Townhomes at Ridgeview Community Association, Inc. v. Holladay Grace Roofing, Inc., d/b/a Holladay Grace Roofing & Restoration, Inc., a Colorado corporation; Chad Holladay, individually., District Court, El Paso, Colorado, 2019CV32609, August 27, 2021.

Kris Fattor and Ann Fattor, et al. v. Iron Horse Condominium Association, Inc., District Court, Grand County, Colorado, 2019CV30049, December 18, 2020.

Fairways at Buffalo Run Homeowners Association vs. Fairways Builders, District Court, Adams County, Colorado, 2016CV30393, March 16, 2017.

The Shadow Canyon Condominiums Association, Inc. v. Shadow Canyon Development Company, LLC, District Court, Douglas County, Colorado, 2012CV811, November 10, 2014

The Dakota Ridge Village Condominium Association v. Dakota Ridge Village, LLC, District Court, Boulder County, Colorado, 09CV615, April 19, 2011.

TRIAL TESTIMONY IN THE LAST 4 YEARS:
Kris Fattor; Ann Fattor; Ed Pino; Ann Pino; Jennifer Yellott; H and B, LLC, a Minnesota limited liability company; Pratt-Southwell Development LLC, a Colorado limited liability company; Apres Investments, LLC, a Colorado limited liability company v. Iron Horse Condominium Association, Inc., District Court, County of Grand, State of Colorado, 2019CV030049, November 30, 2021.

Le Jardin Homeowners Association, Inc. v. Brant Management Inc., BRC Properties LLC, Four Corner Management LLC, and Phillip Brant Michaelson, District Court, City and County of Denver, Colorado, 2016CV31862, December 11, 2017.

PROFESSIONAL COURSES & SEMINARS AS AN ATTENDEE:
SunCam, “The Citicorp Tower – Professional Ethics and Disaster Averted,” September 18, 2022, 1 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, “An Overview of Non-destructive Testing Techniques,” July 28, 2022, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, “An Adaptation of the Uniform Force Method,” June 21, 2022, 1.5 PDH

Over $200 Million," June 3, 2022, 1.0 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Pedestrian Bridge Collapse Forensic Investigation: What Went Wrong and Lessons Learned," 1.0 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "2021 IBC Significant Structural Changes – Part 1: Loads and Inspections," March 14, 2022," 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "2021 IBC Significant Structural Changes – Part 2: Foundations and Materials," March 10, 2022, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Design of Insulating Concrete Form Walls for High Winds," October 28, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Do's and Don'ts in Structural Steel Design," October 7, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Allowable Stress Design vs. Strength Design: A Masonry Cage Fight," September 30, 2021, 1.5 PDH
SunCam, "Repair Techniques for Metal Plated Wood Trusses, Part 2: Moderate Truss Repairs," September 21, 2021, 4 PDH

SunCam, "Engineering Ethics," September 20, 2021, 1 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Introduction to Structural Thermal Breaks for Concrete and Steel Connections," June 8, 2021, 1.5 PDH

The Engineering Management Institute, "Engineering Leadership Accelerator Level 1 – People Skills Course," June 4, 2021, 4.0 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Non-destructive Evaluation of Structural Concrete," May 18, 2021, 1.5 PDH

Structural Engineers Association Colorado (SEA), Webinar, "Many Glacier Hotel, Glacier National Park, Montana," April 27, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Overview of Changes and Additions in ACI 318-19," March 4, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Wind Load Effects on Canopy Systems," February 16, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "90 Seismic Ideas in 90 Minutes," February 9, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Special Inspection and Structural Observation," January 26, 2021, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Retrofitting of Existing Buildings with Steel Joists," December 10, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Legal Warning Flags for Structural Engineers," November 12, 2020, 1.5 PDH

SunCam, "Ethics in Design and Oversight - Florida International University Bridge Collapse," September 9, 2020, 1 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Awards Series Day 1: New Buildings

Jeffrey J. Felderman
Senior Vice President – Construction & Design Compliance

SunCam, "Repair Techniques for Metal Plated Wood Trusses, Part 1: Introduction and Simple Repair Concepts," August 26, 2020, 4 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "ASCE 7-16 Determining Component and Cladding Wind Pressures for Roofs," August 19, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "The 2020 Aluminum Design Manual," August 11, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "2018 National Design Specification (NDS) Updates," July 23, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Seismic Assessment and Intervention for Historic Structures: An Exemplary Case Study," June 25, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Resilience and What it Means to the Structural Engineer," May 26, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Structural Design and Embodied Carbon," April 16, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Lintels for Masonry Walls," March 24, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Masonry Movement Joints," March 10, 2020, 1.5 PDH

SEAK, "Expert Report Writing and Testifying Training," Nadine Nasser Donovan, Esq., Golden, Colorado, March 5, 2020, 6.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Speedcore: Rainer Square – A Project Case Study," February 4, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Efficient Design of Long-Span Composite Steel Deck-Slabs," January 30, 2020, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Ground Improvement for Structural Engineers," November 19, 2019, 1.5 PDH

Hilti, Webinar, "Decking 201: Roof Deck Fastening Design Principles and Design Methodology," November 7, 2019, 1.0 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Permanent Bracing for Metal Plate Connected Wood Trusses," November 7, 2019, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "CFS Lateral Design Using New AISI S240 and S400," August 6, 2019, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Ethics in the Practice of Engineering," January 29, 2019, 1.5 PDH

SoCal Chapter of RCI, Inc., "Technical Seminar : 19th Annual Hawaii Workshop: Roofing, Waterproofing and Exterior Walls," January 14 and 15, 2019, 12.5 CEH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Understanding the AISC Direct Analysis Method of Design," December 11, 2018, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "New Solutions in the New Design Guide 21 on Welding," December 6, 2018, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Changes to the 2016 TMS 402/602 Building Code for Masonry Structures," November 29, 2018, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Taking Wood to the Next Level-Application & Design of NLT and CLT," November 8, 2018, 1.5 PDH

Texas Board of Professional Engineers (TBPE), Webinar, "The TBPE Professional Practice Board Update and Ethics," September 11, 2018, 1.0 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "2018 IBC and IEBC Significant Structural Changes," May 22, 2018, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "ASCE 07-16 Component and Cladding Wind Design," April 28, 2018, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Multi-Family Wood Construction: Engineering Mid-Rise Buildings," January 25, 2018, 1.5 PDH

PDHengineer.com, "Texas ASCE Guidelines for the Evaluation and Repair of Residential Foundations," December 19, 2017, 3.0 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Special Inspection for Wood Construction - An Overview for Engineers and Inspectors," December 7, 2017, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "CFS Framed Lateral Design," August 10, 2017, 1.5 PDH

SEAK, "How to be an Effective Expert Witness," Steve Babitsky, Esq., Golden, Colorado, August 4, 2017, 7.25 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Special Inspections of Existing Buildings," June 27, 2017, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Ethics – Stamping & Sealing: Satisfying Statutes & Standard of Care," June 6, 2017, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Updated Concrete Repair Code and Companion Guide," March 9, 2017, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Design of Connections for Wood Members using the NDS and TR12," January 31, 2017, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Masonry Movement Joints," January 17, 2017, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Structural Engineering Ethics – Black & White or 50 Shades of Grey," November 15, 2016, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Evaluation & Instrumentation of Existing Buildings," September 27, 2016, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Introduction to Structural Fire Engineering," June 23, 2016, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Designing with Post Tensioned Concrete," May 25, 2016, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Vibrations of Reinforced Concrete Floor Systems," January 20, 2016, 1.5 PDH

Jeffrey J. Felderman
Senior Vice President – Construction & Design Compliance

National Council of Structural Engineers Associations (NCSEA), Webinar, "2015 National Design Specification (NDS) for Wood Construction," January 14, 2016, 1.5 PDH

American Concrete Institute (ACI), Seminar, 318-14 Reorganized for Design Building Code Seminar, November 12, 2015, .75 CEU

National Council of Structural Engineers Associations (NCSEA), Webinar, "Calculating Wind Loads for Components & Cladding (C&C)," November 17, 2015, 1.5 PDH

Sherman & Howard LLC, Construction Seminar, Colorado Springs, Colorado, October 21, 2015, 2.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "What You Need to Know About the Seismic Peer Review Process," October 6, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Wind Engineering Beyond the Code," September 10, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Wind Design of Solar Photovoltaic Arrays," August 18, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "HSS Design with the Latest Codes and Material Specifications," June 25, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Practical Design of Structures for Blast Effects-Structural Elements," May 5, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Practical Design of Structures for Blast Effects-Design Criteria," April 28, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Quick Methods for Quality Assurance Reviews," April 14, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "AWC's 2015 Special Design Provisions for Wind and Seismic – Overview and Changes from Previous Editions," April 2, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Practical Solutions to Frequently Asked Welding Questions," February 10, 2015, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "2012 IBC, ASCE 7 & 2008 SDPWS Seismic Provisions for Wood Construction," December 4, 2014, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "Connection Solutions for Wood-Frame Structures," November 6, 2014, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "A Crash Course in Structural Glass," October 23, 2014, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Parking Garage Repairs: Identification, Evaluation, the Process and Repair, August 19, 2014, 1.5 PDH

National Council of Structural Engineers Associations (NCSEA), Webinar, "DoD Minimum Antiterrorism Standards for Buildings," July 22, 2014, 1.5 PDH

Applied Technology Council (ATC), Webinar, "Wind Design for Tornadoes," June 18, 2014, 1.5 PDH
National Council of Structural Engineers Associations (NCSEA), Webinar, "The Analysis of Offset Diaphragms and Shear Walls," June 5, 2014, 1.5 PDH

Jeffrey J. Felderman
Senior Vice President – Construction & Design Compliance

National Council of Structural Engineers Associations (NCSEA), Seminar, Structural Fire Resistance – Overview, Codes & Standards Background, April 24, 2014, 1.5 Continuing Education hours

SEAK, "How to be an Effective Expert Witness" James J. Mangraviti, Jr., Falmouth, Massachusetts, September 19-20, 2013, 14.0 PDH

American Concrete Institute (ACI), Seminar, Adhesive Anchors, May 9, 2013, .75 CEU

Structural Engineers Association of Colorado (SEAC), Seminar, The National Design Specification for Wood Construction (NDS), March 21, 2013, 1.0 PDH

Federal Emergency Management Agency (FEMA), Training, ATC-20 Post-earthquake Safety Evaluation of Buildings, Rapid Observation of Vulnerability and Estimation of Risk (ROVER), and FEMA 154 Rapid Visual Screening of Buildings for Potential Seismic Hazards, November 2, 2012, 8 contact hours

Structural Engineers Association of Colorado (SEAC), Seminar, Changes to the ASCE 7-10 Wind Provisions and their Application to the Front Range, October 18, 2012, 3.5 PDH

HalfMoon LLC, Seminar, Shallow Foundation Design, Construction and Repair, May 3, 2012, 6.5 PDH

American Society of Civil Engineers (ASCE) Web Seminar, Significant Changes to the General Requirements for Determining Wind loads of ASCE 7-10, March 8, 2012, 1.0 PDH

National Council of Structural Engineers Associations Web Seminar, Seismic Isolation: The Best Possible Earthquake Protection, November 3, 2011

American Society of Civil Engineers (ASCE) Web Seminar, Deflection Calculation of Concrete Floors-Immediate, Long-Term Cracking, May 6, 2011, 1.5 PDH

SEAK, "Advanced Deposition Skills For Experts" James J. Mangraviti, Jr., Golden, Colorado, March 8, 2011, 2.0 PDH

SEAK, "Cross Examination of Expert Witnesses – Tactics and Defenses for Attorneys and Expert Witnesses," James J. Mangraviti, Jr., Golden, Colorado, March 8, 2011, 5.25 PDH

ASR Companies & Envergent Building Science, Water Intrusion & Asbestos Awareness, February 24, 2011, 2 PDH

HalfMoon LLC, Seminar, Designing and Building with Structural Insulated Panels and Insulated Concrete Forms, February 22, 2011, 5.5 PDH

HalfMoon LLC, Seminar, Building 2009 Changes to the International Residential Code, September 2, 2010, 6 PDH

W.R. Grace & Co. , Preprufe, Advanced Bond Technology, Workshop, Boston, Massachusetts, August 5, 2010, 8 PDH

W.R. Grace & Co. , Perm-A-Barrier, Workshop, Grace Perm-A-Barrier Systems, Boston, Massachusetts, August 4, 2010, 8 PDH

American Society of Civil Engineers (ASCE) Web Seminar, Renovation of Residential Framing, July 12, 2010, 1.5 PDH

RAM JACK Seminar, Foundation Evaluation and Pile Installation for the RAM JACK SYSTEMS, July 1, 2010, 1 PDH

Jeffrey J. Felderman
Senior Vice President – Construction & Design Compliance

Structures Part 2: Masonry American Society of Civil Engineers (ASCE) Web Seminar, Condition Evaluation of Existing and Wood, June 15, 2010, 1.5 PDH

American Society of Civil Engineers (ASCE) Web Seminar, Practical Design of Bolted and Welded Steel Connections, May 25, 2010, 1.5 PDH

The Energy Center of Wisconsin, Blower Door Testing in Action on Multi-family Buildings, Madison Wisconsin, May 18-20, 2010

American Society of Civil Engineers (ASCE) Web Seminar, Introduction of ASCE 7-10 Wind Loads A Three-Part Series – Part II of III, May 7, 2010, 1 PDH

American Society of Civil Engineers (ASCE) Web Seminar, Design & Rehabilitation of Foundation on Expansive Soils, March 22, 2010, 1.5 PDH

American Society of Civil Engineers (ASCE) Web Seminar, An Introduction to Fire Protection Engineering for Buildings, March 31, 2010, 1PDH

American Society of Civil Engineers (ASCE) Web Seminar, Engineering Through Ethical Challenges, February 17, 2010, 1PDH

American Society of Civil Engineers (ASCE) Web Seminar, Design of High-Rise Steel Structures: The Basics, February 16, 2010, 1.5 PDH

American Society of Civil Engineers (ASCE) Web Seminar, Introduction to Green Design, January 7, 2010, 1 PDH

EXHIBIT 1B

SBSA
a Charles Taylor company

June 23, 2021

Craig S. Nuss
Penny J. Manship
Burg Simpson Eldredge Hersh & Jardine PC
8310 South Valley Highway, #270
Englewood, Colorado 80112

Project Number: 219061.00 (030)
Project Name: Gallery
Location: 3104-3127 North 71st Street
Scottsdale, Arizona 85251

Subject: Construction and Design Compliance Report

Dear Mr. Nuss and Ms. Manship:

PREAMBLE

Per your request, SBSA, LLC, A Charles Taylor Company (SBSA), conducted site observations, interior observations, exterior observations, intrusive examinations, and site measurements at the Gallery Townhomes site (Gallery) in Scottsdale, Arizona. The evaluation also consisted of file review as noted within this report. A record of site observation dates is contained in the attached Observation Drawing Set, Observation Photographs, and photograph log.

The purpose of this evaluation was to document the Construction and Design Compliance, including analysis of the design and construction components as necessary, to determine if the work was designed and constructed in conformance with the applicable code, regulations, technical criteria, site-specific plans, and recognized standard industry requirements. This report includes an evaluation of site civil systems, the stucco and roof systems, as well as additional miscellaneous issues as listed within.

SBSA conducted visual examinations and analysis of the provided file as necessary to determine the commonality of the construction practices used on this site. As well, the examination was conducted to determine the extent or likely extent of the manifestation of resultant damage caused by the inability of the systems to perform their intended function.

Field observations and testing were performed by Edward L. Fronapfel, MSCE, PE, Jerod B. Faris, MSCE, PE, Jeffrey J. Felderman, PE, Sameer S. Rampurawala, M.Eng., EI, and Peter E. Rabner, PE, under the responsible charge of Edward L. Fronapfel, MSCE, PE, D-IBFES, DFE, CBIE, CFCC,

CBCP, EDI, PTI1, HCR-R-I, F.NAFE, F.ASCE. This work consisted of surveying and recording on-site, as-built conditions that are objective in nature. These findings were recorded and transcribed in this report and the attached documents. If necessary, all individuals listed above will testify to the accuracy and objective criteria used for the evaluation of this site. The intrusive testing was conducted with representatives of the defendants on-site during the examinations.

This report is the result of a team effort. All of the work performed by SBSA relating to the project and this report was under the direction and responsible charge of Edward L. Fronapfel, MSCE, PE. The individual team members who contributed to this report were:

Structural	Sameer S. Rampurawala, M.Eng., EI
Civil	Dane M. Dasent, CFM, LEED AP
Building Envelope	Sameer S. Rampurawala, M.Eng., EI Shawn B. Peatrowsky, PE
Recommendations for Repair	Sameer S. Rampurawala, M.Eng., EI Dane M. Dasent, CFM, LEED AP
Direction and Review	Jeffrey J. Felderman, PE Edward L. Fronapfel, MSCE, PE

Edward L. Fronapfel, MSCE, PE, seals this report along with any attachments hereto as completed under his responsible charge.

This report is a summary of voluminous writings, recordings, photographs, and other documents, which cannot conveniently be produced by way of attachment. This report is a summary of those writings, recordings, photographs, and other documents, of which the originals are available for examination in the SBSA job file. To the extent assumptions were made relating to the contents of this report, not all such assumptions are stated within this report or in SBSA's job file. A description of such assumptions can only be identified if specific questions are directed at discrete issues because many of such assumptions are incorporated in SBSA's experience, training, education, and judgment.

This report is based on information provided and reviewed to date, and it is meant to provide engineering opinions regarding construction and engineering conditions as noted within this text. Should additional information be made available or unknown conditions discovered, SBSA retains the right to periodically revise and supplement this report accordingly.

As a part of this report, SBSA provides references, including quoted text and/or images, to substantiate our opinion. For clarity, SBSA italicizes quotes and, in the event that a quote includes already italicized text, that text will appear un-italicized. These italics are in no way intended to modify the intent of the quote but simply to aid the reader in discerning between text generated by SBSA and by outside sources. An original copy of all references is included as an attachment to this report.

SUMMARY OF CONSTRUCTION NON-COMPLIANCE

A. STRUCTURAL
   1. COMPLIANCE WITH GEOTECHNICAL REPORT
   2. LATERAL FORCE RESISTING SYSTEM (LFRS)
      a. Non-Compliant LFRS

B. CIVIL
   1. GRADING AND DRAINAGE
      a. Drainage Bounded by Concrete Flatwork
      b. Non-Compliant Management of Concentrated Flows
   2. CONCRETE FLATWORK
      a. Non-Compliant Cross-Slope of Sidewalks
      b. Non-Compliant Longitudinal Slope of Sidewalks
      c. Non-Compliant Landings

C. BUILDING ENVELOPE
   1. FAÇADE (EXTERIOR CLADDING AND SEALANTS) TYPE 1 – STUCCO
      a. Missing Weep Mechanism in Stucco
      b. Non-Compliant WRB for Stucco System
      c. Non-Compliant EPS Foam Board for Stucco System
      d. Non-Compliant Slope of Horizontal Stucco Surfaces
      e. Deficient Self-Adhered Membrane under Horizontal Stucco System
      f. Missing Control/Movement Joints
   2. MOISTURE-MANAGEMENT SYSTEM (BARRIERS, FLASHINGS, DRAINAGE, ETC.)
      a. Missing Sheet Metal Flashing at Fenestrations
      b. Non-Compliant Flashing to Stucco Interface
      c. Non-Compliant Isolation Joints at Dissimilar Materials
   3. ROOFING SYSTEM TYPE 1 – SPRAY POLYURETHANE FOAM (SPF)
      a. Non-Compliant Slope to Roof Drains
   4. ELEVATED DECKS, BALCONIES, OR WALKWAYS
      a. Non-Compliant Slope of Deck

PROJECT DOCUMENTATION REVIEWED

The following project-specific documentation was reviewed by SBSA as a part of its Scope of Work for this project:

- "Building Department Documents," Received May 6, 2019, Bates Numbers GALLERY_BLDG DEPT 000001-001921.
- "Video from 3112 N 71st St," Received September 30, 2019.
- "Roof Leak Photos," Received from Burg Simpson on February 10, 2021.
- "Disclosure," Received from Burg Simpson on February 19, 2021, Bates Numbers GALLERY_000001-000115.
- Felten Group, "Structural Set," Signed June 8, 2016, Sheet Numbers RL, GSN, S1.1, S1.2, S1.3, S1.4, S1.5, S1.6, S1.7, S1.8, S1.9, S2.1, S2.2, S2.3, S2.4, S2.5, S2.6, S3.1, S3.2, S3.3, S3.4, S3.5, S3.6, SD.
- HanmiGlobal Partner Otak, Inc, "Gallery Townhomes Architectural Plans," Signed August 2, 2016, Sheet Numbers A0.01, A0.02, A0.11, A0.12, A1.01, A1.02, A1.11, A2.11, A2.12, A2.21, A2.22, A2.31, A2.32, A2.41, A2.42, A3.11, A3.21, A3.31, A3.41, A4.01, A4.02, A4.03, A4.04, A4.11, A4.12, A4.13, A5.01, A5.02, A5.03, A5.11, A5.12, A5.12.1, A5.13, A5.14, A5.14.1, A5.14.2, A5.15, A5.16, A5.16.1, A5.16.2, A6.10, A6.11, A6.12, A6.13, A6.14, A6.15, A6.16, A6.17, A6.18, A7.14, A7.15, A7.16, A8.01, A8.02, A8.03, A8.04, A8.05, A8.11.
- "Disclosure," Received from Burg Simpson on June 7, 2021, Bates Numbers CHAS 000001-000053; LEBLANC 002301-002678; LIBERTY 000001-000063; RENCO 000001-000245; SMC000001-000094, 000146-000196, 000234-000261, 000267-000386, 000509-000567, 000574-000676, 000691-000697, 000705-000711, 000719-000725; GALLERY_000001-001065.
- Various Photographs by Homeowners and Nautilus, Received from Burg Simpson on June 16, 2021.
- Protex, "Geotechnical Investigation," dated March 18, 2015, Received from Burg Simpson on June 16, 2021.
- "Disclosure," Homeowner Photos Received from Burg Simpson on June 18, 2021, Bates Numbers GALLERY-CHANG_3112-000001-0000006, GALLERY-JONES_3104-000001-000009, GALLERY-LINE_3110-000001-000004, GALLERY-SLUSARZ-000001-000025, GALLERY-STAVROFF_3124-000001-000082.

APPLICABLE CODE AND INDUSTRY-AFFILIATED STANDARD REFERENCES

In determination of the applicable building code and jurisdictional requirements relevant to this project, SBSA reviewed the Code Adoption History issued by City of Scottsdale, the Jurisdiction with Authority for the building permits and inspections on this property. SBSA also reviewed the building permits and the certificate(s) of occupancy issued by the City of Scottsdale for the subject property as well as the Contract Documents. This verified that when built, this property was under the jurisdiction of the building department. According to the building department, the 2012 building codes were adopted on December 4, 2012 and the 2015 building codes were adopted on November 28, 2016. The building permits and the certificate(s) of occupancy both specify the 2012 International Residential Code (IRC) as the building code. In addition to the documents issued by the local building department, the approved architectural and structural plans state the following:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised August 2, 2016, Sheet A0.11 "Code Summary & Fire Life Safety Plans – Gallery," states the following:

- ***"BUILDING CODE SUMMARY – BASED ON 2012 INTERNATIONAL RESIDENTIAL CODE (IRC)***

  GENERAL INFORMATION

  Building Code Editions (with City of Scottsdale amendments)

  International Residential Code (IRC) - 2012

  *International Building Code (IBC) - 2012 *For Use As Referenced In The IRC*

  National Electric Code (NEC) - 2011

  International Plumbing Code (IPC) - 2012

  International Fuel Gas Code (IFGC) - 2012

  International Mechanical Code (IMC) - 2012

  International Energy Consevation [sic] *Code (IECC) - 2012*

  International Fire Code (IFC) - 2012

  2012 IRC, ICC/ANSI 117.1-2009 ANSI & 2010 ADA Standards"

Felten Group, "K. Hovnanian Homes, Subdivision Gallery," revised June 8, 2016, Sheet GSN "General Structural Notes," states the following:

- ***"DESIGN LOADS***

  2012 International Building and Residential Codes (IBC/IRC)"

In addition to the above, the architectural drawings referred to specific sections of the 2012 International Building Code (IBC). Thus, the 2012 IRC and the 2012 IBC with their respective amendments by the City of Scottsdale were applicable to the design and construction of the project.

The following documents were reviewed and referenced by SBSA as a part of its Scope of Work for this project:

STANDARD OF CARE

1. American Institute of Architects (AIA), "The Architect's Handbook of Professional Practice," Thirteenth Edition, 2001.
2. City of Scottsdale, Arizona, "City Of Scottsdale Amendments To The International Building Code, 2012 Edition, Ordinance 4059," Issued Date December 4, 2012.
3. City of Scottsdale, Arizona, "City Of Scottsdale Amendments To The International Residential Code For One- And Two-Family Dwellings, 2012 Edition, Ordinance 4060," Issued Date December 4, 2012.

A. STRUCTURAL

B. CIVIL

1. American Concrete Institute (ACI), ACI 332R-84 "Guide to Residential Cast-in-Place Concrete Construction," 1999.
2. American National Standards Institute (ANSI), A117.1-2009 "Accessible and Usable Buildings and Facilities," Approved October 20, 2010.
3. Arizona Geological Survey, "A Home Buyer's Guide to Geologic Hazards in Arizona," Down-To-Earth 13, 2002.
4. Arizona Registrar of Contractors, "Workmanship Standards for Licensed Contractors," June 2009.
5. City of Scottsdale, Arizona, "City of Scottsdale Amendments To The International Building Code, 2012 Edition, Ordinance 4059," issued date December 4, 2012.
6. Code of Federal Regulations, "Title 24 Housing and Urban Development," April 1, 2012.
7. International Code Council, Inc. (ICC), "International Residential Code for One- and Two-Family Dwellings (IRC)," 2012.
8. National Fire Protection Association (NFPA), NFPA 101 "Life Safety Code," 2006.
9. U.S. Department of Housing and Urban Development, HUD Handbook 4145.1 REV-2 "Architectural Processing and Inspections for Home Mortgage," March 1990.
10. U.S. Department of Housing and Urban Development, HUD 4910.1 "Minimum Property Standards for Housing," 1994 Edition.
11. U.S. Department of Housing and Urban Development, "Residential Rehabilitation Inspection Guide," February 2000.
12. U.S. Department of Transportation, Federal Highway Administration (FHWA), "Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices," July 1999.
13. U.S. Department of Transportation, Federal Highway Administration (FHWA), "Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide," September 2001.

C. BUILDING ENVELOPE

1. American Architectural Manufacturers Association, AAMA 2400-10 "Standard Practice for Installation of Windows with a Mounting Flange in Open Stud Frame Construction for Low Wind/Water Exposure," 2010.
2. American Society for Testing and Materials (ASTM), ASTM C1063-16 "Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster," 2016.
3. American Society of Testing and Materials (ASTM), ASTM E2112–07 "Standard Practice for Installation of Exterior Windows, Doors and Skylights," 2007.
4. Amerimix, "Fiber Base Coat Stucco AMX 750 FBC," Revised June 2016.
5. City of Scottsdale, Arizona, "City Of Scottsdale Amendments To The International Building Code, 2012 Edition, Ordinance 4059," issued date December 4, 2012.
6. GMC Roofing & Building Paper Products, Inc. (GMC), "GMCraft 10 Minute Weather-Resistive Barrier, Product Data," June 2020.
7. ICC Evaluation Service, Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017.
8. ICC Evaluation Service Report (ESR), "Evaluation Subject: GMCraft 10 Minute, GMCraft 30 Minute, and GMCraft 60 Minute Water-Resistive Barriers, ESR-2376," reissued May 2019.
9. International Code Council, Inc. (ICC), "International Building Code (IBC)," 2012.
10. International Code Council, Inc. (ICC), "International Energy Conservation Code (IECC)," 2012.
11. International Code Council, Inc. (ICC), "International Residential Code (IRC)," 2012.
12. International Conference of Building Officials (ICBO), "AC11 – Acceptance Criteria for Cementitious Exterior Wall Coatings," approved March 2010, Effective March 1, 2010.
13. Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), "Residential Sheet Metal Guidelines," First Edition, 2001.
14. Structure Magazine, "Low-Slope Roof and Deck Design Considerations Part 2: Mitigate Ponding and Water Intrusion by Scott D. Coffman, PE, SECB," September 2017.
15. Stucco Manufacturers Association (SMA), prepared by the Northwest Wall and Ceiling Bureau, "Portland Cement Plaster Stucco Resource Guide," Third Edition, 1997.

Felten Group, "K. Hovnanian Homes, Subdivision Gallery," revised June 8, 2016, Sheet S1.1 "Foundation Plan Building A," states the following:

SOIL	
1. ALL EXCAVATION, FILL (INCLUDING BASEMENT WALL AND RETAINING WALL BACKFILL), COMPACTION, AND SOIL RELATED OPERATIONS SHALL BE PERFORMED ACCORDING TO SOILS CONSULTANT'S RECOMMENDATIONS. SEE SOILS REPORT AND ADDENDUMS BY THE GEOTECHNICAL ENGINEER FOR RECOMMENDATIONS ON THE CONSTRUCTION OF THE FOUNDATION SYSTEM. 2. SOME SOIL REPORTS REFERENCE FOUNDATION DEPTH FROM "LOWEST ADJACENT GRADE WITHIN 5 FEET OF THE FOUNDATION" WHILE OTHER SOIL REPORTS USE "ADJACENT GRADE". SEE SITE SPECIFIC SOILS REPORT FOR PROPER DATUM FOR THIS PROJECT.	
SOILS REPORT INFORMATION	
GEOTECHNICAL REPORT BY:	PROTEX
GEOTECHNICAL REPORT #:	4222
GEOTECHNICAL REPORT DATE:	3/18/2015
ALLOWABLE BEARING PRESSURE	1250 psf.
ALL EXCAVATION, FILL, COMPACTION AND SOIL RELATED OPERATIONS SHALL BE PERFORMED ACCORDING TO GEOTECHNICAL REPORT RECOMMENDATIONS.	

K. Hovnanian Homes, "Standard Specifications, The Gallery, 18 Lots," dated May 2, 2016, Bates Number "SMC000241," states the following:

Concrete: POST TENSION – 9" slab
Note: Soils Reports to be used are Pro Tex, project number # 4222 dated March 18th, 2015.

These notes are generally consistent with the Protex recommendations.

2. LATERAL FORCE RESISTING SYSTEM (LFRS)

The buildings at the Gallery site are three-story 3-plex and 5-plex townhomes. The foundation system includes 8-inch-thick post-tensioned slab-on-ground for each building footprint. The superstructure is constructed of conventional 2x wood stud framing and prefabricated engineered floor and roof trusses. The LFRS is comprised of the roof and floor diaphragms and gypsum wall board and wood-sheathed braced or shear walls.

a. Non-Compliant LFRS

The LFRS is a system of framing members and connections that are intended to transfer the lateral forces, which are developed from wind or seismic loads, from the roof and floor diaphragms of a building through collectors and ultimately into the foundation systems that transfer loads to the supporting soils. For an LFRS to function as a complete system, it must provide a continuous load path as the code mandates. This continuous load path system includes the use of properly designed and installed floor and roof diaphragms, collectors, shear walls, blocking, straps, hold-downs, anchorage from the bottom of the shear wall to the level below or foundation, and other mechanical connectors. The building's lateral resistance is part of the occupant safety criteria and building performance criteria. Failure to design and construct a complete LFRS based on the site-specific design criteria results in the potential for building damage and loss of use due in part to increased damages.

Intrusive examination revealed the framing at Unit 3111 of Building D of the Gallery site was constructed without the proper LFRS that was clearly detailed on structural braced/shear wall plans. The architectural plans label Building D as plan type 31-1211. The structural braced/shear wall plans for the front of the second floor of plan type 31-1211 specify a braced/shear wall type 4, which is a continuous 3/8-inch minimum rated sheathing behind the pop-out wall with .113 x 2-3/8-inch nails spaced per the braced/shear wall schedule. The braced/shear wall plan required one CMSTC16 or two CS16 straps at each end of the exterior sheathing installed with required fasteners to provide minimum tensile capacity of 3410-pounds-force.

