



TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

The purpose of Round 2 Minimum Housing Design Standards is to establish that all applicants who receive new or rehabilitation construction housing through programs funded by the State of Texas Disaster Recovery Program Round 2 live in housing which is safe, sanitary, and affordable. Furthermore, the Round 2 Minimum Construction Specifications shall facilitate that the investment of public and homeowner funds is a component that could lengthen the term of affordability and preserve habitability.

All work carried out with the assistance of funds provided through the Round 2 disaster recovery program shall be done in accordance with these standards and the Round 2 Minimum Construction Specifications, and unless otherwise defined shall meet or exceed industry and trade standards.

Codes, laws, ordinances, rules, regulations or orders of any public authority in conflict with installation, inspection, and testing take precedence over these standards.

A subrecipient can request a variance for a specific project to any part of these standards by submitting a written request to the GLO detailing the project location, the need for the variance, and if required, the proposed alternative. Variance requests can be submitted to:

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TEXAS GENERAL LAND OFFICE

DISASTER RECOVERY PROGRAM

IKE AND DOLLY ROUND 2 MINIMUM DESIGN STANDARDS

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STATE OF TEXAS DISASTER RECOVERY PROGRAM IKE AND DOLLY ROUND 2 MINIMUM DESIGN STANDARDS

1.0 Overview

1.1 The purpose of Round 2 Minimum Design Standards is to ensure that all applicants who receive new or rehabilitation construction housing through programs funded by the State of Texas Disaster Recovery Program Round 2 live in housing which is safe, sanitary, and affordable. Furthermore, the Round 2 Minimum Construction Specifications shall facilitate that the investment of public and homeowner funds is a component that could lengthen the term of affordability and preserve habitability.

1.2 All single family rehabilitation & reconstruction carried out with the assistance of funds provided through Round 2 disaster recovery funding shall be carried out in accordance with these standards and Round 2 Minimum Construction Specifications, and unless otherwise defined shall meet or exceed industry and trade standards.

1.3 Definitions and Acronyms

- A. Work Covered means all new and remodel construction work called for in the “work write-up” and plans.
- B. Home owner: Person to receive funds for structure
- C. Contractor: Builder awarded contract
- D. Contract Administrator: Grant Administrator. This can be the sub recipient
- E. Sub recipient: Units of local government

1.4 Inspections

- A. Inspections shall be carried out using the applicable Round 2 minimum Construction Standards and Specifications in addition to federal, state, and local code requirements. All rooms, porches, exterior areas, crawl spaces and attic spaces shall be included in all inspections. Inspections will include all issues included in the Minimum Construction Standards and Specifications but, when not indicated, any evident deficiency or hazard will be noted.

1.5 Work Write-Ups

- A. Work write-ups shall be written with enough detail to specify, each item to be repaired or constructed, quantity of materials to be used and exact location of work. Each item shall relate to a specific required HQS standard and shall have a specific line item cost estimate.

1.6 Contractors will be selected through a builder assignment method for new construction.

1.7 Contractors shall adhere to the terms of the construction contract including these minimum construction standards and the minimum construction specifications. No work will be approved except that which is established in the contract and in written approved change orders by the Contract Administrator. Whenever the need for clarification results in a change, such issues will result in a written change order prior to any work being completed. Any unforeseen or hidden condition shall be reported to the Contract Administrator immediately or no later than three work days. Any item that conflicts with these standards shall be reported immediately by the contractor.

1.8 Whenever possible the contractor shall make every effort to minimize the impact of the construction on the homeowner. Work shall be carried out swiftly and directly. The work area shall be secured at all times.

- 1.9 The work area shall be left clean and free from clutter at the end of each day and the contractor and not the homeowner will be responsible for storage of materials and tools.
- 1.10 Prior to the commencement of construction the homeowner shall arrange to move and store any valuable personal property that might be damaged during the course of construction. Contractor will maintain protection of existing adjacent surfaces and finishes prior to commencing construction. If property is damaged through negligence of the contractor, arrangements shall be made by the contractor to reimburse the homeowner.
- 1.11 The contractor shall use the site and its facilities only for specified construction. The electrical, water, sewer and gas systems shall be used only for construction purposes and during the construction phase only.
- 1.12 Any discrepancy in the contract documents shall be brought to the attention of the Contract Administrator immediately.
- 1.13 Failure of contractors to meet State of Texas criteria can result in;
 - A. Contractors not being eligible for payment, and
 - B. Contractor shall not become party to any future disaster recovery funded projects.
- 1.14 Within ten (10) days of receiving the issuance of the Notice to Proceed, the contractor shall begin pulling permits.
- 1.15 The number of work days shall be set out in the contract. Upon completion of the work acceptance by the Contract Administrator and homeowner, the Certificate of Final Inspection is issued and the Warranty Period begins.
- 1.16 Thirty (30) days after the Certificate of Final Inspection date, the statutory amount retained may be released to the contractor. In the case that punch list/warranty items are still pending from the final walkthrough, the Sub recipient reserves the right to hold retainage until all items have been addressed. In the event that punch list is not completed before the 30 day deadline, the Sub recipient reserves the right to have the punch list items completed by others and have the cost deducted from the retained amount.
- 1.17 For reconstruction, payments are to be requested when the project reaches approximately 30 percent (after foundation pour), 60 percent (structural and rough in completed), and 100 percent completion and at 30 days after Certificate of Final Inspection is issued. For rehabilitation, payments are to be made at 50 percent, 100 percent and at 30 days after Certificate of Final Inspection is issued.
- 1.18 All requests for payments will be made in writing by the contractor to the Contract Administrator and will include a list of items, their costs, and a sum of the item costs.
- 1.19 The work to be paid shall be based solely on completed items (less retainage) from the schedule of values submitted by the contractor prior to construction or the Itemization of Bid Form if no schedule submitted.
- 1.20 The Contract Administrator will inspect work in a timely fashion from the date of request.
- 1.21 All materials used shall be new (unless otherwise specified in the Project Manual) and of a good quality. All work shall be done with skilled craftsmen and accomplished with care. Contractor shall provide samples to the homeowner for selection for all materials as cited in the individual specifications and provide reasonable time to the homeowner to make selections. Contractor shall

