June 9, 2023

Robert N. Gregory
West Huntley Gregory
100 South Ridge Street, Suite 204
Breckenridge, Colorado 80424

Project Number:	223157.00 (030)
Project Name:	Smith v. Liscott
Location:	101 Mule Deer Court Dillon, Colorado 80435

Subject: Construction and Contract Forensic Review

Dear Mr. Gregory:

Per your request, Charles Taylor Engineering Technical Services (CTETS) conducted a visual site observation, including limited interior observations and exterior observations, at the Smith residence located in Dillon, Colorado. The forensic evaluation also consisted of a review of the relevant disclosed files, as noted within this report, which have been used as the basis in the development of our analysis and determination of our conclusions.

Field observations were performed by Darwin L. Cooprider on May 17, 2023. This field work consisted of observing and photographing the as-built conditions that were not in conformance with the intent of the project. These findings were recorded and transcribed in this report and the attached documents.

The scope of this report does not include evaluation or opinions related to the potential diminution of value of the property due to the defective or non-compliant issues.

Nearmap image, June 9, 2021, site prior to commencement of work.

Nearmap image, June 16, 2022, showing the incomplete construction site.

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BACKGROUND

On September 22, 2020, a General Contract Agreement (Agreement) was entered into between Liscott Custom Homes Ltd (Liscott) as the Contractor and Ben and Holly Smith as the Owner for the construction of a single-family-system built home at 101 Mule Court in Dillon Colorado. The contractual obligations for the Work included construction of the site as necessary and installation of manufactured modular components that would be provided by Heritage Homes of Nebraska to provide the full completion of the site, MEP, and vertical construction.

The total cost of the Contracted Work is shown in the Agreement as $1,034,441.82. The scope of the Work is further annotated in the Agreement and the associated schedule of values. However, the attachments to the contract indicated a higher total estimate.

As described in the Agreement, it was stated that the Scope of Work was that the "*Subcontractor agrees to assist the Contractor in coordination of operations on the said property including: Site work for new home, foundation, New Custom System Built home installation, labor and equipment to provide a Final CO. All GC work will be detailed on the schedule of values provided on the invoice, the SOV will be contractual. These numbers are estimates and subject to change during construction*."

The site work breakdown was estimated by Liscott at $556,905.00, the Modular Home at $549,593.92, the Engineering Breakdown of $7,436.00, and Plan Review Fee of $7,000.00 for a total of $1,120,934.92.

The work commenced approximately September 2022 and required to be completed by April 1, 2022. The Work was defective, incomplete, provided without proper workmanship, and having cost overruns due to the poor performance of the Contractor.

The modular or manufactured homes are provided under the requirements of the State of Colorado. The following provides the definitions of these systems:

The home is, by definition, a Modular Home, and the Contractor then took on the responsibility to validate the home meets the current IRC and other required codes.

Manufactured Housing Installation Standards , available through the Division of Housing in the form of the "Installation Handbook" and located at: Building Codes and Standards | Department of Local Affairs (colorado.gov), states the following:

- *2.12 Pursuant to section 24-32-3310, C.R.S., nothing in this rule is intended to interfere with the right of a local jurisdiction to enforce its rules governing the installation of a manufactured home as long as those rules are not inconsistent with this rule. Pursuant to section 24-32-3318, C.R.S., a local jurisdiction may not adopt less stringent standards for the installation of a manufactured home than those adopted by the Division and may not adopt a different standard without express consent by the Division. However, a local jurisdiction may adopt unique public safety requirements such as weight restrictions for snow loads or wind shear factors.*
    - *2.12.1 Factory-built residential structures (modular) must be installed on a permanent foundation approved through the local jurisdiction. In areas where no building codes have been adopted, the foundation must be designed and approved by a State of Colorado licensed engineer unless plans are approved by the Division and in compliance with its adopted International Residential Code (IRC) foundation prescriptive requirements*.

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The installation of the home must be provided by an approved installer under DOLA[1]. The defined terms Manufactured by DOLA or the local government is as follows:

- *"Manufactured Home Built to Department of Housing and Urban Development (HUD) Standards,*

  Manufactured homes are typically placed on a temporary foundation and titled. Manufactured homes can also be placed on a permanent foundation and never titled. Titled manufactured homes may or may not have the axles and wheels in place. For structural reasons, the I-beams must be left in place, even if the home is placed on a permanent foundation. Manufactured homes have a red HUD plate on the left rear side of each section. Definitions (7.8) "Manufactured home" means any pre constructed building unit or combination of pre constructed building units that: Includes electrical, mechanical, or plumbing services that are fabricated, formed, or assembled at a location other than the residential site of the completed home Is designed and used for residential occupancy in either temporary or permanent locations Is constructed in compliance with the "National Manufactured Housing Construction and Safety Standards Act of 1974", 42 USC. Sec. 5401 et seq., as amended Does not have motive power Is not licensed as a vehicle, and is eligible for a certificate of title pursuant to part 1 of article 29 of title 38, C.R.S. § 39-1-102, C.R.S.

- *Modular Home*

  Modular homes are factory built to standards set by International Residential Code (IRC), and International Building Code (IBC) for non-residential property. Prior to 2003, the standards were set by Uniform Building Code (UBC). Modular homes are typically placed on a permanent foundation and not titled. I-beams may be used during transport for support; however, they are removed when the homes are set. Modular homes are identified by a silver plate located under the kitchen sink.

CTETS understands that the following parties were involved with the construction of this site. Presently, no allocation of potential fault has been assigned under the work of this report:

- David Hasse, 1888 Electrical, 435-790-3584. This subcontractor installed all electrical in the house and hooked up cross sections.
- Jay Burnett, Colorado Hardwood Floors 303-656-5866. This subcontractor installed floors throughout the main floor using wood provided by Heritage Homes.
- Chris Bridgeford, Integrity Concrete 720-660-6558. This subcontractor installed foundation, piers, porches, garage slab, etc.
- Mike Lewellen, Lewellen Home Improvement, 303-419-4581. This subcontractor installed the garage, porches, siding, etc.
- Zack of MJB Plumbing & Heating, 719-491-4143. This subcontractor installed all plumbing for water, sewer, gas.
- Claudio Saucedo, Saucedo Drains, 720-353-7480. This subcontractor installed all damp proofing, water proofing and drainage pipe.
- Tim Stienike, Stienike Construction, 303-638-4720. This subcontractor set the home, tied all boxes together and attached the sections of home.

[1] Code of Colorado Regulations (state.co.us)

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- Terry of Terry's Crane & Rigging. This subcontractor craned the house to the foundation.
- Robert Cowley of Liscott Custom Homes. The general contractor performed the excavation, grading, and compaction of the home, as well as built the stairs in the basement and utility room, and also conducted the initial welding of the structural steel beam.

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PROJECT DOCUMENTATION REVIEWED

The following project-specific documentation was reviewed by CTETS as a part of its scope of work for this project:

- CTL | Thompson Inc., "Soils and Foundation Investigation | Proposed Residence | Lot 5, Block 16 | Whispering Pines Ranch Sub #8 | 101 Mule Deer Court | Summit County, Colorado," August 7, 2019.
- West Huntley Gregory, "Notice of Claim Pursuant to Colo. Rev. Stat. § 13-20-801, *et seq.* and Offer of Settlement," May 5, 2022.
- Chipman | Glasser, "Re: Holly and Ben Smith Notice of Claim," May 9, 2022.
- West Huntley Gregory, "Amended Notice of Claim Pursuant to Colo. Rev. Stat. § 13-20-801, *et seq.,*" June 10, 2022.
- Chipman | Glasser, "Re: Smith CDARA Demand Under CRS § 13-20-803.5," July 12, 2022.
- Claimants Holly and Ben Smith Initial Disclosures, Bates Numbers SMITH_000001 – 000138, February 24, 2023, and Additional Documents Including:
    - Certificates of Insurances
    - Contractor Agreement
    - Various Redacted Emails
    - Home Purchase Agreement
    - Various Texts
    - Redacted Welder Statement Regarding Defects
- Respondent Liscott Custom Homes, Ltd.'s Initial Disclosures, Bates Numbers LISCOTT 00001 - 00662, February 24, 2023.
- Claimants Holly and Ben Smith First Supplemental Disclosures, Bates Numbers SMITH_000139 – 000225, March 2, 2023.
- Claimants' Holly and Ben Smith Second Supplemental Disclosures, Bates Numbers SMITH_000226 – 000254, April 19, 2023.
- Various Project Documents, Including Project Drawings, Bates Numbers SMITH_000255 – 000259, Received May 15, 2023.
- Claimants' Holly and Ben Smith Third Supplemental Disclosures, Bates Numbers SMITH_000255 – 000528 and HERITAGE_000001 – 002669.
- Site Obs. Summary – images and email responses, Received June 7, 2023.

STANDARD OF CARE

When assessing the standard of care for a project, CTETS assesses the parties based on their relative responsibility on the project. Based on our education and experience and based, in part, on common contract language used throughout the industry, CTETS relies upon the following:

The standard of care for any construction professional(s), such as any developer/builder, designer, general contractor, and subcontractor, among others, and the related services performed by each will be: (1) the care and skill ordinarily used by members of the respective profession under the same or similar circumstances at the same time and in the same location; and (2) the project-specific standards as required by the contract, the project documents, and/or by local rules and regulations as detailed below.

The term "standard," as used within this report, shall be the minimum guidelines necessary as called for in the project documents, codes, industry standards, standard settings, and testing agencies. Adherence to this standard ensures that a minimum level of quality has been provided for the construction of the project to meet the needs of each product, the incorporation of the products, and the level of quality anticipated by the project documents.

On this project, the General Contractor (GC), Liscott Custom Homes, was responsible for the contracting of the subcontractors and the construction of the Project. The GC, in this instance, had the duty to provide supervision, quality control and, ultimately, construct the Project, ensuring the construction met the minimum standards of the applicable codes, designs, specifications, product installation recommendations, and industry guidelines.

According to the disclosed documents, Heritage Homes indicates that Liscott has poorly provided their expectation of the standard of care when constructing, placing, and finishing their product:

Dana Tompkins of Heritage Homes of Nebraska wrote the following based on their site visit on July 6, 2022: "*Bob and I were invited to come see the condition of the construction on their new home. We observed several issues relating to the foundation, setting service, and on-site work. I need to note that most new construction jobsites appear messy and unorganized until completion and this one is no exception. It is my belief all great projects start with good footings and foundation, properly designed and constructed for the site conditions*." And further stated "*It disappoints me to see the end result get so far off track. There was an apparent lack of on-site management and control of this project. It started with the inappropriate foundation, then poor setting of the modular, and continued insufficient management of the site finish crews, apparently. I believe the builder needs to be concerned and remediate this as soon as possible*." (Bates Numbers Heritage_000118-000119). CTETS agrees that the foundation system and site setting is one of the most important aspects to provide for quality construction and limit the need for field attempts to cure damages to the supported modulars, finishes, fixtures, and appurtenances.

According to the State of Colorado approved plans (Division of Housing, June 19, 2020) the applicable codes as required under 8 CCR 1302-4 Administrative Rules for the project included the 2018 International Residential Code (IRC), the 2018 International Mechanical Code (IMC), the 2018 International Plumbing Code (IPC), the 2017 National Electrical Code (NEC), and the 2015 International Energy Conservation Code (ICC). In addition, the Town of Dillon and Summit County would have required specific application to their own local adoptions. The 2018 codes, as well as the state and jurisdictional standards, do not include all standards as prescriptive adoptions necessary for the design and construction of the site and buildings. The building codes, manufacturer standards and guidelines, and industry guidelines allow the use of alternates either in full or in part to supplement the code. Further, the building codes adopt and reference many standards pursuant to specific manufacturer products and applications. In addition to these guidelines,

architects, engineers, and construction professionals must always be alert to conditions that are unique to each project that require design and construction quality.

Colorado Revised Statutes, 2021, Section T24-32-3325 "Contract for sale of manufactured home – requirements," states the following:

- *"(1) A seller who is required to register with the division pursuant to section 24-32-3323 shall make the following disclosures in any contract for the sale of a manufactured home:*

  (a) That the buyer may have no legal right to rescind the contract absent delinquent delivery of the manufactured home or the existence of a specific right of rescission set forth in the contract;

  (b) That the seller has a separate fiduciary account for the escrow of home sale down payments pending delivery of the manufactured home and a letter of credit, certificate of deposit, or surety bond filed with the division for the repayment of home sale down payments pending delivery of manufactured homes;

  (c) That an aggrieved person may file a complaint for a refund of a down payment held in escrow by a seller of manufactured homes against the seller with the attorney general or with the district attorney for the district in which the sale occurs; and

  (d) That an aggrieved person may bring a civil action pursuant to the provisions of the "Colorado Consumer Protection Act", article 1 of title 6, C.R.S., to remedy violations of manufactured home seller requirements in this part 33.

- *(2) A contract for the sale of a manufactured home by a person who is required to register with the division pursuant to section 24-32-3323 shall contain the following provisions:*

  (a) A date certain for the delivery of the manufactured home or a listing of specified delivery preconditions that must occur before a date certain for delivery can be determined; and

  (b) A statement that if delivery of the manufactured home is delayed by more than sixty days after the delivery date specified in the contract of sale or by more than sixty days after the delivery preconditions set forth in the contract of sale have been met if no date certain for delivery has been set, the seller will either refund the manufactured home sale down payment or provide a reasonable per diem living expense to the buyer for the days between the delivery date specified in the contract or the sixty-first day after the delivery preconditions set forth in the contract have been met, whichever is applicable, and the actual date of delivery, unless the delay in delivery is unavoidable or caused by the buyer."

eCFR.gov, Code of Federal Regulations, Title 24 "Housing and Urban Development," Part 3282 "Manufactured Home Procedural and Enforcement Regulations," Section 3282.1 "Scope and purpose," states the following:

- *"The National Manufactured Housing Construction and Safety Standards Act of 1974 (title VI of Pub. L. 93-383, 88 Stat. 700, 42 U.S.C. 5401, et seq.) (hereinafter referred to as the Act), requires the Secretary of the Department of Housing and Urban Development to establish Federal manufactured home construction and safety standards and to issue regulations to carry out the purpose of the Act. The standards promulgated pursuant to the Act appear at part 3280 of chapter XX of this title, and apply to all manufactured homes manufactured for sale to purchasers in the United States on or after the effective date of the standards (June 15, 1976). A manufactured home is manufactured on or after June 15, 1976, if it enters the first stage of production on or after that date."*

eCFR.gov, Code of Federal Regulations, Title 24 "Housing and Urban Development," Part 3282 "Manufactured Home Procedural and Enforcement Regulations," Section 3282.7 "Definitions," states the following:

- *"**Standards** means the Federal manufactured home construction and safety standards promulgated under section 604 of the Act, 42 U.S.C. 5403, as part 3280 of these regulations."*

Regarding the basement, attached garage, and attached porch:

eCFR.gov, Code of Federal Regulations, Title 24 "Housing and Urban Development," Part 3282 "Manufactured Home Procedural and Enforcement Regulations," Section 3282.8 "Applicability," states the following:

- *"(j) Add-on. An add-on including an attached accessory building or structure added by the retailer or some party other than the manufacturer (except where the manufacturer acts as a retailer) as part of a simultaneous transaction involving the sale of a new manufactured home, is not governed by the standards and is not subject to the regulations in this part except as identified in this section and part 3280 of this chapter. The addition of any add-on or attached accessory building or structure must not affect the ability of the manufactured home to comply with the standards. If the addition of an add-on or attached accessory building or structure causes the manufactured home to fail to conform to the standards, then sale, lease, and offer for sale or lease of the home are prohibited until the manufactured home is brought into conformance with the standards.*

  (1) With the exception of attached accessory buildings or structures, add-ons must be structurally independent and any attachment between the home and the add-on must be for weatherproofing or cosmetic purposes only.

  (2) If an attached accessory building or structure is not structurally independent all the following must be met for attachment to the manufactured home:

    (i) Manufactured home must be designed and constructed to accommodate all imposed loads, including any loads imposed on the home by the attached accessory building or structure, in accordance with part 3280 of this chapter.

    (ii) Data plate must indicate that home has been designed to accommodate the additional loads imposed by the attachment of the attached accessory buildings or structures and must identify the design loads.

    (iii) Installation instructions shall be provided by the home manufacturer which identifies acceptable attachment locations, indicates design limitations for the attached accessory building or structure including acceptable live and dead loads for which the home has been designed to accommodate and provide support and anchorage designs as necessary to transfer all imposed loads to the ground in accordance with part 3285 of this chapter.

  (k) A structure (including an expandable room, tip-out, or tag-along unit) which is designed and produced as an integral part of a manufactured home when assembled on site, is governed by the standards and these regulations regardless of the dimensions of such structure."

Regarding the combination of the manufactured home and use as a modular home:

eCFR.gov, Code of Federal Regulations, Title 24 "Housing and Urban Development," Part 3282 "Manufactured Home Procedural and Enforcement Regulations," Section 3282.12 "Excluded structures – modular homes," states the following:

- *"(a) The purpose of this section is to provide the certification procedure authorized by section 604(h) of the National Manufactured Housing Construction and Safety Standards Act under which modular homes may be excluded from coverage of the Act if the manufacturer of the structure elects to have them excluded. If a manufacturer wishes to construct a structure that is both a manufactured home and a modular home, the manufacturer need not make the certification provided for by this section and may meet both the Federal manufactured home requirements and any modular housing requirements. When the certification is not made, all provisions of the Federal requirements shall be met.*

  (b) Any structure that meets the definition of manufactured home at 24 CFR 3282.7(u) is excluded from the coverage of the National Manufactured Housing Construction and Safety Standards Act, 42 U.S.C. 5401 et seq., if the manufacturer certifies as prescribed in paragraph (c) of this section that:

  (1) The structure is designed only for erection or installation on a site-built permanent foundation;

  (i) A structure meets this criterion if all written materials and communications relating to installation of the structure, including but not limited to designs, drawings, and installation or erection instructions, indicate that the structure is to be installed on a permanent foundation.

  (ii) A site-built permanent foundation is a system of supports, including piers, either partially or entirely below grade which is:

  (A) Capable of transferring all design loads imposed by or upon the structure into soil or bedrock without failure,

  (B) Placed at an adequate depth below grade to prevent frost damage, and

  (C) Constructed of concrete, metal, treated lumber or wood, or grouted masonry; and

  (2) The structure is not designed to be moved once erected or installed on a site-built permanent foundation;

  (i) A structure meets this criterion if all written materials and communications relating to erection or installation of the structure, including but not limited to designs, drawings, calculations, and installation or erection instructions, indicate that the structure is not intended to be moved after it is erected or installed and if the towing hitch or running gear, which includes axles, brakes, wheels and other parts of the chassis that operate only during transportation, are removable and designed to be removed prior to erection or installation on a site-built permanent foundation; and

  (3) The structure is designed and manufactured to comply with the currently effective version of one of the following:

  (i) One of the following nationally recognized building codes:

  (A) That published by Building Officials and Code Administrators (BOCA) and the National Fire Protection Association (NFPA) and made up of the following:

  (1) BOCA Basic Building Code,

  (2) BOCA Basic Industrialized Dwelling Code,

(3) BOCA Basic Plumbing Code,

(4) BOCA Basic Mechanical Code, and

(5) National Electrical Code, or

(B) That published by the Southern Building Code Congress (SBCC) and the NFPA and made up of the following:

(1) Standard Building Code,

(2) Standard Gas Code,

(3) Standard Mechanical Code,

(4) Standard Plumbing Code, and

(5) National Electrical Code, or

(C) That published by the International Conference of Building Officials (ICBO), the International Association of Plumbing and Mechanical Officials (IAPMO), and the NFPA and made up of the following:

(1) Uniform Building Code,

(2) Uniform Mechanical Code,

(3) Uniform Plumbing Code, and

(4) National Electrical Code or

(D) The codes included in paragraphs (b)(3)(i)(A), (B), or (C) in connection with the One- and Two-Family Dwelling Code, or

(E) Any combination of the codes included in paragraphs (b)(3)(i)(A), (B), (C), and (D), that is approved by the Secretary, including combinations using the National Standard Plumbing Code published by the National Association of Plumbing, Heating and Cooling Contractors (PHCC), or

(F) Any other building code accepted by the Secretary as a nationally recognized model building code, or

(ii) Any local code or State or local modular building code accepted as generally equivalent to the codes included under paragraph (b)(3)(i), (the Secretary will consider the manufacturer's certification under paragraph (c) of this section to constitute a certification that the code to which the structure is built is generally equivalent to the referenced codes. This certification of equivalency is subject to the provisions of paragraph (f) of this section) or

(iii) The minimum property standards adopted by the Secretary pursuant to title II of the National Housing Act; and

(4) To the manufacturer's knowledge, the structure is not intended to be used other than on a site-built permanent foundation."