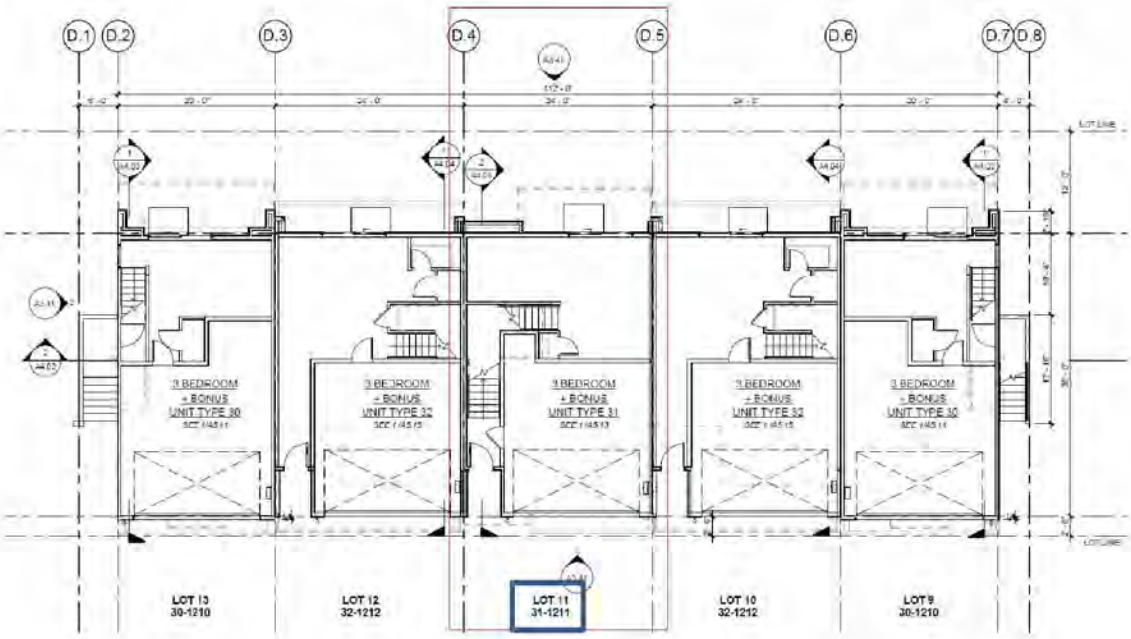
As constructed, the cladding was installed over open stud framing without the required exterior sheathing at the second floor level between the triple panel slider window in the great room and the pop-out wall. Fasteners in the CS16 strap connecting the exterior sheathing below the triple panel window were missing and the steel strap had buckled. The buckled steel strap and the missing exterior wood sheathing failed to comply with the braced/shear wall plan specified on the structural drawings. The non-compliant condition more likely than not reduces the structural integrity of the LFRS, as intended by the Structural Engineer of Record (EOR) and requires repairs.

Where non-compliant LFRS exists, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

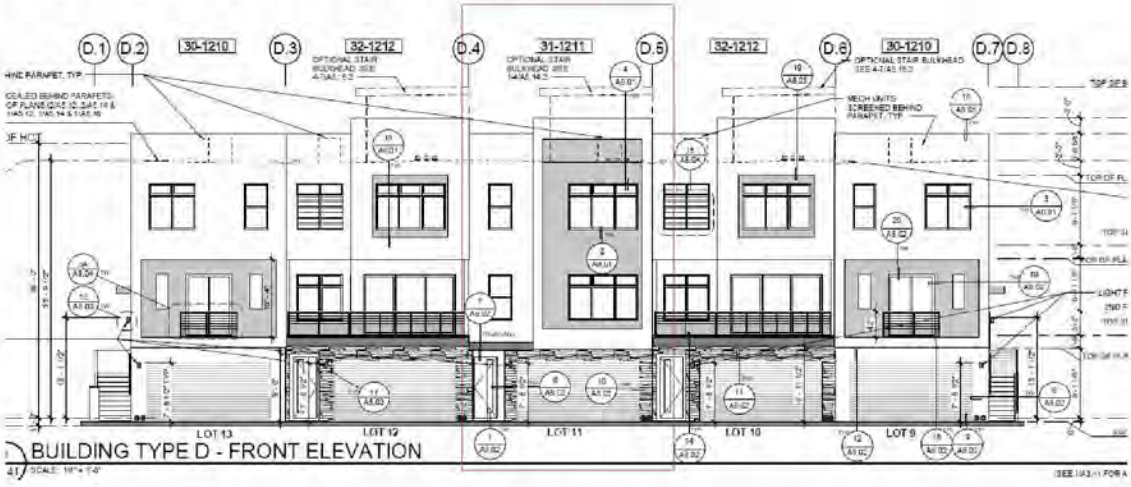
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A2.41 "1st & 2nd Floors Building D, 5-Plex, Gallery Site #4,," Detail 1, illustrates the following:

- *"1/A2.41 First Floor Plan – Building D- 5 Plex"*



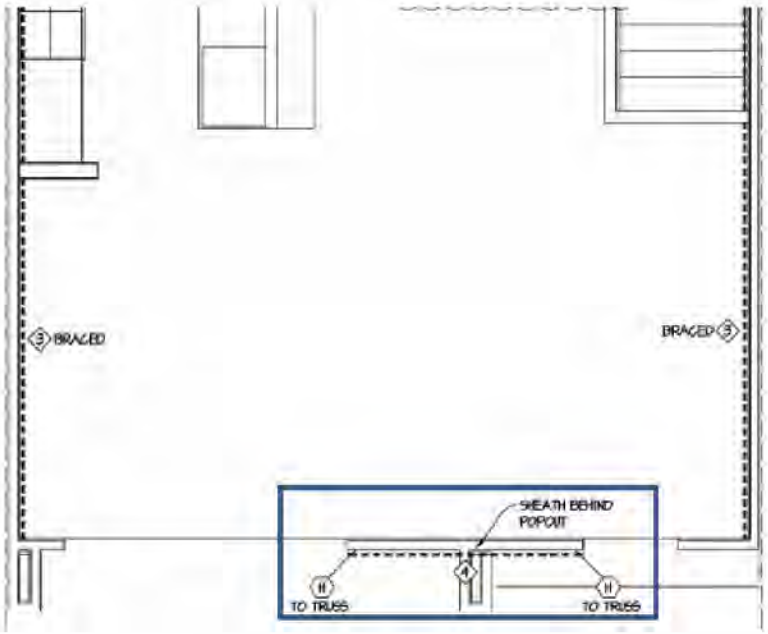
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A3.41 "Exterior Elevations Building D, 5-Plex, Gallery Site #4," Detail 1, illustrates the following:

- *"1/A3.41 Building Type D- Front Elevation"*



Felten Group, "K. Hovnanian Homes, Subdivision Gallery," revised June 8, 2016, Sheet 3.3 "Braced/Shear Wall Plans," states the following:

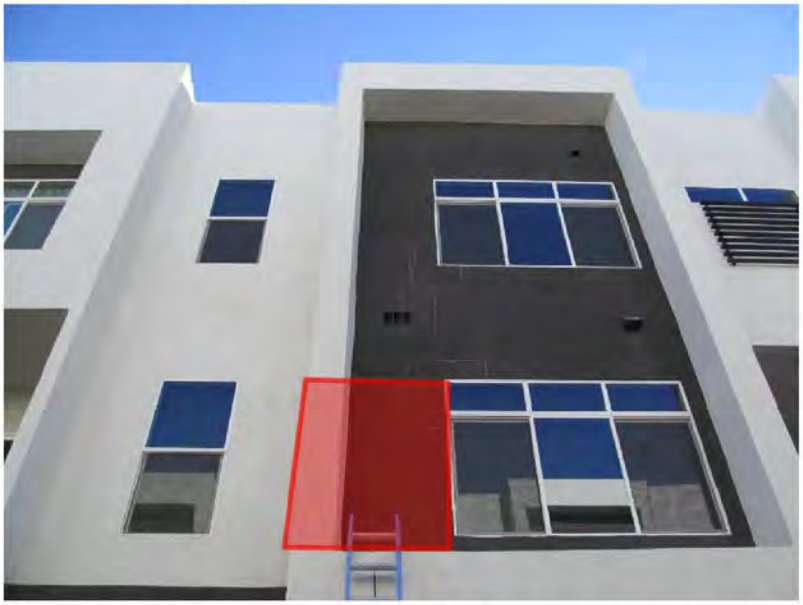
- *"31-1211, 2nd Floor, Braced/ Shear Wall Plan"*



- *"Holdown Schedule"*

H	CMSTC16 STRAP CLEAR SPAN + 38" W/ (44) 10d NAILS (3410 LBS.) OR (2) CS16 STRAPS CLEAR SPAN + 28" W/ (26) 8d NAILS EACH STRAP (3410 LBS.)

Example Photographs:



March 10, 2021, Disc IT8, Photograph 41, SSR, Building D – Unit 3111, overall view of building elevation with non-compliant LFRS. Red box outlines the approximate area within which the exterior sheathing was identified to be missing.

March 10, 2021, Disc IT8, Photograph 237, SSR, Building D – Unit 3111, missing OSB sheathing at existing stud framing.

March 10, 2021, Disc IT8, Photograph 248, SSR, Building D – Unit 3111, missing OSB sheathing at existing stud framing.

March 10, 2021, Disc IT8, Photograph 278, SSR, Building D – Unit 3111, CS-16 metal strap is disengaged and buckled.

Locations:

Non-compliant LFRS was identified at Building D - Unit 3111 of the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings. Similar non-compliant LFRS issues will more likely than not be discovered during stucco repairs recommended in Sections C.1.b and C.1.c of this report.

Example Photograph:

March 10, 2021 Disc OBS5, Photograph 97, SSR, Building B, north side, no landing constructed at bottom of stairs. Longitudinal slope of sidewalk is 4.7-percent.

Locations:
Non-compliant landings exist across the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

C. BUILDING ENVELOPE

1. FAÇADE (EXTERIOR CLADDING AND SEALANTS) TYPE 1 – STUCCO

One of the cladding materials installed at the Gallery site is a stucco (Portland cement-based plaster) system. As constructed, the materials comprising the stucco system from the outermost layer towards the interior typically included the following:

- Hard coat stucco with embedded metal lath
- Flat faced foam
- Weather-resistive barrier (WRB) manufactured by GMCraft
- OSB sheathing or stud framing

Stucco systems fall into one of two categories: one-coat and three-coat systems. One-coat systems (also sometimes referred to as two-coat systems) involve a basecoat and a finish coat and are generally 3/8- to 1/2-inch thick. Three-coat systems include two base coats (referred to as a scratch coat and brown coat) and a finish coat, with a total system thickness of 3/4- to 7/8-inch. The installed system was found to range from 1/8- to 3/4-inch thick, of which the thickness under 1/2-inch would correspond generally to a one-

coat system. For the purposes of this report, the specific type of system does not change the opinions included herein.

Common building materials are recognized in the building code, which provides specific installation requirements for them. Anchored brick veneer, wood lap siding, and traditional three-coat stucco are examples of these code-recognized building materials. The ICC publishes Acceptance Criteria for materials not directly recognized by the building code, such as one-coat stucco systems. The ICC Evaluation Services, AC11 "Acceptance Criteria for Cementitious Exterior Wall Coatings," provides the conditions under which cementitious exterior wall coatings with lath, such as stucco systems, can be recognized in an ICC report under the building code.

International Conference of Building Officials (ICBO), AC11 "Acceptance Criteria for Cementitious Exterior Wall Coatings," approved January 2013, Section 1.0 "Introduction," subsection 1.1 "Purpose," states the following:

- *"The purpose of this criteria is to establish requirements for cementitious exterior wall coatings with laths to be evaluated under the 2021, 2018, 2015, 2012, 2009 and 2006 International Building Code® (IBC), and the 2021, 2018, 2015, 2012, 2009 and 2006 International Residential Code® (IRC)."*

Alternate materials are allowed, provided that the building officials find that they are equivalent to what is prescribed in the code. The requirements for alternate materials are quoted below.

City of Scottsdale, Arizona, "City Of Scottsdale Amendments To The International Building Code, 2012 Edition, Ordinance 4059," issued date December 4, 2012, Section 31-32(a) "Amendments," Chapter 1 "Scope and Administration," Part 2 "Administration And Enforcement," Section 104 "Duties and Powers of Building Official," states the following:

- *"**[A] 104.11 Alternative materials, design and methods of construction and equipment**. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety."*
- *"**104.11.2 Tests**. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records."*

In instances where multiple standards specify differing requirements for the same aspect of construction, the most stringent standard shall apply.

The architectural drawings include assembly details for the Gallery site. The construction assembly specified for exterior walls with stucco from the outermost material towards the interior is listed below:

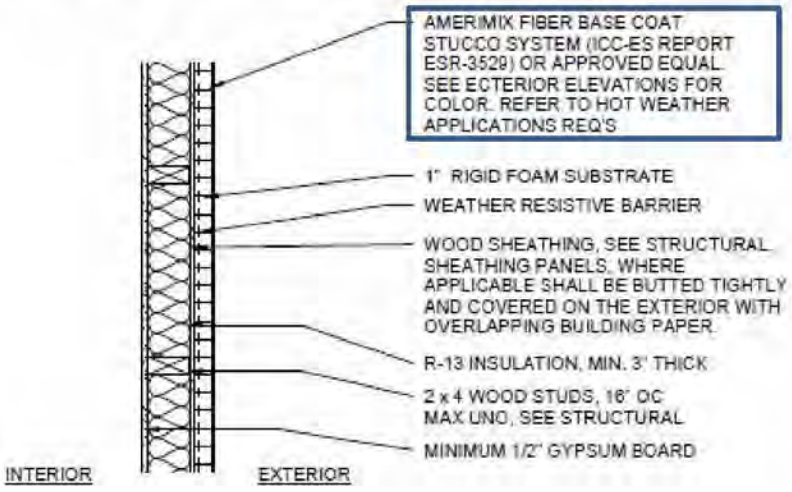
- Amerimix fiber basecoat stucco system or an approved equal alternative
- 1-inch of rigid foam substrate
- WRB
- wood sheathing or framing material.

The architectural drawings as well as the builder's specifications indicated the stucco to be Amerimix fiber basecoat stucco system. Therefore, Amerimix will be used in this report to provide a general description of this type of stucco system. The ICC-ES Evaluation Report ESR-3529 provides the material and installation requirements for Amerimix fiber basecoat stucco system. The February 2017 revision of the report complies with the 2012 International Codes and requires stucco installation by contractors approved by Bonsal American. Should additional stucco information be made available, SBSA retains the right to revise and supplement this report accordingly.

Applicable Code/Industry Standard References/Project-Specific Documents:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A1.01 "Construction Assemblies," Detail 14A "Exterior Wall – Stucco System – Non-Rated," states the following:

Note: Similar description for Detail 15A "Ext Wall – Stucco Sys Furring – Non-Rated" and Detail 16A "Ext Wall - Stucco System - 1-hr rated"



ICC Evaluation Service, Evaluation Report ESR-3529 "Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 1 "Evaluation Scope," states the following:

- *"**Compliance with the following codes:***
  - *2012, 2009 and 2006 International Building Code® (IBC)*
  - *2012, 2009 and 2006 International Residential Code® (IRC)*
  - *1997 Uniform Building Code™ (UBC)*

  Propertied evaluated:
  - *Structural*
  - *Weathering and durability*
  - *Fire-resistance-rated construction*
  - *Types I, II, III and IV construction"*

ICC Evaluation Service, Evaluation Report ESR-3529 "Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 5 "Conditions of Use," states the following:

- *"5.1 Materials and methods of installation must comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this report, this report governs. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.*
- *5.2 Installation must be by contractors approved by Bonsal American."*

ICC Evaluation Service, Evaluation Report ESR-3529 "Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 2 "Uses," states the following:

- *"Amerimix Fiber Base Coat Stucco is an alternative exterior wall covering to that specified in IBC Chapter 25, IRC Section R703 and UBC Chapter 25. The system may be used in any type of construction."*

Amerimix, "Fiber Base Coat Stucco AMX 750 FBC," Revised June 2016, section "2. Product Description," states the following:

- *"Note: Amerimix AMX 750 FBC should be installed in accordance with the provisions of applicable ASTM standards and the local building code. Always follow traditional industry best practices appropriate for the application and weather conditions. Good workmanship in conjunction with proper design and detailing assures durable, efficient, watertight construction."*

Amerimix, "Fiber Base Coat Stucco AMX 750 FBC," Revised June 2016, Section 3 "Technical Data," states the following:

- *"**Applicable Standards***

  ASTM International (ASTM)

  ...
  - *ICC-ESR 3529*

- *2012 International Building Code® (IBC)*
- *2012 International Residential Code® (IRC)."*

K. Hovnanian Homes, "Standard Specifications, The Gallery, 18 Lots," dated May 2, 2016, Bates Number "SMC000259," states the following:

Stucco:

- Scaffolding will be provided by others.
  - Must agree and sign Scaffolding use agreement
- Amerimix PRE-MIXED stucco standard
- All plans/elevations – Sand texture per plans/elevations
- Square corner aide to be used
- **Electrical / Low Voltage/ Mechanical / Plumbing Trades are all individually responsible for supplying and installing their own QuickFlash Flashing Panels (By QuickFlash Weatherproofing Products, Inc) at all exterior penetrations.** – Stucco contractor will weave QuickFlash Flashing Panels into lath to ensure a watertight connection.
- All "pop outs" or other stucco trim details per plan with Silica sand finish
- Pop outs which protrude 4" or less to be installed by stucco trade partner. Pop outs over 4" installed by framing trade partner
- All penetrations through lath to be caulked with Butyl caulk
- Weep metal to be install per current IBC code
- Install Diamond Lath behind all stone/brick areas
- Caulk weep metal to so sole plate exterior wall.

a. Missing Weep Mechanism in Stucco

Installation of a weep mechanism or drip edge at horizontal terminations of the stucco at locations where the stucco application is continued onto a horizontal surface, such as a soffit, is required by industry standards. The weep mechanism allows water within the cladding system to exit to the exterior as required by code, and the drip edge component is to allow the water to break from the surface adhesion and fall away from the structure. Sealing, blocking, omitting, or failing to integrate the weep mechanism results in moisture accumulating behind the cladding, promoting the continuous and progressive deterioration of the underlying water-sensitive building components, including the stucco. Generally, the outward signs due to the entrapped water result in stucco cracks and beneath the products result in damages to the interstitial spaces, including rusted fasteners and stained and/or deteriorated sheathing. All horizontal terminations of the stucco system should incorporate a weep mechanism that is properly integrated with the WRB so that water can travel down the drainage plane and drain to the exterior. Therefore, weep mechanisms are an essential component of the moisture-management system.

The architectural details specify base flashing with weep holes at stucco to window and door head interfaces and reference the stucco manufacturer. The stucco manufacturer requires a weep screed at base of walls, windows, doors, and roofs. The architectural details also specify a minimum 1/4-inch clearance at the stucco soffit to stucco siding interface, with a drainage strip installed per the stucco manufacturer. The architect specified the soffit WRB to be turned up and lapped 6-inches under the wall WRB. Stucco installation details provided in the ESR-3529 require a 1-3/8-inch weep screed shingle-lapped with the wall WRB at foam and solid substrates and 1/2-inch J-weep screed with a solid substrate at roofs. The applicable building codes

specify using a 0.019-inch, corrosion-resistant weep screed with a minimum 3-1/2-inch vertical attachment flange shingle-lapped with the WRB to allow drainage of water to the building exterior.

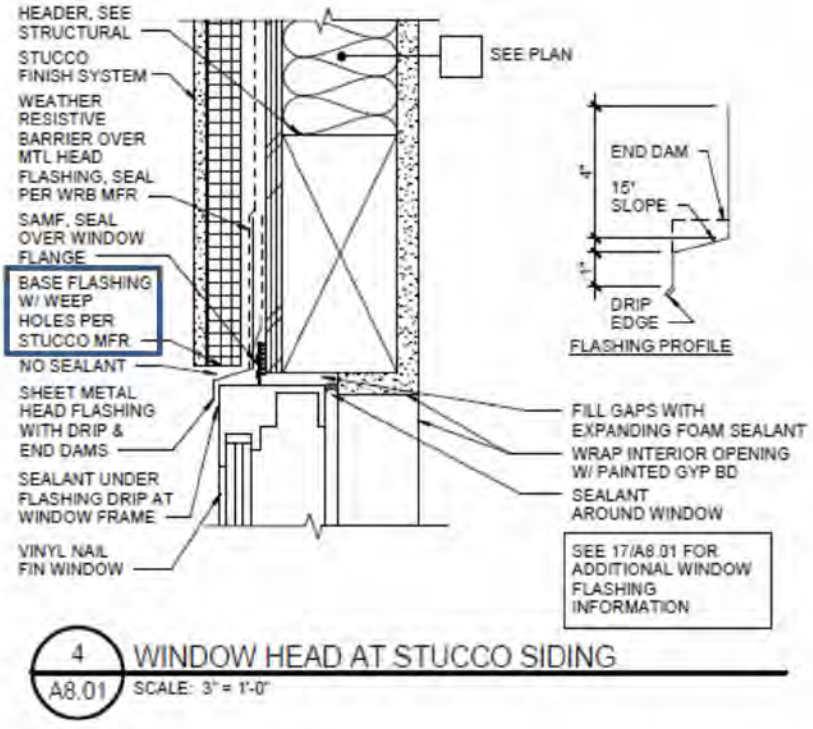
At the Gallery site, the weep casing beads were missing at fenestration heads, stucco roof pop-outs, and soffit terminations, which violates the architectural drawings, the stucco manufacturer requirements, and the building code requirements. This non-compliant condition creates a system which does not drain moisture to the exterior as required by the architectural drawings and stucco manufacturer requirements. Manifestation of resultant damages included stucco cracks, rusted fasteners, deteriorated WRB and stains at sheathing. Weep mechanisms were installed at stucco terminations to roofs, decks, and foundations, indicating the contractor was cognizant of installing weep mechanisms at horizontal terminations in stucco.

Where weep mechanisms in stucco are missing, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

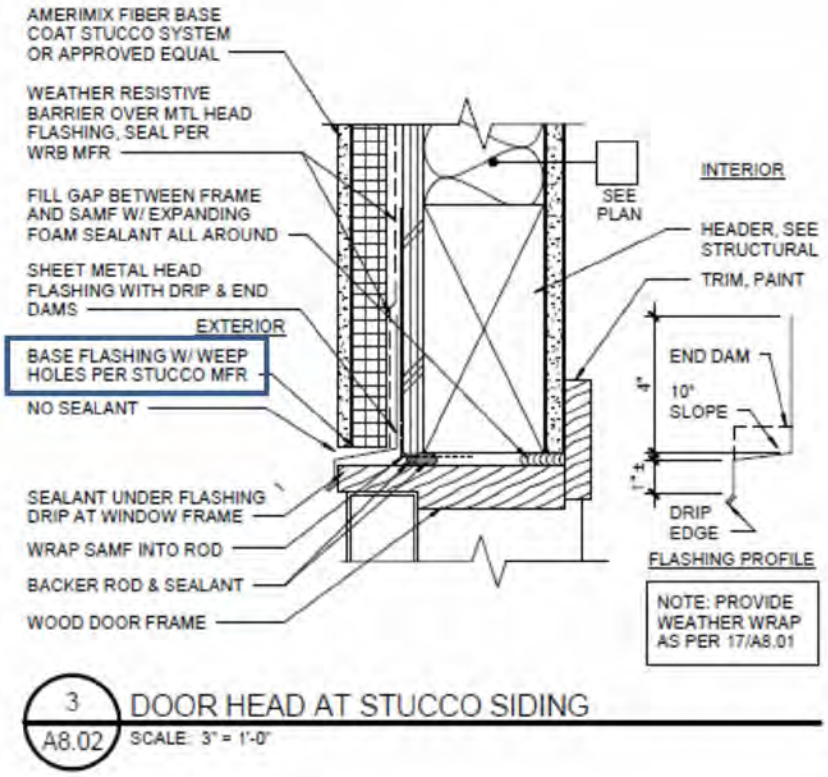
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.01 "Exterior Details," illustrates the following:

- *"4/A8.01 Window Head at Stucco Siding"*



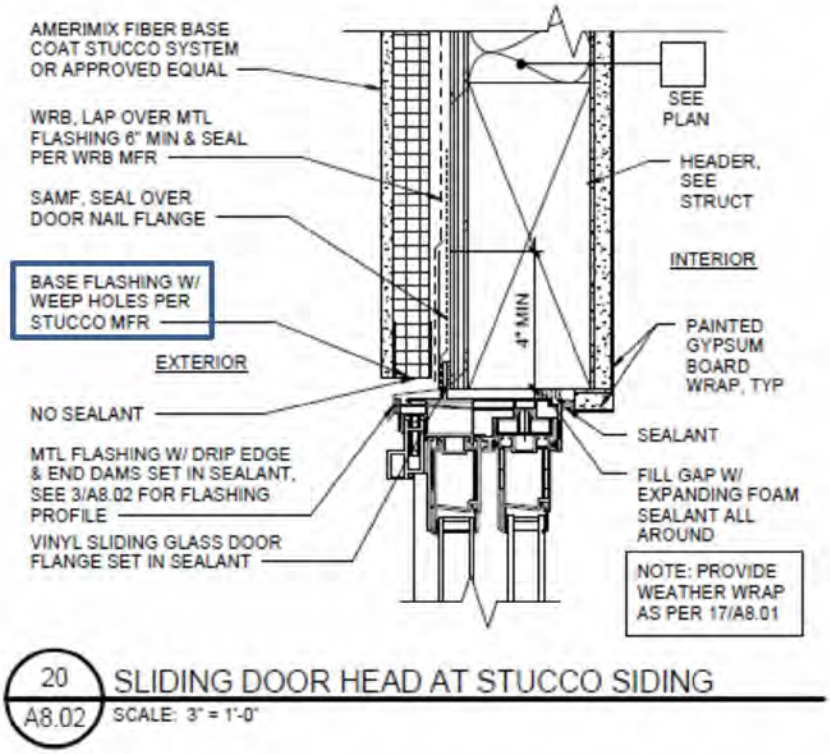
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.02 "Exterior Details," illustrates the following:

- *"3/A8.02 Door Head at Stucco Siding"*



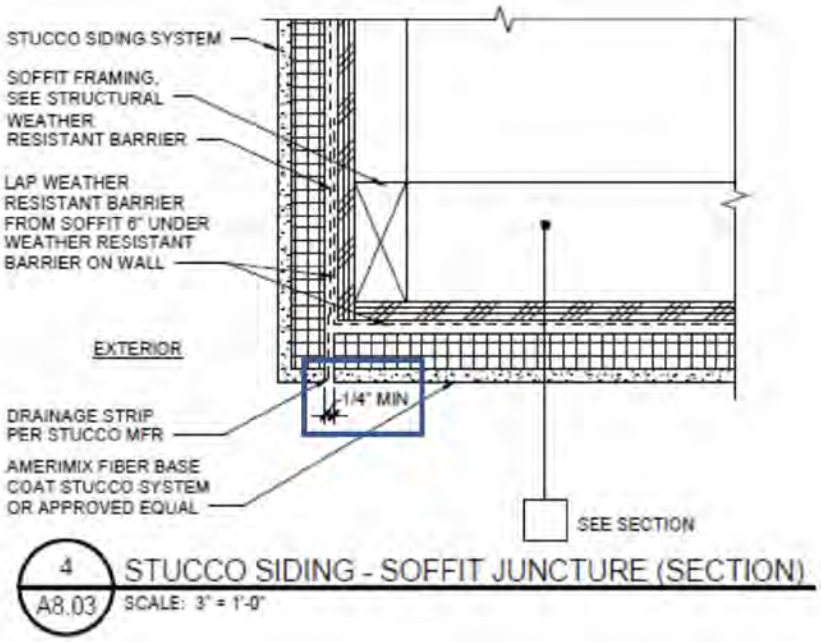
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.02 "Exterior Details," illustrates the following:

- *"20/A8.02 Sliding Door Head at Stucco Siding"*



Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.03 "Exterior Details," illustrates the following:

- *"4/A8.03 Stucco Siding - Soffit Juncture (Section)"*



ICC Evaluation Service Report (ESR), Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 4.0 "Installation," subsection 4.2 "Application over Open Framing," states the following:

- *"The water-resistive barrier, lath and EPS board must lap over the nailing leg of the flashing as shown in the standard weep screed details in Figure 2 of this report. Corrosion-resistant weep screeds must be installed at all locations where the horizontal edge of the EPS board is exposed after application of the stucco coating. Corrosion- resistant casing beads must be installed at all locations where the vertical edge of the EPS board is exposed after application of the stucco coating. The evaluation of the system is limited to use where penetrations through and terminations of the system are provided with flashing."*

ICC Evaluation Service Report (ESR), Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017, Figure 2 "Typical Installation Details," illustrates the following:

- *"Weep Screed – Foam Substrate"*

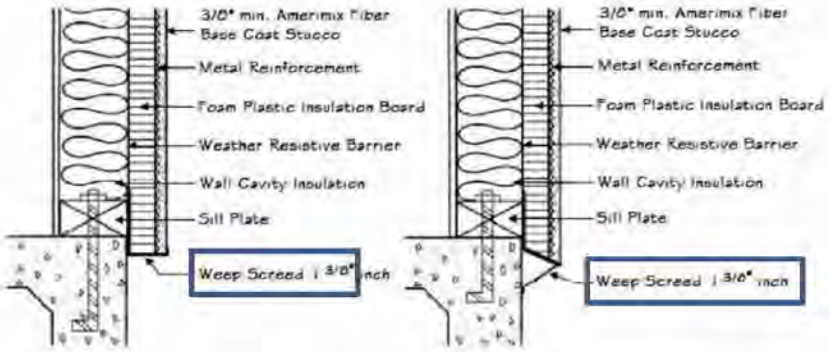


FIGURE 2—TYPICAL INSTALLATION DETAILS

- *"Typical Window - Solid Substrate"*

TYPICAL WINDOW—SOLID SUBSTRATE

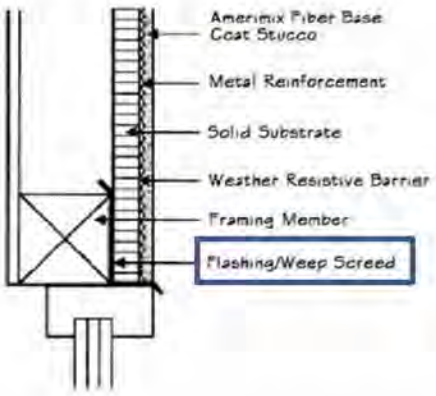
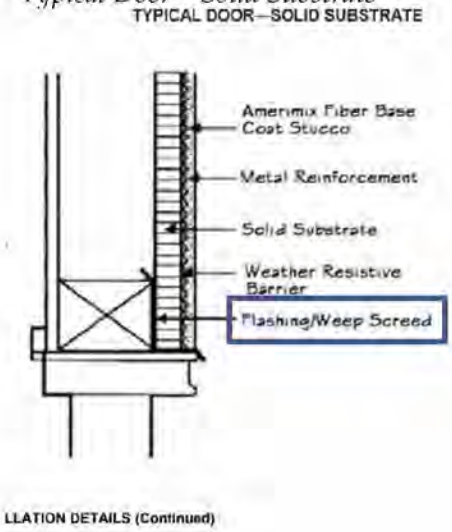


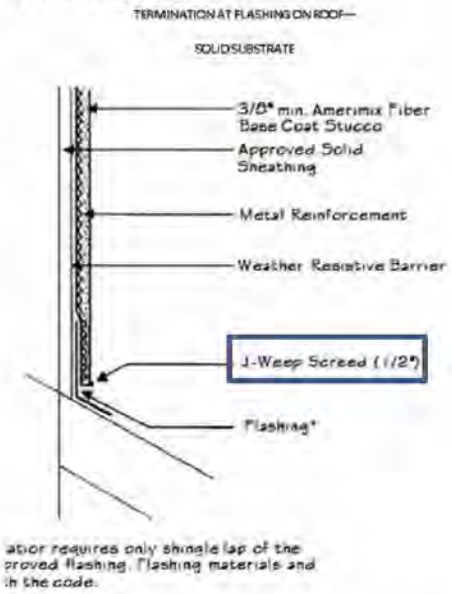
FIGURE 2—TYPICAL INSTALL

- *"Typical Door – Solid Substrate"*



LLATION DETAILS (Continued)

- *"Solid Substrate"*



ator requires only shingle lap of the proved flashing. Flashing materials and th the code.

International Code Council, Inc. (ICC), "International Residential Code (IRC)," 2012, Chapter 7 "Wall Covering," Section R703 "Exterior Covering," Subsection R703.6 "Plaster," states the following:

Note: No local amendments for this section.

- *"**R703.6.2.1 Weep screeds**. A minimum 0.019-inch (0.48 mm) (No. 26 galvanized sheet gage), corrosion-resistant weep screed with a minimum vertical attachment flange of 3 1/2 inches (89 mm) shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and be of a type that will allow trapped water to drain to the exterior of the building. The water-resistive*

barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachment flange of the weep screed."

International Code Council, Inc. (ICC), "International Building Code (IBC)," 2012, Chapter 25 "Gypsum Board and Plaster," Section 2512 "Exterior Plaster," states the following:

Note: No local amendments for this section.

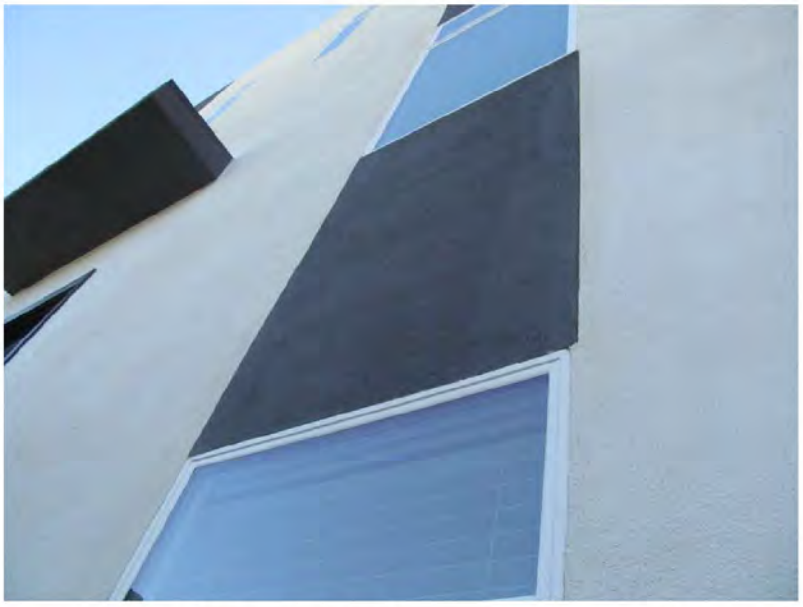
- *"2512.1.2* ***Weep Screeds****. A minimum 0.019-inch (0.48 mm) (No. 26 galvanized sheet gage), corrosion-resistant weep screed with a minimum vertical attachment flange of 3 1/2 inches (89 mm) shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and be of a type that will allow trapped water to drain to the exterior of the building. The water-resistive barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachment flange of the weep screed."*

Example Photographs:

March 9, 2021, Disc IT6, Photograph 32, SSR, Building A, no weep mechanism at soffit and stucco crack along the edge.

