



Rimkus Consulting Group, Inc.
12140 Wickchester Lane, Suite 300
Houston, TX 77079
Telephone: (713) 621-3550

December 16, 2021

Interested Parties
Dayton, OH 45402

Re: Rimkus Matter No: 100145027
Subject: General Repair Scope

To Whom It May Concern:

Rimkus Consulting Group, Inc. (Rimkus) was retained by interested parties to perform a structural condition assessment of the historic Gem City Ice Cream building. The building was located at 1005 West 3rd Street in Dayton, Ohio. The **Report of Findings**, issued on November 22, 2021, outlined the results of a structural assessment and broad repair approaches that could be considered.

Subsequently, Rimkus was asked to develop a general repair scope based on the following repair approach: reconstruction of the original structure and concrete additions while preserving and restoring the south exterior façade. This document is the requested **General Repair Scope** and provides more detailed information suitable for pricing and material estimation purposes. Additional information is required for permitting or actual construction, and this document should not be used as the basis for construction.

The services of a licensed professional experienced in this type of work should be retained to design and oversee the work. Shoring and bracing shall be constructed as needed and shall be maintained until the final permanent structural system is complete. Upon request, Rimkus can provide these services and/or additional detailed information based upon our inspection and documentation, regarding the extent of damage to the existing structures.

General Repair Scope

The following outline provides general information, laid out in the anticipated order of events. The actual event sequencing may vary from this document. Construction sequencing and means and methods will ultimately be determined by the general contractor, as they will be most familiar with the site limitations and logistics of mobilization. Referenced grid lines are shown in the attached layout plan.

Outline:

1. Install shoring and/or temporary bracing on the south (street) side, to stabilize the south exterior façade.
 - a. The south exterior façade will be preserved and not subject to demolition.
 - b. Shoring/bracing shall extend the full length of the façade.
2. Document the east, north, and west exterior wall elevations for future design. Includes:
 - a. All opening locations and sizes.
 - b. Exposed concrete beam and column widths and elevations.
 - c. Exposed material types and color.
 - d. Exposed infill areas, materials, and extent.
3. Demolish the east, north, west, and interior of the original brick structure.
 - a. Demolition shall include multi-wythe brick walls and columns, wood-framed floors and roofs (including concrete topping slabs), and interior partition walls.
 - b. Demolition shall not include concrete beams or columns between grids A and B.
4. Demolish the existing concrete structures between grids B and L.
 - a. It is recommended that demolition begin in the northwest corner given the degree of damage at that location.
 - b. Include any concrete elements remaining in the original structure between grids B and L.
 - c. Demolition should not include beams and columns located on grid B.
5. Install additional shoring and/or temporary bracing on the north (interior) side of the south exterior façade, the full length of the façade.
 - a. Selectively remove portions of the remaining concrete floor and roof slabs as necessary to install shoring/bracing poles.
 - b. Do not remove any of the remaining concrete beams and columns until the shoring /bracing is in place and stable.

6. Demolish the remaining concrete elements, leaving concrete beams and columns on grid A intact.
7. Perform a structural assessment of the south façade and remaining structural support elements (concrete beams, columns, etc.).
 - a. Any necessary repairs/reinforcement shall be included in new construction documents.
8. Design a single new concrete structure to replace the demolished structures with a footprint to match the net existing building footprint.
 - a. The new structure shall be designed in compliance with all applicable building codes for new structures.
 - b. The new structure will tie into and permanently support the south exterior façade.
 - c. The east, north, and west exterior walls shall match the original structure in appearance.
 - d. The interior concrete layout may vary from the original structure and the center construction joint does not need to be replicated.
 - e. The original brick and timber building in the southeast corner may be replaced with the concrete beam and column structure.
 - f. The interior concrete column layout may be modified to better accommodate desired floor plans.
9. Construct the new structure as designed, with new exterior wall elevations to match in appearance the existing building elevations.
10. As needed on the south exterior façade:
 - a. Repoint and tuck the brick.
 - b. Replace missing components.
 - c. Replace/seal window assemblies to maintain the exterior envelope.
11. Remove temporary shoring/bracing and clean-up site.

