

# PROJECT MANUAL

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FOUR NEW TOWNHOUSES

# WALKER TOWNHOMES

519-525 DES PERES AVE.  
ST. LOUIS, MO 63112

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**ARCHITECT:**  
ST. LOUIS DESIGN ALLIANCE, INC.  
6014 DELMAR BLVD  
ST. LOUIS, MO 63112  
314-863-1313

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saint louis

DESIGN ALLIANCE

▼architects

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## 00120 INSTRUCTIONS TO BIDDERS

1. The contract documents are complementary and together describe the full scope of work. The documents do not attempt to show every item required to complete the work. By submitting a bid the Bidder represents that the documents have been reviewed in their entirety and the full scope of work is included in the bid. Errors or misinterpretations resulting from the use of partial documents is solely at the Bidder's risk.
2. The contract documents do not record all existing conditions. The documents do not attempt to show every item required to complete the work. It is the Bidder's responsibility to visit the site prior to submission of bid in order to ensure that bid reflects those conditions which can be determined from a thorough visual inspection of the site and existing conditions.
3. Bidders shall carefully study and compare the contract documents and bring to architect's attention any apparent discrepancies or questions regarding intent of the documents. **Only the architect** is authorized to interpret the intent of the contract documents. Interpretations, corrections, changes to the contract documents shall be made only by Addendum issued by architect. Any other interpretations, corrections, changes made in any other manner or by Bidders shall not be binding on owner.
4. This is a "Design/Build" proposal for plumbing, HVAC, electrical and fire protection systems. Bidder shall submit with bid a brief description of proposed systems highlighting configurations, capacities, equipment, fixtures etc. to allow for proper evaluation of proposed systems.
5. Retainage shall be 10% of amount due contractor for each payment application.

## 00811 SUPPLEMENTARY GENERAL CONDITIONS

1. Contractor shall not be authorized to interpret contract documents and shall not be eligible for extra payment as a result of interpreting intent of contract documents improperly. Apparent discrepancies or conflicting instructions in the documents shall only be interpreted by architect. Proceeding without such interpretations from architect may result in significant project delays and expenses to contractor.
2. All required submittals shall be made electronically except for applications for payment which require "live" signatures.
3. Contractor shall deliver to Architect and Owner prior to beginning the Work an itemized schedule showing projected progress of the Work and completion dates.
4. Contractor shall deliver to Architect and Owner prior to beginning of the Work a list of the major subcontractors for the project.
5. Contractor shall maintain and submit evidence of liability and worker's compensation insurance coverage to Owner prior to beginning the Work.
6. Owner shall maintain "builder's risk" insurance to compensate project in case of fire, vandalism, theft or other damage as may occur.
7. Owner shall order and pay for all "spot surveys" required. Contractor shall coordinate scheduling of such surveys with Owner.
8. All submittals shall be made electronically.
9. Submittals shall be reviewed by Contractor prior to submission to Architect for conformance with contract documents. Any changes from contract documents shall be highlighted in the submittal and shall be documented to demonstrate that the proposed change(s) are in keeping with intent of the contract documents. The Architect shall approve or not approve the proposed change(s).
10. It is the contractor's **SOLE RESPONSIBILITY** to highlight any proposed deviation from the contract documents in materials or construction methods. Failure to do so is done solely at the contractor's risk and any approvals by Architect of submittals without such documentation shall be deemed null and void.
11. It shall be the Contractor's responsibility to make such changes necessary to remove any item(s) or assemblies that are not in conformity with the contract documents at its sole expense.
12. Applications for payment shall be submitted on latest edition A.I.A. Documents G-701 & G-703 or equivalent as approved by Architect or Owner. Application's itemized list shall be categorized in sufficient detail to allow for easy identification of costs incurred as Work progresses.
13. Contractor's general conditions line items and profit shall not exceed the percentage of the contract in the "total completed and stored to date" column for each application for payment.
14. Unconditional lien waivers shall be submitted with each application for payment according to the following schedule:
  - General Contractor: entire amount of payment due
  - Subcontractors: amount received from immediately preceding application
  - Major material suppliers: amount received from immediately preceding application

15. In order for a proposed change in the Work to be considered, documentation shall be submitted to Architect detailing both quantities and unit pricing and any other supporting data to establish cost for the proposed change. All lump sums without backup will be rejected.

#### 01500 TEMPORARY FACILITIES

1. Provide all required temporary facilities and construction for proper performance of the Work
2. All charges from utility companies shall be included in the contract amount.
3. Provide and maintain enclosures for temporary openings in order to keep building weather-tight and secure.
4. Notify utility locator service as required to locate buried utility lines prior the beginning of trenching or excavation.
5. Keep job site free from debris. Remove construction debris from site on regular basis.