submit a letter to the Contract Administrator, signed by the homeowner, stating that the homeowner approves of colors and quality of items such as, but not limited to; paint, flooring materials, brick, shingles, siding, door/window/drawer hardware, and counter tops.

- 1.22 Upon completion of construction, but prior to final inspection, the contractor will;
- A. Remove all construction debris from the site;
 - B. Clean and mop all floors;
 - C. Clean all new and existing paint from other finished surfaces including window glass and mirrors;
 - D. Leave all newly installed items in operating condition;
 - E. Light gas water heater pilots, stove/oven pilots and gas heater pilots;
 - F. Start all other electrical and mechanical systems;
 - G. Put all hardware in operating condition;
 - H. Schedule a meeting with homeowner to furnish equipment manuals and provide home operational and maintenance instructions as needed.
- 1.23 Discovery of defective elements made known to the contractor before or during the construction process shall be brought to the immediate attention of the Contract Administrator in writing. When repairs are made, the repairs shall reasonably match the surrounding materials in original design and dimension as approved by the Contract Administrator.
- 1.24 Where additional work is necessary to make repairs or to correct unforeseen dangerous conditions, the contractor shall submit to the Contract Administrator a proposal consisting of what type of work is needed, the cost of such work, and the time necessary for such work to be completed. Unless it is determined there exists an immediate health and safety danger, NO WORK SHALL BE AUTHORIZED until agreed upon in writing by the homeowner, contractor, and Contract Administrator.
- 1.25 Compensation for additional work will be negotiated in the following manner:
- A. The deletion of work proposed, but not started; or if that is not possible;
 - B. An increase to the dollar amount of the contract (if funds are available).
- 1.26 Contractor shall be responsible to determine utility needs, to provide adequate sanitary facility(s) and to safely operate equipment on site.
- 2.0 Site.
- 2.1 Minimum Site Standards
- A. The lot or defined site shall be free of debris, garbage or other accumulations of site stored items that create possibilities of infestations. The site shall be generally level, well drained, and accessible.
 - B. Sidewalks, Driveways and Parking Pads:
 - a. Sidewalks, driveways and parking pads shall be provided as required by Federal, State or local jurisdiction and as follows:
 - b. A handicap accessible route shall be provided from the street to one entrance door of the house in accordance with Texas Government Code 2306.514.
 - c. Sidewalks - 3 ft. to 4 ft. wide concrete sidewalk with specified finish from street to front porch.
 - d. Driveways and Parking Pads - If driveway or parking pad is required, 9 ft. wide concrete driveway with specified finish from street to garage (if house has a garage) or to parking pad (if house has a parking pad).

- e. When not in a municipality, an all weather surface, i.e. decomposed granite, shells, crushed limestone, etc. that forms a hard packed surface for an automobile to drive on may be used as access for a vehicle to travel from the road to a concrete parking pad or a suitably sized concrete exit pad that will allow a disabled person to exit and enter his/her vehicle and have access to a 36" wide route that meets ADA standards for slope and leads to a 36" wide entry door on the home.

C. Outdoor Lighting

- 1. Front porch light
- 2. Secondary egress door light

D. Grading

- 1. Finish Grade at house foundation shall provide positive drainage away from structure and shall start a minimum of 6 inches below finish floor at slab on grade or a minimum of 6 inches below pier footings for elevated floor.
- 2. Grading below elevated floor slab shall provide positive drainage away from house footprint.

2.2 Hazardous and Substandard Conditions

- A. Hazardous and substandard conditions shall 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 shall include but not be limited to:

- 1. Accumulated debris, waste, or garbage either in enclosed areas such as storage buildings or in yard areas;
- 2. Deteriorated and/or irreparable outbuildings, sheds, wells, privies, or other structures that are no longer in use or are made unusable by their condition;
- 3. Holes, ditches, exposed meter boxes or other conditions that create a tripping hazard excluding drainage ditches that are part of a designed drainage system;
- 4. Rodents, insects, or other infestations; pre-emptive measurements should be taken as necessary such as soil treatment (termite control), removal of near-by overgrown vegetation (vermin) to address such issues.
- 5. Standing water or depressions that hold water during wet weather, leaking water supply, percolating or leaking sewage;
- 6. Exposed pipes, railings or other installations creating tripping hazards;
- 7. Damaged, missing or deteriorated walkways, steps and decks that create tripping hazards or are otherwise unsafe;
- 8. Stairways or steps with two steps or more and without a functional rail.

3.0 Ancillary Improvements

3.1 Minimum Ancillary Improvements Standards

- A. All walkways and decks shall be continuous and usable, free from tripping hazards or other defects.
- B. Walkways that include two or more steps or decks more than 30 in. high shall include railing installed per building code.

3.2 Hazardous and Substandard Conditions

- A. Shall 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.

