



**ECONOMIC DEVELOPMENT AGENCY**

**Neighborhood Stabilization Program  
"Minimum Building Standards"**

June 2009

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## **1000 – General Requirements**

### **1010 – General**

- .1. These Minimum Building Standards (Standards) have been developed by the City of San Bernardino Economic Development Agency (EDA) for use on the Neighborhood Stabilization Program (NSP).
- .2. These Standards shall apply to all properties covered by the NSP.
- .3. All materials, supplies, costs of permits, and labor to complete the specified rehabilitation or repairs, shall be the responsibility of the Builder/Developer unless specified otherwise by the EDA.
- .4. Any drawings or sketches which may be furnished by the EDA or required by the Builder/Developer are intended to clarify or further describe the property. Should the Builder/Developer find discrepancies in, or omissions from, these drawings or sketches or should he/she be in doubt as to their meaning, they should contact the EDA for clarification. Because of the nature of work being done, some details of sketches or drawings may be "typical" and grades, dimensions and exact existing conditions must be verified at the property before commencing work.
- .5. Any additional work that EDA want the Builder/Developer to do should be done after completion of the Rehabilitation work, if at all possible. A separate contract will be signed between the EDA and Builder/Developer before the work is to start.

### **1020 - Terminology**

- .1. When used in these Standards, the following definitions shall apply:
  - A. Install - The item referred to shall be installed with all necessary hardware, trim, fittings, and material necessary to make ready for use. All material shall be new.
  - B. Replace - The existing item referred to shall be removed prior to installation of the new item.
  - C. Trim - When used in conjunction with painting, includes roof vents and pipes, eaves, molding, casing, underside of all doors, and any items other than walls and ceilings.
  - D. Rehabilitation - All repairs to or replacement of present elements of an existing building, such as windows, stairs, flooring, or wiring; rearrangement of rooms by the relocation of partitions or by the installation of new bathrooms and kitchens; or the general replacement of the interior of a building. This may or may not include changes to structural elements such as floor systems, columns or load bearing interior or exterior walls.

### **1030 - General Quality Requirements**

- .1. In order to establish standards of quality, the Standards may refer to certain products by name and/or catalog number. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers, at approximately the same cost.

- .2. All material and each part or detail of the work shall be subject at all times to inspection by the EDA, and the Builder/Developer will hold to the true intent of the Standards in regard to - quality of material, workmanship, and the diligent execution of the contract.
- .3. Materials installed shall be of such kind and quality to ensure that the dwelling will provide acceptable durability, economy of maintenance and adequate resistance to weather, moisture, corrosion and fire. The EDA may request evidence of a material's compliance with the requirements of the structure's plans and specifications and these Standards. Product labels are considered acceptable evidence.
  - A. *The EDA may require that the Builder/Developer carry out a durability evaluation or conduct a building assessment to determine if the materials to be used comply with any green strategies.*
- .4. All work shall be executed by skilled craftsman, experienced in their trade, and in accordance with accepted practices of their trade. All work shall be of the highest standards and methods.
- .5. Unless specifically noted otherwise, all construction methods and materials used shall conform to the California Building Code as adopted by the City of San Bernardino and shall be done in accordance with any other ordinances passed and adopted by the City of San Bernardino (i.e., zoning codes, fire codes, etc.). This includes all repairs, finishes, fixtures, and new work.
- .6. All plumbing and gas work shall be done in accordance with the Uniform Plumbing Code as adopted by the City of San Bernardino.
- .7. All heating and cooling work shall be done in accordance with the Uniform Mechanical Code as adopted by the City of San Bernardino.
- .8. All electrical work shall be done in accordance with the national Electric Code as adopted by the City of San Bernardino.
- .9. Where work involves colors, the Builder/Developer will provide the EDA with samples of all colors for the particular item (roofing, stucco, paint, stain, flooring, etc.), and the EDA will select the color and finish by initialing the color sample and state for what/where it will be used (exterior, interior, fascia, soffit, trim, doors, ceiling, walls, etc.). A maximum of three colors each may be selected for exterior and interior.
- .10. If the EDA has agreed to correct certain specified existing code violations, which are to be excluded from the work done by the Builder/Developer, the work on such violations, if done at the same time the Builder/Developer is on the job, shall be coordinated by the EDA and Builder/Developer so as to provide for a smooth flow of the work.

#### **1040 - Substitutions/Alternatives**

- .1. The Builder/Developer shall furnish a list of any proposed desired substitutions prior to the signing of the contract.
- .2. These standards are intended to encourage the use of new or innovative technologies, methods and materials. Alternatives and non-conventional or innovative methods and materials shall be equivalent to these standards in the areas of quality, durability, economy of maintenance, operation and usability.

- .3. Certain conditions in the geographic area or on the site may justify modification of specific standards, or make compliance with the standards impracticable or impossible. In these cases, approval by the EDA is required.

### **1050 - Optional Green Building Practices**

- .1. *Builder/Developers are encouraged to incorporate any green building practice that offers an opportunity to create environmentally sound and resource-efficient buildings.*
- .2. *In an effort to encourage modern, green building, and energy-efficiency improvements, Builder/Developers are encouraged to incorporate HUD's healthy homes interventions including these seven steps ensuring housing is made and kept:*
  - A. *Dry: Ensure proper drainage away from housing; clean repair gutters and downspouts, repair leaks seal roofs and windows.*
  - B. *Safe: Install safety devices on doors, cabinets, window blinds and outlets; provide adequate storage for all poisonous items out of reach of children and labeled in the proper containers; install smoke detectors and carbon monoxide detectors; have appropriate fire extinguishers available.*
  - C. *Well-ventilated: Service and maintain heating and cooling systems; provide exhaust fans for kitchens, bathroom and dryers to the outside to reduce mold; change furnace filters.*
  - D. *Pest-free: Provide proper storage and disposal for food products, caulk and seal holes; use least toxic pest management methods.*
  - E. *Contaminant-free: Remove lead based paint hazards properly; provide test kits for radon; reduce volatile organic compounds in paint, carpet, etc.*
  - F. *Clean: Install dust walk-off systems in entry ways; provide smooth, cleanable surfaces; provide effective storage space and containers; choose flooring that is easy to clean.*
  - G. *Well-maintained: Important maintenance calendar for inspecting, cleaning, repairing, replacing housing components/systems.*
- .3. *Throughout these Standards, the EDA has inserted opportunities in which green building practices can be achieved.*

### **1100 - Temporary Facilities and Temporary Controls**

#### **1110 – Site Usage**

- .1. All temporary facilities and controls required for the project shall be provided by the Builder/Developer.
- .2. The Builder/Developer will provide daily clean-up of all debris related to the work of the project as required. Provide a dumpster on site for the duration of construction for disposal of construction debris. All work area(s) shall be left broom clean at the end of each work day.
- .3. Immediately, at the end of the work, the Builder/Developer shall remove all of their debris, rubbish, refuse, and unused material from the property and street.

