HOME SPECIFICATION
FOR NEW CONSTRUCTION

Revision 2.0
July 17, 2009
THE PURPOSE OF THIS DOCUMENT

The purpose of the DuPage Habitat for Humanity Home Specification for New Construction is to specify the minimum acceptable standards for methods, materials, features, and content in the construction of new homes. A different document will cover specifications for rehab homes.

The specifications in this document must be used to assure that all DHFH built homes are compatible with local communities, in compliance with local building codes, and consistent with Habitat for Humanity International requirements that the homes be decent and affordable. Additionally, these homes are built to a minimum Energy Star and healthy indoor air quality standard. Finally the affiliate builds to a minimum durability standard that addresses geographic, climatic and disaster issues in Northern Illinois. Line items in this document that pertain to the DHFH Green Building Initiative are explained and flagged (see the section on Green Building initiative).

This document does not attempt to capture best practices for how specific construction tasks should be performed. These are being captured in our Construction Manual, currently under development. For more information on best practices for specific construction tasks, please phone the DuPage Habitat for Humanity office (630-510-3737) to contact the Construction Committee Chairperson or the Construction Manager.

REVISION CONTROL.

The Document Owner for this document is the Construction Committee Chairperson. This person has responsibility for initiating changes to this document and releasing subsequent revisions. The first revision of this document received Board of Director’s approval since it involved assuring the specification is consistent with DHFH policy. Subsequent revisions may or may not be approved by the Board, depending whether they raise questions with DHFH policy. In all cases, the Board will be notified when new revisions are released.

Document Owner: Construction Committee Chairperson
This Revision: Revision 2.0
Revision Release Date: July 17, 2009
First Release Date: October 31, 2008
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACKGROUND</td>
<td>Background</td>
<td>1</td>
</tr>
<tr>
<td>SCOPE OF THIS SPECIFICATION</td>
<td>Scope of This Specification</td>
<td>2</td>
</tr>
<tr>
<td>GREEN BUILDING INITIATIVE</td>
<td>Green Building Initiative</td>
<td>2</td>
</tr>
<tr>
<td>APPLICABLE CODE INFORMATION</td>
<td>Applicable Code Information</td>
<td>2</td>
</tr>
<tr>
<td>HOME FEATURES</td>
<td>Home Features</td>
<td>3</td>
</tr>
<tr>
<td>SECTION 1.0 GENERAL DATA</td>
<td>General Data</td>
<td>5</td>
</tr>
<tr>
<td>SECTION 2.0 SITE WORK</td>
<td>Site Work</td>
<td>6</td>
</tr>
<tr>
<td>SECTION 3.0 CONCRETE</td>
<td>Concrete</td>
<td>6</td>
</tr>
<tr>
<td>SECTION 4.0 METALS</td>
<td>Metals</td>
<td>7</td>
</tr>
<tr>
<td>SECTION 5.0 CARPENTRY</td>
<td>Carpentry</td>
<td>8</td>
</tr>
<tr>
<td>SECTION 6.0 THERMAL AND MOISTURE CONTROL</td>
<td>Thermal and Moisture Control</td>
<td>13</td>
</tr>
<tr>
<td>SECTION 7.0 DOORS, WINDOWS, AND GLAZING</td>
<td>Doors, Windows, and Glazing</td>
<td>15</td>
</tr>
<tr>
<td>SECTION 8.0 FINISHES</td>
<td>Finishes</td>
<td>16</td>
</tr>
<tr>
<td>SECTION 9.0 HEATING AND VENTILATION</td>
<td>Heating and Ventilation</td>
<td>18</td>
</tr>
<tr>
<td>SECTION 10.0 PLUMBING</td>
<td>Plumbing</td>
<td>19</td>
</tr>
<tr>
<td>SECTION 11.0 ELECTRICAL</td>
<td>Electrical</td>
<td>20</td>
</tr>
<tr>
<td>SECTION 12.0 RADON CONTROL</td>
<td>Radon Control</td>
<td>20</td>
</tr>
<tr>
<td>SECTION 13.0 LANDSCAPING</td>
<td>Landscaping</td>
<td>21</td>
</tr>
<tr>
<td>INDEX</td>
<td>Index</td>
<td>22</td>
</tr>
</tbody>
</table>
BACKGROUND:

HOUSE DESIGN CRITERIA: The Habitat for Humanity International (HFHI) Construction and Environmental Resources Department has a list of house design criteria as well as drawings that conform to these guidelines in their plan book. No single design can account for the diversity among the Habitat affiliates and the conditions under which they build. Therefore, HFHI has developed house design criteria and guidelines to ensure that affiliates have the flexibility needed to respond to their particular circumstances while remaining true to the Habitat Affiliate Covenant’s mandate of simple, decent housing.

The purpose of the DuPage Habitat for Humanity Home Specification for New Construction is to specify the minimum acceptable standards for methods, materials, features, and content in the construction of new homes.

The specifications in this document must be used to assure that all DHFH built homes are compatible with local communities, in compliance with local building codes, and consistent with Habitat for Humanity International requirements that the homes be decent and affordable. Additionally, these homes are built to a minimum Energy Star and healthy indoor air quality standard. Finally the affiliate builds to a minimum durability standard that addresses geographic, climatic and disaster issues in Northern Illinois.

The specifications are written with the assumption that all materials are purchased by DHFH. However it is the goal to secure as many in-kind donations as possible. Donated materials must be new products and must meet the specifications as described in this document.

DuPage Habitat for Humanity has several corporate partners and all efforts should be made to allow enough time to order the materials in time for use in all of the DHFH homes. The partners and their services are as follows:

1) Dow – rigid insulation
2) Ferguson – one toilet per home
3) Hunter Douglas – blinds for bathroom and bedrooms
4) Larson Manufacturing – storm doors
5) Rinnai – tank less water heaters
6) Square D – electrical panels
7) Tile partners for Humanity – floor coverings
8) Valspar – paint
9) Whirlpool – stove and refrigerator
10) Yale Residential – door hardware.

New volunteers are encouraged to review this specification to familiarize themselves with the specification for DHFH homes. If during construction a question of how to implement a standard(s) arises, the volunteer should immediately contact a House Leader.
SCOPE OF THIS SPECIFICATION

This specification covers the phases of construction in which the DHFH volunteers are directly involved. Hence, certain areas are not discussed, e.g. electrical wiring. This specification is written with the assumption that the volunteer is familiar with basic construction techniques. Furthermore this specification outlines the fundamental requirements. For more detailed descriptions or explanations, specific external code documents (e.g. ASTM, ICC, etc) may need to be referenced.