- B. Tripping hazards in primary walkways or decks caused by upheaval, broken or damaged wood or concrete or other condition creating a hazard.
- C. Any condition not mentioned that meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

4.0 NOT USED

5.0 Space and Use

5.1 Design Standards for Ceilings:

- A. **FLAT CEILINGS:** All habitable rooms and front porches in a dwelling or dwelling unit shall have a minimum ceiling height of 8 ft.- 0 in. and a maximum ceiling height of 9 ft.- 0 in. At least one half of the floor area of every habitable room located above the first floor shall have a ceiling height of 8 ft.- 0 in. The floor area of that part of any room with a ceiling height of less than 8 ft.- 0 in. shall not be considered as part of the floor area in computing the total floor area of the room for the purpose of determining floor area requirements.
- B. Ceiling Treatments - Single ceiling step ups allowed for maximum ceiling height of 10 ft.-0 in. in the following rooms:
 - 1. Living
 - 2. Dining
- C. Vaulted Ceilings may be provided when following roof framing. These should be properly insulated and ventilated.

5.2 Minimum Space Standards for Hallways

- A. All rooms, except kitchens, baths, hallways, storage rooms and porches shall have a minimum width of 7ft.

5.3 Minimum Space Standards and Appliances for Kitchens

- A. All kitchens shall have adequate food storage facilities including at least three linear feet of counter area for food preparation and adequate cabinet space.
- B. All kitchens shall have a working refrigerator/freezer, cook-top and oven.

5.4 Hazardous and Substandard Conditions

- A. Shall 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 shall include but not be limited to:
 - 1. Lack of adequate food storage, food preparation area, refrigeration or cooking facilities.
 - 2. 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 shall be repaired and/or rehabilitated to meet industry standards.

5.5 Floor Plan

- A. Shall include Living/Dining/Kitchen with open floor plans
- B. Square Footages (Gross square footage including all framed walls, excluding exterior masonry lug, attached garages not included)
 - 1. 2 Bedroom/ 1 Bath home 1,000 min. – 1,330 max. SF
 - 2. 2 Bedroom 2 Bath home 1,000 min. – 1,330 max. SF
 - 3. 3 Bedroom/ 1 Bath home 1,331 min. – 1,425 max. SF

4. 3 Bedroom/ 1-1/2 Bath home 1,331 min. – 1,425 max. SF
5. 3 Bedroom/ 2 Bath home 1,331 min. – 1,425 max. SF
6. 4 Bedroom/ 2 Bath home 1,426 min. – 1,500 max. SF

C. Required rooms/spaces

1. Kitchen
1. Living
2. Dining
3. Bedrooms
 - a. 12 ft.-0 in. minimum furniture wall in Master Bedroom.
 - b. 11 ft.-0 in. diagonal minimum measurement Bedroom size.
 - c. Minimum 5 ft.-0 in. wide x 2 ft.-0 in. deep closet required in each bedroom and maximum 18 SF.
 - d. Walk in closet in master bedroom – Minimum 25 SF.
5. Bathroom(s)
 - a. When plan includes 2 or more bathrooms, provide Master Bathroom and Master Closet in Master Bedroom.
 - b. Bathroom hardware shall include the following:
 - i. One chrome towel bar minimum of 14 in. long
 - ii. Chrome toilet tissue holder
 - iii. Recessed wall mounted mirrored medicine cabinet and/or linen closet with shelving
 - iv. Lavatory with mirror – centered over lavatory
 - v. Shower/tub if panel kit, shall be ABS plastic unit sealed with matching color silicone sealant
 - vi. Chrome shower curtain rod
6. Coat Closet is optional
7. Full Utility Room with Storage/Hanging Space
 - a. Washer/dryer hookups
8. Covered Front Porch
 - a. Minimum depth 5 ft.-0 in.
 - b. Minimum 25 SF and Maximum 75 SF
9. Back or Side door shall have a 5 ft.-0 in. x 5 ft.-0 in. stoop.

6.0 Foundations

6.1 Minimum Foundation Standards

All building slabs, piers and other supporting structures shall be designed and sealed by a licensed professional engineer (PE).

- A. Pier placements will have allowable spans between piers or posts for a 4 in. x 4 in. sill 5 ft. on center or for a 4 in. x 6 in. sill 7 ft. on center.
- B. All piers shall be designed in accordance with 2009 IRC Building Code or later in accordance with authorities having jurisdiction.
- C. Leveling shall be done in such a manner as to be permanent and shall be completed before other work begins.

- D. New posts shall be concrete piers or treated wood posts, of a species that has a natural resistance to decay.
- E. Only pressure treated lumber may be used for pier and beam foundations.
- F. All newly installed foundations shall be designed in accordance with the 2009 IRC Building Code or later in accordance with authorities having jurisdiction.
- G. All concrete slabs shall be designed in accordance with these standards, building codes and Hurricane Ike & Dolly Round 2 Minimum Construction Specifications.
- H. Skirting shall have ventilation openings a minimum of 4 ft. from each corner, and no less than every 8 ft. Vent openings shall be covered by louvered screened vents, and shall be a minimum of 50 square inches.
- I. Creep-hole door shall be hinged and constructed of such insect and decay resistant material to conform with foundation skirt, and shall be of adequate size for entrance into crawl space (minimum of 24 in. x 24 in, recommended of 30 in x 30 in.).