## 01700 CONSTRUCTION PROCEDURES

1. Contractor shall field verify all dimensions. Report discrepancies to Architect for interpretation. Proceeding without such interpretation from architect may result in delays and expenses to contractor.
2. No materials may be substituted without prior approval from Architect.
3. Final cleaning shall be responsibility of Contractor and shall include but not be limited to removing labels, cleaning equipment, windows, floors, cabinets mirrors etc.,
4. Contractor shall maintain a set of record drawings to record changes in the Work. Drawings shall dimension actual locations of all underground and below slab piping and utilities included in project.
5. Collect all "attic stock" and store in location acceptable to Owner.
6. Contractor shall deliver to Owner at final completion a list of all equipment serial numbers, warranties, manuals, and similar product and manufacturer's documentation.

## 02010 SUBSURFACE EXPLORATION

**Rev. 3** 1. ~~A geotechnical engineering investigation of site conditions has not been performed.~~

2. Contractor shall provide all labor and material necessary to account for those soil conditions that can reasonably be anticipated from a thorough visual inspection of the site.

## 02200 EARTHWORK

1. If soil is encountered at design elevation of questionable bearing capacity or otherwise appears unsatisfactory for foundation and under slab support, Contractor shall immediately notify Architect and continue excavation only at direction of Architect. If such conditions are encountered a geotechnical engineer may be employed to provide instruction on how work is to proceed and monitor excavation and backfilling operations.
2. The cost of the geotechnical engineer and remedial work subsequently ordered by the geotechnical engineer shall be an additional expense and submitted as a change order.
3. Notify Architect if groundwater is suspected or observed at design elevations for footings/ foundations.
4. Prevent surface water from ponding on subgrades and flooding project site and surrounding properties.
5. Provide siltation barriers at perimeter of site where grading and excavation occurs to control erosion and prevent runoff at adjacent properties.
6. Contractor shall be solely responsible for establishing floor elevations relative to existing grades.
7. Stockpile topsoil during excavation for replacement at finish grading.
8. Slope finished grades away from foundation wall a minimum 1/2" per ft. for a minimum distance of 10'-0".
9. Finish grading shall provide positive drainage for entire site to drain water off site and maintain existing drainage patterns at property lines.
10. Finish grading shall leave all yards smooth, ready to receive seeding, sod, plantings.
11. Contractor shall maintain yard until grass and plantings are sufficiently established to prevent erosion.
12. Soil compaction shall be 95% of maximum density at optimum moisture content.
13. Granular fill compaction shall be 100% of maximum density.

## 02361 TERMITE CONTROL

1. Treat soil for termite control using termiticide approved by EPA.
2. Apply termiticide at entire perimeter of slab/ foundation and all slab penetrations prior to pouring slab.
3. Apply in accordance with manufacturer's recommendations.

## 02810 IRRIGATION SYSTEMS

1. Provide all required equipment and accessories for fully functional irrigation system sized to serve front and side yards and all planting beds.
2. Provide system components according to the following schedule as provided by Rain Bird or other manufacturer as approved by architect:
  - Backflow prevention valve, brass - mfg. by Febco or Watts
  - ESP controller
  - Spray heads - Seal-a-matic (SAM) 1800 series
  - Rotors - Seal-a-matic (SAM) 5000
  - Rain/ freeze stat, WR2 wireless
  - PFA valves, low flow control
  - Polyethylene pipe
3. Install PVC dump drain from backflow prevention valve to nearest floor drain or sump pit. Provide air gap as required by code.
4. Install blowout valve port outside building in line with backflow prevention valve.
5. Install back flow valves and system controllers ~~in basement~~ and label parts for easy identification.
6. All piping penetrations shall be below grade. Waterproof all penetrations with bentonite.
7. Install rain/ freeze sensor 12" minimum above grade.
8. Provide owner with plumbing inspection certificate.

Rev. 3

## 02900 LANDSCAPING

1. Properly prepare soil consistent with requirements of respective plantings.
2. Trees, shrubs, ground cover, flowering plants, seed, straw, sod, etc. shall be provided by Owner and installed by general contractor.
3. Install all trees, shrubs, ground cover, flowering plants etc. in accordance with growers and industry standards.
4. Foundation planting beds shall be installed a minimum 6" below wood frame walls as indicated elsewhere in contract documents.
5. Seed or sod lawn areas disturbed by construction.
6. It shall be the contractor's responsibility to water all seed and sod installations daily until grass is established.
7. Restore yard areas damaged as result of landscaping work.
8. Remove surplus soil, landscape materials and other waste material and dispose of properly off site.
9. Provide 1-year warranty for all plants installed.