- .4. The Builder/Developer will provide all temporary 6-foot high chain link safety and security fencing for construction operations required for the work of this project. Fencing shall conform to the following specifications:
  - A. 6-foot high chain link fence with 80% or greater green or black wind screen/mesh.
  - B. Mesh shall be attached with hog rings.
  - C. Includes man and vehicle gates where required.
  - D. Gateposts shall be of size to accommodate the size of opening and its intended purpose.
  - E. All gateposts shall be cored or driven into the ground.
  - F. Core holes shall be filled with concrete once temporary fence is removed. Slurry seal all in A/C areas.
  - G. Fencing shall be set back beyond site work improvements.
- .5. On-site materials pertaining to the project and partially completed roofs shall be temporarily protected during inclement weather. It is the responsibility of the Builder/Developer to maintain a watertight condition to prevent any water damage to the building once the roof has been removed until it has been completely patched.
- .6. The Builder/Developer shall provide temporary power as needed for the project.
- .7. Provide and maintain dust and erosion control throughout the duration of the work and as required for the work of the project.
- .8. The Builder/Developer shall provide protection, acceptable to the EDA, for any existing surfaces or equipment that have been selected to remain.
- .9. *GREEN OPPORTUNITY: Minimize the site disturbance during construction.*
  - A. *Control the impact area by designating vehicle parking farther from the site.*
  - B. *Store building materials inside a garage or protected area.*
  - C. *Protect all existing trees with fencing to include the drip line in an effort to avoid over compaction of the soil around the trees.*

## **1200 - Project Closeout**

### **1210 – Final Cleaning**

- .1. Prior to the final inspection, the Builder/Developer will provide final clean-up of the building and property.
- .2. Remove all plaster and paint smears and drops; clean all windows, screens, doors, finished hardware and plumbing fixtures; polish all chrome, clean and polish all countertops and floor covering; throughout entire house - new and/or old. Provide cleaning of all exterior surfaces including walls, windows, landscape areas, driveways, and walkways.

### **1220 – Operations Manuals and Warranties**

- .1. The Builder/Developer will obtain and fill in all necessary information on all warranties where applicable, for manufactured products, materials and/or labor used in connection with the project. He/she shall deliver the original warranties to the EDA where appropriate copies will be made and the original will be delivered to the EDA upon completion of the work. Any sections that need to be sent to the manufacturer to validate the warranty, will be mailed as soon as possible.
- .2. *GREEN OPPORTUNITY: Provide operation and maintenance manuals, and perform training of users to properly instruct them on the green features of the property and how to maintain them.*

### **1230 – Systems Startup**

- .1. Prior to turnover of building, Builder/Developer will conduct testing and startup of all equipment new and/or old for verification of functionality.
- .2. Builder/Developer will ensure that all equipment components (such as filters, bulbs, batteries) are replaced prior to turn over.

## **2000 - Building Sitework / Site Preparation**

### **2010 - Site Clearing and Demolition**

- .1. This work shall be executed in a safe, orderly manner, and in accordance with all applicable codes.
- .2. The Builder/Developer shall protect all existing materials and apparatus from damage, and shall repair damage caused by workers at no cost to the EDA.
- .3. Remove trees and plant materials, with EDA's approval, from areas to be cleared.
- .4. Maintain protection of trees and plant materials which are to remain until completion of work.
- .5. Debris shall not be allowed to accumulate.
- .6. Remove all unsightly trash and dangerous material (wood, metal, etc.).

### **2020 - Site Earthwork**

- .1. Placing of footings and foundations on earth fill will not be permitted. Fill excess cuts under footings and foundations with concrete, and under slabs with tamped gravel.
- .2. Excavations for footings shall be neat and accurately cut trenches to depths and grades shown on drawings/plans. In the absence of drawings/plans, code requirements shall govern.
- .3. All grading around any structures shall have high spots lowered and low spots raised to a minimum of 6" below top of floor slab; a minimum of 2' out with a slight slope from structure.
- .4. Site grading shall accomplish the following:
  - A. Allow drainage of surface water away from buildings and off-site.

- B. Minimize earth settlement problems.
- C. Avoid concentrating runoff onto neighboring properties where erosion or other damage would be caused.
- D. Minimize erosion.
- E. Minimize potential earth movement problems which might adversely affect completed construction.

.5. *GREEN OPPORTUNITY: Grades around structures shall maintain at least a 5% slope away from the foundation.*

## **2040 – Site Hazardous Waste Remediation**

- .1. The property shall be free of hazards which may adversely affect the health and safety of the occupants or the structural soundness of the improvements or which may impair the customary use and enjoyment of the property. These hazards include toxic chemicals, radioactive materials, other pollution, hazardous activities, subsidence, flood, erosion, expansive or compressible soils, inadequate drainage outfall, landslides or mudflows, and deposition of suspended solids or others located on or off site. Projects with potentially significant hazards may be acceptable if any such hazards are effectively mitigated.

## **2100 - Site Improvements**

### **2110 – Roadways, Driveways, and Walkways**

- .1. Surfaces and base courses for roads, streets, parking areas and walks shall be durable materials. Their construction shall be in conformance with generally accepted local design practices.
- .2. Slabs for roadways, driveways, and walkways shall be designed and constructed in accordance with standards set forth by the American Concrete Institute, and as may be necessary to prevent slab damage due to potential soil movements.
- .3. Provide for repairs and/or repairs of existing surfaces to match existing.
- .4. These surfaces shall be installed with provisions for drainage. Adequate surface and underground drainage systems shall serve all paving and improvements so as to ensure continuing stable soil support for these improvements.
- .5. Minimum width for driveways shall be 10', and sidewalks 3', if installed new; or if replaced, to match existing if wider than 10'.
- .6. All exterior concrete surfaces shall be a light broom finish with expansion joints approximately every 12' (fiber material), with slope for drainage away from structure and property.
- .7. All flatwork expansion joints shall be filled with clear silicone sealant.
- .8. Where soil and/or concrete for porches, steps and other work is in contact with members, galvanized metal flashing, or solid sheathing and 15 lb. felt shall be installed, or wrap and scratch coat applied.

- .9. *GREEN OPPORTUNITY: Limit water runoff and maximize infiltration by avoiding impervious surfaces and installing permeable drainage areas between sidewalks, driveways, walkways, patios, and pathways.*
- A. Open matrix concrete grid pavers.*
  - B. Specialized honeycomb substrates for gravel or turf.*
  - C. Pervious mixes of concrete or asphalt.*

## **2150 – Fencing**

- .1. Check all boundaries to ensure property lines are observed, and City Ordinances are not violated (front yard, side yard, and back yard maximum heights).
- .2. All post setting holes shall not be less than 24" deep and 6" diameter, at a maximum of 10' intervals. When adjacent to a foundation (walls), offset hole to obtain 24" depth, and fill in any space larger than 2" between wall and post.
- .3. Entrance walk gate shall be a minimum of 3' wide, and driveway gates a minimum of 12' wide; including all gate hinges and padlock latch attachments.
- .4. Wrought Iron
  - A. Posts to be 2" x 2" x .090 (16 gauge).
  - B. Top and bottom rails to be 1 ½" x 1 ½" (16 gauge).
  - C. Pickets to be ¾" x ¾" (16 gauge), 4" on center.
- .5. Chain Link
  - A. All galvanized material.
  - B. 2-3/8" O.D. end, corner, and gate posts.
  - C. 1-5/8" O.D. line and corner diagonal posts.
  - D. 1-3/8" O.D. top rail, with bottom tension wire.
  - E. 11 gauge - 2" mesh; to include all bands and wire ties.
- .6. Wood Fence
  - A. All posts will be of galvanized material (unless otherwise specified).
  - B. 2-3/8" O.D. end, corner, and gate posts.
  - C. 1-5/8" O.D. line and corner diagonal posts.
  - D. Two 2 x 4 horizontal support rails.
  - E. Fencing as specified (redwood or cedar - minimum #2, two nails per rail).
- .7. Block Wall
  - A. Shall be in accordance with the City of San Bernardino drawing on Garden & Retaining Wall Standards available from the Building & Safety Department.

