



**Department of Planning and Community Development
CITY OF SAN ANTONIO, TEXAS**

***RESIDENTIAL CONSTRUCTION MANAGEMENT POLICY, PROCEDURES AND STANDARDS
(CMPPS)***

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Residential Construction Management Policy, Procedures and Standards (CMPPS)

CITY OF SAN ANTONIO, TEXAS

Section 1 – General Requirements

1.1 General Information

The U.S. Department of Housing and Urban Development provides programmatic funds to rehabilitate and construct affordable housing. Developers shall ensure that projects are in compliance with City of San Antonio adopted codes at the time of permit issuance.

The City has adopted additional standards related to the rehabilitation of affordable housing units and are described beginning in Section 2. The following general information items are applicable to all residential construction projects.

- 1) The Contractor shall obtain and display at the job site all permits and permit cards as required by the City.
- 2) The Contractor shall use the site and its facilities only for the specified construction. The electrical, sanitary waste, water, and gas system shall be used only for construction purposes and during the construction phase only.
- 3) Contractor shall be responsible to determine the need for adequate sanitary facilities and to provide those accommodations on site. Contractor shall be responsible for the safe operation of equipment at all times.
- 4) All work shall be done with skilled and licensed craftsman and accomplished with care.
- 5) All materials used shall be new (unless otherwise specified in the specifications manual) and of a good quality.
- 6) Qualifications of Bidders. The Owner or the City, acting on behalf of the Owner, may make such investigations as the Owner or the City deems necessary to determine the ability of the offeror to perform the work, and the offeror shall furnish to the Owner and the City all such information and data for this purpose as the Owner or the City may request. The Owner, or the City acting on the Owner's behalf, reserves the right to reject any proposal if the evidence submitted by, or investigation of, such offeror fails to satisfy the Owner or the City that the offeror is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.
- 7) This document is not intended to take the place of or duplicate the adopted codes by the City of San Antonio. It is intended to clearly define the various methods of construction and the specific materials to be used in the rehabilitation (construction) work outlined in the description of the work to be performed.
- 8) This document is not a substitute for City of San Antonio building codes, which will typically apply to any substantial new work that is being done on existing structures, and, in some cases, will apply to existing conditions whether addressed in the course of

rehabilitation, or not. In all cases, grantees are responsible for determining the applicability of local building codes. In all cases the more rigorous standard will apply.

- 9) This document is based on the combined criteria of various sources; the state, national, and the uniform model codes; and the ordinances, regulations, and other requirements; all as adopted, or established, by the City of San Antonio, and where stated, the specifications and standards developed by the various manufacturers and trade organizations in the industry. If not defined in this document all work must meet or exceed industry and trade standards.

All new home construction must meet the ENERGY STAR Qualified Homes Thermal Bypass Inspection Checklist.

1.2 Cost estimates

- 1) Cost Estimates should be prepared in advance of any bid process by the Program Administrator and be detailed for each repair item. Each repair item should include a per unit price and the number of units to be repaired. An acceptable bid must be within 15% of the total cost estimate.
- 2) Cost estimates shall be established for all purchases. They can range from simplified estimates to definitive cost estimates.
 - a. Simplified estimates based on previous experience, current price lists, or any other reasonable basis may be used for Construction \$5,000 and under.
- 3) Definitive cost estimates are required for all purchases above the threshold in paragraph 2 above. They must include breakdowns for each cost element. Supporting data must be included to show how the amounts were determined. Cost elements include: Material, Labor, Overhead, and Profit.
- 4) The requirement for an independent estimate of construction costs (FAR 36.203) applies to all construction purchases in excess of the small purchase ceiling.
- 5) Knowledge of cost estimates is restricted to Government personnel whose official duties require such knowledge. Cost estimates must not be revealed to any bidder/offeror.
- 6) Sources of cost data:
 - a. Cost analysts and other profession staff.
 - b. Contract files can be consulted for past experience with the same work.
 - c. Trade journals, catalogs, Dodge Reports, price lists, or other publications which tabulate costs.
 - d. Oral requests to suppliers, wholesalers, and distributors. Care must be taken to ensure such requests are not construed as a bid solicitation.
 - e. Boeckh Building Cost Modification, Marshall Swift Valuation Service, or similar publications.

1.3 Inspections: Pre-Bid

- 1) Inspections must be carried out using the appropriate checklist. All rooms, service porches, exterior areas, out buildings, crawl spaces and attic spaces must be included in

all inspections. Inspections will include all issues included on the checklist but, when not indicated, any evident deficiency or hazard will be noted. When rural property is inspected, all out buildings used by the household for storage, garage, etc., will be included with all yard areas.

- 2) Once City funds are invested, all inspected areas must meet CMPPS. Exceptions are not permitted for any hazardous condition. Variances from the standard are permitted upon documentation of the condition, and explanation of mitigating measures or circumstances, and authorization by the City of San Antonio.
- 3) The completed inspection checklist is to be included as part of the project submittals and will be used by City staff to verify work completion prior to payment.

1.4 Project Submittals

- 1) Individual project specifications must provide specific scopes of work, locations, measurements, and other specifics, and include the Standard Specifications by reference as performance criteria.
- 2) Contractor is responsible for assuring that the bid proposal includes all work and costs necessary to satisfy a building code inspection of the work specified and completed. Contractor is responsible for completing all such work whether specified or not and without additional cost to the Program.
- 3) Repairs needed to correct basic safety, durability, mechanical and efficiency deficiencies, will take precedence over other repairs. The scope of repairs may be limited by budget.
- 4) A thorough inspection of the property may result in a “walk away” if necessary repairs exceed the program’s previously established budget.
- 5) Scope of Work (Line Item Specifications) - The Scope of Work shall consist of Line Item Specifications that describe all the work to be performed in the Contract in accordance with the standard specifications of this document. It is intended that the Scope of Work shall describe the exact items that are going to be installed, replaced, and/or repaired. The sole intent of these Standards is to clearly describe the methods in which they will be installed, replaced and/or repaired, and what end results are to be expected.
 - a) Definition of work Write-Up Words and Phrases
 - i) Line Item Specification Shall Mean - A work item specification which shall be performed in accordance with definition of Scope of Work, and in accordance with this document.
 - ii) The Line Item Number Shall Be - to identify the Line Item.
 - iii) The Line Item Description (Short Title) Shall Be - preceded by the (most commonly used) action word, install, replace, or repair, or other definitive action word, such as, remove, or construct, or by word combinations, such as, demolish and clear, or excavate and fill, as defined herein. Additional detailed description may be included in the Line Item Description when the nature of the Line Item is such that a special description or additional specification is necessary to clarify the intended action.

- iv) The Line Item Quantity Shall be - inserted for each location, or group of locations, of the Line Item. The appropriate Unit of Measure and Quantity shall be used and inserted.
- v) The Line Item Location(s) Shall Be - inserted as a single location or group of locations.
- vi) The Brand and Model May Be - inserted when applicable. The brand name used in the Scope of Work is for the purpose of identifying the quality and the standards of the item to be used. If the Contractor chooses to use another name brand, the Contractor will submit in writing that the product he intends to use will or exceed the quality and standards of the brand and model specified in the Scope of work.
- vii) Install Shall Mean - Install the selected Line Item at the selected location, finished and complete, including removal of the existing units, all modification, materials and work at and in the vicinity of the selected location, leaving the item fully operational, all in accordance with this document.
- viii) Reinstall/Rehab/Relocate Shall Mean - Remove the existing item, perform corrective repairs to the item, and in the manner described under "Repair" and reinstall the item at either the selected original location, or new location, finished and complete, including removal of existing units, all modification, materials and work at and in the vicinity of the selected location, leaving the Item fully operational, all in accordance with this document.
- ix) Construct/Reconstruct/Frame/Reframe Shall Mean - Construct/ Reconstruct or Frame/Reframe the selected Line Item at the selected location, using standard construction practices of the trade, finished and complete, including removal of existing units, all modification, materials and work at and in the vicinity of the Location, leaving the Line Item fully operational, all in accordance with this document.
- x) Replace Shall Mean - Remove the selected (existing) Line Item and install the selected Line Item at either the Selected; a) original location, or b) new (relocated) location, finished and complete, including removal of existing units, all modification, materials and work at and in the vicinity of the location, leaving the item fully operational, all in accordance with this document.
- xi) Repair Shall Mean - repair the existing Line Item at the selected location, complete, including all necessary and required replacement parts, work and materials at the location, leaving the Item fully operational, all in accordance with this document.
- xii) Secure Shall Mean - Use a means to tighten and/or secure the selected existing Line Item at the selected location, including all necessary and required work and materials at the location, leaving the Item fully secure, all in accordance with this document.
- xiii) Remove/Strip shall mean - Remove and legally dispose of the selected existing Line Item at the selected location, and either a) cap/plug/close/cover/seal the

location, or b) proceed as described by another Line Item, all in accordance with this document.

- xiv) Demolish Shall Mean - Remove and legally dispose of the selected existing Line Item at the selected location, complete, including all components and all related, attached or detached, structures, services and appurtenances, all in accordance with this document.
- xv) Scope of Work Shall Mean - all the work described by the Line Item Specifications as listed for a specific job and as described under Scope of Work, all in accordance with this document and the Contract.

Guide Shall Mean – “Construction Management Policy, Procedures and Standards”. Additional phrases are: Standard Specifications, Rehabilitation Standards, Rehabilitation Guide, and this document as used herein.

- 6) No other work must be done to the project other than the work agreed upon in writing by the Grants Administrator and contractor or as necessary to remove immediate health and safety dangers during the construction phase.

1.5 Discovery

Discovery of unforeseen conditions or change in scope of work by the Contractor or by the Owner or by the City acting on the Owner’s behalf shall be made known to each of the other two in writing as soon as possible. Where additional work is necessary, the Contractor shall submit to the Owner and the City a written description of the work, cost of such work, and the time necessary for such work. Unless it is determined there exists an immediate health and safety danger, no work shall be authorized until agreed upon in writing by the Contractor and the Owner and approved by the City. Compensation for additional work will be negotiated between the Owner (or the City acting on the Owner’s behalf) and the Contractor and must be approved in advance by the City.

1.6 Inspections: Permit

Inspections of work performed must be promptly secured by Contractor, and Contractor shall permit access and inspection required by any governmental agency with jurisdictional interest. Aside from the electrical, plumbing, shower pan, and HVAC inspections and finals, the following are also required:

- 1) FOUNDATION
 - a. Slab on Grade - The work requires engineering letter to clear foundation. Letter must specifically indicate that drainage meets the minimum requirements of the City’s building codes. If drainage not addressed in letter, an inspection for drainage is required.
 - b. Pier & Footing - The work requires engineering letter to clear foundation. If sills or joists are replaced/repared engineer letter required to clear foundation inspection. Letter must specifically indicate replacement/repair of wood sill, wood shim, beam and/or girder meets minimum requirements of the City’s building codes.

- c. Removal/Repair/Replace: Skirting - Requires Final Inspection by City Inspector for venting, subfloor access and drainage (in addition to engineer letter)
 - d. City inspection of all concrete flat work and concrete porches to ascertain that steel is properly installed.
- 2) WALLS
- a. City inspection of framing. - City insulation inspection or letter from Insulation Company for proper amount and R-factor to City code.
 - b. **NOTE:** City code requires that insulation be installed, if sheathing and/or sheetrock is removed from an exterior wall. Inspection is required before sheathing, sheetrock and/or paneling is re-installed.
- 3) ROOF
- a. City inspection of partial framing, if any rafters, collars and/or additional bracing are required. New sheathing installation and/or repairs can be inspected at this time. **NOTE:** Do not leave roof open pending inspection.
- 4) SHOWER PAN
- a. City inspection of shower pan is mandatory before covering shower pan.

1.7 Compensation

- 1) Payments will be made monthly based on a percentage of work completed to date using AIA Form G702 and AIA form G703 with ten percent (10%) withheld as retainage. The City's agent must approve each itemized draw that the contractor requests.
- 2) All requests for payments will be made as follows:
 - a) Contractor submits in writing to the City's agent a list of items, their costs, and a sum of the item costs for work to be paid based only on completed items from the schedule of values submitted by the Contractor prior to construction, or the itemization of Proposal Form if no schedule was submitted.
 - b) The City's agent will inspect such work as soon as possible (usually within 3 business days) from receipt of such request.
 - c) The City's agent will provide a "Request for Payment" form to the Contractor to sign for work which payment is authorized.
 - d) The City's agent will forward the signed "Request for Payment" for to the City's Finance Department.
 - e) The City will pay the Contractor no later than thirty (30) calendar days from the date of the Contractor's signature on the "Request for Pay" form.

