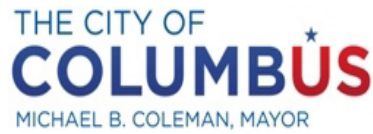


January 2013



Commissioners  
Paula Brooks  
Marilyn Brown  
John O'Grady



City of Columbus  
Mayor Michael B. Coleman



**A**ccessible  
**W**ater Conservation  
**A**ir Quality  
**R**esource Conscious  
**E**nergy Efficient

**AWARE** Manual For Sustainable Accessible Living

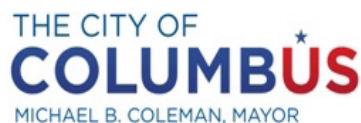
Performance Standards for City of Columbus and Franklin County  
Federally-Funded Residential Rehabilitation and New Construction Projects

# **AWARE Manual For Sustainable Accessible Living**

## **Performance Standards for City of Columbus and Franklin County Federally-Funded Residential Rehabilitation and New Construction Projects**

The AWARE Manual for Sustainable Accessible Living provides building standards and contractor requirements for all residential projects awarded federal funds through the City of Columbus and Franklin County. The green and universal design standards are applicable to both new construction and housing rehabilitation. Columbus and Franklin County are committed to promoting AWARE standards of construction throughout our community.

The AWARE Manual for Sustainable Accessible Living is designed to achieve Enterprise Green Communities Standards. Columbus and Franklin County desire to achieve the highest level of green and universal design standards possible within parameters of funding and feasibility of the project. The intent of the AWARE Manual standards is to develop and redevelop homes that, when matched with resource-conscious behaviors, can lead to more efficient energy use and lower utility bills while allowing residents of all abilities to stay in their home. (<http://www.greencommunitiesonline.org>)



City of Columbus  
Mayor Michael B. Coleman



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THE 2012 AWARE MANUAL  
WAS DEDICATED TO

**RAYMOND PRENDEVILLE**  
**1953 - 2011**

Ray Prendeville was a man of many talents and much love, known for his natural enthusiasm and endearing wit. He was passionate about family and work, and had a deep commitment to help others in need. Ray was an integral part of Homeport and the director of Home Ownership. Ray regarded home building as an opportunity to jumpstart lives, strengthen families, and build community. His inspiration and positive attitude resound in the lives of the many he touched.

Ray selflessly contributed to the development and ongoing improvement of the City of Columbus and Franklin County AWARE Manual. It is with gratitude and honor that the 2012 edition of the AWARE Manual is dedicated to the memory of our friend, Raymond J. Prendeville.

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## **DIVISION 00 - BIDDING REQUIREMENTS**

### **000100 CONSTRUCTION DRAWINGS & SPECIFICATIONS REVIEWS**

#### **The City of Columbus, Housing Division's Project Plan and Specification Review/Approval Procedure**

##### **Step #1**

- Developer shall submit a complete set of construction documents and specifications to the City of Columbus Housing Division for review that have been designed to specifically address and meet the AWARE Manual Standards.
- Electronic or CD submittal of construction documents and specifications is preferred.
- If for any reason a standard can not be met, the developer/specifications writer/architect shall submit a written waiver request for that item, along with the reason why the standard can not be met, to the City of Columbus for approval, along with a justification as to why the standard cannot be met and a proposed alternative. The waiver request shall address these 5 elements:
  1. Identify unit(s) by address, model name, or unit number.
  2. Confirm if unit(s) is or is not considered within the 20% UD requirement.
  3. Identify the AWARE standard from which the waiver variance is being requested.
  4. State rationale for variance, e.g., site or design restrictions, improved product, buyer request.
  5. Provide the proposed alternative.

##### **Step #2**

- The Housing Division will review the submitted construction documents and notify the Developer as to whether the construction documents, specifications and any wavier requests were approved or if any deficiencies were found that need to be corrected.

##### **Step #3**

- The Housing Division will send to the developer, via e-mail, a precise/detailed written review document as to what corrections, if any, are required in order to have their construction documents and specifications approved.

##### **Step #4**

- The Developer shall comply with all the required corrections to their construction documents and specifications per the Housing Division's written review document.

##### **Step #5**

- The Developer shall submit the corrected construction documents and specifications to the Housing Division for final review and approval.

##### **Step #6**

- The Housing Division will review the re-submission.
- The Housing Division will notify the Developer as to whether the construction documents and specifications were approved.
- If any deficiencies from the previous review were not addressed for this second review of the Developer's construction documents and/or specifications, the Developer will be notified that they have been rejected again.

##### **Step #7**

- If specifications, construction documents and waivers are approved, no further action is necessary.
- If rejected again, the Developer will need to refer to the Housing Division's original written review document outlining the required corrections from the first review (and any subsequent document with new deficiencies) in order to complete all corrections/changes before re-submitting again.

### Step #8

- Once the Developers re-submission is received again, the Housing Division, will work them into their schedule as soon as they possibly can for review.
- Until construction documents and/or specifications are approved by the Housing Division, steps #5, # 6 and # 7 will be repeated.

### Specifications

The burden of proof is on the contractor to show that all material, preparation, finishing and workmanship, are compliant with the projects specifications. If any items do not meet or exceed the specifications they will be corrected at the contractor's expense and no additional construction time will be granted. Project will stay on original time frame.

### Specification Writing and Plans

*May be submitted via email or on a disk*

A full set of standard size plans/drawings shall accompany all specifications presented to the City of Columbus for approval, if not submitted by email or disk.

- All standards in the AWARE Manual are to be implemented in all the projects.
- If for any reason a standard can not be met, the developer/specifications writer/architect shall submit a written waiver request for that item, along with the reason why the standard can't be met, to the City of Columbus for approval, along with a proposed alternate.
- Any deviations from the AWARE Manual without a written approved waiver shall be corrected at the developers expense. *Refer to page 7 for waiver request detail.*
- Any Conflict of information between plans/drawings and specifications, the most stringent in following the AWARE Manual shall be implemented.

## 000200 TASK REFERENCE CODE

- Ⓐ Accessibility/Universal Design
- Ⓔ Energy Efficiency
- Ⓖ Green
- Ⓗ Healthy Homes
- Ⓟ Historic Preservation

## 000300 DEVELOPER MANDATORY DESIGN STANDARDS

### Developer Team

- For New Build, Double Conversions and Gut Rehab, each Developer shall put in place a team consisting of an Architect, Designer and/or Specification Writer and Construction Manager for each project that demonstrates capacity to complete the project with the City/County requirements.

## **000400 CONTRACTOR MANDATORY REQUIREMENTS**

### **000401 PARTICIPATION REQUIREMENTS**

To participate in the City of Columbus and Franklin County Residential Programs for Rehab and New Builds, the contractor must meet the following criteria.