These standards must also be applied in concert with all applicable details described in the drawings that specify the construction of the home. There is no specification of workmanship standards. However, at DHFH, our workmanship standards are high and we continually strive to exceed common practice.

GREEN BUILDING INITIATIVE

DuPage Habitat for Humanity has always built and sold homes that are affordable for working families. With the development of the Pioneer Prairie neighborhood, DuPage Habitat will now build homes that are both affordable and sustainable. In this planned "green" community, DuPage Habitat is balancing up-front, cost-conscious development with long-term, environmentally-conscious decisions. This 11-home project will feature homes built to the Energy Star certification level, extensive material recycling, and low-impact landscaping – a three-part strategy to minimize Habitat's carbon footprint, and maximize cost savings for Habitat's limited-income homeowners.

DuPage Habitat’s sustainability plans dovetail with Habitat for Humanity International’s efforts to become the premier “green” affordable housing developer. Locally, DuPage Habitat aims to build all our homes to the LEED certification level within the next five years. We are working in partnership with other Habitat affiliates and green experts to make this possible.

We have noted our “green” building decisions throughout this document with the following symbol: 🌿. We look forward to seeing these plans take shape in the form of the homes at Pioneer Prairie.

APPLICABLE CODE INFORMATION

If conflicts occur between local and national code requirements, the more restrictive shall apply unless otherwise directed by the Local Building Code Official. The following codes were used when preparing this document.

- 2003 International Residential Code – One and Two Family Dwellings
- 2003 International Mechanical Code
2002 National Electrical Code


It is the responsibility of each contractor/sub-contractor to know the code requirements that affect their trade or aspect of work to be performed. Each contractor shall be responsible that their scope of work meet all regulatory code requirements applicable to their work.

The word "approved" as used in these documents is to mean: As reviewed and accepted by the Local Building Department and DuPage Habitat for Humanity (DHFH). Approval for DHFH means that the Construction Manager will make the final decision.

The word "equal" as used in these documents is to mean: Of equal or greater quality and performance than that specified. Finally, use of a substitute product is subject to final approval by DuPage Habitat for Humanity (DHFH).

Use of Sub-contractors: Sub-contractors will be used for all electrical, mechanical and HVAC work. These contractors should be licensed and approved by the local authorities. Sub-contractors for other specialty work will be used where DHFH deems appropriate.

HOME FEATURES

The following describes the features that are included in the construction of a home in DuPage County. It also includes those features not included unless there are exceptional circumstances which would require DHFH approval for a deviation.

Interior Features Included:

- Refrigerator (no ice maker)
- Stove
- Washer & Dryer (Energy Star Compliant)
- Humidifier
- 40 gallon water heater (prefer tank less; if not then should be power vented or sealed combustion type)
- Appropriately size furnace with A-coil *
- A-coil in furnace plenum
- R 43 insulation in attic area
- R 19 insulation in exterior walls
- Hard surface floors in bathroom, kitchen and entry
- Two coats of paint on all drywall wall
- Wire shelving in bedroom closets
- Telephone and TV connections in each bedroom; a phone connection in the kitchen; a TV connection in the living room or family room.
- Carpeting
• Light fixtures (minimum 5 Energy Star compliant light fixtures)
• Exhaust fan. All bathrooms and kitchen to have ductwork connected to an
  exhaust fan located in the garage. Fan to be sized according to ASHRAE
  standard 62.2-2004. The fan will be a continuous mechanical exhaust.
• Smoke Detectors
• Programmable thermostat – simple design that is also Energy Star rated.
  • Dryer vent
  • Sump pump (where applicable)
  • Window blinds in all rooms except the kitchen.
• A-coil is installed now in order that it will be less expensive at a later date to install the coil if
  the owner decides to install air conditioning in the home.

Exterior features included:
• Low E windows
  • Aluminum fascia and soffit
  • Garage door opener
  • Exterior frost-proof hose bib in front and back
  • Exterior electrical outlet in front and back
  • Grass or sod.
  • Landscaping
  • Light fixtures
  • Mail box
  • Asphalt or concrete driveways
  • Maintenance-free siding
  • Storm door
  • Door bell
  • Garage door and opener w/remotes
  • Gutters and downspouts

Features not included:
  ▪ Air conditioning
  ▪ Dishwasher
  ▪ Garbage disposal
  ▪ Fence (Depending on the family needs or depending on the adjacent
    landscaping, a fence may be installed for safety reasons).
  ▪ Shutters
1.0 GENERAL DATA

1.1 All work shall be performed in accordance with all applicable city, state, and national codes and ordinances as indicated in the Code Data section.

1.2 All partition dimensions on the plan sheets are rough dimensions to the face of studs or face of sheathing for exterior walls. Non-bearing partitions and walls shall be laid out so that stock components will fit exactly within indicated dimensions and take into allowance the wall finish. Finished dimensions at critical areas such as closets, bathtubs, etc., must be maintained. The carpenter sub-trade or volunteer crews shall be responsible for maintaining stud tolerances.

1.3 DHFH shall verify all dimensions and conditions on the plans and report any discrepancies to the architect and Habitat prior to commencing work.

1.4 DHFH shall coordinate plumbing, schematics, HVAC layouts, HVAC duct runs and diffuser locations, sewer lines, clean outs, water mains, and B-Box locations, electrical outlets, switches, light locations, and low voltage phone, and data receptacles. Habitat prior to installation must approve all locations for routing work.

1.5 On-site verification of all dimensions and conditions shall be the responsibility of each sub-contractor.

1.6 Each sub-contractor shall obtain all necessary measurements from DHFH in order that his work will not conflict with other trades.

1.7 All work shall be performed in a neat and professional manner.

1.8 Material substitutions shall be allowed only with the permission of DHFH and Architect.

1.9 The architect shall neither have control nor responsibility for means and methods of construction, job safety or safety programs in conjunction with the work.

1.10 Structural changes without written approval from the Architect or Structural Engineer or manufacturer and/or local building department are not permitted.

1.11 All materials shall be installed per current manufacturers’ recommendations and industry standards. DHFH shall maintain all manufacturers’ recommendations and installation guidelines for products to be installed in this project.

1.12 All possible field conditions that may be encountered are not necessarily described by this document. Field conditions encountered which require clarification shall be brought to the attention of DHFH in a timely fashion. Work requiring any change in contract amount or documents shall not proceed without the written authorization.