## 03300 CONCRETE

1. All concrete shall be 3500 psi minimum compressive strength. Provide air entrainment in work exposed to weather.
2. Perform all work in accordance with ASTM C 94/C 94M
3. Perform all work in accordance with ACI 301 1-5 & ACI 117
4. Reinforcing steel shall be ASTM A 615/A 615M, Grade 60
5. Work shall comply with ACI bulletin 306.1 for cold weather placement, ACI 301 for hot weather placement.
6. Work shall comply with CRSI "Manual of Standard Practice" for placing reinforcement.
7. Obtain at least one compression test for each day's pour. Testing shall be performed by a qualified reputable testing agency paid for by Contractor.
8. Vapor retarder shall be 15 mill and meet ASTM E 1745 Class "A". Include manufacturer's recommended adhesive or pressure-sensitive tape.
9. Vapor retarder shall be placed on smooth base, extend retarder completely around all penetrations and slab edges to ensure proper performance of retarder.
10. Contractor shall include cost of stepping foundation as can be reasonably anticipated by a visual inspection of site and review of contact documents. If a topographic survey has not been provided elevation drawings must be considered diagrammatic and do not show all intended footing and foundation depths or required steps.
11. Remove fins and projections and fill honeycombed areas in all foundation walls.
12. Bottom of all footings and grade beams shall be 30" minimum below finished grade at all points.
13. Install 4" perforated, corrugated drain tubing with filter cloth at perimeter of foundation where floor slab is below grade. Terminate at sump pit or if slope permits, daylight at grade.
14. Exterior concrete slabs intended primarily for foot traffic shall be 4" min thickness with 6x6, 1.4x1.4 welded wire fabric reinforcing, light broom finish with control joints at 20'-0" o.c. maximum or as otherwise indicated on the drawings.

Interior concrete slabs shall be 4" min thickness with 6x6, 1.4x1.4 welded wire fabric reinforcing, trowelled finish, installed on 4" minimum granular fill with vapor retarder. Provide control joints at 20'-0" o.c. maximum at offsets and column footings, control joints at 10'-0" oc. each way.

Exterior and interior concrete slabs intended primarily for vehicular traffic shall be 5" min thickness with 6x6, 1.4x1.4 welded wire fabric reinforcing, light broom finish for exterior slabs and trowelled finish for interior slabs, with control joints at 20'-0" maximum each way.

15. Expansion joints shall receive pavement sealant and backer rod.
16. Install paving in public right-of-way in accordance with municipality standards for mix, thickness, finishing method,
17. Slope all exterior slabs 1/8" per ft. minimum to provide proper drainage.

## 04255 MASONRY

1. Work shall comply with Brick Industry Association (BIA) Technical Note No. 1, latest edition, for construction during cold and hot weather conditions.
2. Provide 4' x 4' or other sample panels as directed by architect for review of patterns, color, joint size and tooling, etc.
3. Brick shall be ASTM C 216, ASTM C 67, modular size, standard shape, material allowance \$450/thousand.
4. Mortar shall be ASTM C 270-10 or BIA M1, Type "N", colored, from single manufacturer, mortar color shall be selected from manufacturer's standard colors.
5. All water for mortar mix shall be potable.
6. Joints shall be 3/8" concave.
7. Lay units in one half running bond unless otherwise indicated on drawings.
8. Install EPDM membrane flashing at window and door lintels, window sills, and at base of all veneer walls at foundation.
9. Provide cavity drainage material similar or equal to 1/2" masonry mat as manufactured by CavClear. Similar or equal to be approved by architect.
10. Provide weeps at maximum 33" on center at all veneer cavities.
11. Install adjustable "dove tail" galvanized wire ties at 16" on center vertically and horizontally.
12. Supply and install loose steel lintels as required at all masonry openings, 4" minimum bearing at each end. Size shall be 3-1/2" x 3-1/2" x 1/4" unless otherwise indicated on drawings.
13. Provide miscellaneous masonry accessories for grout, expansion and control joints, weep/ vent products where required for proper installations.
14. Brick pavers shall be ASTM C 902, standard shapes
15. All masonry surfaces shall be cleaned in accordance with BIA Technical Note No. 20 using cleaning agent suitable for brick type and color. Apply with brush by hand or pressurized water matching cleaning agent with application method.

