

MEMO

Date: 13 November 2013

From: David M. White, AIA

To: Fifteen Great Road II, LLC

Project: Village Green Apartments

Re: Outline Specification

Littleton, MA

The following is an outline specification for the building components with a short description.

1. General conditions.
 - a. Lump sum contract.
 - b. AIA 101 General Conditions
 - c. Design Build Pool and Pool Patio, Mechanical, Plumbing, Electrical and Fire Protection. These subcontractors shall provide their own engineers who will provide controlled construction services for their disciplines.
 - d. All work to be in compliance with the latest edition of the MA Building Code, MAAB, FFH and local ordinances.
 - e. Coordination of field testing of soils, concrete and rebar inspections. Testing company engaged by the Owner.
 - f. Provide temp power, water, heat.
 - g. Winter conditions – provide alternate.
 - h. Bond.
2. General requirements.
 - a. Building shell, blower door test for energy code compliance and Energy Star certification.
 - b. See specifications for other general requirements.
3. Energy Star 3.0 certified.
 - a. Requires compliance with the latest EnergyStar edition for components and construction techniques.
 - b. The Owner shall engage a third party Energy Star rater to review the project and provide EnergyStar certification.
4. Concrete
 - a. Interior concrete: 3000 psi
 - b. Exterior concrete: 4000 psi with air entrainment
 - c. Reinforced concrete foundation walls and footings. Foundation walls to be 3' 10" deep. Basement foundation walls to be 9' 10" deep.
 - d. 10 mil poly vapor barrier with taped joints under all interior concrete slabs or taped joints of underslab insulation. .
 - e. WWF reinforcing for exterior slabs on grade.

- f. Fiber mesh reinforcing for interior slabs on grade.
- 5. Sub floor underlayment type.
 - a. Gypsum underlayment which provides better air borne sound mitigation instead of 1/2" Homasote underlayment which provides better impact noise mitigation.
 - b. Provide alternate for 1/2" Homasote underlayment in lieu of gypsum underlayment. Provide 1/4" plywood over Homasote in all glue down carpet installations.
- 6. Stone veneer: Quality Stone Veneer, type as selected from manufacturer's standards.
- 7. Schedule 40, 1 1/4" diameter pipe handrails for the stairs.
- 8. Wood framing
 - a. PT 2x sill plates with HD galvanized anchor bolts.
 - b. No 2 framing lumber for all studs, corridor framing, blocking, etc.
 - c. Open web wood floor trusses at 24" O.C.
 - d. Open web wood roof trusses at 24" O.C.
 - e. LVL stair framing.
 - f. LVL beams and headers where conventional lumber does not meet design criteria.
 - g. 1/2" OSB wall sheathing
 - h. 3/4" Advantech floor decking, glued and nailed.
 - i. 5/8" OSB roof sheathing w/ H-clips at horizontal joints or tongue and groove
 - j. Wolmanized L3 Outdoor PT deck framing with standard G90 galvanized connectors.
 - k. 2x lumber blocking for cabinets, grab bars, bathroom accessories, framing, chair rails and stairway handrails
 - l. 1/2" structural fiberboard, ASTM C 208, Type IV, Grade 2, Wall Sheathing for shear walls: Structural. Both sides all dwelling separation walls.
 - m. 1/2" board sound board on all dwelling enclosure walls not receiving the structural fiberboard.
- 9. Finish Carpentry
 - a. Interior window casing: drywall return with wood bull nose sill and 2 1/2" colonial apron or wood extension jambs
 - b. Common Areas:
 - i. Wood speed base: all areas except utility rooms.
 - ii. Chair rail: corridor:
 - iii. Crown molding; elevator lobbies and vestibules.
 - iv. False panels (astragal over drywall): in first floor stairways.
 - v. Wainscoting panels with chair rails: elevator lobby and vestibules.
 - vi. 5/4 paint grade wall caps with scotia: stairs.
 - vii. Wood skirt boards: stairs.
 - c. Dwelling Units:
 - i. Wood 4 1/2" colonial base: all areas.
 - ii. Astragal: none.
 - iii. Crown molding: in Living and Dining areas and Master Bedrooms. Alternate – provide price per unit.
 - iv. Door and window casing: 2 1/2" colonial casing.
 - d. Vinyl exterior deck rails.
 - e. Trex 5/4x6 exterior decking.

