



Building on a Strong Foundation



Excellence in Structural Engineering

Structural integrity has been the focus of construction since man first conceived to create shelter for himself. Over the eons, various techniques developed and allowed for greater, stronger, and more permanent structures designed for housing, commercial and public use. Today, within a continually advancing technical environment, Alliance Structural Engineers, Inc. is in the forefront of modern applications of structural systems.

Founded in 1995, Alliance Structural Engineers, Inc. has earned its reputation for creativity, technical expertise and innovative structural design combined with practical application. Our steady growth over the years has resulted from working hand-in-hand with architects, builders, developers and other consultants. We strive to cultivate long-term business relationships with each and every client.

■ Experience Counts

From large multi-family to mixed-use multi-building complexes, our engineers demonstrate skill in producing cost-effective and efficient structural design—both on time and on budget. Our impressive list of completed projects encompasses all types of building sizes, systems and materials including wood frame, structural steel, cast-in-place concrete (both conventionally reinforced and post-tensioned), light gauge metal and masonry as well as combinations of these materials. Several of these projects are highlighted within this brochure. Be sure to visit our website at www.allianceengineers.com to see a wide variety of projects we have worked on through the years.

■ Outstanding Service

Of course, deciding on which material and/or system to incorporate into a structure is only the beginning of the structural engineering process. Alliance's comprehensive services are designed to bring the building process smoothly from concept to completed structure. These services include:

- Feasibility Studies of Various Structural Systems
- Preliminary Drawings/Schematics
- Detailed Analysis and Design
- Preparation of Construction Documents
- Construction Administration
- Structural Peer Review
- Expert Witness
- Constructability Review and Value Engineering

Alliance's comprehensive services are supported by outstanding software utilization. Employing the most modern and dependable software available, Alliance Structural Engineers, Inc.'s technological know-how results in outstanding structural design and implementation. Whether your project requires REVIT Structure and/or AutoCAD, RAM Structural Package, including RAM Concept and RAM Structural System, or other software programs, rest assured that Alliance's structural drawings will integrate seamlessly into the overall design of your project.

As structural engineering continues to evolve now and into the future, Alliance Structural Engineers stands ready. We are licensed in multiple states and registered with the NCEES (The National Council of Examiners for Engineering and Surveying - which facilitates registration in any state within the United States). You can depend on Alliance Structural Engineers, Inc. to bring leadership and confidence to your new construction, renovation and/or restoration project.