## 05120 STEEL

1. Provide shop drawings for fabricated items unless otherwise approved by architect.
2. All structural and miscellaneous shapes shall be ASTM A 36, shop primed.
3. Provide miscellaneous metal fabrications as indicated on drawings.
4. Steel pipe shall be Type E or S, Grade B. shop primed.  
Steel columns shall be 3-1/2" diameter x 9.11 #/ ft. standard pipe with welded 1/4" steel base plate.
5. Shim steel beams and columns only with 1/4" or thicker steel shims. Wedges, setting nuts, wood, cement board, etc. shall not be accepted as shim material.
6. Grout shall be non-shrink, factory packaged, ASTM C 1107
7. Welding shall comply with AWS Structural Welding Code, D1.1, and D1.8 seismic, latest editions.
8. All welded joints exposed to view shall be ground flush and smooth.
9. Erect structural steel in accordance with American Institute of Steel Constructions (AISC) Standard Code of Practice for Steel Buildings and Bridges, latest edition.
10. Install all work plumb, and level.
11. Grout all steel bearing areas solid below members and bearing plates. Grout shall be 3/8" max below plates, larger gaps shall have shims.
12. All columns shall be anchored to bearing with bolted connections through a base plate.
13. All installed beams and columns shall be restrained from lateral movement.
14. Steel handrail infill material to be be galvanized square wire mesh similar to Square Mesh as manufactured by McNichols. 3" by 3" opening, woven, .125" wire diameter.

## 06100 CARPENTRY

1. Framing shall comply with American Wood Council Wood (AWC) publication **WCD 1 - Details for Conventional Wood Frame Construction**, latest edition.
2. Provide shop drawings for design and fabrication of prefabricated trusses sealed by an engineer registered in state of project location.
3. Prefabricated trusses shall be manufactured in accordance with Truss Plate Institute (TPI) **Design Specification and Quality Standard**, latest edition.
4. Prefabricated trusses shall be designed for loading indicated in the International Residential Code (IRC) for each building component.
5. Floor truss design design for deflection shall not exceed  $l/480$ .
6. Material Schedule:
  - All wood: 19% maximum moisture content
  - Stud framing: Any species allowed by ANSI **National Design Specification (NDS) for Wood Construction**
  - Joist framing: Any species allowed by ANSI **National Design Specification (NDS) for Wood Construction**
  - Preservative treated lumber: American Wood Protection Association (AWPA) **Book of Standards**
  - Fire treated lumber: American Wood Protection Association (AWPA) **Book of Standards**
  - Plywood: American Plywood Association (APA) product guide for **Performance Rated Panels**
  - Oriented Strand Board: American Plywood Association (APA) product guide for **Performance Rated Panels**
7. Install closed foam sill sealer between foundation and wall plates. Fill all voids with additional thickness of sill sealer or sealant.
8. Exterior building wrap shall be similar to "Tyvek" as manufactured by DuPont. Lap and seal seams, install in accordance with manufacturer's instruction.
9. Gable vents shall be molded high density urethane or aluminum with baked enamel finish, insect screens. Provide size indicated on drawings or verify size with architect prior rough-in installation.
10. All fasteners and connectors shall comply IRC , with regard to type and spacing.
11. All work shall be installed straight, plumb, level and true.
12. Provide temporary bracing required during construction to support assemblies until fully constructed.
13. Provide shear panel bracing as required by IRC
14. Provide blocking, nailers, etc. required for proper support of cabinets, counter tops, shelving, ceiling fixtures, grab bars, etc.
15. All openings in bearing partitions and exterior walls shall receive 2-2x10 header unless otherwise indicated on drawings.
16. Install firestopping in walls and soffits as required by IRC
17. Install draftstopping in attics and soffits as required by IRC or otherwise indicated on drawings.
18. Install fire rated assemblies in accordance with approved test assemblies.
19. Double joists under all parallel partitions, 5" offset permitted to accommodate plumbing and ductwork.
20. Install all bridging and bracing for trusses as required by truss manufacturer.
21. Install full height blocking at mid-point of all joists with 14'-0" span or greater.

## 06200 FINISH CARPENTRY

1. Provide running and standing trim as indicated on drawings or as selected by Owner.
2. Windows shall receive stool and apron with drywall returns as indicated on the Drawings.
3. Exposed plywood panels for interior applications shall be veneer grade, no exposed edges.
4. Stair trim schedule:
  - Treads: Select by Owner and installed by general contractor
  - Risers: Select by Owner and installed by general contractor
  - Balusters: Select by Owner and installed by general contractor
  - Newels: Select by Owner and installed by general contractor
  - Handrail: Select by Owner and installed by general contractor
5. Finished handrail assemblies shall support 200# concentrated load applied at any point along top rail.
6. Scribe and cope trim for accurate fit. Scarf cut joints in running trim.
7. Install all work straight, plumb, level, true, fit all joints tightly.



