

GARDEN STYLE APARTMENTS:

PROJECT INFORMATION

Project Description: HCPE V1 new construction of garden apartment buildings each containing 6 - 24 dwelling units.
Project Name: South City CNI
Project Address:
Owner/Developer: McCormack Baron Salazar
Owner's Address: 120 Olive Street, suite 2500 St. Louis, MO 63101

LOCAL AUTHORITIES

Code Review Jurisdiction: Shelby County, Tennessee - Construction Code Enforcement
https://shelbycountytg.gov/index.aspx?nid=342

Zoning: Shelby County / City of Memphis, Tennessee - Division of Planning and Development
https://shelbycountytg.gov/index.aspx?nid=18

APPLICABLE CODES

- Building Code: 2015 International Building Code
Accessibility Code: 2009 ICC Chapter 11/ ANSI A117.1; Uniform Federal Accessibility Standards (UFAS)
2010 ADA Standards for Accessible Design (applicable at public and common use areas)
Fire / Life Safety Code: 2012 International Fire Code
Energy Code: 2015 International Energy Conservation Code with Local Amendment (MECECC)
Electrical Code: 2015 International Electrical Code with Local Amendments (MECECC)
Mechanical Code: 2015 International Mechanical Code with Local Amendments (MECMC)
Fuel Gas Code: 2015 International Fuel Gas Code Local Amendment (MEFCG)
Plumbing Code: 2015 International Plumbing Code with Local Amendments (MEIPC)
Electrical Code: 2014 National Electric Code with Local Amendments (MECEC)
Zoning Ordinance: Memphis & Shelby County Unified Development Code

ZONING

Zoning Designation: R-SD (SOUTH DOWNTOWN RESIDENTIAL)
Special Districts: None
Permitted Uses: Multiple Family Dwellings, Park, Single Family Attached Dwellings
Flood Zones: None
Parking Spaces - Off Street: Exempt from off-street parking requirement
Setbacks: Per UDC, subject to site plan review in accordance with SCDB Site Plan Review Process and Criteria

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION

OCCUPANCY

Occupancy Types: Garden Apartment Buildings - Residential R-2 (Section 310)

CHAPTER 5 - ALLOWABLE BUILDING HEIGHTS AND AREAS - CONSTRUCTION TYPE V-B, NFPA 13R

Allowable Building Height (504.3): 60
Max Building Height provided: 35'-0"
Allowable Number of Stories (504.4): 3 stories
Max Number of Stories provided: HA 4 IC - 2 stories
MA and LA - 3 stories

Allowable Area (506.2): 7,000 SF for VB NFPA 13R
Max Building Area provided: +/- 7,111 SF (GSF of largest floor in bldg M-A)

Allowable Area Increase: A2 = [A1 + (NS x I1)] x S2
A1 = Allowable Area
A2 = Tabular allowable area factor (S13R) per Table 506.2
NS = Tabular allowable area factor for nonsprinklered building
I1 = area factor increase due to frontage per 506.2 (frontage on public way, 20'-0" min)
S2 = Actual number of building stories above grade plane, not to exceed 3
(NOTE: Max allowable per floor is limited to S2 = 1, so the A2 below is per floor and not by building area)

I1 = (F-P) / 25W30
F = Building perimeter that fronts on a public way with minimum distance of 20'
P = perimeter of entire building
W = Width of public way or open space (when avg is >30', use W=30)
I1 = [(1-.25)30/30

MAX ALLOWABLE FLOOR AREA: A1 = (7,000 x (7,000 x .75)) x 1
A2 = (7,000 x 5.25) x 3
A1 = 12,250 sf; 7,111 SF provided - OK
A2 = 36,750; 23,193 sf provided - OK

CHAPTER 6 - TYPES OF CONSTRUCTION (VB COMBUSTIBLE)

FIRE-RESISTIVE RATINGS

Table 601 - Fire Resistance Requirements for Building Elements

Table with 2 columns: PRIMARY STRUCTURAL FRAME, BEARING WALLS, NON-BEARING WALLS, FLOOR CONSTRUCTION, ROOF CONSTRUCTION. Rows specify fire resistance ratings like 0 HR, 1 HR, 2 HR.