1.13 Conflicts on the drawings shall be brought to the attention of DHFH prior to commencing construction.

1.14 DHFH shall be responsible for cleaning of all work, including, but not limited to patios, siding, soffits, windows, trim, entries, sidewalks, streets, drives, etc. Each crew is responsible to clean up work from the day’s activities at the end of each work day.
1.15 No exterior walls, other than those specified by the drawings, shall be constructed within local setback/easement requirements without the written approval of DHFH and the Local Building Department.

1.16 Scrap lumber shall be stored to reduce waste. Store by size and length and use for blocking around windows and doors.

1.17 Waste is to be recycled; use waste recycling companies that separate waste and issue report on recycled content.

2.0 SITE WORK

2.1 All work outside the building envelope such as landscaping, site engineering, and paving shall be governed by the respective documents for such work and is not included in these specifications.

2.2 Final grading shall slope away from the perimeter foundation to drainage paths specified on the civil engineering drawings at a minimum of 4" per foot unless otherwise specified on the engineering drawings. Finished grade shall be at least 8" below top of foundation.

3.0 CONCRETE

3.1 All concrete shall comply with all code requirements for reinforced concrete. Do not load concrete until 75% of the 28 day compressive strength is achieved.

3.2 Compacted granular fill in depths in excess of 9 inches supporting interior building slabs shall be an approved granular material placed in lifts not to exceed 8 inches in thickness and compacted to a minimum of 95% of maximum dry density in accordance with ASTM D 1557-70 Modified proctor.

3.3 All footings shall extend below the frost line or a minimum of 3'-6" below finished grade whichever is greater.

3.4 All footings shall bear on firm, undisturbed soil or approved compacted fill, either of which shall have a minimum bearing capacity of 3000 PSF.

3.5 Concrete operations performed in cold weather and/or subject to freezing shall conform to "Standard Specification for Cold Weather Concrete" (ACI 318-95) as published by the American Concrete Institute. Concrete shall not be poured on a sub-grade containing free water.

3.6 Concrete shall be maintained above 50 degrees F and in a moist condition for at least the first seven days after placement, except when cured with approved accelerators.

3.7 During hot weather, attention shall be given to ingredients, production methods, handling, placing, protection, and curing to prevent excessive concrete temperatures or water evaporation that would impair required strength or serviceability of the member or structure.
3.8 DHFH shall coordinate the placement and installation of all sleeves that may be required in concrete walls. All penetrations should be properly sealed or caulked.

3.9 All concrete wing walls shall be poured monolithically with the foundation walls and reinforced with #5 bars (2 @top and bottom)

3.10 Provide and install foundation reinforcing steel, anchor bolts, etc. in conformance with the drawings and as may be necessary for the nature of the work.

3.11 Foundation damp proofing shall be equal to one coat of "Koppers' Bituminous Super Service Black Waterproofing Agent", applied in accordance with the manufacturer's recommendation, 8 inches down from the top of foundation to the outside edge of the footings.

3.12 Two inch (2") rigid polystyrene insulation shall be installed on the exterior of the foundation surrounding living areas, from top of footings to grade level per manufacturers' recommendations. Insulation should extend below the frost line.

3.13 Two inch (2") rigid polystyrene insulation covered with 6-mil plastic vapor barrier shall be laid under all living area concrete slabs less than three feet (3') below grade. Two inch (2") rigid polystyrene insulation shall be installed around the perimeter between the slab and foundation wall.

3.14 Minimum specified compressive strength of concrete (after 28 days of cure) shall be:
   - Foundation walls and footings – 3,000 psi.
   - Basement slabs and interior slab on grade – 2500 psi
   - Garage slabs – 3000 psi
   - Driveways, curbs, patios, stoops and walks – 3500 psi

3.15 Stoop flashing shall be “Fiberweb” 300 or equal.

3.16 All excavations shall be in accordance with the latest soil tests and the recommendations of the soils engineer.

4.0 METALS

4.1 All structural steel shall conform to the AISC specifications of A-36 steel and shall have one layer of primer which is shop applied.

4.2 All steel shall be fabricated and erected in conformance with AISC - "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings".

4.3 Sheet metal installation shall conform to Sheet metal Air Conditioning National Association (SMACNA).

4.4 All exposed metal fasteners shall be rust-resistant and finished to match surrounding components. Where possible, fasteners shall be concealed.

4.5 All Lally columns shall have welded column caps bolted to the steel beam.
4.6 All grills exposed to the exterior shall be non-corrosive.

5.0 CARPENTRY

5.1 Floor framing shall meet all the requirements of the current version of IRC.DHFH to verify the version used by the municipality in which the construction is being performed.

5.2 Headers shall be same grade of lumber as floor framing. Headers shall use rigid insulation to adjust for width of the walls.

5.3 Composite / engineered wood beams shall be designed and supplied by companies specializing in their manufacture.

5.4 Provide solid blocking of an area at least equal to the post it supports below all point loads to proper bearing. Both the post and the blocking below it shall rest entirely within the area of the beam or foundation which supports it. Blocking shall be tightly fitted, square cut and installed in an upright position.

5.5 Provide solid blocking under all bearing walls perpendicular to the joists. Where mechanical, plumbing, or electrical services occur in the space, the blocking shall be as deep as possible.

5.6 Provide 1 X 3 wood cross bracing at 7’0 O.C. or approved metal bridging.

5.7 All flush framed 2 X 10 joist connections shall be made with “Simpson” U210 Joist hangers unless otherwise noted on drawings. All post to beam and post to foundation connections shall be made with approved “Simpson” metal connectors or approved equal. Typical beam to post connectors shall be “Simpson” A44 “A” angle 66T”T” post strap or 66L post strap as shown on drawings. Other types may be required for specific conditions and shall be shown on drawings.

5.8 All exterior wall openings in bearing walls are to meet the minimum requirements for headers as detailed in the residential code.