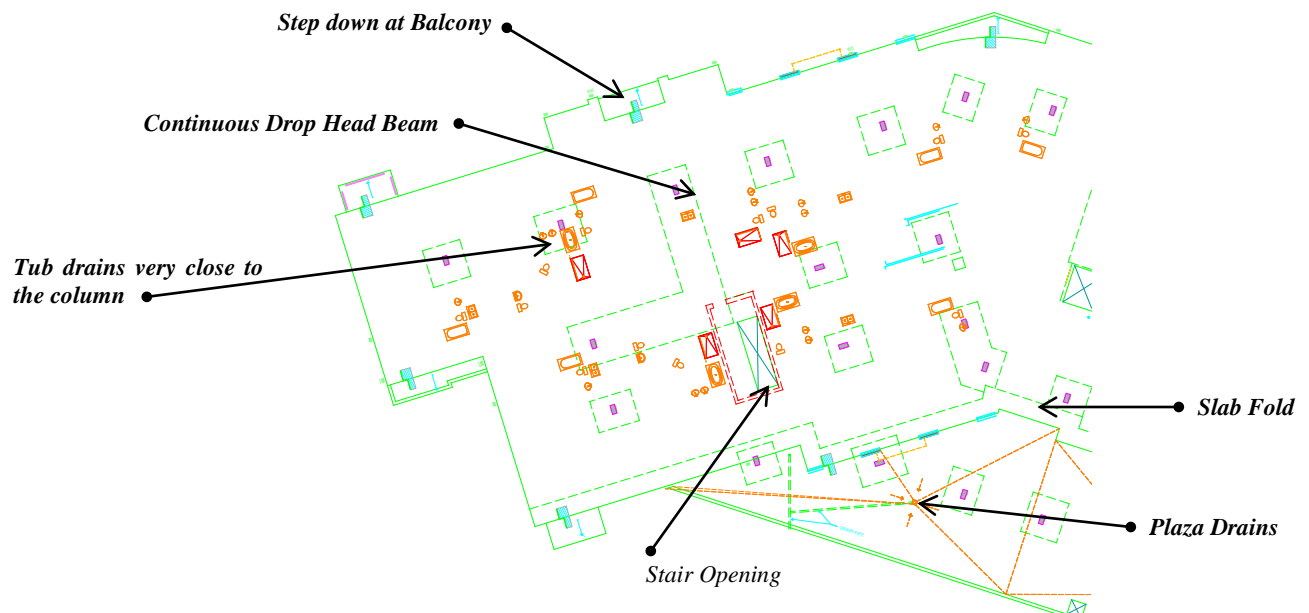
■ **Coordination with Consultants**

Alliance Structural Engineers strives to produce well coordinated structural drawings. We put extra emphasis in taking the lead to ensure that our drawings are functioning as an integral part of the construction for effective results and ease of construction.

Some of our coordination steps are highlighted below. They include:

1. **Slab Penetration Coordination**

In conjunction with the Architect and MEP Consultant, we produce slab penetration plans for internal coordination. The penetration plan on elevated concrete slabs shows all the critical structural elements, such as slab edge, columns, drop heads (panels), beams, slab steps, and slab folds, as well as plumbing drain locations, shaft openings, and other floor drains.



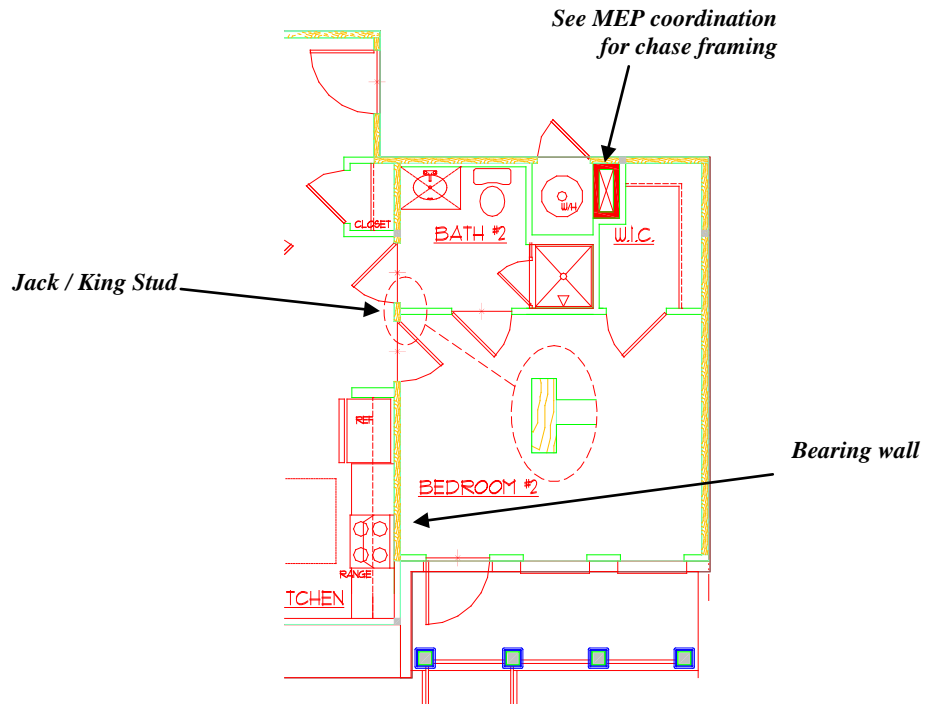
- ❖ *This slab penetration coordination helps detect conflicts between disciplines and allows for correction prior to beginning construction.*

2. Wood and Light Gauge Framing Coordination

Alliance Structural Engineers, Inc works closely with the project architect to ensure that the structural drawings are coordinated with the architectural drawings. In AutoCad and Revit, we use the architectural drawings as background that is xreffed or linked so that the plans can easily be updated as the architectural drawings are refined.