- Contractor certifies that they have not been removed from either the City of Columbus, Franklin County or State of Ohio contractor list in the past twelve (12) months.
- Contractor certifies that they have not been debarred from public contracts for any reason or found by the City of Columbus, Franklin County or State of Ohio (after all appeals) to have violated prevailing wage laws more than three times in a two-year period in the last seven years.
- Contractor certifies that they have not been penalized or debarred from any public contracts for falsified certified payroll records or any other violation of the Fair Labor Standards Act or for any other reason, in the last five (5) years.
- Contractor certifies that they have implemented an OSHA compliant Safety Program and will provide evidence of such upon request.
- Contractor certifies that they maintain a substance abuse policy for their personnel and will provide evidence thereof upon request.
- Contractor certifies that they do not have an Experience Modification rating of greater than 3.0 (a penalty-rated employer) with respect to the Bureau of Workers Compensation risk assessment rating.
- Contractor certifies they are compliant with unemployment and workers compensation laws.
- Contractor certifies that they will supply all required bonds, (License and/or Performance) bonds, to do business in the State of Ohio with an A.M. Best Company rating of at least A.
- Contractor certifies they will employ supervisory personnel with at least three (3) or more years experience in the specific trade on the projects.
- Contractor certifies that they or their sub-contractors have all the required licenses to obtain the permits and to do the work.
- Contractor certifies they and their sub-contractors have EPA RRP Certified Firm and Renovation, Repair and Painting (RRP) certifications. All workers must have RRP training.

### **000402 BIDDING REQUIREMENTS**

Contractor must have the following in order to bid on the City of Columbus and Franklin County Residential Programs for Rehab and New Build projects.

- Current Home Improvement Contractors License (HIC) issued by The City of Columbus for contractors working on 1 to 3 family residential units per building. A current General Contractors License is required on projects with 4 or more residential units per building.
- Current Liability Insurance with minimum of one million per occurrence and two million dollar aggregate.
- Current Workers Compensation Certificate.
- Current Equal Business Opportunity (EBO) Certificate and Contract Compliance Number.
- Current EPA Certified Firm certifications.

## 000500 Environmental Hazards

When environmental hazards, including but not limited to asbestos, mold, pigeon droppings, wild animals, animal waste, vermin are present, the Developer shall submit a copy of an abatement report to the City of Columbus or Franklin County prior to the commencement of work.

### Lead Safe and Lead Paint Clearance Testing

**Standard:** Shall pass the State of Ohio's lead paint clearance test before rehab work can begin after demolition or lead abatement, and again before project can be finalized.

**Testing:** A third party, State of Ohio licensed Risk Assessor will conduct the State of Ohio's lead paint clearance test on all homes built prior to 1978, whether a gut rehab, moderate or major rehab, before the final invoice can be processed.

**Reporting:** Developer shall submit a copy of the Lead Risk Assessment Report to the City of Columbus or Franklin County prior to the commencement of work. Developer shall also submit a copy of the Lead Clearance Report to the City of Columbus or Franklin County upon completion of the test.

## 000501 Smoke-Free Housing Environments

### Purpose of Smoke-Free Policies

To mitigate (i) the known negative effects of smoking on environmental air quality and health status; (ii) the increased maintenance, cleaning and redecorating costs attributable to smoking; an (iii) the increased risk of fire from smoking.

### Smoke-Free Construction Sites

All construction sites (new build or renovation) may be designated 100% smoke-free in any indoor or outdoor spaces within property border.

**Printable No-Smoking Construction Site Sign:** [http://publichealth.columbus.gov/uploadedFiles/Public\\_Health/Content\\_Editors/Planning\\_and\\_Performance/Cardiovascular\\_Health/Tobacco-Free\\_Collaborative/No%20Smoking%20Symbol.pdf](http://publichealth.columbus.gov/uploadedFiles/Public_Health/Content_Editors/Planning_and_Performance/Cardiovascular_Health/Tobacco-Free_Collaborative/No%20Smoking%20Symbol.pdf)

### Voluntary Home Smoking Restrictions are encouraged for single-family home owners

Developers may elect to post "Smoke Free Healthy Housing" signage at entrances and may consider smoke-free language in leases and rental agreements, which includes smoking restrictions within all units including patios, porches, and balconies. Developers may elect to include language in single-family home contracts which recommend that homeowners institute a voluntary home smoking restriction to maintain the 100% smoke-free status of the building.

**EPA Smoke Free Home Pledge:** [http://www.epa.gov/smokefre/pdfs/certificate\\_en.pdf](http://www.epa.gov/smokefre/pdfs/certificate_en.pdf)

### Smoke-Free Lease components for multi-unit buildings

Model Smoke Free Lease Addendum: [http://publichealth.columbus.gov/uploadedFiles/Public\\_Health/Content\\_Editors/Planning\\_and\\_Performance/Cardiovascular\\_Health/Tobacco-Free\\_Collaborative/Sample%20Smoke-Free%20Lease.doc](http://publichealth.columbus.gov/uploadedFiles/Public_Health/Content_Editors/Planning_and_Performance/Cardiovascular_Health/Tobacco-Free_Collaborative/Sample%20Smoke-Free%20Lease.doc)

**Smoke free healthy housing building signs available at no cost:** <http://www.odh.ohio.gov/~media/HealthyOhio/ASSETS/Files/tobacco%20of%202/Signagerequestsfh.ashx>

**Resources - Owner toolkit online or to request technical assistance at no cost:** <http://publichealth.columbus.gov/smoke-free-housing-toolkits.aspx>



## **000600 Construction Permits**

### **Permits**

#### Rehabilitation and New Construction

- All the required permits are to be posted at the construction site at all times. Failure to do so will cause a shut down of the project until permits are posted.
- No invoices will be processed if applicable work has not been inspected, approved and signed off on the permit(s).

## **Division 01 – General Requirements**

### **010100 Change Order**

**Franklin County Projects:** Any changes from the original specifications can be approved by the Developer up to 10% of the project bid price via a written and signed change order. All changes after that must be approved by the developer and the County via a written and signed change order.

However, any change orders impacting an AWARE standard specification must be submitted to the County regardless of cost percentage.

- The developer will be responsible for any/all cost of correcting any work done by a change order that does not follow the AWARE Manual and was approved by them alone.

**City of Columbus Projects:** Any changes from the original specifications can be approved by the Developer up to 10% of the project bid price via a written and signed change order. All changes after that must be approved by the developer and the City of Columbus via a written and signed change order.

Even though the developer has the authority to approve change orders up to 10% of the City of Columbus's project bid price before presenting them to the City of Columbus for approval.