5.9 Provide fire stopping in concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor level and at all interconnections between concealed vertical and horizontal spaces such as at soffits, drop ceilings, cove ceilings, etc. Also provide fire stopping in concealed spaces between stair stringers at the top and bottom of the run. Provide non-combustible fire stopping material at openings around vents, pipes, ducts, conduits, and chimneys at ceiling and floor level, for a minimum distance away from pipe or flue as required by manufacturer's specifications or as required by code. Cutouts in fire stopping for mechanical trades shall be the minimum size necessary and sealed with a fire stopping caulk so as to maintain the integrity of the fire stopping material. Fire stopping caulk shall be as approved by an IRC approved agency and/or local fire regulation authority. (E.g. Great Stuff)

5.10 Structural sheathing shall be installed as recommended and approved by the American Plywood Association and shall be as follows:

- Floor sheathing - 3/4” tongue and groove, OSB sheathing with exterior glue and nailed to joists. Provide 1/8” spacing at panel ends and edges.
• Underlayment -1/4" Luan glued and ring shank nailed at tile areas, butt panel ends and edges to a close but not tight fit. (Allow 1/32” space). ¼” plywood of equal or better quality may be used instead of Luan. Manufacturer recommended underlayment to be used under ceramic tile flooring.

• Roof sheathing – 5/8” OSB. “H” clips to be used when trusses are spaced more than 16” on center.

• Exterior sheathing – ½” insulated “Celotex” or equal.

5.11 Provide either 1 X 4 Let-in wall bracing or ½” approved structural sheathing. Wall bracing shall be located at each end and at least every 25 feet.

5.12 Provide a minimum of 3 – 2X4’s at all beam and point load bearing conditions.

5.13 Provide pre-finished aluminum or vinyl drip caps over all exterior door and window openings. Color to match siding.

5.14 Provide roof vents with a free vent area of 51 sq in or continuous ridge vent and rectangular or continuous eave vents. The net free ventilating area shall be 1/300 of the ventilated area. 50% of the ventilating area shall be provided at or near the ridge and the remaining 50% of ventilating area shall be provided at the eave. Roof vents shall be placed in the upper portion of roof, no less than 3'0” above the eave vents.

5.15 Truss manufacturer shall submit calculations and layouts to DHFH who in turn shall submit to the governing agencies for approval prior to installation. A registered Structural Engineer licensed to practice in the state in which the truss installation is to take place shall seal drawings.

5.16 If trusses are required to be stored prior to erection, they shall be stored and wrapped in a vertical position, raised off the ground, and be protected from the weather. It shall be the responsibility of the truss installer to conform to the most current recommendations of the Truss Plate Institute for both temporary and permanent bracing.

5.17 The cutting, notching, or altering of truss components in any fashion is prohibited.

5.18 Roof trusses shall be secured to top wall plate with truss tie downs.

5.19 Provide 22"x30" attic access panels with finished ceiling panels as shown on drawings. Panel shall provide the same fire protection rating as the ceiling it penetrates.

5.20 All linen closets and pantry closets are to have 5 shelves. All wardrobe closets are to have 1-rod and 1- shelf unless otherwise noted.
5.21 Floor Framing Design Loads:

<table>
<thead>
<tr>
<th>Location</th>
<th>Live (PSF)</th>
<th>Dead (PSF)</th>
<th>Total (PSF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Floor</td>
<td>40</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Second floor</td>
<td>40</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Roof truss Top Chord</td>
<td>30</td>
<td>7</td>
<td>37</td>
</tr>
<tr>
<td>Roof truss Bottom Chord</td>
<td>0</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Roof truss total</td>
<td></td>
<td></td>
<td>47</td>
</tr>
</tbody>
</table>

(No part of the truss shall have a clear height of 42” or more between the bottom chord and any other truss member).

Wall wind load: 20 PSF with 90 MPH (inland) wind speed per 2003 IRC. The combination of live load and wind load may be multiplied by 0.75 and added to the full dead load to increase member strength. Coastal wind speeds are higher.

5.22 All exterior walls shall have an approved continuous building wrap air infiltration barrier behind the siding. This barrier shall have no vertical joints at the box sill. Product shall be installed in accordance with the manufacturers' recommendations and shall in all cases be installed tight to the sheathing. Building wrap shall be "Tyvek" or approved equal. All overlaps shall be taped using approved tape.

5.23 Only treated lumber may be used as structural members in contact with concrete or in below grade conditions. Therefore, all porch posts, basement posts, and sill plates must be treated lumber. Provide "Amofoam" or equal sill sealer under all sill plates in contact with concrete. There are some types of treated lumber that corrode galvanized fasteners. Caution should be used when choosing the lumber.

5.24 Anchor 2x6 wood sill plate onto steel beams with "Hilti" DS heavy-duty pins or other approved method in a 32" staggered pattern.

5.25 Sill plate holes shall be of minimal size for tight bolt fitting.

5.26 Stair treads: minimum of 10” nosing to nosing; stair risers: maximum of 7 3/4 inches high or as code allows. Provide a minimum of 6’-8” head room. Balusters shall be spaced so as not to allow the passage of a sphere of 4” in diameter. The triangular openings formed by the riser, tread and bottom rail shall not allow the passage of a sphere of 6” or greater diameter.

5.27 Only steel shims shall be used for structural framing. Shims shall be of full width of beam flange (for steel beam) or full width of wood beam member. If more than one shim is required to place beam at correct elevation, the plates shall be positioned directly above each other and secured to prevent displacement. The lowest steel plate shim shall rest on a level surface. Alternate means of shimming wood structural members may be achieved with other approved materials. However these alternates need approval based on review by Building Department and Architect.
5.28 All multiple member beams, such as 3-2x12's or 2-2x12's, are intended to have full-length members - splicing of members is prohibited. Beam members shall be full length from bearing point to bearing point.

5.29 All joints of wood wall plates shall occur over the center point of a wall stud. Double top plate joints shall be offset not less than 48". Where top plates are cut in bearing walls for mechanical trades, 24 gauge sheet metal straps shall be installed, one on each side of the plate.

5.30 Notching and boring of floor joists, exterior walls, bearing walls, non-bearing walls, and other building elements shall be subjected to the limitations set forth by the governing codes.