This document was based on the information available to us at this time. Should additional information become available, we reserve the right to determine the impact, if any, the new information may have on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted.

Thank you for allowing us to provide this service. If you have any questions or need additional assistance, please call.

Sincerely,
Rimkus Consulting Group, Inc.

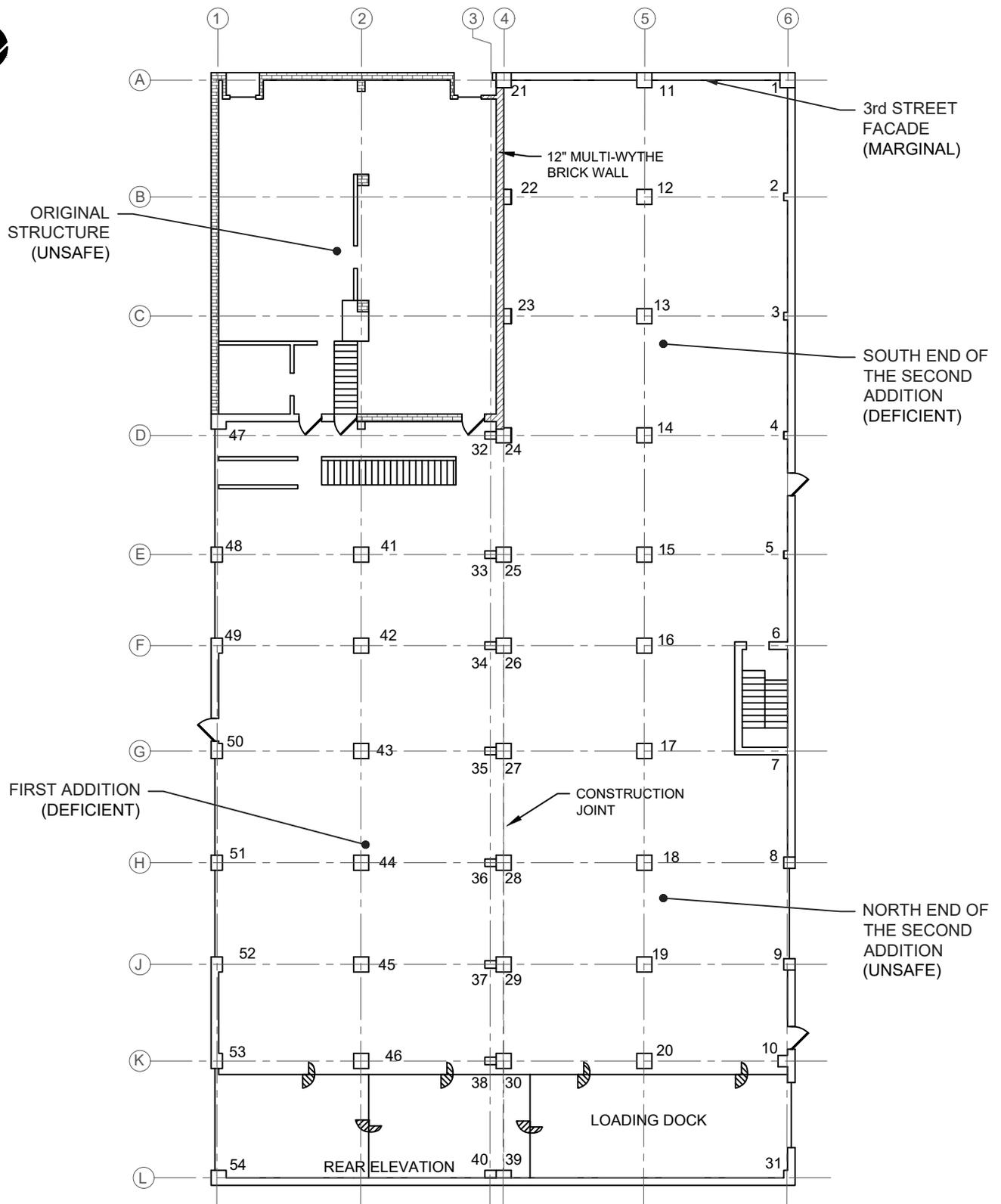
Julie C. Furr, P.E., S.E.C.B.
OH Licensed Engineer No. 87304
Senior Structural Engineer