## **2150 - Landscaping**

- .1. All trees and shrubbery identified to remain shall be trimmed. Trim to property line and a minimum of 4' above roofing or structure; removing all debris.
- .2. All trees and shrubs identified to be removed shall be cut to surface. Remove stump and roots a minimum of 8" below surface; removing all debris, and fill in hole with soil.
- .3. Natural site assets such as existing trees, shrubs, ground cover, must be preserved, maintained, and protected whenever possible.
- .4. Any existing assets lost due to the construction efforts and/or lack of protection will be replaced with like kind and size at the Builder/Developer's expense.
- .5. *GREEN OPPORTUNITY: Create environmentally friendly lawns and landscaping by:*
  - A. *Cover play areas with wood shavings.*
  - B. *Limit the amount of lawn space by installing naturalized plantings.*
  - C. *Provide alternative water sources.*
  - D. *Plant drought-tolerant landscapes.*
  - E. *Plant shade trees in an effort to reduce the cooling loads required in the house.*
  - F. *Consider planting edible plants.*
  - G. *Use water-conserving irrigation equipment where landscape irrigation is required.*
    - i. *Drip Irrigation.*
    - ii. *Advanced irrigation controls like rain sensors.*

## **2200 Site Civil / Site Utilities**

### **2210 - Utilities**

- .1. Underground piping and related items shall be protected from corrosion. Underground mechanical and electrical systems shall be protectively coated to minimize corrosion where soil conditions warrant. Where applicable, sacrificial anodes may be used.
- .2. Sacrificial anodes may be used where soil resistivity does not exceed 15,000 ohm - centimeters. Otherwise, an impressed current system of corrosion prevention shall be used.
- .3. Utilities and other facilities shall be independent for the property, without dependence upon other properties.

## **3100 - Selective Demolition**

### **3110 - Building Elements Demolition**

- .1. This work shall be executed in a safe, orderly manner, and in accordance with all applicable codes.
- .2. The Builder/Developer shall protect existing materials and apparatus from damage, and shall repair damage caused by workers at no cost to the EDA.

- .3. Debris shall not be allowed to accumulate.
- .4. The Builder/Developer shall remove all flooring finishes identified to be removed or replaced. Including abatement of any materials designated as containing asbestos.
- .5. Provide all roofing membrane removal as required for the removal of existing and installation of new roof, equipment, and connections.
- .6. The Builder/Developer shall provide shoring of all existing beams/structures being modified prior to removing existing bearing walls.
- .7. Remove all interior and exterior doors and/or frames that are identified for removal. This activity shall be coordinated with the EDA in an effort to not leave any openings un-lockable.
- .8. Remove all window stops/putty, glass, glazing, and frames as required. Provide demolition of existing sliding glass doors scheduled to be replaced.
- .9. The Builder/Developer shall remove all structural and non-structural wood stud /gypsum sheathing or wood stud / plaster partition walls, wing walls or portion of walls determined to be removed.
  - A. All appurtenances identified to be removed / demolished on walls scheduled to be removed/demolished shall be removed and disposed of by the Builder/Developer.
  - B. Appurtenances identified to remain, shall be removed and re-installed by the Builder/Developer.
- .10. Any specific cutting and patching of drywall needed to install conduit or piping shall be done by the Builder/Developer.
- .11. The Builder/Developer shall remove all wall surface material or portions thereof from interior and exterior walls for new framed openings such as but not limited to doors, windows, recessed electrical panels, louvers, HVAC grills and ducts, backing, etc.
- .12. The Builder/Developer shall provide removal of all existing sprayed on acoustical (popcorn) ceiling texture. Provide for asbestos abatement as necessary.
- .13. The Builder/Developer shall remove existing casework and countertops, backing, anchors, bases, shims, backsplash, etc. identified to be demolished and disposed of.
- .14. Doors and windows must be able to be locked at the end of each day, or provide a temporary secure panel (approved by the EDA) closing the opening at no additional cost to the EDA. This also includes providing a temporary secure panel at all wall, door or window openings scheduled to be removed.
- .15. Removal of Ceramic tile shall include removal and replacement of wall substrate and any existing mortar bed.

### **3120 - Hazardous Components Abatement**

- .1. The property shall be free of those hazards which may adversely affect the health and safety of the occupants or the structural soundness of the improvements or which may impair the customary use and enjoyment of the property. These hazards include toxic chemicals, radioactive materials, other pollution, hazardous activities, subsidence, flood, erosion, expansive or compressible soils, inadequate drainage outfall, landslides or mudflows, and deposition of suspended solids or others located on or off site. Projects with potentially significant hazards may be acceptable if any such hazards are effectively mitigated.
- .2. The Builder/Developer shall provide all labor, material and equipment required to complete the work related to the Hazardous Materials Abatement as required.
  - A. Provide all labor, material and equipment required to abate and legally dispose of off-site all Asbestos Containing Materials (ACM) and Lead Containing Materials including but not limited to pipe fitting insulation (elbows/ends), roof mastic, flooring, flexible joints, doors, door frames, plaster walls, sinks, ceramic tile, etc.
  - B. Provide for the proper removal and disposal of PCB Ballasts and Fluorescent Light Tubes:
    - i. It is assumed that all ballasts not labeled "No PCBs" are considered to contain PCBs and therefore must be treated as hazardous waste. The Builder/Developer shall disconnect the ballasts (those not labeled "No PCB's") from the fixtures and is responsible for proper disposal/recycling.
    - ii. Mercury is present in fluorescent light tubes, which may be present throughout the project areas. Mercury is considered a hazardous waste and will be disposed of properly by the Builder/Developer.

### **4000 - Foundations**

#### **4010 - Standard Foundations**

- .1. Includes excavation, backfill, compaction, and installation of all foundations.
- .2. Concrete materials for foundations shall be in accordance with City of San Bernardino standards and shall be approved by the EDA prior to placement.
- .3. Includes all formwork and accessories for all cast-in place concrete and cement concrete pavement with shoring, bracing and anchorage, form accessories, form stripping, and proper layout, location. Provide proper temporary support/shoring (as required and/or needed).
- .4. Furnish and install all reinforcing steel bars, welded steel wire fabric, fabricated steel bar, slip dowels, or rod mats for all on-site cast-in-place concrete and cement concrete pavement. Provide and install all necessary accessories as indicated.
- .5. All vertical reinforcing steel protection shall be installed in accordance with CAL OSHA codes and regulations. Maintain said protection throughout the duration of reinforcement installation and until enclosed by finish material.
- .6. When replacing existing concrete with new, the new concrete shall have at least the same reinforcement as the existing.

- .7. *GREEN OPPORTUNITY: Provide foundation water management system.*
- .8. *GREEN OPPORTUNITY: Use concrete that contains a percentage of fly ash in place of portland cement.*

#### **4030 - Slabs on Grade**

- .1. Concrete mixture shall be made of a 1-2-3 mix with plastic cement, sand, and 3/4" rock. Ready mix will be a 5 sack. Minimum 2500 psi.
- .2. Slabs shall be constructed in accordance with ACI 302.1R-80, Guide for Concrete Floor and Slab Construction, and as may be necessary to prevent slab damage due to potential soil movements.
- .3. Vapor retarders and base course shall be provided for all interior concrete slabs to which a finish flooring is applied.
  - A. Acceptable base course materials are gravel, slag, crushed rock, sand, cinders and certain types of earth when approved by the local EDA. See ASTM C-33-90, Table 2.
  - B. Base course material shall be clean, washed and free from deleterious substances, consistent with ASTM C-33, with 100% of the material passing a 1" sieve and less than 2% passing a #4 sieve.
- .1. All concrete slabs shall be a minimum of 3 ½" thick (additions, garages, driveways, sidewalks).
- .2. All interior surfaces shall be troweled smooth.
- .3. Includes excavation, backfill, compaction, and installation of all slabs. Completely furnish and install all concrete accessories, colors, finishes, forming, admixtures, reinforcement joint sealers, and curing compounds in accordance with the Specifications.