International Code Council, Inc. (ICC), "International Residential Code and Commentary (IRC)," 2018, Part I "Administrative," Chapter 1 "Scope and Administration," Section R102 "Applicability," states the following:

- *"**R102.1 General**. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code*

specify different materials, methods of construction or other requirements, the most restrictive shall govern.

- ***R102.2 Other laws**. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law."*
- *"**R102.4 Referenced codes and standards**. The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Section R102.4.1 and R102.4.2.*

  ***Exception**: Where enforcement of a code provision would violate the conditions of the* listing *of the* equipment *or* appliance, *the conditions of the* listing *and manufacturer's instructions shall apply."*

International Code Council, Inc. (ICC), "International Residential Code and Commentary (IRC)," 2018, Part I "Administrative," Chapter 1 "Scope and Administration," Section 105 "Permits," states the following:

- ***"R105.4 Validity of permit.** The issuance or granting of a* permit *shall not be construed to be a* permit *for, or an* approval *of, any violation of any of the provisions of this code or of any other ordinance of the* jurisdiction. Permits *presuming to give authority to violate or cancel the provisions of this code or other ordinances of the* jurisdiction *shall not be valid. The issuance of a* permit *based on* construction documents *and other data shall not prevent the* building official *from requiring the correction of errors in the* construction documents *and other data. The* building official *is also authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this* jurisdiction."

International Code Council, Inc. (ICC), "International Residential Code and Commentary (IRC)," 2018, Part I "Administrative," Chapter 1 "Scope and Administration," Section R106 "Construction Documents," states the following:

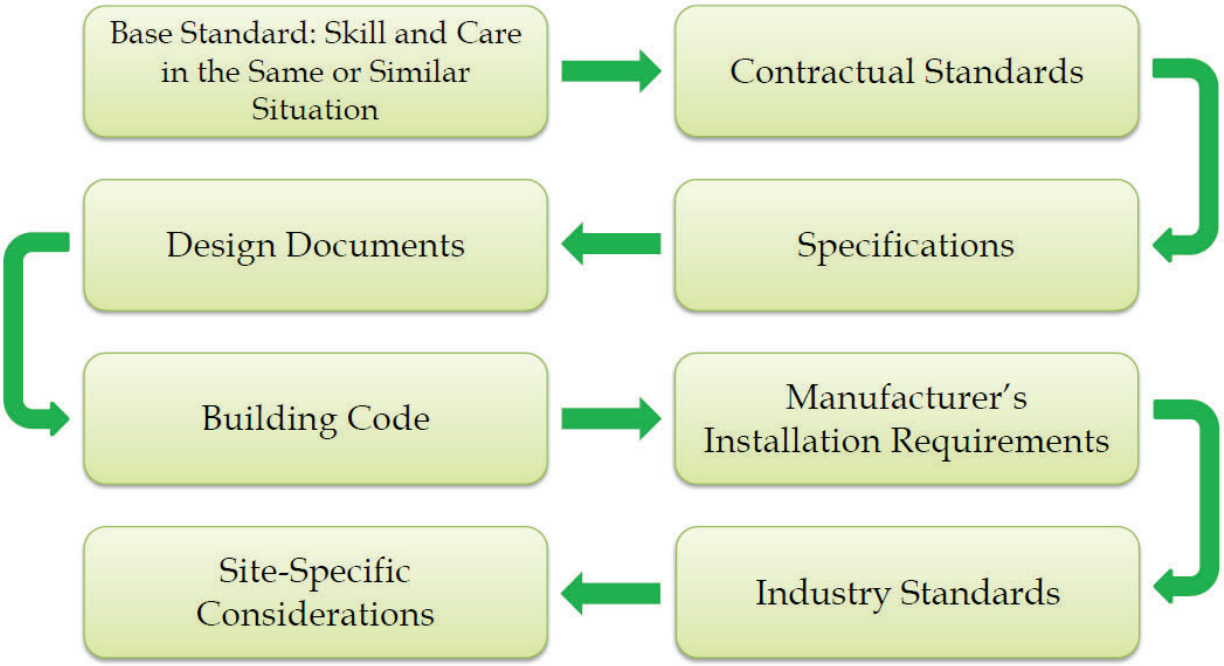
- ***"R106.1.2 Manufacturer's installation instructions.** Manufacturer's installation instructions, as required by this code, shall be available on the job site at the time of inspection."*

International Code Council, Inc (ICC), "International Residential Code and Commentary (IRC), 2018, Part I "Administrative," Chapter 1 "Scope and Administration," Section R110 "Certificate of Occupancy," states the following:

- ***"R110.1 Use and occupancy.** A building or structure shall not be used or occupied, and a change in the existing use or occupancy classification of a building or structure or portion thereof shall not be made, until the* building official *has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the* jurisdiction. *Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the* jurisdiction *shall not be valid."*

When the construction work is not performed in accordance with the project documents, building code, manufacturer standards and guidelines, and industry guidelines, then the work falls below the standard of care. Specific instances of such a failure to meet the standard of care are discussed in greater detail throughout this report.

The following graphic is intended to illustrate the general flow of CTETS's standard of care analysis regarding the obligations of the General Contractor in complying with the Contract and Applicable Codes. It is not intended to be a strict hierarchy.



METHODOLOGY

When using the term "damage" within this report, CTETS assesses the intended use and the expected useful life of the following: a component, a system of components, the completed assembly, the completed property, and the corresponding actual or probable physical manifestation of damage to the property. This definition of damage has been developed from our experience, education, and training regarding construction and design compliance. Over time, this position has become known as the two-prong approach and this premise is the foundation for the findings and opinions developed and expressed within this report. The two-prong approach is founded on the following precepts:

- The analysis begins with an assessment of the first prong of damage. CTETS uses the following definition for the first prong: the inability of an element, assembly, or system to perform its intended function. If the construction cannot perform its intended function(s) throughout its expected useful life, thus a loss of use, then it is CTETS's opinion that this condition is damaged, and thus it satisfies the first prong of our damage analysis. The intended function of each element, assembly, or system is generally defined by the code requirements, site-specific construction documents, manufacturer product information, and relevant industry standards.
- CTETS defines the second prong of damage as the manifestation of damage resulting from the first prong; in other words, there is observable distress or effective loss of use that is a result from the inability of an element, assembly, or system to function as intended. The manifestation of damage creates resultant damage to the element, assembly, or system itself and to otherwise non-damaged products that adjoin the defective condition. This resultant damage can be patently observable or latent. It is important to emphasize the distinction of observations by an expert trained to recognize construction defects compared to a less sophisticated person without the education, experience, and knowledge of an expert in the field. When CTETS refers to observations of construction defects, we are referring to the first prong; when referring to the second prong, CTETS is referring to the actual manifestation of damage from the underlying defect.

Figure 1 graphically displays the relationship of damage to the two prongs and also introduces a causal relationship into the overall process using water intrusion as an example.

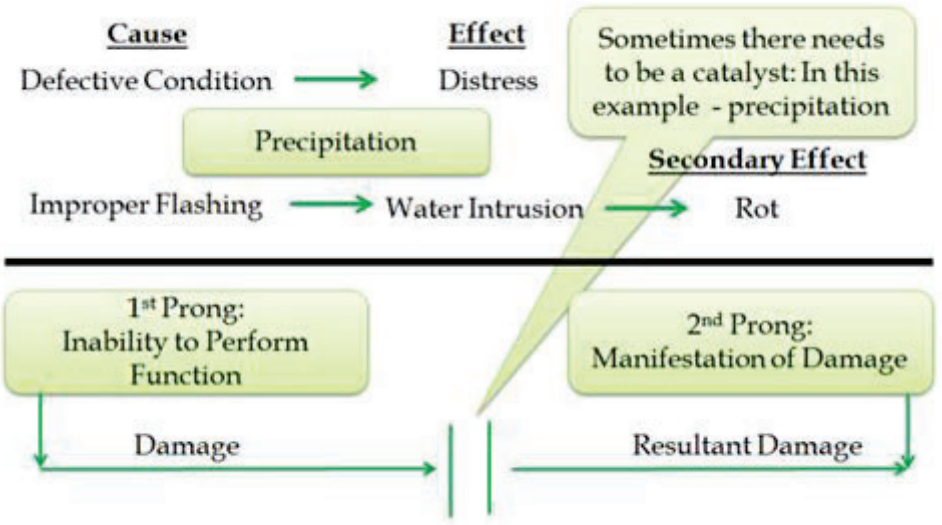


Figure 1- Manifestation Timeline

First prong damage initially occurs near substantial completion when the non-compliant construction is installed and/or becomes a part of the completed system. The defect standing alone, absent some causal event, yields no resultant manifestation, prong two, damage. However, this condition, as to the types of damage, does not negate the loss of use, potential void of warranties, and damage to otherwise non-damaged elements on the property. Simply stated, improperly integrated construction does not and will not work in its constructed state. Conditions that require repair are damage; the existence of the defect is itself damage. During construction, the developer and contractor have the best ability to remedy defective conditions. For example, flashing may be reverse-lapped during construction, which would obviously be a defective condition. However, if that damaged condition (first prong damage) is identified and corrected prior to completion of the project, then the condition will no longer be a defect. In theory, the developer and contractor can correct any deficient conditions up until the substantial completion of the project.

CTETS's determination of defective or non-compliant conditions is not based solely on prescriptive code requirements but considers the non-compliance in light of the observed systems' and elements' ability to function as designed and intended. The expectation is that code-compliant construction will perform for the expected life of those individual systems, components, or assemblies. CTETS's intent is to analyze the constructed systems, not just provide verification of strict compliance. This analysis is referred to as "performance standards" versus "prescriptive standards." Thus, the CTETS repair approach is intended to provide a means for functionality even though at times such construction fails prescriptively to meet the minimum standards of the code, manufacturer guidelines, industry guidelines, or other industry knowledge.

SUMMARY OF CONSTRUCTION NON-COMPLIANCE

A. STRUCTURAL

1. **COMPLIANCE WITH GEOTECHNICAL REPORT**
2. **FOUNDATION SYSTEM**
   - a. **Foundation Wall Construction**
   - b. **Structural Steel Beam Installation**
   - c. **Damaged Garage Roof Trusses**
   - d. **Modular Unit Installation**
   - e. **Porch, Roof, and Patio Construction and Foundation Settlement**
   - f. **Reframing of the Stairs**

B. CIVIL

1. **GRADING AND DRAINAGE**
   - a. **Rough Grading Not Directing Water Away from the Foundation and Structure**
   - b. **Foundation Excavation and Backfill**
   - c. **Incomplete Site Flatwork**
   - d. **Out-of-Plumb Utilities in the Backfill Zone**

C. BUILDING ENVELOPE

1. **FAÇADE (EXTERIOR CLADDING AND SEALANTS) TYPE 1 – SIDING**
   - a. **Non-Compliant or Incomplete Siding and Trim Installation**
   - b. **Untreated Cut Ends and Siding Edges**
   - c. **Non-Compliant Clearance Between Siding and Flashing**
   - d. **Non-Compliant Clearance – Garage Door Jambs to Hard Surfaces**
   - e. **Missing Flashing at Window and Fenestration Heads**
   - f. **Incomplete Soffit and Trim Installation**
   - g. **Damaged or Broken Windows and Panoramic Door Installation**
2. **FAÇADE (EXTERIOR CLADDING AND SEALANTS) TYPE 2 – ADHERED STONE VENEER**
   - a. **Adhered Stone Veneer Not Constructed**
3. **ROOFING SYSTEM TYPE 1 – ASPHALT SHINGLES**
   - a. **Non-Compliant or Incomplete Roofing**
   - b. **Incorrect Drip Edge Flashing**
4. **BELOW-GRADE FOUNDATION WATERPROOFING**

D. INTERIOR CONSTRUCTION

1. **WALL SYSTEM**
   a. **Drywall and Framing Out-of-Plumb**
   b. **Non-Compliant Door and Trim Installation**
   c. **Cabinetry and Millwork Installation**
   d. **Hole in Laundry Room**
2. **FLOOR SYSTEM**
   a. **Damaged Flooring due to Improper or Missing Protection**

E. MECHANICAL, ELECTRICAL, AND PLUMBING (MEP)

1. **MECHANICAL**
   a. **Furnace Venting and Piping Location**
2. **ELECTRICAL**
   a. **Homeowner Installation of Light Fixtures**
   b. **Required Re-Wiring to Correct Improper Installation**
3. **PLUMBING**
   a. **Incomplete Installation of Sump Pump**
   b. **Damaged Gas Service Line**
   c. **Settlement of Gas Line Due to Improper Backfill and Compaction**
   d. **Missing Floor Drains in Garage**

F. MISCELLANEOUS

1. **MISCELLANEOUS ITEMS**
   a. **Incomplete Radon System and Exhaust Piping**
   b. **Missing Garage Door Openers**

FIELD OBSERVATIONS

The construction, when utilizing modular pre-manufactured components, should create conditions were the work provided should be more streamlined, more economical, and allow for the proper finishing of the home at less cost than conventional frame construction. In the instance of the Smith home, this economy did not make this possible, and the proper workmanship was not provided. The following outlines the expectations of the manufactured and modular home market.

The site construction was provided with the combination of on-site foundations supporting modular-framed residential structures. The International Code Council (ICC) provides the following definition[2]:

- *"What is Off-Site Construction?"*

  "*The process of constructing buildings or components of buildings in a factory to increase quality, sustainability and job site safety to project completion over site-building projects.*"

Similarly, as indicated in the Fannie Mae "Multifamily Construction Toolkit," July 15, 2020, modular construction is defined by the National Institute of Building Sciences (NIBS) Off-Site Construction Council as the following:

- *"The planning, design, fabrication and assembly of building elements at a location other than their final installed location to support the rapid and efficient construction of a permanent structure. Such building elements may be prefabricated at a different location and transported to the site or prefabricated on the construction site and then transported to their final location. Off-site construction is characterized by an integrated planning and supply chain optimization strategy."*

As described above, the modular construction industry allows the partial assembly of structural components in a factory-like environment. These components are then transported to the site for final installation. This process inherently speeds up the time of construction compared to the standard process of constructing entirely at the site. In addition to saving time, the process contributes to cost savings by allowing on-site manual construction methods to be performed in a controlled environment with factory equipment. After the final installation, the construction is required to be compliant with applicable building codes and regulations, such as those of the ICC. The ICC has also developed a set of standards that correspond to the construction of modular structures. These standards, prepared by the ICC and the Modular Building Institute (MBI), provide the minimum requirements for the process of fabrication and on-site assembly of the modular components.

The modular approach is well defined in the "Design for Modular Construction: An Introduction for Architects[3]," prepared by the American Institute of Architects (AIA) and NIBS, dated March 15, 2019. The following excerpts provide the industry understanding as to why modular construction is expected to provide higher quality, increased productivity, and decreased costs:

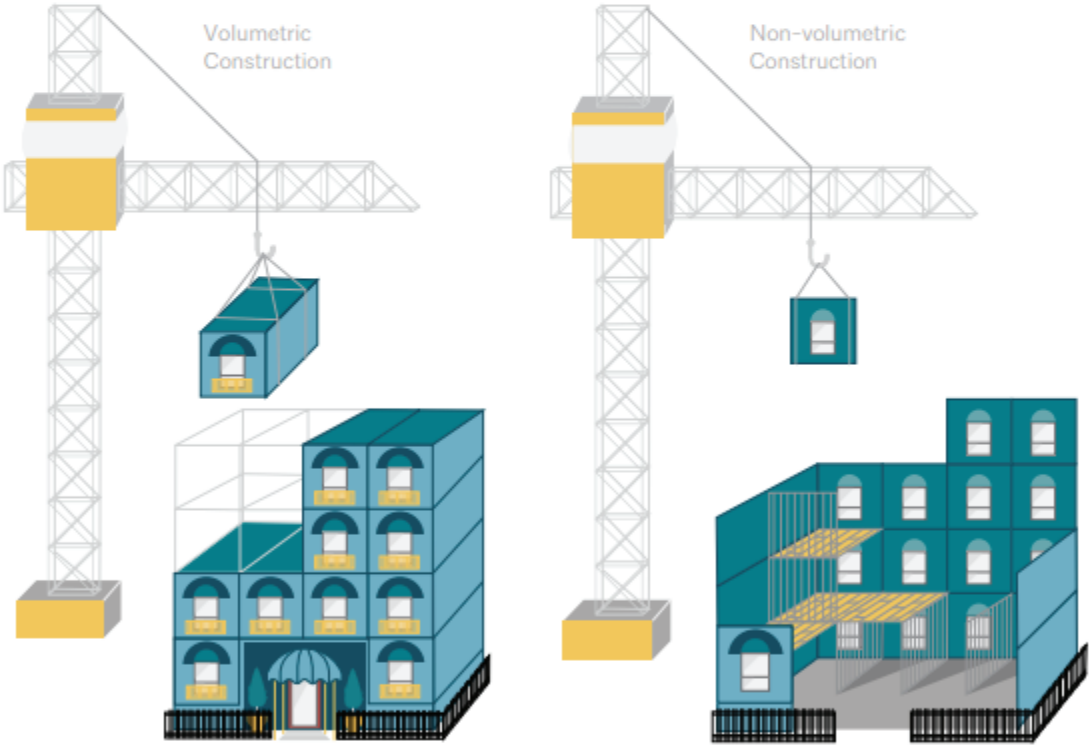
[2] Off-Site Construction - ICC (iccsafe.org)
[3] AIA-NIBS Modular and Off-Site Construction Guide

>THE MODULAR APPROACH IN DETAIL

In general, modular building elements prefabricated off-site are either constructed as non-volumetric components or as volumetric units.

Volumetric modular construction involves the off-site prefabrication of individual three-dimensional units of enclosed space that are then connected on-site to form a single building. For example, volumetric modular construction is often used for multiunit residential projects like hotels, dormitories, and apartment buildings. Each unit, depending on its size, may be made up of one or more modules. Other examples of volumetric elements include patient rooms, bathroom pods, and sections of elevator or stair cores.
Non-volumetric modular construction involves the off-site prefabrication of building elements (commonly referred to as sub-assemblies) that are then connected once on-site. Common examples of

FIGURE 1: VOLUMETRIC VS. NON-VOLUMETRIC CONSTRUCTION



non-volumetric modular building elements include:

- Structural elements such as frames, beams and columns
- Sections of building façade and cladding
- Wall panels and interior partitions
- Floor cassettes and planks
- Roof trusses

Owner provided photo showing the stacking of the modular units. (Bates Number Smith_000452)

The following statement is presented in the "Design for Modular Construction: An Introduction for Architects:"

- *"As the installation of the modules into the building required placing them into notches sunk into the floors, a high level of precision was necessary. The use of BIM to coordinate off-site and on-site operations was critical to achieving this precision. The early involvement of major subcontractors was also shown to be highly beneficial in this regard. Bids were sent out earlier than is standard—when construction drawings were at 50 percent—to allow subcontractors to share feedback. This led to a greater level of quality and accuracy in the construction of the prefabricated components and made for a highly efficient installation process that required drastically fewer modifications. Ultimately, the use of prefabricated components reduced the construction schedule by two months and reduced the building cost by about 2 percent."*

The reasoning behind the desire for this type of construction is that the repetitive nature of the construction results in reduction to the costs of means and methods as learning curves, modeling, fabrication, and componentry can be replicated, unlike in-field construction, which involves multiple trades, materials, learning curves, staffing issues, procurement, and other variables that can delay construction and increase costs.

Heritage Homes of Nebraska's brochure outlines some of the expected advantages of Modular construction:

Heritage Homes of Nebraska Brochure - Heritage Homes of Nebraska.