6.2 Hazards and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:
 - 1. Unsupported beams, or sills or joints in same that have no support; inadequate support;
 - 2. Water draining and/or pooling under foundation area;
 - 3. Ground contact of untreated wooden structure;
 - 4. Severe slab cracks that create or threaten structural or other systems such as plumbing;
- B. Any other condition not mentioned that meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

7.0 Floors

7.1 Minimum Floor System Standards

- A. All sub-floors shall be solid and continuous, without liberal movement or bounce, free from rot and deterioration.
- B. All flooring shall be free from tripping hazards with a minimum of seams spaced at logical locations such as doorways and matched to the existing floor.
- C. All flooring shall be sealed and/or tight at the edges.
- D. Flooring Materials for different living areas:
 - 1. Living – Carpet or Vinyl Tile
 - 2. Dining – Carpet or Vinyl Tile
 - 3. Kitchen – Vinyl Tile
 - 4. Bedrooms – Carpet
 - 5. Closets – Carpet or Vinyl Tile
 - 6. Bathrooms – Vinyl Tile
 - 7. Utility – Vinyl Tile

7.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:

1. Damaged, rotted or deteriorated sub-floor surfaces;
 2. Torn, missing, worn, burned or otherwise damaged floor coverings that create a tripping hazard or unsanitary condition;
 3. Missing base board, shoe mold or sealant that creates an unsanitary condition;
- B. Any other condition not mentioned which meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

8.0 Walls

8.1 Minimum Wall System Standards

- A. Exterior wall surfaces shall be free from chipped, cracking or peeling paint. All such loose paint shall be completely removed and bare wood surfaces primed. All primed surfaces shall be properly painted.
- B. Exterior siding shall be smooth and free from gaps, cracks, rot, termite damage, holes and other areas of damage. All gaps, seams and laps shall be sealed.
- C. Interior wall surfaces shall be free from chipped, cracking or peeling paint. All such loose paint shall be completely removed and bare wood surfaces primed. All primed surfaces shall be properly painted.
- D. Interior walls shall be smooth and comply with HQS standards.
- E. Provide minimum 4 in. exterior walls, 4in. interior walls and 6 in. plumbing walls.
- F. Exterior Wall Materials
 1. Masonry
 - a. Minimum masonry (rock, brick, or Stucco) 0 percent.
 - b. Maximum masonry (rock, brick or Stucco) 30 percent.
 2. Siding
 - a. Refer to Hurricane Ike & Dolly Round 2 Minimum Construction Specifications for Fiber Cement Siding.

9.0 Roofs

9.1 Minimum Roof Systems Standards

- A. Roof surfaces shall be smooth and free from defects. No indication of potential failure will be acceptable.
- B. Roofing materials shall be applied in accordance with the manufacturer's instructions, Texas Department of Insurance requirements, as well as the IRC 2009 or later in accordance with authorities having jurisdiction and any other local codes.
- C. Refer to Hurricane Ike and Dolly Round 2 Minimum Construction Specifications for roofing materials and installation.
- D. All replaced decking shall be of a type that is compatible with the existing decking thus making the roof sub-surface smooth and free from defects.
- E. Pitch
 1. Minimum 4:12
 2. Maximum 6:12
- F. Roof Overhang (Soffits) – As specified in Hurricane Ike and Dolly Round 2 Minimum Construction Specifications.
- G. Attic access required and shall be located as per plans. Provide ridge vent as required for proper air circulation. Dimensions shall be listed on plans. Scuttle hole cover shall be 5/8 in. plywood

with smooth finish. Trim shall be H trim with mitered joints. Paint to match other trim in the dwelling. Cover shall have insulation batts cut to fit on top of it. Pull down attic stairs required when HVAC unit or Hot Water Heater is located in the attic.

10.0 Windows and Doors

10.1. Minimum Window and Door Standards

- A. Doors shall be minimum 2 ft.-4in for small closets and pantries where accessibility is not required.
- B. Every window, exterior door and basement or cellar hatchway should be substantially tight and rodent-proof, and be kept in a state of maintenance and repair.
- C. All exterior doors to the outside or to a garage shall be 3 ft -0 in. x 6 ft – 8 in. and shall be insulated and be equipped with adequate security locks including at least one deadbolt per door. Doors should be fire rated as required by code. All windows accessible from ground level without the aid of mechanical devices shall have a security device/lock.
- D. Every window sash shall be;
 1. Fully equipped with glass window panes which are without cracks or holes, and all panes shall be secured with an adequate amount of putty. Putty shall not be cracked, broken or missing;
 2. Every window sash shall be in good condition and shall fit tightly, within its frame;
 3. Every window, other than a fixed window, shall be capable of being easily opened, shut and locked and shall be held in position by window hardware.
 4. Windows shall be ENERGY STAR qualified.
- E. Every exterior and interior door, when closed, shall fit well within its frame. Exterior doors shall be:
 1. Opaque: 0.21 U-value, NO SHGC Rating
 2. $\leq 1/2$ lite: 0.27 U-value, 0.30 SHGC Rating
 3. $\geq 1/2$ lite: 0.32 U-value, 0.30 SHGC Rating
- F. Every exterior and interior door, door hinge, and door latch and/or lock shall be maintained in good working condition;
- G. Every window, door and frame shall be constructed and maintained in such relation to the adjacent wall construction, so as to exclude rain as completely as possible and to subsequently exclude wind from entering the dwelling or structure, i.e., it shall have adequate weather-stripping.
- H. Window sizes/quantities
 1. Living/Master Bedroom
 - a. Minimum 30 Square Feet of Glazing
 - b. Maximum 45 Square Feet of Glazing
 2. Dining/Bedrooms
 - a. Maximum 30 Square Feet of Glazing
 3. Kitchen
 - a. Maximum 15 Square Feet of Glazing
 4. Bathroom
 - a. Maximum 9 Square Feet of Glazing
- I. The total window area that can be opened in every habitable room, shall be equal to at least 50 percent of the minimum window area size. The window shall be a viable means of egress and therefore accessible and adequately sized to provide this function.