10. Waterproofing
 - a. Below grade foundation walls around basement: Cold Fluid-Applied membrane with R10 rigid insulation protection board.
 - b. Elevator pit: Bentonite waterproofing system, below footing and up walls, material warranty only.
11. Thermal insulation.
 - a. Slab on grade under dwelling units: R5 rigid insulation under slab in building 4 stories or more.
 - b. Foundation, R10 rigid insulation.
 - c. Exterior Walls: R21 dry dens-pak cellulose.
 - d. Dwelling separation walls: fully fill with dry dens-pak cellulose.
 - i. Studs 2x4 and 2x6 full width of wall, not staggered studs.
 - ii. Fiber sound board both sides of wall.
 - e. Corridor walls: sound attenuation batt.
 - i. Studs 2x6 full width of wall.
 - ii. Fiber sound board dwelling side, RC-1 channels corridor side.
 - f. Dwelling unit walls around bathrooms and bedroom: 2 1/2" sound attenuation batt.
 - g. Floors: 3 1/2" sound attenuation batt.
 - h. Top floor ceiling: R50 settled density cellulose insulation with vent-chute baffles at eaves.
12. Thermal envelope sealing.
 - a. Caulking of framing and penetration joints.
 - b. Caulk under all sill plates.
 - c. Caulk all shoe plates of exterior partitions.
 - d. Seal top floor top plates to drywall.
 - e. Spray foam in framing voids
 - f. Low expansion foam in window frame and door rough openings.
13. Weather barrier.
 - a. Tyvek Commercial Wrap 10 year warranty installation program.
14. Roofing
 - a. Ice and Water Shield, 3 rows at eaves, 3 rows at valleys (single row in middle and one row each side) and 1 row at rakes. Full coverage on small roofs.
 - b. 15 lb felt paper underlayment
 - c. Vinyl coated L&R Rite Flow aluminum drip edge.
 - d. Roof shingles: match Tewksbury Village Green.
 - e. Ridge vent: Lomanco, OmniRidge OR-4 Shingle Over Ridge Vent, minimum 18 sq in free area
15. Exterior siding and trim.
 - a. Vinyl 5" double clapboard Manufacturer: Crane/Market Square
 - b. Vinyl perforated soffits and miscellaneous pieces.
 - c. Vinyl Triple 2" Vented top floor deck ceiling.
 - d. PVC corner boards with integral J-track or double 1x offset for J-track.
 - e. PVC 5/4 Frieze Board and 4/4 Rake and Eave trim.
 - i. Windows have factory applied 3 1/2" flat vinyl casing with vinyl siding receptor.
 - f. PVC 5/4 deck post enclosures over post and 1/2" OSB framing.
 - g. Vinyl Shutters.