- The developer must still give a copy of the change order to the City of Columbus.
- The developer takes on the responsibility to make sure the change order follows the AWARE Manual.
- The developer will be responsible for any/all cost of correcting any work done by a change order that does not follow the AWARE Manual and was approved by them alone.
- The Developer / General Contractor staff must consult with A-Team on Change Orders prior to submittal. All Change Orders shall be itemized with a breakdown of all materials, labor and area. (square feet, lineal feet, time delays etc.)

### **010200 Waiver of Liens**

**General Contractor:** Shall submit with every invoice a lien waiver that they have paid in full all work performed and for all labor, materials, machinery, or fuel furnished by the original Contractor and all Subcontractors, material men and laborers.

**Sub-Contractors:** The general contractor shall supply with every invoice a lien waiver from every sub contractor that is connected to that invoice, that they have been paid in full for all the work they performed which covers all labor, materials, machinery, or fuel furnished by the original Contractor and all subcontractors, material men and laborers. The Contractor shall also submit a subcontractor monitoring data form supplied by the City of Columbus.



## 010300 Construction Schedule

Contractor must supply a work schedule at the pre-construction meeting, indicating all stages of the work and project completion on or before the construction completion date in the contract.

### Timeliness

Project shall be finished within the time frame set in contract. There will be no time extension granted unless:

- Delay is weather related, for exterior work only.
- Delay is caused by an act of neglect by the owner/developer and/or by a city/county representative.
- Delay is caused by authorized changes in the work.
- Delay is caused by circumstances beyond the contractors control.

Failure to complete project in timely manner may result in:

- Liquidated damages against the contractor.
- Removal of contractor from the project and from all City of Columbus and Franklin County federally funded housing programs.

## 010400 Mandatory Building Standards

### 010401 Energy Efficiency & Testing

- **Standard:** The target energy efficiency performance is to meet or exceed the current Energy Star requirement for the region at the time of testing. The target Home Energy Rating System (HERS) score should be 85 or below.
- **Testing:** Third party energy efficiency Testing shall be done by an independent third party, certified HERS Rater using the HERS Index scoring system. The HERS Index is a scoring system established by the Residential Energy Services Network (RESNET) in which a home built the specifications of the HERS Reference Home (based on the 2006 International Energy Conservation Code) scores a HERS Index of 100, while a net zero energy home scores a HERS Index of 0. The lower a home's HERS Index, the more energy efficient it is in comparison to the HERS Reference Home.
- **Reporting:** Developer shall provide the City of Columbus a copy of the HERS (Home Energy Rating System) upon completion of testing.
- Developer shall obtain Energy Star v3 Certificate on all NSP3 projects

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### 010402 Air Tightness & Testing

- **Standard:** Air tightness of building enclosure (envelope) – 0.25 cfm50 per sq. ft. of building enclosure (measured at 50 Pascals (Pa)).
- **Testing:** Before a project is finalized, the house shall under go a blower door test to verify that the air tightness of the building enclosure (envelope) meets the current standards.
- **Standard:** No air leakage of joints, collars, flex duct connections and seams in ductwork.
- **Standard:** Air Conditioning Contractors of America (ACCA) 8th Edition of their Manual J Heat loss calculation tool <http://www.acca.org/tech/manualj/> (calculate manual J based on the post rehab building envelope), and use ACCA's Manual S for equipment selection.
- **Testing:** Provide both Manual J & S reports with first Draw documents.
- **Testing:** Third Party testing of furnace and ductwork performance.

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## 010500 Inspections

### Inspecting Energy Related Features

All homes shall have an on-site inspection by the Developer's Construction Manager and the Rehab Tech to verify the installation of energy-related features such as:

- Duct installation and sealing.
- Building envelope air sealing details.
- Proper installation of insulation, including no gaps, voids, or compressions.
- Insulation is accurately fitting cavity.
- Windows and doors are to be flashed, caulked, and sealed properly.

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### Inspecting Pre-Drywall

All homes shall have a pre-drywall insulation inspection by the Developer's Construction Manager and the Rehab Tech to verify proper installation of insulation.

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### City of Columbus and Franklin County Building Permits

- Sign-offs required for all inspections.

### AWARE Inspections

The City of Columbus or Franklin County Rehab Tech shall perform the following inspections:

- Air Seal Inspection (pre-insulation).
- Insulation Inspection.
- Final AWARE Inspection.

Documentation required for approval of Final Invoice:

- Construction photographs and materials list, including list of materials containing recycled content and those that are locally sourced.
- NSP AWARE INSPECTION RECORD shall be posted on premise or readily accessible for Rehab Tech sign-off (see Appendix for document).
- AWARE Final Documentation Checklist shall note all pertinent documentation received (see Appendix for document).

Upon completion of final AWARE inspection, the Developer may request an AWARE Home Choice Certification from the City of Columbus or Franklin County (see Appendix).

## 010600 Definitions

### 010601 Definitions of Construction Project Types

**New Build:** New structure constructed on vacant lot.

**Gut Rehab:** Demolition and removal of all interior components down to bare stud walls and flooring.

**Major Rehab:** All projects with a rehab cost of twenty five thousand dollars (\$25,000.00) or more. The cost of these projects will now require lead hazards to be abated.

**Moderate Rehab:** All projects with the rehab cost under twenty five thousand dollars (\$25,000.00). These projects shall follow lead safe requirements.

**Double Conversion:** Taking a double structure and converting it to a single family structure.

**Commercial, Mixed Use, and Large-Scale Housing Construction:** All commercial, mixed use, and large-scale housing projects (multi-family developments  $\geq$  four (4) units) shall conform to the Enterprise Green Communities standards ([www.greencommunitiesonline.org](http://www.greencommunitiesonline.org)). The Ohio Housing Finance Agency (OHFA) has additional guidance on these standards ([www.ohiohome.org](http://www.ohiohome.org)).

### 010602 AWARE Manual Definitions

**100% Accessible/Universal Design:** House shall have:

- Zero step entry  $\leq$  1/2" at all exterior visitability/accessibility route entry points.
- A first floor bedroom and a first floor accessible/usable full bath or second floor accessible/usable full bath with a 42" to 48" stairway width to the second floor.
- All other Accessible/Universal Design Standards as indicated <sup>(A)</sup> in the AWARE Manual. Construction Specifications Institute (CSI): Divisions 1 through 16; The industry standard for specifications, estimates and product data.

**Walk-Ins:** A closet, pantry or other area that is deeper than 24".

**Federal Housing Act (FHA):** FHA Design Manual:  
<http://www.huduser.org/portal/publications/destech/fairhousing.html>

**Construction Specifications Institute (CSI):** Divisions 1 through 16; The industry standard for specifications, estimates and product data.