Attachments: Floor Plan, Curriculum Vitae

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Rimkus Matter No. 100145027

Floor Plan



8420 Wolf Lake Drive
Suite 110
Bartlett, TN 38133
Tel: (866) 299-3370

1005 WEST THIRD STREET STRUCTURAL CONDITION ASSESSMENT SCHEMATIC FLOOR PLAN

DRAWN BY: REP	REVIEWED BY:
PA REVIEW:	PE REVIEW: JCF
JOB #:	100145027
DATE: 11/19/2021	SCALE: NTS

PAGE:	1
Revision: 1	

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Curriculum Vitae



Julie C. Furr, P.E., S.E.C.B.

Senior Structural Engineer

Background

Ms. Furr holds a B.S. degree in Civil Engineering with a Structural Concentration and a Mathematics Minor and an M.S. degree in Civil Engineering with a Structural Concentration. She has over 19 years of practice in the field of structural/civil engineering and construction and has been registered for 17 years as a licensed professional engineer. She is licensed in Tennessee, Arkansas, North Carolina, Ohio, and Kentucky.

Ms. Furr's experience includes full structural design, consultation, and structural and seismic assessment services on both commercial and private structures up to 11 stories, and residential wood-framed structures of all sizes. Material experience encompasses knowledge of concrete, masonry, steel, wood, and light-gauge metal construction materials.

Project locations are predominately in the central and southeastern parts of the United States, with scattered projects along the East Coast and through the Midwest. Design criteria knowledge encompasses the following design codes and standards: IBC, IEBC, IRC, SBC, ASCE7, ASCE31, ASCE41, FEMA, AASHTO, SEAOC, DOD UFC, NAVFAC, and state building codes in the central and southeastern parts of the United States.

She has also been a member of several professional organizations and industry committees, including American Society of Civil Engineers, Tennessee Structural Engineers Association, Structural Engineering Certification Board, Scientific Earthquake Studies Advisory Committee to the United States Geological Survey (USGS), Building Seismic Safety Council Project 17 Executive Committee to the USGS, and Tennessee Society of Professional Engineers.

Contact Information

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jfurr@rimkus.com

8420 Wolf Lake Drive,
Suite 110
Bartlett, TN 38133

Professional Engagements

• Commercial/Office/Retail

- Enterprise Rental Center on Union – Memphis, TN (2016), Structural engineer responsible for design and production of contract drawings and construction management for single-story concrete masonry with steel bar joists and metal deck construction.
- Kimbrough Offices – Germantown, TN (2014), Structural engineer responsible for design and production of contract drawings and construction management for single-story structural steel construction.
- Charlotte Douglas Airport – Charlotte, NC (2001-2005), Assisted with realignment of existing roadway and analyzed potential routes for cut and fill requirements and avoidance of environmentally sensitive areas.

• Government

- NGA Billeting Facilities at Bagram Air Base – Afghanistan (2012), Structural engineer responsible for design and production of contract drawings utilizing light-gauge steel, structural steel, and miscellaneous materials locally available in country. Adapted design as required based on material supply and field construction expertise.
- Air National Guard and Pope AFB – Fayetteville, NC (2001-2005), Structural engineer responsible for design and production of contract drawings and construction management for prefab metal office and storage systems.
- Historic WWII Barracks Relocation – Charlotte, NC (2001-2005), Structural engineer responsible for design of wood support beams and foundation piers for use during and after barracks relocation.