07120 WATERPROOFING

Rev. 3 1. Waterproof ~~basement~~ walls to within 4" of finished grade with elastomeric coating, fluid or brush applied similar or equal to 795 or 794 Foundation Coating as manufactured by Henry Company. Similar or equal to as approved by architect. Install protection board prior to backfilling. Install accordance with manufacturer's instructions.

Rev. 3 2. ~~Contractor shall provide complete and continuous waterproofing barrier to ensure basement is dry throughout.~~

## 07210 BUILDING INSULATION

1. Provide continuous exterior envelope insulation from eave to lowest floor slab
2. Provide rigid insulation from inside face of foundation wall for 36" to interior below basement slab.
3. Install 2" closed cellular foam at all exterior walls after electrical and plumbing rough-ins are complete. Install R-11 batt insulation after foam insulation installation. Except at furred walls, finished assembly shall achieve minimum R-23.
4. Provide sound batts in all stud cavities containing PVC drain lines.
5. Provide sound batts in all interior bedroom and bathroom walls.
6. Provide sound batts in floor/ ceiling assemblies as indicated on drawings.
7. Attic insulation shall be glass fiber blown-in, R-48 minimum value throughout.
8. Install all work in accordance with manufacturer's instructions.

07241 EXTERIOR INSULATION AND FINISH SYSTEM

Rev. 3 - section added

1. Exterior insulation and finish system (EIFS) shall be similar or equal to STO ThermNext, as manufactured by STO Corporation, manufacturer's standard texture and color. Similar or equal to be approved by architect.
2. Provide all required accessories for proper installation.
3. Install in accordance with manufacturer's instructions.
4. Provide expansion and control joints as indicated on drawings and as required by manufacturer's documentation. Verify layout with architect prior to beginning work.
5. Installation may ONLY be performed by applicator that meets the qualifications listed by system manufacturer.

## 07311 ROOFING

1. Low slope roofing shall be single-ply, thermoplastic polyolefin (TPO), 60 mil thickness, white, similar to Ultra-Ply, as manufactured by Firestone. Provide 1/2." min. thickness cover board over roof deck, mechanically attached. Provide all required accessories for proper installation, including all specialized fittings for penetrations. Install system in accordance with manufacturer's instructions.
2. Provide 20 year manufacturer's warranty. Provide documentation to architect at completion of work.
3. Completion of flashings, terminations, & temporary closure is required to provide watertight conditions. Installation of walkways where shown on the Drawings shall require walkway product acceptable to membrane roofing manufacturer.
4. General Contractor to verify and confirm roofing product warranty applies for geographical region, region wind coverage, wind phenomenon, and conditions of building particulars.

## 07460 SIDING

- Rev. 3** 1. ~~Panel siding shall be similar to HardiePanel as manufactured by James Hardie, 4'x10' or 4'x8' (sizes as shown on Drawings), smooth finish, prefinished as selected by Owner, smooth seams and edges (verify with Owner), install according to manufacturer's instructions.~~
- Rev. 3** 2. ~~Install all siding and wall panels with "rainscreen" application, furring shall be installed between cladding and a code approved weather barrier. Furring shall be 3/8" thick and a minimum of 1 1/2" wide. Install products per manufacturer's requirement as indicated by James Hardie's manufacturer's detail guidelines.~~
3. Provide adequate flashing, water management & moisture control per manufacturer's instruction.
4. Fiber Cement trim shall be similar to HardieTrim, as manufactured by James Hardie, smooth finish, prefinished as selected by Owner, install according to manufacturer's instructions.

## 07600 SHEET METAL

1. Sheet metal work shall conform to the Sheet Metal and Air-Conditioning Contractors' National Association (SMACNA) standards, latest edition.
2. Material thickness schedule:
  - Aluminum coil stock: .025 ga
  - Aluminum gutters and downspouts: .032 ga
3. All flashing exposed to view shall be aluminum, baked enamel finish, manufacturer's standard colors for Owner's selection.
4. Contractor shall prudently install flashing, counter flashing and step flashing to prevent water penetration at roofs, walls.
5. Gutters and downspouts shall be aluminum, baked enamel finish, manufacturer's standards colors, ogee profile gutter with rectangular downspout, extruded on site. Mount with roof hanger. Seal all joints for watertight installation.
6. Isolate dissimilar materials to prevent electrolysis.
7. Terminate downspouts at preformed splash block or underground drain boot as indicated on drawings and as required by municipality.