#### **5000 - Superstructure**

##### **5010 – Framing / Wood**

- .1. Framing and wood construction shall be in accordance with the latest edition of the National Design Specification for Wood Construction.
- .2. A chemical barrier must be provided for structures built in those areas where termites are determined by the EDA to be a hazard. A physical barrier will also satisfy this requirement where the hazard is presented by subterranean termites only.
- .3. Where required by the EDA Field Office, protection against damage by decay shall be provided.
- .4. *GREEN OPPORTUNITY: Keep all untreated wood at least 12 inches above soil in lieu of the code required 8 inches.*

## **5100 - Exterior Enclosure**

### **5110 - Exterior Walls**

#### **5111 – Stucco / Plaster**

- .1. The Builder/Developer shall investigate the condition of studs and ceiling joist to be sure framing members comply with appropriate code.
- .2. Install or reset all electrical boxes to new surface level.
- .3. Exterior angles shall be protected with woven or welded wire fabric of equivalent strength, or corner bead.
- .4. A surface inspection is required after sandblasting and before re-stuccoing by the EDA.
- .5. Application:
  - A. Portland Cement plastering work shall be three-coat work when applied over metal and wire lath/wrap.
  - B. Scratch (first) coat: Apply with sufficient material and pressure to fill solidly all openings in the lath/wrap, and to cover wall, and then scratch to rough surface. Allow to dry a minimum of two days. (Example: complete scratch coat Tuesday, start brown coat Friday).
  - C. Brown (second) coat: Apply after scratch coat has set firm and hard, bring out to grounds, and straighten to a true surface with rod and darby; leave rough, ready to receive finish coat. Surface shall not have variation greater than ¼" in any direction under a five-foot straight edge. Allow to dry a minimum of seven full days before applying color coat. (Example: complete brown coat on Tues., color coat not to start until following Wed.).
  - D. Finish (color) coats: Portland Cement and Lime Finish Coats - Apply over base coats which have set and surface-dry; lay on well, double back and fill out to a true, even surface. Thickness shall be 1/16" to 1/8", then texture as specified.
  - E. When structure is to have lath/wrap and stucco over existing siding, the Builder/Developer is to remove door and window casing; trim out with metal edging or stucco molding, and seal.
  - F. Exterior lath/wrap to be applied as per California Building Code.
  - G. Stucco Color Coat: La Habra, Bauer, or equal.

#### **5112 – Exterior Insulation**

- .1. Materials used for insulation shall be of proven effectiveness and adequate durability so as to ensure that required ratings concerning heat transmission, sound control and fire rating are attained.
  - A. Manville, Owens/Corning, USG; or equal.
  - B. Proper sound insulation shall be used at all walls.
  - C. *GREEN OPPORTUNITY: Use cellulose insulation.*

- .2. Insulation in contact with the ground shall be installed so as not to be adversely affected by soil, vermin and water.
- .3. Shall be installed in accordance with Energy Conservation Standards administered by the Building & Safety Division of the City of San Bernardino.
- .4. Attics:
  - A. If all exterior walls of house are not insulated, bring to R-38 rating (12").
  - B. If all exterior walls are insulated and/or new addition, insulate to R-30 rating (9").
  - C. *GREEN OPPORTUNITY: All attic spaces are to receive insulation.*
- .5. Walls:
  - A. All exposed exterior walls and new addition, insulated to R-11 rating (3 ½").
- .6. Water Heater:
  - A. If it has access from outside or in garage, install R-6 rating insulation blanket and wrap all exposed water lines with pipe insulation.
  - B. *GREEN OPPORTUNITY: Provide insulation at all water heaters.*

### **5113 – Caulking and Joint Sealants**

- .1. Materials used for caulking and sealants shall be suitable for the use intended, and shall be compatible with the materials to which they are applied and with any finish that may be applied over them.

### **5120 - Exterior Windows**

- .1. When required shall be made easily openable, replace sash cords and weights or install spring loaded sash balances, as necessary.
- .2. Windows and operating hardware shall be installed in accordance with the recommendations of the manufacturer.
- .3. When aluminum single hung or slider window(s) is required and the frames are not to be taken out, use International Window Corporation, Keller, or equal (block frame), to fit existing opening. Caulk window frame before installing, including necessary trim.
- .4. When new aluminum slider or single hung window(s) installation is required, provide header(s), trimmers, flashing, International Window Corporation, Keller, or equal (standard frame).
- .5. Operating windows shall be manufactured units consisting of the frame, sill, sash, weather-stripping, and operating hardware. Job site assembled windows composed of frames and sashes made by different manufacturers are not acceptable.
- .6. Glazing:
  - A. When replacing glass, thickness shall be as recommended by the manufacturer for the specific use.
  - B. All bathroom windows shall be glazed with obscure glass.

- C. Glass set in wood shall be secured in place with springs or glazing points and face puttied, wood and putty to be primed and painted.
  - D. Glass set in metal shall be secured in place with glazing clips, back and face puttied with appropriate material, metal and putty to be primed and painted.
  - E. All glass shall be cleaned, with no cracks or rattles (new installation only).
  - F. Re-putty shall mean to replace all damage, loose, and missing putty.
- .7. Weather-stripping shall be properly fitted to eliminate excessive infiltration of dust, snow, or rain.
- .8. Screens:
- A. Screens shall be installed on all openable windows.
  - B. When re-screening or new screens are required, they shall be aluminum frames, aluminum screening; tight fitting and easily removed.
  - C. Nylon screens on newly installed windows and combination doors may be acceptable, unless otherwise requested or stated.
- .9. If a window of any kind must be installed into the wet area of the tub or shower surround, it must:
- A. Contain a sill made of material that is water impermeable , such as marble or Corian, not tiled and grouted.
  - B. Have a sill that is pan-flashed or sealed.
  - C. Have frame made of moisture-tolerant material.
- .10. *GREEN OPPORTUNITY: Replace existing windows and provide new windows with a high energy and low-e performance rating*
- .11. *GREEN OPPORTUNITY: Provide awnings, overhangs, or other shading devices on exterior windows.*

### **5130 - Exterior Doors / Garage Doors**

- .1. All exterior doors will be wood or metal finish (no hardboard). Primed/painted or stained/varnished.
- .2. Doors shall be durable, installed in good operating condition, free of defects, latch readily and lock securely.
- .3. Doors shall fit opening and operate properly.
- .4. All new door installation shall include new hinges and all necessary trim.
- .5. Entry Doors:
  - A. Exterior entry doors shall be side-hinged doors not less than 3 ft. in width and 6 ft. 8 in. in height.
  - B. 1 ¾" solid core - Birch, Mahogany, Luan; unless existing jamb takes 1 3/8" door.
  - C. 3 each - 4" x 4" butt hinges, unless existing jamb takes 1 3/8" door, then 3-3 ½" x 3 ½" butt hinges.