• K-12 Education

- Osceola Elementary School Renovation – Osceola, AR (2011), Structural engineer responsible for design and production of contract drawings and construction management for 47,000-square-foot renovation of school facility for 458 students.
- Marion Junior High School Arena – Marion, AR (2009), Structural engineer responsible for design and production of contract drawings and construction management for 197,000-square-foot, 2,500-seat arena used by 850 students.
- West Memphis High School Arena – West Memphis, AR (2008), Structural engineer responsible for design and production of contract drawings and construction management for \$6 million, 44,000-square-foot arena with seating capacity for 2,800.
- FEMA Safe Rooms – Multiple locations in western Arkansas and Tennessee, Designed FEMA safe rooms for various educational facilities Utilizing concrete masonry block and concrete cap, wood stud framing and structural steel panels, and full cast concrete construction.

• Multi-Family Residential

- Gallatin Apartments – Gallatin, TN (2015), Structural engineer responsible for design and production of contract drawings and construction management for wood-frame construction of two- and three-story structures as well as a clubhouse, mailbox kiosks, and gazebos.

- The Avenue at Nicholasville – Nicholasville, TN (2014), Structural engineer responsible for design and production of contract drawings and construction management for wood-frame construction of two- and three-story structures as well as a clubhouse, mailbox kiosks, and gazebos.
- **Restaurant**
 - One & Only BBQ Restaurant – Cordova, TN (2016), Structural engineer responsible for design and production of contract drawings and construction management for single-story wood frame construction.
 - Great Cookout Restaurant Renovation – Memphis, TN (2016), Single-story wood frame construction. Renovation of prior restaurant facility that required approximately 75% reconstruction.
 - Crescent Center Garage Modification – Memphis, TN (2013), Removed north bays of existing parking garage to provide additional room for new restaurant construction. Analyzed remaining garage structure and designed and provided new lateral-resisting structure on garage end wall.
- **Religious/Institutional**
 - Islamic Association of Greater Memphis Mosque – Memphis, TN (2012), Pre-engineered metal building foundation with interior structural steel and concrete-filled metal deck mezzanine.
- **Shoring**
 - Dupont Pit Shoring – Memphis, TN (2015).
 - New Johnsonville Shoring – New Johnsonville, TN (2014).
 - Black & Veatch Shoring – Memphis, TN (2012).
 - Houston Cofferdam – Houston, TX (2006-2018), Temporary steel shoring 71-foot by 83-foot, 41-foot below-grade. PZ sheet piling used with heavy structural steel rings and braces to provide interior support against buckling.
 - Miscellaneous Temporary Shoring Designs – AR, TN, MS (2006-2018) Designed and detailed temporary shoring to facilitate construction of permanent structures, utilizing steel H-piles and timber lagging, steel sheet cast-concrete tangent piles, and soil nails.
- **Sports Venues**
 - Liberty Bowl Memorial Stadium ADA Renovations (2013), Concrete and structural foam modifications to existing pre-cast concrete risers to provide additional ADA seating in compliance with ADA rules and regulations.
- **Transportation**
 - State Route 304 Project – Desoto County, MS (1998-2001), Assisted in design of new highway bridges.
 - I-240 Highway Project – Memphis, TN (1998-2001), Assisted in design and detailing of bridge seismic retrofits.
 - I-55 Highway Project – Memphis, TN (1998-2001), Assisted in design of widening existing highway bridges.