## 07900 JOINT AND FIRE RETARDANT SEALANTS

1. Sealant schedule:
  - Backer rod: closed cellular polyethylene foam
  - Paving joints: two-part urethane
  - Exterior joints: silicone
  - Interior joints at wet/ damp locations: silicone
  - Interior joints: acrylic
  - Fire assemblies: intumescent acrylic
2. Provide sealant colors from manufacturer's standard. Verify color of all sealants with architect prior to installation.
3. Sealant shall be selected as appropriate for width of joint and adjacent materials and in keeping with manufacturer's performance characteristics.
4. Install sealants in accordance with manufacturer's instructions.
5. Install sealant at perimeter of all openings and penetrations in exterior walls.
6. Install sealant at all dissimilar interior materials. Select sealant opacity and color as appropriate to application to achieve most finished appearance.

## 08100 DOORS AND FRAMES

1. Submit shop drawings for doors and frames for review.
2. Steel doors shall meet ANSI and Steel Door Institute standards. Provide UL labeled units for required fire ratings as indicated on drawings. Steel doors shall be pre-hung, 24 ga, steel skin, 1-3/4 thick", insulated.
3. Interior wood doors shall be pre-hung, solid core, MDF, paneled as selected by Owner, 1-3/8" thick. Doors to be installed by general contractor.
4. All glass in exterior doors and sidelights shall be tempered, insulated, 1/2" min. thickness.
5. All glass in interior doors and borrow lights shall be tempered and or fire resistive glass as required by door fire rating indicated on drawings.
6. All fire rated doors and frames shall have the appropriate UL label affixed at factory.
7. Doors and frames shall be reinforced and prepared to receive hardware.
8. Install all work level and plumb, provide proper clearances, ease of operation and proper latching.

## 08500 WINDOWS AND RESIDENTIAL EXTERIOR DOORS

1. Submit shop drawings showing proposed unit sizes, styles, quantities and accessories
2. Windows and doors shall meet or exceed Energy Star guidelines.
3. Windows shall be similar or equal to #4000 series as manufactured by Quaker. Proposed alternate manufacturers shall be approved by Owner prior to submission of bid.
4. Provide manufacturer's standard exterior door hardware options for style, finish and proper function. Single point locking system for doors under 7'-0" ht. All doors taller than 7'-0" shall receive three point locking system.
5. Provide fiberglass insect screens at all operable units from manufacturer's standard options.
6. Double or single hung units shall have tilt sash and sash locks and bottom sash lift handle.
7. Provide obscure frosted matte glass at all bathroom windows.
8. Install all units in accordance with manufacturer's instructions, level, and plumb,
9. Adjust all sash for smooth operation and proper latching.
10. Each bedroom shall have one window that meets all requirements for "Emergency Escape and Rescue" as stated in Section 1029 of 2012 IBC.
  - a. Window shall have a clear opening of 5.7 square feet.
  - b. Minimum window opening height shall be 24"
  - c. Minimum window opening width shall be 20"
  - d. The net clear window opening shall be the result of normal window operation.
  - e. Maximum window height from floor shall be 44"
  - f. Window operation shall be from the inside and not use specialty keys or tools.



## 08710 DOOR HARDWARE

1. Submit hardware and keying schedules and product data for review.
2. All door hardware shall be of sufficient quantity, size and strength to properly operate and fit doors sizes, fire-rating and function as indicated on door schedule and/ or floor plans.
3. Door hardware shall be similar or equal to Jupiter as manufactured by Schlage, finish to be satin nickel. Similar or equal shall be approved by Owner.
4. All exterior doors shall be fully weather-stripping at head, jamb and sill. Provide threshold at sill.
5. Install wall mounted stop at doors opening against adjacent walls. Provide floor mounted stop when opening against adjacent doors.
6. Pre- hung door hinges shall be manufacturer's standard size quantity, finish appropriate for proper function of door size and weight.
7. Install all hardware in accordance with manufacturer's instructions.
8. Adjust all hardware for smooth operation and proper latching of doors.
9. Door Location Hardware Schedule:
  - a. Exterior Doors: lockset, 1" min. through deadbolt with thumb-turn, Flush bolts or surface bolts at each pair of doors.
  - b. Bathroom and bedroom doors: privacy set
  - c. Typical hinged door: passage set
  - d. Bi-fold doors: bi-fold track and hinges, dummy set to match hinged doors at each leaf
  - e. Bi-pass doors: bi-pass track, rollers, floor guide, bumper, dummy set to match hinged doors at each leaf
  - f. Pocket doors: pocket door hardware, recessed pocket door latch.