- D. Exterior door frames shall be treated against decay.
  - E. Locks - Kwikset, Schlage, or equal.
- .6. Garage Doors:
- A. Steel frame construction.
  - B. Installing new garage hardware or replacement hardware shall comply with the following safety notice:
    - ... FOR YOUR SAFETY ...
    - California State Assembly #772 directed the Commission of Housing and Community Development to change the appropriate rules and regulations in ways that, "ARE REASONABLY NECESSARY TO PREVENT THE DEATH OR INJURY OF PERSONS OR DAMAGE RESULTING FROM THE BREAKING OF GARAGE DOORS SPRINGS". (quoted from Assembly Bill #772)
- .7. Weather-stripping shall be applied to all exterior doors and interior garage door.
- .8. Weather-stripping shall be aluminum and vinyl. Install after surfaces are finished and dry.
- .9. Thresholds and door shoes shall be installed at all exterior doors and interior garage doors and shall be aluminum thresholds, and aluminum/vinyl with drip cap door shoes (channel type), sealed to be watertight.
- .10. Exterior jambs will be rabbet type (fit wall thickness) and to include new wood (pine) casing material. Replace stucco molding only if required.
- .11. A safety door check shall be provided on all outward opening doors, including storm and screen doors.
- .12. Locking devices at doors and windows shall be as follows:
- A. Each exterior doorway and each doorway leading to garage areas, terraces, balconies, or other areas affording easy access to the premises shall be protected by a door which, if not a sliding door, shall be equipped with a deadlock using either an interlocking vertical bolt and striker, a minimum of 1.2 in. throw dead bolt or a minimum 1/2 in. throw self-locking dead latch. Locks shall not require the use of a key for operation from the inside.
  - B. All sliding doors, first floor and basement windows and windows opening onto stairways, fire escapes, porches, terraces, balconies or other areas affording easy access to the premises shall be equipped with a locking device. A sliding door used as a main or service entrance shall be equipped with a keyed locking device.
- .13. Screens shall be aluminum/satin finish with latch set and pneumatic closure or equal.
- .14. Security Screen – Jamb/frame will be 1' 1/4" x 1' 1/4" (18 gauge) with 3/4 x 3/4" center framing (18 gauge) and heavy gauge metal screening. Combination (Bel-Aire) - Solid core (no panels). 1 3/8" door, 3 - 3 1/2" x 3 1/2" butt hinges; 1 3/4" Locks - Kwikset, Schlage, or equal.

### **5140- Flashing**

- .1. Flashing shall have a service life at least equal to that of the assemblies into which it is built.
- .2. Counter flashing is considered exposed flashing and shall be constructed of sheet metal.
- .3. Alternate products or systems of bitumen-impregnated plastic or elastomeric materials may be used for flashing if they are installed in accordance with the manufacturer's recommendations and are acceptable to the EDA.
- .4. All openings between wood or metal and masonry shall be caulked with a non-hardening caulking compound.

### **5200 – Roofing**

#### **5210 - Roof Coverings**

- .1. Strip - Means to remove "all" roofing material to sheathing, with inspection of sheathing prior to installation of new roofing.
- .2. The Builder/Developer shall guarantee the owner to maintain the entire roofing, and counterflashing in a watertight condition for a period of fifteen years.
- .3. Shingles –
  - A. Shall be fiberglass of 15lb. felt.
  - B. New metal 1 ½” drip edge and roof jacks (form over shingles, seal around all pipes).
- .4. Built- Up / Roll Roofing Cap
  - A. Roll roofing cap to be a minimum of 90 lb. roofing paper and must bear a class "C" UL listing.
  - B. One 90 lb. cap sheet to be installed over two layers of 15 lb. felt paper, saturated with at least 20 lb. of hot mopped tar, between layers.
  - C. All base sheets to be well nailed with approved galvanized nails providing a minimum 3/4" penetration into a firm solid sheathed surface.
  - D. New metal ½” drip edge and roof jacks.
- .5. *GREEN OPPORTUNITY: Provide reflective (high-albedo) roofing systems with an Energy Star rating.*

#### **5220 – Gutters and Downspouts**

- .1. *Gutters and downspouts shall be provided at all projects.*
- .2. Gutters and downspouts - Shall be a minimum of 26 gauge galvanized metal, or vinyl material.
- .3. Gutters shall be sloped to downspout and supported a maximum of 3' apart.
- .4. End caps, corner joints, splices, outlet tubes shall be soldered or have watertight joints.

- .5. Downspouts shall be fastened at top, bottom, and approximately every 6', and directed to drain away from the structure.
- .6. Downspouts shall be sized on the basis of 100 square feet of roof surface to 1 square inch of leader. More or less leader area may be required by the EDA.
- .7. Scuppers shall be installed at the outfall end of a valley for special roof designs, such as "butterfly" roofs.
- .8. Scuppers shall be installed for overflow of all roofs enclosed by parapet walls.
- .9. *GREEN OPPORTUNITY: Provide a simple rain water harvesting system for use on irrigation.*

## **6000 - Interior Construction**

### **6010 – Partitions / Ceilings**

### **6011 – Interior Insulation**

- .1. Materials used for insulation shall be of proven effectiveness and adequate durability so as to ensure that required ratings concerning heat transmission, sound control and fire rating are attained.
  - A. Manville, Owens/Corning, or equal.
  - B. *GREEN OPPORTUNITY: Use cellulose insulation.*
- .2. Insulation in contact with the ground shall be installed so as not to be adversely affected by soil, vermin and water.
- .3. Shall be installed in accordance with Energy Conservation Standards administered by the Building & Safety Division of the City of San Bernardino.

### **6012 - Drywall**

- .1. When installation of drywall is specified, provide ½" U.S. Gypsum wall board or equal, unless otherwise specified.
- .2. *GREEN OPPORTUNITY: Select drywall products with a high recycled content and use taping materials and joint compound without hazardous additives that aid in drying and setting.*
- .3. All joints and inside corners shall be taped; outside comers shall have corner bead troweled with joint compound (a minimum of three coats, and smoothly sanded or textured).
- .4. If kitchen base cabinets, toilet or lavatory are removed, and the drywall is to be replaced, it must be replaced with green board or equal.
- .5. If tub surrounding drywall is to be replaced, it must be replaced with wonder (cement) board.

- .6. All wall surfaces to receive ceramic tile shall receive wonder (cement) board or plaster in accordance with the following:
- A. Portland Cement plastering work shall be three-coat work when applied over metal and wire lath/wrap.
  - B. Scratch (first) coat: Apply with sufficient material and pressure to fill solidly all openings in the lath/wrap, and to cover wall, and then scratch to rough surface. Allow to dry a minimum of two days (Example: complete scratch coat Tuesday, start brown coat Friday).
  - C. Brown (second) coat: Apply after scratch coat has set firm and hard, bring out to grounds, and straighten to a true surface with rod and darby; leave rough, ready to receive finish coat. Surface shall not have variation greater than  $\frac{1}{4}$ " in any direction under a five-foot straight edge. Allow to dry a minimum of seven full days before applying color coat (Example: complete brown coat on Tues., color coat not to start until following Wed.).