16. Flashing.
 - a. Ice & water shield membrane flashing behind deck ledgers and roof/wall intersections
 - b. Vinyl coated .026 aluminum flashing at wall/decking intersections, under door sills and roof/wall intersections.
 - c. Vinyl coated .026 aluminum kick-out flashing at bottom of roof/wall intersections
17. Gutters and downspouts.
 - a. Vinyl coated alum 5" gutter and 3x4 downspouts at building entrances.
 - b. Perimeter of the high eave over building entrances.
 - c. South side of Building 2.
18. Fire rated shafts.
 - a. 3M; Fire Barrier Duct Wrap 615+ in lieu of drywall enclosure.
19. Sealant
 - a. Backer rod.
 - b. Silicone and urethane based caulking appropriate for substrate.
20. Doors and frames.
 - a. Building Entrance doors.
 - i. Fiberglass simulated wood grain door, upper panel wood grille and frame light kit
 - ii. Matching side lights with grille and frame light kit
 - i. Hollow metal frame with drywall return both sides.
 - b. Common area doors.
 - i. Dwelling unit entries: solid core, hardboard face, 20 min. fire rated 6 panel doors
 - ii. Utility room doors: solid core, hardboard face, 20 min. fire rated, flush doors
 - iii. Stair doors: solid core with vision panel, hardboard face, 1 1/2 hr. fire rated, flush doors
 - iv. Hollow metal frame with drywall return both sides
 - c. Dwelling unit interior doors:
 - i. Hollow core, hardboard face, 6 panel doors
 - ii. Split jamb and solid wood frames
 - iii. 2 1/2" colonial casing.
 - d. Deck doors and frame.
 - i. Mechanical closet door: Hollow metal insulated door, 4 panels, wood frame and brick mold exterior casing.
21. Door hardware
 - a. Manufacturer, Dorma or equal latchsets.
 - b. Masterkeyed.
 - c. Curved lever handles.
 - d. Finish, brushed nickel
 - e. Building entrance doors: HC door actuators.
 - f. Closers on all fire rated doors and building entrance doors.
 - g. Dwelling unit entry and deck entry lockset.
 - i. Entrance lockset with integral deadbolt.
 - ii. Wood threshold
 - h. Attic access panel: Fire rated insulated steel panel door with weather stripped field fabricated panel above.

- i. Magnetic door holder system for lobby and hallway doors at end of building where elevators located – all floors.
23. Vinyl window
- a. Kohltech, Select Series, single hung, awing, picture and sliding glass doors and built in limiter.
 - i. Screens.
 - ii. Tilt function for single hung windows.
 - b. Factory applied 3 1/2" flat casing with vinyl siding receptor.
 - c. White outside and inside.
 - d. Between the glass grilles
 - e. Energy Star and energy code compliant insulated glazing.
24. Dwelling unit mirror type
- a. Frameless polished edge, top and bottom clips, no mastic.
25. Gypsum board systems.
- a. RC-1 channels on walls and ceilings.
 - b. 2 1/2" metal l-studs for ceiling assemblies.
 - c. 5/8" Type X drywall for walls.
 - d. 5/8" Type X MR drywall for bathroom walls.
 - e. 5/8" Type C drywall for ceilings.
 - f. 5/8" Type C MR drywall for bathroom ceilings.
 - g. U525 drywall assembly for the stair and elevator enclosures.
 - i. 1/2" Type C drywall.
 - ii. 1" Type X drywall shaftliner.
 - iii. 30 -45 minute quick-set laminate compound.
 - h. 1/2" structural fiberboard, ASTM C 208, Type IV, Grade 2, Shear Wall Sheathing: Structural.
 - i. 1/2" board sound board.
26. Ceramic Tile
- a. Floor tile: Daltile, Semi-Gloss/Matte, Matte, 6"x6", w/ 6"x6" Bullnose and Bullnose Corner base.
 - b. Epoxy based.
 - c. Master Bath only.
27. Flooring
- a. Vestibule, quarry tile: Daltile, Quarry Textures 6"x6"x3/8" w/ Cove Base and Cove Base Corners 6"x6"x3/8".
 - b. Corridors: Shaw, Turn Key 28 oz., glue down carpet.
 - c. Stairs and elevator Lobbies: Shaw, Turn Key 28 oz., stretch carpet with Ecofiber 8.2 lbs pad.
 - d. Rubber wearguard/stairnose on common stairways
 - e. Living rooms and bedrooms: Shaw, Military Housing 29, 30 oz., cut pipe carpet with Ecofiber 8.2 lbs pad. Glue down in HC accessible dwelling units.
 - f. Kitchen, solid vinyl tile: LG Hausys, Deco Advantage-Wood, 4"x36"x1/8", embossed simulated wood.
 - g. Second Bathrooms, solid vinyl tile: LG Hausys, Deco Essential-Stone, 18"x18"x1/8", embossed simulated stone.