5.31 Nailing of framing members shall be as follows:

Fastener schedule for structural members

<table>
<thead>
<tr>
<th>Description of Building Mat'l</th>
<th>Qty / type fastener</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joist to sill or girder</td>
<td>3 - 8d / toe nail</td>
<td></td>
</tr>
<tr>
<td>Sole plate to joist or blocking</td>
<td>16d / face nail</td>
<td>16' OC</td>
</tr>
<tr>
<td>Top or sole plate to stud</td>
<td>2 - 16d / end nail</td>
<td></td>
</tr>
<tr>
<td>Stud to sole plate</td>
<td>3- 8d or 2 - 16d / toe nail</td>
<td></td>
</tr>
<tr>
<td>Double studs</td>
<td>16d / face nail</td>
<td>24&quot;OC</td>
</tr>
<tr>
<td>Double top plate</td>
<td>16d / face nail</td>
<td>24&quot;OC</td>
</tr>
<tr>
<td>Top plates, laps &amp; Intersections</td>
<td>2-16d / face nail</td>
<td></td>
</tr>
<tr>
<td>Continued header</td>
<td>16d</td>
<td>16&quot;OC along each edge</td>
</tr>
<tr>
<td>Ceiling joist to plate</td>
<td>3-8d / toe nail</td>
<td></td>
</tr>
<tr>
<td>Continuous header to stud</td>
<td>4-8d / toe nail</td>
<td></td>
</tr>
<tr>
<td>Ceiling joists, laps over partitions</td>
<td>3-16d / face nail</td>
<td></td>
</tr>
<tr>
<td>Ceiling joists to parallel rafters</td>
<td>3-16d / face nail</td>
<td></td>
</tr>
<tr>
<td>Rafter to plate</td>
<td>2-16d / toe nail</td>
<td></td>
</tr>
<tr>
<td>1&quot; brace to each stud &amp; plate</td>
<td>2-8d or 2 staples,1</td>
<td>3/4&quot;/face nail</td>
</tr>
<tr>
<td>Built up corner studs</td>
<td>16d</td>
<td>24&quot;OC</td>
</tr>
<tr>
<td>Built up girders &amp; beams</td>
<td>16d at top &amp; bottom</td>
<td>32&quot;OC staggered</td>
</tr>
<tr>
<td>Roof rafters to ridge, valley or hip rafters</td>
<td>4-16d / toe nail</td>
<td></td>
</tr>
<tr>
<td>Rafter ties to rafters</td>
<td>3-16d / face nail</td>
<td></td>
</tr>
<tr>
<td>Plywood &amp; particle board, roof and wall sheathing to frame</td>
<td>3-8d / face nail</td>
<td></td>
</tr>
<tr>
<td>5/16&quot; to 1/2&quot;</td>
<td>6d / staple 16ga;</td>
<td>6&quot; edges; 12' intermediate.</td>
</tr>
<tr>
<td>19/32&quot; to 3/4&quot;</td>
<td>8d smooth or 6d deformed</td>
<td>6&quot; edges; 12' intermediate.</td>
</tr>
<tr>
<td>1/2&quot; fiberboard sheathing</td>
<td>1 1/2&quot; galv roofing nail; 6d common nail; staple 16ga 1 1/8&quot; long</td>
<td>3&quot; edges; 6&quot; intermediate</td>
</tr>
<tr>
<td>1/2&quot; gypsum sheathing</td>
<td>1 3/4&quot; galv roofing nail; 6d common nail; staple 16ga 1 1/8&quot; long</td>
<td>4&quot; edges; 8&quot; intermediate</td>
</tr>
</tbody>
</table>
Notes for table:

1- All nails are smooth common, box or deformed shanks except where noted.

2- Nail is a general description and may be T-head, modified round head or round head.

3- Staples are 16-gauge wire and have a minimum 7/16" O.D. crown width.

4- Fasteners for building materials not listed above shall be based on values set forth by the governing code or manufacturers recommendations.

5.32 Lumber used for studs (2x4, 2x6, and 2x8) and pre-cut studs shall meet all the requirements of the IRC 2003. All exterior walls are to be 2x6 to allow for R19 insulation.

5.33 Bearing posts noted as 3-2x4, 4-2x4, etc., are intended to mean that the entire area of the post specified on the drawings is provided for the beam to rest on. Therefore, if a 3-2x4 post is specified on the drawings, then a bearing area of 4 1/2" x 3 1/2" is to be provided. Minimum bearing for headers in openings of 6'-0" or greater shall be 2-2x4.

5.34 Porches, balconies or raised floor surfaces more than 30" above the floor or grade below shall have guardrails 36" in height. Open sides of stairs with a total rise of more than 30" above the floor or the grade below shall have guardrails not less than 36" in height measured vertically from the tread nosing. Refer to the local building code for more stringent requirements for guardrails.

5.35 All stairways within the dwelling units shall be equipped with at least one continuous handrail meeting the following requirements:

- Project a maximum of 3 ½ inches into required stair width.
- Be between 30" - 34" high measured from leading edge to tread.
- Have a grip size O.D. - 1 1/4" minimum to 2" maximum.
- Shall be able to support a concentrated load of 200 lbs applied at any point in any direction along the top of the railing and shall be designed to withstand a 50 lb uniform load applied in any direction. (The uniform load and concentrated load shall not be applied simultaneously)
- Ends at top and bottom of stairway shall be returned to a wall or post. The use of a volute, turnout or starting easing is allowed on the lowest tread.

5.36 All ceilings, framed or trusses, shall have stiff backs at 8’0” O.C. maximum.

5.37 Provide blocking as required at all points having wall mounted hardware/cabinets, e.g. towel bars, vanities, blinds, baseboards, kitchen cabinets. Blocking extending beyond adjacent studs shall be 1x 4 let into studs to provide a flush surface for the wall finish.

5.38 All exterior wood decking shall be treated with pressure preservatives. Decking shall not be stained.

5.39 All painted exterior wood trim shall be "Georgia Pacific" prime trim or equal. All six sides shall be primed and all exposed surfaces shall be painted.
5.40 Roof and floor trusses shall be braced to prevent rotation and provide lateral stability.

6.0 THERMAL AND MOISTURE CONTROL

6.1 Exterior walls shall have a minimum R-19 insulation with integral vapor barrier towards the interior of the home. (This is an upgrade from R-18)

6.2 All ceilings shall have a minimum R-43 insulation with vapor barrier towards the interior of the home. Vapor barrier shall have a transmission rate not to exceed one perm. Maintain minimum 3 1/2" batt insulation to outside edge of outside wall. (This is an upgrade from R38)

6.3 Attic insulation will be blown in. Wall insulation will either be blown in or batt. (Blown in is an upgrade from previous specification)

6.4 Foundation walls at crawlspace shall have R-11 batt insulation draped from box sill over interior side of crawlspace. (This is a new specification for green)

6.5 Garage to unit walls shall have a minimum R-19 batt insulation with integral vapor barrier to room side. Garage walls that abut the dwelling and are insulated shall be covered with drywall or paneling.

6.6 All cantilevers and floor areas over unheated spaces (50 degrees or less) shall have a minimum R-43 batt insulation with integral vapor barrier.

6.7 Stuff insulation around exterior door and window openings and take care to insulate fully behind and around electrical boxes on exterior walls.