1.8 Energy Star

- 1) Although the work in these sections is quite often an important aspect of rehabilitation projects, it is usually not part of the overall process of preserving character-defining features (maintenance, repair, replacement) of historic properties; rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, radically change, damage, or destroy character-defining features in the process of rehabilitation work. Ref: http://www.nps.gov/hps/tps/standguide/rehab/rehab_energyeff.htm

- 2) Effective January 1, 2007 all HUD funded construction must meet Energy Star Qualified Home rating.

1.9 Historic Properties

- 1) The following Rehabilitation Standards (Department of the Interior regulations 36 CFR 67) pertain to all historic properties listed in or eligible for listing in the National Register of Historic Places (e.g. greater than 45 years old):
 - a. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
 - b. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
 - c. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
 - d. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
 - e. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
 - f. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
 - g. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
 - h. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
 - i. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
 - j. New additions and adjacent or related new construction will be undertaken in a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.
- 2) The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings are available at:
<http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf>

1.10 Project closeout

Cleaning by the Contractor shall include, but is not limited to:

- 1) Removal and proper disposal of all construction debris from the site.
- 2) Clean and mop all resilient floors.
- 3) Clean all paint from other finished surfaces including window glass and mirrors.
- 4) Contractor shall put all hardware in operating condition. New keys shall be turned over to the City's agent as hardware is installed. The City shall be responsible for providing said keys to the Owner.
- 5) Further details are included in section 16.

Section 2 – Site Work

2.1 General Specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.
- 2) For historic properties, the City recommends identifying, retaining, and preserving buildings and their features as well as features of the site that are important in defining its overall historic character. Site features may include circulation systems such as walks, paths, roads, or parking; vegetation such as trees, shrubs, fields, or herbaceous plant material; landforms such as terracing, berms or grading; furnishings such as lights, fences, or benches; decorative elements such as sculpture, statuary or monuments; water features including fountains, streams, pools, or lakes; and subsurface archeological features which are important in defining the history of the site. For more detailed Information see:
http://www.nps.gov/hps/tps/standguide/rehab/rehab_site.htm

2.2 Demolition of Structure

- 1) The work covered by this section consists of any required demolition, removal and disposal of building, building components, fencing and appurtenances. No building or portion of a building shall be removed intact for any use or purpose. The site should be generally level, well drained, and accessible. Site preparation must meet Texas minimum Construction Specification.
- 2) Disposition of Materials/Debris: All materials resulting from the demolition activity, except such materials, as may be the property of utility companies providing service to the building, shall be disposed of by one of the following means:
 - a) Locally recyclable materials that can be reasonably segregated shall be delivered for recycling with the proceeds belonging to the Contractor.
 - b) Salvageable materials that the Contractor desires to retain shall become the property of the Contractor and shall be transported, stored and /or utilized in compliance with all applicable codes and ordinances.
 - c) All remaining material and debris not recycled or salvaged shall dispose of in accordance with City ordinance "Chapter 14 – Solid Waste". The landfill fees are the responsibility of the offeror and should not be included in the proposal amount.

- d) A log of all loads hauled for each site, whether for recycling, salvage, or disposal, shall be maintained such that a record will be available for each demolition site as to the final disposition of all material and debris removed.
- 3) The Contractor will be responsible for coordinating with all necessary parties to ensure that all utilities have been disconnected prior to starting demolition work. The Contractor will be responsible for the removal of any old lines requiring removal from the property line forward.
- 4) Protection of Utilities and Other Site Improvements: The Contractor shall perform all work required for the care, protection and maintenance of public utilities, building, and other site improvements on and around the site. The Contractor shall assume responsibility for any damage that may occur to same. Prior to commencing work, the Contractor shall verify the location of all surrounding utilities, both overhead and underground which may be located in or near the work area, then take precautions to protect these utilities during this work.
- 5) Site Cleanup: The site shall be totally free of debris resulting from the demolition activity and/or as listed on the individual site worksheet. All disturbed areas not remaining under a concrete slab shall be leveled and graded in such a manner that no water will stand on the site. Should additional fill dirt be required to achieve the above stated requirement for drainage, the cost of said material shall be subsidiary and included in the price proposed for demolition of said structure.
- 6) Hazardous Material: Should the Contractor encounter what is believed to be a hazardous material during the demolition, the City shall immediately be notified.
- 7) Permits/Notifications: The Contractor will be required to obtain a demolition permit for each site from the City's Building Inspection Department. The Contractor will be required to provide a payment and performance bond under this contract in the amount of the total contract price.
- 8) Project Safety, Accident Precaution: With respect to all work performed under this contract, the Contractor shall:
 - a) Comply with the safety standards provision of applicable laws, building and construction codes. The "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, and the Occupational Safety and Health Act of 1970 (Public Law 91-596.)
 - b) Exercise every precaution at all times for the prevention of accidents and the protection of persons including employees and property.
 - c) Maintain at the office or a well-known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or doctor's care of persons, including employees who may be injured on the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or doctor's office.

2.3 Site Preparation General

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction..
- 2) Site clearing: All trees and undergrowth located only within the perimeter of the house and in areas of driveways, walks, and outbuildings are to be removed.

2.4 Site Preparation Materials

- 1) All on-site fill material must be soil or soil rock mixture which is free of organic matter or other deleterious substances. It must contain no rocks or lumps over 6" in greatest dimension, and not more than 15% must be larger than 2 ½" in greatest dimension.
- 2) Imported fill material- must conform with 1) but must have a maximum particle size of 2" in greatest dimension.
- 3) Fill must have a plasticity index (PI) of 12 or better unless placed under a foundation in which case the PI should be 2.

2.5 Site Preparation Methods

- 1) Exterior: The site must remain in a clean and neat condition and at the end of the project must be cleared of all material, trash, and debris. Planting of grass must not be permitted until all clean-up is complete.
- 2) Excavating: Excavate to grade specified in the drawings. Where excavations are not shown in drawings, excavate as required for installation. Depressions resulting from removal of site obstructions must be filled as necessary to level site to original or specified grade.
- 3) Sub-grade preparation: Clearing, scarifying, and re-compaction must be completed as specified, if not specified it must be completed as required for installation.
- 4) Structural fill must be compacted to 95%.
- 5) Paved areas fill must have a minimum of 6" of fill compacted to 90%.

Section 3 – Concrete

3.1 General specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.
- 2) General Specifications for concrete shall be in accordance with City of San Antonio building code current at the time of construction.
- 3) Concrete shall not be placed over grass, roots, or foreign materials.
- 4) Fill dirt shall be clean, compacted, and free from harmful materials.
- 5) All materials used for concrete forms shall be removed after the concrete reaches final set. Voids and honeycombed surfaces shall be filled with cement grout.
- 6) Concrete is to be poured when the temperature is above forty-five degrees Fahrenheit except in the case of rising temperature when concrete placement may begin at forty degrees Fahrenheit.

***NOTE: Foundation repairs must be accomplished in such a manner as to be permanent and must be completed prior to the start of any other work.**

3.2 Piers

- 1) Piers are to be a minimum of 10" SONO TUBE type.
- 2) Piers shall have a minimum of 6" of concrete for footing with 6 x 6 #10 wire mesh installed at bottom of footing according to City Building Code. Call for City inspection before pouring.
- 3) Install proper size reinforcement bar evenly spaced within the pier and securely attached to the sill.
- 4) After posts are cured, remove SONO TUBE wrapping completely and install galvanized termite shield(s).

3.3 Steps

- 1) General Specifications for steps shall be in accordance with City of San Antonio building code current at the time of construction.
- 2) All steps shall have treads a minimum of ten inches (exclusive of nosing) and maximum rise of seven and three-fourths inches. They shall be a minimum of three feet wide or they shall span the full width of the door opening whichever is greater. They shall be a minimum of three feet wide at porches.
- 3) Precast steps shall be standard size with no defects. They shall be set level with concrete bases under each corner. When set, the rise from the top step to the wearing surface shall be the same as the rise for the steps or be in the wearing surface plane.
- 4) Hollow poured steps shall be formed and poured over 8 inch x 16-inch footer. Wall thickness shall be a minimum of 4 inches. The treads shall be broom finished. Steps shall have 3/8 inch steel rods 12 inches on center in both directions.

3.4 Slab on grade (Foundation)

- 1) General Specifications for concrete foundations shall be in accordance with City of San Antonio building code current at the time of construction.
- 2) Grades shall be established from existing concrete or masonry structures, when feasible. Bottom of sill shall maintain a minimum of 12" above existing grade at lowest point. Leveling cannot be exact when any of the following conditions exist:
 - a) The framing is racked, out of plumb
 - b) The sill/floor joists are warped and crowned
 - c) The structure is multi-addition at multi-levels
 - d) The structure is/was a porch, slanted for drainage
- 3) All concrete slabs shall be poured monolithically and in accordance with City of San Antonio building code current at the time of construction, unless otherwise specified. Top of slab poured on existing grade shall have ground slope away from wall. Ground slope shall provide for drainage of water away from the house. All slabs shall be termite treated.

- 4) Before concrete is poured, a slab inspection must be requested from the City's Building Inspection Department and then pass inspection. All slabs and driveways must meet City codes and pass City inspection prior pouring concrete.
- 5) Soil conditions will determine the length of time the concrete footings shall be allowed to set. When the bearing soil is dry, the concrete footing must set three (3) days before the weight of the house is placed on the foundation. When wet conditions exist, or occur, the soil shall be allowed to dry to accept the bearing load.
- 6) Beams (exterior) must have a minimum width of 12 inches at bottom. Exterior beams to have 4 #5 (5/8 inch) rebar, two at top and two at the bottom, set on 3/8 inch steel dowel rods at maximum 8 feet on center. Exterior beams must extend a minimum of 12 inches into undisturbed soil. Exterior beams must be a minimum of 20 inches in height. Interior beams must be a minimum of 8 inches in height with two #5 rebar (5/8 inch) side-by-side 4 inches off bottom of beam set in 3/8-inch stirrups at maximum 8 feet on center. Interior beams width to be 16 inches in width at top and may taper to 8 inches at bottom. #4 rebar to have a minimum lap of 12 inches. #5 rebar to have a minimum lap of 15 inches. All slab and beam specifications listed here must be used **unless the City's Building Code requirements exceed these specifications.**
- 7) All slabs shall be poured over a two-inch thick select granular fill cushion.
- 8) Entry ramp shall be poured at 1"/foot slope with 1/4" x 1/4" tooled grooves at 6" O.C.
- 9) Footings shall comply with the City's Building Code requirements for size and reinforcement. When the surrounding soil is not sufficiently strong enough to hold the concrete until final set, forms shall be constructed instead.

3.5 Concrete porches

- 1) All porches shall be poured monolithically over select granular fill cushion.
- 2) Exterior beams must be the same as for the house.
- 3) Pour 1 inch below doorsill or as noted and slope 1/8 inch per foot to provide drain.
- 4) Concrete topping shall be a minimum of 3" unless otherwise specified.
- 5) When new concrete is to be placed on old concrete, the old concrete must be roughened and cleaned thoroughly. Old concrete shall be chipped with a chipping hammer to expose a new surface for satisfactory bonding.
- 6) Old concrete should be moistened thoroughly and a bonding agent applied before new concrete is placed on it. Where concrete has been dried out, it is necessary to saturate it for several days. There shall be no pools of water, when new concrete is placed.
- 7) New concrete shall be 3000# PSI, pea gravel mix and shall have 6" x 6" - #6 gauge concrete reinforcement wire to cover the entire area. New concrete shall be well worked into the irregularities of the old area.

3.6 Concrete Walkways

- 1) Walks shall be poured monolithic to expansion joints. Reinforcing shall be 6" x 6" number 10 welded wire fabric.
- 2) Width shall be a minimum of 3 feet wide with a broom finish. Control joints shall be spaced the width of the walk. Expansion joints shall be spaced at all radius points,

elevation changes, porches, and at back of curb. Expansion joint material shall be ¾ inch redwood or other material that complies with the building code.

- 3) Slab thickness shall be a minimum of 4 inches.
- 4) Concrete will be deposited when temperature is at 40° F, or above and rising.

3.7 Driveways

- 1) Driveways shall be monolithic poured slab with a broom finish and a minimum thickness of 4 inches.
- 2) Reinforcing shall be 6" x 6" number 10 welded wire fabric.
- 3) The slab will be poured on a 2 inch sand cushion (compacted).
- 4) Expansion joints will be spaced a maximum of 20 linear feet. Expansion joints will be used at all radius points, sidewalk intersections and house slab tie-ins.
- 5) Expansion joint materials shall be ¾ inch redwood or other material that complies with the building code.
- 6) Concrete will be deposited when temperature is at 40° F, or above and rising.