American Institute of Architects (AIA) and National Institute of Building Sciences (NIBS), "Design for Modular Construction: An Introduction for Architects," March 15, 2019, states the following:

- *"A primary reason why more projects are using modular construction is that there is increasing recognition of the benefits the approach offers. As mentioned earlier, because modular construction involves conducting the bulk of the construction process off-site in a controlled setting, it can contribute to improved quality, less waste, increased control of cost, and reduced risk.*

  Quality

  Applying the efficiencies and controls of highly evolved manufacturing processes to building construction produces several significant benefits. The monitored manufacturing setting, the use of precise fabrication tools such as CAD/CAM, and the ability to automate processes allow for a high level of quality control and consistency. This quality control is especially beneficial when it comes to the installation of sensitive high-tech components such as fire and security systems or sensor-based environmental controls. The increased precision in fabrication of exterior wall components also results in a much tighter building envelope with fewer air leaks.

  Depending on the complexity of the project's program and building form, mass production manufacturing processes can be used to achieve additional economies of scale. Additionally, utilizing mass production processes does not necessarily translate into a loss of design flexibility. Project teams can work with fabricators to pursue a mass customization approach that captures the benefits of mass production economies of scale while allowing variability to suit a wide range of client requirements and design intents.

  The production and storage of building components in an enclosed facility also results in reduced exposure to the weather, which can cause moisture-related damage during construction and, in turn, decrease the durability of the components and increase the potential for mold growth that's harmful to occupant health.

Productivity

Labor productivity is also increased when using an off-site approach. A crew working in a plant is less affected by adverse weather. Additionally, a crew equipped with precise tools and machinery, working in a space designed to provide ideal conditions for manufacture, is able to achieve higher levels of quality in a more efficient manner. Off-site construction also means a more consistent crew and a more controlled workflow that will be less prone to disruption.

In addition, as a modular construction approach requires a high level of coordination and collaboration among project team members, it promotes a more integrated process that can in turn lead to increased productivity during the design and planning stages of the project.

Safety

An off-site construction approach is also generally safer for workers. Workers work in a controlled setting and are not exposed to the hazards of extreme weather and other construction site dangers such as those related to noise and air quality. According to the U.S. Labor Department Bureau of Labor Statistics, rates for fatal injuries are, overall, substantially lower in manufacturing than in traditional onsite construction.

On top of increased safety, moving construction work to off-site manufacturing facilities could improve the overall culture of construction work, for example, by providing greater job security and more flexible shifts for workers.

Schedule

Prefabricating the bulk of a building in an off-site facility means that the construction process is much less vulnerable to delays due to poor weather conditions. This facilitates a more predictable schedule. Off-site construction also allows for work that would usually need to be sequenced to be performed simultaneously. Compared to the linear process that generally characterizes traditional on-site construction, with trades working sequentially, off-site construction allows trades to work concurrently.

In addition, if a project is coordinated so that site work and pre-construction engineering is conducted at the same time that building components are fabricated off-site, the construction schedule can be shortened by 30 percent to 50 percent, according to the Modular Building Institute, resulting in dramatic schedule savings. If true, this is a significant benefit over conventional on-site construction that requires the completion of the foundation before work on the building can begin. The more work that can be completed off-site, the greater the savings due to the increased amount of time saved on-site.

Delays related to supply chain issues may also be reduced by using off-site construction, as modular manufacturers may often have more firmly established connections with a larger network of qualified material suppliers as well as a greater ability to store bulk materials compared to traditional on-site operations.

Further savings can be gained through close coordination between on-site and off-site operations. Ideally, building components should be fabricated, transported, and delivered to the site "just-in-time," according to when the site infrastructure required for their installation has been completed, avoiding any additional costs for storage at either the plant or the construction site.

It should be noted that reductions in schedule may depend on the complexity of the project or the level of customization involved. Although a benefit of modular construction is that it allows for greater technical complexity in design, complex projects that require many unique components will require more fabrication time—as well as assembly time—than projects using more standardized elements."

In addition to the ultimate schedule values, the cost values are also well defined in the "Design for Modular Construction: An Introduction for Architects:":

- **"*Cost and value***

  Although modular construction can be more cost efficient than on-site construction, this does not automatically mean it will result in a reduction in overall project cost. However, the costs are often more predictable than with traditional construction methods. If affordability and controlled cost is of primary concern on a project, modular construction can be used to achieve it, but it will require greater intention in design and thorough planning.

  The cost for any particular modular project, as with any conventional project, will vary according to a range of factors. Project teams should consult with a modular manufacturer when determining the various specific factors that will impact the cost of the project, and to what extent. For example, in some cases modules may need to be overbuilt in order to meet transportation and set requirements. In other cases, depending on the modular manufacturer, more complex designs may increase the fabrication cost if more expensive materials are needed, more production time is required, or the facility must be retooled in order to construct the necessary components. As well, the modular manufacturer's expertise is useful in determining the most cost-effective way to handle transportation of modules. As with fabrication costs, the transportation cost for any particular modular project will depend on a number of variables, including, for example, the trucking distance between the fabrication facility and the job site, and the number of trips required. In most cases, all modules will be over-dimensional loads, and a special permit will be required to transport them on public roads. Depending on the project and location, it may be determined that it's more cost-effective to make the modules as large as possible within regulations and pay for a police escort or special routing in order to reduce the total amount of modules and minimize the number of deliveries. This strategy would also limit the number of crane lifts required, which could offset the higher cost of larger cranes needed to lift larger components.

  Ultimately, when analyzing the cost of modular construction compared to conventional construction for a specific project, it's important that all hard and soft costs be taken into account. Overall, modular construction should be understood as a lifecycle investment. Regardless of the upfront costs, if implemented correctly it will prove to be a more cost-efficient way to create value in the long term, and the decision to use modular construction should ideally be made based not on an upfront cost comparison but rather on a clear understanding of the particular benefits the approach offers and the extent to which these align with what the project owner values in each particular circumstance."

Regarding the construction of the modular units, some level of dimensional variability can be encountered during the various stages of modular building construction, such as during fabrication, transportation, and/or final on-site installation. These variabilities in the constructed modules are permitted deviations that can result from conditions, such as changes in temperature and humidity or, in part, due to standard construction practices. The use of modular construction would reduce these dimensional issues, as the factory-built process will create a more uniform condition. These dimensional variabilities can cause issues during the final installation on site and may require the contractor to slow progression of the project to determine repairs as necessary. As such, procedures to verify compliance are required at various stages throughout the process of manufacturing, transportation, and erection. These procedures not only identify issues with certain dimensional variabilities, but also highlight possible design errors and/or defects from fabrication. During the compliance verification, the fabrication of subsequent modular components can be adjusted to bring attention to the component and to set limits to the variability to lessen the impact during final construction.

Dimensional variability is discussed in the International Standard ISO 1803 "Building construction – Tolerances – Expression of dimensional accuracy – Principles and terminology," First edition, October 1, 1997, prepared by The International Organization for Standardization (ISO). The figure below depicts the continuous and cyclical process of compliance between aim in design and achievement in construction:

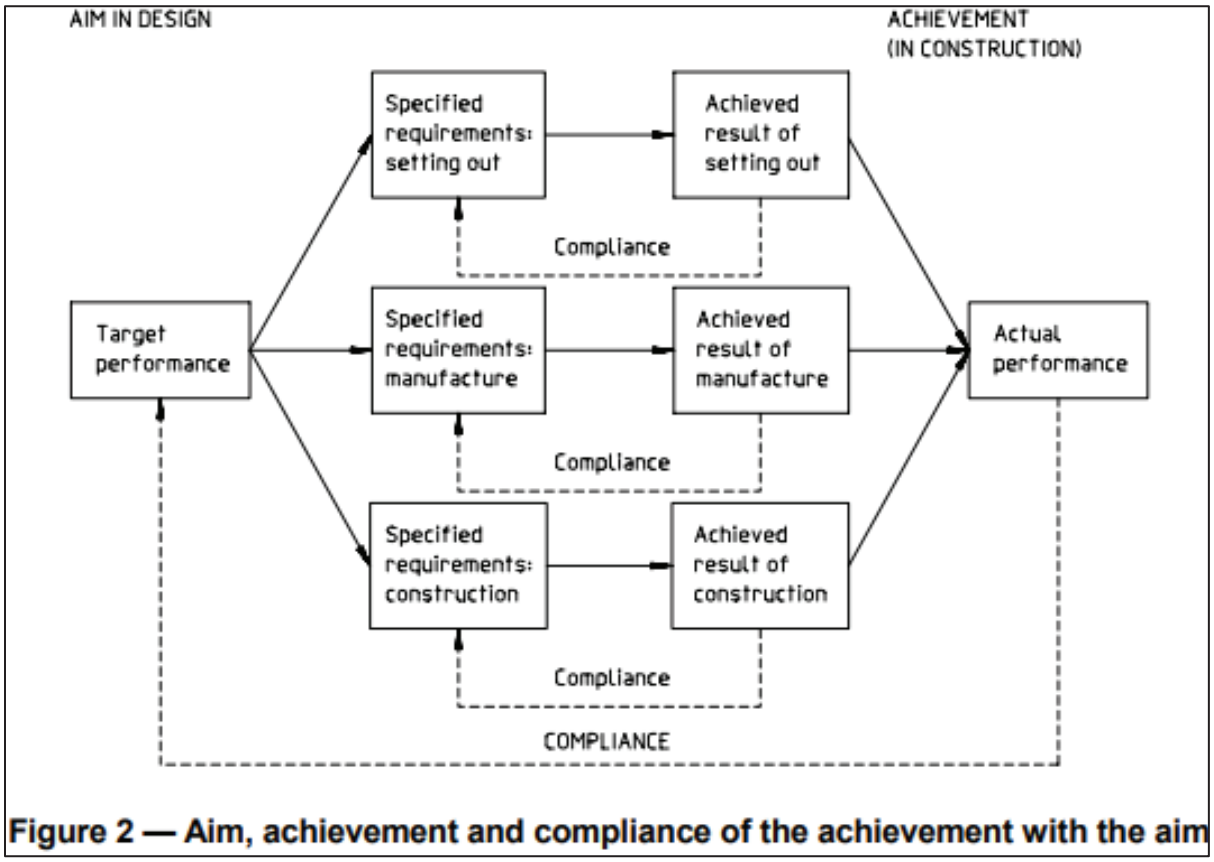


Figure 2 — Aim, achievement and compliance of the achievement with the aim

Heritage Homes of Nebraska provided the modulars for the project to Liscott as their Local Builder Vendor.

In general, the modular construction of these cabins should have saved both scheduling and construction time and reduced the costs for the Smiths. Instead, the Smiths have reported several issues with the modular components that continued throughout the construction of the Project. A CDARA Notice was prepared by the Smiths on May 5, 2022 and provided again under an Amended Notice on June 10, 22, 2022, outlining various issues and defects with the design and manufacturing of the components of the modular structures. The Smith's reported that these issues caused the construction process to slow down as the issues required attention and repairs. These construction issues related to the defects in manufactured units pertain to site work, finishes, structural supports, access for utility lines, building envelope, and other items as outlined. Those issues will be addressed in this report. The Smiths have also reported out-of-pocket expenses associated with these items and schedule delays to the units. The manufacturer had not constructed the unit as necessary to validate the construction of the modulars and their inherent placement with each other, and, in addition, the builder failed to provide level and plumb base work, including poor soil preparation, resulting in damages that increased the issues associated with setting and finishing the home. Due to the inherent poor workmanship, the field crews experienced numerous issues pertaining to structural, mechanical, fire, plumbing, and architectural features while setting the units that had to be field remedied and have yet to be properly completed.

An excerpt from the Heritage Home's website (Custom Modular Builder - Heritage Homes of Nebraska) describes its services with the statement regarding their work with their standards.

- *"Heritage Homes has been revolutionizing the world of home construction since 1978 and building some of the best custom homes, offering a superior alternative to the traditional construction experience. As you explore our website, you'll also learn about our company's commitment to exceptional customer service. We offer a variety of floor plans, including two-story, one-story, and multi-family homes to fit your unique needs. With Heritage Homes, you can have the home of your dreams without the stress of conventional construction. With a focus on customization and attention to detail, it's no wonder how we have built a reputation of building some of the Midwest's best custom homes."*

In addition, Heritage Homes states:

- *"These are the superior home construction specifications you can expect in every Heritage Home. Certain features you choose may change or improve these minimums. We set high standards when selecting the materials and products used in every home.*[4]*"*

The International Organization for Standardization, International Standard ISO 1803 "Building construction – Tolerances – Expression of dimensional accuracy – Principles and terminology," First edition, October 1, 1997, Section 2 "General Principles," states the following:

> In practice, dimensional variability exists in any process of fabrication or measurement. Inaccuracies will occur at each of the stages in the building process, resulting in deviations (manufacturing deviation, setting-out deviation and erection deviation) from the desired size (target size); see figure 1. Thus, for the actual performance of a building to match the desired or target performance, the design should take account of dimensional variability using the probability concept, where appropriate. The functional requirements of the design set limits on variability (permitted deviations) in relation to which the achieved dimensions should be checked for compliance; see figure 2. Compliance procedures are not only carried out at the end of the process (which in many cases would be too late to rectify errors), but at each stage in the process of manufacture, setting out and erection.

International Code Council, Inc. (ICC) and Modular Building Institute (MBI), "Standard for Off-Site Construction: Planning, Design, Fabrication and Assembly," 2020, states the following:

> **803.1 Installation Tolerances**. The registered design professional shall detail in the construction documents the required construction tolerances for fitting each module to each module and to the foundation. Terms shall be as defined in ISO 6707-1:2020.

[4] Custom Modular Builder - Heritage Homes of Nebraska

International Code Council, Inc. (ICC) and Modular Building Institute (MBI), "Standard for Off-Site Construction: Planning, Design, Fabrication and Assembly," 2020, Chapter 1 "Application and Administration," Section 101 "Administrative Provisions," states the following:

101.1 Purpose. The purpose of this standard is to provide minimum requirements to safeguard public health, safety, general welfare and to address societal and industry challenges for the inspection and regulatory compliance of off-site construction. This standard is intended for adoption by government agencies and organizations for use in conjunction with model codes to achieve uniformity in the inspection and regulatory compliance of off-site construction.

101.2 Scope. This standard applies to planning, design, fabrication and assembly of off-site construction.

101.3 Provisions for Compliance. This standard provides the minimum requirements for off-site construction. In lieu of these provisions, or where these provisions are not applicable, accepted engineering methods and practices in accordance with the appropriate sections of the International Building Code or the International Residential Code as applicable for the intended use of the structure shall be permitted to be used. Where requirements are not provided by this standard, the applicable provisions of the construction codes adopted by the authority having jurisdiction shall apply to the off-site and modular construction.

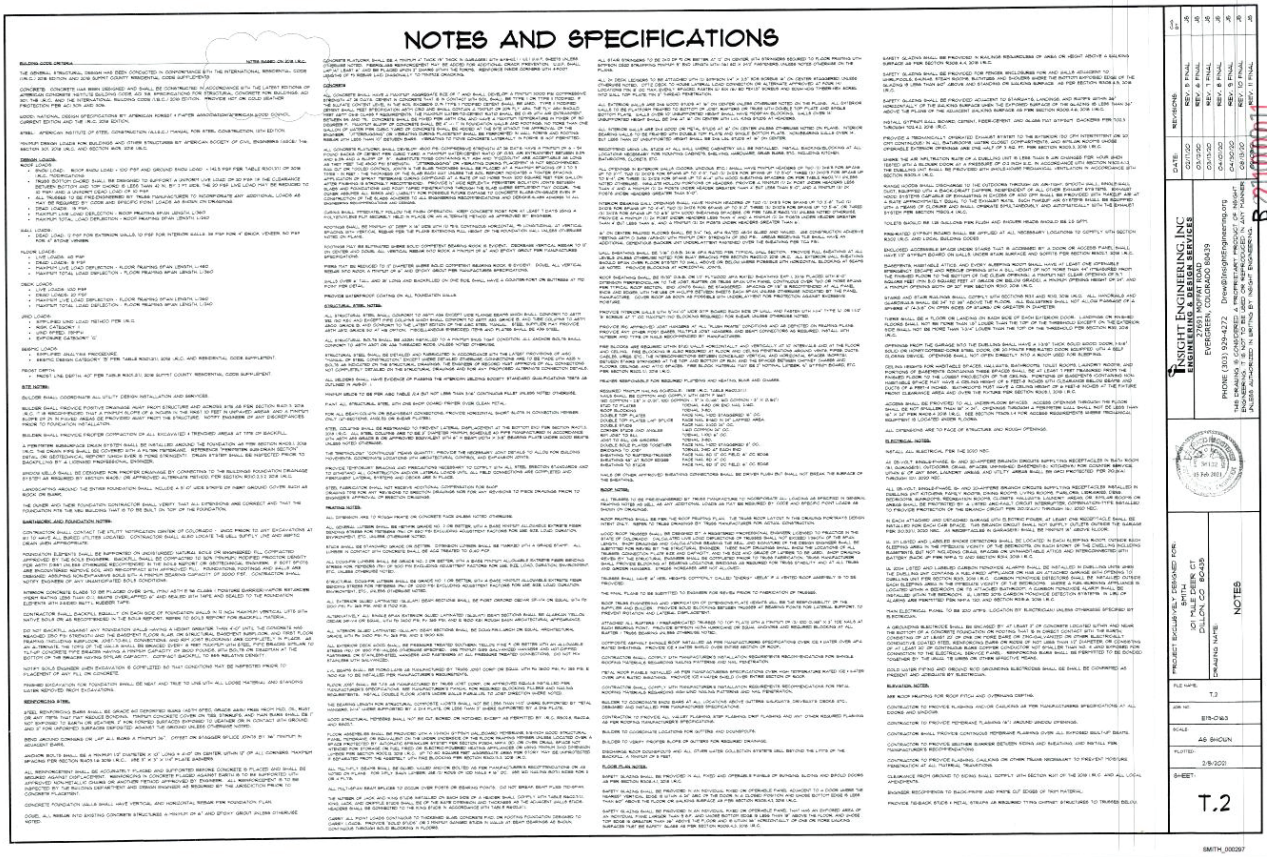
101.4 Compliance alternative. Nothing in this standard is intended to prevent the use of designs, technologies or products as alternatives to any prescriptions in this standard, provided equivalence is demonstrated and approved by the authority having jurisdiction.

101.5 Referenced standards. The specific year, date and editions of the standards referenced by this standard are listed in Chapter 8.

International Code Council, Inc. (ICC) and Modular Building Institute (MBI), "Standard for Off-Site Construction: Planning, Design, Fabrication and Assembly," 2020, Chapter 8 "On-site Installation," Section 803 "Installation Tolerance," subsection 803.1 "Installation Tolerances," states the following:

803.1 Installation Tolerances. The registered design professional shall detail in the construction documents the required construction tolerances for fitting each module to each module and to the foundation. Terms shall be as defined in ISO 6707-1:2020.