- h. Sound mitigating underlayment mat under all solid vinyl tile flooring in dwelling units: Pliteq, GenieMat RST, 5mm, rubber sound control underlayment.
 - i. Laundry closet, sheet vinyl: Mannington, Vega II.
 - j. Utility rooms, VCT: Armstrong, Standard Excelon Imperial Texture w/ Johnsonite vinyl wall base 4"x1/8".
 - k. Vinyl transition strips: Johnsonite T strips with receiver and ramps selected for adjacent flooring.
 - l. Elevator floor: Carpet by elevator manufacturer.
28. Suspended Acoustical Tile Ceiling for corridors.
- a. Armstrong, Cortega, Second Look with 1" white recessed grid.
29. Paint
- a. Sherwin Williams Alternates: Benjamin Moore, Gliddon
 - b. Low or No VOC water based paint.
 - c. Three coat systems.
 - d. Walls: egg-shell
 - e. Ceilings: Flat
 - f. Bathroom walls: Semi-gloss
 - g. Trim and casing: Semi-gloss
 - h. Allow for 5 color choices in each sheen.
30. Signage
- a. Acrylic, colored, flat panel with rounded corners and contrasting color text.
31. Storage lockers.
- a. Metal welded wire mesh locker system in basement.
32. Dwelling unit bathroom Accessories.
- a. Moen residential line.
 - b. Finish: brushed nickel
 - c. Curved shower rod for tubs, straight curtain rods for showers.
 - d. American Pride, mirror door, recessed medicine cabinet.
 - e. HC accessible accessories, towel bars and grab bars, provided in HC accessible dwelling units.
33. Fire extinguishers and cabinets.
- a. 4A:60B:C fire extinguishers as required by code.
 - b. Metal, white, semi-recessed cabinet with metal framed, smoke acrylic panel door
34. Postal specialties
- a. Exterior (145 units) front loading, cluster boxes, pedestal mounted on a concrete pad located where designated on the site plan with canopy.
35. Closet specialties
- a. Clarion vinyl coated wire shelves.
 - i. 16" shelf with Super Slide closet rod in clothes closets.
 - ii. 12" or 16" linen shelves in linen closets.
36. Appliances
- a. Whirlpool or equivalent
 - b. Kitchen appliances finish: stainless steel.
 - c. Laundry appliances finish: white.
 - d. Refrigerator size; 18 cu. ft. (fits in 30" space), Energy Star rated.

- e. Range: electric. Alternate gas.
 - f. Dishwasher Energy Star rated.
 - g. Microwave/hood: over range.
 - h. Full Size Side by side or stackable washer and dryer units, 2.0 cu. ft. front load washer, 3.5 cu. ft. dryer.
 - i. High burst resistant braided steel washer hoses.
 - ii. Dryer Boxes and Dryer Ells.
 - i. Countertop microwave and Frigidaire wall oven in HC accessible dwelling units.
37. Window treatment
- a. Springs Window Fashions, Horizontal vinyl mini-blinds at all dwelling unit and common area windows.
 - b. Bali-Graber Stock, Vertical solid vinyl blinds at sliding glass doors.
38. Cabinets
- a. Evans Cabinets Valueline, Petersburg or equal.
 - b. Kitchen: Shaker, maple.
 - c. Bathroom: Shaker, maple.
 - d. Brushed nickel knobs and wire pulls.
39. Countertops
- a. Kitchen: Granite: "A" lot or select grade granite, uniform or medium-grained, polished.
 - i. 5/4" granite
 - ii. Edge, straight slightly eased.
 - iii. 4" backsplash and sidesplash.
 - b. Bathroom: Cultured marble with integral sink.
40. Elevator
- a. 3500lbs, hydraulic, single piston, side opening.
 - b. Plastic laminate walls, baked enamel frames and doors.
 - c. Battery lowering.
 - d. Sump pump
41. Fire suppression system.
- a. NFPA 13 for the residential floors and basements.
 - b. NFPA 13 dry sprinkler system for the attic.
 - c. Steel and Blazemaster PVC piping.
 - d. White semi recessed pendent ceiling heads, side wall mounted heads for top floor.
 - e. Dry pendent heads for decks and entrance areas.
42. Plumbing
- a. Gas distribution to each dwelling unit.
 - b. Painted exterior gas pipes
 - c. Water entrance to the building, insulated shutoff.
 - d. Cold water PVC main distribution to each dwelling unit.
 - e. Individual remote read water meters.
 - f. Freeze proof hose bibs at building perimeter.
 - g. Cellular PVC drainage pipe.
 - h. Red and blue PEX tubing for hot and cold water within dwelling unit.