3.8 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Broken, fire damaged or otherwise compromised beams, joist or sills;
 - b) Water draining and/or pooling under foundation area;
 - c) In areas that have more than two annual days with temperatures below 30 degrees, a lack of underpinning, skirting, or other insulating feature to exposed plumbing.
 - d) Severe slab cracks that create or threaten structural or other systems such as plumbing;
- 2) Any other condition not mentioned that meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 4 – Framing

4.1 General Specifications

- 1) General specifications shall meet Texas Minimum Construction Standards and shall be in accordance with City of San Antonio building code current at the time of construction.
- 2) General specifications for framing shall be as follows:
 - a) All wood in contact with concrete, earth, or within 12 inches of ground level shall be pressure treated lumber or lumber with natural resistance to decay.
 - b) All lumber used for framing shall be #2 yellow pine or #2 SPF, graded and stamped as such. Fir shall be in non-load bearing areas only.
 - c) All lumber shall be fastened as scheduled in the International Residential Code.

d) All framing shall be constructed to comply with the International Residential Code.

4.2 Minimum Foundation Standards

- 1) Pier placements will have allowable spans between piers or posts in accordance with City of San Antonio building code current at the time of construction.
- 2) All piers should be designed in accordance with the SBCCI Chapter 18.
- 3) Leveling must be done in such a manner as to be permanent and must be completed before other work begins.
- 4) New posts must be concrete piers or-pressure treated wood posts, of a species that has a natural resistance to decay.
- 5) Cedar posts and shims must be treated to prevent rot and deterioration.
- 6) When leveling, grades must be established from existing concrete porches, fireplaces and chimneys.
- 7) When leveling is complete, doors, windows, and openings must be reasonably plumb, level, and fully operational.
- 8) Correct over spans by installing stringers and/or floor joists. Stringers are to be placed on concrete pads and piers.
- 9) All sills must have 12" minimum clearance above the ground when leveling is to be done unless otherwise specified.
- 10) All newly installed foundations should be designed in accordance with the SBCCI Chapter 18.
- 11) Skirting must extend 4" below and at least 18" above grade and be lapped and fastened under siding on the same horizontal line of the entire wall or "side" of building. Skirting must have ventilation openings in accordance with City of San Antonio building code current at the time of construction. Foundation vents shall be heavy duty metal and screened with 18/16-mesh screen wire cloth and shall be properly spaced to provide ventilation under the structure.

***NOTE: Foundation repairs must be accomplished in such a manner as to be permanent and must be completed prior to the start of any other work.**

4.3 Underpinning

Underpinning shall be constructed of conforming material with 12" 22 gauge galvanized flashing with at least 2" overlap on bottom of skirt and extending 6" into the ground. When stucco underpinning is specified, it shall extend a minimum of 6" into existing soil.

- 1) MORTAR: All mortar applications shall consist of one (1) part of Portland cement to not less than 3 nor more than 5 parts of damp, loose aggregate by volume. Hydrate lime may be used but shall not exceed 10% by weight nor more than 25 % by volume of the cement used.
- 2) TEMPERATURE: The temperature of the surrounding air shall not be less than 40° F during application and for at least 48 hours thereafter.
- 3) SURFACES: Surfaces to receive stucco finish shall be covered with 2.5# per square yard metal lath lapped at end and sides a minimum 1", and wired 6" o.c. vertically to 3/8" rods or 3/4" metal tube spaced not over 24" o.c. for underpinning. Tie wire to be minimum 18 gauge wire.

- 4) APPLICATION: Apply in 2 or 3 coats; the final coat shall not be applied sooner than one (1) day after the preceding coat. Before applying the final coat, the surface shall be dampened evenly to obtain uniform suction. Minimum thickness of 1".
- 5) UNDERPINNING TRENCH: To ensure proper drainage, the underpinning trench shall be filled with dirt and sloped around perimeter of foundation to divert water runoff away from foundation.

4.4 Creep-hole Door

Creep-hole Door shall be hinged and constructed of such material as to conform to foundation skirt and shall be of adequate size for entrance to crawl space, minimum size 24"W x 18"H. Install eyehook latch to secure creep hole door. When covered by dirt, the creep-hole door must be flashed.

4.5 Water Table

Water Table shall be 1 "or 2" dimension lumber of #1 grade pressure treated, beveled at 15° and nailed with galvanized nails, or a manufactured metal water table nailed with galvanized nails.

4.6 Wall framing (Framing Details)

- 1) Studs shall be spaced a maximum of 16 inches on center with double top plates and single bottom plate. Double studs shall be provided on each side of openings in accordance with City of San Antonio building code current at the time of construction.
- 2) All windows, doors, and arched openings shall have double headers. Where the openings are less than 6 feet in width, the header shall be supported by one cripple stud at each end. If the span exceeds 6 feet, then it shall be supported at each end by two cripple studs. Headers must have ½ inch spacers.
- 3) Maximum allowable span for double headers shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.
- 4) Unless plywood dimension 4' x 8' x ½ inch CD grade sheathing or other approved materials are used for bracing, new corner posts on exterior wooded walls shall be diagonally braced with a 1" x 4" #2 grade lumber let in at each corner from the bottom to the top plate. Alternatively, a metal "T" brace may be used.
- 5) Posts for porch framing shall be S4S 4"x4" pressure treated lumber or as detailed in project specifications.

4.7 Roof framing

- 1) For historic properties, the City recommends Identifying, retaining, and preserving roofs--and their functional and decorative features--that are important in defining the overall historic character of the building. This includes the roof's shape, such as hipped, gambrel, and mansard; decorative features such as cupolas, cresting chimneys, and weathervanes. For more detailed Information see:
http://www.nps.gov/hps/tps/standguide/rehab/rehab_roofs.htm

- 2) Collar brace shall be installed on upper 1/3 of rafter pairs and shall be placed on every third pair of rafters.
- 3) Purlins shall be installed perpendicular to rafters allowing braces to load bearing walls thereby preventing swag.
- 4) Load bearing wall rafter supports shall be installed along purlins to even roof rafters to one another in such a manner as to provide the decked roof surface to be in a true and even plane.
- 5) Maximum allowable spans for ceiling joists shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction..
- 6) Ceiling joists shall be continuous or may be joined together over a partition to provide a continuous tie across the structure.
- 7) Barge rafters shall be installed on every gabled roof (to be same size as rafters).
- 8) When a ridge-board is required, it shall be a minimum of 1" in thickness and not less in depth than the cut end of the rafter it joins (one size larger than the rafters).
- 9) New decking shall be ½" CDX grade plywood or OSB (oriented strand board) with clips for rafter spacing up to 24 inches on center.
- 10) All roof overhangs shall be a minimum of 12 inches extending horizontally out from house wall, to a maximum of 24 inches.
- 11) 2" X 4" bracing shall be cut into the last two rafters and nailed to barge rafters (4 per gable).
- 12) The roof pitch shall be at least 4 inches of rise to 12 inches of run.
- 13) Engineer-designed trusses may be used in lieu of conventional framing.

4.8 Porches

- 1) Removal shall be done in such a manner as to cause a minimum amount of damage to the remaining structure. Adequate bracing and strengthening shall be done as necessary for the main structure after removal.
- 2) Wooden flooring shall be of tongue and groove type #2 pine minimum. Treated material can also be used and when required will be indicated in the Description of Work.
- 3) Cold rolled steel columns shall be 1 1/8" square tubing with support brackets welded top and bottom. Metal scrolls welded for stiffener and design shall be continuous length from floor to bearing beam.
- 4) Wood columns shall be a minimum of 4" x 6" dimension and shall extend from porch floor continuously to bearing beam. Wood columns shall be treated wood posts or of a species that has a natural resistance to decay.
- 5) Wood steps shall have 2" x 12" or double 2" x 6" treads and should be kerfed on back side. Width of steps shall be no less than 3', rise shall be no more than 7" and tread shall be no less than 11 ". Wood shall be treated. Stringers shall rest on a 4" thick concrete pad reinforced with 6" x 6" - #10 gauge wire mesh. Pad to extend out 6" in width wider than stringers and 12" out in front of first step.
- 6) Precast concrete steps and landings will be permitted. These units are to be installed over a 3" gravel bed and be level after installation.

- 7) Handrails shall be 13 gauge steel, attached so as to withstand 250# pressure for 5 minutes. All metal handrails shall have a metal primer, one coat, if painting is not called for in Description of Work.

4.9 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Termite or other wood destroying insect damage to structural members;
 - b) Water damage or dry rot to structural members;
 - c) Broken, fire damaged or otherwise compromised beams, joist or sills;
 - d) Unsupported beams, or sills or joints in same that have no support; inadequate support;
 - e) Water draining and/or pooling under foundation area;
 - f) In areas that have more than two annual days with temperatures below 30 degrees, a lack of underpinning, skirting, or other insulating feature to exposed plumbing.
 - g) Existing skirting or underpinning that is cracked, damaged or not properly vented.
 - h) Ground contact of untreated wooden structure;
 - i) Water incursion through wall structure resulting in drywall damage;
 - j) Holes, cracks or gaps in interior or exterior wall structures;
 - k) Exposed nails, popped seams or other defects not representative of normal wear and tear;
 - l) Cracked, peeling, or chipped paint. Exposed unpainted or untreated wood, drywall or other wall surface;
- 1) Any other condition not mentioned that meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 5 – Roofing

5.1 General specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.
- 2) For historic properties, the City recommends Identifying, retaining, and preserving roofs--and their functional and decorative features--that are important in defining the overall historic character of the building. This includes roofing material such as slate, wood, clay tile, and metal, as well as its size, color, and patterning. For more detailed information see: http://www.nps.gov/hps/tps/standguide/rehab/rehab_roofs.htm
- 3) Unless otherwise specified, all old roof coverings, including felt, whether composition, wood, or built-up, shall be removed before installation of new roof. All rotted or missing sheathing, overhang, rafter ends and fascia shall be replaced. There shall be no voids or obstructions and all holes shall be patched with metal.

- 4) There shall not be any voids or obstructions in the sheathing, and knotholes shall be covered with sheet metal.
- 5) Sufficient bracing shall be installed to strengthen the roof and to bring the framing to code.
- 6) Repair decking by replacing defective sheathing boards, leaving new deck surface smooth and clean, and adequately secured to structural members. Nails to be 8D common or box for shiplap, and 6D common or box nails for plywood sheathing, 6" o.c. along all edges and 12" o.c. along intermediate members for plywood. Plywood is to be sheathing grade no less than 1/2" in thickness with aluminum clips or 1 x 4 shingle strip blocking.
- 7) All roofing shall be done in accordance with the manufacturer's recommendations, and installed in such a manner to prevent any leaks.
- 8) Galvanized or aluminum attic vents shall be installed, minimum of two. One square foot of ventilation should be provided for every 300 square feet of attic area.
- 9) Eaves shall have galvanized drip edge.

5.2 Composition roofing

- 1) Install with simplex felt nails #30 felt paper-overlapping rows 4 inches.
- 2) Install minimum 220-pound equivalent fiberglass seal tab Class A fiberglass composition shingles (30 year warranty) according to manufacturer's directions.
- 3) Architectural shingles (30 year warranty) may be used in lieu of composition shingles.

5.3 Gutter and downspout

- 1) Shall be of seamless galvanized metal or aluminum properly hung and shall have a "splash block" under each downspout.

5.4 New built-up roof

- 1) shall be installed as follows:
 - a. Nail one (1) ply of 30# felt; mop two (2) plies of 15# felt.
 - b. Apply hot mopped tar and gravel, properly spaced to create a uniform and durable roof.
 - c. Aggregate shall be 1/4" crushed limestone.

5.5 Stoop roofs

- 1) To be constructed of such material as to conform to existing roof, and shall have all necessary structural members required to form a structurally sound unit.

5.6 Flashing

- 1) All flashing and valley material shall be 26 gauge galvanized iron.
- 2) Valley tin shall be a minimum of 20" wide, 10" each side centered.
- 3) Shingles shall be laced over flashing.
- 4) All flashing shall be installed only after all felt paper is in place.
- 5) All pipes projecting through the roof shall have metal stack flashing or neoprene rings.

5.7 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Water damage caused by water leaking through the roofing materials;
 - b) Missing, worn or upturned shingles, or other visible wear on the exterior of the roof envelope;
 - c) Damaged or rusting roof jacks, leads, flashings, drip edges, or other component;
 - d) Structural damage evidenced by buckling, sagging, or broken members;
 - e) De-lamination of materials, uplifted edges, or other failure of materials or application;
 - f) Any condition, including normal wear which, in the best judgment of the inspector, would lead to the failure of the roof envelope within five years;
- 2) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 6 – Doors & Glazing

6.1 Windows

- 1) For historic properties, the city recommends identifying, retaining, and preserving windows--and their functional and decorative features--that are important in defining the overall historic character of the building. Such features can include frames, sash, muntins, glazing, sills, heads, hoodmolds, paneled or decorated jambs and moldings, and interior and exterior shutters and blinds. For more detailed information see: http://www.nps.gov/hps/tps/standguide/rehab/rehab_windows.htm
- 2) General specifications shall be as follows:
 - a) ¾" insulated glass
 - b) All interior and exterior gaps, joints, or mating surfaces shall be caulked to prevent air infiltration. Windows shall have air infiltration rates not exceeding 0.37 cubic feet per minute per foot of operable sash crack.
- 3) Windows shall be installed plumb and level to ensure proper operation with no "sticking".
- 4) All windows shall be low "E" glass.