Some of the coordination steps we take include:

- Ensure that bearing walls stack from floor to floor
- Maintain the integrity and continuity of all firewalls
- Make sure that king and jack studs are coordinated with door openings and available wall lengths
- Coordination with the architect on the beams that require individual fire-proofing
- Frame around rated chases so the construction sequence for chase framing is feasible
- Confirm that columns and/or posts fit into the wall that they are placed within



ARCHITECTURAL LAYOUT

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

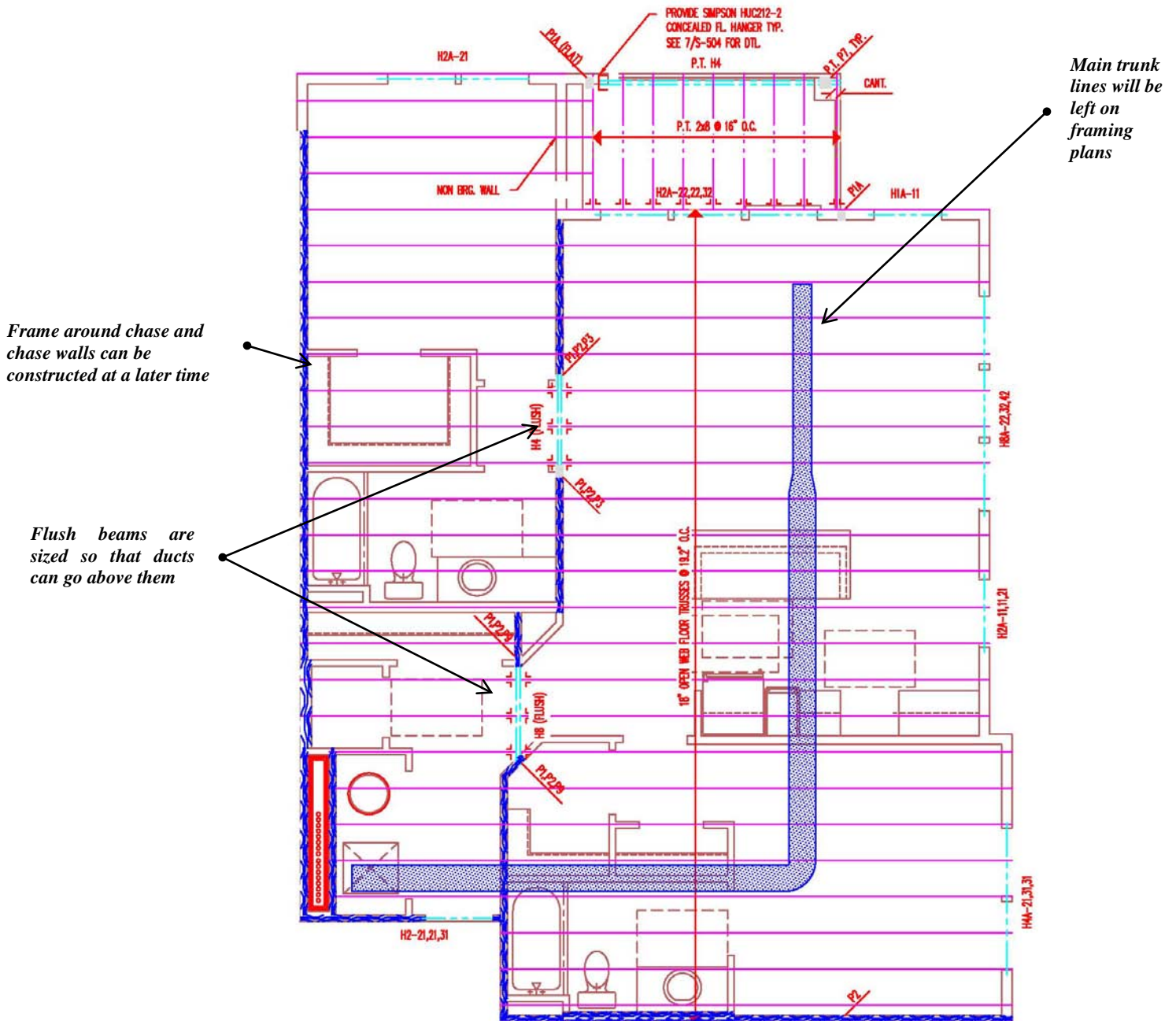
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3. MEP Coordination

a. Duct Layout

At Alliance Structural Engineers, Inc we work closely with mechanical engineers in two ways. First, we provide our framing layout to the mechanical engineer so that the duct layouts can be prepared with the framing direction in mind. We also obtain the duct layouts from the mechanical engineer and superimpose them on our framing plans. This method allows us to conduct value engineering of the proposed duct layouts and bring conflicts to the attention of other consultants.