Insight Engineering Inc, provided additional information regarding the construction of the residence on Sheet T.2, “Notes and Specifications.” This included expectations of the construction in regard to codes, standards and workmanship:


NOTES AND SPECIFICATIONS

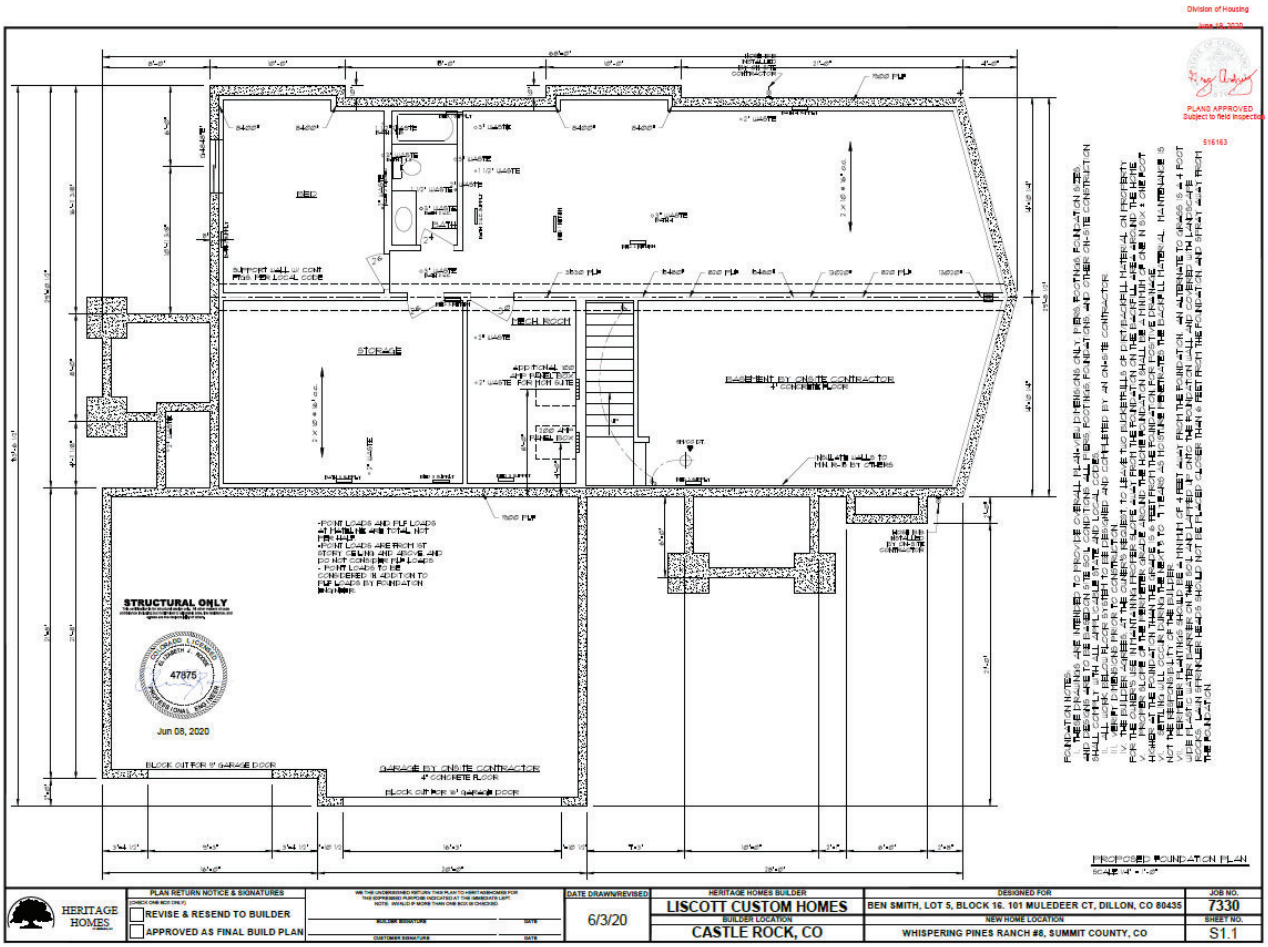
Sheet T.2, Bates Number Smith_000_297.

It should be noted that the non-compliant conditions outlined below are in no specific order of importance.

A. STRUCTURAL

The residence consists of a two-story, pre-manufactured modular unit system type construction with a conventionally wood framed attached garage. The design also includes construction of an elevated deck on the rear elevation, porch roofs, and entry structures on the south, east, and west elevation, and a roof structure and associated porch structure extending from the north elevation. The residence is constructed over a basement that extends beneath the full extent of the two-story portion of the structure.

The design, fabrication, and shipment of the modular units was provided by Heritage Homes of Nebraska. The construction is consistent with the design(s) provided by Heritage Homes. The available documents indicate that Heritage Homes of Nebraska provided architectural, MEP, and structural design. The structural-only design was signed by NTA ICC and the provided the structural frame calculations was signed by Elizabeth J. Roose, Colorado Professional Engineer Number 47875, on June 8, 2020. Insight Engineering provided the foundation plans.



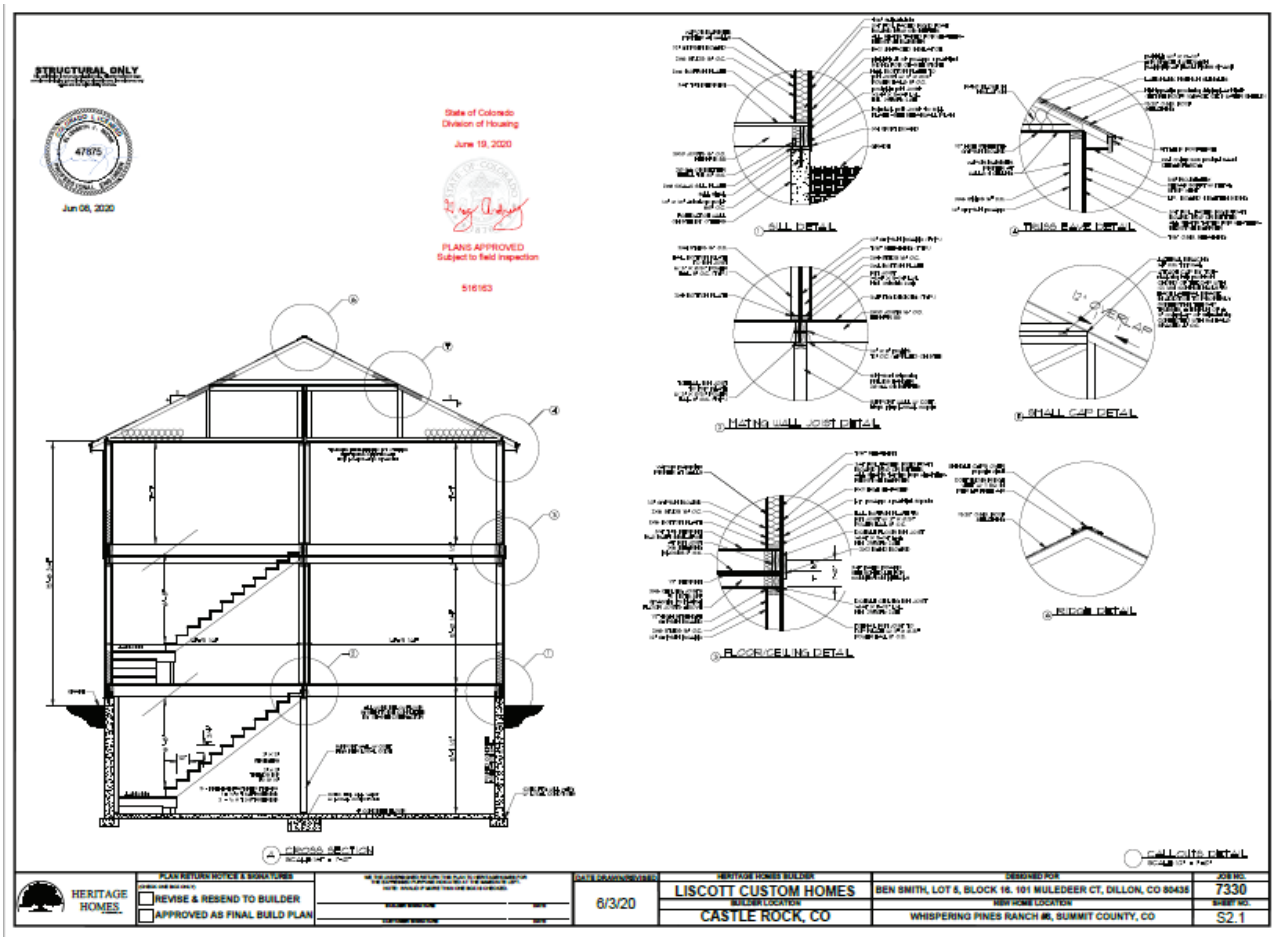
Those plans would not be used in final design, as site conditions would warrant the need for on-site geotechnical and final engineering of the design, including lateral load resistance features for the foundation walls.

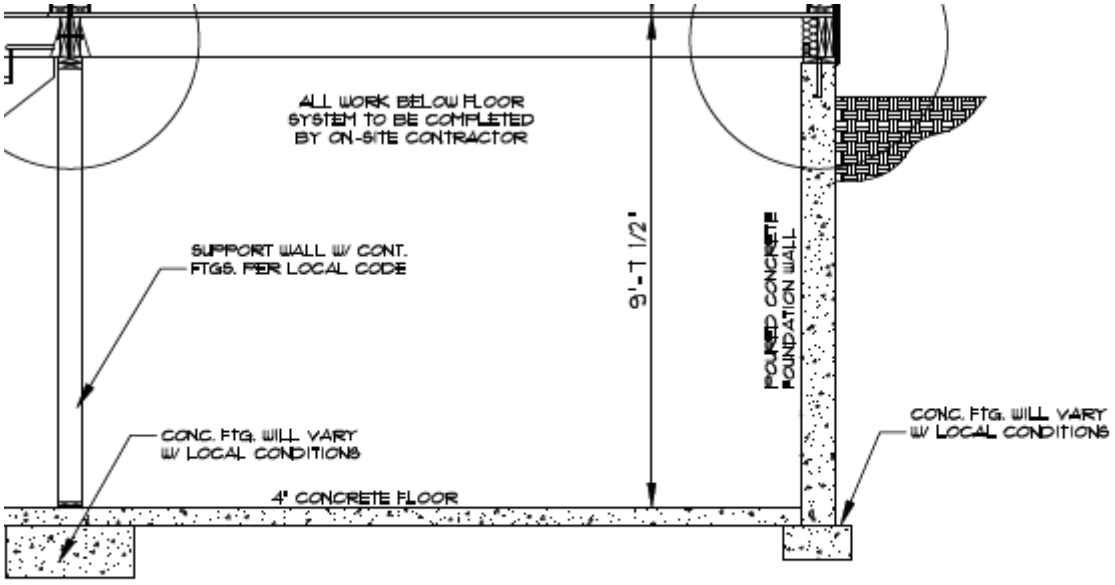
As stated on Sheet S1.1:

FOUNDATION NOTES:
I. THESE DRAWINGS ARE INTENDED TO PROVIDE OVERALL PLAN-VIEW DIMENSIONS ONLY. PIERS, FOOTINGS, FOUNDATION SIZES, AND DESIGNS ARE TO BE BASEDON SITE SOIL CONDITIONS. ALL PIERS, FOOTINGS, FOUNDATIONS, AND OTHER ON-SITE CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES.
II. ALL WORK BELOW FLOOR SYSTEM TO BE DESIGNED AND COMPLETED BY AN ON-SITE CONTRACTOR.
III. VERIFY DIMENSIONS PRIOR TO CONSTRUCTION.
IV. THE BUILDER AGREES, AT THE OWNER'S REQUEST, TO LEAVE TWO BUCKETFULLS OF DIRT/BACKFILL MATERIAL ON PROPERTY FOR THE OWNER'S USE IN MAINTAINING PROPER SLOPE AWAY FROM THE FOUNDATION ON THE BACKFILL AREA AROUND THE HOME.
V. PROPER SLOPE OF THE PERIMETER GRADE AROUND THE HOME FOUNDATION SHALL BE A MINIMUM OF ONE IN SIX ± ONE FOOT HIGHER AT THE FOUNDATION THAN THE GRADE IS 6 FEET FROM THE FOUNDATION, FOR POSITIVE DRAINAGE.
VI. SETTLING WILL OCCUR DURING THE NEXT 5 TO 7 YEARS AS MOISTURE PENETRATES THE BACKFILL MATERIAL. MAINTENANCE IS NOT THE RESPONSIBILITY OF THE BUILDER.
VII. PERIMETER PLANTINGS SHOULD BE A MINIMUM OF 4 FEET AWAY FROM THE FOUNDATION. AN ALTERNATE TO GRASS IS A 4 FOOT WIDE PLASTIC WATER BARRIER ON THE SOIL AND LAPPED UP ONTO THE FOUNDATION WALL AND COVERED WITH LANDSCAPE ROCKS. LAWN SPRINKLER HEADS SHOULD NOT BE PLACED CLOSER THAN 6 FEET FROM THE FOUNDATION, AND SPRAY AWAY FROM THE FOUNDATION.

516163

EXHIBIT 104 CTETS_000028

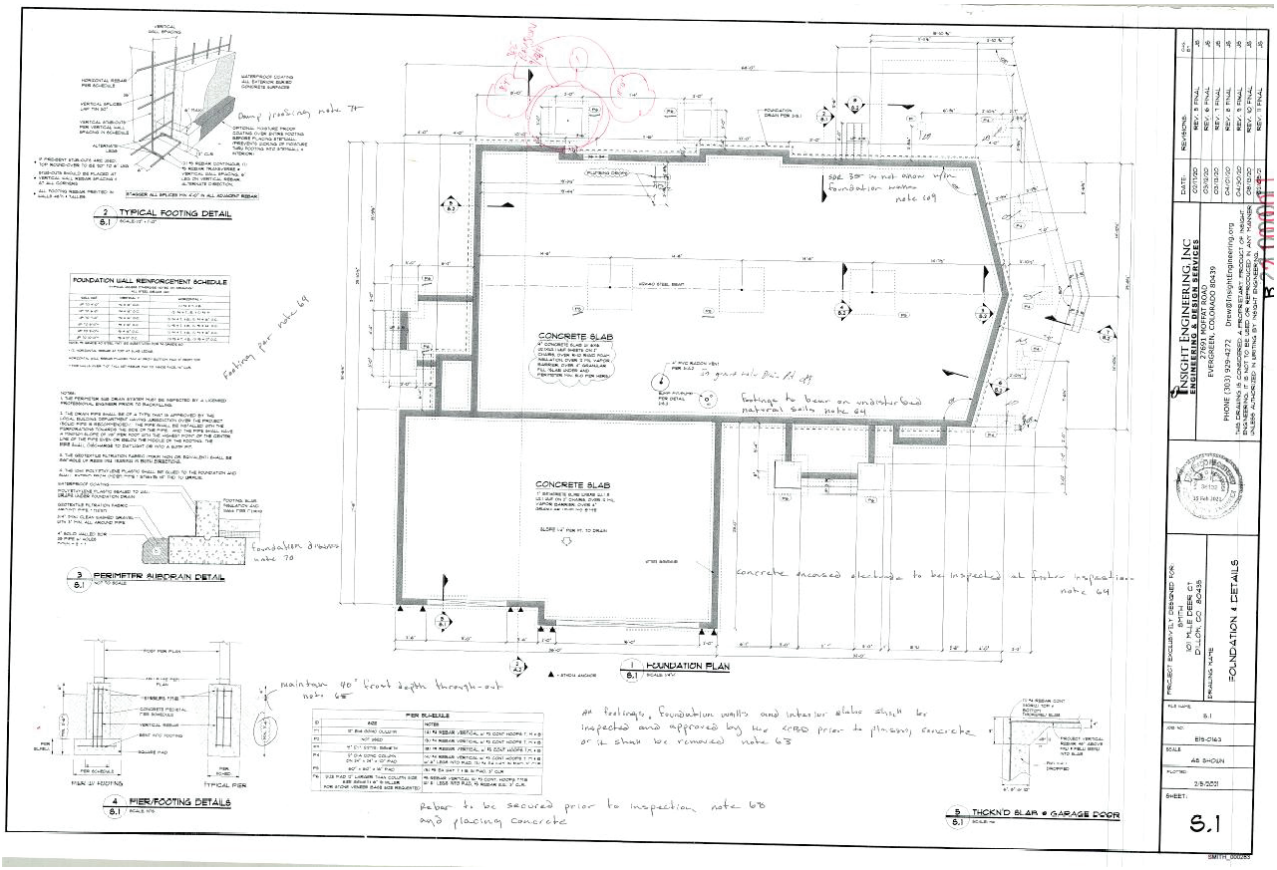




CROSS SECTION
SCALE: 1/4" = 1'-0"

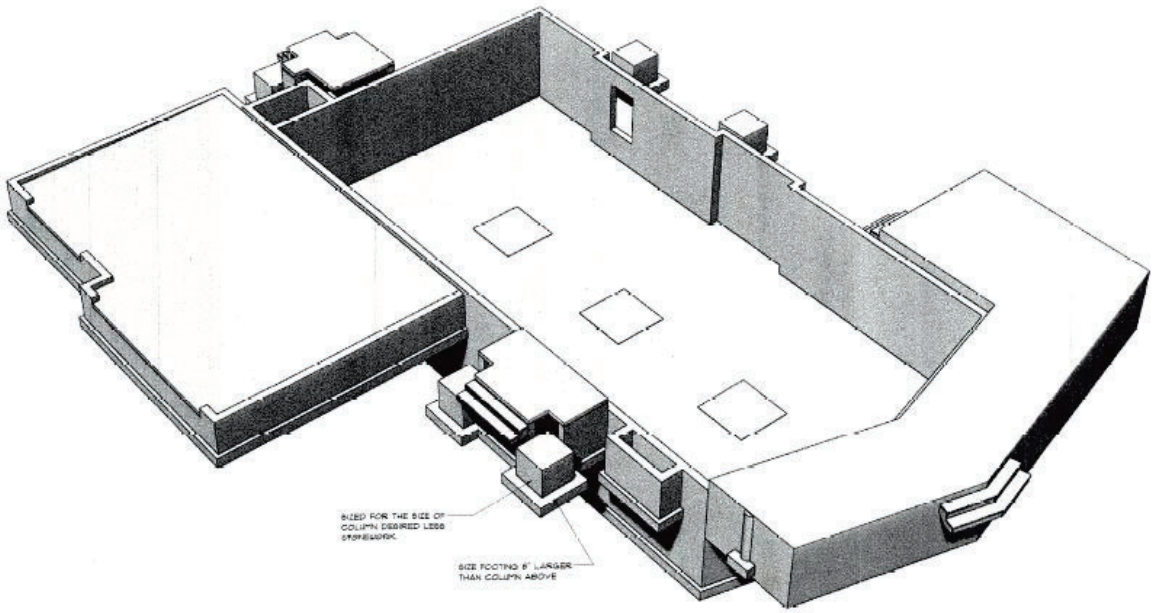
EXHIBIT 104 CTETS_000029

The prepared foundation design package was ultimately provided by Insight Engineering. The CTL report provided design parameters, including bearing conditions and lateral load requirements for the foundation walls, as well as providing construction requirements that Liscott would have had to adhere to in meeting their standard of care.



Sheets S.1 – S.4, provided by Insight, indicated that the footings were to bear on undisturbed natural soils.

EXHIBIT 104 CTETS_000030



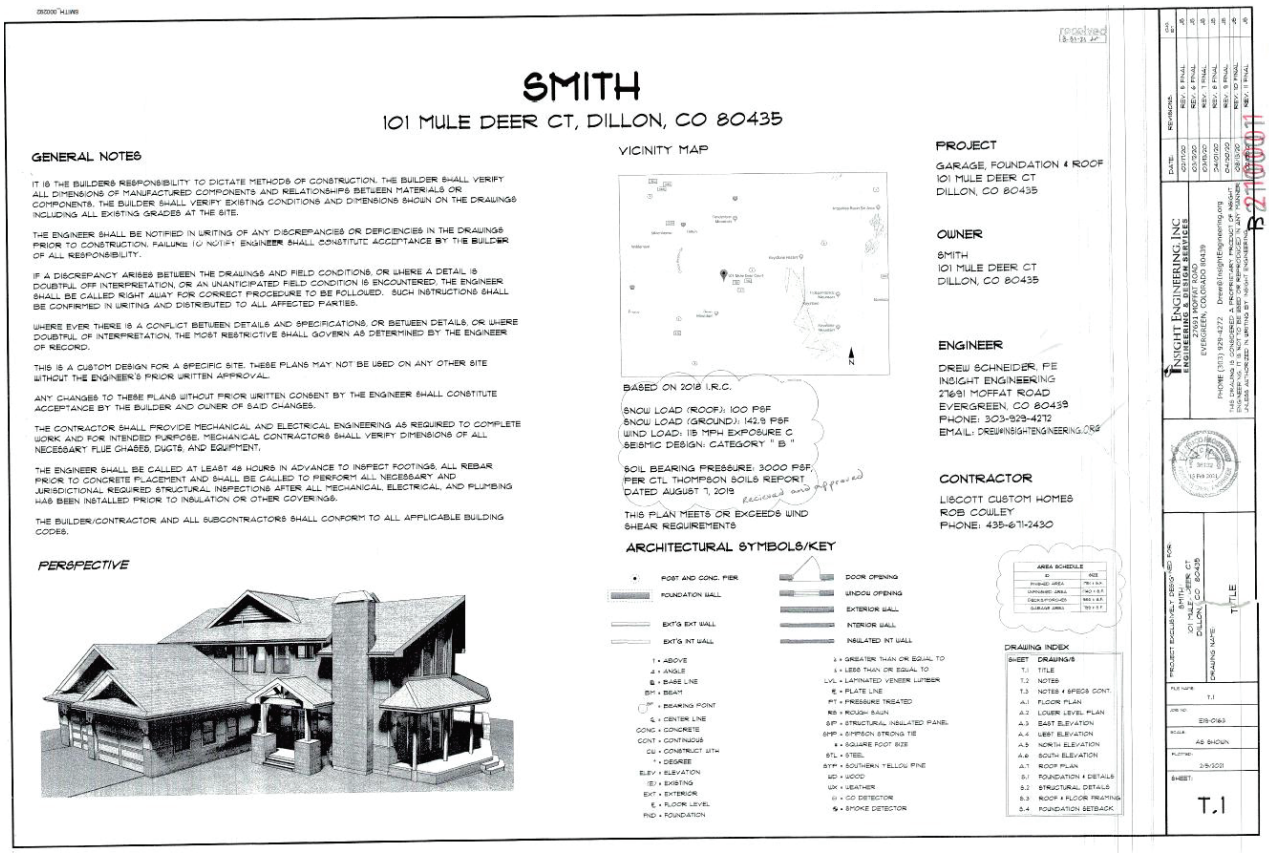
1/8.2 FOUNDATION PERSPECTIVE
SCALE: NTS

EXHIBIT 104 CTETS_000031

FOUNDATION WALLS

Foundation walls which extend below-grade should be designed for lateral earth pressures where backfill is not present to about the same extent on both sides of the wall. Many factors affect the values of the design lateral earth pressure. These factors include, but are not limited to, the type, compaction, slope and drainage of the backfill, and the rigidity of the wall against rotation and deflection. For a very rigid wall where negligible or very little deflection will occur, an "at-rest" lateral earth pressure should be used in design. For walls that can deflect or rotate 0.5 to 1 percent of wall height (depending upon the backfill types), lower "active" lateral earth pressures are appropriate. Our experience indicates typical below-grade walls in residences deflect or rotate slightly under normal design loads, and that this deflection results in satisfactory wall performance. Thus, the earth pressures on the walls will likely be between the "active" and "at-rest" conditions.