6.2 Doors

- 1) For historic properties, the city recommends identifying, retaining, and preserving doors--and their functional and decorative features--that are important in defining the overall historic character of the building. Such features can include frames, sills, heads, hoodmolds, paneled or decorated jambs and moldings, and interior and exterior shutters and blinds. For more detailed information see:
 - a) http://www.nps.gov/hps/tps/standguide/rehab/rehab_spacefeatfinish.htm

- b) http://www.nps.gov/hps/tps/standguide/rehab/rehab_entrances.htm
- 2) General specifications for doors shall be as follows:
 - a) All doors shall fit and work properly.
 - b) All exterior doors shall be one and three-quarter inch, solid core, units. They shall be drilled for a lockset and deadbolt. Exterior doors shall have one and one-half pair of door butts, weather-strip threshold (made of rolled vinyl with aluminum channel backing). Doors shall have air infiltration rates not exceeding 0.5 cubic feet per minute per square foot of door area.
 - c) All interior doors shall be hollow core six panel mahogany or pressboard with a minimum thickness of one and three-eighths inches and shall be bored for a lockset.
 - d) Pre-hung units shall have a frame made of three-quarter inch material with a properly plowed jamb to receive one and three-quarter inch or one and three-eighth inch doors. A pre-hung unit shall be equipped with the door panel, jamb, and all trim. Pre-hung doors shall be installed plumb and level. Door panel shall not be trimmed or manipulated in any fashion and shall swing free and easy.
 - e) All doors which come into contact with interior wall surfaces when opened are to have base board mounted, rubber tipped door stops installed.

6.3 Mirrors

- 1) Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish floor or ground.
- 2) Mirror Specifications:
 - a) ASTM C 1036, Type 1, Class 3, Quality Q3; with pyrolytic coating.
 - b) Nominal Glass Thickness: 1/4 inch (6 mm).
 - c) Performance Characteristics; coated surface to subject side:
 - d) Visible Light Transmittance: 12 percent.
 - e) Visible Light Reflectance: 60 percent.
- 3) Mirror Installation:
 - a) Coordinate with other trades to ensure that surfaces to receive mirrors are not painted, coated, or otherwise treated in a manner detrimental to mirror adhesion.
 - b) Ensure walls are rigid, plumb, smooth, clean, dry, and free of foreign materials.
 - c) Apply one coat moisture-resistant paint to back of mirror and allow to completely dry.
 - d) Set mirrors with mechanical fasteners and adhesive applied in accordance with manufacturer's instructions.
 - e) Apply adhesive to mirror back with 25 percent coverage. Set mirror in place and hold firmly until adhesive sets.
 - f) Support bottom of mirror with L-shaped bar mechanically fastened to wall blocking.
 - g) Provide 2 clips minimum at top and each side of mirror. Mirrors greater than 6 square feet shall have 3 clips minimum at top.
 - h) Place plumb and level without visible distortion.

6.4 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Broken, missing or cracked panes;
 - b) Rotten or deteriorated sills, frames or trim;
 - c) Dried, cracked or missing putty or gasket. Any missing seal or sealant resulting in loose panes or air leaks;
 - d) Sealed or blocked windows including windows which have been painted shut, windows which are not operational or windows which will not function as a viable fire exit such as windows with burglar bars which cannot be opened readily from the inside;
 - e) Windows that do not lock or locks that do not function with ease;
 - f) Any door that is broken, deteriorated, or otherwise damaged so that it does not provide a sealed entry. Any doors which does not shut neatly in order to provide a seal with the passage set or lock set fitting neatly within the strike plate;
 - g) Any exterior door which is not solid core, sealed or painted, and which does not have a functioning lockable dead-bolt;
 - h) Rotted, deteriorated, or broken thresholds, jambs, frames, trim or other functioning or passive pieces to the door system warrant replacement;
 - i) For new construction including reconstruction, windows and/or doors that fail to meet the requirements of the model energy code.
 - j) For new construction including reconstruction, doors and thresholds that fail to meet the requirements of no-step entry established in SB 623.
- 2) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 7 – Interior Finishes

7.1 Walls & Ceilings

General specifications for ceiling and walls shall be as follows:

- 1) Gypsum board must conform to “ASTM C1396 / C1396M - 11 Standard Specification for Gypsum Board”. It shall be tapered joint gypsum board with a thickness of one-half inch on walls and 5/8” grade “X” on ceilings.
- 2) Moisture resistant gypsum board must conform to ASTM D-3273 and ASTM C-473. Standard “green board” does not meet these requirements and is not acceptable.
- 3) Paneling shall be smooth without blemish, one-fourth inch thick, and finished according to individual specifications.
- 4) Perforated tape mix installation shall comply with the recommendations of the manufacturer. Temperature shall be 55 degrees Fahrenheit or above in the area it is being applied until the cement is completely dry.

7.2 Gypsum board for ceiling

- 1) Fasteners shall be spaced in accordance with City of San Antonio building code current at the time of construction.
- 2) Nails shall be driven with their heads perpendicular to the face of the board and seated below the surface of the board without breaking the paper (screws shall comply with the same above).
- 3) The board shall be cut to fit with tapered sides butting and ends butting. Where possible joints shall be staggered. The board shall be a minimum of one-half inch off finished floor.

7.3 Gypsum board for wall

- 1) Fasteners shall be spaced in accordance with City of San Antonio building code current at the time of construction. Nails shall be driven with their shanks perpendicular to the face of the board and seated below the surface of the board without breaking the paper.
- 2) The board shall be cut to fit with tapered edges butting and ends butting. Where possible joints shall be staggered. The board shall be a minimum of one-half inch off finished floor.

7.4 Tape and float

- 1) Over joints, the tape shall be embedded in cement and covered with a thin layer of cement. A second and third coat shall be applied with each coat feathered and extended beyond the previous coat by two inches. The finish coat shall be sanded lightly and any imperfections filled prior to any painting or decorating.
- 2) Cover nails with three (3) applications of cement allowing time to dry between each coat. The final coat shall be sanded lightly before application of paint or other decoration.
- 3) Inside corners shall be reinforced with tape embedded in cement, finished as specified "over joints".
- 4) Outside corners shall be protected by wood molding, metal molding, or metal corner reinforcement. Metal corner reinforcement shall be finished as specified "over joints" with two coats of cement.
- 5) Texturing ceilings and walls shall be medium orange peel splatter.

7.5 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Termite or other wood destroying insect damage to siding, trim and/or structural members;
 - b) Water damage or dry rot of siding, trim and/or structural members;
 - c) Broken, fire damaged or otherwise compromised siding, trim and/or structural members;

- d) Water incursion through wall structure resulting in drywall damage;
 - e) Holes, cracks or gaps in interior or exterior wall structures;
 - f) Exposed nails, popped seams or other defects not representative of normal wear and tear;
 - g) Cracked, peeling, or chipped paint. Exposed unpainted or untreated wood, drywall or other wall surface;
- 1) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 8 – Millwork and Trim

8.1 General specifications

- 1) For existing millwork and trim install material that is a replacement in kind--or a compatible substitute material.
- 2) For historic properties, the City recommends identifying, retaining, and preserving interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and mantels, paneling, light fixtures, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stenciling, marbling, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings. For more detailed information see:
http://www.nps.gov/hps/tps/standguide/rehab/rehab_spacefeatfinish.htm
- 3) New trim materials shall be of select grade of white pine or equivalent. Cabinet plywood shall be of A grade or equivalent (paint or stain grade as per specifications. Pine or fir plywood not permitted for cabinets. MDF is not permitted in millwork.
- 4) Finger jointed material shall not be allowed on surfaces to be varnished but are allowed on surfaces to be painted.
- 5) Finish work shall be finished smooth, free from machine or tool marks, abrasions, raised grain, etc., on exposed surfaces, and shall be machine sanded and hand dressed to a smooth finish.
- 6) All molded members and trim shall be mitered or coped at corners.
- 7) All measurements and dimensions shall be verified by the Contractor at the job.
- 8) Nails shall be countersunk.

8.2 Cabinets (Kitchen)

- 1) Cabinets shall be set level.
- 2) Cabinet face frames shall be made of ¾ inch grade birch plywood. End panels and bottoms shall be ½" plywood. Cabinet backs and tops shall be ¾" medium density particleboard with filled bull nosed edge.
- 3) Doors shall be ¾" birch plywood, "A" grade, trimmed with lip mold.
- 4) Drawer fronts shall be the same as doors. Sides, panels, and bottoms of ¾" plywood.
- 5) All joints shall have countersunk nailing and glue.

8.3 Countertops

Countertops shall be laminated counter top with matching backsplash, approved by the Grants Management and Administration Department.

8.4 Interior trim

- 1) Door trim shall be H-trim with mitered corners and installed with a $\frac{1}{8}$ " inch reveal, or specified trim.
- 2) Window stools shall have a mitered, bull nosed front end. Window trim may also be gypsum board.
- 3) Ceiling trim, where needed, shall be 1 $\frac{1}{4}$ " cove mold with mitered joints and corners.
- 4) Baseboards shall be a base mold of at least 2 $\frac{3}{4}$ ".
- 5) Shoe mold shall be required in all rooms without carpet.

8.5 Shelves

- 1) Kitchen shelves shall be a minimum 11 $\frac{1}{2}$ " deep by 1" lumber.
- 2) Bedroom closet, bathroom closet, and garage shelves shall be a minimum of 12" deep by 1" thick lumber or other dimension as specified on the plans. They shall be adequately supported with wall brackets.

8.6 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Termite or other wood destroying insect damage to siding, trim and/or structural members;
 - b) Water damage or dry rot of siding, trim and/or structural members;
 - c) Broken, fire damaged or otherwise compromised siding, trim and/or structural members;
 - d) Water incursion through wall structure resulting in drywall damage;
 - e) Holes, cracks or gaps in interior or exterior wall structures;
 - f) Exposed nails, popped seams or other defects not representative of normal wear and tear;
- 2) Cracked, peeling, or chipped paint. Exposed unpainted or untreated wood, drywall or other wall surface;
- 3) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 9 – Flooring

9.1 General specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.

- 2) All sub-floors should be solid and continuous, without liberal movement or bounce, free from rot and deterioration.
- 3) All flooring must be free from tripping hazards with a minimum of seams spaced at logical locations such as doorways and matched to the existing floor.
- 4) All flooring must be sealed and/or tight at the edges.
- 5) If concrete slab on grade is used, plywood underlayment is not required.
- 6) Underlayment for pier and beam construction:
 - a) Bathroom underlayment must be $\frac{5}{8}$ " CDX exterior grade plywood over a 30 pound felt paper vapor barrier.
 - b) All other floors must have $\frac{5}{8}$ ", plywood installed with vapor barrier as in bathroom; floors must be smooth and even throughout structures.
 - c) If hardwood flooring is to be installed, sub-flooring must be $\frac{5}{8}$ " CDX plywood.
- 7) Vinyl composition tile (VCT) must be 12"x12" square and $\frac{1}{8}$ " thickness homogenous type as approved by the Contract Administrator.
- 8) Sheet vinyl must be 12 mm. Floors at bath and kitchen must have waterproofed cover.
- 9) Carpeting must be durable quality nylon fabric with jute backing and meet or exceed FHA specifications. Must be a 24-28 oz. face weight carpet with continuous nylon filament.

9.2 Vinyl Composition Tile (VCT)

- 1) VCT must be 12"x12" square and $\frac{1}{8}$ " thickness homogenous type as approved by the Contract Administrator.
- 2) Resilient flooring should only be installed in temperature-controlled environments.
- 3) Substrates must be dry, clean, smooth and free from paint, varnish, wax, oils, solvents and other foreign matter.
- 4) Allow all flooring materials and adhesives to condition to the room temperature for a minimum of 48 hours before starting the installation.
- 5) The area to receive the resilient flooring should be maintained at a minimum of 65°F (18°C) and a maximum of 100°F (38°C) for 48 hours before, during and for 48 hours after completion.
- 6) Installation must be done with manufacturer's suggested adhesive.
- 7) The VCT must be fitted with no gaps showing at walls, door openings, or trim. Full cover must be achieved. At doors or other areas of joining, metal strips must be installed to protect floor covering.
- 8) Shoe mold is required.