ADDITIONAL REQUIREMENTS: Dwelling Unit Separation Walls: 1 HR (Section 420.2, Section 708.3)
Dwelling Unit Floors: 1 HR (Section 711.2.4.3)
Exterior Exit Stairway Walls (Breezeway): 1 HR (Section 708.5 ex#1, 1071.6, 1023.2)

CHAPTER 7 - FIRE AND SMOKE PROTECTION FEATURES

Table 705.8 - Openings: The maximum Area of unprotected and protected openings permitted in an exterior wall in any story of a building shall not exceed the percentages specified in Table 705.8

Table with 3 columns: Fire Separation Distance, Opening Protection, Allowable Area. Rows specify percentages for unprotected, sprinklered, and no limit.

CHAPTER 7 - FIRE AND SMOKE PROTECTION FEATURES

Table 705.8 - Openings: The maximum Area of unprotected and protected openings permitted in an exterior wall in any story of a building shall not exceed the percentages specified in Table 705.8

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MINIMUM FIRE RESISTANCE RATINGS

Fire Walls: Non required
Fire Barriers: 1 HR EXTERIOR EXIT (BREEZEWAY WALLS)
Fire Partitions: 1 HR DWELLING UNIT SEPARATION
Horizontal Assemblies: Refer to Fire Resistive Ratings above (Floor construction)
Penetrations: Protected by approved penetration firestop system with rating equal to wall penetrated.

CHAPTER 8 - INTERIOR FINISHES

FINISHES
Ratings for Interior Finishes:
Class A - Flame spread (0-25); smoke-developed (0-450)
Class B - Flame spread (26-75); smoke-developed (0-450)
Class C - Flame spread (76-200); smoke-developed (0-450)

Interior Floor Finish: Interior floor finish and floor coverings shall comply with Section 804.
EXCEPTION: Floor finishes and coverings of a traditional type, such as wood, vinyl, linoleum or terrazzo, and resilient floor covering materials that are not comprised of fibers.

Decorations and Trim: Curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with Section 806 or be noncombustible.

CHAPTER 9 - FIRE PROTECTION SYSTEMS

FIRE PROTECTION
Automatic Sprinkler System: Required for Group R occupancy (903.3.1).
NFPA 13R system provided per 903.3.1.2.

Portable Fire Extinguishers: In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C. (Mounted under kitchen sink base cabinet in all units)

Fire Alarm and Detection Systems: Manual Fire Alarm Boxes not required for Group R-2 where protected throughout with an automatic sprinkler system and the occupant notification appliances will automatically activate throughout the notification zones upon a sprinkler waterflow. (907.2.9 Ex #2)

Smoke Alarms: Installed interconnected and hardwired to buildings power source with monitored battery back-up, provided at locations in accordance with Section 907.2.11.2-4 for Group R-2 Occupancy.

CHAPTER 10 - MEANS OF EGRESS

OCCUPANT LOAD
Residential R-2 200 Gross SF per occupant (Table 1004.1.2)
Largest Apartment GSF: 1,325 GSF +/- 7 occupants
Largest Building GSF served by single stair: 3,404 GSF +/- 17 occupants

EGRESS
Egress Width: 0.2' Per Occupant (R-2)
Largest Apartment Calculated: 0.2 x 7 occupants = 1.4' min calculated door egress width
(See "Doors - Means of Egress" requirements below for default minimum width)

Stairway Egress Width: Largest Floor Calculated: 0.3 x 15 occupants = 4.5' min calculated stair egress width
(See "Stairways - Width" requirements below for default minimum width)

Stories with One Exit or Access to one exit for R-2 Occupancies (1008.3.2-1)
Maximum Number of Dwelling Units: 4 (Three stories above grade), max 10 occupants/unit
Maximum Travel Distance: 125'

Accessible Means of Egress: Area of Refuge is not required per 1009.1.3 - B.
48" clear width between handrails is required per 1009.1.3 - Ex#2
Max Dead-End Corridor Length: 50' (1020.4 exception 2)

Egress Through Intervening Spaces: Egress from a room or space shall not pass through adjoining or intervening rooms, except where adjoining rooms are adjacent to the area served. Egress shall not pass through kitchens, store rooms, closets or similar spaces.