- J. Every habitable room shall have at least one window or skylight which can easily be opened, or other such device as to adequately ventilate the room.
- K. Windows are not required in adequately ventilated bathrooms, toilet rooms, kitchens, and other similar rooms when they are equipped with a ventilation system which will completely change the air every seven minutes and which can be kept in continuous operation when occupied.
- L. Every window or other opening to outdoor space which is used or intended to be used for ventilation, shall likewise be supplied with screens covering all of the window areas required for ventilation. The material used for all such screens (doors & windows) shall be not less than 16 mesh per inch and shall be properly installed, maintained and repaired to prevent the entrance of flies, mosquitoes or other insects. Half screens on windows may be allowed provided they are properly installed and are bug and insect tight.
- M. Bay Windows – optional in Living and/or Dining Rooms
 - 1. Bay windows shall not be deeper than 1 ft. – 6 in.

10.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:
 - 1. 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;
 - 2. Windows that do not lock or locks that do not function with ease;
 - 3. Any exterior door which is not insulated, sealed or painted, and which does not have a functioning lockable dead-bolt;
 - 4. For new construction including reconstruction, windows and/or doors that fail to meet the minimum requirements for Federal, State or Local energy codes.
 - 5. For new construction including reconstruction, doors and thresholds that fail to meet the requirements of no-step entry established in Texas Government code 2306.514.
- B. Any other condition not mentioned which meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

11.0 Weatherization

11.1 Minimum Weatherization Standards

- A. All holes, open seams, or other incursions that result in air leaks will be properly sealed.
- B. All windows shall be properly sealed with elastic putty or gasket material provided to create a tight seal.
- C. All exterior doors shall be adequately weatherproofed.
- D. All exposed plumbing shall be freeze protected or insulated to a minimum R-value of 3.5.
- E. Refer to Hurricane Ike and Dolly Round 2 Minimum Construction Specifications for minimum insulation R values.
- F. For new construction including reconstruction, homes shall meet the Model Energy Code.

11.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:

1. Air incursion from open holes or seams in exterior walls, windows or doors;
 2. Open seams in window casements, doors casements or other installations that create air leaks resulting in heat loss or gain;
 3. Missing caulk or putty in windows;
 4. Missing weather stripping or other seal at exterior doors;
 5. Exposed plumbing systems that present freeze hazards or heat loss to hot water pipes;
 6. Inadequate insulation in ceiling;
 7. For new construction including reconstruction, homes that fail to meet the Model Energy Code.
- B. Any other condition not mentioned which meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

12.0 Electrical

12.1 Minimum Electrical Standards - Shall comply with local code and/or meet standards as written below.

- A. The minimum electrical service for each dwelling and/or dwelling unit shall be 100 amps, or as adjusted and approved, in writing, by the electrical inspector of the city. In the absence of a city electrical inspector, the rehabilitation technician for the city/state, may make a determination that a lower service is adequate, provided that such determination is in writing with the basis for such determination included. Furthermore, lesser service shall be approved by the service provider or Sub Recipient.
- B. Service shall be of a three wire type, with service entry on an approved weatherhead.
- C. All exposed wiring, service lines and feeders shall be protected and properly shielded in approved conduit.
- D. Every habitable room within such dwelling shall contain receptacles required by code but not less than the following:
 1. At a minimum, 2 separate and remote wall type electric convenience outlets.
 2. Habitable rooms over 120 square feet, shall contain, at a minimum, 3 separate and remote wall type electric convenience outlets.
 3. All newly installed outlets shall be of the grounded type and tamperproof.
 4. Circuit breakers shall be Arc Fault type where required by code.
 5. Temporary wiring, extension or zip cords shall not be used as permanent wiring.
- E. Every habitable room shall have at least one ceiling or wall type electric light fixture, controlled by a wall switch, or a wall type grounded electric convenience outlet controlled by a remote switch.
- F. Every toilet room, bathroom, laundry, furnace room, and hallway (hallway where applicable) shall contain at least 1 supplied ceiling or wall type electric light fixture, controlled by a wall switch.
- G. Wherever a service outlet is installed within six feet of a standing or running water source measurable to the shortest possible distance, (i.e. the top of tubs or lavatories) a functioning GFCI type outlet will be installed.
- H. Every kitchen shall be wired to meet the requirements of the N.E.C., based on the size and layout of each individual kitchen.
- I. All heavy duty appliances, i.e., window air conditioners, freezers, electric stoves, washers, electric dryers, microwaves, etc., shall be supplied with its own proper outlets on separate circuits, as applicable.
- J. Receptacle convenience outlets installed in or on open porches, breezeways, garages, utility rooms, etc., shall be of the GFI type.