9.3 Sheet Vinyl Floor Covering

- 1) Vinyl flooring should only be installed in temperature-controlled environments.
- 2) Floors to receive vinyl must have all foreign material removed from surfaces and all holes must be filled. Nails must be countersunk.
- 3) Substrates must be dry, clean, smooth and free from paint, varnish, wax, oils, solvents and other foreign matter.

- 4) Allow all flooring materials and adhesives to condition to the room temperature for a minimum of 48 hours before starting the installation.
- 5) The area to receive the resilient flooring should be maintained at a minimum of 65°F (18°C) and a maximum of 100°F (38°C) for 48 hours before, during and for 48 hours after completion.
- 6) Installation must be done with manufacturer's suggested adhesive. No joints must be permitted.
- 7) The vinyl must be fitted with no gaps showing at walls, door openings, or trim. Full cover must be achieved. At doors or other areas of joining, metal strips must be installed to protect floor covering.
- 8) Shoe mold is required.

9.4 Carpet

- 1) Sub-floor must be free from holes and foreign material. Nails must be countersunk.
- 2) Installation must be accomplished using tack strips and carpet must be stretched and then attached to tack strips.
- 3) Carpet must be installed on $\frac{3}{8}$ " composition pad minimum.

9.5 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Damaged, rotted or deteriorated sub-floor surfaces;
 - b) Torn, missing, worn, burned or otherwise damaged floor coverings that create a tripping hazard or unsanitary condition;
 - c) Missing base board, shoe mold or sealant that creates an unsanitary condition;
- 2) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 10 – Exterior Treatment

10.1 Brick

- 1) For existing masonry install masonry that is a replacement in kind--or a compatible substitute material.
- 2) For historic properties, the City recommends identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the building such as walls, brackets, railings, cornices, window architraves, door pediments, steps, and columns; and details such as tooling and bonding patterns, coatings, and color. For more detailed information see:

http://www.nps.gov/hps/tps/standguide/rehab/rehab_masonry.htm

- 3) New building face brick must be of gas fired solid clay shale units. Structural clay tile, concrete masonry units, and stone must comply with FHA specifications, Section 703.
- 4) Do not install cracked, broken, or chipped masonry units.
- 5) Lay masonry units plumb, true to line and with level courses accurately spaced within allowable tolerances.
- 6) Adjust masonry units into final position while mortar is soft and plastic.
- 7) Lay masonry units with full mortar coverage on horizontal and vertical joints.
- 8) Provide weep holes in head joints in first course and immediately above all flashing. Maximum spacing 33 inches.
- 9) Attach masonry veneer to backing with metal veneer ties. Use at least one tie per 3.25 square feet of veneer.
- 10) Dry brush masonry surface after each day's work. Scrub with acceptable cleaning agent.

10.2 Exterior Trim

- 1) For existing exterior trim install material that is a replacement in kind--or a compatible substitute material.
- 2) For historic properties, the City recommends identifying, retaining, and preserving wood features that are important in defining the overall historic character of the building such as siding, cornices, brackets, window architraves, and doorway pediments; and their paints, finishes, and colors. For more detailed information see: http://www.nps.gov/hps/tps/standguide/rehab/rehab_wood.htm
- 3) New fascia shall be Hardi Plank. Fascia shall be installed on wood band nailed to rafter tails and shall be ½ inch wider than the cut of the rafter and soffit.
- 4) New soffit shall be Hardi Vented soffit installed to rafter (when specified).
- 5) New posts and handrails:
 - a) Columns shall be a turned post column and be pressure treated lumber or fiberglass equivalent designed for exterior use.
 - b) Handrails shall be pressure treated lumber.
- 6) New exterior door and window trim shall be Hardi Trim. Gaps shall be only large enough so that caulking will be sufficient to fill.
- 7) All fasteners and fittings shall be non-corrosive materials.

10.3 Siding

- 1) For existing siding install siding that is a replacement in kind--or a compatible substitute material.
- 2) For historic properties, the City recommends identifying, retaining, and preserving wood features that are important in defining the overall historic character of the building such as siding, cornices, brackets, window architraves, and doorway pediments; and their paints, finishes, and colors. For more detailed information see: http://www.nps.gov/hps/tps/standguide/rehab/rehab_wood.htm
- 3) New exterior siding shall be Hardi-Plank.
- 4) All joints and panels must fall on center of framing members.

- 5) For lap siding start application by fastening a starter strip ($\frac{3}{8}$ " x $\frac{3}{8}$ "") along bottom edge of the Sill. Level and install first piece of siding so that bottom edge is at least $\frac{1}{8}$ ", below the starter strip.
- 6) Fasteners must be $\frac{3}{4}$ ", up from the drip edge of the siding.
- 7) Minimum overlap of courses must be 1". NO siding may be placed closer than 6" to the exposed earth.

10.4 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Termite or other wood destroying insect damage to siding, trim and/or structural members;
 - b) Water damage or dry rot of siding, trim and/or structural members;
 - c) Broken, fire damaged or otherwise compromised siding, trim and/or structural members;
 - d) Water incursion through wall structure resulting in drywall damage;
 - e) Holes, cracks or gaps in interior or exterior wall structures;
 - f) Exposed nails, popped seams or other defects not representative of normal wear and tear;
- 2) Cracked, peeling, or chipped paint. Exposed unpainted or untreated wood, drywall or other wall surface;
- 3) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 11 – Painting

11.1 General specifications

- 1) All work shall be done by skilled mechanics and shall be uniform in appearance, of approved color, smooth and free from runs, sags, skips, and defective brushing.
- 2) Paint shall be well ground, not settled, badly caked, or thickened in container. It shall be readily broken up with a paddle to a smooth consistency and have easy brushing properties.
- 3) Paint shall be readily mixed.
- 4) Installation rate shall be no higher than the rate of coverage suggested by the manufacturer. All paint materials shall be delivered in original unopened containers, with labels and tag intact.
- 5) Paint shall be allowed to dry hard between coats, as per manufacturer's recommendation. Full coverage is required.

- 6) When color, wood grain, stain, or undercoat show through the final coat of paint, the work shall be covered by additional coat or coats until the paint is uniform in color and appearance and coverage is complete.
- 7) Edges of paint adjoining other materials or colors shall be sharp and clean without overlapping.
- 8) All cracks and joints shall be completely sealed with caulking compound (both interior and exterior). Caulking compound shall be delivered to the job in manufacturer's unopened containers. Caulk to be minimum 20-year warranty acrylic latex.
- 9) At completion of all construction, all damaged surfaces shall be touched up and left in a high quality condition.
- 10) *Lead based paint shall not be used.***

11.2 Exterior painting

- 1) Paint must carry a quality of no less than a 15-year warranty.
- 2) Exterior painting shall be performed when weather conditions are acceptable as recommended by the manufacturer.
- 3) Back prime unpainted wood using one coat of primer paint with mildew retardant.
- 4) Nail holes, splits or scratches shall be puttied, caulked or spackled smooth after prime coat. Knots and pitch streaks shall be spot primed with a quality stain killer.
- 5) Wood surfaces shall have smooth finish surface when painted.

11.3 Interior painting

- 1) Gypsum board paint finish shall be Eggshell or Satin. Flat finish is not allowed.
- 2) Paint for walls, ceiling and trim must carry a quality of at least a 10-year warranty.
- 3) At no time will latex paint be used to cover oil-based paint. All trim and wood shall receive two coats of semi-gloss oil base or latex enamel paint.

Section 12 – Plumbing

12.1 General specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction..
- 2) For Historic properties, the City recommends identifying, retaining, and preserving visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, and plumbing fixtures,. For more detailed information see:
http://www.nps.gov/hps/tps/standguide/rehab/rehab_mechsystems.htm
- 3) All lines shall be located in wall cavities, ceiling/attic cavities and under foundation. Include roof jacks and flashing where necessary.
- 4) Gas piping shall be black steel pipe. Provide standard U.S. made gas stops where required.
- 5) Provide standard U.S. made gas stops where required.

- 6) Potable water supply piping, water discharge outlets, back-flow prevention devices or similar equipment must be in serviceable condition free from deterioration, corrosion and blockage and must not be so located as to make possible their submergence in any contaminated or polluted liquid or substance.
- 7) New sanitary waste and drainage piping shall be PVC, Schedule 40.
- 8) Water piping shall be type "L" copper tubing with wrought copper solder joint fittings, PEX water lines or galvanized iron with galvanized fittings.
- 9) Unions shall be provided to permit removal of equipment without cutting piping where legal.
- 10) Water stop valves shall be standard U.S. made with ends similar to fittings. Valves shall be provided at each piece of equipment to permit removal without shutting off service.

12.2 Water Supply and Wastewater Systems

- 1) Every dwelling unit must be connected to a sanitary water supply and functioning sanitary waste/water disposal system.
- 2) Every dwelling unit must contain a room which is equipped with a functioning toilet and a properly installed lavatory. Said lavatory must be properly connected to both hot and cold running water, under pressure, and must be properly maintained in working order. Faucets should be free from leaks or drips and should shut off completely
- 3) Every dwelling unit must contain a bathtub and/or shower. Bathtub and/or shower may be in the same room as the flush water closet and lavatory, or said bathtub and/or shower may be in a separate room. These facilities must be properly connected to both hot and cold running water lines, under pressure, and must be maintained in working order. Faucets shall be free from leaks or drips and shall shut off completely.
- 4) Toilets and bathrooms must have doors with a privacy type lock and such doors, lock and hardware must be operable and maintained in working order.
- 5) Every dwelling must have supplied water-heating facilities which are properly installed; are maintained in working condition and free of leaks; are properly connected to any required hot water lines; and, are capable of heating water to be drawn for every bath as well as general usage
- 6) Every kitchen sink, toilet, lavatory basin and bathtub/shower, must be maintained in working condition and be properly connected to an approved water and sewer or septic system.
- 7) The following shut off valves will be installed:
 - a) One owner's shut off at the meter or supply source,
 - b) One shut off at each toilet,
 - c) One shut off each for hot and cold water at each sink/lavatory.
 - d) One supply side shut off at each water heater.
 - e) At least one exterior faucet must be installed and all faucets must be freeze protected.

12.3 Fixtures

- 1) Existing Plumbing Fixtures which are to remain shall be placed in good working order. All missing or damaged trim shall be replaced with new trim of same design or the entire set shall be replaced.
- 2) Water Closet: Only standard US made brand is acceptable and shall include a two (2) piece close coupled white, vitreous china, water saving commode (gallons per flush to current code). Includes pressed wood toilet seat, supply line, shut-off valve and one (1) bowl wax ring.
- 3) Kitchen sink shall be a new stainless steel seven (7) inches deep medium-grade double compartment, 33x22 inch self-rimming unit installed in kitchen complete with new ADA Compliant single handled mixer faucet, with vegetable sprayer, American Standard Colony Soft Kitchen Faucet w/ separate spray (Model #: 4175.501 or written approved equivalent washer-less), basket strainers, new continuous waste, P-trap assembly, DWV, etc. to code.
- 4) Lavatory: Unit shall include a 18" or 24" vanity (if space allows) complete with wood cabinet or equal, with cultured marble top, supply risers, shut-off valves and all necessary hardware.
- 5) Lavatory faucets to be ADA Compliant American Standard Colony Soft Single Control Faucet w/ pop-up drain or written approved equivalent. Model #: 2175.503
- 6) Tub shall be a 5' white enameled steel/fiberglass tub complete with a lever operated pop-up drain and overflow, PVC waste, a single lever shower diverter and a water saver showerhead.
- 7) Tub/shower faucets to be ADA Compliant American Standard products utilizing ceramic disc valves from the Colony Series or written approved equivalent.
- 8) Shower pan shall be installed as per manufacturer's instructions and have a City inspection.
- 9) Dryer venting shall be ducted to the exterior of the structure. All openings shall be rodent and weatherproof.
- 10) Washer connections shall be recessed mount box in wall with DWV and water faucets.
- 11) Hose bibs shall be installed at locations on the plans. Exterior hose bibs shall be the frost proof type with built in vacuum breaker. Backflow preventers are required.

12.4 Water Heaters

- 1) All water heaters must and carry a 5 year tank warranty, and be properly vented and sealed.
- 2) All water heaters will have at least thirty gallons storage capacity. Will be able to supply a continuous flow of hot water of at least 102 degrees F, and will be properly installed with gas and or electric shut-off valves as well as cold water supply shut-off valves.
- 3) Each unit shall be equipped with a functioning pressure release valve (TPL) which must release pressure at 150 P.S.I. and/or 210 degrees F. Water released must be exhausted to the exterior of the building.
- 4) Each water heater must be enclosed (except where otherwise permitted by the SBCCI) in a sealed closet designed for this purpose with combustion air drawn from outside the

living area. Any gas water heater installed in garage areas will be located at least 18" above the floor in order to prevent combustion of fuel vapors.

5) Energy Efficiency Requirements

- a) Electric water heaters must meet the minimum energy efficiency requirements outlined in the following chart when acquiring residential electric resistance water heaters of the types and sizes described below.