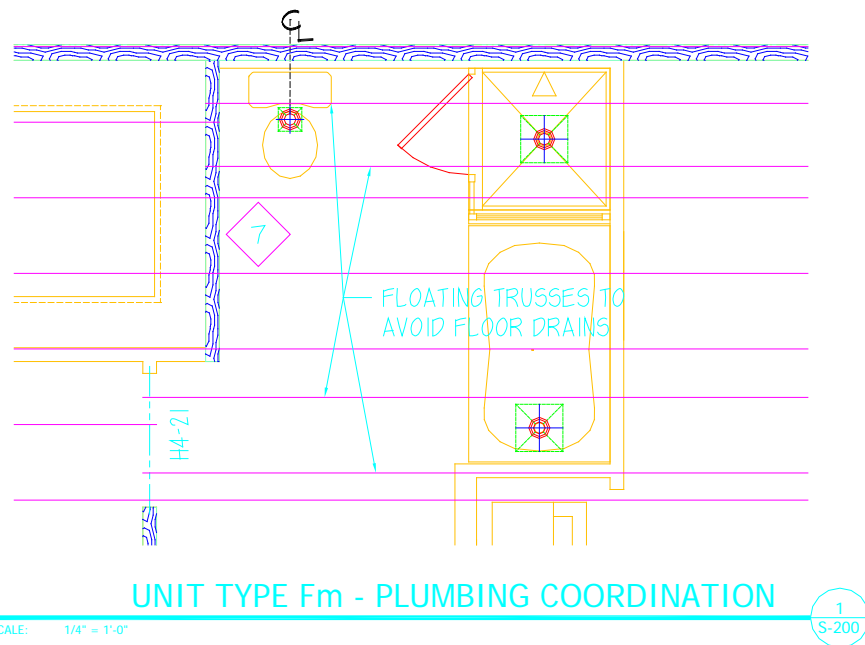
In addition, we keep the hard duct within the floor plenum on the framing plans so that the truss manufacturer can incorporate the mechanical chases into the truss design.



b. Plumbing

Our coordination efforts include laying the floor trusses to accommodate plumbing drains. We locate drains on the framing plans and we add additional floating trusses to facilitate avoiding the drains.

We also avoid using plumbing walls as load bearing walls. In situations where these walls have to be used as load bearing walls, we add details to reinforce the wall top plates and studs which will be notched and/or bored for pipes.



c. Electrical

Alliance Structural Engineers, Inc coordinates with electrical engineers to provide chases in projects where the electrical room is located below the podium slab. This ensures individual runs are not made to each unit and is more efficient.

We size jacks and king studs at the end of the headers keeping the location of electrical switches in mind – particularly on exterior walls.

Sample Single Family Projects

- **Four Seasons Active Adult Community at Silver Maple**
Middleton, Delaware
Developer: K. Hovnanian Homes



Project Description:

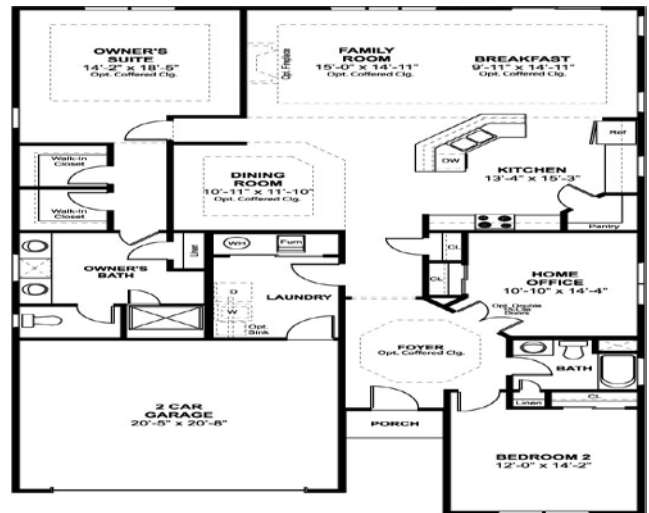
Hundreds of 2 and 3 bedroom, 1-story single family homes in. There is a lavish swimming pool and tiki bar/ fire pit area among other amenities.

Structural System:

Built on shallow foundations, floors and roofs are framed with prefabricated wood roof trusses and I-joists on load-bearing wood stud walls.



- **Four Seasons Active Adult Community at Weatherby**
Gloucester County, New Jersey
Developer: K. Hovnanian Homes



Project Description:

This active gated adult community features 428 beautifully appointed single family homes in 6 distinctive home designs. Community amenities include a world class clubhouse with outdoor pool, sports and billiards room, state of the art fitness center, tennis and bocce courts, and a cozy fireside lounge.