**Smoking:** Smoking means inhaling, exhaling, burning, or carrying any lighted cigar, cigarette, pipe, weed, plant, or other tobacco product or combustible substance in any manner or in any form.

**Green Compliant:** Examples of green compliant material requirements include but are not limited to the following:

- No/Low VOC
- Formaldehyde Free
- Renewable and Sustainable Resource
- Recycled Material
- Organic Material
- Asbestos Free
- Low Carbon Foot Printing
- Natural Resource
- Abundant Resource
- Biodegradable Material
- Meets E 1 Standards
- Meets The Carpet And Rug Institutes Green Label Certification
- Types Of Flooring – bamboo, carpet, concrete, cork, hardwood, laminate, linoleum, rubber, stone and tile.
- No Off-Gassing

The intent is to install an approved green-compliant, Leadership in Energy and Environmental Design (LEED) or Enterprise Green Communities-compliant product.

**HWH:** Hot water heater

**Rehab Tech:** The City of Columbus or Franklin County Rehabilitation Technician for that project.

**WaterSense:** A partnership program by the U.S. Environmental Protection Agency (EPA) to conserve water through more efficient products. <http://www.epa.gov/watersense>

**Zero Step Entry:** House shall have:

- At least a 5' x 5' clear area at the exterior visit-ability/accessibility route entry point of which the interior finished floor level is the same level as the finished exterior ground/porch/deck area as well as a visit-ability/accessibility route entry point at garage service door shall have an exterior clear area with a 5' x 5' concrete pad installed to allow 18" on the pull side of the door.
- A maximum threshold rise no greater than ½" between the exterior level area and the structures interior finished floor level.
- A covered (roofed or metal awning) entry area with a minimum 36" overhang.
- If porch or deck, it shall be designed/installed to accept a future ramp or lift installation.

## 010700 Sustainable Design Requirements

### Exterior Walls

*Framing – New Build Only*

- Use 2" x 6" studs set at 24" on center with 2-stud corners and drywall clips at corners. If using the 2" x 6" studs interferes with the universal design intent, install 2" x 4" studs set 16" on center with 2-stud corners and drywall clips. The walls of 2" x 6"s and 2" x 4"s, shall have an insulated value of a minimum of R-19.
- The use of wood blocking in place of drywall clips is acceptable as long as blocking is parallel to stud to which it is attached.

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## **010701 Disposal/Recycling**

*Mandatory*

Contractor shall:

- All construction and demolition waste/debris shall be recycled
- Recycle all cardboard generated by construction and all cardboard trash in the house to the local recycling plant. Disposing of cardboard in any other manner will result in a \$500.00 penalty assessed on the contractor per each occurrence. The penalty will be deducted from the contractors next invoice draw.
- All recyclable materials shall be documented specifically as to the material type, i.e. concrete, wood, metal, plastic, cardboard, other, etc., in a report submitted on a quarterly basis to the City of Columbus or Franklin County. It is important to work with your waste hauler before construction begins to set up a tracking system for recyclable materials.

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## **010702 Framing Techniques & Plans**

### **Framing Techniques and Plans**

*The use of a detailed framing plan reduces material waste wood without compromising the structural integrity.*

- Create a framing order waste factor limit. Limit the overall estimated waste factor to 10% or less.

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## **010800 Accessibility/ Universal Design Requirements**

### **20 percent requirement**

**Mandatory:** At least 20% of all NSP Funded Units within the project are to meet all Accessible/Universal Design Standards of the AWARE Manual. New Build, Double Conversions and Gut Rehabs

- 1 to 5 houses = 1 house
- 6 to 10 houses = 2 houses
- 11 to 15 houses = 3 houses

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### **Intent Beyond Mandatory**

*“If Developer decides to go beyond mandatory within the 80% requirement, accessibility features shall be shown in the construction documents.”*

The City of Columbus and Franklin County’s intent is to incorporate as many of the Accessibility/ Universal Design Standards (A) in all Federally-funded residential projects.

- Accessible/Usable bathroom(s) and kitchen floor space, using the Fair Housing Act Design Manual.
- Wood blocking installed in the walls to accept handrails and grab bars. Blocking shall be flush to surround.
- Zero-step entry.
- Exterior and interior door openings and handles.
- Location of windows, electrical outlets and switches.
- **All other Accessible/Universal Design Standards as indicated (A) in the AWARE Manual**  
(A)

### **010801 Zero-step Entry Requirements**

#### **One Zero Step Entry**

- The no-step or zero-step entry can be located at the front or rear of the structure. It can also be located through an internal garage entrance with a 3' wide door, provided that the entrance to the garage from the sidewalk or driveway has a maximum slope of 1:20.
- Whenever possible, the entrance should be sheltered. If grading is required, the maximum slope is 1:20, the free/clear area outside the garage service door shall be a minimum turning radius of 5' x 5' concrete pad installed to allow 18" on the pull side of the door.
- **New Builds – Mandatory:** All units shall have at least one zero step entry.  
(A)
- **Rehabs – Mandatory:** When replacing a front and/or rear porch/deck, install to make a zero step entry. (If replacing both porches/decks, only one needs to be a zero step.)  
(A)

### **010900 Final Documentation Requirements**

*Refer to AWARE Final Documentation Checklist, Appendix page # 59*

### **011100 Manuals and Warranties**

Contractor is to provide a packet containing construction photographs, all manufacturer’s manuals and warranties on all the installed equipment, fixtures and appliances, at the time of the Final Inspection. Any/all pre-existing items are exempt. Final invoice will not be processed until packet is provided.

## **011200 Completed Unit Maintenance**

### **Completed Project Responsibility**

Upon completion of the construction phase the Developer shall have responsibility for all maintenance on their projects until ownership is transferred. Maintenance shall include the following although not all inclusive.

- Maintain active hazard and liability insurance coverage.
- Secure units from unapproved access.
- Regularly monitor units to identify maintenance needs.
- Address all construction, health, and safety issues.
- Ensure all mechanical systems remain functional.
- Provide for exterior grounds maintenance.
- Report to CPD all illegal activity, entry, or theft.
- Advise the city/county Case Housing Underwriter on emergency incidents.

## Division 02- Site Construction

### 020100 Site Work

#### Minimize Soil Disturbance and Erosion

*Mandatory – All Projects*

- Schedule construction activities to minimize exposed soil.
- Use alternative means to install utilities, such as tunneling instead of trenching, use of smaller equipment, shared trenches or easements.
- Demarcate limits of clearing and grading.