## **6020 - Interior Doors**

- .1. Doors shall be durable, installed in good operating condition, free of defects, latch readily and close securely.
- .2. Doors shall fit opening and operate properly.
- .3. All new door installation shall include new hinges and all necessary trim and hardware.
- .4. Interior Hinged / Closet / Bathroom Doors:
  - A. Shall be side-hinged doors not less than 1  $\frac{3}{8}$ " thick.
  - B. At least 2 each 3  $\frac{1}{2}$ " x 3  $\frac{1}{2}$ " butt hinges.
  - C. Locks - Kwikset, Schlage, or equal.
- .5. Shower Door / Tub Enclosure:
  - A. Shower Doors – MAAX, Kohler, or equal. Seal around frame and walls.
  - B. Tub Enclosure - MAAX, Kohler, or equal. Seal around frame and walls
- .6. Door stops installed at all swinging doors shall be solid (no coil springs).
- .7. Interior jambs will be flat type (fit wall thickness) and to include new wood (pine) material stop molding and casing (both sides).

## **7000 - Finishes**

### **7010 – Ceramic Tile**

- .1. Install ceramic tile where identified.
- .2. Ceramic tile to be American Olean, Dal-Tile, or equal.
- .3. *GREEN OPPORTUNITY: Use ceramic tile with high recycled content.*
- .4. Submit a complete range of colors and types for the EDA's selection. One of each color of type selected shall be retained by the EDA. All materials placed in the building shall match such samples.

- .5. Applications and installation of adhesive, primer, caulking compound, and prepared grout when used, shall be as recommended by manufacturer of the tile and in accordance with these standard specifications.
- .6. Ceramic tile shall be applied over a water-proof surface only (cement or wonder (cement) board).
- .7. At showers, the top of step shall have slight slope into shower.

## **7020 - Floor Finishes**

- .1. The Builder/Developer shall provide all necessary floor preparation of existing surfaces to properly receive new flooring material.
- .2. Sub-flooring shall be a minimum thickness of 3/4" plywood or 1x boards.
- .3. Underlayment shall have a maximum thickness 3/8" industrial particle board.
- .4. Install all flooring per manufacturer's recommendation.
- .5. Existing floor covering to be removed prior to installation of new floor.
- .6. Provide underlayment when sub-flooring is in such a condition to warrant replacement. Bathroom, kitchen, and laundry underlayment to be of water resistant material.
- .7. Surfaces to receive flooring shall be clean, dry, smooth, even, and without defects.
- .8. At Bathrooms, the toilet and lavatory cabinet shall be removed before flooring installed. Reinstall toilet and cabinets.
- .9. Install new baseboard or shoe after installation of flooring. If cove is required, it shall be formed integrally of matching sheet material. Adhesives shall be as recommended by manufacturer.
- .10. Coat all concrete floors on earth grade with concrete primer as recommended by manufacturer.
- .11. Leveling compound and crack filler - As manufactured by Aetna Manufacturing Company for concrete floors or equal.
- .12. Linoleum (sheet goods) - FHA base cushioned, Armstrong - Cambray or equal.
- .13. Vinyl Tile - Armstrong - Stylistic or equal.
- .14. Carpet - 260z.
  - A. Base, HUD/FHA bulletin UP- 44c requirement.
  - B. Pad - 5/8" rebond high plush, HUD bulletin UP-72 requirement.
- .15. *GREEN OPPORTUNITY: Provide greener carpeting such as:*
  - A. *Products made from natural materials;*
  - B. *Products that do not contain residues from dyes and finishes used in manufacturing;*
  - C. *Products that do not have surface treatments to repel stains;*
  - D. *Products with documented low VOC offgassing;*

*E. Products with high recycled contents.*

- .16. Submit a complete range of colors and types for the EDA's selection.

**7030 - Ceiling Finishes**

- .1. Ceilings shall be drywalled and painted. No sprayed on acoustical ceilings (popcorn) will be allowed.

**7040 - Painting**

- .1. Lead Content:
- A. The definition states in part, "..... with respect to paint which is manufactured after June 22, 1977, lead-based paint means any paint containing more than six one-hundredths of one percent lead by weight (calculated as lead metal) in total non-volatile content of the paint or the equivalent measure of lead in the dried film of paint already applied".
  - B. All contractors and sub-contractors on rehabilitation activities will comply with the Lead-Base Paint Regulation under 24 CFR Part 35, requiring:
    - i. The prohibition of the use of lead-based paint in the rehabilitation of properties;
    - ii. The elimination of immediate lead-based paint hazards in residential structures.
- .2. *All paint shall have low VOC levels.*
- .3. If exterior painting is required, caulk all exterior door and window frames to seal completely. Remove all loose and deteriorated putty on windows and re-putty before painting. When painting of exterior trim is specified, this shall include doors, windows, all frames, eaves, soffits, porches and all appendages.
- .4. If a paint to be used on exterior surfaces is not inherently mold resistant, a suitable fungicide shall be included in the formulation.
- .5. If repair of exterior surfaces is indicated, remove all broken and loose material by raking out, scraping and sanding if necessary. Repair with proper material for area being repaired, blending in with texture of area being repaired. Prime the repaired area prior to painting.
- .6. If interior painting is indicated, repair all cracks by "V" scratch approximately 1/8" X 1/8" in walls and ceilings of all rooms being re-painted. Use proper type of patching material for areas being repaired. Fill all cracks and holes solid and blend in repaired areas with texture of surface being repaired. Prime cracked areas prior to painting. When painting of walls and ceilings of a room is specified, this shall include all trim, windows and door frames, closets, and cabinets (inside).
- .7. All surfaces to be painted shall be free of dirt, dust, grease before painting is started. All knots, pitch streaks, and sappy spots shall be first sealed with shellac or sealer approved for use with materials as specified, before subsequent coats are applied. Each coat shall be allowed to dry before subsequent coat is applied.

- .8. If it should become necessary, in order to give good coverage because of surface condition of the paint color(s), it is the obligation of the Builder/Developer to apply sufficient coats to obtain complete coverage.
- .9. All new drywall shall be primed with one coat of Drywall Sealer/Primer before the application of the finish coat, unless otherwise specified.
- .10. Paint to be Dunn-Edwards, Glidden, Sinclair or equal. EDA to select color(s) and finish.
- .11. Paint for kitchen, service area, bathroom(s) to be a durable and washable gloss finish (unless EDA requests a semi-gloss).
- .12. Stain – Exterior/interior application (Minwax, Behr, or equal).
- .13. Varnish - Exterior/interior application (Behr, Varathane Elite, or equal).
- .14. Spar gloss or satin, EDA to specify (Behr, Varathane Elite, or equal).
- .15. Spar gloss or satin, EDA to specify (Behr, Varathane Elite, or equal).
- .16. Paint application shall consist of two coats on old material, and three coats on bear wood or new material. The top and bottom edges of interior doors shall be sealed (painted or varnished) with one coat, exterior doors with two coats.
- .17. Application of paints, stains, or other coating systems shall be in strict accordance with manufacturer's directions and shall comply with the following:
  - A. Exterior Wood Siding, Millwork and Trim
    - i. Knots, resinous wood, and nail holes shall be sealed with a prepared sealer or aluminum paint prior to puttying and priming. Any nail holes or cracks in surfaces to be painted shall be filled with putty.
    - ii. A prime coat shall be applied to all surfaces to be painted before or immediately after installation. Primer shall be formulated specifically for application to unfinished wood. Finish coats formulated to serve as primers may be used.
    - iii. One of the following finish systems shall be applied. Coverage shall be that which will provide at least the minimum thickness recommended by the manufacturer.
      - a. Oil paint systems.
      - b. Latex paint systems.
      - c. Pigmented stains as per manufacturer's directions.
      - d. Clear penetrating preservatives or water repellent finishing systems.
    - iv. The top and bottom of exterior wood doors, casement sash, awning sash and the bottom of double hung sash shall receive two coats of paint or sealer.