Structural System:

Built on shallow foundations, floors and roofs are framed with prefabricated wood roof trusses and I-joists on load-bearing wood stud walls



➤ **Celebrate Active Adult Community**

Stafford, Virginia

Developer: Dell Webb / Pulte Homes



Project Description:

A community of 2 and 3 bedroom with 2 and 3 car garage. Amenities include clubhouse, fitness center and Gazebo.

Structural System:

Built on shallow foundations, floors and roofs are framed with prefabricated wood roof trusses and I-joists on load-bearing wood stud walls.



- **Heritage Shores Active Adult Community**
Bridgeville, Delaware
Developer: Brookfield Residential Properties



Project Description:

A community of 2 and 3 bedroom with 2 and 3 car garages, and available second levels and lofts. Amenities include indoor and outdoor pools, tennis, fitness center, and a dance Studio.

Structural System:

Built on shallow foundations, floors and roofs are framed with prefabricated wood roof trusses and I-joists on load-bearing wood stud walls.



Sample Clubhouse Projects

- Centennial Mills Community Center
Voorhees, N.J.



Project Description:

Project consisted of a 7,500 S.F. Recreational Center, an 8,300 S.F. Community Building and a 1,000 S.F. pool house. The Recreational Center has an indoor pool, a fitness area, an aerobics area and a basement with storage for mechanical and pool equipment, among other amenities. The Community Building has a 2,200 S.F. multi-purpose room with a moveable partition, a high volume lounge area and a billiards room along with other amenities.

Structural System:

Roof is framed with prefabricated wood trusses on a combination of steel frames and load bearing wood stud walls. Floor was framed with concrete slab on a metal deck on steel beams/joists. Building is founded on shallow foundations.



- **WCI Four Corners Community and Clubhouse**
East Fishkill, N.Y.



Project Description:

12,000 S.F. 1-story Clubhouse with a 1,200 S.F. Caretaker Suite as the second floor. There is a wrap around porch on approximately 75% of the exterior walls. There is a multi-purpose room, a basketball court, a fitness center and a large lounge area among other amenities.

Structural System:

Floors and roof are framed with prefabricated wood trusses on a combination of steel frames and load bearing wood stud walls. Building is founded on shallow foundations.



➤ **Potomac Green Clubhouse**
Loudoun County, VA



Project Description:

This project is a two-story Clubhouse with over 28,000 S.F. of space. The first floor consists of 22,833 S.F. of which, 4,500 S.F. is a multi-purpose room with 2 moveable partitions and a 2,500 S.F. fitness area. There is a billiards room, card room, great room, men and women's locker rooms and elevator among other amenities. The second floor consists of a 6,000 S.F. elevated indoor running track and male and female rest rooms. There is a mechanical well on the roof level. In addition, there are side structures such as a pool house, shade structures for the tennis courts and a gate house.

Structural System:

Roof is framed with prefabricated wood trusses on a combination of steel frames and load bearing wood stud walls. Floor was framed with concrete slab on a metal deck on steel beams/joists. Building is founded on shallow foundations.



➤ **Spring Hill Clubhouse**

Lorton, VA



Project Description:

12,000 S.F. one-story Clubhouse with a basement that has storage facilities for the pool equipment. There is an indoor pool, a ballroom with a moveable partition, billiards room, a large lounge area, men and women's locker rooms, aerobics area, a fitness room and a computer/business center area.

Structural System:

Roof is framed with prefabricated wood trusses on a combination of steel frames and load bearing wood stud walls. Floor was framed with concrete slab on a metal deck on steel beams/joists. Building is founded on shallow foundations.



Sample Podium Projects

1. **The West Lee, Arlington, Virginia**
Owner/Developer: Silverwood Homes



Project Description:

An innovative and complex combination of 128 condominiums, 35,000 square feet of parking and 10,000 square feet of commercial/amenities space.

Structural System:

Floors and roof are framed with prefabricated wood trusses on load bearing wood stud walls on a 2-story reinforced concrete parking structure. Building is founded on deep foundations consisting of pre-cast piles.



2. **Prescott Condominiums, Alexandria, Virginia**
Owner/Developer: Carr Homes



Project Description:

The Prescott contains 64 luxuriously designed condominium units over concrete podium. The fire truck access lane is situated on top of the podium and the building has common roof top terrace.

Structural System:

4-story wood framed building over 1-level parking garage of reinforced concrete structure.



3. **The Residences at Lyon Hill, Arlington, Virginia**
Owner/Developer: McShay Homes



Project Description:

This development contains 18 luxuriously designed condominium units ranging in size from 1,380 to 2,290 square feet each. Units are arranged in a 4-story building over 1-level parking garage.