If on-site clay soils are used as backfill and the backfill is not saturated, we recommend design of basement walls at this site using an equivalent fluid density of at least 65 pcf. If imported granular material, such as CDOT Class 4, 5, or 6 aggregate base course is used as backfill, this value can be reduced to 55 pcf. This value assumes deflection; some minor cracking of walls may occur. If very little wall deflection is desired, a higher design value is appropriate. The structural engineer should also consider site-specific grade restrictions, the effects of large openings on the behavior of the walls, and the need for lateral bracing during backfill.



SMITH

101 MULE DEER CT, DILLON, CO 80435

GENERAL NOTES

IT IS THE BUILDER'S RESPONSIBILITY TO DICTATE METHODS OF CONSTRUCTION. THE BUILDER SHALL VERIFY ALL DIMENSIONS OF MANUFACTURED COMPONENTS AND RELATIONSHIPS BETWEEN MATERIALS OR COMPONENTS. THE BUILDER SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS SHOWN ON THE DRAWINGS INCLUDING ALL EXISTING GRADES AT THE SITE.

THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES OR DEFICIENCIES IN THE DRAWINGS PRIOR TO CONSTRUCTION. FAILURE TO NOTIFY ENGINEER SHALL CONSTITUTE ACCEPTANCE BY THE BUILDER OF ALL RESPONSIBILITY.

IF A DISCREPANCY ARISES BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR WHERE A DETAIL IS DOUBTFUL OFF INTERPRETATION, OR AN UNANTICIPATED FIELD CONDITION IS ENCOUNTERED, THE ENGINEER SHALL BE CALLED RIGHT AWAY FOR CORRECT PROCEDURE TO BE FOLLOWED. SUCH INSTRUCTIONS SHALL BE CONFIRMED IN WRITING AND DISTRIBUTED TO ALL AFFECTED PARTIES.

WHERE EVER THERE IS A CONFLICT BETWEEN DETAILS AND SPECIFICATIONS, OR BETWEEN DETAILS, OR WHERE DOUBTFUL OF INTERPRETATION, THE MOST RESTRICTIVE SHALL GOVERN AS DETERMINED BY THE ENGINEER OF RECORD.

THIS IS A CUSTOM DESIGN FOR A SPECIFIC SITE. THESE PLANS MAY NOT BE USED ON ANY OTHER SITE WITHOUT THE ENGINEER'S PRIOR WRITTEN APPROVAL.

ANY CHANGES TO THESE PLANS WITHOUT PRIOR WRITTEN CONSENT BY THE ENGINEER SHALL CONSTITUTE ACCEPTANCE BY THE BUILDER AND OWNER OF SAID CHANGES.

THE CONTRACTOR SHALL PROVIDE MECHANICAL AND ELECTRICAL ENGINEERING AS REQUIRED TO COMPLETE WORK AND FOR INTENDED PURPOSE. MECHANICAL CONTRACTORS SHALL VERIFY DIMENSIONS OF ALL NECESSARY FLUE CHASES, DUCTS, AND EQUIPMENT.

THE ENGINEER SHALL BE CALLED AT LEAST 48 HOURS IN ADVANCE TO INSPECT FOOTINGS. ALL REBAR PRIOR TO CONCRETE PLACEMENT AND SHALL BE CALLED TO PERFORM ALL NECESSARY AND JURISDICTIONAL REQUIRED STRUCTURAL INSPECTIONS AFTER ALL MECHANICAL, ELECTRICAL, AND PLUMBING HAS BEEN INSTALLED PRIOR TO INSULATION OR OTHER COVERINGS.

THE BUILDER/CONTRACTOR AND ALL SUBCONTRACTORS SHALL CONFORM TO ALL APPLICABLE BUILDING CODES.

PERSPECTIVE

VICINITY MAP

BASED ON 2018 I.R.C.

SNOW LOAD (ROOF): 100 PSF
SNOW LOAD (GROUND): 142.9 PSF
WIND LOAD: 115 MPH EXPOSURE C
SEISMIC DESIGN: CATEGORY " B "

SOIL BEARING PRESSURE: 3000 PSF, PER CTL THOMPSON SOILS REPORT DATED AUGUST 7, 2019

THIS PLAN MEETS OR EXCEEDS WIND SHEAR REQUIREMENTS

ARCHITECTURAL SYMBOLS/KEY

PROJECT

GARAGE, FOUNDATION & ROOF
101 MULE DEER CT
DILLON, CO 80435

OWNER

SMITH
101 MULE DEER CT
DILLON, CO 80435

ENGINEER

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PROJECT EXCLUSIVELY DESIGNED FOR: SMITH, 101 MULE DEER CT, DILLON, CO 80435

DRAWING NAME: TITLE

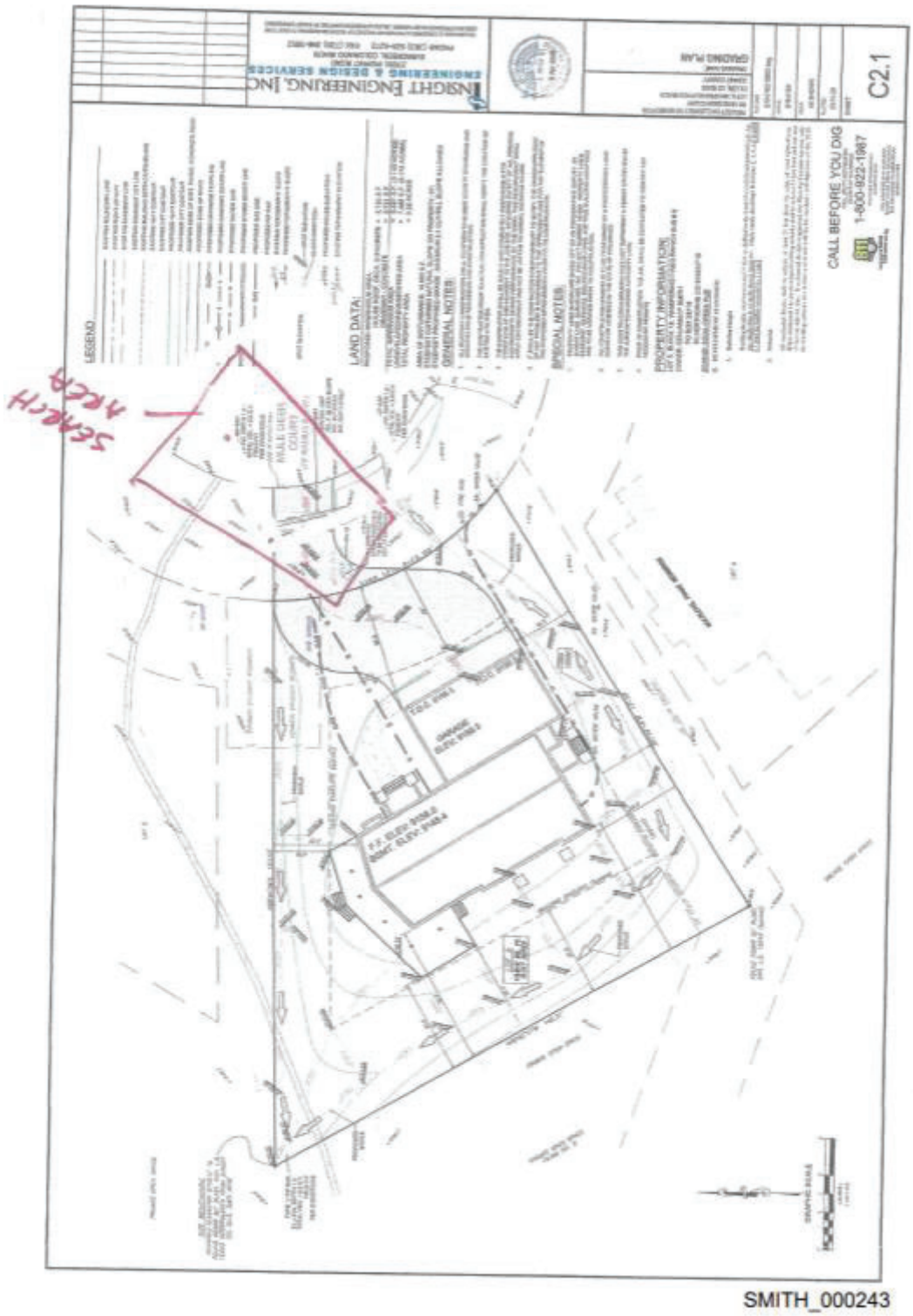
SHEET: T.1

Insight Engineering Sheet T.1 indicates that the structural foundation design was based on a geotechnical report by CTL Thompson, dated August 7, 2019. The Summit County plan reviewer notes that the report was received and reviewed (Bates Number Smith_000292).

Foundation perspective was provided by Insight. No calculations have been made available to CTETS to determine the lateral resistance or how the soil was to be placed for support of the shallow foundations that would be on fill materials. Insight's plans state in the general notes that counterforts should be added to walls in excess of 25-feet. No counterforts are shown on the plans. If Liscott backfilled the walls prior to the setting of the modules, bracing would have been required to maintain the plumbness of the walls during that process. Counterforts or buttresses would have been required to provide lateral resistance to the walls, at a design value, per the CTL report of 55-pcf. At this time, CTETS has not provided a calculation of the Insight plans and will respond upon receipt of Insight's complete file regarding these issues. The current damage to the walls will require excavation, replumbing, and proper grout and anchor placement to create plumb and level conditions. In addition, CTETS believes that the minimum number of counterforts that Insight called for should be placed after the walls are plumb to allow them to provide proper lateral function.

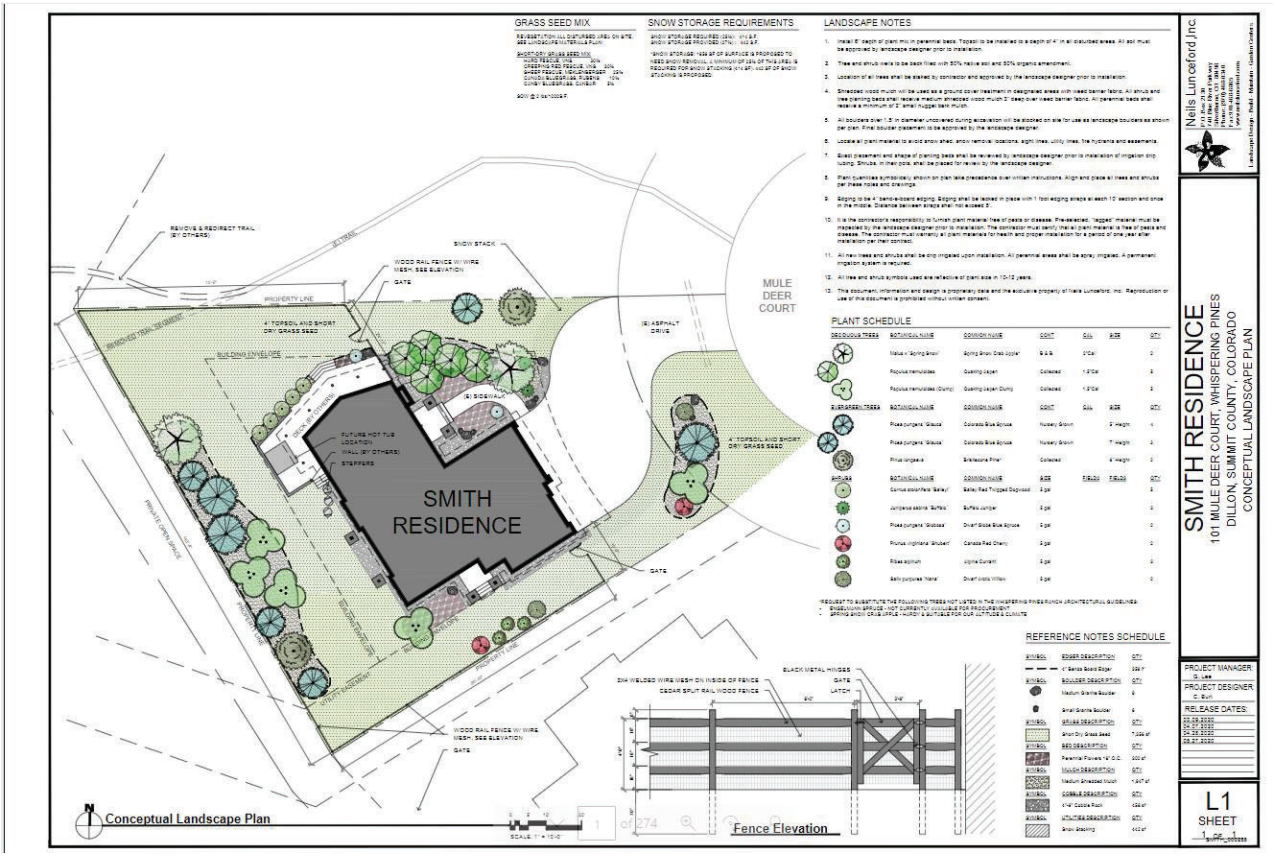
In addition to the plans provided under the Seal of DOLA, there were also signed architectural and engineering plans and specifications provided by Insight Engineering Incorporated, Andrew Schneider Professional Engineer 36132, Revision 9 Final, on April 30, 2020 under contract with Liscott. The truss designs were provided by Alpine, Bruce Feldmann, Colorado Professional Engineer number 35633, dated March 27, 2020. A site plan was prepared by Insight Engineering, for Liscott.

EXHIBIT 104 CTETS_000033



Site Plan, Bates Number Smith_000243.

EXHIBIT 104 CTETS_000034



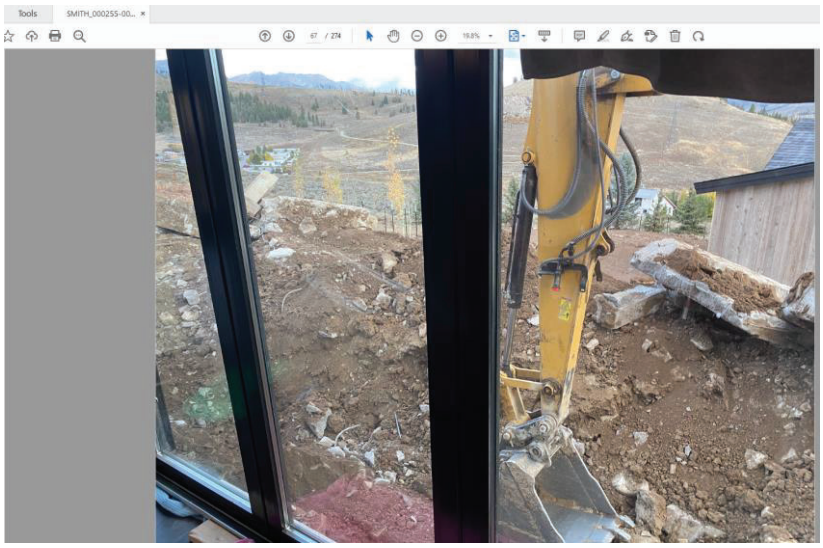
Landscape plans, provided by Niels Lunceford.

CTETS has observed, as of the writing of this report, the exterior and interior of the construction. Due to the work of Liscott, there was damage to the components being constructed. At the time of the CTETS site observation, the foundations for the porches and their associated roof structures have been demolished due to, as CTETS understands, settlement in the foundation backfill zone due to improper backfill and compaction conducted by Liscott and their subcontractors.

CTL provided the following requirements for the backfill on this property. This should have been performed by Liscott:

Foundation Wall Backfill

Proper placement and compaction of foundation backfill is important to reduce infiltration of surface water and settlement of backfill. Backfill which will support surface improvements (sidewalks, driveways, etc.) should be placed in thin loose lifts, moisture conditioned to within +/-2 percent of optimum moisture content, and compacted to at least 95 percent of ASTM D 698 maximum dry density. We recommend using imported granular soils (CDOT 4, 5, or 6 road base or similar soil) in pavement and walkway areas. Backfill in landscape areas should be compacted to at least 90 percent of ASTM D 698 maximum dry density. The natural clay soils can be used as backfill in landscape areas, provided they are free of rocks larger than 6 inches in diameter, organics, and debris. Clay backfill should be placed at a moisture content slightly above optimum to reduce expansion potential. The upper 2 feet of fill should be a relatively impervious material to limit infiltration. Thickness of lifts will likely need to be reduced if there are small confined areas of backfill, which limit the size and weight of compaction equipment. Some settlement of the backfill should be expected even if the material is placed and compacted properly. In our experience, settlement of properly compacted granular backfill could be on the order of 0.5 to 1 percent of backfill thickness. Backfill with on-site clay soils could have a slightly higher (1 to 2 percent) settlement or heave potential. Methods to reduce the risk of backfill settlement or heave include using a granular material and increasing the minimum compaction level. Moisture content and density of the backfill should be tested during placement by a representative of our firm.



Owner provided photograph showing the demolition of the porches prior to CTETS's visit.

Owner provided photograph of foundation damage at the porch foundations (Bates Number Smith_000507).

Although the modular plans provided to the State of Colorado indicated a spread footing system to be employed, the plans stated it had to be designed and constructed based the on-site soil conditions (Sheet G1.1), and, thus, these there should be an evaluation of the site. The plans prepared by Insight Engineering Inc state that the *"Foundation (By On-Site Contractor), Sheet A1.2. Insight Engineering provided the engineering plans for the foundation."*

Heritage Homes issued a report on August 29, 2022, regarding the setting of the modular units and the issues noted with this installation during its July 6, 2022 site observation. Details of this observation and the noted issues can be found in the reports by Heritage Homes.

Insight Engineering issued a report on August 23, 2022 that included a bullet point list of the items noted and documented during its site visit regarding the construction of the structural components of the project. Details of this observation and the noted issues can be found in the reports from Insight.

CTETS has reviewed copies of these reports and has found, generally, that the findings included these reports regarding the improper construction and the impacts of such construction are warranted.

Should a complete evaluation of the structural elements be required, a full review of the original soils report(s) and original construction drawings will be necessary. A geotechnical report has been provided for review. The structural plans and calculations that were provided to the State of Colorado were generally reviewed for lateral and vertical loading on the frame portions of the modular home and generally appear to be compliant with the IRC. No foundation calculations were provided for the basement to the State of Colorado.

The following non-compliant conditions were discovered during CTETS's visual site observations:

1. COMPLIANCE WITH GEOTECHNICAL REPORT

A geotechnical report has been provided for review. The structural plans indicate that a geotechnical report was provided by CTL Thompson in 2019, as well the Insight Engineering plans provided that the report shall be followed in the construction of the home. Liscott would have had to provide their work as outlined in the CTL Thompson report, specific to excavation, drainage, and backfill requirements among other items.