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### 020200 Demolition

- ▶ **NOTE:** If an old air conditioner is on site the refrigerant must be reclaimed before discarding the unit or have it picked up by an authorized dealer to do so.

### 020300 Foundations

*Mandatory – All Projects, If The Site Conditions Will Allow)*

- Provide and grade topsoil to create a minimum slope of 5% (6") for the first 10' away from building.
- All gutter, downspouts and conductors are to divert the water away from the foundation thru under-ground roof drain system.

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### 020301 Foundation Drainage

#### Foundation

*Mandatory, New Build Only*

- Install foundation waterproofing and insulation.
- Install a foundation drainage system with sealed sump pump system.

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### 020400 Grading

#### Surface Water Management:

*All Feasible and Applicable Project Sites*

- For a permeable lot, design the lot such that at least 50% of the built environment is permeable or designed to capture water runoff for infiltration on-site.
- For erosion control, if portions of lot are located on a steep slope, reduce long-term runoff effects through use of terracing and retaining walls.
- For erosion control, plant one tree, four 5-gallon shrubs, or 50 square feet of native groundcover per 500 square feet of disturbed area (including area under roof).
- For runoff from roof, install permanent storm water controls (e.g., vegetated swales, on-site rain garden, dry well, or rain-water cistern) designed to manage runoff from the home.
- Have the site designed by a licensed or certified landscape design or engineering professional such that all water runoff from the home is managed through an on-site design element.





## **020500 Landscaping**

*Mandatory – All New Plantings*

- ▶ **Note:** Plant No Silver Maple Trees.
- ▶ **Note:** All public and service walks, trees, shrubs and grass on premise shall be maintained to local code.
- All new plantings of trees and plants are to be native species and 100% appropriate to the site's soil and climate. Do not include any invasive species. Consult a professional with expertise in Ohio native plants.
- Any turf must be drought-tolerant.
- Select WaterSense label products when available.



## **Conserve Existing Onsite Vegetation**

*Mandatory – All Projects*

- Minimize disturbance of and damage to trees and other existing vegetation, except all foundation damaging trees/plants which shall be removed from site.
- Prepare designated existing trees and vegetation for impact of construction by pruning, root pruning, fertilizing and watering.



## Division 03- Concrete

### 030100 Cast-in Place Concrete

#### 030201 Foundations

*Mandatory, New Build Only*

- Install foundation waterproofing and insulation.
- Install a foundation drainage system with sealed sump pump system.

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#### 030202 Concrete Slabs

*Mandatory New Build Only*

- Install a continuous 4" thick basement slab using 3,000 psi mix. Ensure the soil is uniformly and properly compacted. Install a 4" bed of  $\frac{3}{4}$ " clean (no fines) gravel on top of soil, provide expansion joints (also known as isolation joints) around the inside perimeter of the foundation using standard isolation joint material, and then install a continuous, with 12" over lapped at junctions, 6-mil polyethylene plastic vapor barrier between the stone and the concrete.
- Include plastic reinforcing fibers in the mix, like fibermesh. Screed, float, and finish with a steel trowel to a smooth surface that drains water to any existing drains, and strike control joints in the wet concrete.
- **Optional:** Insulation under slabs – 1.5 inch of extruded polystyrene (XPS) – eliminates need for polyethylene vapor barrier (installing vapor barrier on top of XPS is acceptable but is an unnecessary expense).
- Developer may choose to install 1.5" foam under concrete slab.

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## Division 04- Masonry

*Developer Design Specific*

**040100 Masonry Foundations**

**040200 Masonry Repairs**

## Division 05- Metals

*Developer Design Specific*

**050100 Structural Steel**

**050200 Ornamental Irons**

## Division 06 Carpentry

### 060100 Lumber & Wood Alternatives

- ▶ **Note: Recycled Products, Reclaimed and Composite products with no added urea-formaldehyde resins are preferred.**



### 060101 Building Materials

- Use pre-cut or pre-assembled building systems or methods.
- Use building materials that require no additional resources to complete application onsite.
- Use recycled-content building materials.
- Use materials from renewable resources or agricultural byproducts.



### 060102 Laminated Wood Fiber Products

*Mandatory – New Build*

- Gluelam, parlam, microlam, etc. are alternatives to large dimension lumber for trusses, beams and headers.



### 060103 Wood I-beam Construction

*Mandatory – New Build*

- Use wood I-Beams as an alternative to 2" x 8" s or larger used for floor and roof joists.



### 060104 Sheathing

#### Oriented Strand Board (OSB)

*Mandatory – All Projects*

- Use as an alternative to plywood for sheathing, flooring and roofing.



### 060105 Plastic Lumber

- This is made from recycled plastic products. It can be used as an alternative to wood in non-structural applications such as decking and fencing.



## 060200 Wood Blocking

*New Build, Gut Rehab and Major/Moderate Rehab If Walls Are Opened/Accessible*

- Wood blocking shall be installed on the entire wall.
  - All bathroom walls.
  - Shower stalls.
  - Tub/Shower area.
  - In stairway wall to 2nd floor.

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## 060300 Cabinetry

*Mandatory – All New and Replacement Installation*

- All base cabinet fronts at sink areas must be of the removable style/design.
- When first floor bath has a removable front, second floor bath in a non-UD unit is not required to have a removable front.

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*Mandatory on all 100% Accessible/Universal Design Units Only*

- All cabinet doors and drawers shall have loop or U shaped style handles installed as low as possible on wall cabinets and as high as possible on base cabinets.
- Base cabinets are to include a pull out workspace such as a pull out cutting board or an accessible 30 inch AFF work station can be substituted for the pull out work space.

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## 060301 Base Cabinets

### Base, Wood Cabinet

- Install base cabinets constructed of solid hardwood face-frames, doors and drawer fronts with ½" wood/plywood carcasses and floors.
- Drawer boxes shall be wood or plywood, and joined using wood, metal or plastic corner bracing.
- Use cabinets that are Environmentally Certified under Kitchen Cabinet Manufacturers Association's (KCMA) Environmental Stewardship Program.
- Cabinets shall be of a height to accommodate the countertop height of 36".

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### Base, Low VOC, Wood Cabinet

- Install base cabinets constructed of solid hardwood face-frames, doors and drawer fronts. Drawer boxes shall be wood or plywood. Carcasses will be joined using wood, metal or plastic corner bracing.
- All particleboard components shall meet American National Standards Institute (ANSI) A208.1 for formaldehyde emission limits or all exposed particleboard shall be sealed with a clear low-VOC sealant or have a factory-applied sealant prior to installation. All Medium Density Fiberboard (MDF) edges shall meet ANSI A208.2 for formaldehyde emission limits or all exposed MDF edges shall be sealed with a clear low-VOC sealant or have a factory-applied low-VOC sealant prior to installation.
- Cabinets shall be of a height to accommodate the countertop height of 36".