- v. Prior to erection, all edges of vertical siding shall be sealed with a heavy coat of house paint primer, water repellent stain, exterior aluminum house paint or sealer. Wood batten strips shall be backed-primed or sealed.
- B. Wood Shingles, Shakes, Rough-sawn Siding.
- i. Two coats of oil stain, pigmented oil stain, or an oil shingle paint shall be applied.
- C. Hardboard and Softwood Plywood Siding.
- i. These sidings shall be finished in accordance with the manufacturer's direction.
- D. Wood Porch Floors and Decks.
- i. One coat of primer and two coats of floor and deck enamel designed for exterior use shall be applied. Joints between floor and wall shall be caulked.
- E. Unfinished Surfaces.
- i. Shingles and board siding of vertical grain cedar, redwood and bald cypress may be left unfinished.
- F. Exterior Concrete Masonry Units or Concrete Brick
- i. At least two coats of masonry paint shall be applied.
  - ii. Concrete masonry units or concrete brick, except small areas of foundation walls, shall be painted to provide a water resistant finish.
  - iii. High density concrete brick or solid split block forming the outer face of double unit walls (veneer, cavity walls, etc.) may be left unpainted when acceptable to the EDA.
- G. Exterior Galvanized Steel or Iron
- i. Field painting shall consist of two coats. One coat shall be a primer formulated specifically for galvanized surfaces, and the second coat shall be a finish coat. A finish coat formulated to serve as a primer may be used as the first coat.
- H. Exterior Steel, Iron or Terne Plate
- ii. Steel or iron, except stainless steel, weathering steels, or steel treated with coatings to provide corrosion resistance, shall be painted.
  - iii. A rust inhibitive primer and a finish coat shall be applied.
- I. Interior Millwork and Trim
- i. All mill work and trim, including windows; interior doors; window, door and base trim; paneling and closet shelving and trim shall be finished by painting or natural finishing.

- ii. If the surface is open grain wood, it shall be filled or sealed to prevent the grain from rising. Surfaces shall be treated with a primer. One or more finish coats shall be applied to provide a smooth surface and good hiding.
- iii. Natural finishes include stain-wax, stain followed by one or more coats of varnish, clear coats of varnish with or without wiped paint undercoats or oil and wax finishes.

#### J. Wood Floors

- i. If flooring is open grain wood, one coat of filler shall be applied. All excess shall be wiped off.
- ii. Flooring shall be finished with:
  - a. One or two coats of penetrating sealer and one coat of wax; or
  - b. Two coats of varnish and one coat of wax; or
  - c. Two coats of polyurethane; or
  - d. One or more coats of factory-applied finish.

#### K. Interior Plaster and Gypsum - Walls and Ceilings

- i. Plaster surfaces may be painted, covered or left unfinished, except for surfaces of kitchens and baths. If painted, a finished coat shall be applied over a primer-sealer, unless finish coats are of the self-priming type.
- ii. Gypsum wallboard shall be covered. If painted, one coat of wallboard sealer shall be applied unless finish coats are of the self-sealing type. Two finish coats shall be applied over the sealer. One finish coat, except in kitchen and baths, may be acceptable if good coverage is obtained.

#### L. Interior Metal

- i. Non-ferrous metals or wrought iron may be painted or left unfinished. Other metals shall be painted in accordance with 609-3.4.

#### M. Interior Concrete Floors

- i. If painted, at least two coats of resin emulsion paint, a solvent rubber paint or a floor and deck enamel shall be applied. If oil paint is used, the surface shall be neutralized before painting.
- ii. A coat of wax shall be applied over paint, stain or an integral finish.

#### N. Wall Coverings

- i. Covering material shall be secured to a suitable base in accordance with the manufacturer's directions.
- ii. All rooms that have new wall covering installed will include molding, trim, base, and painting (if required).

## **8100 – Furnishings**

### **8110 – Carpentry, Cabinets, and Millwork**

- .1. All manufactured factory finished cabinets shall comply with ANSI A161.1-86, Recommended Minimum Construction and Performance for Kitchen and Vanity Cabinets, or with an equivalent standard.
- .2. Workmanship: All interior wood finish, cabinet and casework shall be smooth dressed, well sanded, and thoroughly cleaned before priming. All material showing machinery, sandpaper, or other defacing marks will be rejected. Interior wood finish or cabinet work shall not be installed on newly plastered walls until the plaster in that section is reasonable dry and approved by the EDA.
- .3. All interior wood finish, doors, frames, and other cabinet work or fixed wood equipment shall be properly installed, level plumb, and true. Members shall be neatly and accurately scribe in place, maintaining full lengths without splicing, except where the use of full lengths would be impractical or impossible, and then if joined, butt joints shall be beveled. Replacement and installation of new trim or molding shall match existing in size and profile or otherwise be reasonably appropriate upon finished installation.
- .4. All cabinets (kitchen base and wall, bathroom lavatory, etc.) shall be a minimum of birch plywood construction (stain grade quality), shop fabricated casework, with all necessary hardware. Shelving shall not be less than 3/4" pine, plywood, or particle board. Kitchen base cabinets shall have a built-in bread board.
- .5. All cabinets and trim shall be scribe to contacting surfaces and shall be straight, plumb level and in true alignment, closely fitted, and rigidly fastened in place.
- .6. Countertops:
  - A. Top material shall be phenolic laminate, vinyl plastic covering, ceramic tile, stainless steel or other material suitable for its intended use.
  - B. The top material shall be securely bonded to a reinforced steel core, to 5/8 in. plywood, or to any other equivalent material.
  - C. At least a 3 in. back and end splash shall be provided against all abutting vertical surfaces which are not water and grease resistant. When a back splash is omitted, the joints at the juncture of the counter top and vertical surfaces shall be tight and sealed.
  - D. All edges, including the sink and any built-in surface units, shall have a non-corrodible metal molding or other suitable edging.
  - E. High Pressured Laminated Plastic (Formica or equal) - Shall be constructed with a bullnose front edge, minimum of a standard back splash where it abuts walls, and full length of cabinets. If laminated plastic ends at wall, provide end splash (material must be identical to counter top original color). Scribe and closely fitted to adjacent work, and securely anchored to cabinets. Installation of sinks shall have required mounting flange and sealed against leaking. No butcher block unless otherwise requested or stated by the EDA.

F. Ceramic Tile - Shall be applied over a plastic cement base secured to 3/4" exterior plywood secured to the cabinets. Raise front edge, minimum of a standard back splash, and sealed at edges of full length cabinets. (See Ceramic Tile Specification).

G. *GREEN OPPORTUNITY: Countertops shall be made of natural stone (granite), tiles, or manufactured solid surfaces (Corian).*

.7. Interior woodwork:

A. Trim (D.F.) "B or better".

B. Shelving - Particle board or #2 shelving.

## **9000 – Plumbing, Mechanical, Electrical**

### **9010 - Plumbing Fixtures**

.1. All fixture installation is to include trap, vent, faucets, and all trim necessary to mount fixture in an approved manner, and to include repair of damaged areas affected by the installation. When kitchen or lavatory faucet is replaced, it will also include risers. Replace all angle stops.