- i. Accessible washer hook-ups in each dwelling unit.
- j. Tankless gas hot water heater for domestic hot water and on demand heating coil.
- k. Comfort height tank type, elongated bowl toilets.
- l. Kitchen single bowl stainless steel sinks and lever fixtures.
- m. Bathroom lavatories integral with cultured marble counter tops.
- n. Fiberglass tub and shower enclosures.
- o. HC fixtures and roll-in type shower for HC accessible dwelling units, floor drain in front of shower.
- p. All bath plumbing fixtures brushed nickel.
- q. Janitor sink – 1 per building in second floor utility room

43. HVAC

- a. All work to meet EnergyStar 3.0 requirements.
- b. Self contained Magic-Pak HVAC unit for each dwelling unit.
- c. Mastic sealed ducted supply distribution with central return to fan coil unit.
- d. Balanced return from all rooms to central return for the dwelling unit.
- e. Tankless gas hot water heater for domestic hot water. Alternate: electric hot water tank.
- f. Programmable thermostats.
- g. Ducted bathroom exhausted low sones 2 speed Panasonic fan rated for continuous use with a time delay switch and with vinyl wall cap.
- h. Dryer vents ducted to outside with dryer box, dryer ell and vinyl wall cap (same color as siding)
- i. Kitchen exhaust hood ducted to the outside with vinyl wall cap (same color as siding) for Energy Star certification.
- j. Corridor make-up air system with heating and AC and attic exhaust system

44. Electrical Light Fixture

- a. Electrical, CATV and telephone entrance to the building.
- b. Wiring to support camera system – interior all hallways, both entrances, exterior – both entrances (Price as alternate). Owner to provide cameras.
- c. All work to meet EnergyStar 3.0 requirements.
- d. Full electrical distribution system.
- e. House electrical panel
- f. All units and house panel metered separately.
- g. Electrical panel for each dwelling unit.
- h. Low voltage media service box for each dwelling unit with CATV, telephone and data distribution.
- i. Energy star light fixtures.
- j. Addressable fire alarm system with phone connection to central station.
- k. Smoke detectors throughout building.
- l. CO detectors in dwelling units.
- m. Video Intercom entry system for each dwelling unit.
- n. All work to be in compliance with the NEC and local ordinances.
- o. Provide for 6 exterior plug-in stations per building for electric cars. Price as an alternate
- p. Site Lighting – provide allowance to include parking lot lights, separate metering.

45. Site Work

- a. Erosion control measures as required
- b. Excavation for building, utilities from street, drainage system, drive and parking area.
- c. Drainage system structures, pipes and earth moving as per civil drawings by others.
- d. Perimeter footing drain with 6" perforated pipe set in crushed stone wrapped in filter fabric.
- e. Sump pump in Building 3
- f. 2" binder course, 1" wearing course bituminous pavement for all drives and parking areas.
- g. Base courses, structural fill and all backfill as per geotechnical report.
- h. Concrete sidewalks in immediate area of building and along parking in front of building.
- i. 2" bituminous pavement for all remaining sidewalks.
- j. Granite curbs at concrete sidewalks.
- k. 4" deep crushed stone drip strip sized for roof runoff with 4" perforated pipe connected to lower footing drain. Size of dripstrip to be coordinated with roof runoff.
- l. Landscaping in front of the building and selected areas of the site as per landscaping drawings by others. Provide allowance.
- m. Lawn seeding around the building and the parking areas.
- n. Conservation seed mix for all remaining disturbed areas.
- o. Bike racks.
- p. Pool, pool patio and fencing.
- q. Recycle center and enclosure.