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## 060302 Base Cabinet Shelving

*Suggested*

- Install base cabinets with the lower shelves that pull out like drawers.

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## 060303 Wall Cabinets

### Wall, Wood Cabinet

- Install wall cabinets constructed of solid hardwood face-frames, doors and drawer fronts with ½" wood/plywood carcasses and floors. Carcasses will be joined using wood, metal or plastic corner bracing.
- Use cabinets that are Environmentally Certified under KCMA's Environmental Stewardship Program.

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### Wall, Low VOC, Wood Cabinet

- Install wall cabinets constructed of solid hardwood face-frames, doors and drawer fronts. Drawer boxes shall be wood/plywood. Carcasses will be joined using wood, metal or plastic corner bracing.
- All particleboard components shall meet ANSI A208.1 for formaldehyde emission limits or all exposed particleboard shall be sealed with a clear low-VOC sealant or have a factory-applied sealant prior to installation.
- All MDF edges shall meet ANSI A208.2 for formaldehyde emission limits or all exposed MDF edges shall be sealed with a clear low-VOC sealant or have a factory-applied low-VOC sealant prior to installation.

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## 060400 Countertop

- After field measure for sizing, install a Plastic Laminate or an approved equal or better compliant countertop to a maximum height of 36".
- Seal all bare wood and wood composite surfaces including the underside of the countertop with a low VOC sealant.
- Screw to base cabinet a square edged plastic laminate counter top.
- Provide end-caps and cutout for sink.
- Caulk countertop to adjoining walls with low VOC caulking to match wall color. Developer's choice of in-stock color and texture.

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## 060500 Stair Systems

### Second Floor Stair System

*New Build, Double Conversions and Gut Rehab If Possible*

- Width of stairways is to be between 42" to 48" to accommodate a future chair lift installation.

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## **Division 07- Thermal & Moisture Protection**

### **070100 Material Protection & Moisture Prevention**

#### **Material Protection and Moisture Prevention**

- Protect unused moisture-sensitive materials from water damage through just-in-time delivery, storing unused materials in a dry area, or tenting materials and storing on a raised platform.
- Maintain moisture content of materials to industry standards.

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### **070101 Flashing**

- Effective flashings must be used on all rough openings, including membrane flashing on bottom of all rough openings for windows, (pan flashing with back dam), and doors using adhesives compatible with drainage plane materials. Also install window and door jamb and head flashing that integrates with drainage plane.

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### **070200 Thermal Insulation & Air Sealing**

#### **070201 Air Infiltration Package (AIP)**

##### **Air Seal Structure**

- Seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with either low VOC caulk if less than 1/4" wide or expanding foam if greater than 1/4" wide.
- Seal all top plate and bottom plate penetrations. If the foundation masonry wall is open core concrete block seal the tops of the block with expanding foam.
- Seal all penetrations created by plumbing, gas lines, electrical boxes and outlets.
- Seal large accessible gaps around windows between house framing and window frame – use special care on large sliding-glass doors and vinyl-framed windows. Do not use expansive foam on these.
- ▶ **Note:** Take care to seal all joints without excess sealant.
- Seal any gaps in the building envelope adjacent to flues with carefully cut to fit sheet metal that is securely fastened to framing sealing all seams and gaps with fire rated caulk. Seal recessed light fixtures in ceilings that are part of the building envelope and are not rated for insulation contact with an airtight box made of drywall sealed to the ceiling and seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather stripping on attic doors or hatches.
- All mechanical's shall have the rough-in inspections signed off first, before any unit can be air sealed.
- Air sealing must be done and inspected/approved by the Rehab Tech, prior to the installation of insulation.

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## 070202 Crawl Spaces

### Crawl Space Air Seal and Insulate

- Install a 6 mil poly vapor barrier on ground in crawl space and up foundation walls to an end product that will provide a water and air tight seal between the interior of the crawl space and the walls and floor of the crawl space and all penetrations including but not limited to those created by plumbing, electrical and HVAC equipment will be sealed tight.
- After the plastic vapor barrier has been inspected and approved by the on-site construction manager and the rehab tech responsible for this property, insulate to a minimum value of R13. Area to be completed without voids and any gaps shall be sealed with polyurethane foam sealant.

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## 070203 Insulation Performance Standards & Testing

### Insulation Performance Standards and Testing

*Mandatory – All Projects*

- **Standard:** Rim Joists: R-19 minimum.
  - Testing: Third Party and Rehab Tech inspection of materials and workmanship prior to covering.
- **Standard:** Exterior Wall System: R-19 minimum.
  - Testing: Third Party and Rehab Tech inspection of materials and workmanship prior to covering.
- **Standard:** Attic: R-38 minimum, including the backside of the access panel door.
  - Testing: Third Party and Rehab Tech inspection of materials and workmanship prior to covering.
- **Standard:** Interior walls within attic spaces shall be R-19 minimum.
- **Standard:** All demising wall bands shall be sealed on multi-family units.
- ▶ **Gut And Moderate Rehab Exterior Walls:** If R-19 is not attainable, a waiver must be submitted to the City of Columbus/Franklin County as to why and what R-value can be obtained for the wall.

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## 070204 Existing Construction Requirements

### Existing Walls Not Being Demoed

- Blow-In insulation to meet the AWARE Manual Standards.

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## 070205 Spray Foam Insulation Requirement

*for Rim/Band Joist Areas (to R-19 minimum)*

- After cleaning the area thoroughly, apply Green-compliant, expanding foam either separately or in combination with batt insulation to achieve a minimum R19, and meet building code fire retardancy requirements. to the rim joist at the entire perimeter of the basement and/or crawl space exterior walls. Install to R-19 at a minimum.
- Use a foam product that meets International Residential Code (IRC), Section R314.5.11, and Underwriters Laboratories, Inc. (UL) classification Certificate R7813.
- Insulate from the subfloor for the first floor to the top of the foundation wall and seal all penetrations and the top of the foundation.
- Seal all openings within the area of the rim joist created by plumbing, gas lines, electrical boxes or any other penetrations.

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## 070300 Roofing & Roofing Elements

### 070301 Metal Roofing

- Install, repair/replace sheathing. Use 7/16" OSB sheathing. Cover sheathing with a breathable roof underlayment. Install complete metal roof system. Developer is to choose the style and color.

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- ▶ **NOTE:** The use of light color shingles is encouraged because of its reflectivity of the sun, thus lowering the roof temperature.