## 09260 GYPSUM BOARD SYSTEMS

1. All gypsum board shall be 1/2" thick,
2. Provide regular, fire resistance rated, moisture and mold resistant panels as required by application indicated on drawings.
3. Install moisture/ mold resistant panels in all bathroom and similar damp locations
4. Provide all required framing members, accessories for complete installation to meet performance requirements.
5. Install control joints in accordance with Gypsum Association's published recommendations.
6. Only install cement board in locations to receive ceramic tile finish.
7. Finish shall be three coat work, smooth, in all areas.
8. Provide all required trims and accessories for proper, finished installation.

## 09300 TILE AND STONE

1. Owner will provide all tiling as indicated on the drawings, general contractor to install.
2. Tile and natural stone shall be installed on ½" thick cement backer board, similar or equal to Durock as manufactured by United States Gypsum. Similar or equal shall be approved by architect.
3. Custom shower bases shall receive vinyl shower pan liner, 40 mil thickness, with prefabricated corners. Floor shall slope to drain at all points.
4. Grout shall be compatible with type of tile and location to ensure proper performance, color selected from manufacturer's standard options.
5. Installer shall provide and install ½" cement board underlayment at all floor and wall areas to receive tile or stone.
6. Floor tile shall be installed with thin-set method,
7. Wall tile shall be installed with adhesive method.
8. Provide recessed 8"x10"x 3" "shampoo shelf" in all showers.
9. Mounting schedule:  
Combination tub/ shower: 5'-0" above tub or to bottom of soffit  
Showers: 6'-6" above top of shower base  
Tub (no shower): 8" above top of tub
10. Provide and install marble threshold at doors where tile abuts different floor material.
11. Grout joints, unglazed tile and natural stone, shall be sealed upon completion.
12. Provide all required trims, special shapes and accessories for proper, finished installation.
13. Clean all work at final completion

## 09550 WOOD FLOORING

1. Owner to provide hardwood flooring, general contractor to install at locations as shown on Drawings.
2. Deliver flooring to job site for climate acclimation one week prior to installation.
3. Install 15# felt underlayment prior to installation of hardwood.
4. Provide base shoe to match flooring species at new flooring.
5. Finish shall be polyurethane, three coats of satin finish. Apply final coat after all trades have substantially completed their work.
6. Install in accordance with National Wood Flooring Association (NWFA) recommendations for each substrate condition.

096680 CARPET

1. Owner to select carpet, general contractor to install at location as shown on the drawings.
2. Carpet and pad shall be as selected by owner.
3. Prepare subfloor to receive pad and carpet. Fill and sand wood subfloor to provide smooth surface.
4. Carpet edge strips, transition strips and other accessories exposed to view shall be vinyl, color selected from manufacturer's standard options.
5. Provide all materials and accessories for proper installation.
6. Plan seaming to minimize seams and provide most consistent finished appearance.
7. Leave work clean and free of adhesive at completion. Remove all stains.
8. Install in accordance with manufacturer's recommendations for each substrate condition.

## 09900 PAINTING

1. Paints and stains shall be provided from only the following manufacturers: PPG/ Porter, Sherwin Williams, Benjamin Moore, Pratt & Lambert, Cabot, Olympic,
2. Comply with EPA lead-safe work practices when removing lead paint. General contractor shall obtain EPA certificate for lead paint removal and post warning signs. All workers shall be certified to remove lead paint. General contractor shall maintain records to document compliance with 2010 EPA Remodeling, Repair and Repainting Rule.
3. Paint Schedule:  
Interior drywall: 1 coat latex primer, 2 coats eggshell latex, final coat roller applied  
Interior wood trim (paint): 1 coat acrylic primer, 2 coats semi-gloss latex enamel  
Exterior wood trim and metal (paint): 1 coat acrylic primer, 2 coats acrylic exterior, semi-gloss
4. Walls shall be a different color from ceilings. Trim may be different color from walls.
5. Prepare all surfaces to receive paint. Painter shall bring to attention of General Contractor surface defects needing repair prior to start of painting. Finished work shall be free of surface defects.
6. Painter shall install sealants as required to achieve finished appearance
7. Leave work clean and adjacent surfaces free of splatters, drips etc.
8. Install in accordance with manufacturer's instructions for each substrate condition.

#### 10810 TOILET ACCESSORIES

1. Toilet accessories shall be as selected by Owner.
2. Mirrors shall be 14" plate glass, adhesive attachment.
3. Install in accordance with manufacturer's instructions.