March 9, 2021, Disc IT6, Photograph 266, SSR, Building A, sheathing bottom edge stained at wall-soffit junction.

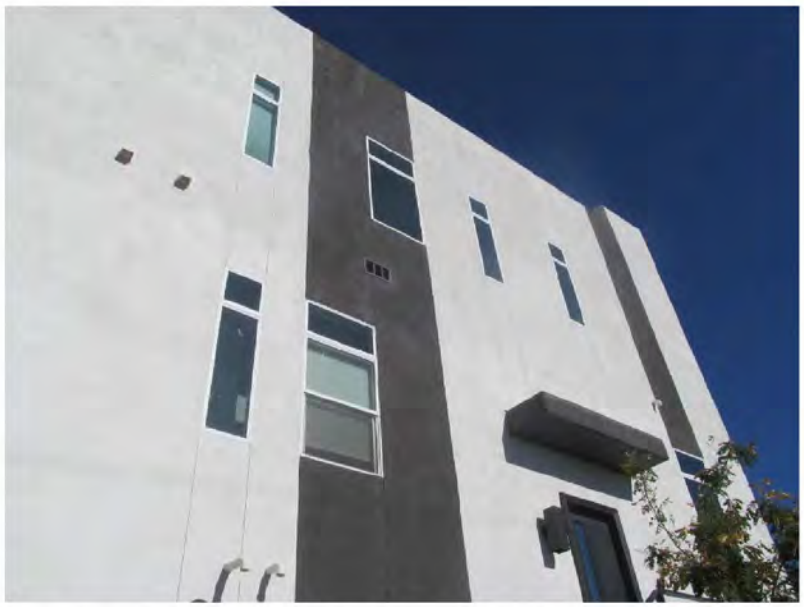
March 9, 2021, Disc IT6, Photograph 280, SSR, Building A, no weep mechanism at stucco termination above window head.



December 19, 2018, Disc OBS1, Photograph 129, JBF, Building A, no weep mechanism at window head.

December 19, 2018, Disc OBS1, Photograph 129, JBF, Building A, no weep mechanism at base of stucco at soffits.

December 19, 2018, Disc OBS1, Photograph 82, JBF, Building B, no weep mechanism at stucco soffits.



December 19, 2018, Disc OBS1, Photograph 87, JBF, Building B, no weep mechanism at window heads.

March 9, 2021, Disc IT5, Photograph 73, JJF, Building B, visible stains at sheathing edge and deterioration.

March 9, 2021, Disc IT5, Photograph 164, JJF, Building B, visible stains at sheathing edge and rusted fasteners.

March 11, 2021, Disc OBS6, Photograph 48, JJF, Building C, no weep mechanism at stucco soffits.

March 11, 2021, Disc OBS6, Photograph 84, JJF, Building C, no weep mechanism at window heads.

December 19, 2018, Disc OBS1, Photograph 61, JBF, Building C, no weep mechanism at stucco soffits.

December 19, 2018, Disc OBS1, Photograph 18, JBF, Building D, no weep mechanism at stucco soffit.

March 10, 2021, Disc IT8, Photograph 96, SSR, Building D, rusted fastener head at EPS foam board.

March 10, 2021, Disc IT8, Photograph 96, SSR, Building D, rusted fastener head at framing.

March 10, 2021, Disc IT8, Photograph 120, SSR, Building D, deteriorated WRB over framing with visible stains.

December 19, 2018, Disc OBS1, Photograph 24, JBF, Building D, no weep mechanism at stucco soffits.

March 11, 2021, Disc OBS6, Photograph 222, JJF, Building D, no weep mechanism at window heads.

December 19, 2018, Disc OBS1, Photograph 19, JBF, Building D, weep mechanism at base of stucco at top of foundations.

Locations:

Weep mechanisms are missing at all soffit, fenestration head, and stucco termination to stucco pop-out box locations across the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

b. Non-Compliant WRB for Stucco System

The building code, manufacturer specifications, and industry standards require a complete and compliant WRB behind moisture-managed claddings. The architectural drawings specify installation of WRB per section 2510.6 of the IBC. The stucco manufacturer's product evaluation report ESR-3529 specifies installation of WRB per the applicable building codes.

The applicable codes and the ESR-3529 require the WRB with a performance equivalent to two layers of Grade D paper, such that each layer provides a separate continuous plane. An exception to the above stated requirements is if the WRB applied over solid sheathing has a water resistance equal to or greater than that of 60-minute Grade D paper and is separated from the stucco by an intervening, substantially non-water-absorbing layer or drainage space.

Intrusive examination revealed that a single layer of WRB was generally installed over open stud framing and solid sheathing. Occasionally, two layers of WRB over framing were identified to have been used. The WRB used at the Gallery site was labeled GMCraft-10 324, Type 1, Grade D, Style 2, ESR 2376. The label indicates that the WRB product used throughout the site is an asphalt-saturated type D building paper that has a nominal finish weight of 3.5-pounds-per-100-square-feet and designed to resist water intrusion for a minimum of 10-minutes when tested according to ASTM D-779. The nominal weight for a number 15 asphalt felt is generally between 7.5- to 12.5-pounds-per-100-square-feet (psf). The WRB manufacturer's product specifications state the GMCraft-10 exceeds 20-minutes of water resistance but does not meet the 60-minute requirement required by the building code and the stucco manufacturer. As constructed, the applied WRB does not meet the nominal weight, the number of required layers, the water resistance requirements of the applicable building code, and the ESR-3529 report for the Amerimix stucco system specified on the architectural drawings. This deficiency in material properties and number of WRB layers impairs the functionality of the stucco system as required in the building codes and the stucco manufacturer's product specifications.

Haphazardly installed and closely spaced staple and fastener holes facilitate the water intrusion, causing damage and increasing future additional damage. Full-length rusted fasteners and stains on framing indicate damage due to water intrusion where the non-compliant WRB was installed behind stucco. Failure of the moisture-management system along with the combination of other construction defects as discussed in this report will continue to direct water onto moisture-sensitive building components.

Where non-compliant WRB for stucco system exists, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A1.01 "Construction Assemblies," states the following:

- *"IBC 1405.10.1.1 WATER RESISTIVE BARRIERS*

  Water-Resistive Barriers Shall Be Installed As Required In Section 2510.6"

ICC Evaluation Service Report (ESR), "Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 3.0 "Description," subsection 3.2 "Material," states the following:

- *"3.2.10 Weather Protection:*

  3.2.10.1 Water-resistive Barrier: A water-resistive barrier is required and must comply with IBC Section 1404.2, IRC Section R703.2 or UBC Section 1402.1, as applicable. The barrier must be minimum No. 15 asphalt non-perforated felt complying as Type 1 in accordance with ASTM D226 (IBC or IRC); minimum Grade D kraft building paper complying with UBC Standard 14-1; asphalt-saturated rag felt complying with UL standard 55A (UBC); or material recognized in a current evaluation report as complying with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38).

  When applied over any wood-based sheathing, the barrier must be one of the following:

  a. A minimum of two layers of Grade D kraft building paper as set forth in IBC Section 2510.6, IRC Section R703.6.3 or UBC Section 2506.4, or an equivalent recognized in a current evaluation report.

  b. One layer of EPS insulation board having horizontal tongue-and-groove edges as described in Section 3.2.4, over one layer of Grade D kraft building paper having a minimum water-resistance rating of 60 minutes, or a water-resistive barrier recognized in a current ICC-ES evaluation report as having a minimum water-resistance rating of 60 minutes."

International Code Council, Inc. (ICC), "International Residential Code (IRC)," 2012, Chapter 7 "Wall Covering," Section R703 "Exterior Covering," Subsection R703.6 "Plaster," states the following:

Note: No local amendments for this section.

- ***"R703.6.3 Water-resistive barriers**. Water-resistive barriers shall be installed as required in Section 1404.2 and, where applied over wood-based sheathing, shall include a water-resistive vapor-permeable barrier with a performance at least equivalent to two layers of Grade D paper. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing (installed in accordance with Section 1405.4) intended to drain to the water-resistive barrier is directed between the layers.*

  Exception: Where the water-resistive barrier that is applied over wood-based sheathing has a water resistance equal to or greater than that of 60-minute Grade D paper and is separated from the stucco by an intervening, substantially nonwater-absorbing layer or drainage space."

International Code Council, Inc. (ICC), "International Building Code (IBC)," 2012, Chapter 25 "Gypsum Board and Plaster," Section 2510 "Lathing and Furring for Cement Plaster (Stucco)," states the following:

Note: No local amendments for this section.

- *"2510.6 **Water-resistive barriers**. Water-resistive barriers shall be installed as required in Section 1404.2 and, where applied over wood-based sheathing, shall include a water-resistive vapor-permeable barrier with a performance at least equivalent to two layers of Grade D paper. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing (installed in accordance with Section 1405.4) intended to drain to the water-resistive barrier is directed between the layers.*

  Exception: Where the water-resistive barrier that is applied over wood-based sheathing has a water resistance equal to or greater than that of 60-minute Grade D paper and is separated from the stucco by an intervening, substantially nonwater-absorbing layer or drainage space."

International Code Council, Inc. (ICC), "International Building Code (IBC)," 2012, Chapter 14 "Exterior Walls," Section 1404 "Materials," states the following:

Note: No local amendments for this section.

- *"**1404.2 Water-resistive barriers**. A minimum of one layer of No. l5 asphalt felt, complying with ASTM D 226 for Type 1 felt or other approved materials, shall be attached to the studs or sheathing, with flashing as described in Section 1405.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer."*

International Code Council, Inc. (ICC), "International Residential Code (IRC)," 2012, Chapter 7 "Wall Covering," Section R703 "Exterior Covering," states the following:

Note: No local amendments for this section.

- *"**R703.2 Water-resistive barrier.** One layer of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D226 for Type l felt or other approved water-resistive barrier shall be applied over studs or sheathing of all exterior walls. Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm). Where joints occur, felt shall be lapped not less than 6 inches (152 mm). The felt or other approved material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1.*

  Exception: Omission of the water-resistive barrier is permitted in the following situations:

  1. In detached accessory buildings.

  2. Under exterior wall finish materials as permitted in Table R703.4.

  3. Under paperbacked stucco lath when the paper backing is an approved water-resistive barrier."

GMC Roofing & Building Paper Products, Inc. (GMC), "GMCraft 10 Minute Weather-Resistive Barrier, Product Data," June 2020, "Product Description," states the following:

- *"GMCraft is an asphalt saturated type "D" building paper exceeding the industry standards as a water-resistive-barrier. It is designed to prohibit water or moisture intrusion behind stucco and other exterior wall claddings. GMCraft offers superior protection against internal damage due to excessive moisture and condensation."*

GMC Roofing & Building Paper Products, Inc. (GMC), "GMCraft 10 Minute Weather-Resistive Barrier, Product Data," June 2020, "Test Results," states the following:

GMCraft 10	Test Method	Test Results
Water Vapor Transmission	ASTM E-96-00	**38 Perms**
Water Resistance	ASTM D-779	**Exceeds 20 minutes**
Tensile Strength	ASTM D-828	**MD 45 lb-f/in** **CD 21 lb-f/in**

ICC Evaluation Service Report (ESR), "Evaluation Subject: GMCraft 10 Minute, GMCraft 30 Minute, and GMCraft 60 Minute Water-Resistive Barriers, ESR-2376," reissued May 2019, Section 3.0 "Description," subsection 3.2 "GMCraft 10 Minute," states the following:

- *"GMCraft 10 Minute is asphalt-saturated kraft paper complying with UBC Standard 14-1 as Type I, Grade D, Style 2. The building paper has a nominal finish weight of 3.5 pounds per 100 square feet (0.17 kg/m2)."*

ICC Evaluation Service Report (ESR), "Evaluation Subject: GMCraft 10 Minute, GMCraft 30 Minute, and GMCraft 60 Minute Water-Resistive Barriers, ESR-2376," reissued May 2019, Section 4.0 "Installation," subsection 4.1 "General," states the following:

- *"When the barriers are installed over wood-based sheathing in exterior plaster applications, two layers of the product must be applied over the sheathing in accordance with Section 2510.6 of the 2012, 2009 and 2006 IBC or Section R703.7.3 [2012, 2009 and 2006 IRC Section R703.6.3] of the 2018 and 2015 IRC. As an alternative, one layer of the GMCraft 60 Minute may be installed in accordance with the exception to Section 2510.6 of the 2012, 2009 and 2006 IBC or the 2018 and 2015 IRC Section R703.7.3 [2012, 2009 and 2006 IRC Section R703.6.3]. Installation of water-resistive barriers under 2018 and 2015 IBC Section 2510.6 over wood-based sheathing is outside the scope of this report. For cementitious coatings over exterior insulation and finish systems, application must be in accordance with the ICC-ES evaluation report on the exterior coating system."*

Example Photographs:

March 9, 2021, Disc IT6, Photograph 314, SSR, Building A, one layer of WRB with 10-minute water resistance. Label references ESR 2376.

March 9, 2021, Disc IT5, Photograph 178, JJF, Building B, one layer of WRB over sheathing.

March 9, 2021, Disc IT5, Photograph 72, JJF, Building B, one layer of WRB over framing.

March 9, 2021, Disc IT5, Photograph 75, JJF, Building B, damaged framing due to water intrusion.

March 10, 2021, Disc IT9, Photograph 124, SSR, Building C, manufacturer's label shows the building paper is Type 1, Grade D, Style 2 building paper with 10-minute water resistance and references ESR 2376.

March 10, 2021, Disc IT8, Photograph 216, SSR, Building D, manufacturer's label shows the building paper is Type 1, Grade D, Style 2 building paper with 10-minute water resistance and references ESR 2376.

March 10, 2021, Disc IT8, Photograph 93, PER, Building C, deteriorated WRB over framing.

March 10, 2021, Disc IT8, Photograph 101, PER, Building C, deteriorated WRB over framing.

March 10, 2021, Disc IT7, Photograph 136, JJF, Building D, one layer of WRB over sheathing.

March 10, 2021, Disc IT8, Photograph 114, SSR, Building D, one layer of WRB over framing with visible stains.

March 10, 2021, Disc IT8, Photograph 120, SSR, Building D, deteriorated WRB over framing with visible stains.

March 10, 2021, Disc IT8, Photograph 172, SSR, Building D, full-depth rusted fasteners.

Locations:

Non-compliant WRB for the stucco system exists at all locations where stucco is applied across the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

c. Non-Compliant EPS Foam Board for Stucco System

The architectural drawings and builder's specifications both specify Amerimix stucco system installed over a 1-inch-thick rigid foam substrate. The architectural drawings and the manufacturer's product specification both refer to ESR-3529. Where the stucco system is installed over open stud framing, the ESR-3529 requires a minimum 1-inch-thick EPS foam plastic insulation board with 3/8-inch projecting tongues and compatible grooves for horizontal joints. Where installed over solids substrates such as OSB sheathing, the ESR-3529 requires a minimum 1/2-inch-thick EPS foam plastic insulation board with vertical grooves on the back face (interior side) of the boards. The groves are required to be a minimum 1/4-inch wide by 1/8-inch deep spaced a maximum of 12-inches to allow efficient drainage of moisture between the EPS foam boards and the WRB. As an alternative to EPS foam boards with vertical grooves, ESR-3529 allows using flat-faced EPS foam boards if Tyvek StuccoWrap® or Tyvek DrainWrap® WRB is installed over the solid substrate.

Intrusive examination revealed that the foam board used at the Gallery site was generally 3/8- to 7/8-inch thick, did not have the required vertical grooves, and was installed tight to the improperly selected WRB. The GMCraft-10 WRB was installed at all buildings and is not recognized by ESR-3529 for application of flat-faced foam boards without vertical grooves. Flat-faced foam boards installed tight to the WRB are non-compliant with the project requirements, prevent a bond break or drainage gap between the stucco system and the WRB, and obstruct drainage of the moisture behind the stucco. Use of non-compliant EPS foam boards in combination with the non-compliant WRB type reduces the overall performance of the moisture-management system. Damage included stains on the interior face of the EPS foam boards and full-length rusted fasteners where entrapped water overwhelmed the moisture-management system. This non-compliant condition, along with the combination of other construction defects of the stucco system, will more likely than not reduce the integrity of the structural components and the general appearance of the cladding in the foreseeable future.

Where non-compliant EPS foam board exists, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

ICC Evaluation Service Report (ESR), Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 3.0 "Description," subsection 3.2 "Material," states the following:

- *"3.2.4 **Foam Plastic Insulation Boards:** Foam plastic insulation formed from expanded polystyrene (EPS) resin, with a maximum flame spread index of 25 or less and a smoke-developed index not exceeding 450 when tested in accordance with ASTM E84 in the thickness intended for use. The foam plastic insulation boards must have a minimum nominal density of 1.5 pounds per cubic foot (24.0 kg/m3). When installed over open stud framing, the boards must be a minimum of 1 inch (25.4 mm) thick and have 3 /8-inch (9.5 mm) projecting tongues with compatible grooves for horizontal joints. See Figure 1 for*

joint detail. Foam plastic boards installed over solid substrates must have a minimum thickness of 1/2 inch (12.3 mm). The maximum board thickness must not exceed 4 inches (25.4 mm). All boards must be recognized in a current ICC-ES evaluation report. See Section 7.3 for board identification. When installation is over solid substrates, as described in Section 4.3, the boards must have minimum 1/4-inch-wide-by-1/8-inch-deep (6.4 mm by 3.2 mm) vertical grooves spaced a maximum of 12 inches (305 mm) on the back face of the boards. As an alternate to the vertical grooves in the foam plastic board, flat-faced boards may be installed over solid substrates provided the Tyvek StuccoWrap or Tyvek DrainWrap water-resistive barrier, recognized in ESR-2375, is installed between the EPS board and the solid substrate."

ICC Evaluation Service Report (ESR), Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 4.0 "Installation," subsection 4.3 "Application over Solid Substrates," states the following:

- *"**4.3.1 General:** All solid substrates, except for concrete and unit masonry, must be covered with a minimum of one layer of water-resistive barrier as described in Section 3.2.10.1 of this report and the lath described in Section 3.2.3 of this report. The installation of EPS boards over solid substrates is optional and must be governed by the conditions stated in this report. When EPS boards are installed over solid substrates, the EPS boards must incorporate vertical grooves as described in Section 3.2.4 or be flat-faced foam boards incorporating Tyvek water-resistive barriers described in Section 3.2.4 of this report. Two layers of water-resistive barriers as described in Section 3.2.10.1 are needed where wood-based substrates occur and the length of the fasteners used to attach the lath must be increased by the thickness of the EPS boards."*

Example Photographs:

May 14, 2019, Disc IT3, Photograph 18, JBF, Building A, EPS foam board installed tight to WRB and vertical grooves generally missing at the inner face.

March 9, 2021, Disc IT6, Photograph 271, SSR, Building A, EPS foam board installed tight to GMCraft WRB and vertical grooves generally missing at the inner face.

March 10, 2021, Disc IT7, Photograph 20, JJF, Building B, EPS foam board installed over WRB with vertical grooves generally missing at the back face.

March 9, 2021, Disc IT5, Photograph 155, JJF, Building B, 3/8-inch-thick EPS foam board installed over WRB with vertical grooves generally missing at the back face.

May 13, 2019, Disc IT1, Photograph 116, JBF, Building B, 1/2-inch-thick EPS insulation installed over OSB sheathing does not incorporate vertical grooves.

March 10, 2021, Disc IT7, Photograph 279, JJF, Building C, EPS foam board installed over WRB with vertical grooves generally missing at the back face.

March 10, 2021, Disc IT7, Photograph 210, JJF, Building C, EPS foam board installed tight to WRB and vertical grooves generally missing at the back face.

March 10, 2021, Disc IT9, Photograph 92, PER, Building C, rusted lath

March 10, 2021, Disc IT9, Photograph 90, PER, Building C, rusted staples

March 10, 2021, Disc IT9, Photograph 87, PER, Building C, rusted staples and lath

March 10, 2021, Disc IT9, Photograph 95, PER, Building C, EPS foam board installed tight to WRB and vertical grooves generally missing at the back face. Note corrosion from the nails on the EPS foam board.

March 10, 2021, Disc IT7, Photograph 117, JJF, Building D, EPS foam board installed over WRB with vertical grooves generally missing at the back face.

March 10, 2021, Disc IT7, Photograph 226, JJF, Building D, EPS foam board installed over WRB with vertical grooves generally missing at the back face.

Locations:

Non-compliant EPS foam board installation for stucco exists at locations where stucco is applied over solid substrates across the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

d. Non-Compliant Slope of Horizontal Stucco Surfaces

Stucco is water-resistant, not waterproof, and is expected to be permeated by water. Horizontal stucco surfaces with little or no slope can pond or hold water. Water penetrates into the assembly, resulting in damage to the sheathing and other moisture-sensitive building products. To reduce the water migration into the moisture-managed system, stucco is required to slope and be waterproofed below in order to effectively shed water off its surface and away from the substrate.

Stucco roof parapet caps, roof pop-out boxes, and pop-out boxes at front and rear elevations with inadequate slope are present at locations across all buildings. The architectural elevations locate stucco pop-out boxes between the garage and first floor level for unit types 30-1210 and 31-1211. For unit type 32-1212, the stucco pop-out boxes are located between the first floor and second floor levels. The architectural drawings specify stucco parapet caps and pop-out boxes to be sloped but provide no further information. Stucco industry standards require a minimum 1:2 slope. Providing slope to stucco surfaces minimizes the absorption of the water through the stucco and into the framed wall components. Waterproofing below the stucco cap should be used regardless of the slope. For further discussion, refer to section C.1.e of this report.

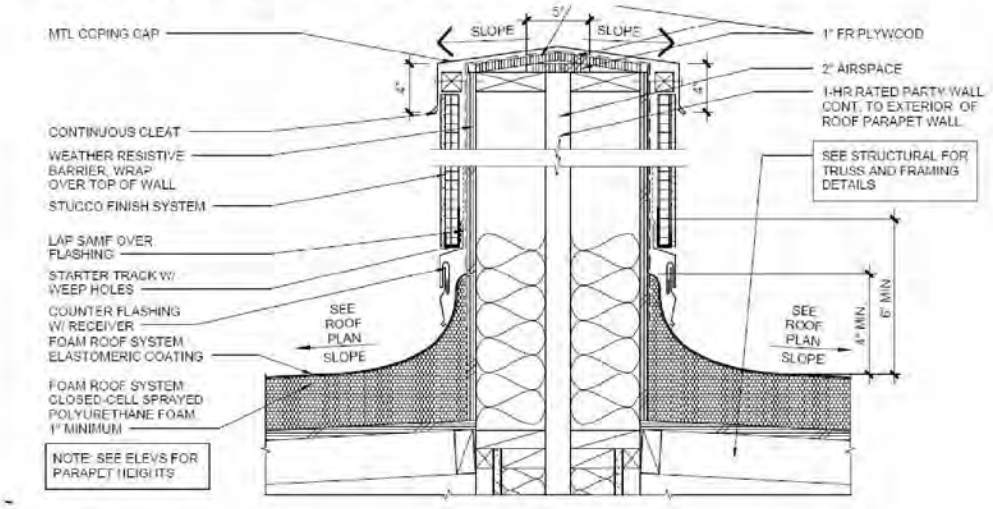
The as-built slope measurements of the stucco parapet walls were constructed with varying slope ranging between 0- to 30-percent, and the stucco pop-out boxes were constructed with varying slope ranging between 5- to 15-percent. At some locations, the stucco was constructed with a slope away from the point of drainage. Also, at some locations the stucco at the roof parapets was sloped to the exterior instead of constructed with the slope inward towards the roof. Where stucco slope does not meet industry standards, and combined with the cracks in the stucco, water is allowed to penetrate under the stucco system.

Where non-compliant slope of stucco at horizontal surfaces exists, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

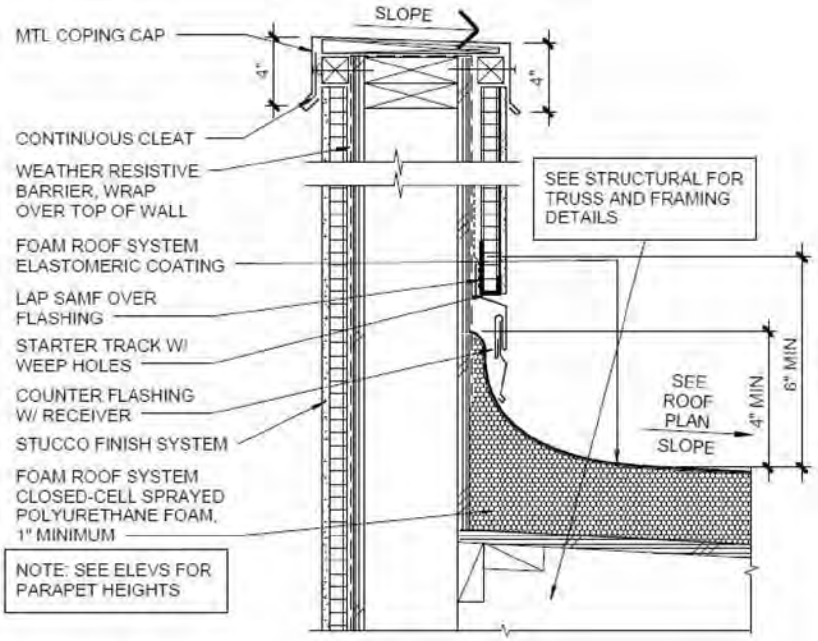
Applicable Code/Industry Standard References/Project-Specific Documents:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.05 "Exterior Details," illustrates the following:

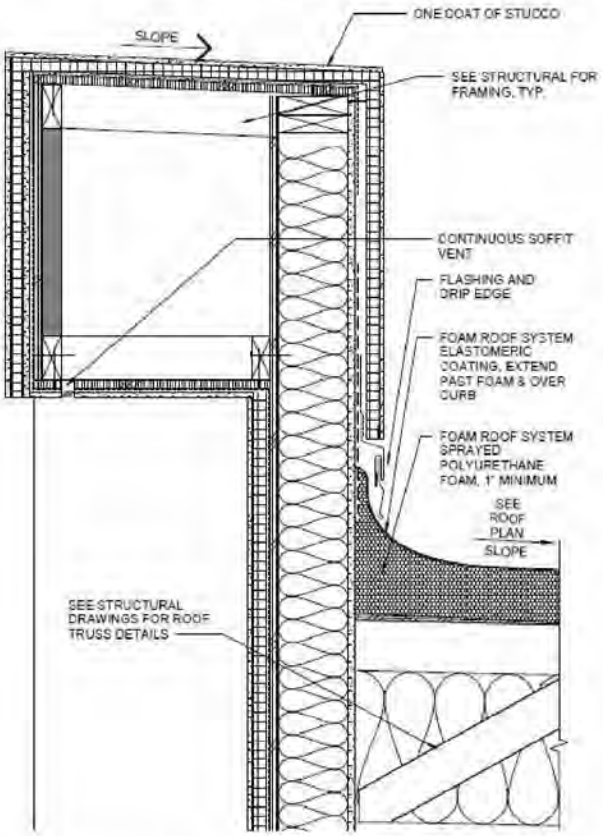
- *"15/A8.05 Roof Party Wall Parapet"*



- *"16/A8.05 Roof Parapet"*



- *"19/A8.05 Roof Parapet At Pop-Out Box"*



Stucco Manufacturers Association (SMA), prepared by the Northwest Wall and Ceiling Bureau, "Portland Cement Plaster Stucco Resource Guide," Third Edition, 1997, Section "Recommendation/Standards for design and installation," states the following:

- *"18. The stucco assembly is not recommended for tops of railings, tops of fences or tops of parapet walls. The minimum slope for a sill-type surface would be 12:6. Surfaces in a plane less than 12:6 must be given special protection from possible of moisture intrusion. Tops of railings, fences, parapet walls, and window sills are segements* [sic] *of a wall. By definition in the building code, a weather-exposed exterior wall must have a slope of 60° or greater from the horizontal plane."*

Example Photographs:

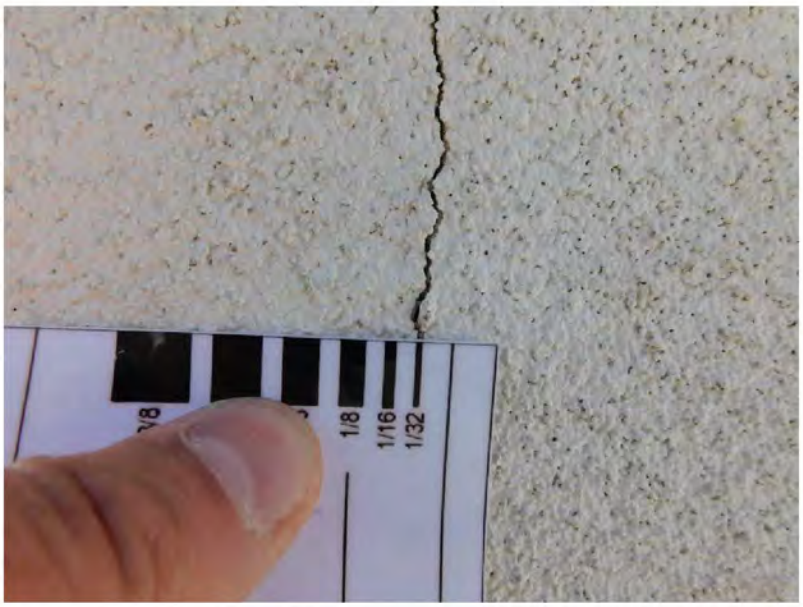
March 11, 2021, Disc IT10, Photograph 3, SSR, Building A, roof parapet wall stucco cracks.

March 9, 2021, Disc IT6, Photograph 56, SSR, Building A, pop-out box stucco cracks.

March 11, 2021, Disc IT10, Photograph 170, SSR, Building B, roof parapet wall stucco cracks.

March 11, 2021, Disc IT10, Photograph 207, SSR, Building B, roof parapet wall stucco cracks.

March 11, 2021, Disc IT10, Photograph 241, SSR, Building B, roof parapet wall stucco cracks.

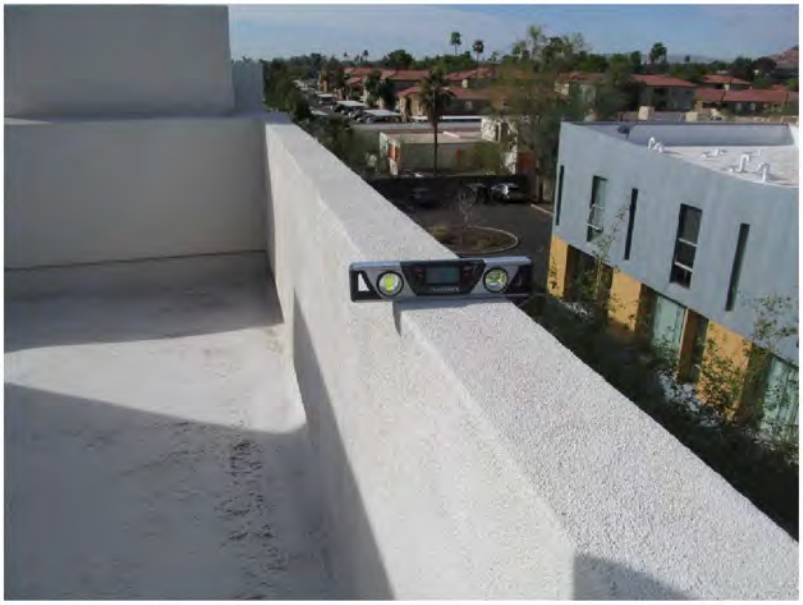


March 11, 2021, Disc OBS7, Photograph 421, PER, Building C, roof parapet wall cracks.

March 10, 2021, Disc IT8, Photograph 54, SSR, Building D, pop-out box stucco cracks.

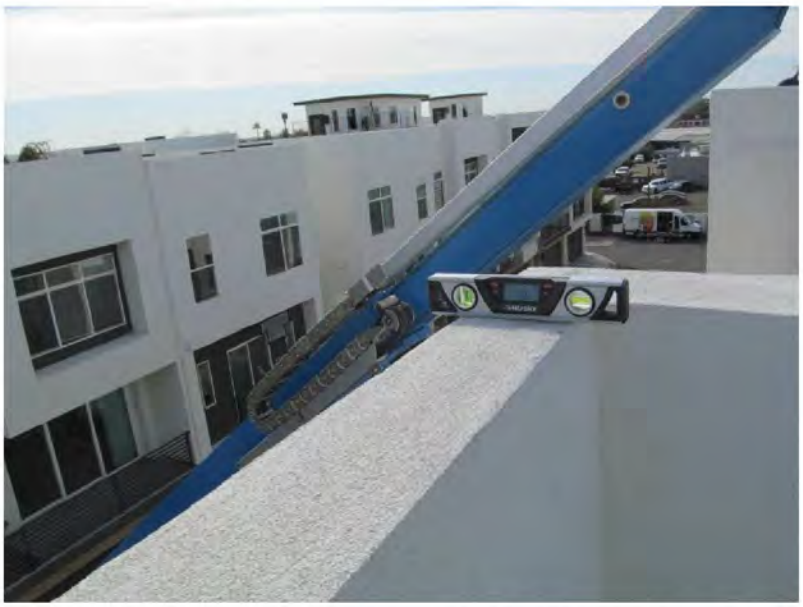
March 11, 2021, Disc OBS7, Photograph 301, PER, Building D, roof parapet wall cracks.

March 11, 2021, Disc IT10, Photograph 70, SSR, Building A, roof parapet wall slopes 6-percent outward.

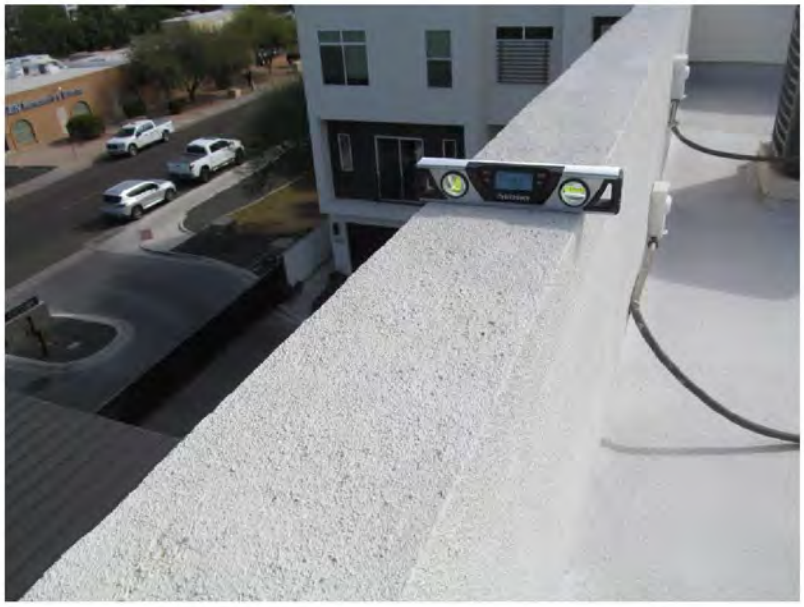


March 11, 2021, Disc IT10, Photograph 71, SSR, Building A, roof parapet wall slopes 0.1-percent inward.

March 11, 2021, Disc IT10, Photograph 76, SSR, Building A, roof parapet wall slopes 0.8-percent inward.



March 11, 2021, Disc IT10, Photograph 136, SSR, Building A, roof parapet wall slopes 0.6-percent outward.



March 11, 2021, Disc IT10, Photograph 146, SSR, Building A, roof parapet wall slopes 0.3-percent outward.

March 11, 2021, Disc IT10, Photograph 227, SSR, Building A, roof parapet wall slopes 2-percent.

March 11, 2021, Disc IT10, Photograph 284, SSR, Building B, roof parapet wall slopes 2.8-percent.

March 11, 2021, Disc IT10, Photograph 313, SSR, Building B, roof parapet wall slopes 5.5-percent inward.

March 9, 2021, Disc IT5, Photograph 313, JJF, Building B, stucco parapet box slopes 3.3-percent outward.

March 11, 2021, Disc OBS7, Photograph 350, PER, Building C, roof parapet wall slopes 0.5-percent outward.

March 10, 2021, Disc IT9, Photograph 25, PER, Building C, stucco pop-out box slopes 2.9-degrees (5-percent) outward.

March 11, 2021, Disc OBS7, Photograph 289, PER, Building D, roof parapet wall slopes 3.3-percent inward.

March 11, 2021, Disc OBS7, Photograph 292, PER, Building D, roof parapet wall slopes 1.9-percent inward.

March 10, 2021, Disc IT8, Photograph 45, SSR, Building D, stucco pop-out box slopes 14-percent outward.

Locations:

Non-compliant slope of horizontal stucco surfaces exist at locations across all buildings at the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

e. Deficient Self-Adhered Membrane under Horizontal Stucco System

The stucco system was used at horizontal surfaces of parapet walls and pop-out boxes as discussed in section C.1.d. The architectural drawings detail the WRB to be wrapped over the top of the wall and integrated with the WRB on the vertical face of the wall. SAM was detailed to lap over the flashing or weep system at stucco termination. No clear information was shown regarding the extent of the SAM over the WRB.

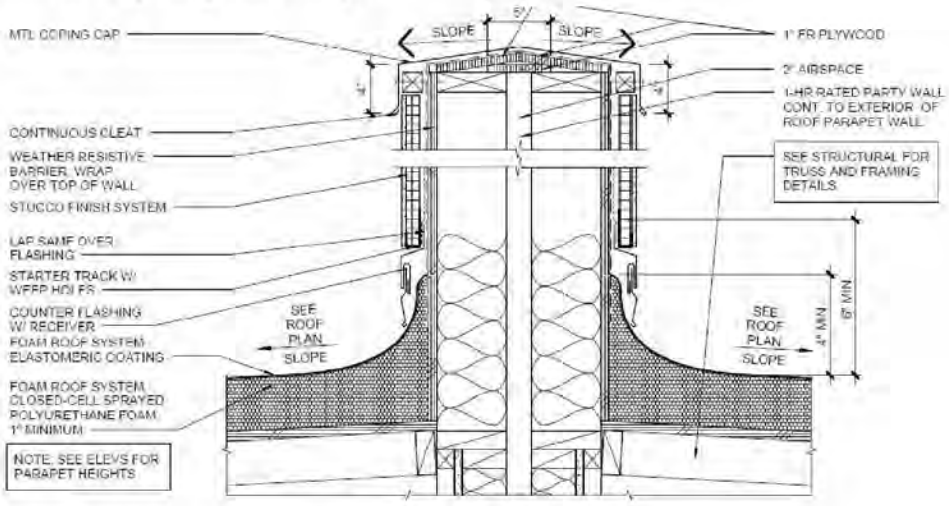
Cracks at horizontally applied stucco surfaces were documented throughout the Gallery site. At intrusive examinations, the top of the stucco parapet walls and pop-out boxes were covered with Xtraflash SAM under the stucco system. Cracks and puncture holes due to the staples and nails used to attach the stucco system were documented through the SAM. Rusted fasteners and stains on the framing below at some of the intrusive examination locations indicate water intrusion had occurred through the puncture holes in the SAM. The Xtraflash SAM installed by the contractor failed to self-seal around fastener holes, which allowed water intrusion resulting in damage to the moisture-sensitive building components. As constructed, the stucco surface cracks and the puncture holes in the deficient SAM have and will allow moisture intrusion and do not comply with the weather-resistance requirements of the applicable building code.

Where breaches in the SAM applied under horizontal stucco surfaces exist, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

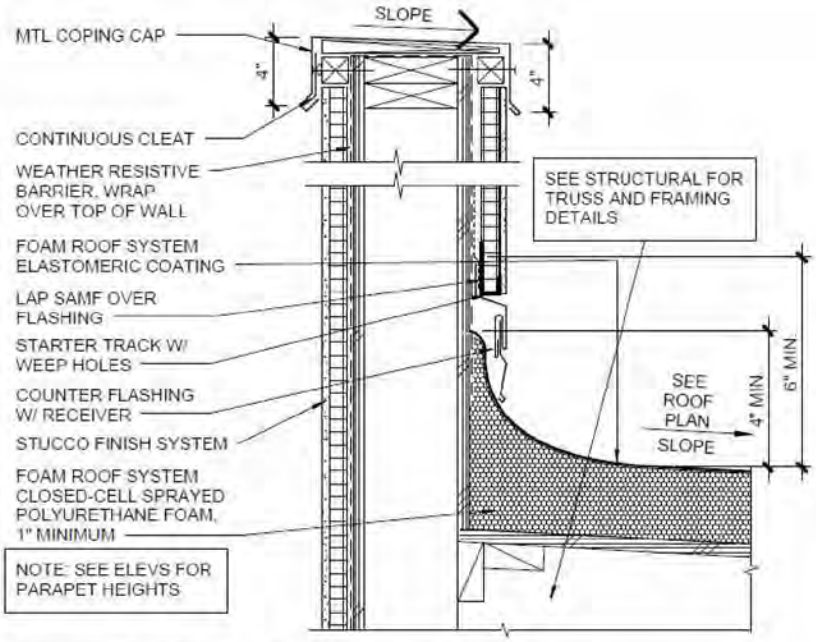
Applicable Code/Industry Standard References/Project-Specific Documents:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.05 "Exterior Details," illustrates the following:

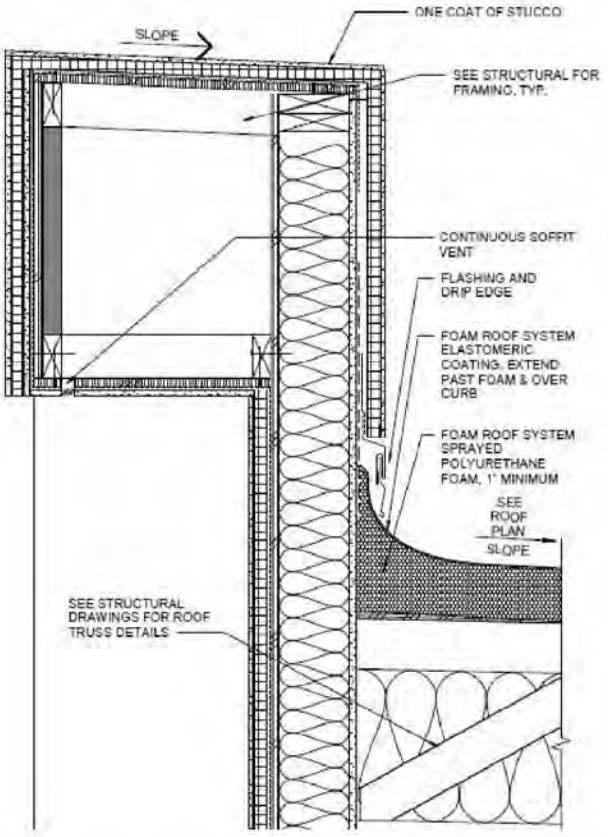
- *"15/A8.05 Roof Party Wall Parapet"*



- *"16/A8.05 Roof Parapet"*



- *"19/A8.05 Roof Parapet At Pop-Out Box"*



Example Photographs:

March 11, 2021, Disc IT10, Photograph 19, SSR, Building A, stucco cracks at parapet wall junction.

March 11, 2021, Disc IT10, Photograph 37, SSR, Building A, stucco cracks at parapet wall junction.

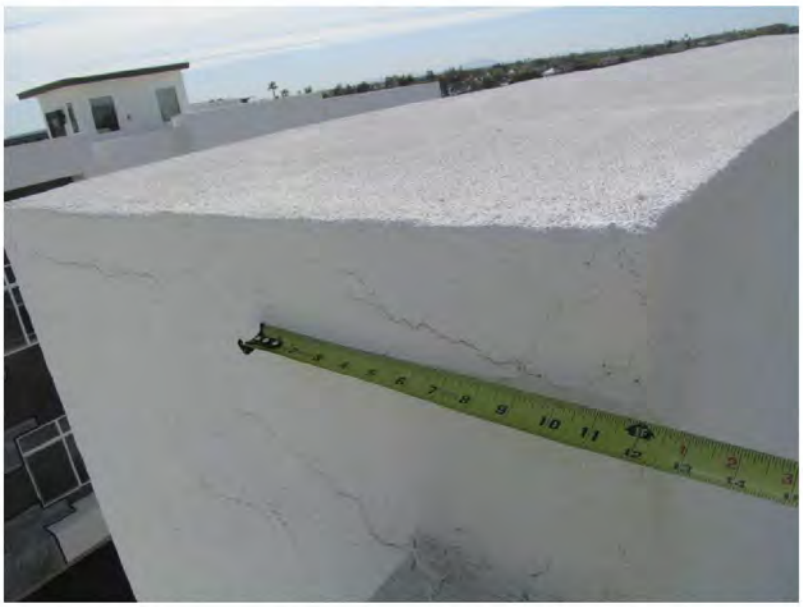
March 11, 2021, Disc IT10, Photograph 67, SSR, Building A, rusted lath, rusted fasteners, and stains on EPS foam board due to moisture intrusion.

March 11, 2021, Disc IT10, Photograph 102, SSR, Building A, holes and stains in Xtraflash SAM allow moisture intrusion.

March 11, 2021, Disc IT10, Photograph 103, SSR, Building A, reverse side of EPS foam board shows stains due to corrosion of fasteners.

March 11, 2021, Disc IT10, Photograph 125, SSR, Building A, top plate under SAM has stains and rusted fasteners.

March 11, 2021, Disc IT10, Photograph 132, SSR, Building A, top plate under SAM has stains and rusted fasteners.

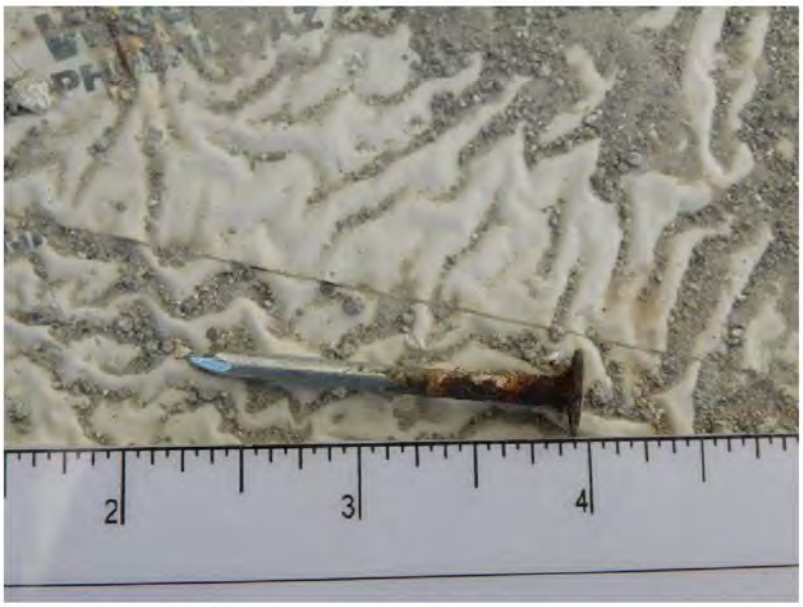


March 11, 2021, Disc IT10, Photograph 172, SSR, Building B, stucco cracks at parapet wall junction.

March 11, 2021, Disc IT10, Photograph 241, SSR, Building B, stucco cracks at parapet wall junction.

March 11, 2021, Disc IT10, Photograph 244, SSR, Building B, cracks at parapet wall allow stucco to peel off due to the elements and have allowed moisture intrusion.

March 10, 2021, Disc IT9, Photograph 185, PER, Building C, holes and stains in Xtraflash SAM allow moisture intrusion.



March 10, 2021, Disc IT9, Photograph 188, PER, Building C, holes and stains in Xtraflash SAM allow moisture intrusion.

March 11, 2021, Disc IT10, Photograph 372, SSR, Building D, rusted nails and lath indicate moisture intrusion through stucco.

March 11, 2021, Disc IT10, Photograph 374, SSR, Building D, rusted staple.

March 11, 2021, Disc IT10, Photograph 378, SSR, Building D, puncture holes in SAM allow moisture intrusion.

Locations:

Holes in SAM underneath the horizontal stucco surfaces exist at intrusively tested locations across all buildings at the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

f. Missing Control/Movement Joints

In order to control cracking, industry standards require the installation of control or movement joints to limit the impacts of expected internal stresses within the material, especially at areas where high stresses occur. This includes rectangular penetrations through stucco, such as at the corners of fenestrations, as well as changes in plane and floorlines. Moreover, the areas in the field of the wall between stucco control joints are required to be limited to 144-square-feet to maintain a length-to-width ratio of not more than 2.5 to 1 and to not exceed 18-feet between control joints. With one-coat systems, it is recognized that a higher level of crack control will be necessary than with conventional three-coat systems. Either increased systems of movement joints or admixtures in the cementitious products can be utilized to reduce the system's propensity of cracking.

The architectural drawings include typical vertical control joint and typical sealant joint details for stucco. The architectural details specified 3/8- to 1/2-inch-wide sealant joint with backer rod installed in a width to depth ratio of 1:2. The architectural drawings also allowed for an alternate method using 3/8- to 1/2-inch-wide sealant installed over bond breaker tape. The manufacturer's product specification references ASTM C1063 for lath installation. ASTM C1063 requires control joints spaced a maximum 18-feet in each direction or a length to width ratio less than 2.5 to 1.

The architectural elevations do not specifically locate or identify all the control joints. The architectural side elevations of the buildings illustrate continuous vertical control joints at the window to stucco interfaces and specify typical Detail 1/A8.01, which illustrates the Architect's design intent regarding control joint location. Continuous vertical control joints were generally installed at window jambs on side elevations of all buildings. No horizontal control joints were installed at any of the building elevations and no vertical control joints were installed on the front and rear elevations at any of the buildings. Stucco cracks have been identified on all building elevations of the Gallery site. The contractor should have requested additional information regarding the control joints specified on the architectural drawings as well as the manufacturer's lath installation and control joint requirements. Failure to install compliant control/movement joints violates the manufacturer's installation instructions and industry standards, contributing to the cracking throughout the stucco system.

Where non-compliant control/movement joints exist, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A3.11 "Exterior Elevations Building A, 5-Plex, Gallery Site #1," "Elevation Notes," states the following:

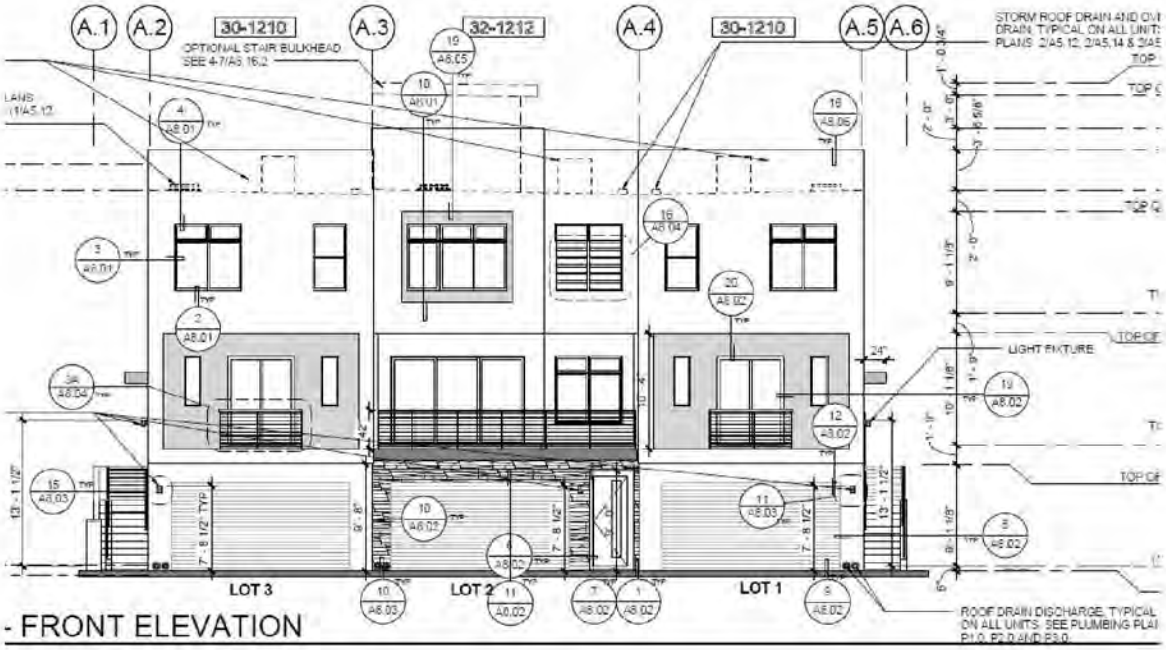
Note: similar note for Buildings B, C, and D.

- *"SEE 5/8.01 FOR TYPICAL SEALANT JOINTS."*

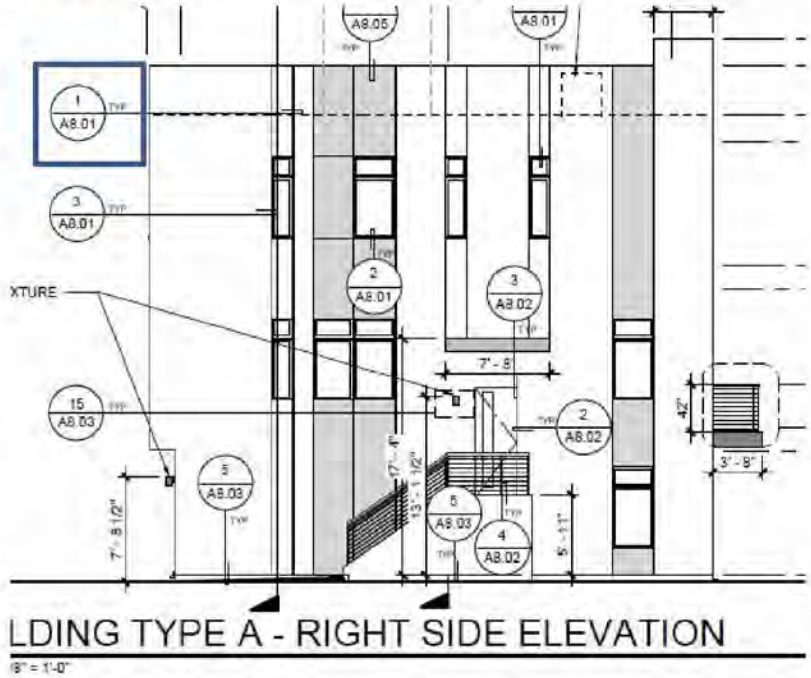
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A3.11 "Exterior Elevations Building A, 5-Plex, Gallery Site #1," illustrates the following:

Note: Buildings B, C, and D have generally similar control joint information.

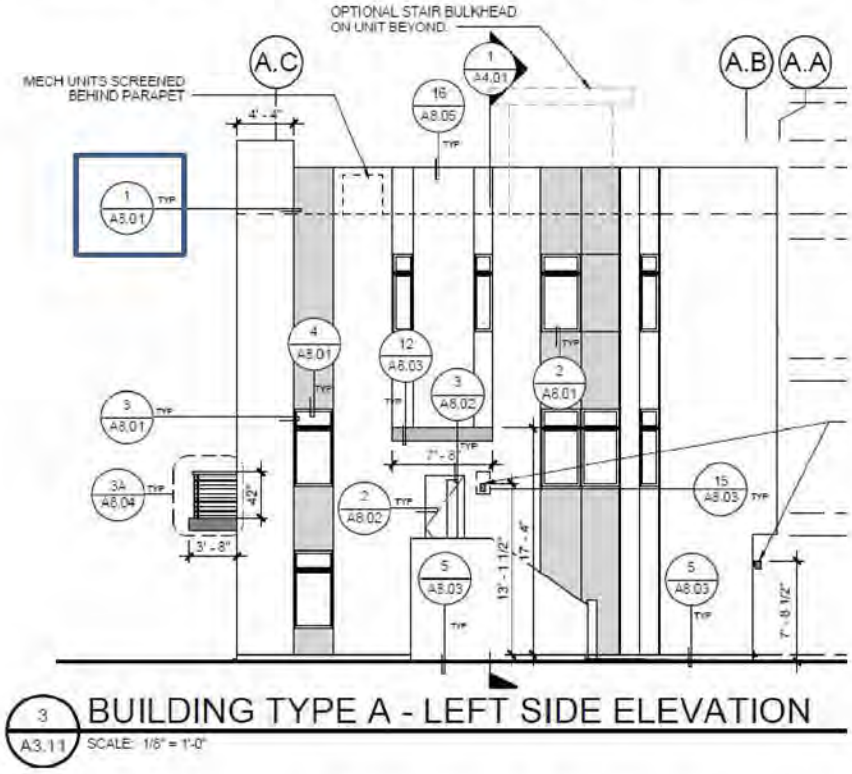
- *"1/A3.11 First Floor Plan – Building Type A – Front Elevation"*



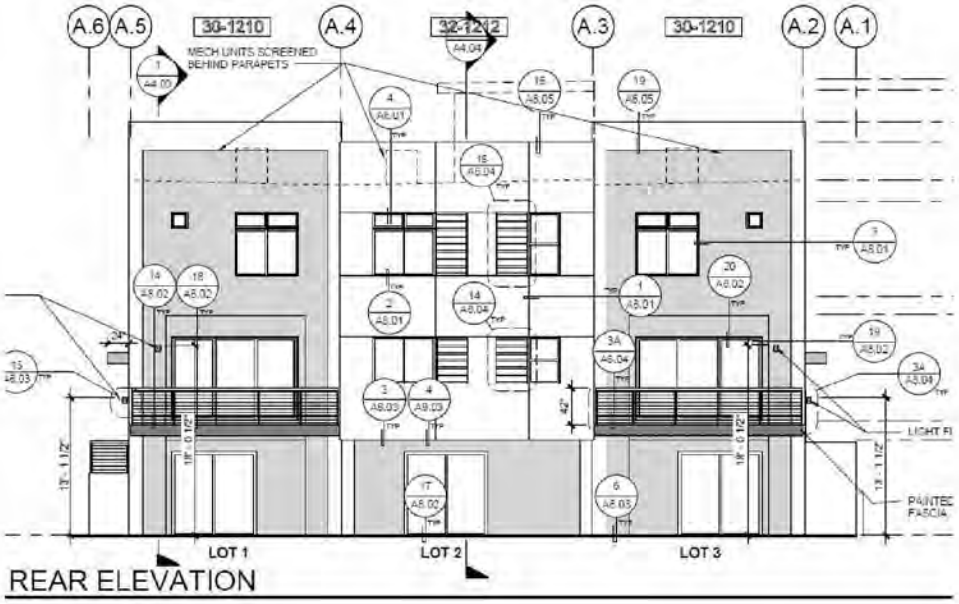
- *"2/A3.11 First Floor Plan – Building Type A – Right Side Elevation"*



- *"3/A3.11 First Floor Plan – Building Type A – Left Side Elevation"*

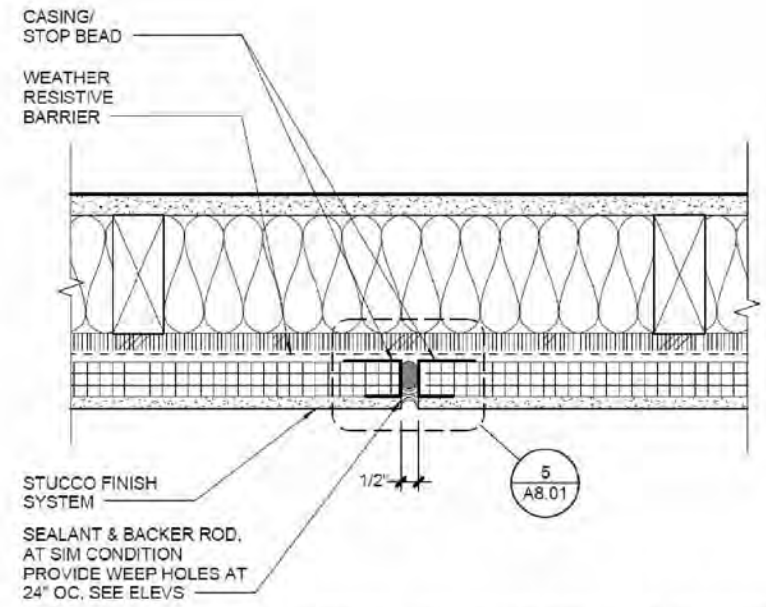


- *"4/A3.11 First Floor Plan – Building Type A – Rear Elevation"*



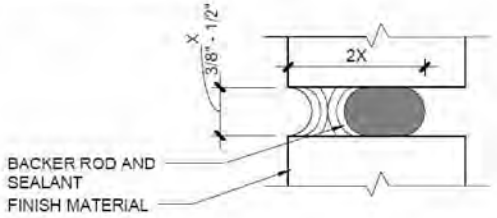
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.01 "Exterior Details," illustrates the following:

- *"1/A8.01 Vertical Control Joint At Stucco Siding"*

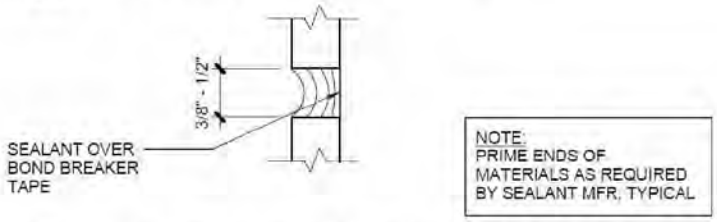


1 / A8.01 VERTICAL CONTROL JOINT AT STUCCO SIDING
SCALE: 3" = 1'-0"

- *"5/A8.01 Typical Sealant Joints"*



A REQUIRED SEALANT JOINT DIMENSION



B ALTERNATE JOINT WHEN DEPTH IS NOT POSSIBLE PER "A" ABOVE

5 / A8.01 TYPICAL SEALANT JOINTS
SCALE: 12" = 1'-0"

Amerimix, "Fiber Base Coat Stucco AMX 750 FBC," Revised June 2016, Section 4 "Installation," states the following:

- *"**Preparation***

  …
  - *Lath must be installed per ASTM C1063."*

American Society of Testing and Materials (ASTM), ASTM C1063-16 "Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster," 2016, Section 7 "Installation," subsection 7.11 "Application of Accessories," subsection 7.11.4 "Control Joints—General," states the following:

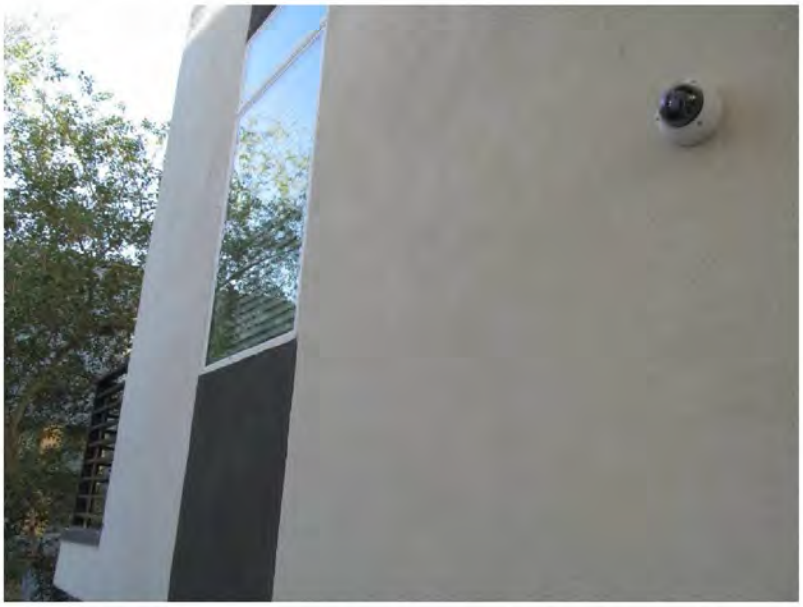
- *"7.11.4 Control Joints-General—Control joints shall be formed by using a single prefabricated member or fabricated by installing casing beads back to back with a flexible barrier membrane behind the casing beads. The separation spacing shall be not less than 1/8 in. (3.2 mm) or as required by the anticipated thermal exposure range and shall be in conformance with 7.10.1.5."*
- *"7.11.4.1 Control Joints—Control (expansion and contraction) joints shall be installed in walls to delineate areas not more than 144 ft² (13.4 m²) and to delineate areas not more than 100 ft² (9.30 m²) for all horizontal applications, that is, ceilings, curves, or angle type structures."*
- *"7.11.4.2 The distance between control joints shall not exceed 18 ft (5.5 m) in either direction or a length-to-width ratio of 2 1/2 to 1. A control joint shall be installed where the ceiling framing or furring changes direction."*

ICC Evaluation Service Report (ESR), Evaluation Report ESR-3529 "Evaluation Subject: Amerimix Fiber Base Coat Stucco," reissued February 2017, Section 4.0 "Installation," subsection 4.7 "Miscellaneous," states the following:

- *"**4.7.2 Control Joints:** Control joints must be installed as specified by the registered design professional, designer, builder, or exterior coating manufacturer, in that order. In the absence of details, conventional three-coat plastering details must be used."*

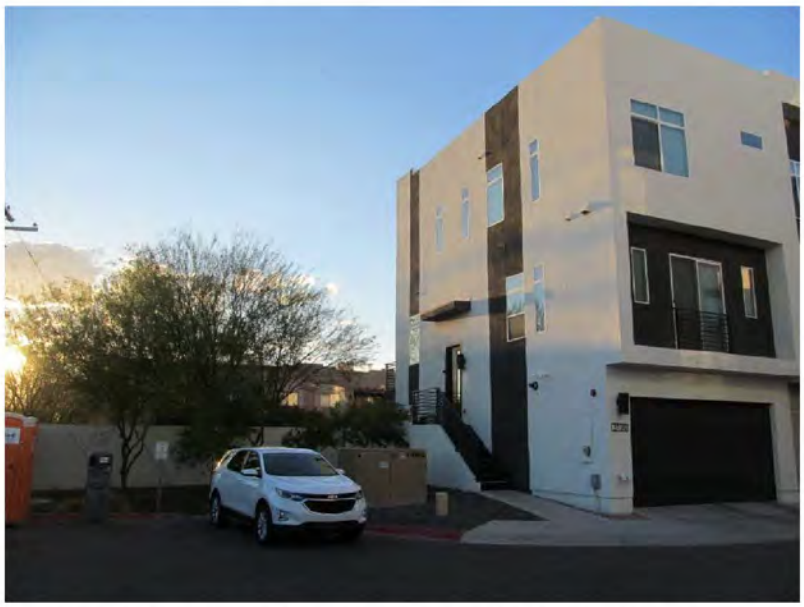
Example Photographs:

March 10, 2021, Disc OBS 5, Photograph 2, SSR, Building A, missing horizontal movement joints at floorlines.

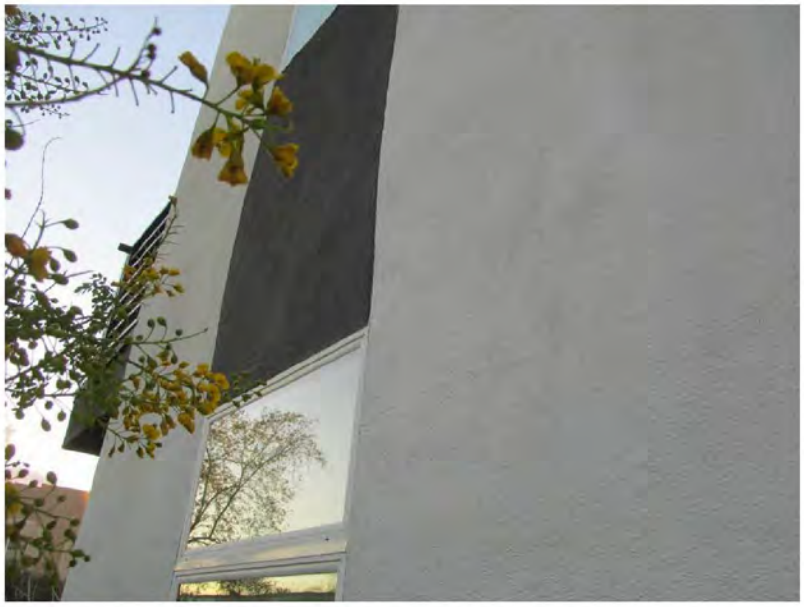


March 10, 2021, Disc OBS 5, Photograph 28, SSR, Building A, horizontal stucco crack. See below photo for close-up view of damage.

March 10, 2021, Disc OBS 5, Photograph 29, SSR, Building A, horizontal stucco crack.



March 10, 2021, Disc OBS 5, Photograph 63, SSR, Building B, missing horizontal movement joints at floorlines.



March 10, 2021, Disc OBS 5, Photograph 95, SSR, Building B, stucco cracks.

March 9, 2021, Disc IT5, Photograph 169, JJF, Building B, missing control joint and horizontal crack in stucco at floorline.

March 11, 2021, Disc OBS 6, Photograph 11, JJF, Building C, missing horizontal movement joints at floorlines.

December 18, 2019, Disc OBS 1, Photograph 71, JJF, Building C, missing horizontal movement joints at floorline.

March 11, 2021, Disc OBS 6, Photograph 30, JJF, Building C, vertical control joints were provided on side elevations at re-entrant corners.

March 11, 2021, Disc OBS 6, Photograph 75, JJF, Building C, stucco cracks.

March 11, 2021, Disc OBS 6, Photograph 209, JJF, Building C, stucco cracks.

March 10, 2021, Disc IT 8, Photograph 6, SSR, Building D, missing horizontal movement joints at floorlines.

March 10, 2021, Disc IT7, Photograph 97, JJF, Building D, missing control joint and horizontal crack in stucco at floorline.

Locations:

Missing control or movement joints for stucco exists at all building elevations across the Gallery Townhomes site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

2. Moisture-Management System (Barriers, Flashings, Drainage, Etc.)

The claddings installed include stucco and adhered masonry veneer (AMV). These claddings are considered moisture-managed systems; therefore, water will penetrate the face of the veneers. Each product also can absorb and release some water to a limited degree. However, the hygrothermal effects of the products should not be relied on as a means to handle wetting and drying. The elevations, solar exposure, and shadows all impact each area and each elevation will behave differently. Proper water shedding detailing is required to allow for durability and performance.

The exterior cladding, as installed, relies on a secondary barrier to minimize air and moisture infiltration past the exterior sheathing and into the wall cavity. This WRB is required by the building code and cladding manufacturers. A WRB is a material that lies behind the façade cladding. When water infiltrates past the cladding, this barrier blocks and redirects the flow of water. When properly installed, the WRB guides the water to a flashing or weep mechanism, which directs the water back out to the exterior of the façade. These components make up the moisture-management system.

A secondary aspect of the WRB is that it performs as an air barrier, limiting infiltration of non-conditioned air and exfiltration of conditioned air. This barrier function improves thermal comfort in the building and reduces energy consumption. Good construction provides the air/thermal and of weather barriers together and is continuous from

foundation to the roof system. Proper water shedding detailing is required to allow the durability and performance of the cladding assembly.

The proper material selection, installation, and integration of the moisture-management system are critical for the long-term performance of the building systems. Non-compliant installation directly affects the effective useful life of the building.

a. Missing Sheet Metal Flashing at Fenestrations

Sheet metal flashings work in conjunction with the surrounding moisture-management system by guiding water away from the WRB and out to the exterior of the façades. Sheet metal flashings are commonly installed at horizontal terminations of façades, including above the foundation line, above fenestrations, above decorative trim, and above lower roofs. Missing or improperly installed sheet metal flashing results in the misdirection of water and prevention of water from exiting the cladding systems.

In order to work as intended, sheet metal flashings need to be installed in a manner that promotes positive drainage and hinders moisture from re-entering the system. This requires shingle-lapped integration with the WRB and the presence of end dams and positive slope (typically 5-degrees). End dams and positive slope direct the water off of the face of the flashing rather than allowing it to pool or run laterally off of the sides back into the assembly. Flashings additionally require unobstructed clearance from claddings.

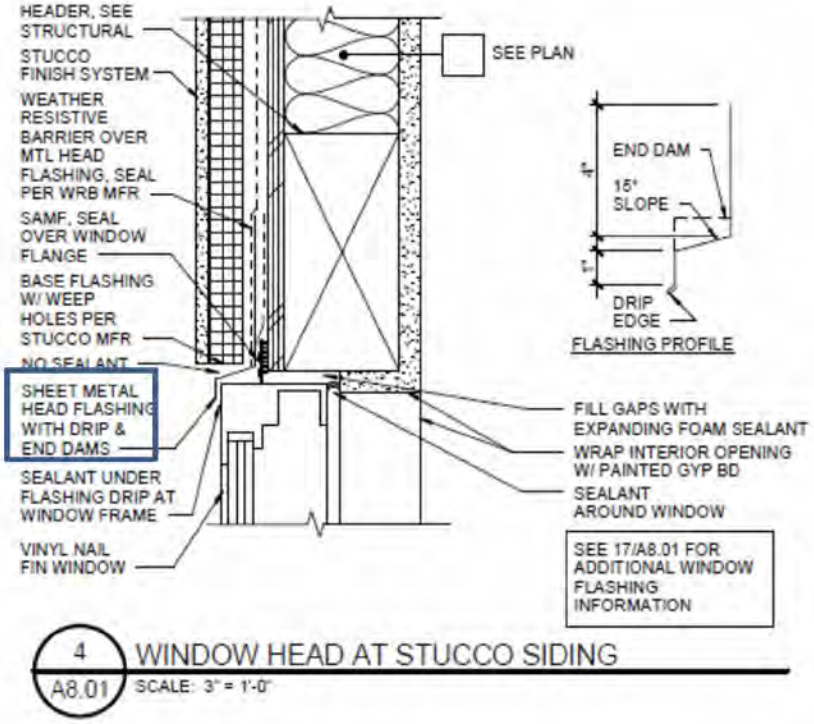
The architectural details specify 4-inch vertical leg sheet metal flashing with 1-inch drip edge and end dams at door and window heads. The flashings were detailed with 10-degree slope at door heads and 15-degree slope at window heads. The architectural details also required the WRB to be shingle-lapped over sheet metal head flashing and sealant under the drip edge to the fenestration frame. At the Gallery site, the sheet metal flashings were generally missing at the fenestration heads. The ineffectiveness of the flashing at fenestration heads is further compounded when cladding is installed tight to fenestration heads without a weep mechanism as discussed in Section C.1.a. This allows water to drain directly onto the fenestration frame and accumulate. As constructed, the moisture-management system at fenestration heads is non-compliant with the architectural drawings. This non-compliant condition, along with the combination of other construction defects of the stucco system, will more likely than not reduce the functionality of the stucco system and the general appearance of the cladding in the foreseeable future.

Where non-compliant issue exists, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

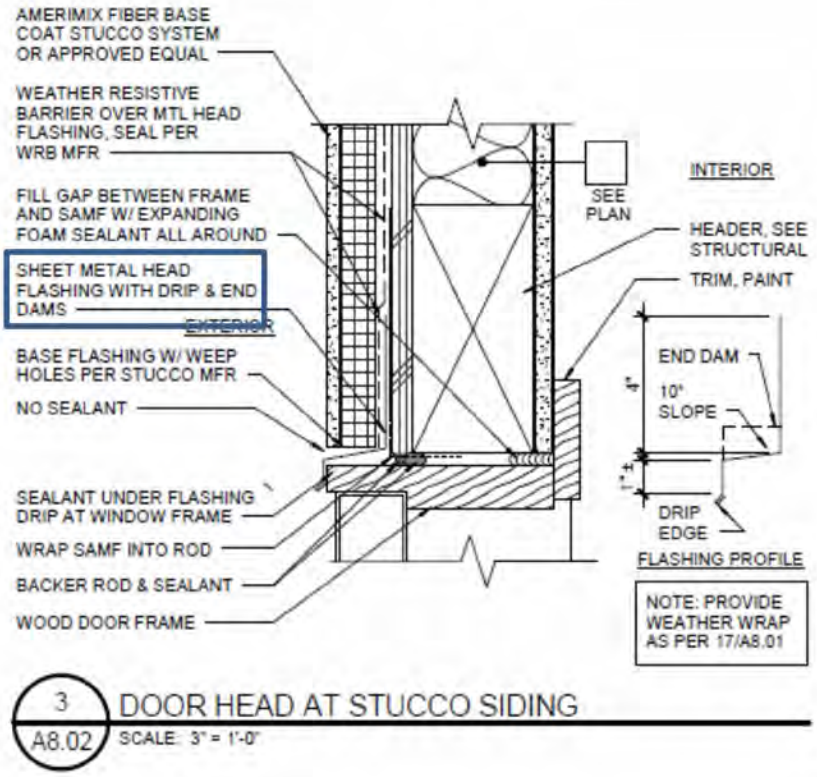
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.01 "Exterior Details," illustrates the following:

- *"4/A8.01 Window Head at Stucco Siding"*



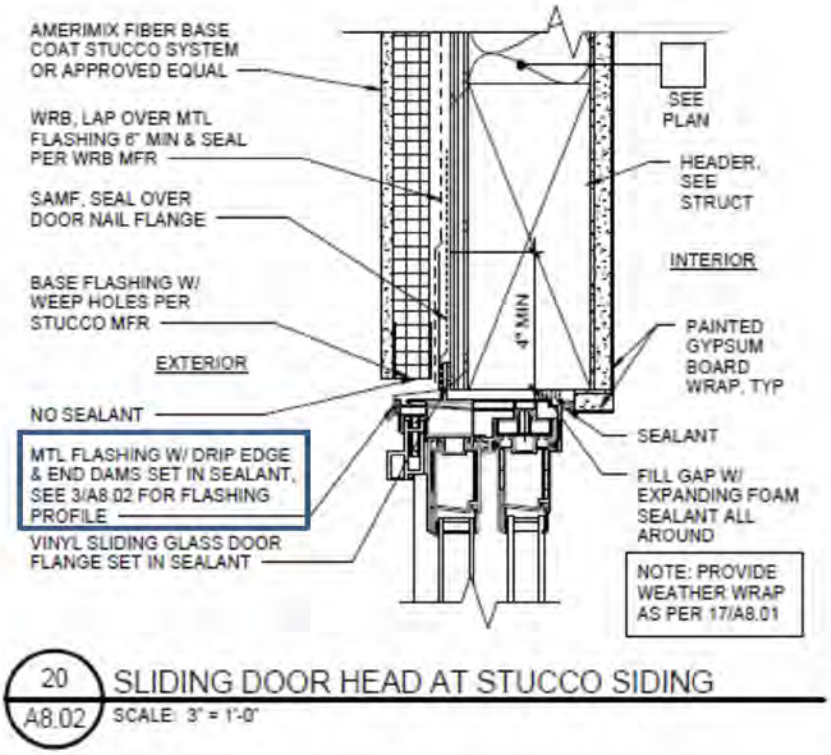
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.02 "Exterior Details," illustrates the following:

- *"3/A8.02 Door Head at Stucco Siding"*



Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.02 "Exterior Details," illustrates the following:

- *"20/A8.02 Sliding Door Head at Stucco Siding"*



International Code Council, Inc. (ICC), "International Residential Code (IRC)," 2012, Chapter 7 "Wall Covering," Section R703 "Exterior Covering," states the following:

Note: No local amendments for this section.

- *"**R703.8 Flashing.** Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at all of the following locations:*

  1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage…."

International Code Council, Inc. (ICC), "International Building Code (IBC)," 2012, Chapter 14 "Exterior Walls," Section 1405 "Installation of Wall Coverings," states the following:

Note: No local amendments for this section.

- *"**1405.4 Flashing.** Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect it to the exterior. Flashing shall be insta11ed at the*

perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting trim.

1405.4.1 Exterior wall pockets. *In exterior walls of buildings or structures, wall pockets or crevices in which moisture can accumulate shall be avoided or protected with caps or drips, or other approved means shall be provided to prevent water damage."*

Example Photographs:

March 9, 2021, Disc IT5, Photograph 3, JJF, Building A, missing flashing at sliding door head.

March 9, 2021, Disc IT6, Photograph 286, SSR, Building A, missing flashing at sliding door head.

March 10, 2021, Disc IT7, Photograph 139, JJF, Building D, missing flashing at sliding door head.

March 10, 2021, Disc IT7, Photograph 212, JJF, Building C, missing flashing at sliding door head.

March 10, 2021, Disc IT8, Photograph 219, SSR, Building D, missing flashing at window head.

March 10, 2021, Disc IT9, Photograph 269, PER, Building C, missing flashing at window head.

Locations:

Sheet metal flashings are missing at fenestration heads across all buildings at the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

b. Non-Compliant Flashing to Stucco Interface

Metal flashing with a drip edge is installed at all deck perimeters and the perimeters of the cantilevered awnings above the end unit side doors to divert water away from the cladding below the flashing. Where the metal flashing and cladding interface is built incorrectly, the flashings cannot perform their intended function to divert water away from the cladding. Water is allowed to penetrate behind the claddings at the metal flashing interface, which results in damage to the underlying building components.

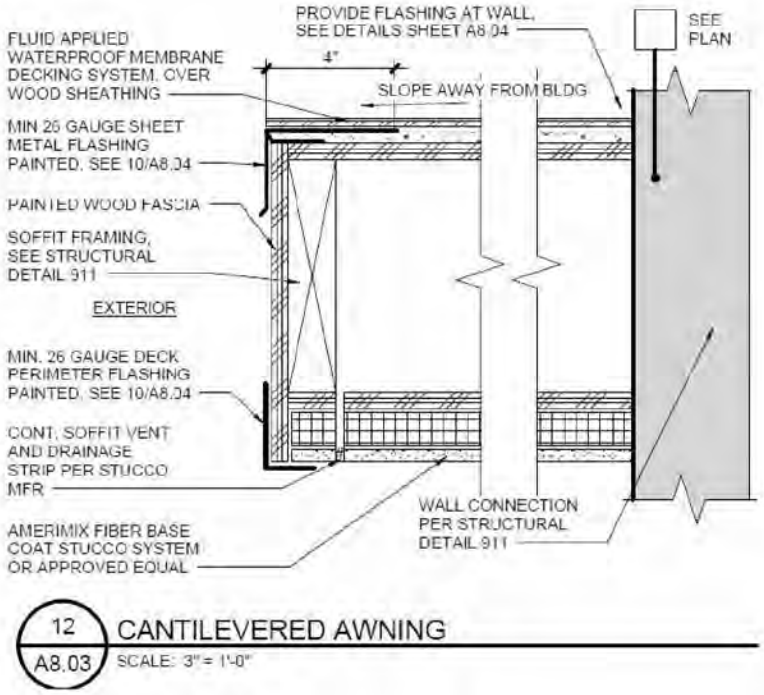
At the Gallery site, the metal flashing at the perimeter of the decks and cantilevered awnings is inset above the stucco and water drains into the stucco system below. The stucco is built out at the deck and cantilevered awning edges, which prevents the stucco from terminating behind the flashing. The architectural details illustrate stucco and wood fascia behind the metal edge flashing with a drip edge at the deck and cantilevered awnings, respectfully. At the as-constructed cantilevered awning edges, stucco was substituted for the painted wood trim. The architect specifies the edge flashing to be installed per the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) and required installation that prevents water from bucking against the cladding. At some locations, the edge flashing is installed over the stucco, which suggests the installer was cognizant of the project specifications. Stains and cracks in the stucco below the edge flashing indicate that water is not diverted away from the stucco.

Where non-compliant flashing to stucco interface exists, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

Applicable Code/Industry Standard References/Project-Specific Documents:

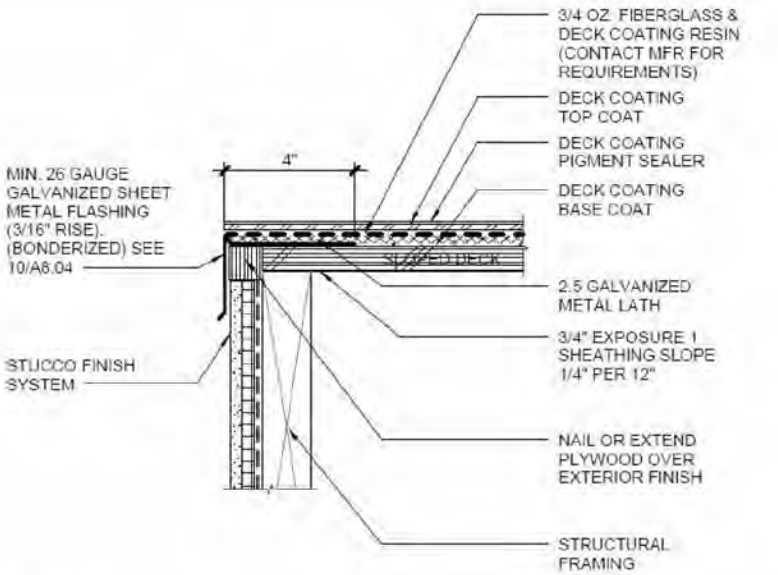
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.03 "Exterior Details," illustrates the following:

- *"12/A8.03 Cantilevered Awning"*



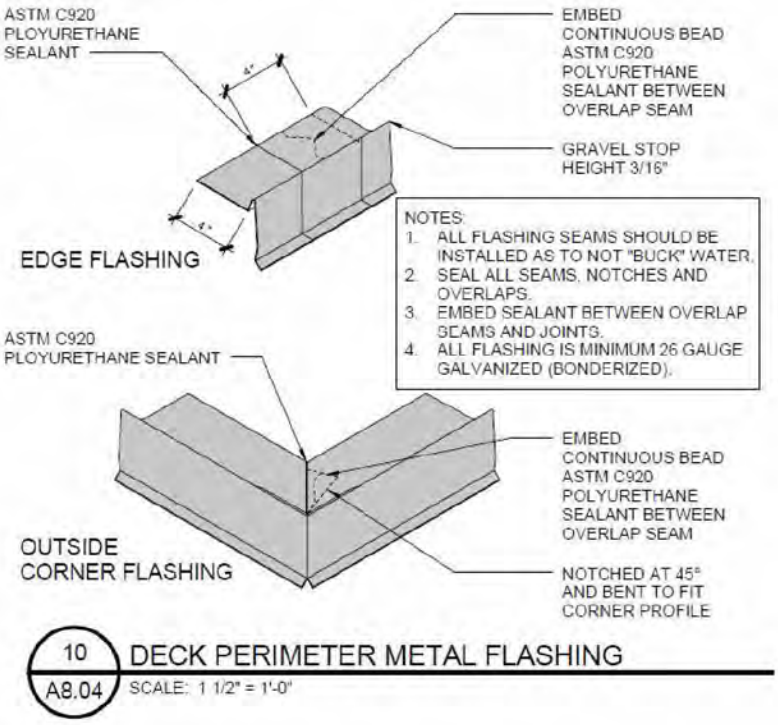
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.04 "Exterior Details," illustrates the following:

- *"5/A8.04 Deck Perimeter Flashing"*

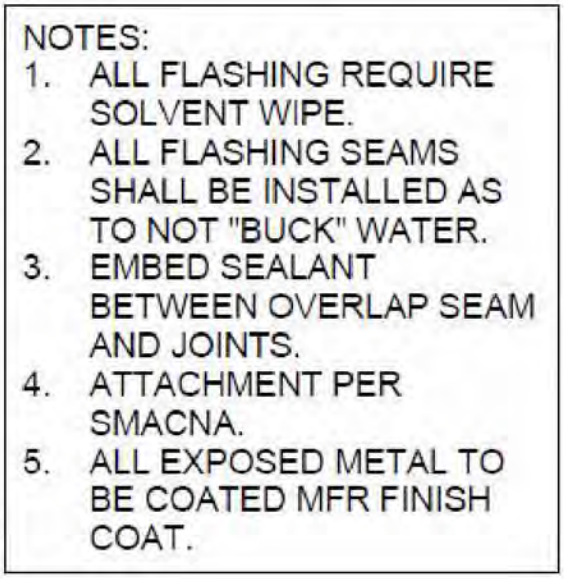


5 / A8.04 DECK PERIMETER FLASHING
SCALE: 3" = 1'-0"

- *"10/A8.04 Deck Perimeter Flashing"*



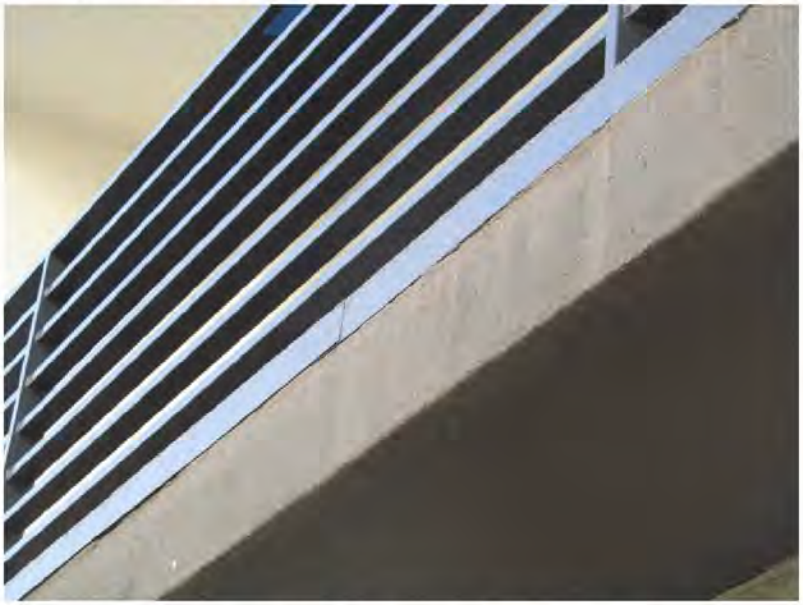
- *"9/A8.04 Deck Sheet Metal Corners"*



Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), "Residential Sheet Metal Guidelines," First Edition, 2001, Chapter 2 "Decks," subsection 2.2 "Coated Decks," subsection 2.2.1 "Deck to Wall Flashing," states the following:

- *"At the deck edge the sheet metal should extend out over the front face, with a minimum 2 in. (50 mm) coverage, and terminate in a hemmed diverter that is added as a separate attachment or is formed in conjunction with the other flashing."*

Example Photographs:



March 10, 2021, Disc OBS5, Photograph 11, SSR, Building A, deck edge flashing inset at stucco.

March 10, 2021, Disc OBS5, Photograph 23, SSR, Building. A, awning edge flashing inset at stucco.

October 14, 2019, Disc OBS2, Photograph 125, SSR, Building B, deck edge flashing inset at stucco and stains visible.

March 10, 2021, Disc OBS5, Photograph 69, SSR, Building. B, awning edge flashing inset at stucco.

March 10, 2021, Disc OBS5, Photograph 77, SSR, Building B, deck edge flashing correctly installed at stucco.

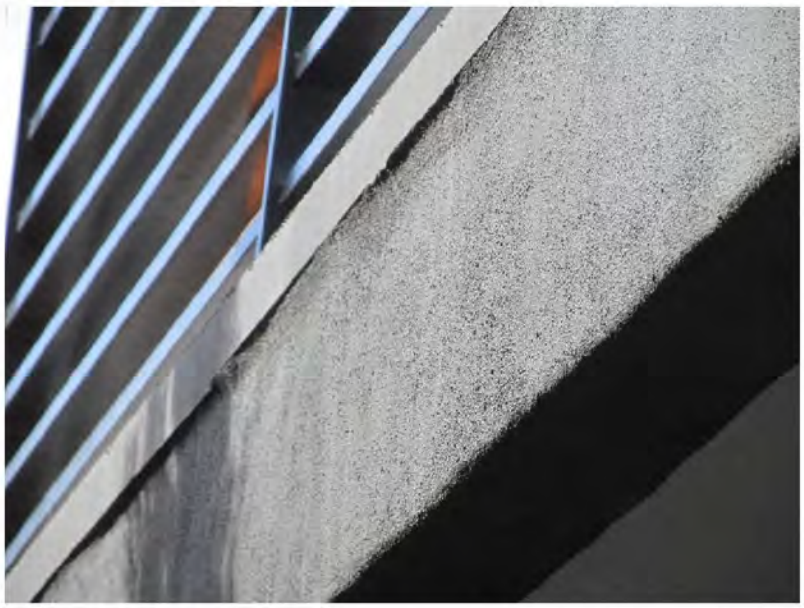
March 10, 2021, Disc OBS5, Photograph 94, SSR, Building B, awning edge flashing inset at stucco.

March 11, 2021, Disc OBS6, Photograph 21, JJF, Building C, awning edge flashing inset at stucco.

March 11, 2021, Disc OBS6, Photograph 58, JJF, Building C, deck edge flashing inset at stucco.

March 10, 2021, Disc IT7, Photograph 182, JJF, Building C, deck edge flashing inset at stucco.

May 13, 2019, Disc IT1, Photograph 176, JBF, east elevation of Building C, metal flashing at leading edge of deck is inset from stucco.



March 11, 2021, Disc OBS6, Photograph 89, JJF, Building D, deck edge flashing inset at stucco.

May 13, 2019, Disc IT1, Photograph 2, JBF, east elevation of Building D, deck edge flashing inset at stucco.

October 14, 2019, Disc OBS3, Photograph 389, SSR, Building D, deck edge flashing inset at stucco and stains visible.

Locations:

Non-compliant sheet metal flashings to stucco interface is present at all buildings across the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

c. Non-Compliant Isolation Joints at Dissimilar Materials

The buildings at the Gallery site feature stucco and AMV. These façade types interface with each other and with other materials, including different claddings, window and door frames, and penetrations such as mechanical vents, electrical outlets, and gas pipes. These dissimilar materials have different thermal properties and will expand and contract at different rates.

Material	Thermal Expansion Coefficient [in/(in*°F)]
Aluminum	1.23E-05
Brick	4.00E-06
Concrete Masonry	5.20E-06
Fiber Cement Siding	6.70E-06
Glass	5.00E-06
Mortar	7.30E-06
Rigid Polyvinyl Chloride	4.40E-05
Stucco	6.50E-06
Wood (across grain)	3.00E-05
Wood (perpendicular to grain)	3.00E-06

Differential movement causes separations or openings between the materials that allow air and water infiltration. Sealant joint design and construction provide the first line of defense against air and water intrusion at the building envelope. Properly sized and constructed sealant joints are required at all of the aforementioned interfaces to properly accommodate movement between dissimilar materials. Backer rod or bond breaker tape is required at isolation joints to prevent three-sided adhesion of the sealant and to allow the sealant to properly accommodate movement between dissimilar materials. Backer rod and bond breaker tape also help to provide the correct sealant profile to accommodate movement without causing excessive stress, which becomes the cause of the sealant joint failure in cohesion (i.e., within the sealant material) or in adhesion (i.e., between the sealant and the substrate).

Proper sealant at joints and penetrations additionally limits uncontrolled air movement through the wall assembly. Not providing protection from air penetration through the wall assembly fails to meet the minimum requirements required by the International Energy Conservation Code (IECC) adopted through the IRC.

The architectural drawings reference compliance with the 2012 IECC and provide typical sealant joint details for the Gallery site. Typical isolation joint details include stucco-soffit joint, stucco-AMV juncture, pipe or cable wall penetration in stucco and AMV, and electrical or mechanical mounting in stucco and AMV. The architectural drawings require backer rod and sealant all around the fenestrations and specify using AAMA 2400-10 or the manufacturer's installation instructions for window installation. AAMA-2400-10 references ASTM E2112-07 "Standard Practice for Installation of Exterior Windows, Doors and Skylights," which also discusses joints between

fenestrations and the building envelope. Interfaces of dissimilar cladding materials with each other, fenestrations, and penetrations were generally installed without a sealant joint and a backer rod. Where installed, the sealant joint width was inadequate. As a result, cracks and open joints exist between materials, which act as direct paths for water to enter the wall assemblies and overwhelm and damage the underlying components. An exception is at a few locations where windows are isolated with full height vertical control joints on the side elevations of all buildings.

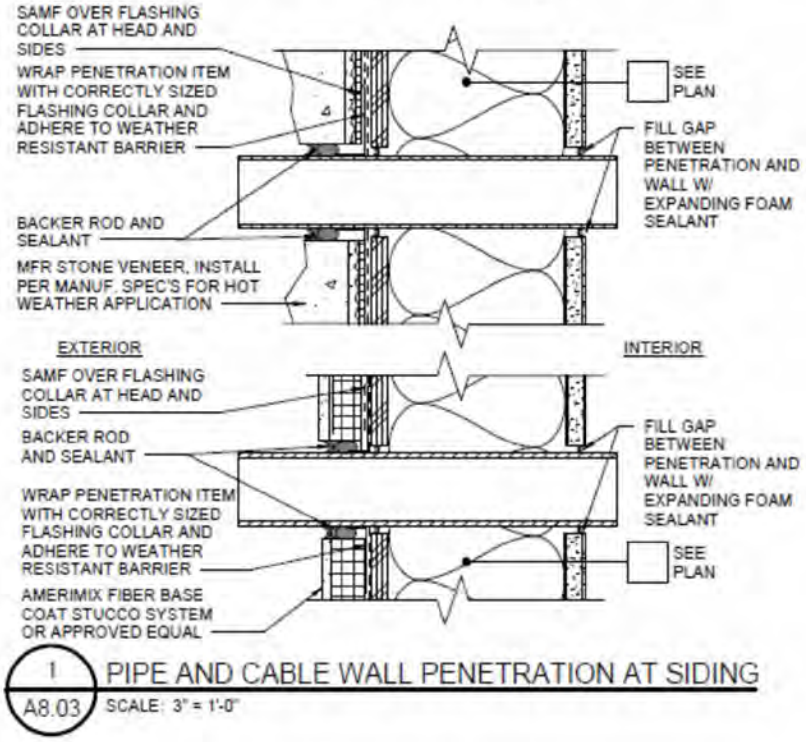
Ultimately, maintenance of sealant joints becomes the responsibility of the Homeowner's Association (HOA) directly after the declarant control ends. Maintenance of properly constructed sealant joints should be the responsibility of the HOA over the life of the property, but improperly constructed joints do not allow for the proper application of the joints or maintenance of the joints; something that was not originally installed cannot be maintained. Furthermore, maintenance of properly installed sealant joints is the responsibility of the declarant until the time of turnover of maintenance responsibilities to the HOA to provide for the effective useful life of the properties. The Association should be funded to properly maintain the joints, typically during paint cycles. Generally, the isolation joints in Arizona are periodically replaced every 5- to 6-years.

Where non-compliant isolation joints at dissimilar materials exist, the as-built condition falls short of the prescriptive requirements of the relevant codes, design, and industry standards and, therefore, the developer, contractor, and subcontractors who performed the work fell below the standard of care.

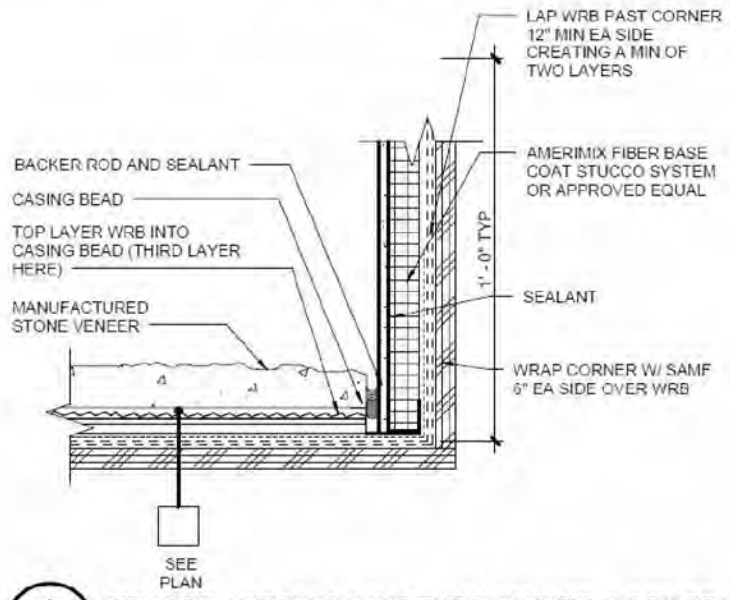
Applicable Code/Industry Standard References/Project-Specific Documents:

Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.03 "Exterior Details," illustrates the following:

- *"1/A8.03 Pipe And Cable Wall Penetration At Siding"*

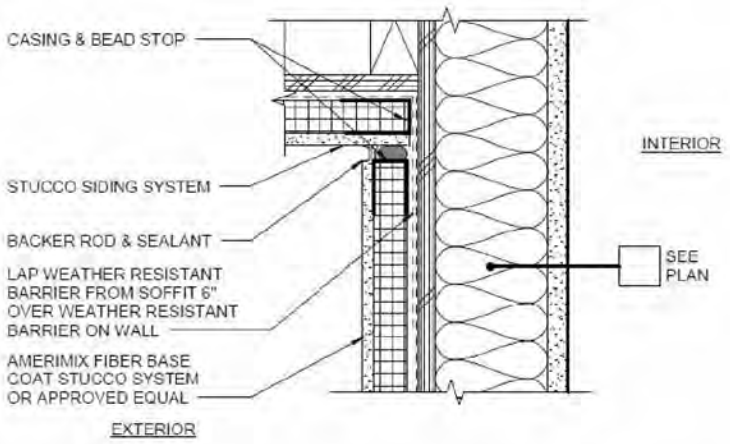


- *"2/A8.03 Stucco / Stone Juncture (Inside Corner)"*



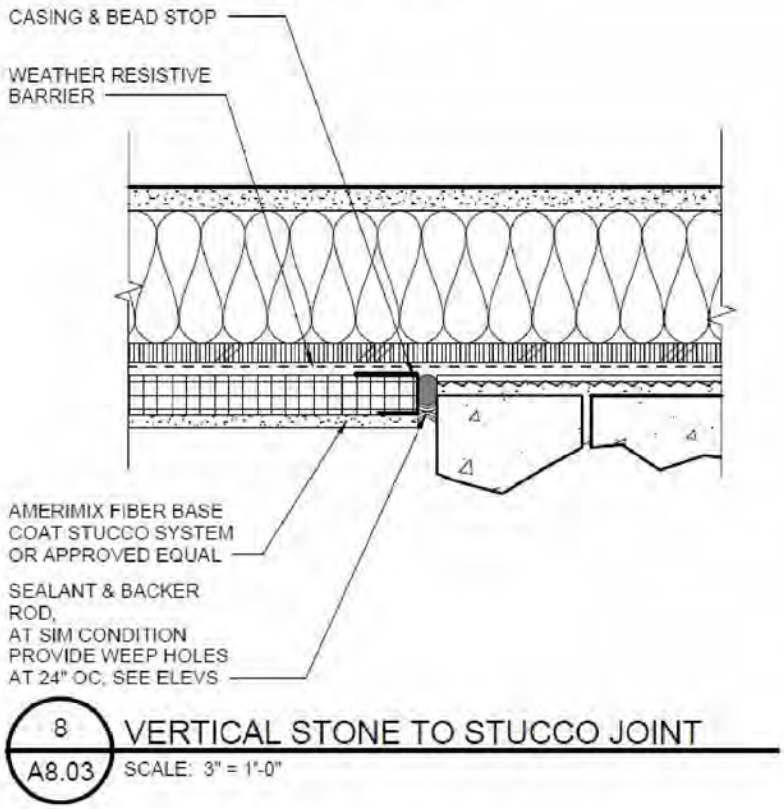
2 / A8.03 STUCCO / STONE JUNCTURE (INSIDE CORNER)
SCALE: 3" = 1'-0"

- *"3/A8.03 Stucco Siding – Soffit Joint (Section)"*

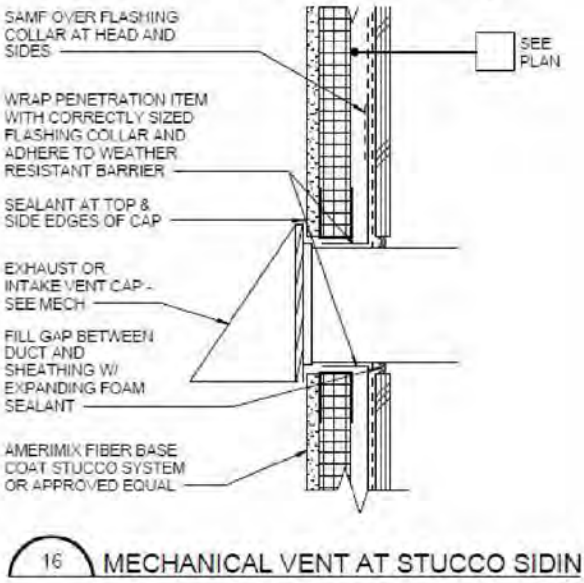


3 / A8.03 STUCCO SIDING - SOFFIT JOINT (SECTION)
SCALE: 3" = 1'-0"

- *"8/A8.03 Vertical Stone To Stucco Joint"*

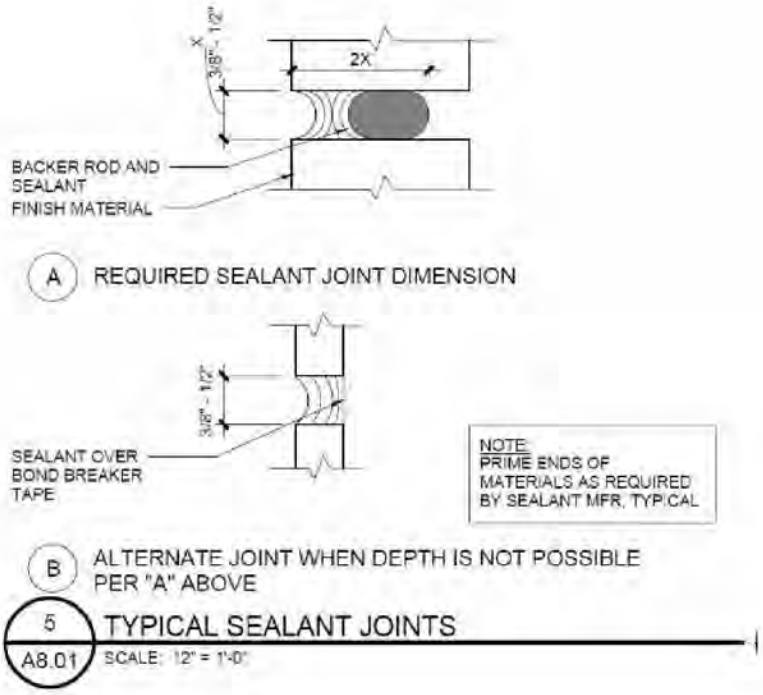


- *"16/A8.03 Mechanical Vent At Stucco Siding"*



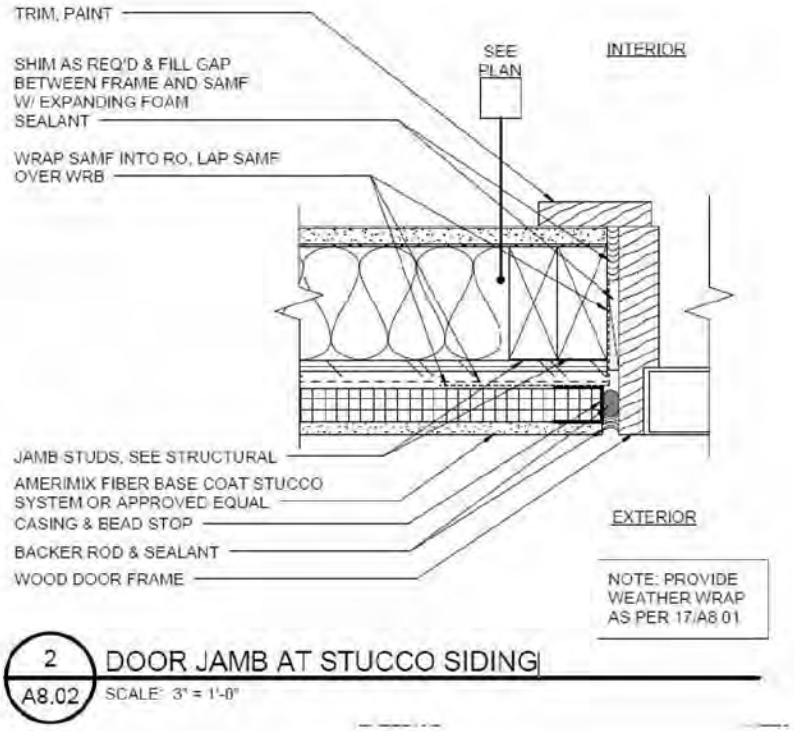
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.01 "Exterior Details," illustrates the following:

- *"5/A8.01 Typical Sealant Joints"*



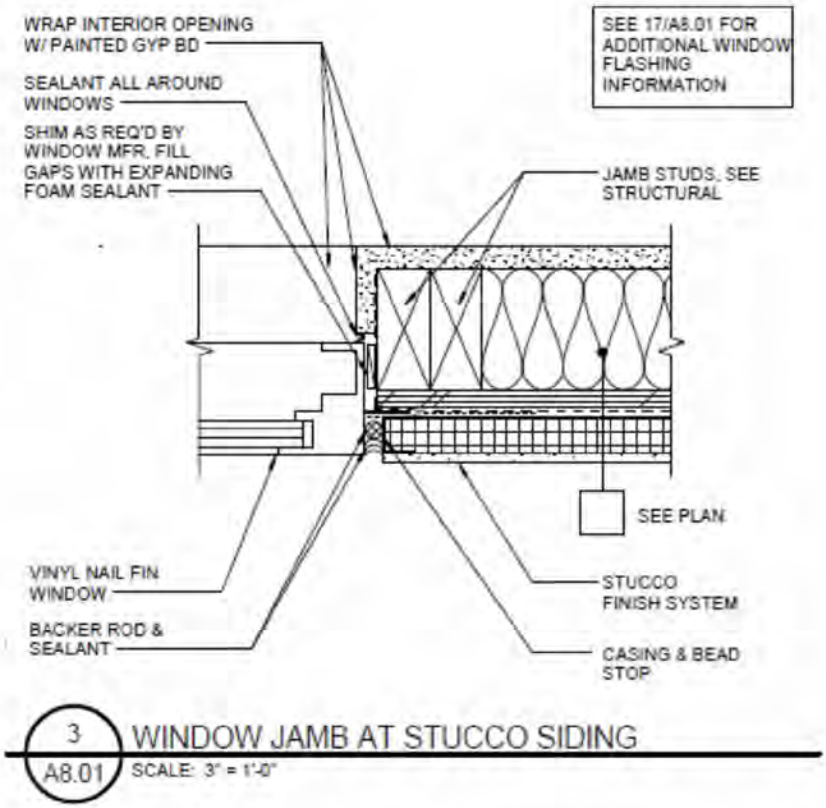
Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.02 "Exterior Details," illustrates the following:

- *"2/A8.02 Door Jamb At Stucco Siding"*



Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.01 "Exterior Details," illustrates the following:

- *"3/A8.01 Window Jamb At Stucco Siding"*



Otak, Inc., "K. Hovnanian Homes, Gallery Townhomes," revised date August 2, 2016, Sheet A8.01 "Exterior Details," states the following:

- *"17/A8.01 Opening Weather Wrap (Doors & Windows)"*

NOTE: THESE WRAP DETAILS ARE BASED ON AAMA 2400-10 METHOD A. SEE AAMA 2400-10 FOR FULL WRITTEN DESCRIPTION OF SYSTEM INSTALL WINDOWS PER MFR RECOMMENDATIONS, NOTIFY ARCHITECT IF CONFLICTS OCCUR.

International Code Council, Inc. (ICC), "International Energy Conservation Code (IECC)," 2012, Chapter 4 "Residential Energy Efficiency," Section R402 "Building Thermal Envelope," states the following:

- *"**R402.4 Air leakage (Mandatory)**. The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.*

  ***R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.*

R402.4.1.1 Installation. *The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance."*

International Code Council, Inc. (ICC), "International Energy Conservation Code (IECC)," 2012, Chapter 4 "Residential Energy Efficiency," Section R402 "Building Thermal Envelope," states the following:

- ***"Table R402.4.1.1 Air Barrier and Insulation Installation***

TABLE R402.4.1.1
AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	CRITERIA[a]
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stair or knee wall doors to unconditioned attic spaces shall be sealed.
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.
Rim joists	Rim joists shall be insulated and include the air barrier.
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors.

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

American Architectural Manufacturers Association, AAMA 2400-10 "Standard Practice for Installation of Windows with a Mounting Flange in Open Stud Frame Construction for Low Wind/Water Exposure," 2010, Section 2.0 "Referenced Documents," states the following:

- *"**ASTM E2112-07**, Standard Practice for Installation of Exterior Windows, Doors and Skylights"*

American Architectural Manufacturers Association, AAMA 2400-10 "Standard Practice for Installation of Windows with a Mounting Flange in Open Stud Frame Construction for Low Wind/Water Exposure," 2010, Section "Introduction," states the following:

- *"This practice addresses the recommended methods and/or sequences used to apply/modify the water-resistive barrier or other flashing and sealing materials to the open-framed opening. For sheathed wall installations refer to ASTM E2112, 'Standard Practice for Installation of Exterior Windows, Doors and Skylights'."*

American Architectural Manufacturers Association, AAMA 2400-10 "Standard Practice for Installation of Windows with a Mounting Flange in Open Stud Frame Construction for Low Wind/Water Exposure," 2010, Section 5.0 "Procedure," subsection 5.4 "Flashing Requirements," states the following:

- *"Proper flashing and/or sealing is necessary as a barrier to prevent water from infiltrating into the building. Flashing and/or an appropriate method of sealing shall be designed as a part of an overall weather resistant barrier system."*

American Architectural Manufacturers Association, AAMA 2400-10 "Standard Practice for Installation of Windows with a Mounting Flange in Open Stud Frame Construction for Low Wind/Water Exposure," 2010, Section 5.0 "Procedure," subsection 5.5 "Joints and Anchorages," states the following:

- *"Joints and anchorages between the building envelope (WRB assembly) and fenestration product shall be designed to accommodate differential thermal expansion and contraction, as well as the structural requirements within the window/wall assembly."*

American Architectural Manufacturers Association, AAMA 2400-10 "Standard Practice for Installation of Windows with a Mounting Flange in Open Stud Frame Construction for Low Wind/Water Exposure," 2010, Section 6.0 "Post-Installation Procedures," states the following:

- *"6.5 Install appropriate sized open-cell backer rod in the joint between the window frame and the final exterior wall surface (siding, stucco, etc.) then apply sealant per the sealant manufacturer's recommendations."*

American Society of Testing and Materials (ASTM), ASTM E2112-07 "Standard Practice for Installation of Exterior Windows, Doors and Skylights," 2007, Section 5 "Related Issues and Procedures," subsection 5.2 "Joints and Anchorages," states the following:

- *"Joints and anchorages between the building envelope (weather barrier assembly) and fenestration product shall be designed to accommodate differential thermal expansion (see Table 1) and moisture migration within the window/wall assembly."*

Example Photographs:

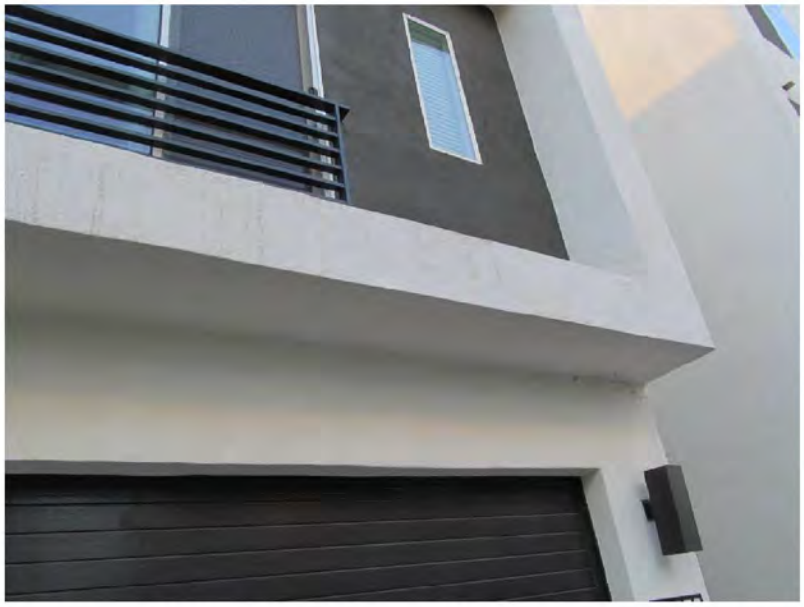
March 9, 2021, Disc IT6, Photograph 12, SSR, Building A, non-compliant isolation joint at window to stucco interface with a diagonal crack at top right corner of window.

March 9, 2021, Disc IT6, Photograph 14, SSR, Building A, non-compliant isolation joint at window to stucco interface with a diagonal crack at bottom right corner of window.

March 9, 2021, Disc IT6, Photograph 27, SSR, Building A, non-compliant isolation joint at penetration to stucco interface with a diagonal crack at top right corner of dryer vent.

March 9, 2021, Disc IT6, Photograph 39, SSR, Building A, non-compliant isolation joint at sliding door to stucco interface with a diagonal crack at top right corner of sliding door.

March 9, 2021, Disc IT6, Photograph 81, SSR, Building A, non-compliant isolation joint at window to stucco interface with a diagonal crack at bottom right corner of window.



March 10, 2021, Disc OBS5, Photograph 72, SSR, Building B, missing isolation joint at stucco siding to stucco soffit

March 10, 2021, Disc OBS5, Photograph 91, SSR, Building B, non-compliant isolation joint at utility box to stucco with diagonal stucco racks.

March 11, 2021, Disc OBS6, Photograph 41, JJF, Building C, non-compliant isolation joint at pipe to AMV interface.

March 10, 2021, Disc OBS6, Photograph 176, JJF, Building C, non-compliant isolation joint at utility box to stucco interface.

March 10, 2021, Disc IT7, Photograph 7, JJF, Building D, non-compliant isolation joint at window to stucco interface and resulting separation at window.

March 10, 2021, Disc IT7, Photograph 149, JJF, Building D, failed sealant joint at door to stucco interface; no backer rod visible.

March 11, 2021, Disc OBS6, Photograph 28, JBF, stairs between Buildings C and D, cracking and separation of stair wall. SBSA understands builder performed repairs at this location.

Locations:

Non-compliant isolation joints at dissimilar materials exist at locations across the Gallery site. Refer to the attached Observation Drawings and Defect Matrix for locations and details of findings.

3. ROOFING SYSTEM TYPE 1 – SPRAY POLYURETHANE FOAM (SPF)

The upper low-slope roofs at the Gallery site were detailed as a minimum 1-inch-thick closed-cell SPF and finished with an elastomeric coating. The SPF roof system is installed over roof sheathing supported by pre-engineered roof trusses with tapered top chords to provide 1/4-inch-per-foot or 2-percent slope for drainage. Crickets were required along the lower side of the party wall to promote drainage towards the roof and overflow drains which are installed on both halves of the roof plan. Crickets were also required on the upper side of the mechanical unit pads for drainage around the mechanical pads towards the roof drains. Roof and party wall parapet walls were detailed to direct water towards the interior of the roof.

a. Non-Compliant Slope to Roof Drains

Low-slope roof systems, including those used for waterproofing on roof decks, require positive slope towards the means of drainage to allow for adequate drainage of the system. The architectural drawings and the building codes require a minimum of 1/4-inch-per-foot or 2-percent for the low-slope roof system. Crickets were detailed along walls and at upslope locations of rooftop equipment to promote positive drainage towards the roof drains.

GENERAL RECOMMENDATIONS FOR REPAIR

All comments made are based on conditions seen at the time of these observations. SBSA does not accept any responsibility for unknown or unknowable conditions within the existing site or structures that are typically encountered during the rehabilitation process. The repair recommendations herein are conceptual and are intended for cost estimating purposes only. They are intended to provide repairs in conformance with the applicable building code and industry standard of care. These repairs are not intended for construction or for use on this project or extensions of the project unless completed, adapted, stamped, or acknowledged by SBSA. Any and all designs, repair recommendations, or work provided herein is an instrument of service of SBSA. Instruments of service are intended to work in a full system property/fully integrated system approach and should not be used individually without adaptation and completion by or from SBSA. Any unauthorized use of instruments of service shall be at the sole risk of the user and SBSA shall not be liable in any way for such use. The intent of the following is that all repairs will be provided in whole. It will be necessary for qualified design professionals to perform additional work to prepare proper construction documents, details, calculations, and specifications suitable for construction of the repairs described herein.

The repair cost is a Level Two (Schematic/Conceptual Design) estimate as defined in the Standard Estimating Practice, 9th Edition, by the American Society of Professional Estimators. The estimation for this level may range from -20 to plus 10-percent of accuracy.

Contingencies: Normal reconstruction contingencies are 10-percent of the unburdened construction services total, and have some relation to the general conditions of the project. The general conditions should be reviewed for both contingency and design fees and should be burdened appropriately to those items that require review and work with the design team and that require relation to the discovery, measurement, scheduling, and repair of the work for contingent items. Based on SBSA's findings on this project; damage to flatwork and asphalt, of misapplied materials, damage to substrates, WRB and interstitial spaces, SBSA believes that the burden for contingent items (known/unknowns) should be set at 10-percent.

All repairs shall be performed per applicable building codes, project-specific details, manufacturer installation guidelines, and industry standards.

A. STRUCTURAL

1. COMPLIANCE WITH GEOTECHNICAL REPORT

- The original geotechnical report presents recommendations for overexcavation, soil stabilization, and drainage on the site. Review the original geotechnical report for applicable design and construction recommendations for informational purposes.

2. LATERAL FORCE RESISTING SYSTEM (LFRS)

a. Non-Compliant LFRS

- All LFRS repairs shall be performed per the braced/shear wall and holddown schedule provided on Sheets S3.1 through S3.6 of the Felten structural plans as designed by the Structural EOR.
- For Unit 3111 of Building D, perform the following repairs to the LFRS.

- Remove existing stucco to coordinate with repairs recommended in Sections C.1 and C.2 of this report.
- Repair contractor to verify and confirm the extent of repairs to the LFRS.
- Where exterior sheathing is identified as missing, install new 3/8-inch minimum-rated sheathing using specified nails spaced to provide minimum shear resistance of 306-plf per the braced/ shear wall schedule.
- Where existing strap is identified as installed incorrectly, remove and replace with new strap per the holddown schedule. Install according to the manufacturer's installation requirements.
- Reinstall cladding per the repairs recommended in Sections C.1 and C.2 of this report.

- Repair contractor to include 10-percent of the stucco repair costs for use as a contingency for the repairs for the non-compliant LFRS. The as-built construction of the LFRS will be compared with LFRS design on the Felten structural plans as designed by the Structural EOR after the stucco system is removed.

B. CIVIL

1. GRADING AND DRAINAGE

a. Drainage Bounded by Concrete Flatwork

- Perform repairs at all locations noted in the Civil Repair Drawings.
- Coordinate sidewalks, curbs, and roadway to allow for proper site geometric integration in all new construction. A full topographical survey from the curb line to the face of the building will be required due to the limited site elevation difference to enable design to correct the deficient construction.
- Construct concrete aprons below roof drain terminations. Where sidewalks exist, remove sidewalk to nearest joint and provide sidewalk chase. Where no sidewalks are constructed, construct curb cut to allow flow out of bounded area, and regrade unpaved area to drain.
- Place rocks (4- to 6-inch diameter) in concrete aprons.
- Adjust existing electrical and irrigation boxes as required.

b. Non-Compliant Management of Concentrated Flows

- Perform repairs at all locations noted in the Civil Repair Drawings.
- Construct concrete aprons below roof drain terminations. Where sidewalks exist, remove sidewalk to nearest joint and provide sidewalk chase. Where no sidewalks are constructed, construct curb cut to allow flow out of bounded area.
- Place rocks (4- to 6-inch diameter) in concrete aprons.
- Adjust existing electrical and irrigation boxes as required.

2. CONCRETE FLATWORK

a. Non-Compliant Cross-Slope of Sidewalks

- Remove and replace concrete as noted in Civil Repair Drawings. Coordinate between asphalt roadway, curb profile, and sidewalks to achieve geometric integration.
- Concrete removal shall be to the nearest construction/control joint.
- Ensure that subgrade is prepared in compliance with the recommendations of a geotechnical engineer prior to the placement of concrete.
- Ensure grading and drainage direct runoff away from flatwork subbase.
- Ensure all new flatwork meets slope requirements set forth in the current applicable building code as amended by the City of Scottsdale, MAG Standard Details, and ADA/ANSI standards.
- At all locations where new concrete flatwork is to be constructed directly adjacent to vertical building elements, provide full-depth, 1/2-inch expansion joints in compliance with applicable codes and/or industry standards.

b. Non-Compliant Longitudinal Slope of Sidewalks

- Remove and replace concrete as noted in Civil Repair Drawings.
- Concrete removal shall be to the nearest construction/control joint.
- Ensure that subgrade is prepared in compliance with the recommendations of a geotechnical engineer prior to the placement of concrete.
- Ensure grading and drainage direct runoff away from flatwork subbase.
- Ensure all new flatwork meets slope requirements set forth in the current applicable building code as amended by the City of Scottsdale, MAG Standard Details, and ADA/ANSI standards.
- Verify final geometry using topographic survey. If required, construct code-compliant stairs at entrances to buildings or at bottoms of existing stairways.
- At all locations where new concrete flatwork is to be constructed directly adjacent to vertical building elements, provide full-depth, 1/2-inch expansion joints in compliance with applicable codes and/or industry standards.

c. Non-Compliant Landings

- Remove and replace concrete as noted in Civil Repair Drawings.
- Concrete removal shall be to the nearest construction/control joint.
- Ensure that subgrade is prepared in compliance with the recommendations of a geotechnical engineer prior to the placement of concrete.
- Ensure grading and drainage direct runoff away from flatwork subbase.

- Ensure all new flatwork meets slope requirements set forth in the current applicable building code as amended by the City of Scottsdale, MAG Standard Details, and ADA/ANSI standards. Maximum slope of landings to be 2-percent.
- Verify final geometry using topographic survey. If required, construct code-compliant stairs at entrances to buildings or at bottoms of existing stairways.
- At all locations where new concrete flatwork is to be constructed directly adjacent to vertical building elements, provide full-depth, 1/2-inch expansion joints in compliance with applicable codes and/or industry standards.

C. BUILDING ENVELOPE

1. FAÇADE (EXTERIOR CLADDING AND SEALANTS) TYPE 1 – STUCCO

a. Missing Weep Mechanism in Stucco

- Coordinate with replacement of the WRB and the stucco system as described in Sections C.1.b and C.1.c of this report.
- Install new weep mechanisms at the following horizontal terminations.
- At window heads, slider door heads, swing door heads, and garage door heads, terminate the weep casing bead 1/4-inch above sheet metal head flashing.
- At soffits, install weeps per the architectural Detail 4/A8.03 and manufacturer's requirements.
- Shingle-lap WRB with new weep mechanisms.
- Coordinate repair with related stucco and underlying moisture-management repair recommendations as well as all adjacent civil repair recommendations.

b. Non-Compliant WRB for Stucco System

- Full removal and replacement of the stucco and the exterior insulation is required to address the non-compliant installation of the WRB for the existing stucco system. Remove existing WRB to perform following repairs.
- Install missing exterior sheathing and straps, as necessary, per the LFRS repairs recommended in Section A.2 of this report.
- Install sheet metal flashings per Section C.2.a of this report.
- Ensure that the WRB above is shingle-lapped with the sheet metal flashing.
- Install new WRB per the requirements of ESR-3529 for the existing stucco system.
    - Repair contractor to estimate using between two layers of Grade D kraft building paper or one layer of Grade D kraft paper with minimum water-resistance rating of 60-minutes or using Tyvek products such as StuccoWrap or DrainWrap as specified in Section 3.2.4 and Section 3.2.10 of ESR-3529.
- Ensure all WRB terminations shingle-lap with all surrounding rigid and flexible flashings, weeps, and accessories.
- Install EPS foam boards per repairs recommended in Section C.1.c of this report.

- Install new stucco system to comply with the current requirements of ESR-2359.
- Install lath per the stucco manufacturer and ASTM C1063.
- Install control joints at fenestration corners, floorlines, top plate/truss lines, and within the field of the wall to comply with ASTM C1063 and the stucco manufacturer.
- Install weep casing beads with 3-1/2-inch vertical legs at all stucco terminations Ensure that the WRB shingle-laps with the new weep casing beads.
- Coordinate with adjacent repairs, including underlying moisture-management and stucco repair recommendations.

c. Non-Compliant EPS Foam Board for Stucco System

- Full removal and replacement of the stucco is required to address the non-compliant installation of the EPS foam board for the existing stucco system.
- Where installed over solid substrates, remove existing EPS foam board to perform the following repairs. Also refer to other stucco repairs in this report.
- Ensure all EPS foam boards have 3/8-inch projecting tongues with compatible grooves at horizontal joints.
- At solid substrates, install new minimum 1/2-inch-thick EPS foam board with vertical grooves spaced at a maximum 12-inches on-center on the back face of the boards. The vertical grooves should be a minimum 1/4-inch wide by 1/8-inch deep as required by ESR-3529.
- As an alternative to EPS foam boards with vertical grooves, flat-faced EPS foam boards may be installed over the solid substrates provided the WRB recommended in Section 3.2.4 of ESR-3529 is used.
- Coordinate with adjacent repairs, including underlying moisture-management and stucco repair recommendations.
- Where EPS foam board repairs are necessary at open stud framing, use minimum 1-inch-thick EPS boards installed in compliance with ESR-3529.

d. Non-Compliant Slope of Horizontal Stucco Surfaces

- Repair to be performed at all stucco parapet walls and pop-out boxes sloped less than 2:1.
- Remove existing stucco, lath, and building paper as required to perform the repair as described below.
- Install continuous shims to provide a 2:1 minimum slope on stucco wall caps.
- Install new self-sealing SAM that reduces the potential for water intrusion due to fastener holes. Install new SAM over the top of the continuous shim, ensuring SAM shingle-laps over the adjacent WRB on all sides and forms a continuous saddle at the intersections with the adjacent wall.
- Reinstall stucco as described in Repair Section C.1.c.

- Coordinate repair with related cladding, flashing, and underlying moisture-management recommendations.

e. Deficient Self-Adhered Membrane under Horizontal Stucco System

- Refer to Repair Section C.1.d of this report.

f. Missing Control/Movement Joints

- Refer to Repair Section C.1.b of this report.

2. MOISTURE-MANAGEMENT SYSTEM (BARRIERS, FLASHINGS, DRAINAGE, ETC.)

a. Missing Sheet Metal Flashing at Window Head

- Coordinate with replacement of the WRB and the stucco system as described in the stucco repair sections of this report.
- Where sheet metal flashing is missing at fenestration heads, perform the repair described below.
- Install new pre-finished sheet metal flashings with 4-inch vertical legs and horizontal legs sloped 10- to 15-degrees as detailed on the architectural plans with hemmed drip edges.
- Apply sealant at ends of sheet metal flashing to provide end dams.
- Ensure all flashing joints and corners are sealed.
- Ensure that the WRB above is shingle-lapped with the sheet metal flashing.
- Reinstall cladding per manufacturer instructions with a minimum 1/4-inch clearance between the bottom of cladding and the back of the sloped sheet metal flashing. Gap between the cladding and flashing to remain unsealed.
- Coordinate repair with related cladding and underlying moisture-management repair recommendations.

b. Non-Compliant Flashing to Stucco Interface

- At elevated decks and awnings, remove existing edge flashing and membrane/coating to allow for stucco repairs described below.
- Remove and replace stucco as required by the architectural details 12/A8.03 and 5/A8.04. Coordinate with replacement of the WRB and the stucco system as described in the stucco repair sections of this report.
- Install new edge flashing at decks per Section C.4.a of this report. New deck coating and new awning TPO perimeter edge membrane will be required to facilitate the repairs. Ensure the flashing is integrated with the new deck coating and awning TPO membrane.

c. **Non-Compliant Isolation Joints at Dissimilar Materials**

- At locations where stucco interfaces with dissimilar materials, perform the following repairs. Typical locations for repair include joints at fenestrations, penetrations at all cladding types, vertical joints between cladding types, and joints between all cladding types and wood trim, including fascia trim at re-entrant corners.
- Reinstall cladding as required to address other repair recommendations, providing 3/8- to 1/2-inch-wide gap between dissimilar materials. The depth to width ratio for the joint should be equal to 2:1. At stucco, provide casing bead at edge of joint.
- Install type B backer rod and low-modulus elastomeric sealant to provide compliant butt isolation joint at dissimilar material interfaces with joint widths that are 3/8-inch or greater.
- Install polyethylene bond breaker tape and low-modulus elastomeric sealant to provide compliant fillet isolation joint at dissimilar material interfaces where the existing space is less than 3/8-inch wide or the dissimilar materials are out of plane.
- Following installation of sealant isolation joints at penetrations through the cladding, set surface-mounted objects in continuous sealant against the face of the cladding. Where applicable, profile the sealant at the top of the surface-mounted objects to promote drainage over the top flanges.