6.8 All concealed flashing shall be a minimum of 26-gauge sheet metal. Provide sheet metal baby tin sidewall flashing at all roof to wall conditions. Building wrap shall extend over baby tin sidewall flashing.

6.9 Underlayment, ice dam protection, shingles, roof flashing and other roofing conditions shall be in accordance with the NRCA roofing and waterproofing manual, latest edition.

6.10 Shingles shall be “Timberline Prestique 30” High Definition shingles or equal. Color to be chosen by DHFH.

6.11 Provide flashing and sheet metal installation in compliance with SMACNA. Provide to prevent the penetration of water through the exterior shell of the building.

6.12 Provide aluminum or vinyl gutters and downspouts. Downspouts terminating at grade shall be provided with splash blocks or shall discharge directly into storm sewer. Color to be determined by DHFH.

6.13 All accessories used with gutters and downspouts shall be designed for use with the rain removal system by the systems manufacturer and shall have the same finish.
6.14 Rain removal system shall be installed with the ability to expand and contract with changing temperatures. Gutters shall be able to support a minimum of 50 lbs. per lineal foot of lateral pressure when installed.

6.15 All hanger systems shall provide a concealed attachment at the front of the gutter. Spikes and ferrules and brackets attached to the outside periphery of the gutter shall not be used.

6.16 Gutter expansion joints shall be installed per manufacturer's recommendations or, if more restrictive, at all hip roof, on straight runs greater than forty feet and any other condition where normal movement due to expansion and contraction is restricted.

6.17 Nails fastening the rain removal system shall be aluminum. All nails shall have a suitable etch finish to remove grease (?) and provide additional holding strength.

6.18 Gutter hangers shall be located a maximum of 24" apart and nailed to the roof sheathing or fascia board (at truss ends where possible) with two 11/4" or 11/2" aluminum screw shank nails.

6.19 Gutters shall be installed without bending, damaging, or otherwise voiding the shingle warranty. The gutter installer (if used) shall be responsible for repairing any damage to shingle work due to gutter installation.

6.20 Flash all stoops including sidewall conditions etc. with not less than 26 gauge sheet metal.

6.21 Valleys shall be woven or closed with not less than No. 50 roll roofing material not less than 36" wide centered in the valley over underlayment.

6.22 All exposed insulation material shall have a flame spread rating not to exceed 25.

6.23 Caulking and Sealants: Exterior joints around windows and door frames, between wall cavities and window or door frames, between wall and foundation, between wall and roof, between wall panels and penetrations or utility services through walls, floors, roofs and all other openings in the exterior envelope shall be caulked, gasketed, weather-stripped or otherwise made weather tight. Caulking material shall be compatible with all surfaces to be sealed using backer rods as required. Apply caulk at all openings and at juncture of dissimilar materials. Use low expansion “Great Stuff” by DOW for sealing all penetrations. Use low VOC caulking products that are rated by the South Coast Air quality Management District (SCAQMD), for all other uses. Use Hilti Fire Stop Caulk CP606 for fire caulking.

6.24 DHFH shall select colors. Do not caulk vinyl to vinyl unless manufacturer specifically specifies doing so.

6.25 All roof surfaces with a pitch less than 4:12 shall be completely covered with ice and water shield. Roofs with a pitch of 4:12 or greater shall have ice and water shield extending to a minimum of 2'0" inside of exterior wall. All roofs shall have ¾" overhang on fascia board.

6.26 All shingles shall be hand nailed (mechanical fasteners may be used if approved by DHFH prior to installation.
6.27 Roofing nails shall be aluminum or hot-dip galvanized 11 or 12 gauge, sharp pointed conventional nails with barbed shanks, a minimum head diameter of 3/8", and of sufficient length to penetrate a minimum of ¾" into solid decking.

6.28 Soffit panels shall be installed per manufacturer’s recommendations and shall have no visible fasteners. All fasteners shall be non-corrosive.

6.29 Vinyl siding shall be meet UBC Standard 14-2 and shall be supplied by a member of the Vinyl Siding Institute. Siding shall be installed in strict conformance with manufacturer’s recommendations so as to remain free of warps, buckles and other defects. Color to be determined by DHFH.

6.30 Provide metal pan w/drain for all mechanical & laundry equipment located above habitable rooms.

7.0 DOORS, WINDOWS, AND GLAZING

7.1 Exterior entry doors shall be metal clad, insulated and provided with appropriate weather stripping and threshold. Match door designs as shown on drawings. Storm doors shall be supplied by Larsons, a Habitat Partner. All exterior doors shall be insulated and have door sweeps and weather-stripping.

7.2 (Added to meet Energy Star requirements) All windows shall be of the type shown on the drawings and shall be single or double hung and provided with u-values of .35 or less and show such on an approved NFRC label. U-value shall be “window unit” rather than “center of glass” U-value.

All windows are to be low-E double glazed units. If metal framed, units shall include thermal break or be insulated frame. The perimeter of windows units shall be wrapped with insulation prior to installation to form a tight seal between the window unit and rough opening.

Former window suppliers are Pella, Feldco, Anderson and Alside.

7.3 (Added to meet Energy Star requirements) Sliding glass doors shall have double glazed and if possible low E glazing. Sliding glass doors are to have the operable panel on the interior side of the track and an auxiliary bar is to be included in the installation that will be jimmy resistant. Sliding doors are to be Energy Star rated or better.

7.4 Provide at least one egress window in each bedroom and basement with a clear opening of 5.7 sq. ft. with a minimum width of 20 inches and a minimum height of 24 inches. Maximum sill height above floor shall be 44 inches and a minimum of 19” above finished floor.

7.5 All habitable rooms shall be provided with an aggregate glazing area of not less than 8 percent of the floor area of such rooms. One-half of the required glazing shall be capable of being opened for ventilation. Door and window infiltration rates (heat gain and loss) shall meet or exceed village standards or National Code if applicable.
7.6 Tempered glazing shall be provided in individual panes greater than 9 sq. ft. with an exposed bottom edge less than 18 inches above the finished floor and in storm doors, ingress, and means of egress doors, bath and shower enclosures, within 24 inches of a vertical edge of an exterior door which is within 60 inches or less of a walking surface, and as code requires.

7.7 Unit entry doors shall be pre-primed, sanded, de-greased, and field painted with smooth medium/high luster washable enamel paint.

7.8 Provide 2 x 6 (or larger) wood members below all entry doors as a "kick" plate. Material shall be treated and exposed surfaces finish painted in the field.