- K. All wall and/or ceiling type lighting fixtures shall be controlled by a wall switch.
- L. All electric lighting fixtures installed on the exterior shall be of the type approved for exterior use.
- M. All broken and/or missing switch plates and/or receptacle plates shall be replaced.
- N. All outlets and fixtures shall be properly installed, shall be maintained in working condition, and shall be connected to the source of electric power in a proper manner and shall be in accordance with the electrical code of the city and/or the N.E.C., as applicable.
- O. All work done shall be inspected and approved by the electrical inspector of the city, or by a person who is knowledgeable in electrical requirements and installations, and is approved by the city/county/state.
- P. Smoke detectors required in accordance with NFPA 74.
- Q. Install TV J-box with conduit to attic in one location.
- R. A minimum of one phone jack to be provided. Location to be determined by owner.
- S. Provide exterior W.P. (weather proof) electrical convenience outlets installed in accordance with local building codes and NEC requirements.
 - 1. Two exterior outlets required, one in front and one in back

12.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:
 - 1. Equipment or wiring which is missing, broken, disconnected, loosely connected, burnt, unsupported, corroded, cracked, split, has evidence of overheating, physical damage, or misuse;
 - 2. Device or equipment is dirty, full of debris, infested etc.;
 - 3. Frayed wiring is present;
 - 4. 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;
 - 5. Intermittent operation of fixed equipment, switches, outlets or other devices;
 - 6. Flexible cord is used as a permanent wiring method;
 - 7. Interior wiring is surface mounted and not conduit. This excludes crawl spaces and other allowable installations where access to wiring is limited;
 - 8. Exterior wiring which is exposed to damp conditions, sunlight or potential damage that is not in conduit;
 - 9. Bathroom receptacle, kitchen receptacle located within six feet of a water source, garage receptacle or other outdoor receptacle that are not protected by a ground fault interrupting device;
 - 10. Polarity is reversed in connections or receptacles;
 - 11. Branch circuits, feeders 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.
 - 12. Unlabeled circuit breakers;
 - 13. Circuits that have been expanded past their original design limits;
- B. Any other condition not mentioned which meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

13.0 Lighting

13.1 Minimum Lighting Systems Standards

- A. At least one overhead or other switch operated light shall be installed in each interior room.
- B. At least one light shall be installed at each exterior door operated by an interior switch that is within reach of the door.
- C. Ceiling Fans
 - 1. Required in bedrooms and living rooms.
 - 2. Ceiling fans in bedrooms shall have a light kit – provide separate wall switch for fan and light
- D. Provide one porcelain receptacle light fixture in attic switched at attic entrance
- E. Lighting
 - 1. All lighting fixtures shall be ENERGY STAR or equivalent high efficiency fixtures.
 - 2. All light bulbs shall be either high efficiency compact fluorescent or LED Lighting.
 - 3. Recessed lights shall be insulated can and air tight (ICAT).
 - a. Maximum of 4 can fixtures per residence.

13.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:
 - 1. Missing or dysfunctional overhead or other switch operated lighting in each interior room;
 - 2. Missing or dysfunctional lighting at each exterior door operated by an interior switch that is within reach of the door;
- B. Any other condition not mentioned which meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

14.0 Water Supply and Wastewater Systems

14.1 Minimum Water Supply and Wastewater Systems Standards

- A. Every dwelling unit shall be connected to a sanitary water supply or functioning sanitary waste/water disposal system.
- B. Every dwelling unit shall contain a room which is equipped with a functioning toilet and a properly installed lavatory. Said lavatory shall be properly connected to both hot and cold running water, under pressure, and shall be properly maintained in working order. Faucets shall be free from leaks or drips and shall shut off completely
- C. Every dwelling unit shall contain a bathtub. If more than one bathroom, second bathroom can contain bath tub 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 shall be properly connected to both hot and cold running water lines, under pressure, and shall be maintained in working order. Faucets shall be free from leaks or drips and shall shut off completely.
- D. Toilets and bathrooms shall have doors with a privacy type lock and such doors, lock and hardware shall be operable and maintained in working order.
- E. Every dwelling shall have supplied water-heating facilities (traditional or tankless) 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.
- F. Hot water storage associated with traditional water heating facilities shall be no less than 30 gallons for a single family dwelling. All water heaters shall be properly vented and sealed and shall be equipped with a working pressure relief valve and drip log.

- G. Every kitchen sink, toilet, lavatory basin and bathtub/shower, shall be maintained in working condition and be properly connected to an approved water and sewer or septic system.
- H. Potable water supply piping, water discharge outlets, back-flow prevention devices or similar equipment shall be in serviceable condition free from deterioration, corrosion and blockage and shall not be so located as to make possible their submergence in any contaminated or polluted liquid or substance.
- I. The following shut off valves will be installed:
 - 1. One owner's shut off at the meter or supply source,
 - 2. One shut off at each toilet,
 - 3. One shut off each for hot and cold water at each sink/lavatory.
 - 4. One supply side shut off at each water heater.
 - 5. At least one exterior faucet shall be installed and all faucets shall be freeze protected.
- J. Install water conserving fixtures
 - 1. Toilets – 1.6 gallons per flush
 - 2. Showerheads – 2.0 gallons per minute
 - 3. Kitchen faucets – 2.0 gallons per minute
 - 4. Bathroom faucets – 2.0 gallons per minute

14.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:
 - 1. Lack of a continuous sanitary water supply. Where ground wells are used, this source shall be approved for drinking or a secondary source of drinking water shall be available;
 - 2. Lack of a continuously functioning sanitary waste water disposal system;
 - 3. 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;
 - 4. Deteriorated, rotted, broken or otherwise worn water supply or waste water pipes;
 - 5. Evident leaks either continuous or intermittent of either waste water or water supply lines. This includes evidence of pooling underground of water mains, sewer feeds or septic drain fields;
 - 6. Missing or blocked vent pipes;
 - 7. Missing or dysfunctional shut off valves one of which shall be located at the following locations:
 - a. One 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.
 - 8. The lack of fully functioning faucets at each sink/lavatory, bathtub/shower, at and at least one exterior hose bib
- B. Any other condition not mentioned which meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