3. ROOFING SYSTEM TYPE 1 – SPRAY POLYURETHANE FOAM (SPF)

a. **Non-Compliant Slope to Roof Drains**

- Repairs to be performed at all roof decks with non-compliant drainage.
- Remove and replace membrane and underlying substrates as necessary to perform repairs described below.
- Remove and replace damaged underlying coverboard and structure, if present.
- Install tapered insulation to provide positive drainage (1/4-inch minimum) towards roof drains.
- Slope cricket a minimum of 1/4-inch-per-foot along the valley.

4. ELEVATED DECKS, BALCONIES, OR WALKWAYS

a. **Non-Compliant Slope of Deck**

- Repairs to be performed at all decks with non-compliant slope and drainage at edge flashing.
- Remove existing deck edge flashing, membrane, and underlying substrates as necessary to perform repairs described below. Remove and replace damaged underlying structure, if present.
- Provide a notch equivalent to the thickness of the metal flashing and deck coating for a length equal to the horizontal leg of the flashing. Ensure the notch slopes positively towards the deck edge.

Limitations of Liability:

All comments made are based on conditions seen at the time of these visual observations and review of provided documentation. SBSA does not accept any responsibility for unknown or unknowable conditions within the existing site or structures. In addition, if the professional services of the consultant do not extend to the repair phase, then, by acceptance of this report, it is agreed that the owner will defend, indemnify, and hold harmless SBSA from any claim or suit whatsoever. SBSA agrees to be responsible for its own or its employees' negligent acts, errors, or omissions.

Sincerely,

SBSA, LLC
A Charles Taylor Company
Firm # 16794-0

Jeffrey J. Felderman, PE
Senior Vice President – Construction and Design Compliance

Edward L. Fronapfel, MSCE, PE, D-IBFES, DFE, CBIE, CFCC, CBCP, EDI, PTI1, HCR-R-I, F.NAFE, F.ASCE
Chief Executive Officer

SSR:DMD:JJF:ELF:kn

Attachments: Observation Photographs
Photograph Log
Observation Drawing Set, Sheets G0.00, A1.01-1.04, C1.01-C1.16, C2.01-C2.04, C3.01-C3.08
Repair Drawings, Sheets B1.01-B1.04
Defect Matrix
References

K:\2019\21906100\030 - Reporting\01 Reports and Attachments\Gallery CDC Report.docx

EXHIBIT 1C

Legend:
x = condition present, o = not present,
na = not applicable, - = not checked

		Bldg A	Bldg B	Bldg C	Bldg D	Total
A	**STRUCTURAL**					
1	Compliance with Geotechnical Report					
2	Lateral Force Resisting System (LFRS)					
a	**Non-Compliant LFRS**	**o**	**o**	**o**	**x**	**1**
B	**CIVIL**					
1	Grading and Drainage					
a	**Drainage Bounded by Concrete Flatwork**	**x**	**x**	**x**	**x**	**4**
b	**Non-Compliant Management of Concentrated Flows**	**x**	**x**	**x**	**x**	**4**
2	Concrete Flatwork					
a	**Non-Compliant Cross-Slope of Sidewalks**	**x**	**x**	**o**	**o**	**2**
b	**Non-Compliant Longitudinal Slope of Sidewalks**	**o**	**x**	**o**	**o**	**1**
c	**Non-Compliant Landings**	**x**	**x**	**x**	**x**	**4**
C	**BUILDING ENVELOPE**					
1	Façade (Exterior Cladding and Sealants) Type 1 – Stucco					
a	**Missing Weep Mechanism in Stucco**	**x**	**x**	**x**	**x**	**4**
b	**Non-Compliant WRB for Stucco System**	**x**	**x**	**x**	**x**	**4**
c	**Non-Compliant EPS EPS Foam Board for Stucco System**	**x**	**x**	**x**	**x**	**4**
d	**Non-Compliant Slope of Horizontal Stucco Surfaces**	**x**	**x**	**x**	**x**	**4**
e	**Deficient Self-Adhered Membrane under Horizontal Stucco System**	**x**	**x**	**x**	**x**	**4**
f	**Missing Control/Movement Joints**	**x**	**x**	**x**	**x**	**4**
2	Moisture-Management System (Barriers, Flashings, Drainage, Etc.)					
a	**Missing Sheet Metal Flashing at Fenestrations**	**x**	**x**	**x**	**x**	**4**
b	**Non-Compliant Flashing to Stucco Interface**	**x**	**x**	**x**	**x**	**4**
c	**Non-Compliant Isolation Joints at Dissimilar Materials**	**x**	**x**	**x**	**x**	**4**
3	Roofing System Type 1 - Spray Polyurethane Foam (SPF)					
a	**Non-Compliant Slope to Roof Drains**	**x**	**x**	**x**	**x**	**4**
4	Elevated Decks, Balconies, or Walkways					
a	**Non-Compliant Slope of Deck**	**x**	**x**	**x**	**x**	**4**

EXHIBIT 1D

9E - 24E - 127E - 139E - 218E - 238E
NC ISO JT | 1/32" CRACK AT WINDOW | NO WEEPS OR SMHF AT WINDOW HEAD | MANUFACTURERS LABEL MIWD SERIES 5500 | (2) LAYERS OF BP OVER SHEATHING AND (1) LAYER BP OVER OPEN FRAMING | BP IS DISCONTINUOUS | ADDITIONAL PLASTIC FINS AT WINDOW SHINGLE LAPPED WITH RAINBUSTER FLASHING | APPLIED OVER BP | NO BOND BETWEEN SAM | SHEATHING FASTENERS AT 6" AND 3" VERTICALLY AND 10" HORIZONTALLY

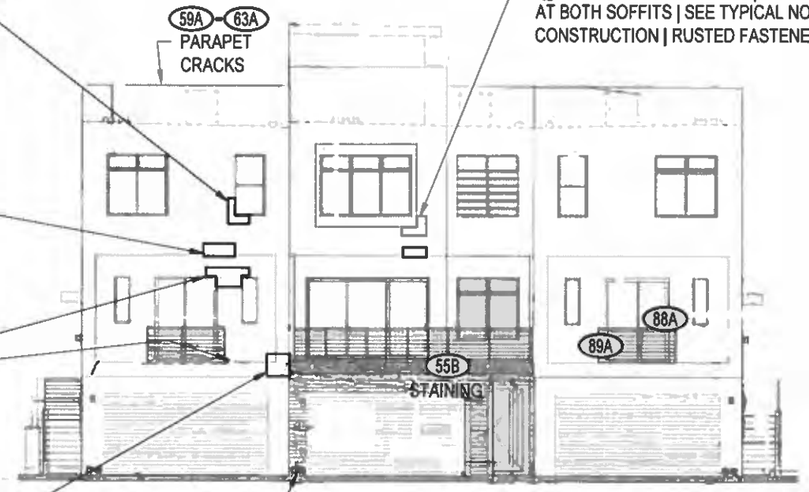
25E - 35E - 140E - 151E - 239E - 267E
NO WEEPS, NO ISO JT AT VENT AND SOFFIT | STAINS AND 1/32" CRACK ON STUCCO | HORIZONTAL CRACK AT SOFFIT | (2) LAYERS BP OVER SHEATHING AND (1) LAYER OVER OPEN FRAMING | 6" FASTENER EDGE SPACING | METAL STRAP OVER SHEATHING | STAINS AT OSB SHEATHING AT SOFFIT EDGE

36E - 63E - 152E - 161E - 268E - 291E
NO WEEPS OR SMHF AT AT DOOR AND WINDOW | DIAGONAL CRACK AT DOOR HEAD AND WINDOW HEAD | NC ISO JT | 1/2" CLR SILL FLASHING TO HORIZONTAL STUCCO SOFFIT AND 5% SLOPE | MULTIPLE CRACKS | (1) LAYER GM CRAFT BP SHINGLE LAPPED AT FENESTRATION | RAINBUSTER FLASHING SEALED WITH WINDOW AND SLIDING DOOR FRAME | NO BOND WITH SHEATHING

64E - 76E - 108E - 126E - 186E - 217E - 292E - 324E
1/32" CRACK | NO WEEPS AT SOFFIT | MULTIPLE CRACKS AND STAINS AT DECK SOFFIT | 1/8" FOAM | 3/8" STUCCO | (1) LAYER BP OVER RAIN BUSTER SAM OVER OSB AT WINDOW | AT SOFFIT XTRAFLASH SAM SHINGLE LAPPED AT SOFFIT AND TURNED UP 3'-6" AT APPLIED OVER BP | SIMPSON CS20 STRAP | OPEN FRAMING AT BUMP-OUT | (1) LAYER BP | NO SHEATHING | STAINS ON FRAMING AT DECK | 3/4" FOAM | 1/2" STUCCO | (1) LAYER BP OVER FRAMING AND SHINGLE LAPPED WITH BASE FLASHING | 1 3/4" CLR WEEP SCREED TO DECK

77E - 96E - 162E - 185E
1/32" CRACK AT WINDOW SILL | 2% SLOPE | NO WEEPS AT BOTH SOFFITS | SEE TYPICAL NOTES OF STUCCO CONSTRUCTION | RUSTED FASTENERS

59A - 63A
PARAPET CRACKS



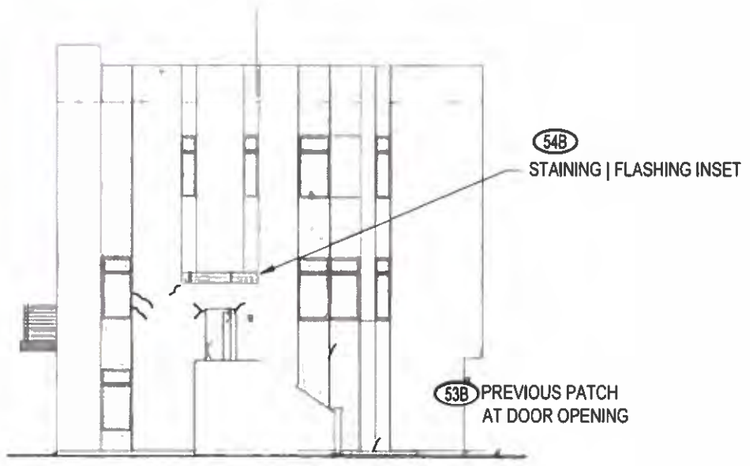
FRONT ELEVATION

97E - 107E
WEEP SCREEDS WITH HOLES IN AMV AND STUCCO | 7" TO 11" CLR TO GRADE | DRAINAGE BOUNDED

1D 1E ADDRESS
1B ADDRESS

178E - 185E - 313E
STUCCO ASSEMBLY IS 1/2" THICK | WOVEN WIRE MESH LATH THOUGHOUT | DIAMOND MESH AT SOFFIT | 2" STAPLES AND 1 3/4" NAILS | SPACING MISSING AT RED MARKING AND VARIES | OCCASIONALLY RUSTED | NO INTERLOCKING TONGUE AND GROOVE AT HORIZONTAL JOINTS IN 3/4" - 7/8" EPS INSULATION (FOAM) | BP IS CRAFT 324 ESR2376 TYPE 1 GRADE D

199A - 202A
POOL AREA



LEFT ELEVATION

BUILDING A - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#D	IT5	03/09/2021	JJF
#E	IT6	03/09/2021	SSR

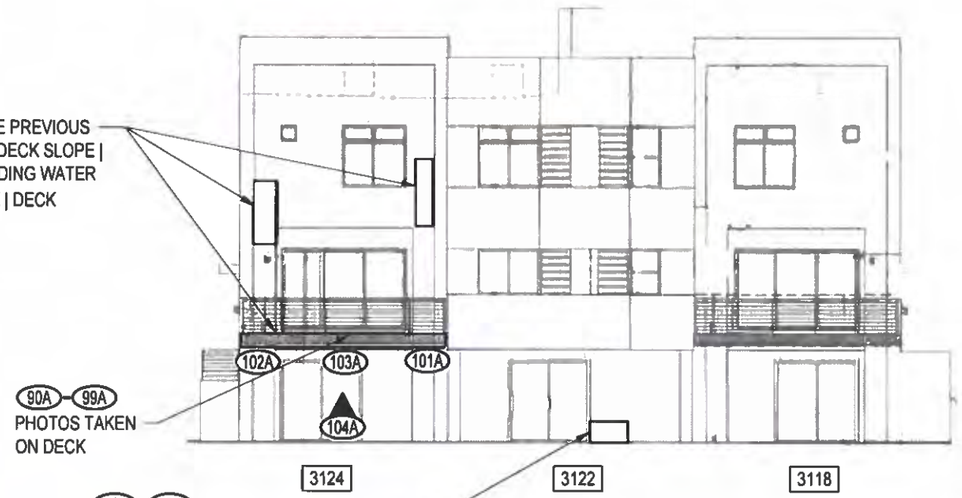
SBSA
a Charles Taylor company
5926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 945-0220

NO.	DESCRIPTION	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE
1	RULE 36A DISCLOSURE	NPP	SSR	JJF	06/22/2021

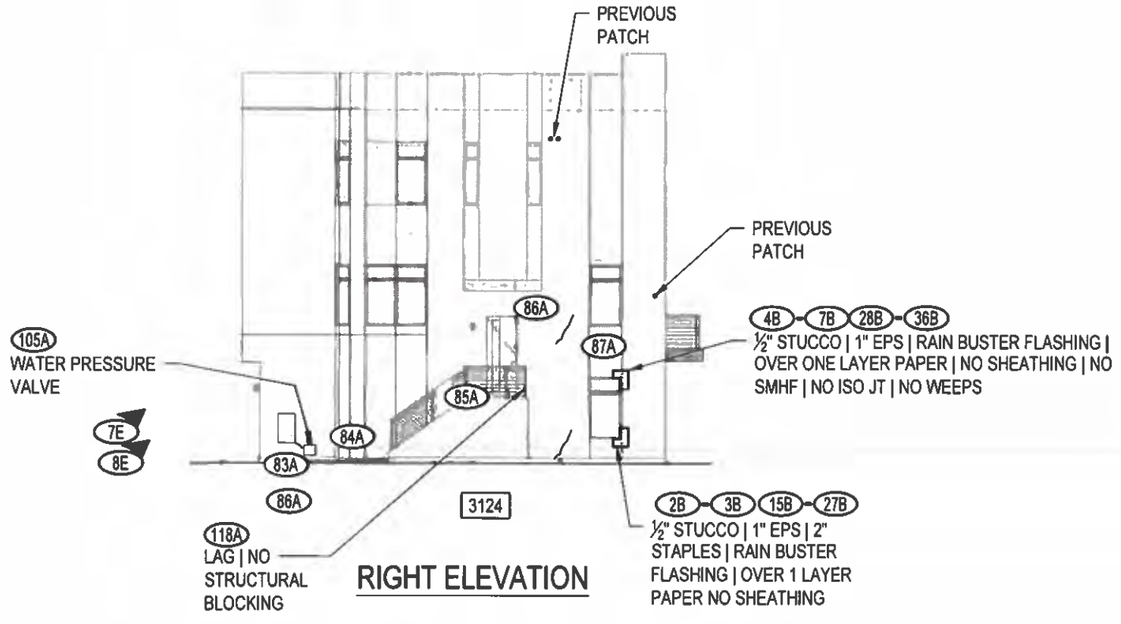
GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING A - 3118-3122-3124
FRONT AND LEFT ELEVATION (INTRUSIVE)

DRAWING SCALE: NTS
JOB NUMBER: 219061 00

C1.03



REAR ELEVATION



RIGHT ELEVATION

BUILDING A - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#D	IT5	03/09/2021	JJF
#E	IT6	03/09/2021	SSR
#G	IT8	03/10/2021	SSR

SB|SA
a Charles Taylor company
3926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 565-0250

NO	DESCRIPTION	DATE
	RULE 36A DISCLOSURE	06/23/2021

DRAWN BY	DESIGNED BY	REVIEWED BY
NPP	SSR	JJF

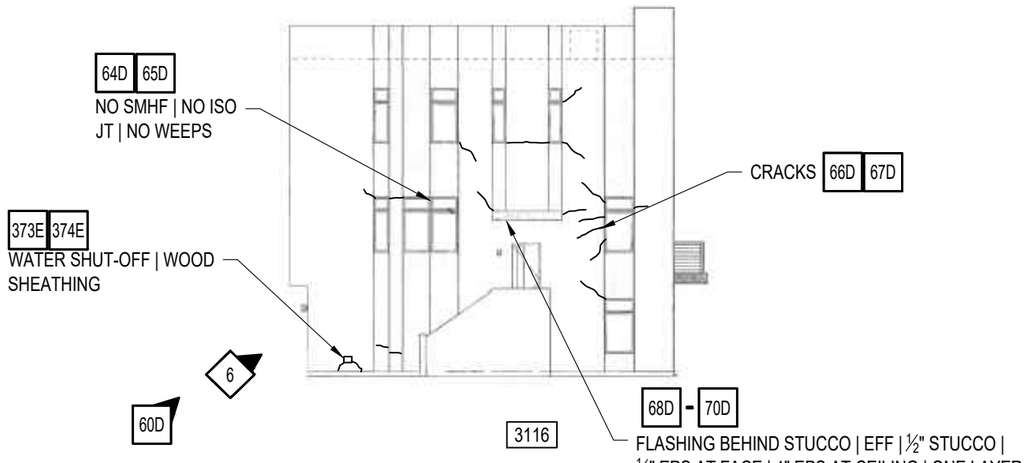
GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING A - 3118-3122-3124
REAR AND RIGHT ELEVATION (INTRUSIVE)

DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.04

K:\2019\219061\00_000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING A ELEVATIONS.DWG

REAR ELEVATION



RIGHT ELEVATION

BUILDING B - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
##	OBS1	12/19/2018	JBF
##	IR1	05/14/2019	ELF
#D	OBS5	03/10/2021	SSR / PER
#E	OBS6	03/11/2021	JJF

SBSA
a Charles Taylor company
5926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 345-0250

NO.	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE	DESCRIPTION
-	NPP	SSR	JJF	06/22/2021	RULE 26A DISCLOSURE

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING B - 3104-3106-3110-3112-3116
REAR AND RIGHT ELEVATION

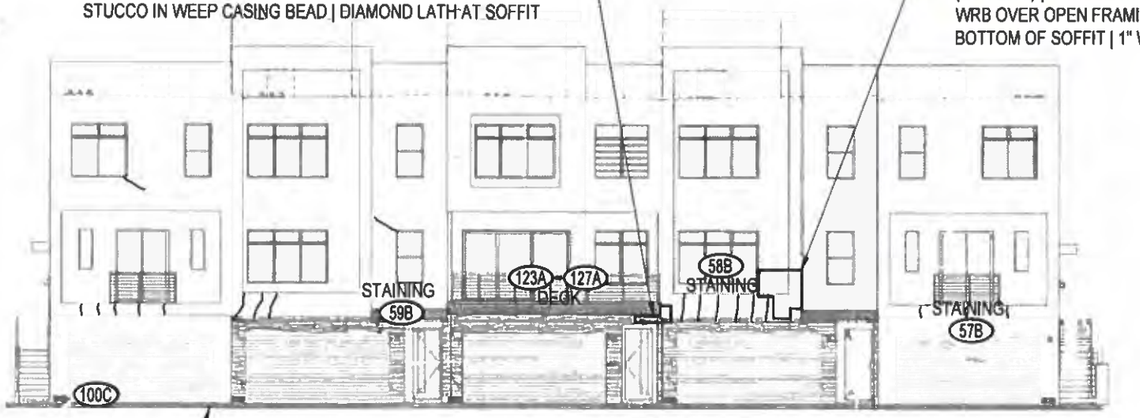
DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.06

K:\2019\219061\00\000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING B ELEVATIONS.DWG

44D - 84D - 95D
CRACKED STUCCO | 1 ½" CLR TO DECK | ⅜" TO ½" STUCCO | WOVEN WIRE FABRIC | 1" INSULATION BOARD | RUSTED STAPLES 1" BY 2" | NO SHEATHING | WATER STAINED FRAMING | (1) LAYER BP ON 3112 ABOVE GARAGE | (2) LAYERS BP 3110 DECK BEAM | DECK (1) LAYER BP WITH 1" INSULATION AND STUCCO IN WEEP CASING BEAD | DIAMOND LATH AT SOFFIT

26D - 43D - 85D - 94D - 96D - 119D - 182D - 193D
½" STUCCO | WOVEN WIRE LATH | 1" INSULATION BOARD | EXTRA FLASHING ON HORIZONTAL SURFACE | (1) LAYER WRB OVER WOOD SHEATHING AND OPEN FRAMING | OPEN FRAMING AT FRONT EDGE | WRB (ESR-2376) | 1" INSULATION BOARD NO VERTICAL SLOTS | (1) LAYER OF WRB OVER OPEN FRAMING | WOVEN WIRE LATH | EXPANDED METAL LATH BOTTOM OF SOFFIT | 1" WALL INSULATION WITH NO VERTICAL DRAINAGE

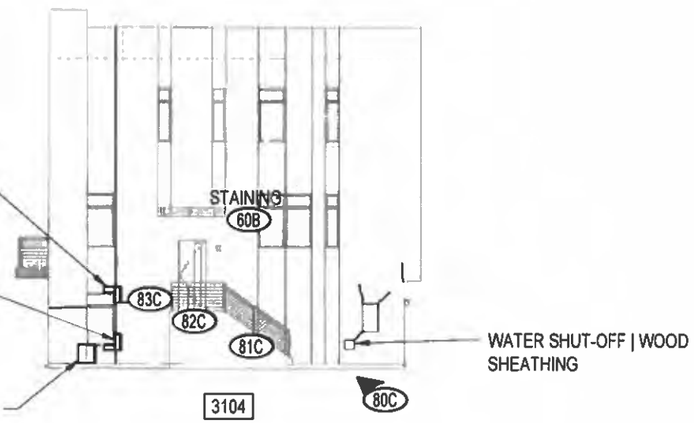


FRONT ELEVATION

10B - 14B - 45B - 52B
½" STUCCO OVER 1" EPS | RAIN BUSTER FLASHING | ONE LAYER PAPER | NO SHEATHING

8B - 9B - 37B - 44B
½" STUCCO OVER 1" EPS | RAIN BUSTER FLASHING | ONE LAYER PAPER | NO SHEATHING

272F - 287F
½" STUCCO WITH WOVEN WIRE LATH | (1) LAYER WRB | OPEN FRAMING | 9" RAIL BUSTER WITH SEALANT | ⅞" EPS



LEFT ELEVATION

BUILDING B - ELEVATIONS

299G
UNIT 3110:
ROOF LEAK AND REPAIR | CEILING DRYWALL | STAIN FROM LEAK LOCATED AT UPPER LEVEL BED | HOME OWNER REPORTS NEW DRAIN COVER AT MAIN AND OVERFLOW DRAIN | 4" TEAR IN ROOF SURFACE COAT | ROOF SLOPE AT CRICKET 0.9% - 1.9% | AT ACCESS DOOR FRAMING UNDER JAMB IS EXPOSED | STUCCO STOPS SHORT OF JAMB | 5" CLR FRAMING TO ROOF

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
#1	IT1	05/13/2019	JBF
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#C	IT4	05/14/2019	ELF
#D	IT5	05/19/2021	JJF
#F	IT7	03/10/2021	JJF
#G	IT8	03/10/2021	SSR

SB|SA
a Charles Taylor company
5926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 565-0250

NO.	DESCRIPTION	DATE
	R1/L2.5&A DISCLOSURE	06/22/2021

DRAWN BY	DESIGNED BY	REVIEWED BY
NPP	SSR	JJF

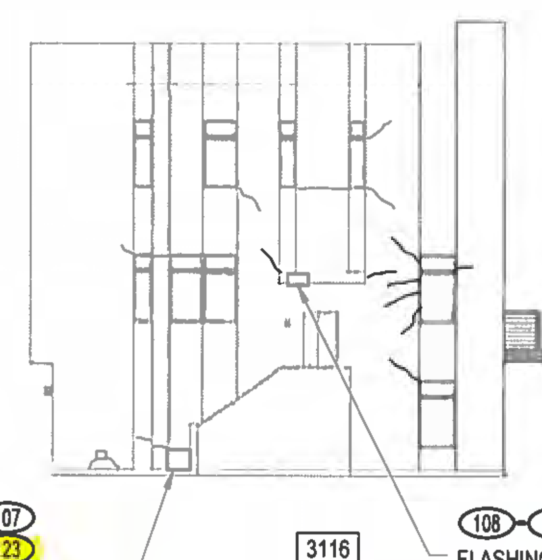
GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING B - 3104-3106-3110-3112-3116
FRONT AND LEFT ELEVATION (INTRUSIVE)

DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.07

K:\2019\219061.00\000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING B ELEVATIONS.DWG

REAR ELEVATION



RIGHT ELEVATION

BUILDING B - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND

SYMBOL	DISC	DATE	INITIALS
##	IT1	05/13/2019	JBF
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#C	IT4	05/14/2019	ELF
#D	IT5	05/19/2021	JJF
#F	IT7	03/10/2021	JJF
#G	IT8	03/10/2021	SSR

SBSA
a Charles Taylor company
3926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 345-0250

NO.	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE	DESCRIPTION
-	NPP	SSR	JJF	06/22/2021	RULE 26A DISCLOSURE

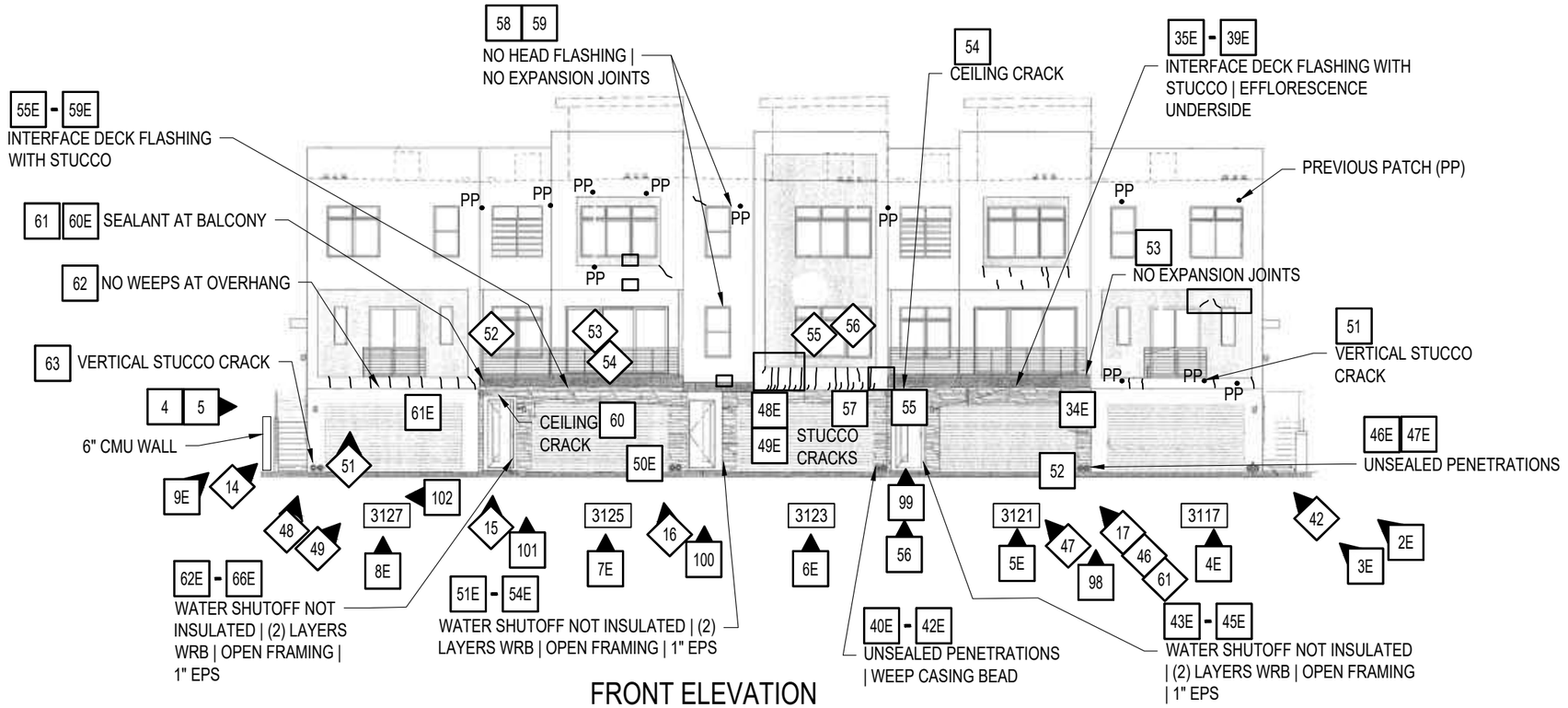
GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING B - 3104-3106-3110-3112-3116
REAR AND RIGHT ELEVATION (INTRUSIVE)

DRAWING SCALE:	NTS
JOB NUMBER:	219061.00

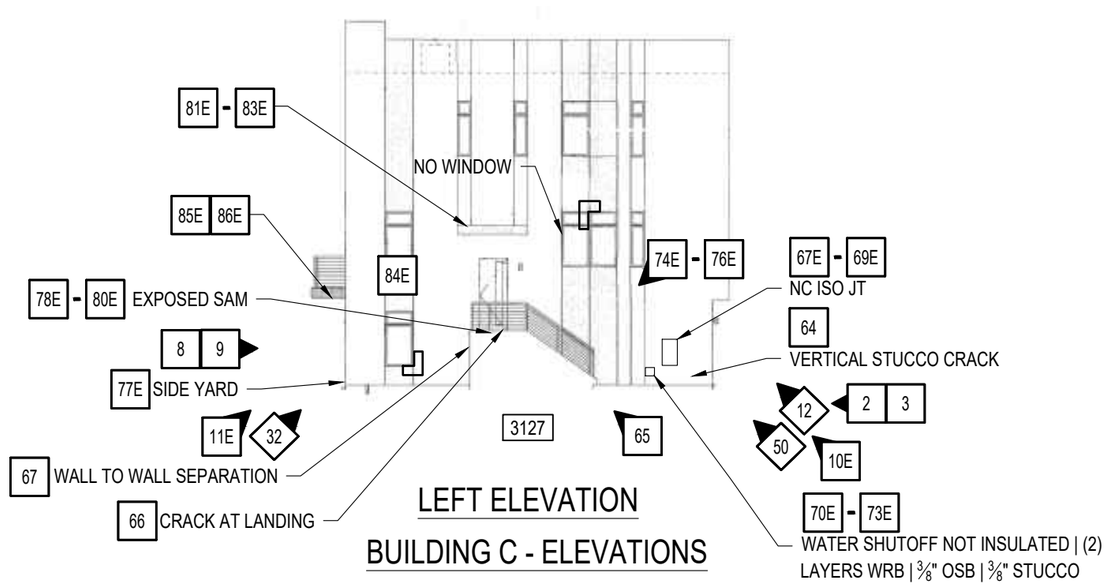
C1.08

K:\2019\21906100\000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING B ELEVATIONS.DWG

1E ADDRESS



FRONT ELEVATION



LEFT ELEVATION

BUILDING C - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
##	OBS1	12/19/2018	JBF
##	IR1	05/14/2019	ELF
#E	OBS6	03/11/2021	JJF

SBSA
a Charles Taylor company
5926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 345-0250

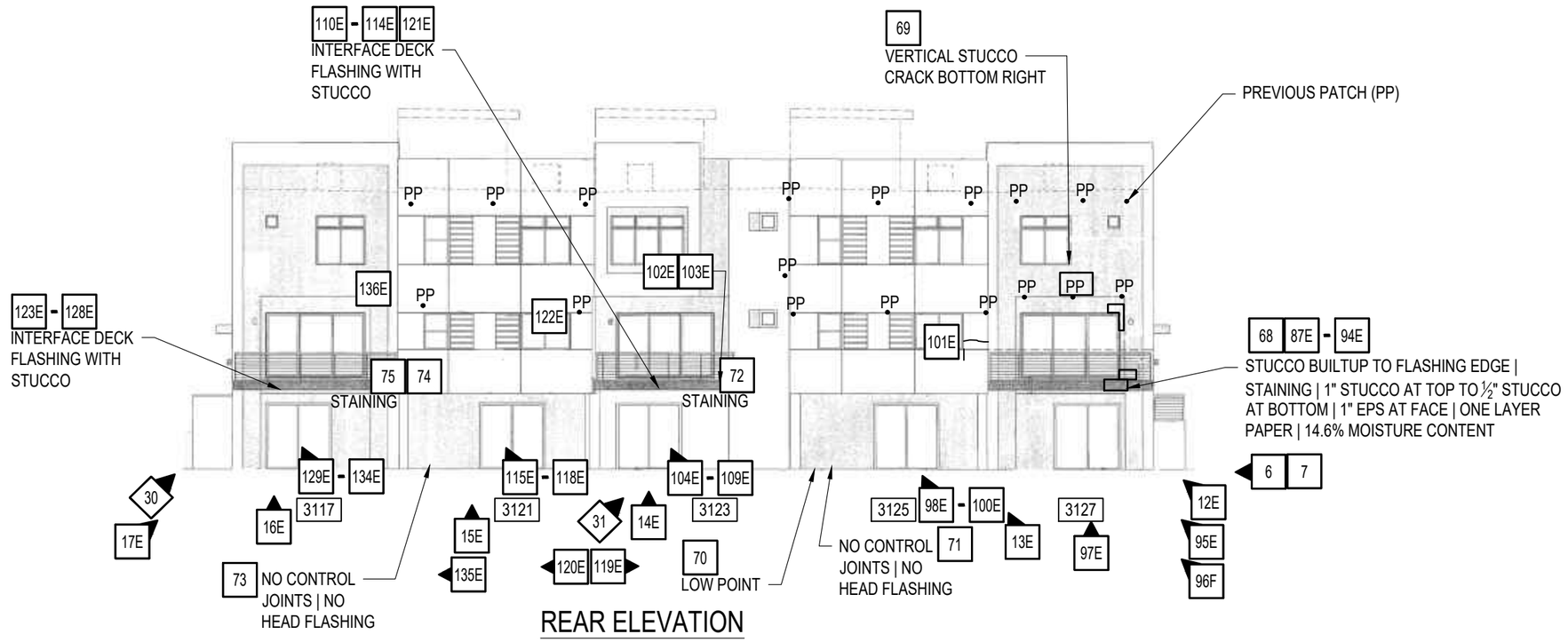
NO	DESCRIPTION	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE	
-	RULE 26A DISCLOSURE	NPP	SSR	JJF	06/22/2021	