7.9 Interior doors shall be flush or raised panel, hollow core style.

7.10 Garage door shall be four panel steel door without insulation or glazing. Supplier shall provide all tracks, counter springs, hardware and materials. Finish of the door shall be factory painted white. If garage is connected to the house, then use an insulated door.

7.11 All egress doors shall be operable from the interior without the use of a key. Entry doors shall be equipped with a lock set and dead bolt with a 1” throw. Master bedroom and bathrooms shall be equipped with privacy hardware. All other doors shall be provided with passage hardware.

7.12 Hinged doors shall have pre-hung casing. Bi-fold doors shall have drywall returns unless otherwise noted on the drawings (normally entry and hall closets have cased openings).

7.13 Finish and style of hardware to be specified later.

8.0 FINISHES

8.1 Furnish and install "U.S. Gypsum" or equal tapered wallboard and metal corner beads. Tape all joints with "Perfatape or equal". Wallboard shall be glued and screwed, and finished surfaces shall be level and free from waves, pits, and buckles. Use 5/8" fire code gypsum board as indicated on the plans and details and as required by the governing code. Gypsum board installation shall comply with the following standards unless otherwise noted on the drawings:

8.2 Nailing of finish material shall be as follows:
   - 1/2" Drywall use 1 1/4" DW (Type W) screws spaced 16" on edge and 16" on center as noted in section 8.3.
   - 5/8" Drywall use 1 5/8" DW (Type W) screws spaced 12" on edge and 12" on center as noted in section.

8.3 Wallboard installed with truss cords as the supporting member shall not be glued or screwed within 12” (horizontally) or 8” (vertically) of the perpendicular joint to a vertical wall except perimeter walls.

8.4 Wallboard ceiling support clips to be installed between truss cords greater than 19" on center.
8.5 All material finishes, colors, styles, and manufacturers are to be approved and/or selected by DHFH.

8.6 All interior trim shall be approved and/or selected by the DHFH.

8.7 All interiors windowsills shall be painted wood. All joints shall be caulked.

8.8 Provide vertical blinds and tracks at all sliding glass doors, horizontal blinds and tracks at all windows (except kitchen). Privacy blinds are to be supplied by a Habitat partner.

8.9 (Added to meet requirement for low environmental impact materials) Flooring shall be 12”x12” vinyl composite tiles of .080” thickness or equal. Flooring shall be applied to surfaces properly leveled and sealed. Linoleum flooring may be used at the discretion of DHFH. Cork flooring will be considered on a test basis in one new home.

8.10 Where vinyl tiles are used over framed floors, the sub-floor shall be covered with 1/4” Luan plywood that is glued to sub-floor and fastened with 1/4” ring or screw shank nails (min. 12 gauge shank) every 6” along edges and 8” in the body of panel. If linoleum is used, self-leveling compound shall cover all joints and nail locations – sanded smooth and sealed before the linoleum is installed.

8.11 Bathroom shall be equipped as follows:

- One toilet paper holder
- Two Bath Towel bars
- One friction fit shower curtain bar
- One soap dish (tiled ceramic surrounds only)
- One medicine cabinet (optional)
- Shower liner with rings
- Water Closet (supplied by Ferguson, a Habitat partner)
- Mirror
- Cabinets
- Counter tops - Cultured marble with integral bowl, back splash and end splash as required.
- Faucets
- Tub/shower enclosure - with smooth finish surround on three sides to shower height. Enclosure to be ceramic tile up to shower height.

8.12 Kitchen appliances and accessories shall be as follows or equal:

- Refrigerator -16 cu. ft. frost free w/o automatic icemaker and valve box, supplied by Whirlpool, a Habitat Partner. To be Energy Star compliant.
- Oven/range combination, supplied by Whirlpool, A Habitat partner.
- Range exhaust (non-vented) - recirculating or exhaust outside. To be Energy Star compliant, range must be exhausted outside.
- Cabinets
- Double stainless steel sink with single faucet
- Laminated counter tops with post-formed edge. Post formed back splash is optional.

8.13 (Specified for low VOC) Paint Schedule – all paint to be supplied by Valspar, a Habitat partner. If possible request the low VOC paint with the Green Seal -11 (GS-11) label.

<table>
<thead>
<tr>
<th>Location</th>
<th>Primer</th>
<th>Finish Coat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>Alkyd Primer</td>
<td>2 coats acrylic enamel</td>
</tr>
<tr>
<td>Galvanized metal</td>
<td>Galvanized metal primer</td>
<td>2 coats acrylic enamel</td>
</tr>
<tr>
<td>Ferrous metal</td>
<td>Zinc chromate primer</td>
<td>2 coats alkyd enamel</td>
</tr>
<tr>
<td>Interior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>Latex Primer</td>
<td>2 coats flat acrylic enamel</td>
</tr>
<tr>
<td>Drywall</td>
<td>Latex primer</td>
<td>2 coats flat acrylic enamel</td>
</tr>
<tr>
<td>Ferrous Metal</td>
<td>Alkyd metal primer</td>
<td>2 coats alkyd enamel</td>
</tr>
</tbody>
</table>

8.14 All trim and mill work shall be field painted.

8.15 All base trim shall be selected and/or approved by DHFH. Base shoe is to be installed at hard floor surface locations.

8.16 All exterior door thresholds shall be height adjustable; all carpet to vinyl flooring transitions shall have approved thresholds.

8.17 (Specified for low VOC) Carpet is 26 oz medium pile carpet with low VOC characteristics. Consideration is to be given to the adhesive for gluing the carpet or tiles – use a low VOC adhesive.

9.0 HEATING AND VENTILATION

9.1 The Mechanical subcontractor shall provide a complete and operable system for the heating and ventilating in accordance with the governing codes for such work and shall be responsible for providing any additional information required to secure a building permit including, but not limited to, sealed plans and specifications as required by the regulatory agencies.

9.2 Center diffusers on windows where applicable and allowed by floor and roof truss layouts. Ceiling diffusers shall be white and floor diffuser color shall be selected by DHFH and compatible with floor finish.

9.3 DHFH to obtain performance specifications for each unit and their various options for review and approval prior to construction.
9.4 The mechanical subcontractor's scope of services shall include the area within the building envelope, the porches, and the exterior area within 5'-0" of the building envelope and porch.

9.5 (New specification for energy conservation) The heating and ventilation system shall conform to Energy Star requirements.

9.6 (New specification for energy conservation) Furnaces shall have a minimum AFUE rating of 90% and shall be direct vent sealed combustion units.