- Proposed Route 475 Project – west of Knoxville, TN (1998-2001), Developed vertical and horizontal alignments and produced preliminary cost estimates as part of draft Environmental Impact Statement.
 - State Routes 15 and 18 – central Tennessee (1998-2001), Produced cost estimates and authored the draft and final environmental assessment reports.
 - Bridge Repair/Replacements – various locations in Tennessee (1998-2001), Determined drainage basin areas, 10-year/100-year flood elevations, and expected velocities in the channel as part of the advanced planning reports.
 - Polaris Parkway – Columbus, OH (1998-2001), Prepared detailed roadway and bridge plans.
 - State Route 162 – Knox County, TN (1998-2001), Produced preliminary cost estimate for feasibility study.
- **Water/Wastewater**
 - MLGW Allen Pump Station Renovation – Memphis, TN (2015), Structural assessment of potential modifications to existing concrete structure and of cracks and damage observed during renovation.
- **Expert Witness Cases**
 - Deficient Performance at Lyon’s Ridge Apartments – Memphis, TN (2006-2018), Multi-story wood-framed retirement complex. Engaged by general contractor to review original construction documents and provide testimony on design deficiencies in defense. Repairs to correct deficient performance were estimated in excess of \$1 million.
 - Deficient Construction at 6401 River Tide – Memphis, TN (2006-2018), Wood-framed 5,000-square-foot addition to an existing 12,300-square-foot private residence. Engaged by property owner to review renovation documents, assess property condition, and identify potential life-safety concerns with the then-current state of construction. Repairs to correct renovation deficiencies were estimated at \$2.1 million.
 - Collapsed Roof at 612 Broad Street – Crenshaw, MS (2006-2018), Multi-wythe unreinforced masonry brick with timber floor and roof framed two-story structure. Engaged by attorney to investigate the structure on-site and identify potential cause of roof collapse and life-safety concerns with the damaged structure. One fatality caused by falling structure. Structure has since been demolished.
- **Structural Design/Site Investigations**
 - Cordova Baptist Church – Memphis, TN (2006-2018), Two-story single cab elevator addition to an existing wood-framed structure with basement and concrete foundation walls. Engaged by architect to provide foundation design and assess existing concrete basement walls impacted by construction. Additional assessment was requested while on-site to determine cause of basement water intrusion and mold growth.
 - International Paper Parking Garage – Memphis, TN (2006-2018), Two-story existing concrete parking garage with lower level below grade. Engaged by owner to perform structural assessment and inspection of deteriorated/damaged elements, including subgrade concrete retaining walls, and to provide repair recommendations and details as required.

- Cossitt Library – Memphis, TN (2006-2018), ASCE 7 41-13 Tier 1 and Tier 2 Seismic assessment of a historical designated structure on the river bluff to determine structural integrity and identify structural deficiencies and life-safety concerns for continued occupancy.
- Elvis Presley YMCA – Memphis, TN (2006-2018), Structural investigation of World War II-style Quonset hut structure with deteriorated support girders to determine structural integrity and identify immediate life-safety issues with continued occupancy. Also performed structural investigation of precast concrete natatorium with deteriorated precast concrete roof framing to determine structural integrity, collapse potential, and life-safety impact to immediately adjacent occupied structure.
- VA Clinics Tier Seismic Assessments – Memphis and Jackson, TN (2011-2017), Performed Tier 1 and Tier 2 seismic assessments per ASCE 31-03 and 41-13.
- Peabody Place Seismic Assessment – Memphis, TN (2012-2016), Structural steel and concrete-filled metal deck structure. Gravity and lateral assessment of existing structure for compliance with newer building codes, including seismic lateral design.
- LaPetite Academy – Olive Branch, MS (2013), Assessed damage to storefront wall and structure following impact by a vehicle. Provide a repair scope and recommendations.
- Warehouse Concrete Tilt-Panel Assessment – Memphis, TN (2013), Assessed spalling concrete tilt-panels and deteriorated steel reinforcement. Designed and developed repair plans.
- KT Building Assessment – Union City, TN (2012), Circa 1900 historic building featuring multi-wythe unreinforced masonry clay brick construction. Assessed deterioration of brick and mortar. Designed and provided repair recommendations using methods compatible with historic brick and mortar construction.
- Memphis in May Headquarters – Memphis, TN (2011), Three-story existing building (circa 1900) renovation. Engaged by architect to assess extensive water damage to multi-wythe unreinforced masonry clay brick walls and timber floor and roof framing. Design details for damaged element repair and water remediation were required for safe occupancy.
- **Structural Analysis – Renovations**
 - Artspace 138 St. Paul – Memphis TN (2006-2018), Three-story existing building (circa 1901) renovation. Engaged by architect to perform structural analysis and design required to upgrade the former cotton warehouse into efficiency luxury apartments. Exterior wall construction consisted of multi-wythe brick URM with interior floor/roof framing of heavy timber framing with wood plank decking.
 - Liberty Bowl Jumbo Tron Skin – Memphis, TN (2006-2018), Existing steel Jumbo Tron structure was reviewed for capacity to support new solid skins on three sides to conceal framing. Miscellaneous steel modifications were required to meet original design intent and reinforce structure for increased wind loading.
 - Peabody Place Service Master Improvements – Memphis, TN (2006-2018), Structural steel and composite concrete floor infills required to renovate existing space into new office space. Miscellaneous steel connections, details, and small structures were also provided to support expanded floors and architectural elements.