2. FOUNDATION SYSTEM

a. Foundation Wall Construction

The issues with the foundation wall construction will be addressed by Insight Engineering (Insight) in a separate report. During the site observation and discussions with the Homeowner, it is understood that Insight has surveyed the north prow foundation wall and determined it to be constructed, "*out-of-plumb by nearly 4*, *which likely contributed to the lack of steel beam bearing."*[5]

Observation and reference measurements, as shown in the following photos, were taken on the exterior between the foundation wall. The wall above shows an offset between these vertical surfaces of approximately 5-inches at the point of the prow to approximately 1-inch at the on end and 0-inches at the ends of the foundation wall, respectively. Additionally, during the July 6, 2022 site visit by Heritage Homes, it noted that the top of the foundation wall dips down by

[5] Insight Engineering, August 23, 2022, 12:24 PM, correspondence.

at least 2-inches,[6] which result in an excessive gap between the top of the foundation wall and the bottom of the modular unit wall.

The General Contractor Agreement between Liscott Homes (Contractor) and Ben and Holly Smith (Owner), signed and dated December 19, 2020, states the following:

- *"6.) Warranty: Contractor warrants that all materials and equipment furnished under the Contract Agreement shall be new and in conformance with the Contract Documents."*

The Manufactured Housing Research Alliance publication titled, "Manufactured Home Installation Guide," 2008, Section "Construct Foundation (For Homes with Load-Bearing Perimeter Wall)," states the following:

- *"Step 3. Construct the Footings or Slab*

  Construct the foundation according to the approved design, including the perimeter foundation wall, drainage system, footings, and/or slab."

- *"Level the wall. Make sure the foundation is level and straight with no more than a 1/4 inch vertical variation over the entire foundation and no more than 1/8 inch vertical variation over any two-foot length."*

It is CTETS's opinion that this poorly constructed foundation and the improper placement of backfill without proper foundation support are contributing factors in the out-of-plumb conditions noted for the drywall finishes, excess gapping and poor-quality door installation, and the pulling away of the cabinets along the west wall of the kitchen, as shown in the following photos. In addition to the construction issues, the foundation plan would have had to incorporate lateral resisting elements, such as counterforts, where the basement top of the wall has to be supported for the on-site backfill. The plans are silent on the lateral forces utilized in the design, or lack of design, of a foundation system.

In an attempt to address this condition of the out-of-plumb foundation wall construction, Liscott inserted OSB materials and wood shims into the gap, then applied spray foam insulation to fill the gap between the top of the sill plate and the rim joist of the modular unit. It is CTETS's opinion that this non-compliant condition exists due to the failure of Liscott, and any cost associated with any repairs or remedial construction is the responsibility of Liscott.

[6] Heritage Homes, August 29, 2022 , 8:11 AM, correspondence.

Example Photographs:

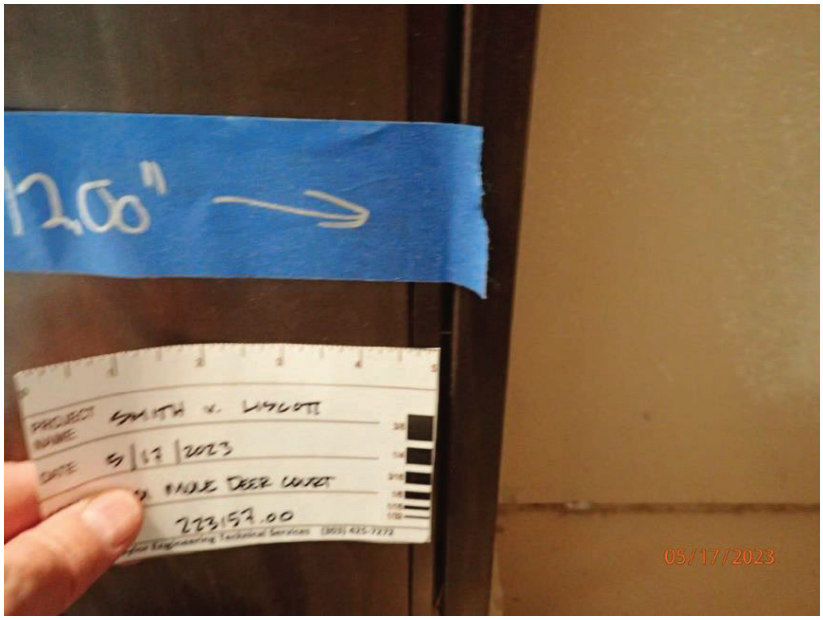
Foundation damage provided in the disclosures in the file.

Interior damages related to the setting of the modular components and foundation movement or interior post issues (Bates Number Smith_000521).

May 17, 2023, Disc OBS1, Photograph 155, DLC, 101 Mule Deer Court, base cabinet pulled away from west kitchen wall.

May 17, 2023, Disc OBS1, Photograph 156, DLC, 101 Mule Deer Court, base cabinet pulled away from west kitchen wall.

May 17, 2023, Disc OBS1, Photograph 184, DLC, 101 Mule Deer Court, width dimension at top of door frame – approx. 1-1/4-inch.



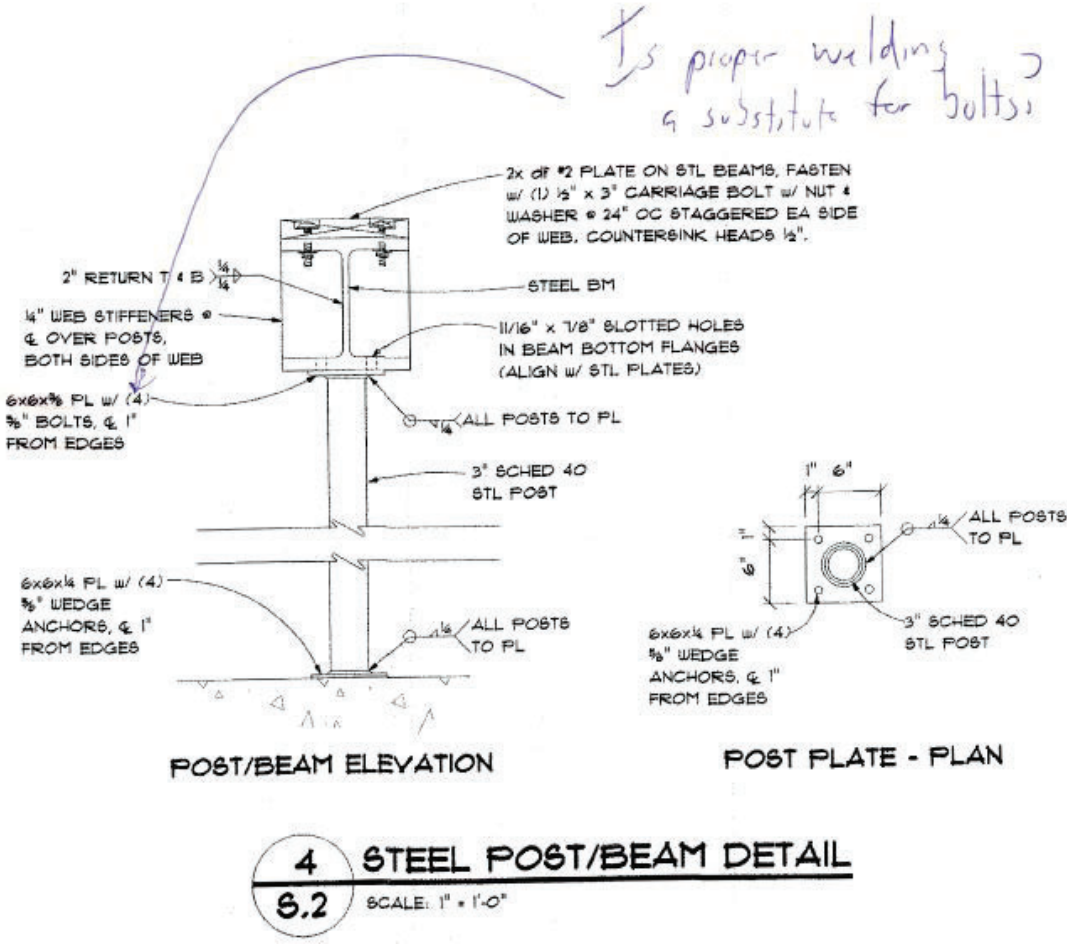
May 17, 2023, Disc OBS1, Photograph 189, DLC, 101 Mule Deer Court, width dimension at bottom of door frame – approx. 3/8-inch.

b. Structural Steel Beam Installation

During the site observation, CTETS noted that repairs had been made to the structural steel beam installation. These repairs included 1) installation of the correct steel support post, 2) welding of the connection between the support post and the beam, 3) fabrication and installation of the splice plate over the southern support post, 4) fabrication and installation of the required web stiffeners, and 5) fabrication and installation of the bearing supports where

the beam bears at the foundation walls. This remedial work was designed by Insight Engineering and constructed by a certified welding contractor hired by the Owners after the discovery of the 2-inch sag in the beam span. The cost for these repairs were paid directly by the Owner to the welding contractor.

During the construction of doors and other finish components, it was found that the steel support beam was sagging by approximately 2-inches. Further detailed information regarding this condition can be found in the Insight Engineering, August 23, 2022, report of items observed during the construction. CTETS understands, from discussions with the Owners, that during construction, Liscott had used dimensional lumber to support the steel beam. The beam levelness was a necessity of properly setting the modular components, and during the rigging and setting, the beam would have been required to have sufficient support. After the setting, permanent posts would be used to account for any acceptable construction tolerances between the foundation elements and the floor beam, allowing the floor beam to be properly placed in a level and plumb condition. According to Insight Engineering, the use of 3-inch schedule, 40 steel posts were to be used for the support of the beam.



Detail 4, Sheet S.2 Insight Engineering, dated February 15, 2021 (Bates Number Smith_000282).

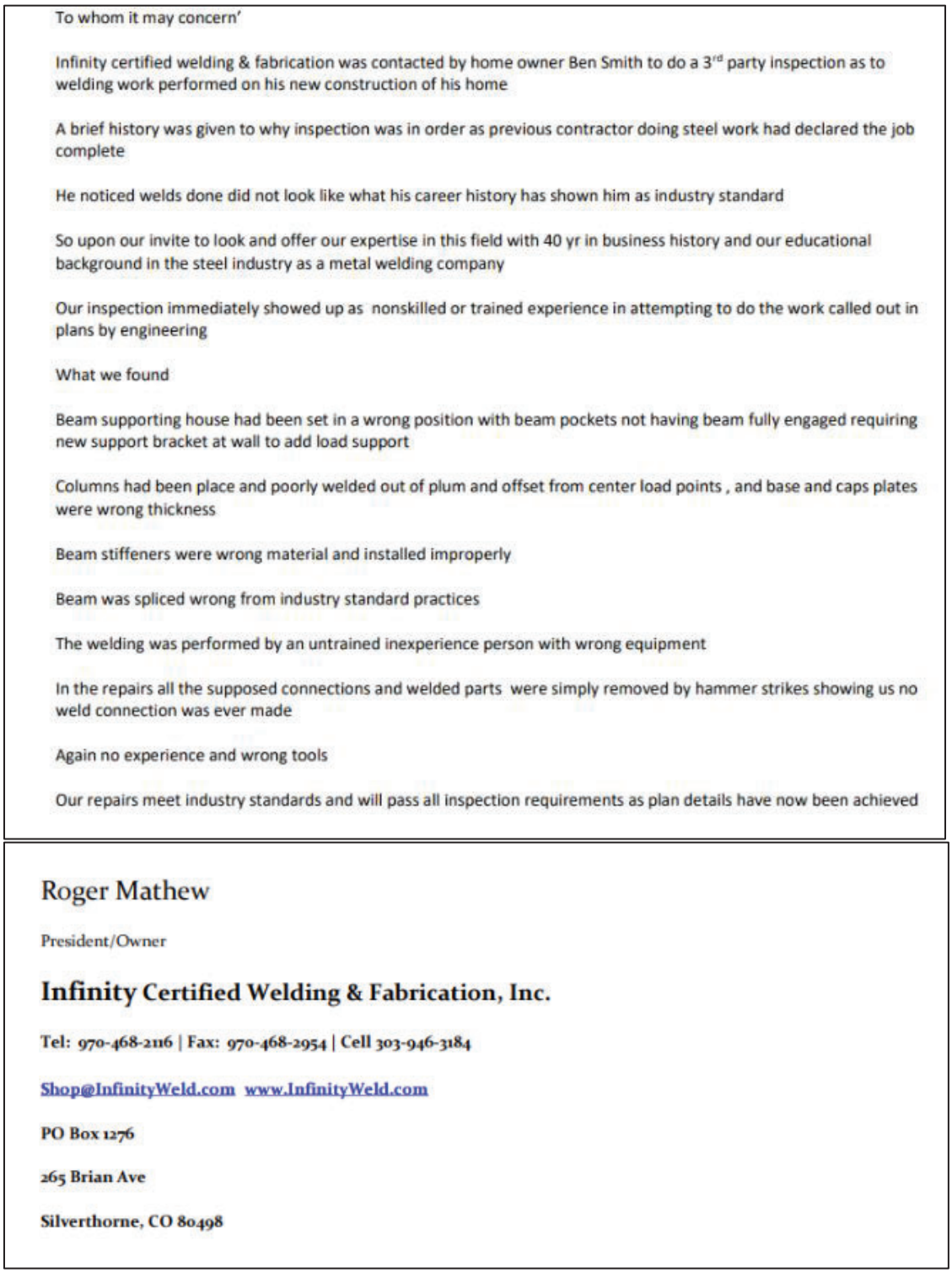
This item of foundation and beam levelness was brought to the attention of Liscott on April 18, 2022 by Garrett Spiker of MJ Doors & More LLC as they were trying to install the panoramic doors at the north elevation. In this communication, Mr. Spiker told Liscott that floors were out of level by approximately 1-3/4-inches toward the center of the structure, as verified by using a bubble and laser level. The following screen capture from August 26, 2022 provides Mr. Spikers' account of the April 18th communications:

Subject: Liscott Homes Converstaion
Date: Fri, 26 Aug 2022 12:02:08 -0600
From:MJ Doors & More LLC <mjdoorsandmorellc@gmail.com>
To: Ben Smith <ben@firesmithtools.com>

To WHom It May Concern
On the 18th of April, 2022 I Garrett Spiker with MJ Doors & More LLC sent a text message to Mr. Jon Reid with Liscott Homes regarding significant issues (the house being severely out of level) at which time he advised me to call Rob with Liscott homes (please see the attached Screen shots). From there I made contact Rob, explained to him that the floors were 1 3/4 inches out of level, diving in towards the center. Rob expressed to me that this was not possible. I then explained to rob that I was looking at it with both a bubble level and a laser level along with a tape measure to verify how far out of level that the floor actually was. I then stated to Rob that completeing the installation was not possible due to the irregularity. Rob responded with "the floor could not be more then a 16th of an inch out of level across the entire span". He then instructed me to do whatever we needed to do to get the Panoramic Doors installed and they would take care of trimming them out. I told him that it would not work, it would not be right and that it would compromise the functionality of the systems.. Rob then instructed me to just worry about getting the doors installed and that he would worry about trimming the doors out to make them look good.
This led to our having to completely remove the two four panel Panoramic Door systems and our having to reinstall them (without compensation). While so doing and nearing the end of the reinstall Mr. Smith arrived on site and we immediately addressed the situation with him. We set up a laser level to show him that while our doors were level the floor was in fact extremely out of level with a severe slope leading to the center beam of the house in both directions.
Thanks
Ernest and Garrett
--

Screen capture of the correspondence from MJ Doors & More regarding the out-of-level floor conditions encountered during the panoramic door installation. The heading and title section at the top section have been redacted.

The following screen capture shows the communication from Infinity Welding regarding the repairs to the structural steel supports and connections:



To whom it may concern'

Infinity certified welding & fabrication was contacted by home owner Ben Smith to do a 3rd party inspection as to welding work performed on his new construction of his home

A brief history was given to why inspection was in order as previous contractor doing steel work had declared the job complete

He noticed welds done did not look like what his career history has shown him as industry standard

So upon our invite to look and offer our expertise in this field with 40 yr in business history and our educational background in the steel industry as a metal welding company

Our inspection immediately showed up as nonskilled or trained experience in attempting to do the work called out in plans by engineering

What we found

Beam supporting house had been set in a wrong position with beam pockets not having beam fully engaged requiring new support bracket at wall to add load support

Columns had been place and poorly welded out of plum and offset from center load points , and base and caps plates were wrong thickness

Beam stiffeners were wrong material and installed improperly

Beam was spliced wrong from industry standard practices

The welding was performed by an untrained inexperience person with wrong equipment

In the repairs all the supposed connections and welded parts were simply removed by hammer strikes showing us no weld connection was ever made

Again no experience and wrong tools

Our repairs meet industry standards and will pass all inspection requirements as plan details have now been achieved

Roger Mathew

President/Owner

Infinity Certified Welding & Fabrication, Inc.

Tel: 970-468-2116 | Fax: 970-468-2954 | Cell 303-946-3184

Shop@InfinityWeld.com www.InfinityWeld.com

PO Box 1276

265 Brian Ave

Silverthorne, CO 80498

Screen capture of the correspondence from Infinity Welding regarding its inspection and the repairs performed. The heading and title section at the top section have been redacted.

The General Contractor Agreement between Liscott Homes (Contractor) and Ben and Holly Smith (Owner), signed and dated December 19, 2020, states the following:

- *"6.) Warranty: Contractor warrants that all materials and equipment furnished under the Contract Agreement shall be new and in conformance with the Contract Documents."*

The approved Heritage Homes Construction Drawings, June 3, 2021, Sheet S2.1, Detail A, "Cross Section," states the following:

- *"All work below floor system to be completed by on-site contractor"*

Industry standards require interior supports for the structure to be installed prior to setting the home. The Manufactured Housing Research Alliance publication titled, "Manufactured Home Installation Guide," 2008, Section "Construct Foundation (For Homes with Load-Bearing Perimeter Wall)," states the following:

- *"Step 5. Install Interior Supports*

  Install piers, columns and H-beams to support the interior of the home according to the approved design."

Example Photographs:

May 17, 2023, Disc OBS1, Photograph 97, DLC, 101 Mule Deer Court, lumber reported by the Smiths as those used to support structural steel beam.

May 17, 2023, Disc OBS1, Photograph 98, DLC, 101 Mule Deer Court, lumber reported by the Smiths used to support structural steel beam.

Owner provided photo showing the use of dimensional lumber supports for the structural steel beam. Note there is no lateral support provided for the basement walls that would be necessary to backfill them prior to the modulars being set.

Construction photo of beam support, screen captured from Bates Number HERITAGE_000055.

May 17, 2023, Disc OBS1, Photograph 124, DLC, 101 Mule Deer Court, repaired connection between support post and steel beam. This attachment detail was done at both the north and south support post. North post location does not have a splice connection plate.

May 17, 2023, Disc OBS1, Photograph 125, DLC, 101 Mule Deer Court, approved beam splice plate installed at the south beam support location.

May 17, 2023, Disc OBS1, Photograph 126, DLC, 101 Mule Deer Court, approved beam bearing seat as installed at the south and north foundation wall bearing points.

c. Damaged Garage Roof Trusses

At the site visit, it is CTETS's understanding from discussion with the Owners that when the lumber and garage truss packages were delivered, they were placed directly on the ground without any type of dunnage or other supports and were also not covered to be protected from the elements. Subsequently, these items became covered in snow and ice. When it was time for the installation of the trusses, they had been frozen to the ground. Liscott then used a mini-excavator to dig them out and break them free from the ice and snow. This resulted in damage to the truss framing members, primarily along the bottom chords.