### 070302 New Roof Installation

*Dimensional 30 Year Shingle Shall Be Used On All City of Columbus Funded Projects.*

- Owner to select color.
- If existing sheathing is in poor condition, laminate roof structure with 7/16" OSB sheathing at right angles to rafters; nailed every 10" at center and 6" on edges with 8d common nails. Clean roof deck thoroughly to remove debris and to make ready to accept roof covering. Install minimum of 1 ply, 15 lb. 36" wide asphalt felt and 30 year life, 3 tab asphalt or fiberglass, minimum 250 lb class A, shingles in accordance with the shingle manufacturer's written specifications and with a minimum of four (4) nails per shingle.
- Install self-adhesive Ice-Guard (ice dam protection) beneath all flashings and on all edges and to extend the ice-guard back at least 2' past the interior wall.
- Install new aluminum, enamel-finish drip edge flashing on all edges.
- Install new boot flashings on all vent stacks.
- Install new roof ridge vent per manufacturer's printed instructions and install soffit or gable vents to complete the venting system if house has no existing or gable vents.
- Install new metal flashings (chimney, counter, step, and valley).
- Install flue cap on all remaining chimneys.
- ▶ **Note:** All debris shall be placed in a dumpster at the end of each day.



### 070303 Existing Roof Replacement

*Dimensional 30 Year Shingle Shall Be Used On All City of Columbus Funded Projects*

- Strip existing roof, removing all roofing and felt.
- Examine roof sheathing, cornice and eave edges before continuing work. Notify owner of any defects; do not proceed until such defects have been corrected.
- Pull all nails and re-nail sheathing securely if necessary. Clean roof deck thoroughly to remove debris and to make ready to accept roof covering and new OSB sheathing if applicable (See Sheathing specification).
- Install minimum of 1 ply, 15 lb. 36" wide asphalt felt and 30 year life, 3 tab asphalt or fiberglass, minimum 250 lb class A, shingles in accordance with the shingle manufacturer's written specifications and with a minimum of four (4) nails per shingle.
- Install self-adhesive Ice-Guard (ice dam protection) beneath all flashings and on all edges and to extend the ice-guard back at least 2' past the interior wall.
- Install new aluminum, enamel-finish drip edge flashing on all edges.
- Install new boot flashings on all vent stacks. Do not paint.
- Install new roof ridge vent per manufacturer's printed instructions and install soffit vents to complete the venting system.
- Install new metal flashings (chimney, counter, step, and valley).
- Install flue cap on all remaining chimneys.
- ▶ **All debris shall be placed in a dumpster at the end of each day.**

### 070304 New Historical Roof Installation

#### Install Historic Roof Covering

- If existing sheathing is in poor condition, laminate roof structure with 7/16" OSB sheathing at right angles to rafters; nailed every 10" at center and 6" on edges with 8d common nails. Clean roof deck thoroughly and make ready to accept roof covering. Install self-adhesive ice-guard (ice-dam protection) beneath all flashings, on all edges and to extend the ice-guard back at least 2' past the interior wall and on all perimeter edges in accordance with manufacturer's printed instructions, Owens Corning or equal. Install 1 ply, 15 lb, 36" wide asphalt felt underlayment and minimum 240/235 lb. asphalt/fiberglass, class A shingles, minimum 25 year life. Indicate Manufacturer and owner's choice of color.
- All debris shall be placed in a dumpster at the end of each day.

<b>MANUFACTURER</b>	<b>STYLE</b>	<b>COLOR</b>
Certain Teed	Carriage House (dimensional)	Nickel Gray
GAF	Slateline (dimensional)	English Gray Slate or Weathered Slate
Certain Teed	(standard 3-tab)	Nickel Gray
GAF	Royal Sovereign (standard 3-tab)	Nickel Gray
Owens Corning	(standard 3-tab)	Estate Gray
Tamko	(standard 3-tab)	Antique Slate



## 070305 Historical Roof Replacement

### Replace Historic Roof Covering

- Remove existing roofing down to bare sheathing. Examine roof sheathing, cornice and eave edges and rafter tails. Notify the owner of any defects; do not proceed until such defects have been corrected. Pull all roofing nails and re-nail sheathing securely if necessary. If new sheathing is needed, use 7/16" OSB board. Clean deck thoroughly to remove all debris and to make ready to accept roof covering. Install self-adhesive ice-guard (ice-dam protection) beneath all flashings and on all edges and to extend the ice-guard back at least 2' past the interior wall, on all perimeter edges in accordance w/manufacturer's printed instructions, Owens Corning or equal. Install 1 ply, 15 lb, 36" wide asphalt felt underlayment and minimum 240/235 lb. asphalt/fiberglass, class A shingles, minimum 25 year life. Indicate Manufacturer and color below. Owner's choice of color.
- ▶ **Note:** All debris shall be placed in a dumpster at the end of each day.

<b>MANUFACTURER:</b>	<b>STYLE</b>	<b>COLOR:</b>
Certain Teed	Carriage House (dimensional)	Nickel Gray
GAF	Slateline (dimensional)	English Gray Slate or Weathered Slate
Certain Teed	(standard 3-tab)	Nickel Gray
GAF	Royal Sovereign (standard 3-tab)	Nickel Gray
Owens Corning	(standard 3-tab)	Estate Gray
Tamko	(standard 3-tab)	Antique Slate

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- ▶ **Note:** All roof venting on historic properties are to be complaint with the Historic Review recommendations.

## 070306 Repairing of Slate Roofs

- Remove damaged material, replace to match existing.

## 070400 Siding & Exterior Finishes

*The intent on the exterior finish is to make the home as maintenance free as possible and green compliant. Developer to choose type, finish and color.*

- Below are some examples, but are not limited to just these items:
  - Brick  
*All existing brick to be tuck pointed as needed.*
  - Fiber Cement Board
  - Wood
  - Wood Composite
  - Stucco
  - Vinyl Siding

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## **070500 Adhesives**

### **070501 Volatile Organic Compounds (VOC)**

All adhesives used shall comply with the following:

- The volatile organic compound (VOC) content of adhesives, adhesive bonding primers or adhesive primers in this project shall not exceed the limits defined in Rule 1168 – “Adhesive and Sealant Applications”, amended 1 January 2005): South Coast Air Quality Management District (SCAQMD), State of California, [www.aqmd.gov](http://www.aqmd.gov).

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### **Caulking**

- All caulking shall be a 25-year or better, paintable Low/No VOC caulk.

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## **Division 08- Doors & Windows**

### **080100 Exterior Doors**

#### **080101 Metal Exterior Doors**

- Install an Energy Star rated steel insulated door, complete with lockset and deadbolt lockset. All locksets and deadbolt locks shall be keyed alike.
- The door must also include one 180 degree peep hole at 59" above finished floor.
- The threshold is to be no higher than ½" if the entry is at the visit-ability/accessibility route.
- All doors, front/rear/side, shall be 36" wide.