15.0 Mechanical Systems

15.1 Minimum Mechanical Systems Standards

- A. Each dwelling and/or dwelling unit shall be supplied with its own heating system.
- B. All heating facilities shall 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.
- C. Ambient heat shall be supplied from an adequate heat source in an adjoining room or hallway;
- D. Every supplied central heating system shall comply with all of the following requirements:
 - 1. The central heating unit shall be safe and in good working condition.
 - 2. Every heat duct, steam pipe, and hot water pipe shall be free of leaks and shall function so that an adequate amount of heat is delivered where intended;
 - 3. Every seal between any of the sections of a hot air furnace shall be air-tight so noxious gases and fumes will not escape into the heat ducts; liner shall be installed. The liner shall meet or exceed the requirements of the local building/heating code and shall be installed according to same. Where there are no local building/heating codes, equipment and installation shall be inspected and approved by a person qualified in this area as designated by the city/county/state
- E. Every supplied space heater shall comply with all of the following requirements:
 - 1. No space heater burning solid, liquid, or gaseous fuels shall be of a portable type;
- F. All mechanical work shall be inspected and approved by the city’s local mechanical/heating inspector and/or the building inspection department or by a person knowledgeable in mechanical/heating systems and installations that is approved by the City/County/State.
- G. **All ranges shall have ENERGY STAR** rated or equivalent power vented fans and shall exhaust to the exterior.
- H. Bathrooms and utility room shall have energy star or equivalent power vented fans that exhaust to the exterior.
- I. Air-conditioning units shall be minimum 14.5 SEER with gas, heat or electric heat pump HSPF 8.2, or ≥80 AFUE furnace, sized in accordance with ACCA Manual J.
- J. Condensing units, at elevated structures, shall be on a platform at finish floor level. For elevated pier and beam home the unit may be suspended off of the side of house.

16.0 Water Heaters

16.1 Minimum Water Heater Standards

- A. Both tankless water heaters and conventional hot water heaters can be installed under these standards. Water heaters shall be able to supply a continuous flow of hot water of at least 102 degrees F, and shall be properly installed with gas and/or electric shutoff valves as well as cold water supply shutoff valves. Domestic Hot Water (DHW) equipment shall meet the following ENERGY STAR efficiency requirements:

	30 Gal	40 Gal	50 Gal	60 Gal	70 Gal	80 Gal
Gas	0.63 EF	0.61 EF	0.59 EF	0.57 EF	0.55 EF	0.53 EF
Electric	0.94 EF	0.93 EF	0.92 EF	0.91 EF	0.90 EF	0.89 EF
Oil	0.55 EF	0.53 EF	0.51 EF	0.49 EF	0.47 EF	0.45 EF

- B. Each unit shall be equipped with a functioning pressure release valve (TPL) which shall release pressure at 150 P.S.I. and/or 210 degrees F. Water released shall be exhausted to the exterior of the building.
- C. Hot water heaters shall be installed in an enclosed sealed closet designed for this purpose with combustion air drawn from outside the living area. Any gas water heater installed in garage areas shall be located at least 18 inches above the floor in order to prevent combustion of fuel vapors. Sealed closets shall have recessed concrete slab and drain or catch pans piped to the exterior. Closet Flooring shall be water resistant material. Water Heaters installed in attics shall comply with access requirements in IRC 2009 or later in accordance with authorities having jurisdiction and shall have a drain pan with overflow routed to exterior location readily observable when overflow occurs. Exterior rated Tankless water heaters may be installed on the exterior side or back of the house.

16.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall 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 shall include but not be limited to:
 1. Gas water heaters are prohibited in bathrooms, sleeping rooms, and closets;
 2. Missing gas shut off valve;
 3. Missing water supply shut off valve;
 4. Combustion air taken from living area except when adequate air exchange meets SBCCI standards;
 5. Missing or dysfunctional TPL valve. TPL drain shall flow at an angle not exceeding horizontal and exhaust flow to exterior of building;
 6. Inadequate exhaust pipe, combustion exhaust shall be double walled and skirted at all penetrations;
 7. Storage tanks less than thirty gallons;
 8. Pipes, nipples or tanks elements that are rusted or corroded.
- B. Any other condition not mentioned that meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.

17.0 Accessibility

17.1 Minimum Standards – Accessibility

- A. All newly constructed housing shall include the following accessible features:
 1. At least one 36 in. entrance door (preferably the main entrance) is on an accessible route served by a ramp or no step entrance with a threshold height of maximum ½ inch above finished floor
 2. Each interior door provides a clear opening of at least 32 in. (34 in. minimum door width) when door is open 90 degrees unless the door provides access only to a closet of less than 15 SF.
 3. Bathroom walls shall be reinforced with blocking for potential installation of grab bars
 4. Each hallway width shall be at least 36 in. wide and shall be level with ramped or beveled changes at each doorway.
 5. Door pulls and faucet handles shall be of a lever type operable with a closed fist.
- B. Bathrooms-When homeowner requests an accessible bathroom.
 1. 36 in. grab bar located behind the toilet with maximum dimension of 12 in. from adjacent side wall.