Structural System:

Floors and roof are framed with concrete slabs on Epicore metal decks on load bearing light gauge metal stud walls.



4. **Wintergreen of Westville, New Haven, Connecticut**

Owner/Developer: Metropolitan Development



Project Description:

Wintergreen of Westville is a residential development consisting of 293 units. The project consists of five buildings built on a common cast-in-place concrete podium of 145,000 square feet with three expansion joints.

Structural System:

Floor and roof are framed with prefabricated wood trusses on load bearing wood stud walls on an open parking garage structure.



5. **Orchard Square** , East Rutherford, New Jersey

Owner/Developer: Millennium Homes

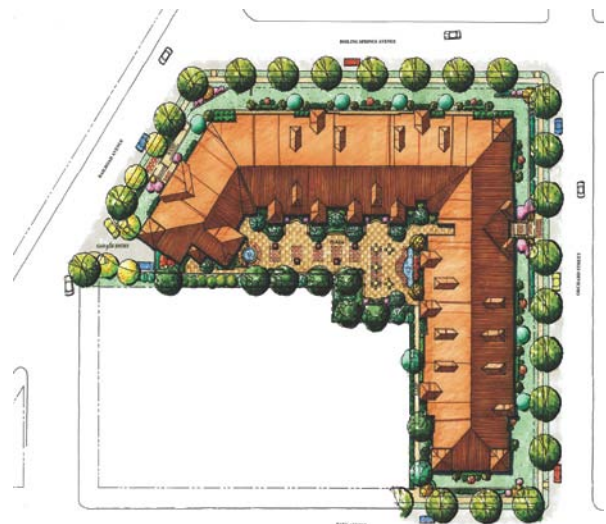


Project Description:

108 units of active adult condominiums arranged in a light steel framed, 4-story building over a 2-level parking garage.

Structural System:

Floors are framed with concrete slab and composite steel joists (Vescom) on load bearing light gauge metal studs. Roof is framed with light gauge metal trusses.



6. **The Pointe at Livingston**, Livingston, New Jersey
Owner/Developer: Millennium Homes



Project Description:

Designed as an active adult community, the Pointe at Livingston contains 200 condominiums which are arranged within four light steel-framed 4-story buildings. Each building is constructed over its own one-level parking garage.

Structural System:

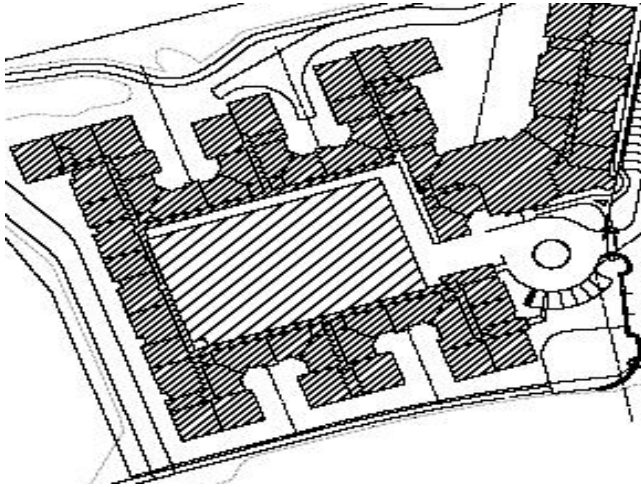
The floors and roofs are framed with concrete slabs and composite steel joists (Hambro). This concrete and steel assembly is supported by load-bearing, light gauge metal studs over a cast-in-place concrete parking garage.



Sample Donut Style Multi-Family Projects

1. Lorton Station Town Center, Lorton, Virginia

Owner/Developer: KSI



Project Description:

Two hundred fifty one (251) condominium units arranged in one donut style 4-story wood framed structure totaling approximately 325,000 square feet. The building is wrapped around a six level pre-cast parking garage.

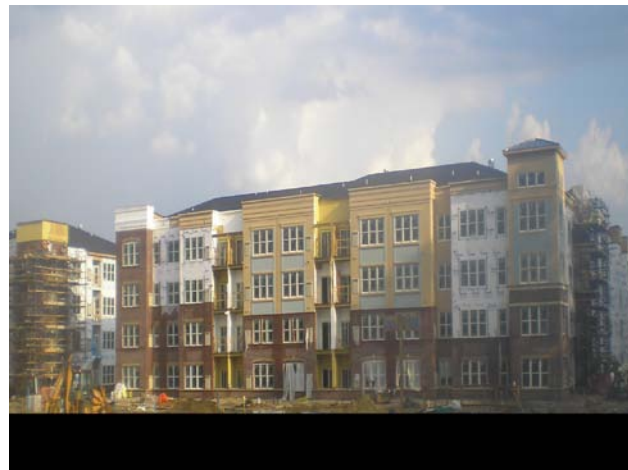
Structural System:

Built on shallow foundations, the Lorton Station Town Center's floors and roof are framed with prefabricated wood trusses on load-bearing wood stud walls.