Energy Efficiency Requirements for Federal Purchases		
Storage Volume	Energy Factor	Annual Energy Use
55 gallons or less	0.93 or greater	4,721 kWh or less
56 gallons or more	0.92 or greater	4,773 kWh or less

- b) Where specified, residential electric resistance water heaters that meet or exceed the energy efficiency requirements outlined above are required.
- c) Water heater pipe insulation must have a minimum thickness of 3/4". All hot and cold vertical lengths of pipe shall be insulated, plus the initial length of horizontal hot and cold water pipe until wall penetration.

12.5 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Lack of a continuous sanitary water supply. Where ground wells are used, this source should be approved for drinking or a secondary source of drinking water should be available;
 - b) Lack of a continuously functioning sanitary waste water disposal system;
 - c) Missing, dysfunctional or non-existent sanitary facilities including a functioning toilet in a separate room designed for such purposes. The lack of at least one sink and or lavatory for hygiene and at least one sink for kitchen purposes, each providing a continuous flow of both hot and cold water. The lack of at least one functional bathing facility;
 - d) Deteriorated, rotted, broken or otherwise worn water supply or waste water pipes;
 - e) Evident leaks either continuous or intermittent of either waste water or water supply lines.
 - f) This includes evidence of pooling underground of water mains, sewer feeds or septic drain fields;
 - g) Missing or blocked vent pipes;
 - h) Gas water heaters are prohibited in bathrooms, sleeping rooms, and closets;
 - i) Missing gas shut off valve for water heater;
 - j) Water heater combustion air taken from living area except when adequate air exchange meets SBCCI standards;

- k) Missing or dysfunctional water heater TPL valve. TPL drain should flow at an angle not exceeding horizontal and exhaust flow to exterior of building;
 - l) Inadequate water heater exhaust pipe, combustion exhaust should be double walled and skirted at all penetrations;
 - m) Water Heater storage tanks less than thirty gallons;
 - n) Water Heater storage tanks that have calcified;
 - o) Water heater pipes, nipples or tanks elements that are rusted or corroded.
 - p) Missing or dysfunctional shut off valves one of which should be located at the following locations:
 - i. One shut off at the meter or supply source,
 - ii. One shut off at each toilet,
 - iii. One shut off each for hot and cold water at each sink/lavatory,
 - iv. One supply side shut off at each water heater.
 - v. The lack of fully functioning faucets at each sink/lavatory, bathtub/shower, at and at least one exterior hose bib
- 2) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 13 – Electrical

13.1 General specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.
- 2) All habitable rooms and other appropriate spaces requiring electrical services shall be provided with a system of wiring, wiring devices, and equipment to safely supply electrical energy for proper illumination, appliances, resident security, and other electrical equipment.
- 3) All electrical work must be performed by a licensed electrician, and a copy of the permit issued by the City Building Inspection Department must be PROPERLY DISPLAYED prior to commencement of work on the electrical system. All electrical work must be inspected by the City Building Inspection Department.
- 4) For Historic properties, the City recommends identifying, retaining, and preserving visible features of early mechanical systems that are important in defining the overall historic character of the building, such as fans, grilles, and switch plates, and lights. For more detailed information see:
http://www.nps.gov/hps/tps/standguide/rehab/rehab_mechsystems.htm
- 5) All wiring must utilize copper conductors; aluminum conductors are disallowed.
- 6) All wiring must be fished in wall cavities. Any surface mounted wiring must be in smooth EMT conduit or wire mold securely mounted.
- 7) All electrical components, installations and modifications shall comply with NEC, and amended Codes and Ordinances of the City of San Antonio, Texas.

- 8) In case of any conflict between the plans and the National Electrical Code, the National Electrical Code will prevail and all work must be performed in accordance with said code. In case of any conflict between the plans and the Codes and Ordinances of the City, the Codes and Ordinances of the City will prevail and all work must be performed in accordance with said codes and ordinances.
- 9) GFCI's will be installed according to State of Texas property code, City of San Antonio building code current at the time of construction. and manufacturer's recommendation; such devices will be properly grounded and tested for proper function.

13.2 Service

- 1) New Service Entrance must be a minimum 200 amp, 120/240v service as per the plans.
- 2) New Service shall include capacity for 200 amps, grounding and lightning arrester.
- 3) Service and panel box shall include, capacity of service as indicated, box with number of circuits as indicated, lightning arrester and ground. Distribute all circuits to avoid overload of service.

13.3 Fixtures

- 1) Materials shall be new and shall be UL Approved and/or National Electrical Code rated. New light fixtures shall be metal and not plastic.
- 2) All existing or new 220v appliances/equipment shall be retrofitted with new cord to be compatible with receptacle required by the State of Texas property code and City of San Antonio Building Code.
- 3) Bathroom ceiling heater must be forced fan unit. Install as per the plans and the manufacturer's recommendations.
- 4) Bath exhaust fan must be U.L. approved and installed to meet City of San Antonio building code current at the time of construction..
- 5) Newly installed Range Hood must be U.L. listed and vented through the roof.

13.4 Smoke and CO Detector

- 1) For all new construction, 110 volt U.L. listed smoke alarm units shall be installed according to State of Texas property code, City of San Antonio building code current at the time of construction, and manufacturer's recommendation at location(s) specified on project specifications. Also at least one carbon monoxide detector must be installed if natural gas or other combustible is used as fuel source.
- 2) For all rehabilitation projects, U.L. listed smoke alarm units shall be installed according to State of Texas property code, City of San Antonio building code current at the time of construction and manufacturer's recommendation. Also at least one carbon monoxide detector must be installed if natural gas or other combustible is used as fuel source.

13.5 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - a) Equipment or wiring which is missing, broken, disconnected, loosely connected, burnt, unsupported, corroded, cracked, split, has evidence of overheating, physical damage, or misuse;
 - b) Device or equipment is dirty, full of debris, infested etc.;
 - c) Frayed wiring is present;
 - d) Unshielded, knob and tube wiring is present;
 - e) Circuit breaker, switch, receptacle, fixed equipment, wiring or cable is not compatible with the phase, voltage, amperage, or other characteristics of the electricity in use;
 - f) Intermittent operation of fixed equipment, switches, outlets or other devices;
 - g) Flexible cord is used as a permanent wiring method;
 - h) Interior wiring is surface mounted and not conduit. This excludes crawl spaces and other allowable installations where access to wiring is limited;
 - i) Exterior wiring which is exposed to damp conditions, sunlight or potential damage is not conduit;
 - j) Bathroom receptacle, kitchen receptacle located within six feet of a water source garage receptacle or other outdoor receptacle are not protected by a ground fault interrupting device;
 - k) Polarity is reversed in connections or receptacles;
 - l) Branch circuits, feeder lines, cable size, device rating, circuit breakers, sub-panels or service panels are inadequate for the load as calculated by the current NEC standard Section 110-14. CABO sections 4100-4500 or the SBCCI sections;
 - m) Unlabeled circuit breakers;
 - n) Circuits that have been expanded past their original design limits;
 - o) Missing or dysfunctional overhead or other switch operated lighting in each interior room;
 - p) Missing or dysfunctional lighting at each exterior door operated by an interior switch that is within reach of the door;
- 2) Any other condition not mentioned which meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

Section 14 – Mechanical Systems

14.1 General Specifications

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.

- 2) For Historic properties, the City recommends identifying, retaining, and preserving visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, vents, fans, and grilles. For more detailed information see:
http://www.nps.gov/hps/tps/standguide/rehab/rehab_mechsystems.htm
- 3) Central heat and air unit shall be U.L. listed. The unit shall be and shall comply with the Energy Conservation Code. It shall include all connections, piping, and fittings. BTU output and number of units shall be determined in the individual specifications. Unit must be installed by a licensed HVAC contractor in accordance City of San Antonio building code current at the time of construction. The thermostat must be capable of being set by adjustment or selection of sensors from at least 55° to 85° Fahrenheit and shall be capable of operating the system heating and cooling in sequence.

14.2 Minimum Mechanical Systems Standards

- 1) Each dwelling and/or dwelling unit must be supplied with its own heating system.
- 2) All heating facilities must be properly installed, be maintained in working condition and be capable of adequately heating all habitable rooms, bathrooms, and toilet rooms contained therein, or intended for use by the occupants thereof, to a temperature of at least 70 degrees F. (21 -degrees C.) at a distance 3 feet above the floor when the outside temperature is at or below minus 10 degrees F.
- 3) Ambient heat must be supplied from an adequate heat source in an adjoining room or hallway;
- 4) Every supplied central heating system must comply with all of the following requirements:
 - a) The central heating unit must be safe and in good working condition.
 - b) Every heat duct, steam pipe, and hot water pipe must be free of leaks and must function so that an adequate amount of heat is delivered where intended;
 - c) Every seal between any of the sections of a hot air furnace must be air-tight so noxious gases and fumes will not escape into the heat ducts; liner must be installed. The liner must meet or exceed the requirements of the City of San Antonio building code current at the time of construction, and must be installed according to same.
 - d) Whenever an existing structure has as its source of central heat the old octopus type conversion furnace, the unit must be inspected by a qualified furnace inspector to determine if the unit is still safe, free from carbon-monoxide leakage and capable of supplying heat as required above.
- 5) Every supplied space heater must comply with all of the following requirements:
 - a) No space heater burning solid, liquid, or gaseous fuels must be of a portable type;
 - b) Every space heater burning solid, liquid, or gaseous fuels must be properly vented to a chimney or duct leading to outdoor space and must be so installed as to provide proper draft (except when a functioning ODS system and a CO testing device is installed).

- c) Every fuel burning space heater must have a fire-resistant panel between it and the floor or floor covering; whenever a space heater is located within 2 feet of a wall, said wall must be protected with insulation sufficient to prevent overheating of the wall.
 - d) Every space heater smoke pipe must be of a double walled variety and must be equipped with approved type thimbles or guards, properly constructed of non-flammable material. At the point where the pipe goes through any wall, ceiling, or partition the pipe must be surrounded by a protective collar or escutcheon.
 - e) Whenever feasible, un-vented free standing space heaters shall be removed and replaced with vented types. In rare situations, when vented type units are not feasible, un-vented ODS equipped units may be installed if approved by the City. In cases where ODS equipped heater are used a Carbon Monoxide testing device will be permanently installed.
- 6) All Texas, "T" valves should be replaced with approved shut off valves.
 - 7) All mechanical work must be inspected and approved by the City's building inspection department .

14.3 Heat Pumps

Installation & Efficiency Standard

- 1) Equipment shall be properly sized to dwelling based on ASHRAE or ACCA Manual J standards.
- 2) Manufacturer data sheets on installed air conditioning equipment or ARI equivalent combined compressor and coil HSPF must be provided to the utility in the Implementation Report.
- 3) Heat pumps shall have a minimum SEER of 14.00 and an HSPF of 8.2.

14.4 Central Heat and Air Conditioner

Installation & Efficiency Standard

- 1) Air conditioning equipment shall be properly sized to dwelling based on ASHRAE or ACCA Manual J standards.
- 2) Manufacturer data sheets on installed air conditioning equipment or ARI reference numbers must be provided.
- 3) The central air conditioning equipment must meet the following standards:
 - a) Minimum ARI-listed SEER rating of 14.00
 - b) Minimum ARI-listed EER of 11.5
 - c) Heat pumps must have a minimum ARI-listed HSPF rating of 8.2

14.5 Hazardous/Substandard Conditions

- 1) Hazardous conditions must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:

- a) The lack of a steady and dependable source of heat which will supply heat to all living areas either directly or indirectly and be able to maintain this heat at least 70 degrees. F. in all conditions;
- b) Open flame gas or propane heaters which exhaust fumes to the interior of the living area and are not equipped with an Oxygen Depletion System (ODS). If an open flame type heater equipped with ODS is used a carbon monoxide detector must be installed;
 - i. Leaking, damaged or inadequate heat exchange units or venting systems which create the danger of CO build up;
 - ii. Leaking, corroded or damaged gas supply lines;
 - iii. Texas-T type shut valves;
 - iv. The lack of a functioning supply shut off valve for each gas or propane device;
 - v. The lack of a functional pilot or electric start for each gas or propane device;
 - vi. Ambient heat which is not supplied from an adjoining room;
 - vii. Free standing electric heaters used for sole source of heat.