Exterior Exit Stairways: Exterior exit stairways shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane (1027.2)

Exit Discharge: Exits shall discharge directly to the exterior of the building; exit discharge shall be at grade or provide direct access to grade. Exit discharge shall not re-enter a building.

Emergency Escape and Rescue: Emergency escape and rescue openings are required at all sleeping rooms below the fourth story above grade plane and shall have at least one minimum net clear opening of 5.7 square feet with minimum net clear opening height of 20", a minimum net clear opening width of 20" and sill height less than 44" at finish floor. The minimum clear opening for an grade emergency and rescue openings shall be 5 square feet (1030.2.1)

DOORS
Means of Egress: 32" Minimum Clear Width, 80" Minimum Height.
Fire Exit: Level landing on each side of door, Maximum 2% slope on exterior landings

1008.5 Exception 1: Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply:
1.1. A door is permitted to open at the top step of an interior flight of stairs, provided the door does not swing over the top step.
1.2. Screen doors and storm doors are permitted to swing over stairs or landings.
1008.1.5 Exception 4: Maximum 1/2" variation in elevation due to differences in finish materials is allowable.

Landings at Doors: Width not less than width of the stairway or door, 44" Minimum Length
1008.1.6 Exception: Landing length in the direction of travel within individual units of Group R-2 need not exceed 36 inches.

Thresholds: Maximum 3/4 inch in height for sliding doors serving dwelling units or 1/2 inch for other doors
Raised threshold and floor level transitions more than 1/4" beveled at 1:2 ratio minimum

Panic/Fire Exit Hardware: Not Required (1010.1.10)

STAIRWAYS
Stairway Width: Width of stairways shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches. (1011.2)
1011.2 Exception 1: Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches.

Stairway Headroom: Stairs shall have a minimum headroom clearance of 6'-8" measured vertically from a line connecting the edge of each nosing (1011.3)

Stair Treads and Risers: 1011.5.2 Riser Height and Tread Depth: Stair riser heights shall be 7 inches maximum and 4 inches minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. Rectangular tread depths shall be 11 inches minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads at a right angle to the treads leading edge.

Dimensional Uniformity: The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed 3/8 inch in any flight of stairs.
Stairway Landings: Width of landings shall not be less than the width of stairways they serve; Minimum depth equal to the width of the stairs but need not exceed 48" for straight run stairs. (1011.6)

Vertical Rise: Max 12 feet between floor levels or landings.
Outdoor stairways: Shall be designed so that water will not accumulate on walking surfaces.

(CHAPTER 10 CONT.)
Handrails: Located not less than 34" nor more than 38" above the leading edge of tread. Required on each side of a stair and shall comply with Section 1014.

Handrail extensions: Shall be provided at minimum 12" horizontally beyond top riser and continue to slope for the depth of one tread minimum beyond bottom riser. (1014.6)

Guardrails: All unenclosed floor openings of landings, stairs, ramps, balconies and porches located more than 30" above the floor or grade below shall have guardrails (1011.1)

Height- Required guards shall not be less than 42" high, measured vertically above the adjacent walking surfaces, adjacent fixed seating, or the line connecting the leading edges of the treads. Within individual dwelling units guards shall not have a height less than 34".

Opening Limitation- Required guards shall not have openings which allow passage of a sphere 4 inches in diameter from the walking surface to the required guard height. Within individual dwelling units, guards on the open sides of stairs shall not have openings which allow passage of a sphere 4 3/8 inches in diameter.

Stairway Open-Air Requirement: Exterior stairways serving as an element of a required means of egress shall be open on at least one side. An open side shall have a minimum of 35 SF of aggregate open area adjacent to each floor level and the level of each intermediate landing. The required open area shall be located not less than 42" above the adjacent floor or landing level. (Section 1027.3)

Chapter 11 - ACCESSIBLE DWELLING UNITS (1107.6.2)
Type-B Units: Where there are four or more dwelling units in a single structure, every unit shall be a Type-B unit, except as permitted to be reduced by Section 1107.7 (1107.7.1) where no elevator service is provided in a structure, only the dwelling units and sleeping units that are located on a story with an accessible entrance from the exterior of the structure are required to be Type A units or Type B units. At least one story with Type-B units is required on each floor. Two percent of all units on the site shall be Type A units (1107.6.2) reference is given for location of accessible dwelling units

All Federally assisted new construction housing developments with 5 or more units must design and construct 5 percent of the dwelling units, or at least one unit, which is accessible for persons with mobility disabilities. These units must be constructed in accordance with the Uniform Federal Accessibility Standards (UFAS) or a standard that is equivalent or stricter.