2. Summerfield at Morgan Station Landover, Maryland

Owner/Developer: Camden Properties

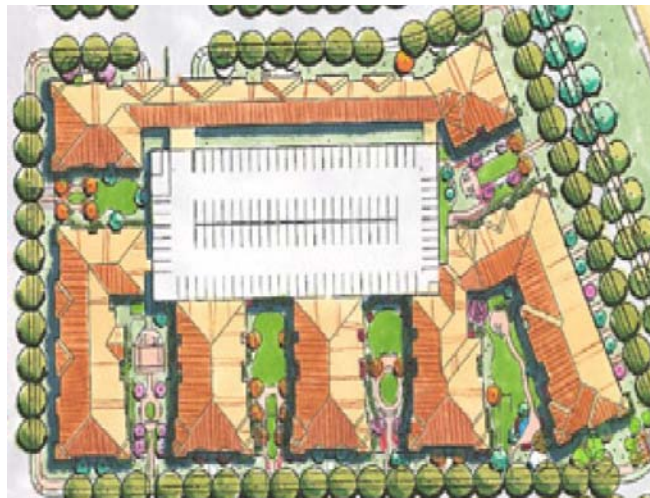
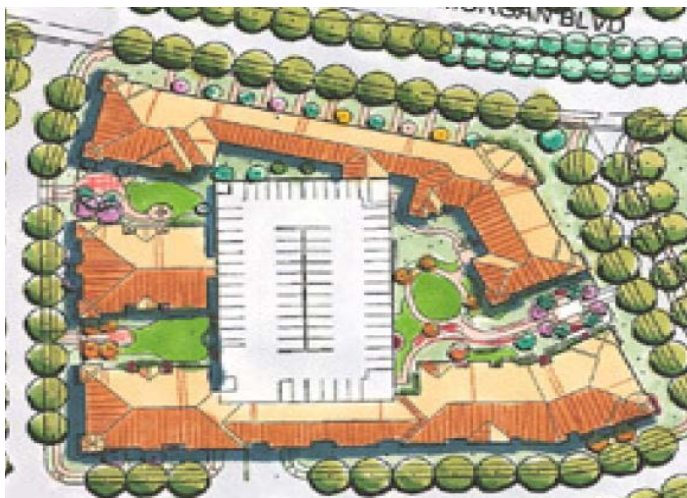


Project Description:

Summerfield at Morgan Station is a wood framed donut style condominium complex consisting of two 4-story buildings with a total of 498 units. Each building is wrapped around its own pre-cast concrete parking garage.

Structural System:

Built on shallow foundations, the Summerfield at Morgan Station's floors and roof are framed with prefabricated wood trusses on load-bearing wood stud walls



3. Camp Springs Metro Place at Town Center, Camp Springs, Maryland

Owner/Developer: Metropolitan Development



Project Description:

A perfect example of donut style design, this residential development consists of 457 rental units arranged in total of six buildings wrapped around a six-story parking garage. Each building is designed as four stories wood framed structure on shallow foundations.

Structural System:

Built on shallow foundations, the Camp Springs Metro Place Town Center's floors and roof are framed with prefabricated wood trusses on load-bearing wood stud walls.



4. **Overlook Ridge - Phase I**, Revere, Massachusetts

Owner/Developer: Roseland Properties



Project Description:

Built on an old quarry site, Overlook Ridge contains two apartment buildings - each designed with a combination of four and five stories. The development includes 310 rental units in addition to a stand alone pre-cast parking garage.

Structural System:

Each floor is framed with plywood decking on standard steel bar joists. These joists are supported by panelized, light gauge metal studs.