2. 42 in. grab bar located to side of toilet located 12 in. from back wall and extending min. of 54 in. from back wall.
 3. Toilet seats are to be 1 ft.-4 in. to 1 ft.-7 in. above the floor and located within the bathroom to allow a grab bar to be installed on one side of the fixture (toilet shall be installed in the corner of the bathroom to accomplish grab bar installation). Locate the toilet 1 ft.-6 in. from the wall the grab bar will be installed on (measured from center of toilet to wall). The non-grab bar side of the toilet shall be minimum 1 ft.-3 in. from the finished surface of the adjoining wall, vanity or from the edge of the lavatory for front lavatory approach and 2 ft. 0 in. for side approach.
 4. Toilet flush valve controls shall be on the wide (open) side of the toilet.
 5. Vanities and lavatories shall be installed with the centerline of the fixture a minimum of 1 ft.-3 in. horizontally from an adjoining wall or fixture for front approach and 2 ft.-0 in. for side approach. Top of fixture maximum height at rim is 2 ft.-10 in. and bottom of vanity apron is minimum 2 ft.-3 in. clear above floor with 1 ft.-5 in. deep knee space for front approach. All exposed hot water supply lines and P-traps are to be insulated.
 6. Sufficient maneuvering space shall be provided within the bathroom for a person in a wheelchair or other mobility aid to enter, close the door use the fixtures and then reopen the door and exit.
 - a. When door swings into the bathroom, shall have a minimum of 2 ft.-6 in. x 4 ft.-0 in. clear space within the room to allow the door to close
 7. Bathtubs and tub/showers located in the bathroom – provide a clear access aisle adjacent to the lavatory that is at least 2 ft.-6 in. wide and extends for a length of 4 ft.-0 in. measured from the foot of the tub.
 8. Stall showers in a bathroom may be of any size or configuration as long as it is at least 36 in. x 36 in. A minimum clear floor space of 2 ft.-6 in. wide by 4 ft.-0 in. shall be available outside the stall. If the minimum of 36 in. x 36 in. is used, the shower shall have reinforcing in the wall for installation of a shower seat opposite of the shower controls. Threshold at edge of stall shower shall not exceed ½ in. in height.
- C. Kitchens-When homeowner requests an accessible kitchen.
1. A clear floor space at least 30 in. by 48 in. that allows a parallel approach by wheel chair is provided at the range or cook top and the sink and either a parallel or forward approach is provided at oven and refrigerator/freezer.
 2. Clearance between counters and all opposing base cabinets, countertops, appliances or walls is at least 40 in.
 3. In U shaped kitchens provide a minimum 60 in. turning radius.
- D. Each electrical panel, light switch, thermostat or other control device is maximum 48 inches above the floor to the highest operable part.
- E. Unless otherwise required by building and local codes, Breaker Box is to be located on the first floor in the Utility Room or Garage and is installed maximum 48 inches above the floor to the highest operable part. In the event that the home does not have a Utility Room or Garage, the Breaker Box should be located at a place that it is unblocked and easily accessible outside of the home's common areas (living and dining room, hallways, etc.).
- F. Each electrical plug or other receptacle is minimum 15 inches above the floor.

18.0 Architectural Barriers

18.1 Minimum Standards - Architectural Barriers

- A. For existing housing, architectural barrier removal or accessible features will be approved, as required, but when installed shall meet the following requirements.
- B. All newly constructed ramps shall be constructed as follows:

1. Ramp length required is one foot of run for each inch of rise.
 2. Maximum rise for any run is 30" therefore a landing is required every 30 feet of ramp.
 3. Handrails are required on both sides of the ramp if it rises at a greater than 5% slope. Clear width between handrails is 36".
 4. Landings are required at the beginning and end of each ramp. Landings shall be same width as the ramp and shall be 5'-0" long.
 5. If ramps change direction landing shall be minimum 5'-0" x 5'-0".
 6. Handrails shall be continuous or extend 12" beyond top and bottom of ramp segment.
 7. Ramps shall be constructed of a non-skid material. Wooden ramps shall be constructed of treated material.
- C. Guard Rails- Guard rails shall meet the requirements of the International Residential Code as follows:
1. Porches, balconies or raised floor surfaces located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height. Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads.
 2. Porches and decks which are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches above the floor or grade below.
 3. Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of a sphere 4 inches or more in diameter.
 4. Exceptions:
 - a) The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches cannot pass through.
 - b) Openings for required guards on the sides of stair treads shall not allow a sphere 4 3/8 inches to pass through.

19.0 Lead-Based Paint

The use of lead-based paint is specifically prohibited.

20.0 Manufactured Housing

20.1 Minimum Manufactured Housing Standards

- A. Construction standards for new manufactured housing units are set by the National Manufactured Housing Construction and Safety Standards act of 1974, the Texas Manufactured Housing Standards Act (Article 5221F) and HUD Code Standards 3280 and 3282.
- B. All manufactured housing shall be installed on a permanent foundation.
- C. All manufactured homes will be tied down through the installation of approved tie downs adequate to meet state and are to meet TDI requirements.
- D. All road transport accessories such as wheels, trucks and hitching devices shall be removed in order to make installation permanent.

20.2 Hazardous and Substandard Conditions

- A. Hazardous conditions shall include any condition that threatens the health and or safety of the occupants. Substandard conditions include any condition that threatens, defeats or will lead the lack of functional viability of a single feature of a home. These conditions shall include but not be limited to:
 1. A manufactured home that is not permanently situated on a permanent foundation;

2. A manufactured home that is not adequately tied down or affixed by an approved tie down system;
 3. A manufactured home that has not had its wheels, truck and hitch removed;
- B. Any other condition not mentioned that meets the definition of a hazardous or substandard condition shall be repaired and/or rehabilitated to meet industry standards.