Section 15 – Miscellaneous

15.1 Pest Control

- 1) Property must have a one-time treatment for termite control.
- 2) Green dye in the termite treatment is required to help ensure adequate coverage.
- 3) The extermination must be performed by a licensed and bonded company and must have a one year written warranty or guarantee delivered to the Owner through the City.
- 4) Hazardous and Substandard Conditions
 - a) Must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - i) Infestations of pest, wood destroying insects, or vermin;
 - ii) Untreated wood having direct ground contact and used for structural purposes;
 - iii) Cluttered debris or stored materials suitable for rodent or insect habitat.
 - b) Any other condition not mentioned that meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

15.2 Attic Access

- 1) Must be located as per the plans. Dimensions must be listed on the plans.
- 2) Unless otherwise specified on the plans, scuttle hole cover must be 5/8", plywood with a smooth finish. Trim must be H trim with mitered joints.
- 3) Paint to match other trim in house.
- 4) Cover must have insulation batt cut to fit on top of it.

15.3 Gravel Walks and drives

- 1) Gravel Walks and drives must be made of washed gravel $\frac{3}{8}$ " diameter minimum.
- 2) Gravel must be 4" thick minimum over a well graded and compacted soil.
- 3) Gravel must be contained by 2" x 12" treated lumber (note: distance from ground level to top of board not less than 2").

15.4 Gutters

- 1) Gutters and downspouts must be galvanized metal, or aluminum, properly hung.
- 2) A directional fitting must be installed to divert water away from the house.
- 3) A concrete splash block must be placed under each downspout.

15.5 Insulation

- 1) General specifications shall meet Texas Minimum Construction Standards, and City of San Antonio building code current at the time of construction.
- 2) Exterior wall insulation: provide foil or paper faced glass fiber batts having a thermal resistance "R" value of at least R-13.
- 3) Ceiling insulation: provide foil or paper faced glass fiber batts having a thermal resistance "R" value of at least R-30.
- 4) Floor Insulation: provide foil or paper faced glass fiber batts having a thermal resistance "R" value of at least R-11.
- 5) Install all insulation according to manufacturer's instructions unless otherwise specified.
- 6) Blown insulation is acceptable but should have proper fire retardance and be placed above and below fire blocking.

15.6 Hardware

- 1) All exterior deadbolt locks are to be ASNI rated *Security Grade 1*.
- 2) All entrance locksets must be keyed alike with deadbolts.
- 3) *Schlage Accent Universal Residential Keyed Entry Door Lever* shall be installed on all exterior entry doors. Any alternate brands must be approved by the Contract Administrator.
- 4) *Schlage Residential Single-Cylinder Deadbolts (Security Grade 1)* shall be installed on all exterior entry doors. Any alternate brands must be approved by the Contract Administrator.
- 5) Keyed Entry sets and Deadbolt locks for new construction are to be finished in satin nickel/chrome unless otherwise specified.
- 6) Keyed Entry sets and Deadbolt locks for rehabilitation projects are to match existing hardware as close as possible.
- 7) Interior Doors on new construction - All bathroom and bedroom doors shall have *Schlage Privacy Accent Push-Button Lock Residential Privacy Door Lever*.
- 8) All other interior doors on new construction shall have *Schlage Accent Residential Passage Door Lever*.
- 9) All door hardware on rehab projects shall match existing hardware as closely as possible.

- 10) All doors must have a wall mounted door stop, strike-plate, and lockset, with 1 ½ pair of appropriate hinges.
- 11) Bathroom hardware must include the following unless otherwise specified:
 - a) Two chrome towel bars 18", long
 - b) Chrome toilet tissue holder.
 - c) Chrome toothbrush and tumbler holder.
 - d) Shower/tub panel kit must be ABS plastic unit sealed with matching color silicone caulk. Master bath unit must be ADA compliant.
 - e) Chrome shower curtain rod.

15.7 Landscaping

- 1) Upon final cleanup and removal of all materials and debris, yard must be hydro-mulched, or sodded with a turf grass appropriate to the local climate, or as specified in individual work write-up.
- 2) Replacement landscaping will be of native/adaptive and drought resistant species.
- 3) Utilize low-water requirement turf. Long, narrow strips of turf should be eliminated.
- 4) Low-water use, drought-tolerant, native and adaptive plants shall be utilized.
- 5) Group plants according to water usage.
- 6) Choose plants suitable to the South Central Texas climate.

<http://www.saws.org/conservation/outdoor/plants/index.cfm>

Section 16 – Project Close-Out

16.1 Cleaning

- 1) Remove all construction debris from the site.
- 2) Clean and mop all resilient floors.
- 3) Clean all paint from other finished surfaces including window glass and mirrors.

16.2 Operating Items

- 1) Start all systems and leave all newly installed items in operating condition.
- 2) The Contractor shall be responsible for determining that all plumbing and electrical fixtures, switches and receptacles, which were part of the Scope of Work, are in proper working order upon completion of the rehabilitation.

16.3 Preparation of Structure

- 1) Prepare structure for Owner's occupancy.

16.4 Hardware

- 1) All hardware to be put in operating condition.
- 2) New keys must be turned over to Grants Administrator upon final completion.

APPENDIX

City of San Antonio

Minimum Property Design Standards

- 1) All property rehabilitations shall comply with HUD's "Nationally Applicable Recommended Rehabilitation Provisions" (NARRP).
http://www.huduser.org/publications/destech/narrp/toc_narrp.html
- 2) All material shall be new, recently purchased, and in excellent condition. Only the material specified shall be the material which is used, and only the brand specified shall be the brand used, unless an equal is specified. The Contractor shall obtain written approval for an equal from the City of San Antonio prior to purchasing and installing the equivalent material.
- 3) Contractor must provide samples to the City for selection for all materials as cited in the individual specifications and provide reasonable time to the City to make selections. Contractor must obtain a letter from the Grants Administrator, stating that the Grants Manager approves of colors and quality of items such as, but not limited to; paint, flooring materials, brick, shingles, vinyl siding, door/window/drawer hardware, and counter tops.
- 4) Quality of appearance and durable utility, being the direct result of quality workmanship, shall be the goal of the Program and the Contractors participating in the Program. Achievement of quality workmanship shall become a goal accomplished by applying standards of excellence which exceed the commonly accepted minimum standards. The quality of workmanship performed by the Contractor shall be scrutinized prior to acceptance by the City of San Antonio. The decision of the City of San Antonio will be final.
- 5) When repairs are made, the repairs must reasonably match the surrounding materials in original design and dimension as approved by the City.
- 6) Standards for Rehabilitation of Historic Properties
 - a) A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
 - b) The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
 - c) Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

- d) Changes to a property that have acquired historic significance in their own right will be retained and preserved.
 - e) Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
 - f) Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
 - g) Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
 - h) Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
 - i) New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
 - j) New additions and adjacent or related new construction will be undertaken in a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired
- 7) Additions to Historic Properties:
- a) Although the work in these sections is quite often an important aspect of rehabilitation projects, it is usually not part of the overall process of preserving character-defining features (maintenance, repair, replacement) of historic properties; rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, radically change, damage, or destroy character-defining features in the process of rehabilitation work. Therefore, the City makes the following recommendations:
 - i. Placing functions and services required for the new use in non-character-defining interior spaces rather than constructing a new addition.
 - ii. Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed.
 - iii. Designing a new addition in a manner that makes clear what is historic and what is new.
 - iv. Considering the design for an attached exterior addition in terms of its relationship to the historic building as well as the historic district or neighborhood. Design for the new work may be contemporary or may reference design motifs from the historic building. In either case, it

should always be clearly differentiated from the historic building and be compatible in terms of mass, materials, relationship of solids to voids, and color.

- v. Placing a new addition on a non-character-defining elevation and limiting the size and scale in relationship to the historic building.
- vi. Designing a rooftop addition when required for the new use that is set back from the wall plane and as inconspicuous as possible when viewed from the street.
- vii. Ref: http://www.nps.gov/hps/tps/standguide/rehab/rehab_newadd.htm

8) Minimum Space Standards for Ceilings

- a) Wherever possible, a habitable room in a dwelling or dwelling unit must have a ceiling height of not less than 7'-6". At least ½ of the floor area of every habitable room located above the 1st floor must have a ceiling height of 7'-6". The floor area of that part of any room where the ceiling height is less than 7'-6" must not be considered as part of the floor area in computing the total floor area of the room for the purpose of determining maximum floor area.
- b) Where the ceiling height of a habitable room is less than 7' and it would be cost-prohibitive to raise said ceiling, the requirement may be waived provided the Contract Administrator does so in writing.
- c) A ceiling height of a minimum of 7' is acceptable in bathrooms, toilet rooms, hallways, utility rooms, and kitchens.

9) Minimum Space Standards for Hallways

- a) All rooms, except kitchens and/or kitchenettes and baths, hallways, storage rooms and porches must have, a minimum width of 7'.

10) Minimum Space Standards for Kitchens

- a) All kitchens must have adequate food storage facilities including at least three linear feet of counter area for food preparation, adequate cabinet space in good repair.
- b) All kitchens must have a working refrigerator, cook-top and oven.

11) Minimum Space Standards for Bathrooms

- a) The bathroom must be located in a separate private room and have a flush toilet in proper operating condition.
- b) The bathroom must have a fixed basin in proper operating condition, with a sink trap and hot and cold running water.
- c) The bathroom must have a shower or a tub in proper operating condition with hot and cold running water.
- d) The facilities must utilize an approvable public or private disposal system, including a locally approvable septic system.

12) Minimum Space Standards for Bedrooms

- a) Every bedroom shall contain at least 70 square feet.
- b) Bedrooms must not constitute the only means of access to other bedrooms or habitable spaces and shall not serve as the only means of egress from other habitable spaces, except when the unit contains fewer than two bedrooms.

13) Hazardous and Substandard Conditions

- a) Must include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead to the lack of functional viability of a single feature of a home. These conditions must include but not be limited to:
 - i. Lack of adequate food storage, food preparation area, refrigeration or cooking facilities.
 - ii. Spaces that are so small as to be unusable or inadequate for their intended purpose.
- b) Any other condition not mentioned that meets the definition of a hazardous or substandard condition should be repaired and/or rehabilitated to meet industry standards.

City of San Antonio

Project/Contractor Requirements

- 1) LINES AND GRADES. The plans must include a horizontal control line (baseline) and vertical control points (bench marks). These have been established in the field and will be re-established or shown to the Contractor prior to commencing construction. After construction has started, the Contractor shall be responsible for protecting and preserving these controls. From these controls, the Contractor shall stake all alignments for the work and will be responsible for all horizontal and vertical construction staking.
- 2) SUPERINTENDENCE. The Contractor or his appointed Superintendent(s) shall provide proper superintendence for this entire project. Correspondence, questions concerning the project, interpretations and instructions shall be to or through the Contractor or the Superintendent. The City will not in any manner supervise the Contractor's workmen or subcontractors.
- 3) PROJECT MAINTENANCE. The project area shall be maintained by the Contractor in a neat, passable condition. Vehicular access shall be maintained to every house and adjacent property. The Contractor shall provide a crew to maintain streets and driveways during holidays and weekends for the period of this contract.
- 4) EXTENSION OF TIME. The Contractor may make written request for an extension of time because of acts of God, acts of war, strikes, or unavailability of materials because of failure of the manufacturer or transporter. The Contractor shall support, by written evidence, any claim for a time extension because of any delay in receipt of material. An extension of time will not be granted for normal material delivery times, or failure of the Contractor to act properly toward the timely completion of the project.

Upon written request, additional contract time will be granted only for the number of days that exceed the National Climatic Data Center's historical average number of days of rainfall of 0.1". Rain days shall be defined as a day with 0.1" or more of measured rainfall, as measured at the Gregg County Airport.

- 5) INSURANCE. The Contractor shall not commence work under this contract until he has obtained at his expense all insurance required under this section of the Special Provisions and by the Contract Documents and such insurance has been approved by the City and Owner, nor shall the Contractor allow any subcontractor to commence work on any subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Such insurance shall remain in full force and effect on all phases of the work, whether or not the work is occupied or utilized by the Owner, until all work under the Contract is completed and has been accepted by the Owner and approved by the City.

Nothing contained in the insurance requirements shall be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operations under the Contract.

Any insurance bearing an adequacy of performance will be maintained after completion of the project for the full guarantee period.