The General Contractor Agreement between Liscott Homes (Contractor) and Ben and Holly Smith (Owner), signed and dated December 19, 2020, states the following:

- *"6.) Warranty: Contractor warrants that all materials and equipment furnished under the Contract Agreement shall be new and in conformance with the Contract Documents."*

The Structural Building Components Association and Truss Plate Institute jointly produced a document titled, "BCSI-B1 Summary Sheet – Guide for Handling, Installing, Restraining and Bracing of Trusses," 2011, Section "Handling," which states the following:

- *"Notice. Avoid lateral bending.*
- *Notice. The contractor is responsible for properly receiving, unloading, and storing the trusses at the jobsite. Unload trusses to smooth surface to prevent damage.*
- *Trusses may be unloaded directly on the ground at the time of delivery or stored temporarily in contact with the ground after delivery. If trusses are to be stored for more than one week, place blocking of sufficient height beneath the stack of trusses at 8' (2.4m) to 10' (3M) on-center (o.c).*

- *For trusses stored for more than one week, cover bundles to protect from the environment."*

Rather than replacing the truss or making the necessary repairs prior to installation, Liscott instead went ahead and erected the damaged trusses. After installation, Liscott then attempted to make repairs. Prior to attempting to make the repairs, Liscott had received and approved a repair procedure from the truss manufacturer. However, even with these instructions, Liscott didn't repair the trusses properly. Most notable is that they didn't use any construction adhesive, proper nail spacing, or correct lumber, as specified by the truss manufacturer.

Since these repairs attempted by Liscott were incorrect, the Owners then hired a qualified carpenter to implement these repairs in accordance with the truss manufacturer's instructions. This work was then signed off and accepted. Example photographs of these repairs are shown below.

It is CTETS's opinion that Liscott failed in their duties by 1) not properly protecting the materials from the elements and allowing them to become frozen to the ground, 2) damaging the truss by using a mini-excavator to dig them out, 3) proceeding to use the damaged trusses in the construction, and 4) attempting, but failing, to properly make the repairs. Therefore, it is CTETS's opinion that all the costs incurred for the repairs, as well as a potential credit back to the Owner for installing a damaged product, are the responsibility of Liscott.

Example Photographs:

Owner provided photo, trusses delivered to the site and stored directly on the ground without dunnage.

Owner provided photo, trusses and other building materials stored directly on the ground without dunnage with no protective covering, and covered with snow and ice.

Owner provided photo, trusses and other building materials stored directly on the ground without dunnage with no protective covering, and covered with snow and ice.

May 17, 2023, Disc OBS1, Photograph 103, DLC, 101 Mule Deer Court, repairs at bottom chord of garage trusses.

May 17, 2023, Disc OBS1, Photograph 104, DLC, 101 Mule Deer Court, repairs at bottom chord of garage trusses.

May 17, 2023, Disc OBS1, Photograph 106, DLC, 101 Mule Deer Court, repairs at bottom chord of garage trusses.

May 17, 2023, Disc OBS1, Photograph 107, DLC, 101 Mule Deer Court, repairs at bottom chord of garage trusses.

d. Modular Unit Installation

Several issues were noted regarding the setting of the modular units during the site observation. In addition to the CTETS items mentioned below, Heritage Homes issued a report on August 29, 2022, regarding the setting of the modular units and the issues noted with this installation during its July 6, 2022 site observation. Details of this observation and the noted issues can be found in this report from Heritage Homes.

The following items were noted by CTETS during the May 17, 2022 site observation.

The Heritage Homes design drawings, detail 3/S2.1, calls for the installation of a 2 x 12 band board. This band board serves as a structural connection between the upper and lower modular units. As of the CTETS's site observation, this band board has not been installed.

Damage was observed at the northeast corner of the units, generally at the mating line between the lower and upper modular units. It is CTETS's understanding that during the setting of the units, Liscott's setting crews used a mini-excavator to try and push the units together. This has damaged the insulation board and the OSB sheathing that will require repairs prior to the installation of the siding. The current installation has resulted in a gap of approximately 2-inches between the east and west units. It has also resulted in the east side unit overhanging the foundation by approximately 2-inches, as shown in photos 72 and 73 below.

Since Liscott was not able to fully pull the units tight together, the incomplete work was left with a 2-inch gap between the east and west side units across the full height. Liscott then proceeded to simply fill this gap with spray foam insulation. Liscott should have instead taken the unit back apart and figured out how to properly set them to ensure full contact, as intended for an assembly such as this. This gap can be seen in the photos annotated below.

This mis-alignment of the modular unit has also translated into the installation of the interior doors and frames along the mid-line of the structure. These issues are discussed elsewhere in this report.

CTETS understood from its discussions with the Owner that the Heritage Homes representative stated that Heritage has had problems with this same setting crew on past projects and would not have approved using this setting crew.

The General Contractor Agreement between Liscott Homes (Contractor) and Ben and Holly Smith (Owner), signed and dated December 19, 2020, states the following:

- *"6.) Warranty: Contractor warrants that all materials and equipment furnished under the Contract Agreement shall be new and in conformance with the Contract Documents."*

The Manufactured Housing Research Alliance publication titled, "Manufactured Home Installation Guide," 2008, Section "Set the Home," states the following:

- *"Step 1. Prepare for Set*

  For perimeter bearing wall foundations:

  - *Check that the length and width of the home match with the foundation walls.*
  - *Check that the two main diagonal measurements of the foundation are equal.*
  - *Check that the foundation walls and other support points are within 1/4 inch of level overall and within 1/8 inch of level within any four foot distance.*
  - *For multi-section homes, check that each pair of diagonal measurements for each portion of the foundation corresponding to a home section are equal.*

- *Step 3. Lift Home*

  There are three primary methods available to place the home on the foundation: jacking, rolling and craning.

…cranes are most commonly used for basement foundations."

The Manufactured Housing Research Alliance publication titled, "Manufactured Home Installation Guide," 2008, Section "Complete Multi-Section Set," states the following:

- *"Step 5. Position Additional Home Sections*

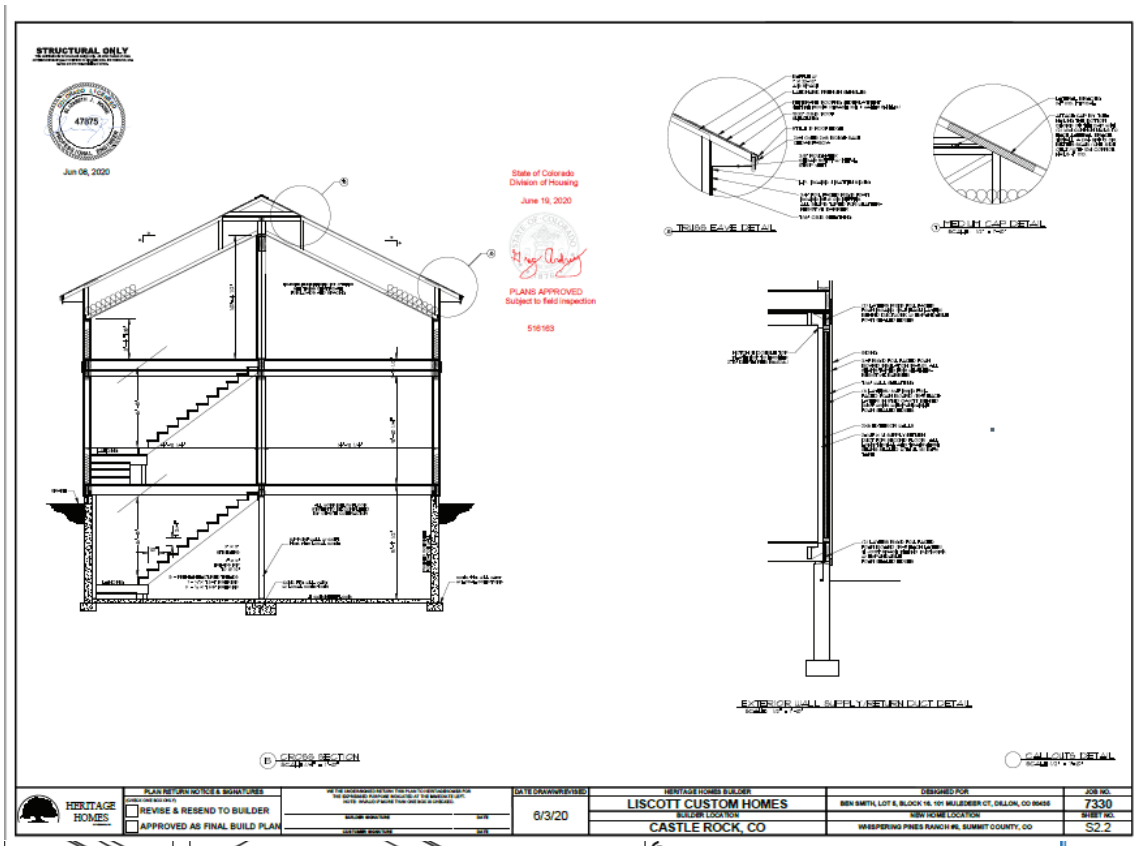
  Follow this procedure to install additional home sections:

  …

  5. Level Section. Lower the section onto the outside piers first, inside piers last. Before releasing the mechanical positioning system, check interior doorways and other openings for misalignments that may cause problems during trim-out. The floors should be flush, level, and tight and the roof section should have little, if any, gap at the top of the marriage line. Use at least two come-a-longs to pull the sections snugly together and use the water level or other leveling device to set all piers and shims.

  6. Shim gaps. Shim any gaps up to one inch between structural elements with dimensional lumber. If any gaps exceed one inch, re-position the home to eliminate gaps."

Based on this information and our extensive professional construction experience, this failure by Liscott and its setting crews demonstrates Liscott's lack of qualified, on-site supervision and overall management of the Project, starting with the incorrect construction of the foundation. Therefore, it is CTETS's opinion that any costs incurred for the repairs to the exterior or interior of the residence to adjust and account for these failures, as well as a potential credit back to the Owner for incorrectly installing a this non-compliant and/or defective product, are the responsibility of Liscott.



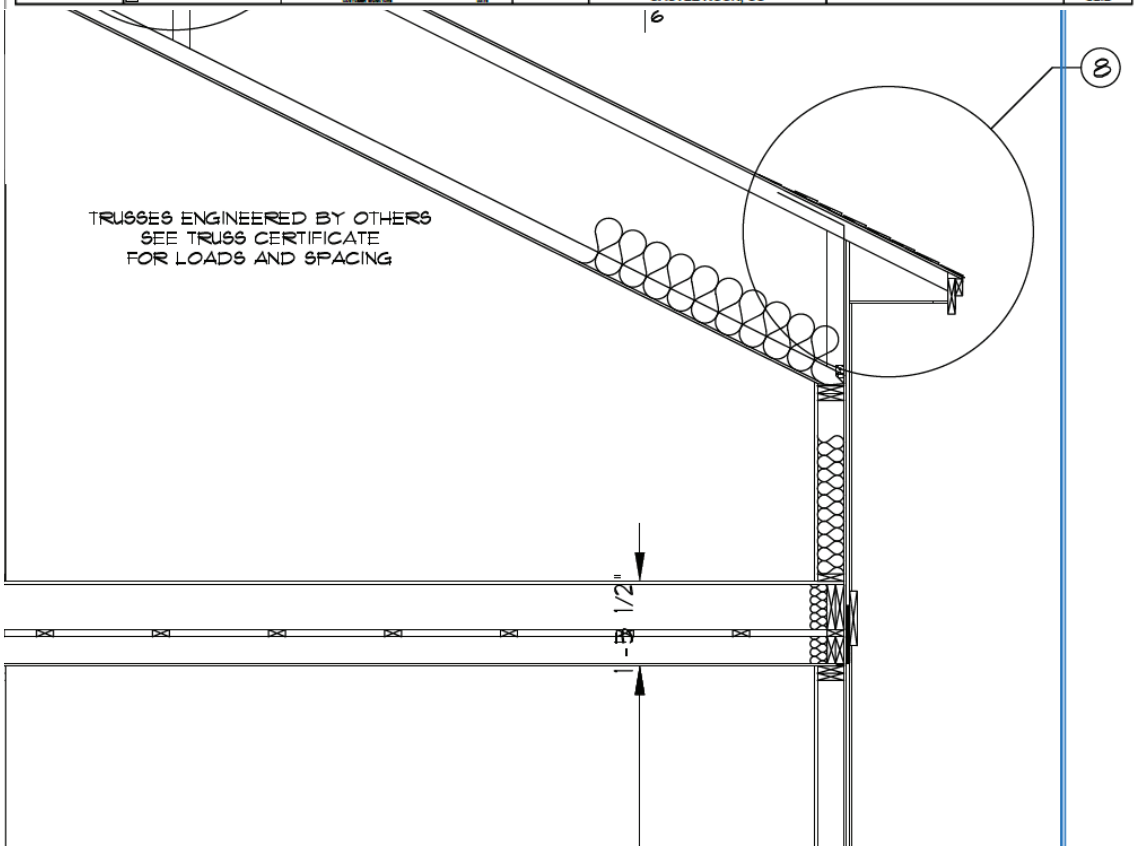
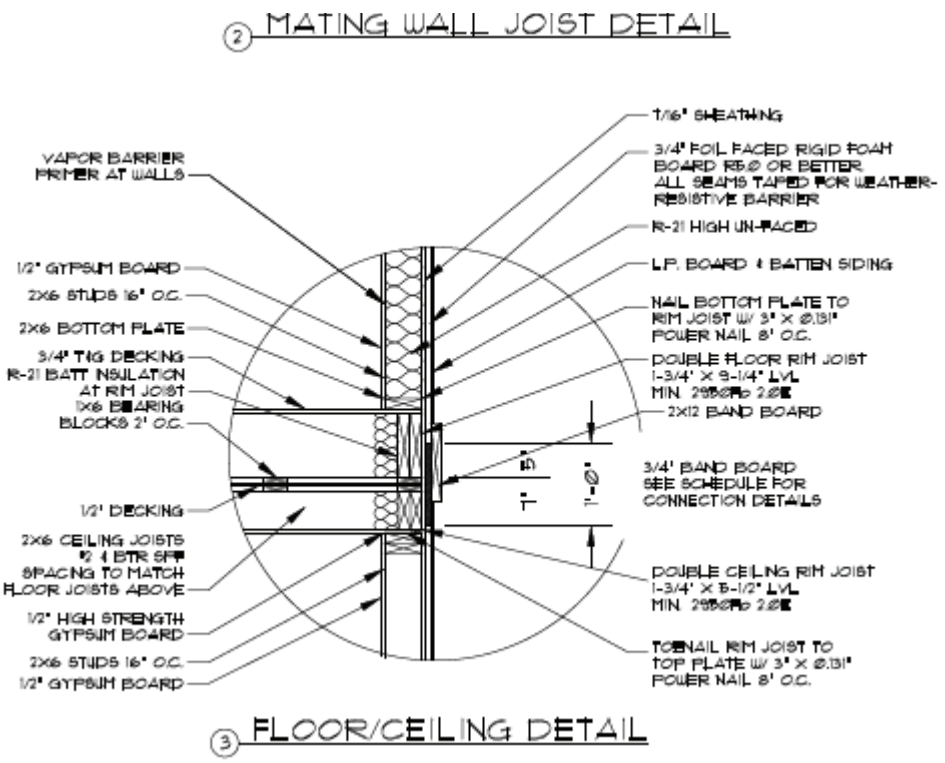


EXHIBIT 104 CTETS_000058



Mating line provided on the Heritage Homes drawings provided and approved by the State of Colorado.

EXHIBIT 104 CTETS_000059

Example Photographs:

Owner provided photo showing the gap between the modular units prior to Liscott's application of spray foam insulation in this gap.

May 17, 2023, Disc OBS1, Photograph 11, DLC, 101 Mule Deer Court, overall view of the north elevation. 2x12 band board is missing at second story floor line.

May 17, 2023, Disc OBS1, Photograph 12, DLC, 101 Mule Deer Court, modular unit construction and damage at NE corner from use of a mini-excavator.

May 17, 2023, Disc OBS1, Photograph 49, DLC, 101 Mule Deer Court, east half of the north elevation showing incomplete modular unit installation and 2-inch gap at centerline.

May 17, 2023, Disc OSB1, Photograph 51, DLC, 101 Mule Deer Court, 2-inch gap between east and west modular units gap filled with spray foam.

May 17, 2023, Disc OSB1, Photograph 52, DLC, 101 Mule Deer Court, gap between east and west modular units. Gap offset between upper and lower levels.

May 17, 2023, Disc OSB1, Photograph 53, DLC, 101 Mule Deer Court, modular units mis-aligned with the foundation wall.

May 17, 2023, Disc OBS1, Photograph 54, DLC, 101 Mule Deer Court, modular units mis-aligned with the foundation wall at west half.

May 17, 2023, Disc OBS1, Photograph 55, DLC, 101 Mule Deer Court, modular units mis-aligned with the foundation wall at west half.

May 17, 2023, Disc OBS1, Photograph 59, DLC, 101 Mule Deer Court, close-up of gap between modular units.

May 17, 2023, Disc OBS1, Photograph 60, DLC, 101 Mule Deer Court, close-up of gap between modular units.

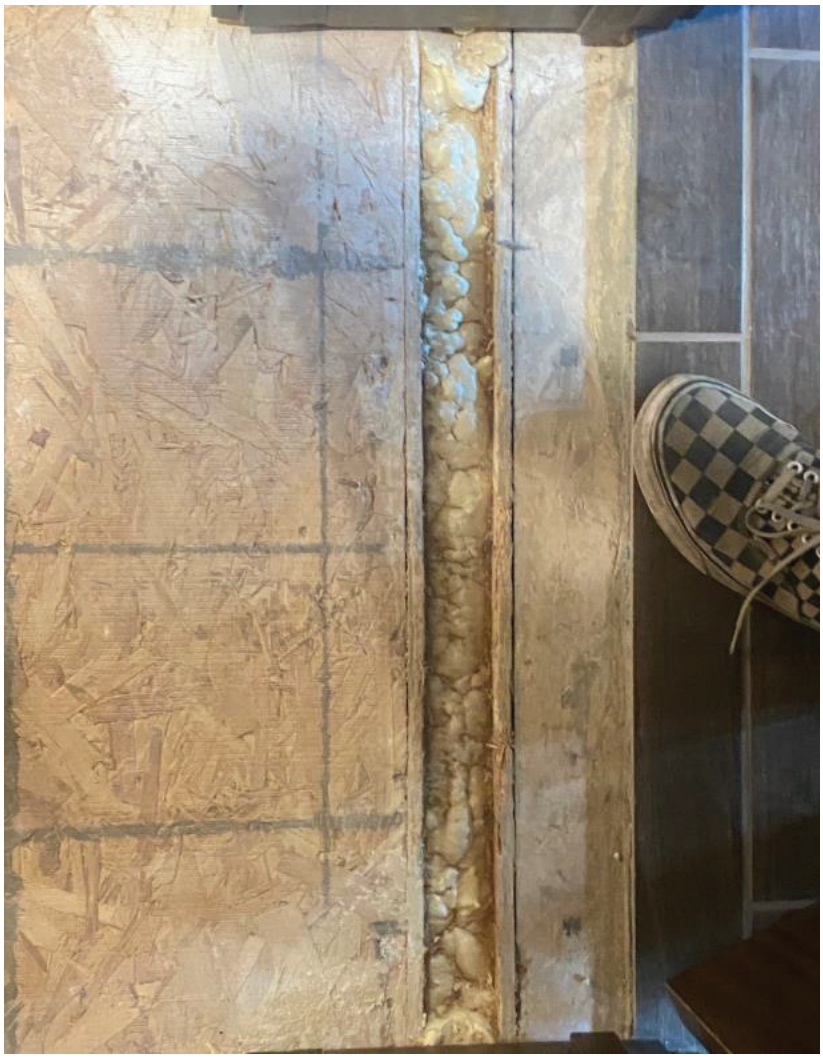
May 17, 2023, Disc OBS1, Photograph 65, DLC, 101 Mule Deer Court, modular units mis-aligned with the foundation wall at east half.

May 17, 2023, Disc OBS1, Photograph 69, DLC, 101 Mule Deer Court, damage at NE corner from use of a mini-excavator pushing on the units.

May 17, 2023, Disc OBS1, Photograph 72, DLC, 101 Mule Deer Court, overhang of modular unit to foundation wall east elevation.