## 10916 CLOSET SHELVING

1. Custom closet finish shall be as selected by owner.
2. Provide adjustable shelving hardware/ supports where adjustable shelving indicated on drawings.
3. Provide all intermediate supports, material and accessories appropriate to application for proper installation
4. Anchor all support brackets ONLY to blocking or studs. Drywall anchors of any kind or not acceptable.
5. Install in accordance with manufacturer's instructions.



#### 11400 KITCHEN EQUIPMENT

1. Kitchen equipment shall be as selected by Owner and installed by General Contractor.
2. Provide all required power, plumbing and ventilation for proper installation of kitchen equipment.
3. Verify all equipment selections and locations with Owner prior to rough-ins.
4. Install all equipment in accordance with manufacturer's instructions.

## 12300 CASEWORK

1. Cabinets and countertops shall be by Owner and installed by General Contractor.
2. Vanities and countertops shall be by Owner and installed by General Contractor.
3. Submit product samples and shop drawings for review.
4. All cabinets placed against walls shall be anchored to blocking, studs. Island cabinets shall be anchored to subfloor and joists.
5. Provide all required fillers and accessories to provide proper clearances for door and drawer operation including clearances for pulls.
6. Scribe fillers and tops to walls as needed for finished appearance. Joints shall not be wider than  $\frac{1}{4}$ "
7. Install cabinet's level and plumb.
8. Adjust cabinet doors, drawer fronts for proper alignment, and smooth operation

## 15000 PLUMBING DESIGN BUILD

1. The plumbing contractor shall be solely responsible for the design and construction of the plumbing system.
2. Plumbing Contractor shall provide all documentation required to secure permit for the plumbing work.
3. All work shall conform with applicable codes and ordinances.
4. Provide all material and labor for a complete system, including but not limited to: incoming water service, incoming gas service and supply piping, supply waste and vent system, domestic water supply system, fixtures and fittings.
5. Submit product samples and shop drawings for review.
6. Install all work in accordance with manufacturer's instructions.
7. Fixtures and fittings shall be selected by Owner and installed by Plumbing Contractor.
8. Water heater to be selected by Owner and installed by Plumbing Contractor, verify flue type and location, plumber will need to coordinate with electrical and mechanical contractors to verify installation of vents and wiring.

## 15500 HEATING VENTILATION AIR-CONDITIONING (HVAC) DESIGN BUILD

1. The HVAC contractor shall be solely responsible for the design and construction of the HVAC system.
2. HVAC Contractor shall provide all documentation required to secure permit for the HVAC work.
3. All work shall conform with applicable codes and ordinances.
4. Provide all material and labor for a complete system, including but not limited to: heating and air-conditioning and distribution system, exhaust vent ductwork for kitchen and baths, all temperature controls and control wiring.
5. Typical diffusers/ registers shall be floor or ceiling mounted, rectangular, adjustable damper, white.
6. Floor registers located in hardwood floors installations shall be hardwood, flush, rectangular, adjustable damper, finished to match adjacent flooring.
7. Equipment shall be Energy Star qualified.
8. Heating equipment shall be gas (verify with Owner)
9. Submit product samples and shop drawings for review.
10. Install all work in accordance with manufacturer's instructions.
11. Protect ductwork from infiltration of dust and debris during construction. Install new filters at completion of project.
12. Seal all joints in ductwork and at all boots.
13. Return air grilles at bedrooms shall have acoustical filter, mount centered on door.
14. Equipment schedule to establish a functional and quality standard:
  - Acceptable Manufacturers: Carrier, American Standard, RUUD, Trane, York
  
  - Heat Pump equipment: Performance series, 16 SEER min. efficiency, mfg by Carrier

## 16000 ELECTRICAL DESIGN BUILD

1. Electrical contractor shall be solely responsible for the design and construction of the electrical system.
2. Electrical contractor shall provide all documentation required to secure permit for the electrical work.
3. All work shall conform with applicable codes and ordinances.
4. Provide all material and labor for a complete system, including but not limited to: incoming service, panels, power, lighting, Smoke and carbon monoxide detectors, toilet exhaust fans, communication/ data/ TV wiring,
5. Exhaust fans shall be similar to Ultragreen, 110 cfm, mfg by Broan .
6. All switches shall be rocker type, outlets flush, and white. Cover plates shall be thermoplastic nylon, white (verify with Owner).
7. Equipment shall be Energy Star qualified.
8. Submit product samples and shop drawings for review.
9. Coordinate outlet locations and connections with requirements of all equipment. Connect all hardwired equipment.
10. Install all work in accordance with manufacturer's instructions.
11. Light fixtures shall be selected by Owner and installed by Electrical Contractor.
12. Light fixture schedule on drawings to establish a functional and quality standard: