

Brenton J. Barnette, P.E. | Senior Forensic Engineer

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Professional Summary:

Mr. Barnette has been engaged in the engineering profession since 2006 and has performed design and forensic investigations of commercial, industrial, and residential structures as well as transportation infrastructure. His diverse background in engineering allows him to communicate effectively with contractors, homeowners, attorneys, and insurance industry representatives. Some of Mr. Barnette's specific areas of focus are as follows:

- Structural failures of building components and systems
- Determination of cause and origin of damages to commercial, industrial, and residential property
- Building envelope evaluations
- Catastrophe damage inspections, including hurricane, tornado, and flooding events
- Concrete, masonry, structural steel, and wood designs
- Residential design
- Civil/structural repair designs
- Hail/wind damage to commercial and residential roofs
- Fenestration (window/door) inspections
- Forensic structural investigations

Licenses and Certifications:

- Professional Engineer (Additional states available upon application):

Alabama, License #37796	North Carolina, License #38552
Colorado, License #55315	South Carolina, License #32827
Florida, License #82714	Tennessee, License #123835
Georgia, License #42926	Texas, License #127865
Louisiana, License #42979	Virginia, License #57521
Mississippi, License #29451	
- Model Law Engineer (MLE), National Council of Examiners for Engineering and Surveying
- Fenestration Master Professional Certification, Fenestration and Glazing Industry Alliance
- HAAG Certified Inspector – Residential and Commercial Roofs
- FAA Part 107 Small Unmanned Aircraft Systems (sUAS) Remote Pilot Certification

Professional Experience:

- EFI Global, Inc./EFI Global of North Carolina, P.C., Senior Forensic Engineer, 2016-Present
- Brenton J. Barnette Engineering, Civil/Structural Engineer, 2015-2018
- Towery Consulting and Engineering, PLLC, Structural Engineer, 2015-2018
- North Carolina Department of Transportation, Engineer, 2006-2015

Project Experience:

The projects listed here outline a small sampling of the types of projects and losses Mr. Barnette regularly investigates. For further information or additional examples, please contact EFI.

- **Condominium Complex (Gulf Shores, AL)**
Fenestration Evaluations
Served as lead engineer for an engineering team that evaluated the windows and doors at a large multi-building condominium complex to determine whether the fenestrations sustained damage from Hurricane Sally.
- **County School Buildings (Valdosta, GA & Hahira, GA)**
Wind Damage Evaluations
Inspected the roofs of multiple buildings to determine whether the roof claddings sustained wind damage during Hurricane Helene.
- **Residential Structure (Clyde, NC)**
Flood Damage Evaluation
Inspected a residential structure to determine the extent of damage resulting from a flood event during Tropical Storm Helene and provided repair recommendations.
- **Commercial Complex (Atlanta, GA)**
Roof Cladding Evaluations
Inspected the asphalt shingle and metal roof claddings of multiple buildings to determine whether the roof claddings had sustained hail and/or wind damage.
- **Residential Structure (Hendersonville, NC)**
Tree Impact Damage Evaluation
Inspected a residential structure to determine the extent of damage to the structure resulting from a tree impact and provided repair recommendations.
- **Residential Structure (Mt. Holly, NC)**
Vehicle Impact Damage Evaluation
Inspected a residential structure to determine the extent of damage to the structure resulting from a vehicle impact and provided repair recommendations.
- **Residential Structure (Atlanta, GA)**
Explosion Damage Evaluation
Inspected a residential structure to determine the extent of damage to the structure resulting from an explosion at a nearby property and provided repair recommendations.

- **Residential Structure (Milton, GA)**
Construction Defect Evaluation
Inspected a recently constructed residential structure to determine whether construction defects were present and provided recommendations for repair.
- **Apartment Complex (Jacksonville, FL)**
Fire Damage Evaluation
Inspected recently constructed precast concrete parking structure to determine the extent of damage resulting from a fire and reviewed/approved proposed repair protocols.
- **Apartment Complex (Charlotte, NC)**
Building Envelope Evaluation
Inspected the building envelope of a relatively new multi-story apartment complex to determine the cause of widespread water intrusion and provided consultation for proposed repairs.
- **Residential Structure (Denver, CO)**
Structural Damage Evaluation
Inspected a deformed steel beam in a residential structure to determine the cause of damage and provided recommendations for repair.
- **Residential Structure (Rutherfordton, NC)**
Structural Damage Evaluation
Inspected a collapsed floor system in a residential structure to determine the cause of the collapse and provided recommendations for repair.
- **Industrial Building (Gastonia, NC)**
Structural steel Design
Designed a steel support system (beams, columns, footings, etc.) for an existing floor structure to allow for the installation of new manufacturing equipment.
- **Residential Structure (Charlotte, NC)**
Residential Design
Provided structural design and drawings for a custom single-family home (new construction).

Formal Education:

- Bachelor of Science in Civil Engineering (B.S.C.E.) – Cum Laude, The University of North Carolina at Charlotte, Charlotte, NC, 2005

Specialized Education/Training:

- Florida Laws & Rules for Professional Engineers, 2025
- Haag Certified Inspector – Residential and Commercial, 2025
- Engineering Ethics, 2024
- Hurricane Mitigation: Summary Report on Building Performance, 2024
- Fundamentals of Wood Construction, 2024
- Concrete Construction, 2024

- Advanced Fabricated Building, 2024
- Depositions (Are You Ready?), 2024
- Lessons Learned – Design and Construction of Buildings, 2023
- Storm Shelters and Safe Rooms, 2023
- Florida – Ethics for Professional Engineers, 2022
- Florida Laws and Rules for Professional Engineers, 2022
- Fenestration Master Professional Certification, 2022
- Insulated Glass Fabricator Workshop, 2021
- Leak Detection for Roofs, 2020
- 2015 International Building Code: Significant Changes to Structural Provisions, 2020
- 2015 International Building Code Essentials – Structural Safety, 2020
- 2017 Florida Building Code Advanced 6th Edition: Summary of Structural Provisions, 2020
- Impacts of the 2010 ADA Guidelines, 2020
- Ethics for Professionals, 2020
- Florida Engineering Laws and Rules, 2020
- Wind Design using ASCE 7-10, 2020
- Designing with Structural Composite Lumber, 2020
- Precast Concrete Erection Procedures, 2020
- Building Pathology – An Introduction, 2019
- Building Pathology – Roofs, 2019
- Concrete Fundamentals – Concrete Slab on Grade, 2019
- Building Design and Construction Features for Fire Prevention, 2019
- Fire Essentials and Fire Science, 2019
- Ethics for the Practicing Engineer – An Introduction, 2019
- Roofing Materials – Concrete Tiles, 2019
- Roofing Materials – Asphalt Shingles, 2019
- Ethics NSPE, 2019
- Engineering Ethics for the North Carolina Professional Engineer, 2018
- Design of Buildings in High Wind Coastal Areas, 2018
- Florida Professional Ethics, 2018
- Florida Laws and Rules Course, 2018
- Corrosion Theory and Corrosion Protection, 2018
- Tornado Risks and Hazards in Southeastern USA, 2018
- Causes of Distress and Deterioration of Concrete, 2018
- Maintenance of Concrete, 2018
- TBPE – Professional Engineering Practice Update/Ethics, 2018
- Biodeterioration of Wood, 2017
- Foundation Walls, 2017
- Engineering and Design Evaluation and Repair of Concrete Structures, 2017
- Load Paths, 2017

- Asphalt Shingle Roofing for High Wind Regions, 2017
- Masonry Details, 2017
- Recommended Practice for the Design of Residential Foundations, 2017
- Reinforced Masonry Pier Construction, 2017

Courses Instructed:

- An Introduction to Windows and Sliding Glass Door Systems, 2023
- Windows and Doors – Sorting Out the Issues, 2022