CHAPTER 12 - INTERIOR ENVIRONMENT

Natural Ventilation: Building shall be provided with natural ventilation in accordance with Section 1203.4, or mechanical ventilation in accordance with the IMC. Natural ventilation of an occupied space shall be through windows, doors, louvers, or other openings to the outdoors. The operating mechanisms for such openings shall be provided with ready access so that the openings are readily and rollably accessible to the building occupants. Minimum operable area is 4% of floor area being ventilated. (1203.6.1)

Natural Lighting: The minimum net glazed area shall not be less than 8 percent of the floor area of the room served. (1205.2)

Energy Star Requirements: Kitchen fan must exhaust to the outdoors, and "test to 100CFM after install"
Bath fan must exhaust to the outdoors, and "test to 50 CFM after install"
Entire unit to meet ASHRAE 62.2-2013

Sound Transmission: Air-borne sound: Walls, partitions and floor/ceiling assemblies separating dwelling units from each other or from public or service areas shall have a STC of not less than 50, or not less than 45 if field tested for air-borne noise when tested in accordance with ASTM E 90. (1207.2)

Structure-borne sound: Floor/ceiling assemblies between dwelling units or between a dwelling unit and a public or service area within the structure shall have an IIC rating of not less than 50, or not less than 45 if field tested, when tested in accordance with ASTM E 492. (1207.3)

2015 IECC - ZONE 3A
NOTE: SHELBY COUNTY AMENDMENT TO TABLE IECC R402.1.2
ALL BATT INSULATION TO BE INSTALLED TO MEET RESNET GRADE 1 INSTALLATION CRITERIA
Ceiling R-value: R38
Wood Frame Wall R-value: R13
Floor R-value (at overhangs): R19
Slab R-value: 0

Windows: NOTE: Requirements of 2015 IRC are superseded by EnergyStar requirements as follows:
Fenestration U-Factor: 0.30 or less
Glazed Fenestration SHGC: 0.25 or less
Air Infiltration: <= 0.3 cfm/ft²

DOORS:
Opaque Doors: U Factor <= 0.17
1/2 Lite Rear Entry Doors: U Factor <= 0.25 SHGC <= 0.25
Full Light Doors: U Factor <= 0.30 SHGC <= 0.25
Air Infiltration to be <= 0.5 cfm/ft²

Per MBS standards, fill all voids and gaps in exterior wall envelope with spray foam, such as gaps between window and door frame and framing, voids in box beam lintels, voids in multi-stud corners, and voids created by nailer studs where interior partitions intersect exterior wall framing.

Project complies with Enterprise Green Communities checklist, see Project Manual for specific requirements.



Architecture Planning Interiors Research
50 South B.B. King Boulevard
Memphis, Tennessee 38103
Telephone 901.521.1440
Fax 901.525.2760
E-mail info@lrk.com

Client:
McCormack Baron Salazar

720 Olive St Suite 2500
St. Louis, MO 63101

Issues and Revisions table with columns: Date, Issued / Revised. Rows show dates 3/16/2020, 5/18/2020, 7/13/2020 and corresponding revision descriptions.

BUILDING ADDRESSES table listing addresses like 442, 444, 446, 448 RATLIFF LANE, 324, 236, 238, 330 SHAMEL PLACE, 378, 448 VANCE AVE, 316, 384 FOOTBLANE, 338 S DANNY THOMAS BLVD, 368, 431 VANCE AVE, 378 SHAMEL PLACE, 321 SHAMEL PLACE, 450, 380 FOOTBLANE, 348 S DANNY THOMAS BLVD, 402, 406 FOOTBLANE

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LRK Project Number: 01.15100.03

Project Name:
South City CNI Phase 4
Memphis TN

Drawing Name:
CODE SUMMARY GARDENS

Drawn By: ADB
Checked By: HJL

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