.2. Fixtures:

A. Water closets - Deep bowl (round or elongated per EDA request). American Standard - Hydra; Eljer – Titan; Kohler; or equal. Handicap (17" high). Must be rated at no more than 1.6 gallons per flush.

i. *GREEN OPPORTUNITY: Use of a high-efficiency toilet that uses less than 1.6 gallons per flush is recommended.*

B. Bathtubs - 5' pressed steel- American Standard; Kohler, or equal

C. Lavatories – American Standard, Kohler, or equal.

D. Kitchen Sinks -Single or double compartment enameled cast iron - Kohler or equal; Single or double compartment stainless steel (7" depth, 20 gauge minimum thickness) - Sterling or equal.

E. Garbage Disposal- Insinkerator – Badger 2, ½ HP (3 year warranty) or equal.

F. Laundry Sinks - American Shower & Bath, or equal.

G. Faucets

i. Lavatory - Delta, Peerless, Kohler, or equal.

ii. Tub/Shower Diverter - Price Pfister, Kohler, or equal.

iii. Shower - Price Pfister, Kohler, or equal.

iv. *GREEN OPPORTUNITY: Provide low flow faucets and shower heads or fit standard faucets with a flow reducing aerator.*

H. Bathtubs - 5' Lasco; Hess Co; or equal.

I. Tub Wall Kits - Plaskolite, Elite; Nova, Seville; or equal.

J. Shower - Lasco, or equal.

**K. WATER HEATERS:**

- i. Shall be Reliance; Galaxie; Whirlpool; or equal, with an eight (8) year warranty. Size shall be as required to service property.
- ii. All shall have pressure/temperature relief valve with a drain line to the outside; or if located on a concrete floor in center of house - pressure/temperature relief valve and drain line shall be installed per Building and Safety requirements.
- iii. *All units shall be secured to walls.*
- iv. All units shall be insulated.
- v. *GREEN OPPORTUNITY: Water heater should have a high-efficiency rating.*

**9020 - Domestic Water Distribution**

- .1. Each dwelling shall be provided with a continuing and sufficient supply of safe water under adequate pressure and of appropriate quality for all household uses, and one that will not impair the functioning or durability of the plumbing system or attachments.
- .2. Connection shall be made to a publicly owned or publicly controlled water supply system that is adequate to serve the demands of the project.
- .3. Provide all connections to risers or fixtures from top to mains so that the entire system can be drained at low point.
- .4. Provide hot water supply to all fixtures except water closets.
- .5. Support piping from the building structure by means of hangers to maintain required grading and pitching of lines and to prevent vibration.
- .6. *GREEN OPPORTUNITY: All hot water lines shall be insulated.*
- .7. *GREEN OPPORTUNITY: Consider the use of PEX piping.*
- .8. *GREEN OPPORTUNITY: Provide a single-throw shut-off valve at service to clothes washing machines. If machine located above a livable space, provide a floor drain and shower pan under the washing machine.*

**9030 - Sanitary Waste**

- .1. Roto Root (clean) all drain lines to street through clean-out cap, roof vent, etc.
- .2. Each dwelling shall be provided with a water-carried system adequate to dispose of domestic wastes in a manner which will not create a nuisance or endanger the health of the occupants or the public.
- .3. Connection shall be made to a publicly owned or publicly controlled system that is adequate to serve the needs of the project.

## 9100 - Heating, Ventilating, and Air Conditioning (HVAC)

### 9110 – Heating and Ventilating

- .1. Heating and ventilating equipment shall be Trane; Bryant; Carrier; or equal, as appropriate to the situation.
- .2. *GREEN OPPORTUNITY: Equipment should be rated as high efficiency.*
- .3. *GREEN OPPORTUNITY: Evaluate existing heating and ventilation system and down size or reconfigure to be more efficient. Do not oversize equipment.*
- .4. *GREEN OPPORTUNITY: Consideration should be given to using equipment that provides alternatives to conventional refrigerant, such as non ozone depleting HFC refrigerants.*
- .5. *GREEN OPPORTUNITY: Provide ceiling fans in bed rooms and living spaces.*
- .6. Provide wall thermostat with complete vent system, attic shield, roof jack, and gas piping/shut-off valve.
- .7. *GREEN OPPORTUNITY: Install programmable thermostats with both daytime and nighttime setbacks. Separate control of different spaces into zones so that the unit works more efficiently.*
- .8. *GREEN OPPORTUNITY: Provide duct cleaning prior to turn over.*
- .9. Install in an approved manner and location.
- .10. Crawl Space Ventilation:
  - A. The space between the bottom of the floor joists and the earth under any building (except such space as is occupied by a basement or cellar) shall be provided with a sufficient number of ventilating openings through foundation walls or exterior walls to ensure ample ventilation. Such openings shall be covered with a corrosion-resistant wire mesh with a mesh size not greater than 1/2 in. nor less than 1/4 in. in any dimension. The minimum net area of ventilating openings shall not be less than 1 sq. ft. for each 150 sq. ft. of crawl space area.
  - B. One ventilating opening shall be within 3 ft. of each corner of each building where such openings are required.
- .11. Attic Space Ventilation
  - A. Cross ventilation shall be provided for each separate space. Ventilation openings shall be protected against the entrance of rain and snow.
  - B. The ratio of the total net free ventilation area to the area of ceiling shall be not less than 1/150, except that the ratio may be 1/300 if:
    - i. A vapor retarder having a transmission rate not exceeding one perm is installed on the warm side of the ceiling;
    - ii. Between 25 and 50 percent of the required ventilating area is provided by vents located in the eaves or cornices with the balance of the required ventilation provided by ventilators located at least 3'-0" above the vents in the eaves or cornices; or

- iii. The attic space is accessible and suitable for future habitable rooms or walled-off storage spaces have at least 50% of the required ventilating area located in the upper part of the ventilated spaces as near the high point of the roof as practicable and above the probable level of any future ceiling.

## **9200 – Fire Protection Systems**

### **9210 – Fire Protection Specialties**

- .1. Provide smoke detectors that are U.L. approved; First Alert SAI50LT, or equal. Hard wire will have battery back-up.
- .2. *GREEN OPPORTUNITY: Provide carbon monoxide detectors.*

## **9300 - Electrical Systems**

### **9310 - Electrical Service and Distribution**

- .1. When required, provide a new electrical service box/meter. All existing circuits shall be checked out and split as required. All new loads, outlets, lights, etc., must be on additional circuits, unless prior approval is received from the EDA.
- .2. Electrical Service installed at location shall be as recommended by Edison Company.
- .3. Check all services and verify all electrical service, circuits (marking panel if not done); replacing all faulty outlets, switches, damage and missing cover plates; for house and garage.
- .4. When encountering non-complying wiring, it is to be removed in its entirety. This is to include boxes, lights, old panels (unless used for junction box), etc.; and to include repair, patching, and painting of all areas affected (to match existing) -- ceilings, walls, etc. All new wiring shall be concealed within walls, ceilings unless approval from the EDA is obtained prior to installation.
- .5. *GREEN OPPORTUNITY: All bulbs shall be fluorescent. No incandescent lighting will be allowed.*
- .6. *GREEN OPPORTUNITY: Avoid recessed lighting. When required use insulation-contact fixtures that seal tightly and allow insulation to be packed against them.*
- .7. *GREEN OPPORTUNITY: Install dimmer switches at all living areas. Restrooms shall have motion detector switches.*
- .8. *GREEN OPPORTUNITY: All low voltage (telephone, data, television) shall be run in conduits to provide for future expansion and/or replacement.*