The Contractor shall obtain and maintain for the full period of the Contract the following types of insurance in the form, minimum limits and amounts herein specified or as may be otherwise required in the Contract Documents. The Contractor shall automatically renew any policy which expires during the performance of his Contract and notify the Owner and City of such a renewal prior to expiration date.

a) Workmen's Compensation including Occupational Disease, and Employer's Liability Insurance.

i) Definitions:

- (1) *Certificate of coverage ("certificate")* - a copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.
 - (2) *Duration of the project* - includes the time from the beginning of the work on the project until the Contractor's/person's work on the project has been completed and accepted by the Owner and approved by the City.
 - (3) *Persons providing services on the project ("subcontractor" in 406.096)* - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
- ii) The Contractor shall provide coverage, on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.
 - iii) The Contractor must provide a certificate of coverage to the Owner and the City prior to being awarded the contract.
 - iv) If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the Owner and the City showing that coverage has been extended.
 - v) The Contractor shall obtain from each person providing services on a project, and provide to the Owner and the City:

- (1) a certificate of coverage, prior to that person beginning work on the project, so the Owner and the City will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (2) no later than seven days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- vi) The Contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
 - vii) The Contractor shall notify the City and the Owner in writing by certified mail or personal delivery, within 10 days after the Contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
 - viii) The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
 - ix) The Contractor shall contractually require each person with whom it contracts to provide services on a project, to:
 - (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - (2) provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
 - (3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (4) obtain from each other person with whom it contracts, and provide to the Contractor:
 - (a) a certificate of coverage, prior to the other person beginning work on the project, and
 - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - x) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - xi) notify the Owner and the City in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - xii) Contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificate of coverage to be provided to the person for whom they are providing services.
 - xiii) By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the Owner and the City that all employees of the

Contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

xiv) The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the Owner or the City to declare the contract void if the Contractor does not remedy the breach within ten days after receipt of notice of breach from either the Owner or the City.

- b) Public Liability Insurance. (Note "Indemnity" clause hereinafter). Before commencement of the work, the Contractor shall submit written evidence that he and all his subcontractors have obtained for the period of the Contract full Comprehensive General Liability Insurance coverage. This coverage shall protect the Contractor; the City of San Antonio, the Owner; and each of their officers, agents and employees from claims for damages for bodily or personal injury, sickness or disease, including death, and from claims for damages to property, which may arise directly or indirectly out of, or in connection with the performance of work under this Contract by the Contractor, by any of his subcontractors, or by anyone directly or indirectly employed of either of them, or under the control of either of them, and the minimum amount of such insurance shall be as follows unless higher minimum amounts are otherwise required in the Contract Documents:
- i) Public Liability Insurance in an amount not less than One Million Dollars (\$1,000,000) for damages arising out of bodily or personal injury, sickness or disease, or death of one person and subject to the same limit for each person in an amount not less than One Million Dollars (\$1,000,000) in any one occurrence;
 - ii) and property damage in an amount not less than One Million Dollars (\$1,000,000) for all single combined damages arising out of injury to or destruction of property of others in any one occurrence with an aggregate limit in the same amount.

The Property Damage portion of this coverage shall include explosion, collapse and underground exposure coverage. In addition, where Completed Operation Insurance coverage is applicable, such coverage will be maintained after completion and acceptance of the project for the full guarantee period.

- c) Automobile Liability Insurance: Before commencement of the work, the Contractor shall submit written evidence that he and all his subcontractors have obtained Automobile Liability Insurance coverage on all self-propelled vehicles designed for travel on public roads used in connection with the Contract, whether owned, non-owned, or hired. The liability limits shall not be less than Two Hundred Fifty Thousand Dollars (\$250,000) for injury or death of one person and in an amount not less than Five Hundred Thousand Dollars (\$500,000) in any one occurrence; and Property Damage limits of not less than One Hundred Thousand Dollars (\$100,000) in any one occurrence.
- d) Contractual Liability Coverage: Each and every policy for Liability Insurance carried by the Contractor and each subcontractor will include a "Contractual Liability Coverage" endorsement sufficiently broad to insure the provision titled "Indemnity" hereinafter set forth.

- e) Indemnity: The Contractor shall defend, indemnify and hold harmless the Owner, the City of San Antonio, and each of their officers, agents, servants, and employees; from any and all suits, actions, claims, losses or damage of any character and from all expenses incidental to the defense of such suits, actions or claims, based upon or arising out of or alleged to be based upon or arising out of (1) any injury, disease, sickness or death of any person or persons, (2) any damages to any property including in part loss of use thereof, caused by any act or omission of the Contractor, of any subcontractor of the Contractor, or by their officers, agents, servants, employees, or anyone else under the Contractor's direction and control, and arising out of, occurring in connection with, resulting from, or caused by the performance or failure of performance of any work or services called for by the Contract or from conditions created by the performance or non-performance of said work or services, but not including the sole negligence of any party herein indemnified.
- f) Builders' Risk "All-Risk" Insurance: In addition to such Fire and Extended Insurance coverage which the Contractor or his subcontractors elect to carry for their own protection, the Contractor, before commencement of the work, shall effect and maintain for the life of his Contract Builders' Risk "All Risk" completed Value Insurance coverage upon the full insurable value of all portions of the project which is the subject of this Contract and subject to a loss for which Builders' Risk "All-Risk" Insurance coverage gives protection, and shall include completed work and work in progress. This coverage shall be with an insurance company or companies acceptable to the Owner and approved by the City. Such insurance shall include as Additional Named Insured: The Owner; the City, and any of their officers, agents, and employees; and any other persons with an insurable interest designated by the Owner or the City as an Additional Named Insured. Duplicate originals of the policy of insurance required herein shall be furnished to the City of San Antonio as provided under "Evidence of Insurance Coverage" hereinafter.
- g) Evidence of Liability & Builders' Risk Insurance Coverage: Before commencement of any work, the Contractor shall submit written evidence that he and all his subcontractors have obtained the minimum insurance required by the Contract Documents. Such written evidence shall be in the form of a Certificate of Insurance executed by the Contractor's insurance carrier showing such policies in force for the specified period or by furnishing a copy of the actual policy or policies. Each policy or certificate will bear an endorsement or statement waiving right of cancellation or reduction in coverage without ten (10) days' notice in writing to be delivered by registered mail to the Owner and to the City. The Contractor shall furnish duplicate originals of Builders' Risk "All-Risk" Completed Value Insurance coverage to the City of San Antonio, one copy of which shall be for the City, one copy for the Owner.

- 6) WATER FOR CONSTRUCTION. The Contractor to provide and pay for construction water.
- 7) ELECTRICITY. The Contractor shall make his own arrangement for electricity.
- 8) EXPLOSIVES. The use of explosives will not be permitted.
- 9) SANITARY REQUIREMENTS. The operations of the Contractor shall be in full conformance with all of the rules and regulations of boards and bodies having jurisdiction with respect to

sanitation. The Contractor shall supply safe and sufficient drinking water to all of his employees, shall obey and enforce all sanitary regulations and orders, and shall take precaution against the spread of infectious diseases. Acceptable, portable, chemical-type toilets shall be provided and maintained by the Contractor.

- 10) DISPOSAL OF SURPLUS MATERIALS. All surplus materials not included or incorporated in the project shall be removed from the site to the satisfaction of the City of San Antonio.
- 11) SIGNS, BARRICADES, AND LIGHTING. The Contractor shall provide and erect construction signing, barricades and lighting to protect the public in connection with the work, all in accordance with the latest published provisions of the Texas Manual of Uniform Traffic Control Devices and as approved by the City. The construction drawings indicate only the general signing required and do not detail the requirements for protection in connection with trenching and other construction operations.

Existing street signs, traffic signs and all other signs within the project area shall be protected, maintained and replaced if damaged or stolen; all by the Contractor as approved by the City.
- 12) MATERIALS AND WORKMANSHIP. All materials incorporated into this project shall be new and of first quality except as specifically provided for in the technical specifications. The workmanship shall be of the highest level as approved by the City.
- 13) EXISTING FACILITIES. Whether shown on the plans or not, the Contractor shall be completely responsible for the protection or replacement of all facilities within the project area and in connection with the work.
- 14) GUARANTEE. As a part of this project, the Contractor shall guarantee all materials and workmanship and shall repair or remove and replace any defective condition as determined by the City. Such guarantee shall be effective for a period of one year from the date of written acceptance by the Owner and approval by the City or date of final payment whichever is first. The maintenance bond shall be in full effect throughout the warranty period.
- 15) STATE SALES TAX. The Contractor's attention is directed to Section 3.291 of the Texas Administrative Code. Contractor will obtain the necessary permit or permits from the State Comptroller allowing the purchase of materials for incorporation in this project without having to pay the Limited Sales, Excise and Use Tax at the time of purchase. Such offerors must submit segregated prices for the total cost of materials and total cost of services, and the successful offeror must require his subcontractors to obtain such permits and to sign written sub-contracts in which the prices are segregated for the total cost of materials and the total cost of services. Total materials cost should not include materials which are used or consumed in performing the work, but do not become a part of the completed installation.
After the proposal opening and after any subsequent negotiations but prior to execution of contract, the successful offeror will be required to provide a separation of materials costs and labor costs for the amounts of the proposed price and any alternatives. The following form

shall be used to provide this information. This form shall be submitted in six (6) copies with the executed contract and such statement will become a part of the contract:

STATEMENT OF MATERIALS AND SERVICES

City of San Antonio

Project Name: _____
Total Materials
Cost: \$ _____
Total Service Cost: \$ _____
Total Contract
Price: \$ _____

Note: The total materials cost plus the total services cost must equal the amount shown for the total contract price.

16) CLEANUP. The entire project site shall be left in as good or better condition as the condition at the time construction is started, all as approved by the Owner and the City. All cleanup shall be completed within the time specified for the project construction and liquidated damages will be applied to cleanup time in the event such is performed after the contract time has expired.

17) CERTIFICATE OF INCORPORATION. In the event the Contractor is a corporation, the Contractor shall furnish a certificate issued by the Secretary of the State of Texas dated not more than thirty days prior to commencement of construction evidencing that the Contractor is a corporation duly incorporated under the laws of the State of Texas and currently in good standing, or in the case of a corporation not incorporated under the laws of the State of Texas, the certificate shall evidence that such corporation currently holds a permit to do business in the State of Texas and it is in good standing. Such corporate Contractor shall at all times pay all franchise taxes and other taxes and assessments levied against it by the State of Texas and at all times maintain its corporate status and good standing according to the laws of the State of Texas.

18) ALTERNATE MATERIALS AND METHODS. Consistent with the intent and character of this project, the Contractor may request from the City the substitution of materials or methods of construction which he believes will give equal results. The request shall be in writing and shall contain detailed information. The City will consider such requests and shall give his answer in writing. The City's judgment will be final and no reason for denial will be required except as may be offered by the City. The City may require additional information on which to make a judgment; in which case it shall be the entire responsibility of the Contractor to provide such information.

19) EXPECTED EARNINGS SCHEDULE. At the pre-construction conference for this project, the successful offeror shall submit to the City an "Expected Earnings Schedule". This table or chart shall show the amount of payment the Contractor expects to receive monthly on this project

until the project is completed. The table can be handwritten or typed. Though the Contractor shall make his best effort in estimating these payments accurately, the schedule shall be used for estimating purposes only and shall not bind the Owner, the City, or the Contractor to the listed payments. Payments, as usual, will be made upon actual work performed less the appropriate retainage.

- 20) PERFORMANCE AND PAYMENT BOND. Surplus lines carriers under Chapter 981 of the Texas Insurance Code are not eligible to act as sureties on Performance and Payment Bonds.
- 21) RETAINAGE. Retainage is that part of the contract payment withheld by the Contract Administrator to secure performance of the contract.
 - a) Retainage shall be withheld at the following rates:
 - i) For any contract where the total contract price estimate at the time of execution of the contract is less than \$400,000 retainage shall be 10%.
 - ii) For any contract where the total contract price estimate at the time of execution of the contract is greater than or equal to \$400,000 retainage shall be 5%.
- 22) INSPECTION. The Contractor is required to apply for all inspections and/or permits as per City of San Antonio requirements.
- 23) AS-BUILT DRAWINGS. The Contractor will provide the City, prior to final payment, one set of construction drawings for each home; red-lined to show any changes in actual construction.
- 24) PREVAILING WAGE RATES. Contractor agrees to abide by the requirements of Texas Government Code Chapter 2258, entitled "Prevailing Wage Rates," as applicable. Contractor understands that a contractor or subcontractor subject to the requirements of that Chapter must pay the prevailing wage rates as set forth in this Contract. Any contractor or subcontractor who violates this requirement may be subject to penalties as provided in Chapter 2258, including but not limited to a penalty of \$60 for each worker employed for each calendar day or part of the day that the work is paid less than the wage rates stipulated in this Contract."
- 25) ALLOWANCE FOR MISCELLANEOUS EXTRA WORK: A discretionary allowance has been established in the proposal for extra work, which may arise during the construction phase of the project due to the discovery of unknown obstructions or other unexpected project conditions for which a method of payment has not been established. This allowance is not intended to be used to procure payment for items specifically named as subsidiary to other items listed within the contract documents. Prior to initiation any item of extra work under the allowance item the Owner, City, and Contractor shall agree as to the scope of extra work to be performed and the amount of payment to be made for the particular item of extra work under consideration. Expenditure of the allowance funds is at the discretion of the Owner and must be approved by the City. The allowance may be used in full or in part, as the Owner deems necessary, but only if approved by the City. If no extra work is identified and approved by the Owner or if the City does not approve extra work, the allowance funds will not be expended. All allowance funds that have not been expended at the end of the project will be credited back to the City by means of a Final Change Order.