9.7 (New specification for energy conservation) All ducts shall be located in conditioned spaces. No heating ducts shall be located in attics, unconditioned crawl spaces or under slabs. All joints in supply/return ducts shall be sealed with duct mastic. Duct tape is unacceptable for this purpose.

9.8 (New specification for energy conservation) All heating systems shall be sized to maintain 70 °F indoors when the temperature outdoors is -10 °F.

9.9 (New specification for energy conservation) All pipes shall be located in conditioned areas.

10.0 PLUMBING

10.1 The Plumbing subcontractor shall provide a complete and operable water and sewage system in accordance with the governing codes for such work and shall be responsible for providing any additional information required to secure a building permit including, but not limited to, sealed plans and specifications as required by the regulatory agencies.

10.2 Provide chrome escutcheon plates at all pipes passing through cabinets and wall finish conditions.

10.3 (New specification for low flow) All fixture hardware shall be approved by DHFH and be low flow rated.

10.4 Frost proof hose bibs shall be mounted 12" above grade.

10.5 No plumbing shall be located in areas subject to freezing.

10.6 Routing of exposed drain lines in utility room shall be approved by DHFH. In no case shall a drain be located within the travel area of a room.

10.7 The plumbing subcontractor's scope of services shall include the area within the building envelope, the porches, and the exterior area within 5'-0" of the building envelope and porch.

10.8 (New specification for low flow) Toilets to be low flush rates – 1.6 gpf, if available from national donor.
11.0 ELECTRICAL

11.1 The electrical subcontractor shall provide a complete and operable electrical system in accordance with the governing codes for such work and shall be responsible for providing any additional information required to secure a building permit including, but not limited to sealed plans and specifications as required by the regulatory agencies.

11.2 DHFH shall be responsible for coordinating the installation of a complete and operable cable T.V. and phone system. Each home shall have a cable jack in a common area (living room or family room) and each bedroom. Each home shall also have a telephone jack in a common area (kitchen) and each bedroom.

11.3 Placement of exterior meters shall be done in a logical, neat, and orderly manner. Placement shall be coordinated and approved by the DHFH.

11.4 Provide 110-volt (U.L. approved) smoke detectors on each level of the unit and in each sleeping area hard wired in series with battery backup. Provide a separate circuit at the panel. All detectors shall sound when one sounds. Smoke detector placement shall comply with all local requirements and be shown on the electrical plans. Carbon monoxide detectors to be installed per code.

11.5 The electrical subcontractor’s scope of services shall include the area within the building envelope, the porches, and the exterior area within 5'-0" of the building envelope and porch.

12.0 RADON CONTROL

12.1 A radon reduction system shall be installed in the building if required by local agencies and shall conform to the following minimum standards or as required by the local building officials.

12.2 A layer of gas-permeable material shall be placed under all concrete slabs that directly contact the ground and are within the walls of the living spaces of the building. Gas permeable material is a uniform layer of clean aggregate, a minimum of 4" thick. Aggregate size shall pass through a 2" sieve, but be retained by a 1/4" sieve.

12.3 A minimum 6-mil polyethylene (or equal) flexible sheeting material shall be placed on top of the gas-permeable layer prior to casting concrete. The sheeting shall cover the entire floor and be lapped at least 12" at joints. All punctures and tears shall be sealed and covered with additional material.

12.4 Openings around bathtubs, showers, water closets, pipes, wires, or other objects that penetrate the concrete slab shall be filled with polyethylene caulk (or equal).

12.5 All control joints, isolation joints, and any other joints in concrete slabs or between slabs and foundation walls shall be sealed with a caulk or sealant.

12.6 Sump pits open to soil or serving as the termination point for drain tile loops shall be covered with a gasketed cover.

12.7 A minimum 3" diameter ABS, PVC or equal gas-tight pipe shall be embedded
vertically into the gas permeable material before the slab is cast. A "T" fitting or equivalent method shall be used to ensure that the pipe opening remains within the sub-slab material. The pipe shall extend up through the building floors and terminate a minimum of 12" above the roof in a location a minimum of 10 feet from any window or other openings into the conditioned spaces of the building.

12.8 In buildings where interior footings or other barriers separate the sub-slab gas permeable material, each area shall be fitted with an individual vent pipe. Vents can connect to a single vent that terminates above the roof.

12.9 Radon vent pipes shall be accessible for future fan installation through an attic or other area outside the habitable space. An electrical circuit terminated in an approved box shall be installed during construction in the attic close to the radon vent pipe.

12.10 All exposed and visible interior radon vent pipes shall be identified with at least one label on each floor and in accessible attics. The label shall read: "Radon Reduction System".

13.0 LANDSCAPING (Section added for low environmental impact and sustainable level scope)

13.1 Consideration will be given to install rain barrels for water collection and use to water gardens. Also consider sustainable landscaping where possible.

13.2 Concrete pavers will be used for driveways and walkways if a donation can be secured.
INDEX with associated sections and comments

Asphalt: *not yet specified*
Blinds – doors: 8.8
Blinds – windows: 5.37
Carpeting: 8.17
Concrete: *all of section 3.0, 5.23, 12.2-12.5, 13.2*
Door bells: *not yet specified*
Doors - Exterior: 7.1, 7.3, 7.6, 7.7, 7.11, 7.12, 8.16
Doors – Interior: 7.9, 7.12
Doors – storm: 7.1, 7.6
Drywall: 7.12, 6.5, 8.2
Fascia: 6.18, 6.25
Garage Door Openers: *not yet specified*
Gutters and downspouts: 6.12, 6.14-6.19
HVAC Systems: 1.4, *all of section 9.0*
Lighting fixtures: *not yet specified*
Lumber: 1.16, 5.2, 5.23, 5.32
Mailbox: *not yet specified*
Paint – walls: 5.13
Paint – ceilings: 5.13
Phone /TV-Internet connections: 11.2
Plumbing fixtures: 10.3
Roofing: 5.10, 5.14, 6.8, 6.9, 6.16, 6.18, 6.21, 6.23, 6.23, 6.25, 6.27
Shelving in closets: 5.20
Siding: 1.14, 5.22, 6.29
Soffit: 1.14, 6.28
Trim – interior: 1.14, 8.6, 8.14, 8.15
Trim – exterior: 1.14, 5.39
Tile: 5.10, 8.9-8.11, 8.17
Waterproofing: 3.11, 6.09
Windows: 1.14, 1.16, 5.13, 6.7, 6.23, *all of section 7.0, 8.7, 8.8, 9.2*