- Memphis School of Excellence – Memphis, TN (2006-2018), Seismic retrofit of existing structure. CMU perimeter bearing walls with interior structural steel columns and moment frames, and metal roof deck.
- **Structural Analysis – New Construction**
 - Nicholasville Apartments – Lexington, KY (2006-2018), Multi-structure wood-framed apartment complex. Units ranged in size from single-story duplexes to multi-family three-story apartments. Conventional shallow foundations with slab-on-grade construction.
 - Legends Park Apartments/Mixed-Use Facility – Memphis, TN (2006-2018), Multi-structure wood-framed apartment complex. Units ranged in size from single-story, single-family residences to multi-family, three-story apartments. Conventional shallow foundations with slab-on-grade construction and CMU stemwalls.
 - Home 2 Suites – St. Simmons Island, GA (2006-2018), Four-story hotel constructed of CMU and concrete hollowcore planks, with structural steel framing over the open ground floor lobby and entrance canopy.
 - Satellite Healthcare – Memphis, TN (2006-2018), Outpatient medical facility with structural steel framing and metal roof deck, with large architectural entry canopy and fin.
 - Bunge River Tower – Helena, AR (2006-2018), Structural steel tower located in Mississippi River to support elevator conveyor used to offload material back to shore.
 - Arbor Glenn Housing – Charlotte, NC (2001-2005), Multi-structure wood-framed apartment complex. Units ranged in size from single-story, single-family residences to multi-family, three-story apartments. Conventional shallow foundations with slab-on-grade construction and CMU stemwalls.

Forensic Engagements

- **Foundation and Slab Settlement**

- Memphis, TN (2019), Performed a structural assessment of a sagging sanctuary floor in a wood-framed church. The floor joists had been damaged from long-term moisture exposure. Two joists had broken completely and were on the ground with additional joists cracked and in imminent danger of falling.
- Olive Branch, MS (2018), Investigated a 5,200-sq-ft residence constructed in 2017 to determine cause of brick veneer, interior finish, and concrete slab cracks. Cause of damage was identified as foundation settlement due to poorly compacted fill.

- **Construction Defects/Accidents**

- Memphis, TN (2018), Structural consultation on an industrial accident involving one fatality and one injury. A demolition company was contracted to remove a steel tower supporting tanks when the tower came down early due to improper sequencing of the demolition procedures.

- **Storm Damage**

- TN, AR, MS, MO, KY (2018-2019), Performed multiple roofing assessments of residential and commercial structures damaged by wind and hail.

- **Vehicular Impact Damage**

- Memphis, TN (2018), Performed a structural assessment of a single-story, wood- and steel-framed funeral home structure that had been hit by car, damaging two exterior bearing walls.
- Parsons, TN (2018), Performed a structural assessment of a two-story structure, circa 1910, constructed of multi-wythe unreinforced masonry clay brick and timber floor and roof framing. A car had run through the front of the structure and through a shared tenant wall.