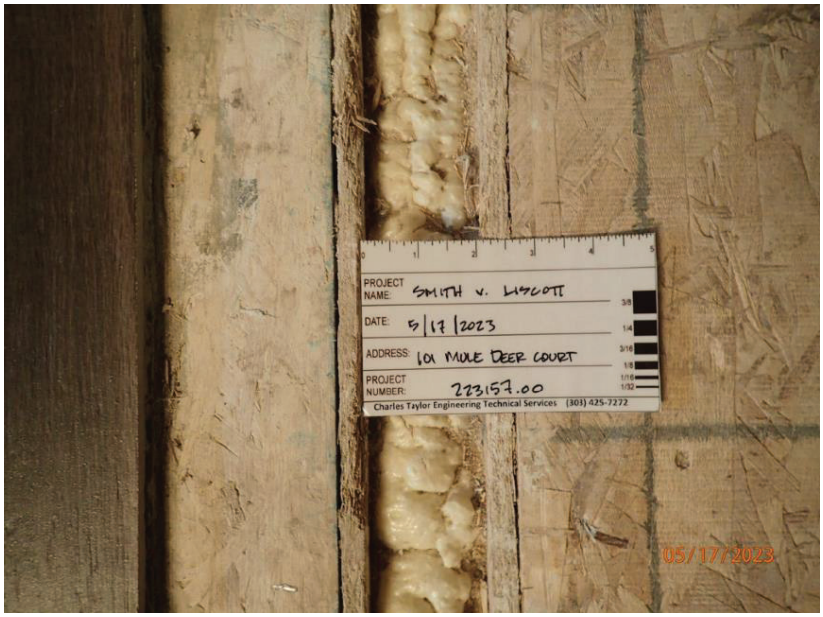
May 17, 2023, Disc OBS1, Photograph 73, DLC, 101 Mule Deer Court, overhang of modular unit to foundation wall east elevation.

Owner provided photo showing the 2-inch gap at the mating line between the modular units. Top of stairs at second floor level.



Owner provided photo showing spray foam insulation applied in the 2-inch gap at the mating line between the modular units at the first floor.

May 17, 2023, Disc OBS1, Photograph 227, DLC, 101 Mule Deer Court, 2-inch gap between east and west unit at subfloor at top of stairs.



May 17, 2023, Disc OBS1, Photograph 242, DLC, 101 Mule Deer Court, 2-inch gap between units filled with spray foam at sill into upstairs Bath #4.

e. Porch, Roof, and Patio Construction and Foundation Settlement

At the time of the site visit, the front porch framing, roofs, flooring, and foundations had been removed. This includes the work at the east elevation front entry, the north and west elevation porch, and the south elevation entry. This was all a direct result of the poor backfill placement and compaction work, as well as the apparent damage to the foundation walls and splitting of the concrete. During the site observation, the Owners noted that when the porch framing was

removed at the front entry area, it was found that the framing was poorly attached to the main structure and, in most cases, the fasteners only penetrated through the exterior insulation board and sheathing.

The local building codes and industry standards require proper soil preparation. The international Code Council (ICC) publication titled "2018 IRC® Code and Commentary," Chapter 4, "Foundations," Section 401 "General," Subsection 401.2 "Requirements," states the following:

- *"**R401.2 Requirements.** Foundation construction shall be capable of accommodating all loads in accordance with Section 301 and of transmitting the resulting loads to the supporting soil. Fill soils that support footings and foundations shall be designed, installed and tested in accordance with accepted engineering practice."*

The Manufactured Housing Research Alliance publication titled, "Manufactured Home Installation Guide," 2008, Section "Prepare the Site," states the following:

- *"Step 4. Determine Soil Conditions*

  …

  The soil under every portion of the support system must meet the following criteria:

  - *The soil must be firm and undisturbed (not previously excavated) or fill compacted to at least 90% of its maximum relative density. Uncompacted fill will settle over time, causing the home to shift and become unlevel.*
  - *Fill must not contain large debris. This too will settle over time."*

Due to this all being a result of Liscott's failure to provide high quality workmanship and for the lack of full-time, qualified supervision, it is CTETS's opinion that all costs associated with the removal and reconstruction of these components is the responsibility of Liscott.

Example Photographs:

May 17, 2023, Disc OBS1, Photograph 30, DLC, 101 Mule Deer Court, demolished footing setting at SW corner of property.

May 17, 2023, Disc OBS1, Photograph 21, DLC, 101 Mule Deer Court, south elevation entry foundation and porch framing have been removed.

May 17, 2023, Disc OBS1, Photograph 37, DLC, 101 Mule Deer Court, west elevation location where foundation has been removed.

May 17, 2023, Disc OBS1, Photograph 46, DLC, 101 Mule Deer Court, north elevation concrete work has been removed and backfill materials being placed.

May 17, 2023, Disc OBS1, Photograph 78, DLC, 101 Mule Deer Court, east elevation porch structure has been removed.

May 17, 2023, Disc OBS1, Photograph 82, DLC, 101 Mule Deer Court, east elevation entry footing have been removed and looking toward the front door location.

f. Reframing of the Stairs

At the time of the site observation, the stairs from the first floor to the second floor have been reframed to correct for the non-compliant tread and riser configuration where the stairs meet the second floor. It is CTETS's understanding that due to the modular units not being completely

brought together at the mid-line, there was a 2-inch gap left between the units. This caused the top two to three steps to vary in width. This re-framing work has since been completed.

The General Contractor Agreement between Liscott Homes (Contractor) and Ben and Holly Smith (Owner), signed and dated December 19, 2020, states the following:

- *"6.) Warranty: Contractor warrants that all materials and equipment furnished under the Contract Agreement shall be new and in conformance with the Contract Documents."*

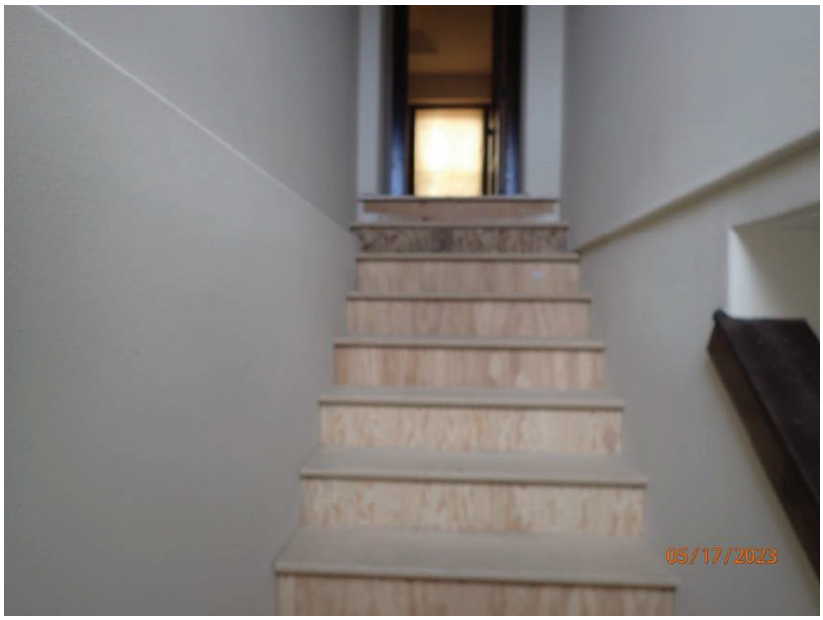
It is CTETS's opinion that this non-compliant condition is the direct result of Liscott's failure to properly complete the installation of the modular units to ensure they were completely brought together and gaps between the units fully closed. Any costs for this re-framing, or other related, repairs are the responsibility of Liscott.

Example Photographs:

Owner provided photo prior to the re-framing showing non-compliant dimensional variance between the treads and risers at the second floor.

Owner provided photo showing the 2-inch gap at the mating line between the modular units. Top of stairs at second floor level.

May 17, 2023, Disc OBS1, Photograph 224, DLC, 101 Mule Deer Court, lower landing stairs from first floor to second.



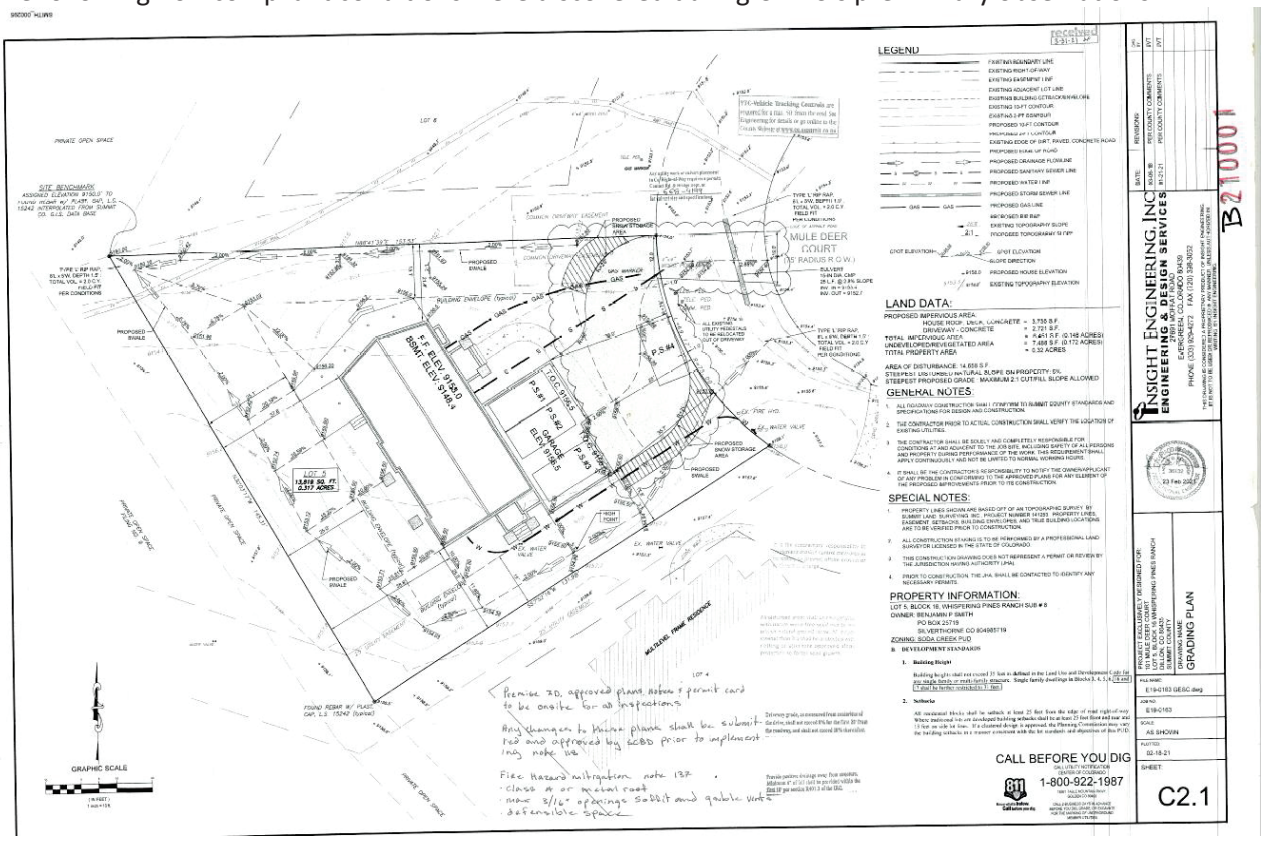
May 17, 2023, Disc OBS1, Photograph 226, DLC, 101 Mule Deer Court, main stair from set from first floor to second.

May 17, 2023, Disc OBS1, Photograph 227, DLC, 101 Mule Deer Court, 2-inch gap at top of stairs, 2x lumber used to fill to gap between the east and west modular units.

May 17, 2023, Disc OBS1, Photograph 228, DLC, 101 Mule Deer Court, 2x lumber used to fill to gap between the east and west modular units. The lumber does not sufficiently fill the gap.

B. CIVIL

The following non-compliant conditions were discovered during CTETS's preliminary observations:



Grading plan was provided by Insight Engineering (Bates Number Smith_000295).

1. GRADING AND DRAINAGE

a. Rough Grading not Directing Water away from the Foundation and Structure

During the excavation, the soils were not properly stockpiled or placed in a manner that created a swale condition that would have properly directed water away from the foundation and backfill zone. Proper construction practice requires that excess water be directed away from these areas to avoid oversaturation and potential undermining of the foundation. If excess water is allowed to enter the grade below the foundation, it could cause settling or other movement of these components due to failure in the subgrade compaction. When water accumulates in an open excavation during construction, it requires pumping of the water, removal of the saturated materials, placement and proper compaction of clean dry material, and verification that these materials are properly compacted to the requirements of the geotechnical and structural requirements to achieve adequate bearing of the foundation components.

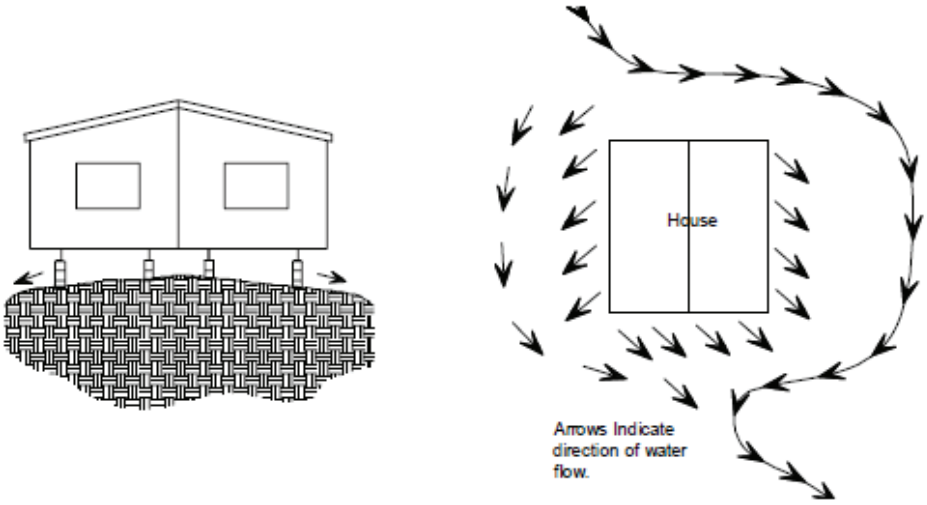
The local building codes and industry standards require proper drainage. The international Code Council (ICC) publication titled "2018 IRC® Code and Commentary," Chapter 4, "Foundations," Section 401 "General," Subsection 401.3 "Drainage," states the following:

- *"**R401.3 Drainage.** Surface drainage shall be diverted to a storm sewer conveyance or other* approved *point of collection that does not create a hazard.* Lots *shall be graded to drain surface water away from foundation walls. The* grade *shall not fall fewer than 6 inches (152mm) within the first 10 feet (3048mm)."*

The Manufactured Housing Research Alliance publication titled, "Manufactured Home Installation Guide," 2008, Section "Prepare the Site," states and illustrates the following:

- *"Step 3. Clear and Grade the Site*

  . . .



Grade the ground so that water under porches, decks, and recessed entries flows away from the home. If proper grading is not possible, use other methods such as a drain tile and automatic sump pump system to remove any water that may collect under the home.

Sheet T.1, provided further direction to the Contractor regarding the need for drainage and water control:

SITE NOTES:

BUILDER SHALL COORDINATE ALL UTILITY DESIGN INSTALLATION AND SERVICES.

BUILDER SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURE AND ACROSS SITE AS PER SECTION R401.3, 2018 I.R.C. IT IS RECOMMENDED THAT A MINIMUM SLOPE OF 6 INCHES IN THE FIRST 10 FEET IN UNPAVED AREAS, AND A MINIMUM SLOPE OF 2% IN PAVED AREAS BE PROVIDED AWAY FROM THE STRUCTURE. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO FOUNDATION INSTALLATION.

BUILDER SHALL PROVIDE PROPER COMPACTION OF ALL EXCAVATED & TRENCHED AREAS AT TIME OF BACKFILL.

A PERIMETER SUBSURFACE DRAIN SYSTEM SHALL BE INSTALLED AROUND THE FOUNDATION AS PER SECTION R405.1, 2018 I.R.C. THE DRAIN PIPE SHALL BE COVERED WITH A FILTER MEMBRANE. REFERENCE "PERIMETER SUB-DRAIN SECTION" DETAIL OR GEOTECHNICAL REPORT (WHICH EVER IS MORE STRINGENT). DRAIN SYSTEM SHALL BE INSPECTED PRIOR TO BACKFILLING BY A LICENSED PROFESSIONAL ENGINEER.

WINDOW WELLS SHALL BE DESIGNED FOR PROPER DRAINAGE BY CONNECTING TO THE BUILDINGS FOUNDATION DRAINAGE SYSTEM AS REQUIRED BY SECTION R405.1 OR APPROVED ALTERNATE METHOD, PER SECTION R310.2.3.2, 2018 I.R.C.

LANDSCAPING AROUND THE ENTIRE FOUNDATION SHALL INCLUDE A 5'-0" WIDE STRIPE OF INERT GROUND COVER SUCH AS ROCK OR BARK.

THE OWNER AND THEIR FOUNDATION CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS ARE CORRECT AND THAT THE FOUNDATION FITS THE NEW BUILDING THAT IS TO BE BUILT ON TOP OF THE FOUNDATION.

EARTHWORK AND FOUNDATION NOTES:

CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO - UNCC PRIOR TO ANY EXCAVATIONS AT 811 TO HAVE ALL BURIED UTILITIES LOCATED. CONTRACTOR SHALL ALSO LOCATE THE WELL SUPPLY LINE AND SEPTIC DRAIN WHEN APPROPRIATE.

FOUNDATION ELEMENTS SHALL BE SUPPORTED ON UNDISTURBED NATURAL SOILS OR ENGINEERED FILL COMPACTED APPROVED BY THE SOILS ENGINEER. BACKFILL SHALL BE COMPACTED TO 90% (MINIMUM) MODIFIED PROCTOR DENSITY PER ASTM D1557 UNLESS OTHERWISE RECOMMENDED IN THE SOILS REPORT OR GEOTECHNICAL ENGINEER. IF SOFT SPOTS ARE ENCOUNTERED REMOVE SOIL AND RE-COMPACT WITH APPROVED FILL. FOUNDATIONS, FOOTINGS AND WALLS ARE DESIGNED ASSUMING NON-EXPANSIVE SOILS WITH A MINIMUM BEARING CAPACITY OF 3000 PSF. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNANTICIPATED SOILS CONDITIONS.

INTERIOR CONCRETE SLABS TO BE PLACED OVER 12-MIL (MIN) ASTM E 96 CLASS I MOISTURE BARRIER/VAPOR RETARDER (PERM RATING LESS THAN 0.1), SEAMS OVERLAPPED 6" AND SEALED WITH TAPE AND SEALED TO THE FOUNDATION ELEMENTS WITH 2-SIDED BUTYL RUBBER TAPE.

CONTRACTOR SHALL BACKFILL EQUALLY ON EACH SIDE OF FOUNDATION WALLS IN 12 INCH MAXIMUM VERTICAL LIFTS WITH NATIVE SOILS OR AS RECOMMENDED IN THE SOILS REPORT. REFER TO SOILS REPORT FOR BACKFILL MATERIAL.

DO NOT BACKFILL AGAINST ANY FOUNDATION WALLS HAVING A HEIGHT GREATER THAN 4'-0" UNTIL THE CONCRETE HAS REACHED 2250 PSI STRENGTH AND THE BASEMENT FLOOR SLAB, OR STRUCTURAL BASEMENT SUBFLOOR, AND FIRST FLOOR FRAMING (INCLUDING SUBFLOOR, JOIST-TO-SILL CONNECTIONS, AND RIM JOIST BLOCKING) ARE COMPLETELY IN PLACE. AS AN ALTERNATE, THE TOPS OF THE WALLS SHALL BE BRACED EVERY 8 FEET MAXIMUM WITH STEEL PIPE BRACES SIMILAR TO TILT-UP CONCRETE PIPE BRACES HAVING A MINIMUM CAPACITY OF 2500 POUNDS, WITH BOLTS OR DEADMAN AT THE BOTTOM OF THE BRACES HAVING SIMILAR CAPACITY. COMPACT BACKFILL TO 85% RELATIVE DENSITY.

NOTIFY SOILS ENGINEER WHEN EXCAVATION IS COMPLETED SO THAT CONDITIONS MAY BE INSPECTED PRIOR TO PLACEMENT OF ANY FILL OR CONCRETE.

FINISHED EXCAVATION FOR FOUNDATION SHALL BE NEAT AND TRUE TO LINE WITH ALL LOOSE MATERIAL AND STANDING WATER REMOVED FROM EXCAVATIONS.

The CTL Thompson report provided the site requirements to Liscott for the control of groundwater after backfill and rough and fine grade conditions were achieved. During construction, it is crucial that water control be provided so that work already completed is not damaged and foundations are not saturated while the work is progressing. As completion ends, the grades are finalized.

EXHIBIT 104 CTETS_000080