SAMPLE CLIENT LIST

I. ARCHITECTS

Lessard Design, Inc

Jack McLaurin

T: (703) 596-4503

jmclaurin@lessardgroup.com

Devereaux & Associates

Rodney Williams

T: (703) 893-1020

rwilliams@devereauxarch.com

KTGY Group, Inc

Rohit Anand

T: (703) 891-3612

ranand@cubellis.com

W.C. Ralston

Warren Ralston

C: (703) 795-3508

warren@wcralston.com

SAMPLE CLIENT LIST

II. BUILDERS

Pulte Home Corporation

Julio Quietrio

T: (703) 934-9300

Julio.Quiterio@pulte.com

K. Hovnanian Homes

Larry Gorman

T: (703) 885-7168

LGorman@khov.com

Brookfield Residential

Chip Devine

T: (703) 848-4923

Chip.Devine@brokkfieldp.com

Van Metre Homes

Chris Fox

T: (703) 723-2800

Cfox@vanmetrehomes.com

We are currently licensed in the following states:

- Connecticut
- D.C.
- Delaware
- Florida
- Georgia
- Kentucky
- Maryland
- Massachusetts
- New Jersey
- New York
- North Carolina
- Pennsylvania
- Rhode Island
- South Carolina
- Texas
- Virginia
- West Virginia

As a record holder with NCEES, we can readily obtain other state licenses not listed above for your project.

KEY PERSONNEL

Abdi H. Farah, P.E., President

Abdi Farah is the president of Alliance Structural Engineers, Inc. He oversees the operations and management of the firm, including client relations and project development. He's actively involved in each and every project and is well-known for building long-term professional relationships with Alliance's clients, including architects, builders, developers and other consultants.

With two decades in the structural engineering industry, Abdi has extensive experience in structural analysis, design and construction coordination. He has served as the structural engineer-of-record for a multitude of mid-rise multi-family buildings, mixed-use structures, commercial developments, parking structures, townhouses and single family residences while utilizing a wide variety of building systems and materials.

Abdi has further distinguished himself through his ability to create cost-effective, practical structural designs that can be easily constructed. Under Abdi's leadership, Alliance Structural Engineers, Inc has developed a reputation for innovative, practical design delivered on time and within budget.

Abdi earned his Bachelor's of Science from the University of Houston in 1987 and his Masters Degree in Structural Engineering from the University of Toronto, Canada in 1990. He is a registered professional engineer in 18 states and can obtain licenses in other states as needed.

Timothy B. Kowalcyk, P.E., Senior Engineer

Tim is a registered Professional Engineer with fourteen years of experience in structural engineering and project management. He brings to Alliance a comprehensive knowledge of design standards and building codes in various states and jurisdictions. In addition, he has vast experience in multi-family, custom single family housing, and renovation. One of his greatest strengths is the ability to build long-term client relationships with owners and design teams and provide cost effective solutions for building structures.

Tahsin Omerbell, P.E., Senior Engineer

Tahsin Omerbell has worked in the structural engineering field for nearly three decades. His vast experience includes exposure to most any construction technique and/or application, with particular emphasis in the design of concrete, steel, and wood structures. Tahsin is well-known for his ability to identify structural areas that require particular attention and quickly recommend economical and practical solutions.

Matthew Zhang, Senior Engineer

As a senior engineer, Matthew has a wide-ranging experience in reinforced concrete frame, concrete shear wall, steel structure, elevated transfer slab, masonry systems and wood/light-gauge steel structures. He has worked on projects ranging from large condominiums to office buildings and parking garages of all sizes. Matthew's extensive experience in construction management gives him a unique and valuable insight into the constructability of drawings. He is well-known for efficient, economical structural design.

Mehri Hamidi, Senior Engineer

Mehri Hamidi began her engineering career by obtaining a Bachelor of Science in Civil/Structural Engineering (1985) followed by professional engineering and professional earthquake engineering licenses in 1989 and 1995, respectively. Now, after more than two decades of structural engineering experience, Mehri specializes in commercial developments, residential communities and industrial plants. She has experience in various structural and foundation systems including wood, concrete, steel and masonry.

Mark L. Anstrom, P.E., Senior Engineer

Mark Anstrom has been working in the structural engineering field since 1999. Throughout his time in the industry, Mark worked on an array of projects including military housing, custom homes, historic renovation, structural repairs, mid-rise concrete, and multi-family housing. He has experience in a wide range of construction types including wood, concrete, steel, and masonry. He is capable of managing multiple simultaneous projects as well as advising and assisting fellow engineers. Mark's role at Alliance consists of management and design of numerous projects. His management duties include providing technical guidance to project engineers, quality control, and budget management. He graduated with honors from Pennsylvania State University in 2003 with both Master's and Bachelor's Degrees in Architectural Engineering.