- **Roofing System Integrity**

- Alamo, TN (2019) Performed an assessment of a wind-damaged TPO roofing system on a two-story structure, circa 1920, constructed of multi-wythe unreinforced masonry clay brick and timber and roof framing.
- Memphis, TN (2018) Performed an assessment of a hail-damaged natural slate tile roofing system on a 10,000-square-foot residence.

- **Fire/Natural Disaster Investigations**

- Jackson, TN (2018) Performed a structural assessment of a residence damaged by a magnitude 3.6 earthquake on January 16, 2018. Damage was limited to cosmetic damages of interior and exterior finishes and occurred due to the unique framing layout.
- Blytheville, AR (2018) Performed a structural assessment of a two-story, wood-framed hotel that had been damaged by a tornado. Two structures were located in the complex: one structure had suffered minor cosmetic damage; the second structure had lost the full second floor.
- Caruthersville, MO (2018) Performed a structural assessment of a residential structure damaged by fire. Determined a prior fire had caused most of the damage that was revealed during cleanup efforts and which had been concealed during an interior renovation.

Professional Experience

- **Rimkus Consulting Group, Inc.**

2018 – Present

- Senior Structural Engineer

Responsibilities encompass all commercial and residential occupancy types and square footages. Provides written reports, analysis, calculations, and drawings as required based on project scope.

- Senior Consultant – Design Services, AEC Services Group

Design services include structural design for new buildings and renovations/repairs of existing buildings. Perform structural assessments of existing buildings and provide report and/or construction documentation of the conditions and remediation options.

- **Chad Stewart & Associates, Inc.** **2006 – 2018**
 - Senior Structural Engineer/Project Manager
Performed design and oversaw production of contract drawings for new projects and renovations of existing buildings for commercial, residential (single-family and multi-family), mixed-use developments, educational facilities, fire stations, assisted living facilities, worship facilities, metal building foundations, hotels, and county and state institutional occupancies.

Also inspected existing structures to determine structural integrity and identify life-safety concerns. Produced reports documenting results, possible repair solutions, and repair details. A significant percentage of buildings inspected included older, unreinforced masonry buildings and wood frame structures. Performed existing building structural assessments for refinancing and insurance purposes. Assessment methods included Tier 1 and Tier 2 analyses per ASCE-31 and ASCE-41 and Probable Maximum Loss estimates utilizing FEMA HAZUS software and FEMA-310. Served as an expert witness for high-end residential and multifamily litigation and provided consultation services for legal and insurance purposes on both commercial and private structural failures.

- **Bulla Smith Design Engineering, Inc.** **2001 – 2005**
 - Structural Engineer
Designed and produced contract drawings, reviewed shop drawings for approval, performed site visits, consulted with clients and contractors. Experience working on the following project types: wood frame multi-family housing; steel frame/concrete slab education and multi-use retail/office/residential; prefab metal office and storage for Air National Guard and Pope AFB; CMU/steel joist fire stations; renovation/addition to existing wood frame and CMU/steel joist structures; and manufactured wood/CMU state and federal park buildings.

- **Parsons Transportation Group** **1998 – 2001**
 - Structural Engineer Intern
As structural engineer intern, participated in a variety of transportation infrastructure projects in Missouri, Tennessee, and Ohio.

Education and Certifications

- **Civil Engineering, M.S.:** University of Memphis (2018)
- **Civil Engineering, B.S.:** University of Memphis (1998)
- **Registered Professional Engineer:** North Carolina, Tennessee, Arkansas, Ohio, and Kentucky

Committees

- **National Council of Structural Engineers:** Existing Buildings/Structural Retrofit Subcommittee - Member
- **Applied Technology Council 136:** Seismic Code Support Committee - Member
- **Collierville Board of Adjustment and Appeals** - Commissioner

- Memphis and Shelby County Code Advisory Board - Member
- Tennessee Structural Engineers Association State Board – Member
- West Tennessee Structural Engineers Association Regional Board – Past President
- Tennessee Society of Professional Engineers Legislative Committee - Member