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING C - 3127-3125-3123-3121-3117
FRONT AND LEFT ELEVATION

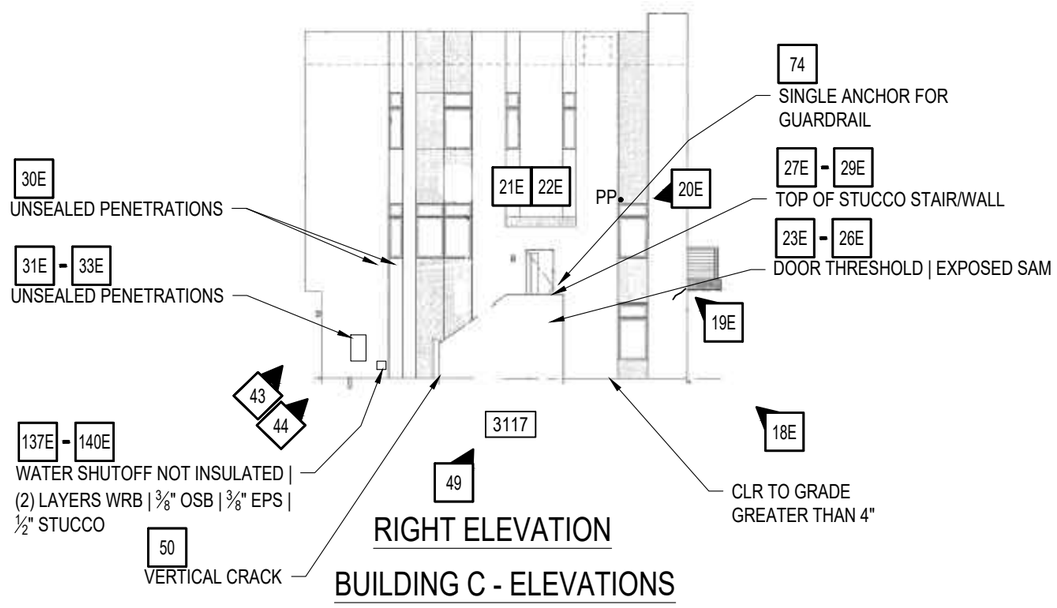
DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.09

K:\2019\219061\00\000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING C ELEVATIONS.DWG



REAR ELEVATION



RIGHT ELEVATION

BUILDING C - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
##	OBS1	12/19/2018	JBF
◇##	IR1	05/14/2019	ELF
#E	OBS6	03/11/2021	JJF

SBSA
a Charles Taylor company
5926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 345-0250

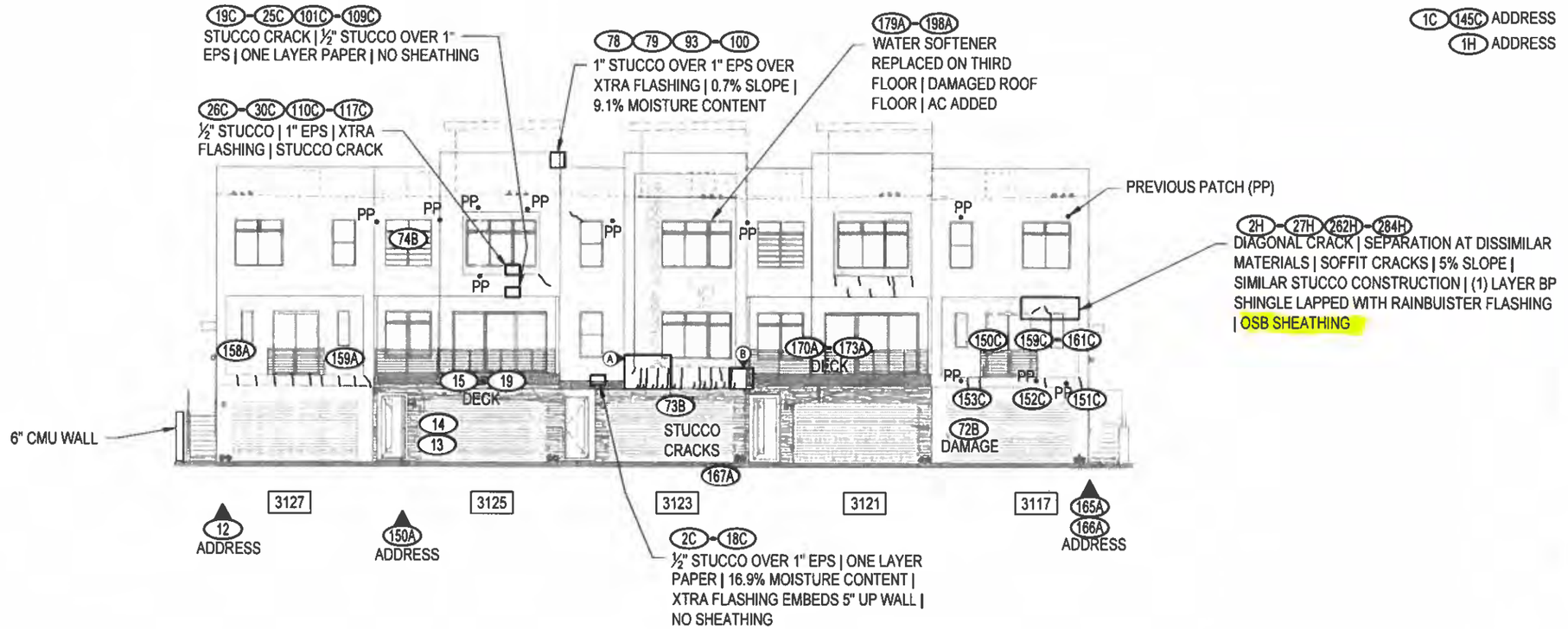
NO.	DESCRIPTION	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE	
-		NPP	SSR	JJF	06/22/2021	RULE 26A DISCLOSURE

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING C - 3127-3125-3123-3121-3117
REAR AND RIGHT ELEVATION

DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.10

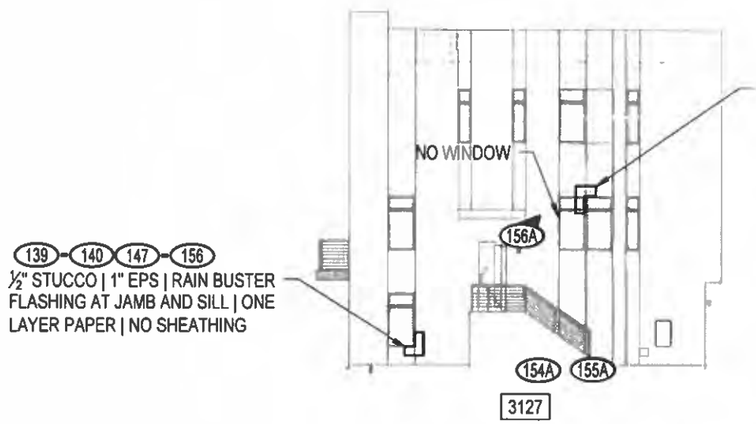
K:\2019\219061\00\000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING C ELEVATIONS.DWG



FRONT ELEVATION

49H 72H 98H 100H 181H 261H
(A) STUCCO SOFFIT MULTIPLE CRACKS 1/32" | SLOPE 4.5% - 6.5% | WINDOW TO STUCCO SEPARATION 1/16" | SIMILAR STUCCO CONSTRUCTION | RUSTED FASTENERS | XTRAFLASH SAM ON INNER LAYER OF BP | NC EPS FOAM BOARD | WINDOW SILL SHINGLE LAPPED WITH RAINBUSTER 9" OVER NC BP | BP TURNED DOWN AND SHINGLE LAPPED WITH XTRAFLASH | XTRAFLASH TURNED UP ON OSB 5" | MULTIPLE PUNCTURE HOLES IN THE SAM

28H 48H 73H 97H 101H 180H
(B) DECK DRIP EDGE INSET AT STUCCO | EFF STAINS | 1/16" CRACK AT JOINT SEPARATION | 1 ½" CLR STUCCO TO DECK | NO WEEPS AT SOFFIT | EPS FOAM BOARD STAINED AND DAMAGED | RUSTED FASTENERS AND LATH | 5/8" STUCCO AND 7/8" EPS FOAM BOARD | NO VERTICAL GROOVES FOR DRAINAGE AT WRB INTERFACE | (1) LAYER BP | GMC 10 MIN BP | BP PUNCTURED WITH FASTENER HOLES | STAINED OSB | INADEQUATE EMBEDMENT OF DECK HANDRAIL FASTENERS | DECK SIDEWALL (1) LAYER BP SHINGLE LAPPED WITH 3 ½" VERTICAL LEG OF BASE FLASHING



139 140 147 156
½" STUCCO | 1" EPS | RAIN BUSTER FLASHING AT JAMB AND SILL | ONE LAYER PAPER | NO SHEATHING

141 143 157 173
½" STUCCO | 1" EPS | ONE LAYER PAPER | RAIN BUSTER FLASHING | NO WEEPS | NO HEAD FLASHING | NO SHEATHING | RUSTED FASTENERS

LEFT ELEVATION

BUILDING C - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
##	IT1	05/13/2019	JBF
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#C	IT4	05/14/2019	ELF
#H	IT9	03/10/2021	PER

SB|SA
a Charles Taylor company
5996 McIntyre Street
Golden, CO 80403
Ph (303) 420-7272
Fax: (720) 345-8250

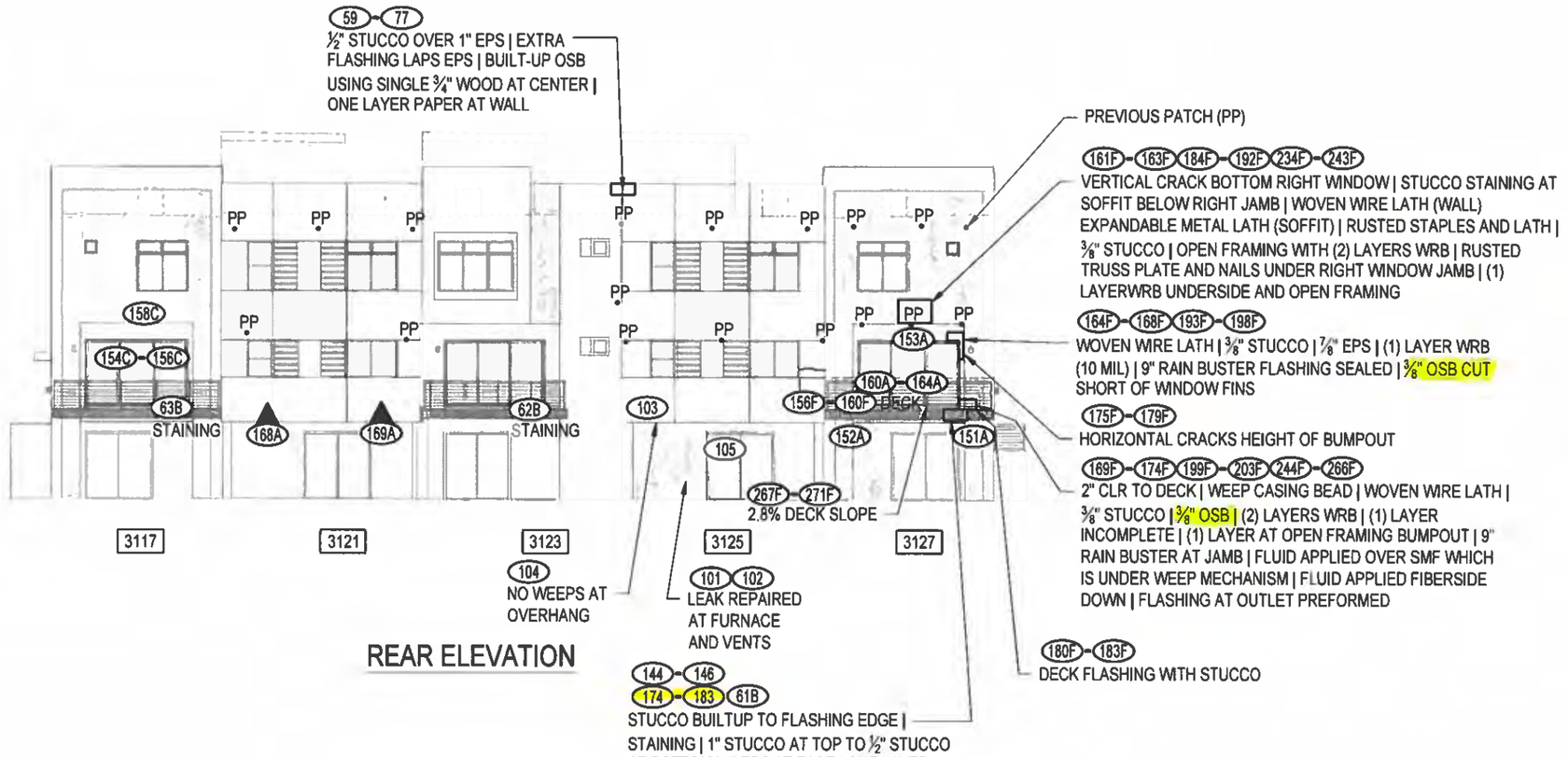
NO.	DESCRIPTION	DATE	DRAWN BY	DESIGNED BY	REVIEWED BY
	RULE 36A DISCLOSURE	06 .22/2021	NPP	SSR	JTF

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING C - 3127-3125-3123-3121-3117
FRONT AND LEFT ELEVATION (INTRUSIVE)

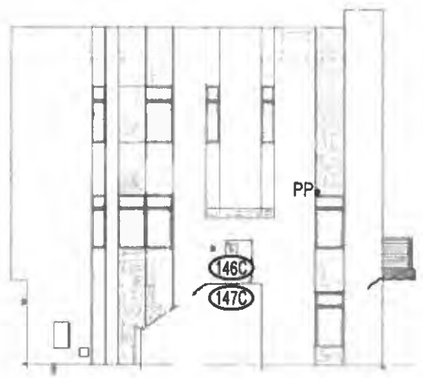
DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.11

K:\ 2019\ 219061\00\ 000 - GENERAL\ 05 DRAWINGS\ 01 CAD FILES\ GALLERY BUILDING C ELEVATIONS.DWG



REAR ELEVATION



RIGHT ELEVATION

BUILDING C - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
#	IT1	05/13/2019	JBF
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#C	IT4	05/14/2019	ELF
#H	IT9	03/10/2021	PER

SB|SA
a Charles Taylor company
3926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 365-0250

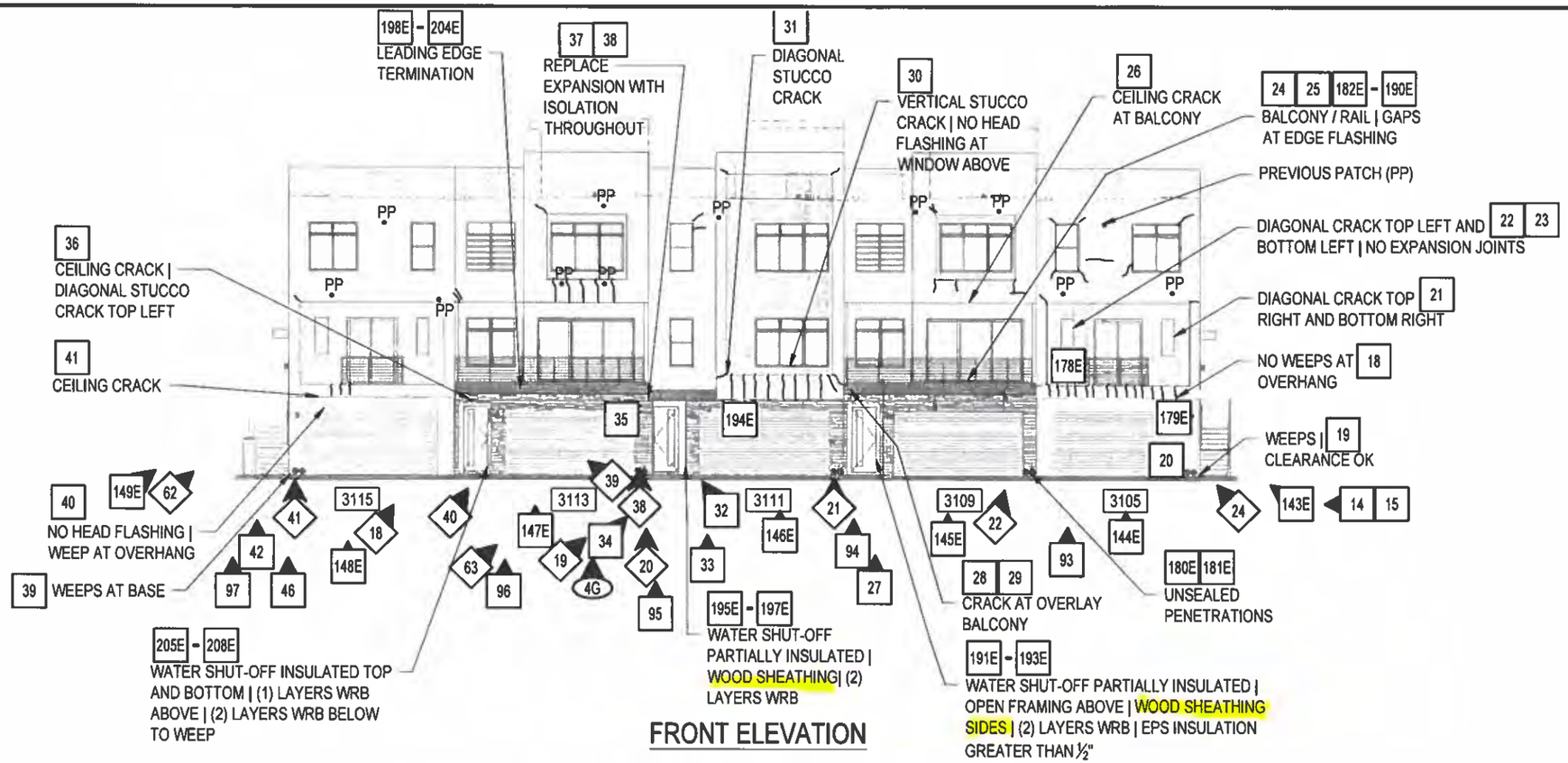
NO.	DESCRIPTION	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE
	RULE 36A DISCLOSURE	NPP	SSR	JTF	06.22.2021

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING C - 3127-3125-3123-3121-3117
REAR AND RIGHT ELEVATION (INTRUSIVE)

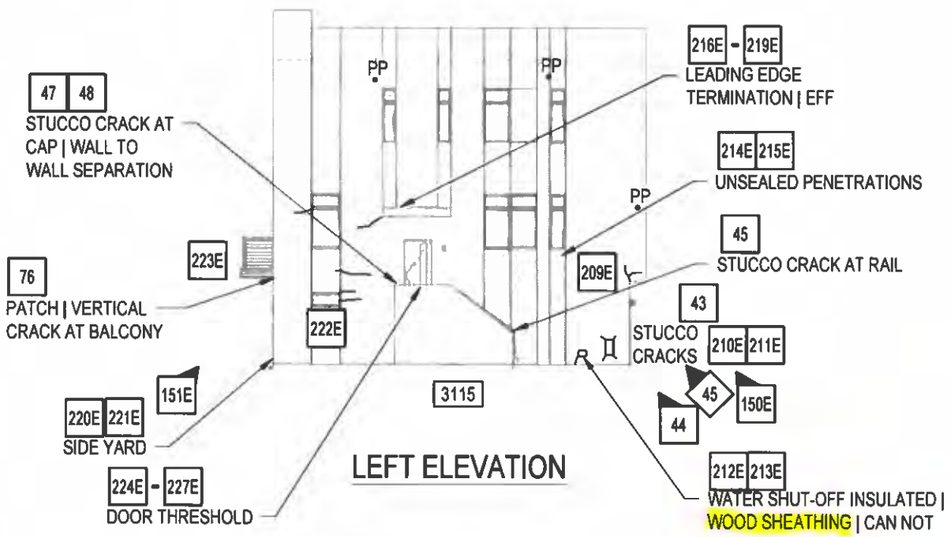
DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.12

K:\2019\219061.00\000 GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING C ELEVATIONS.DWG



FRONT ELEVATION



LEFT ELEVATION

BUILDING D - ELEVATIONS

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND

SYMBOL	DISC	DATE	INITIALS
##	OBS1	12/19/2018	ELF
##	IR1	05/14/2019	ELF
#E	OBS6	03/11/2021	JJF

SB|SA
a Charles Taylor company
3938 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 345-0250

NO.	DESCRIPTION	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE
	RULE 36A DISCLOSURE	NPP	SSR	JJF	06/22/2021

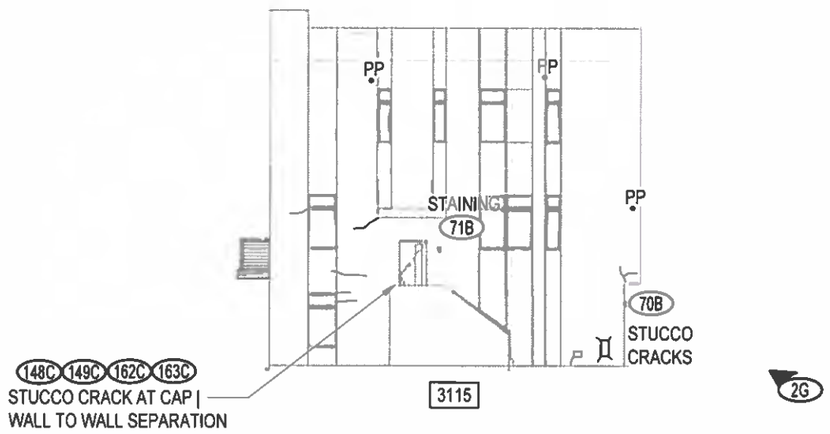
GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING D - 3115-3113-3111-3109-3105
FRONT AND LEFT ELEVATION

DRAWING SCALE: NTS
JOB NUMBER: 219061 00

C1.13

K:\ 2019\ 219061 00\ 000 - GENERAL\ 05 DRAWINGS\ 01 CAD FILES\ GALLERY BUILDING D ELEVATIONS.DWG

FRONT ELEVATION



LEFT ELEVATION

BUILDING D - ELEVATIONS

8G 30G 173G 207G

Ⓐ NC ISO JT | 1/16" SEPARATION AT WINDOW | MULTIPLE CRACKS | 1/32" | STAINS | WEEPS AT SOFFIT | STAINS | 16x10 VENT COVER | (2) LAYERS OF BP | ½" EPS AT OSB | ⅞" EPS AT OPEN FRAMING UNDER WINDOW | RAINBUSTER SHINGLE LAPPED WITH WINDOW JAMB AND SILL FLANGE | NO BOND | NO FLASHING AT VENT | BP SHINGLE LAPPED OVER 1" VENT FLANGES | NO WEEPS | ISO JT PROVIDED AT VENT ONLY

31G 42G 208G 229G

Ⓑ NC ISO JT | 1/32" SEPARATION AT WINDOW HEAD | 3/16" FINISH COAT SEPARATION | NO SMHF | NO WEEPS | 1" EPS FOAM OVER (1) LAYER BP | OSB MISSING ADJACENT TO WINDOW | NC LATERAL FORCE RESISTING SYSTEM | RAINBUSTER AT HEAD AND JAMBS SHINGLE LAPPED OVER WINDOW AND SEALED | PUNCTURE HOLES

43G 66G 231G 298G

Ⓒ STAINS | EFF | MULTIPLE CRACKS 1/16" - 1/32" | 14% SLOPE | NO WEEPS AT SOFFIT | STAINS | (1) LAYER BP OVER OPEN FRAMING | MISSING OSB | BP SHINGLE LAPPED OVER XTRAFLASH SAM TURNED UP 3" - 4" FROM SOFFIT | MULTIPLE PUNCTURE HOLES IN SAM | WINDOW FLANGE SHINGLE LAPPED WITH RAINBUSTER SHINGLE LAPPED WITH BP AT SOFFIT | ⅞" EPS OVER XTRAFLASH SAM AT BUMP-OUT | (1) LAYER BP OVER STUD FRAMING OVER XTRAFLASH | CS16 TENSION STRAP NOT ENGAGED AT SOFFIT UNDER SIDE | (1) LAYER BP CONTINUES FROM ABOVE AND TURNED IN | DECK LEVEL STAIN AT EXTERIOR CUT END

67G 108G 111G 172G

Ⓓ ¾" CLR WEEP CORNER BEAD TO DECK | 3" DRIP EDGE FLASHING | MULTIPLE CRACKS 1/16" - 1/32" | NO WEEPS AT SOFFIT | CRACKS AND STAINS | DECK EDGE FLASHING INSET AT STUCCO | STAINS ON FOAM | RUSTED FASTENERS | (1) LAYER BP AT DECK LVL BEAM | STAINS ON LVL | ½" STUCCO | ⅞" EPS FOAM | NO TONGUE AND GROVE AT JOINTS | OPEN FRAMING AT BUMPOUT | (1) LAYER BP SHINGLE LAPPED WITH 3 ½" VERTICAL FLASHING LEG | XTRAFLASH SAM AT CORNERS TURNED DOWN OVER INNER LAYER OF BP | MULTIPLE PUNCTURE HOLES IN SAM

TYPICAL NOTES:
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

INDICATES APPROXIMATE AREA OF MISSING OSB AGAINST REQUIRED LATERAL FORCE RESISTANCE SYSTEM

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
#	IT1	05/13/2019	JBF
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#C	IT4	05/14/2019	ELF
#G	IT8	03/10/2021	SSR

SBSA
a Charles Taylor company
5926 McIntyre Street
Golden, CO 80403
Ph: (303) 425-7272
Fax: (720) 345-0250

NO.	DESCRIPTION	DATE	DRAWN BY	DESIGNED BY	REVIEWED BY
	RULE 24A DISCLOSURE	06 .22/2021	NPP	SSR	JJF

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING D - 3115-3113-3111-3109-3105
FRONT AND LEFT ELEVATION (INTRUSIVE)

DRAWING SCALE: NTS
JOB NUMBER: 219061 00

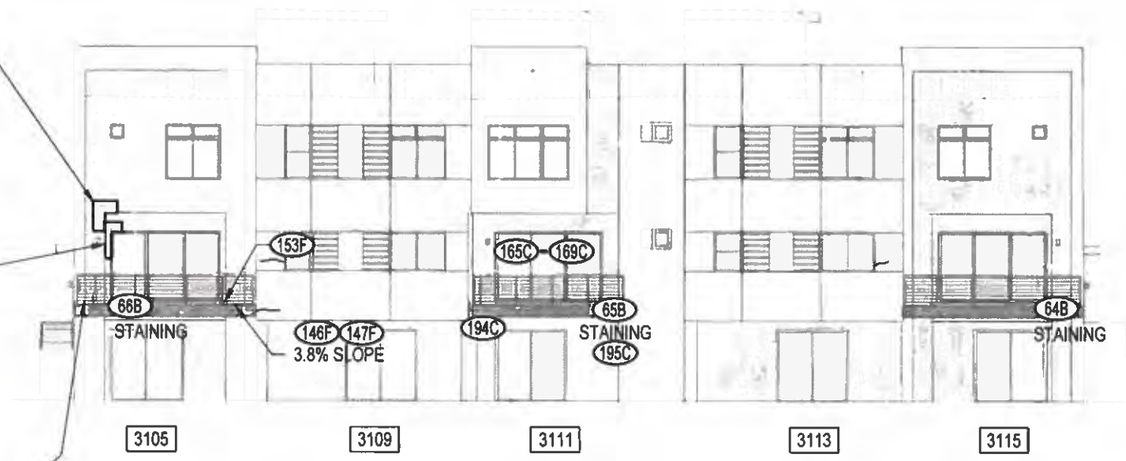
C1.15

1F ADDRESS

95F - 99F - 114F - 130F
STUCCO CRACKS AT CORNER | ⅜" TO ½" STUCCO THICKNESS | WOVEN WIRE LATH (WALL) AND EXPANDED METAL LATH (SOFFIT) | ⅞" EPS NO VERTICAL GROOVES AT WALL | NO EPS ON UNDERSIDE | RUSTED NAILS AT BOTTOM OF OVERHANG | (2) AND (3) LAYERS OF WRB

100F - 104F - 110F - 113F - 131F - 145F
⅜" TO ½" STUCCO THICKNESS | WOVEN WIRE LATH | ⅜" EPS | 9" WIDE (RAIL BUSTER) FLASHING AT HEAD AND JAMB | SEALANT AT WINDOW FLANGE | ⅜" OSB SHEATHING | (1) LAYER WRB ABOVE WINDOW | (2) LAYER WRB AT JAMB | OSB SHORT OF WINDOW FLANGE

148F - 152F - 154F - 155F
4" CLR TO SMF | UNDER WINDOW / DOOR

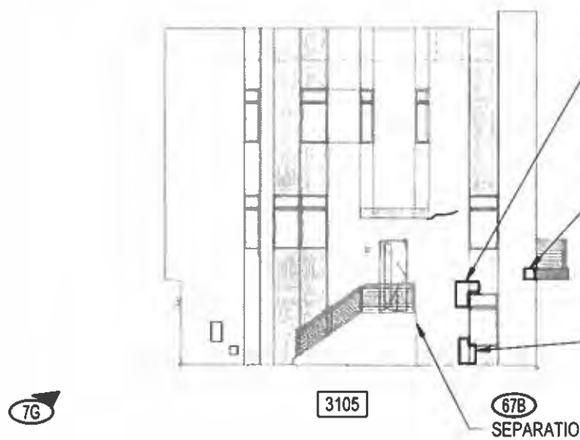


REAR ELEVATION

2F - 7F - 15F - 32F
NO ISO JT | WINDOW SEPARATION | NO WINDOW WEEPS | WOVEN WIRE LATH | ⅞" EPS WITH NO VENT GROOVES | 9" WIDE LOOSE WINDOW FLASHING | WINDOW SEALED AT PERIMETER | UNDER AND OVER FLASHING | OPEN FRAMING | (1) LAYER WRB

51F - 61F - 63F - 94F
½" STUCCO | WOVEN WIRE LATH | SEALANT AT DECK INTERFACE | WOVEN WIRE LATH | ⅜" AND ⅞" EPS | ⅜" OSB AT DECK LEVEL ON WALL | (1) LAYER WRB | ABOVE AND BELOW OSB STRIP OPEN FRAMING WITH (2) LAYERS WRB | DECK BEAM WITH (2) LAYERS WRB (1) LAYER WRB LAPPED WITH WEEP ABOVE DECK | 1" CLR TO DECK | RUSTED NAILS

8F - 14F - 33F - 50F - 62F
NO ISO JT (TYP) | WINDOW SEPARATION | WOVEN WIRE LATH | (1) LAYER WRB | (RAIN BUSTER) | OPEN FRAMING | 9" WIDE LOOSE WINDOW FLASHING | SEALANT | ⅜" TO ½" STUCCO THICKNESS



RIGHT ELEVATION

TYPICAL NOTES
- NO HORIZONTAL CONTROL JOINTS AT FLOOR LEVEL.
- NO VERTICAL CONTROL JOINTS AT FRONT AND REAR ELEVATIONS.
- NO ISOLATION JOINTS BETWEEN DISSIMILAR MATERIALS.
- NO SHEET METAL HEAD FLASHING AT DOORS AND WINDOWS
- NO WEEPS AT HORIZONTAL TERMINATION ABOVE FENESTRATIONS AND AT SOFFITS

PHOTO LEGEND			
SYMBOL	DISC	DATE	INITIALS
#1	IT1	05/13/2019	JBF
#A	IT2	05/13/2019	ELF
#B	IT3	05/14/2019	JBF
#C	IT4	05/14/2019	ELF
#F	IT7	03/10/2021	JJF
#G	IT8	03/10/2021	SSR

BUILDING D - ELEVATIONS

SB|SA a Charles Taylor company
9936 McIntyre Street
Golden, CO 80403
Ph. (303) 425-7272
Fax: (720) 345-0250

NO.	DESCRIPTION	DRAWN BY	DESIGNED BY	REVIEWED BY	DATE
	RULE 256A DISCLOSURE	NPP	SSR	JJF	06/22/2021

GALLERY
SCOTTSDALE, AZ
OBSERVATION DRAWING SET
BUILDING D - 3115-3113-3111-3109-3105
REAR AND RIGHT ELEVATION (INTRUSIVE)

DRAWING SCALE: NTS
JOB NUMBER: 219061.00

C1.16

K:\2019\219061\00_000 - GENERAL\05 DRAWINGS\01 CAD FILES\GALLERY BUILDING D ELEVATIONS.DWG