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#### **080102 Wood Exterior Doors**

- Install an Energy Star rated wood door, complete with lockset and deadbolt lockset. All locksets and deadbolt locks shall be keyed alike.
- The door must also include one 180 degree peep hole at 59" above finished floor.
- The threshold is to be no higher than ½" if the entry is at the visit-ability/accessibility route.
- All doors, front/rear/side, shall be 36" wide.

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#### **080103 Fiberglass Exterior Doors**

- Install an Energy Star rated fiberglass door, complete with lockset and deadbolt lockset. All locksets and deadbolt locks shall be keyed alike. The door must also include one 180 degree peep hole at 59" above finished floor. The threshold is to be no higher than ½" if the entry is at the visit-ability/accessibility route. All doors, front/rear/side, shall be 36" wide.

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### **080200 Interior Doors**

- Shall be installed complete with passage latch set and use a privacy set on the bathroom(s) and bedroom(s).
- All doors that are not fiberglass, solid wood or pre-finished shall be sealed using a low/no VOC product on all six sides and the pre-drilled lock-set hole(s) shall also be sealed.

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### **080300 Sliding Glass Doors**

- Install only glass doors that have National Fenestration Rating Council (NFRC) ratings that meet or exceed the requirements of the Energy Star rating.

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## 080400 French Doors

- Install Energy Star rated French Doors in lieu of sliding doors if the doorway is at a visit-ability route. Threshold shall be no higher than ½" inch.

## 080500 Garage Overhead Doors

*Mandatory on all 100% Accessible/Universal Design Units Only*

- ▶ **Mandatory Notice: Must Do Door Flashings**
- Effective flashings must be used on all rough openings, including membrane flashing on bottom of all rough openings for windows, pan flashing with back dam, and doors using adhesives compatible with drainage plane materials. Also install window and door jamb and head flashing that integrates with drainage plane.

## 080501 Garage Doors Openers

- Overhead Door - All garages shall have an automatic garage door opener with two remote controllers and an exterior surface mounted key-pad.

(A)

## 080600 Windows

### 080601 Window Design Requirements

*New Build and Gut Rehab*

- All operable primary windows installed shall have a sill height minimum of 24" and a maximum height of 30" from the finished floor.
- Exceptions
  - Kitchen – The height standard does not apply to windows over cabinets.
  - Bathroom – For the reason of privacy, the height standard does not apply.
  - Historic structure.
  - Existing brick structure.
  - Secondary windows.

(A)

### 080602 Window Types

#### House Windows: Vinyl, Wood or Fiberglass - Single or Double Hung

- Install only operable windows that have National Fenestration Rating Council (NRFC) ratings that meet or exceed the window requirements for Energy Star Rating for the Northern Climate Zone 5.
- All windows are to include screens.

(G) (E)

#### Basement Windows

- Install either glass block windows with vents or new vinyl/wood windows with screen.

(E) (G)

## **080700 Door Hardware**

### **080701 Exterior Locksets**

#### **Exterior Door Locksets**

*Mandatory on all 100% Accessible/Universal Design Units Only*

- All locksets shall be lever handle style.

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### **080702 Interior Locksets**

#### **Interior Door Latch Sets**

*Mandatory on all 100% Accessible/Universal Design Units Only*

- All latch sets shall be lever handle style.

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### **080703 Peep Holes**

*Mandatory on all 100% Accessible/Universal Design Units Only*

- A second 180 degree peep hole shall be installed at 45" above the finished floor.

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- All Exterior Entry Doors shall have peep holes, except the following:
  - Exterior doors with clear view side-lite(s).
  - Exterior doors with lite(s).
  - Garage, Service Doors.

## Division 09- Finishes

### 090001 Kitchen Floor Designs

*New Build, Double Conversions and Gut Rehab If Possible*

- Design an accessible floor space, using the Fair Housing Act Design Manual.  
(A)

### 090002 Bathroom Floor Designs

#### First Floor Bedroom and Full Bathroom

*New Build, Double Conversions and Gut Rehabs If Possible*

- Plans shall include the construction of a first floor bedroom and an accessible/usable full bathroom. However, when a 1st floor bedroom and a full accessible/usable bathroom is not possible due to limited square footage conditions, build an accessible/usable half bath. If an accessible/usable half bath is not possible, then construct a standard operational half bathroom.  
(A)

#### First Floor Half Bath

*All Projects Without A First Floor Full Bath, Except Moderate Rehab*

- Construct an accessible/usable half bath. If an accessible/usable half bath is not possible, then construct a standard operational half bathroom.  
(A)

### 090003 Laundry Room Floor Designs

*New Build, Double Conversions and Gut Rehab If Possible*

- Construct a complete laundry room on a habitable floor level where square footage will allow.
- It is mandatory that a laundry room be constructed on a habitable floor, on all projects presented as meeting 100% Accessible/Universal Design.  
(A)

### 090100 Separate Shower Surrounds

- The shower is to have a low step-up entry and with a floor area of minimum 3' x 4'.
- Shower control to be no higher than 48" from floor.
- Shower-head shall be an adjustable height spray hand-held model with a maximum 2.0 GPM flow rate.
- The walls are to be finished as green compliant as possible and all adhesives to be low/no VOC.
- All controls shall be single lever style and with an anti-scald device.
- Tub design to have a wide, flat edge that can be sat on when entering and exiting the tub.
- All shower floors shall be of a non-slip material.

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### 090200 Ceramic Tile

#### Ceramic Tile Surrounds

- Use highly durable, moisture-resistant materials in all tub/shower enclosures such as cement board and fiberglass-reinforced board.
- ▶ **Note:** Green Board is not permitted.

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### 090300 Floor Coverings

- All floor tile, sheetgoods and wood flooring in the kitchen must be extended under the base cabinet at the sink area because it shall have a removable front.

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- All bathrooms shall have non-slip green compliant flooring.

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- ▶ **NOTE :** Developers are encouraged not to use carpeting, which can be a harbinger for dust, allergens and other substances that may pose health hazards to susceptible residents. We recommend developers use alternative flooring material such as linoleum, laminate, ceramic tile, bamboo, cork, wood or rubber.

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### 090301 Tile, Sheet Goods & Wood Floors

- Install an approved Green Compliant, LEED or Enterprise Green Communities Standards compliant product:
  - Tile
  - Sheet Goods
  - Wood

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- ▶ **NOTE:** At all entryway floor areas at the exterior doors, must be covered with water-resistant flooring; no carpet. The dimensions shall be a minimum of a 4' x 4' area.

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### 090302 Carpet With Padding

*If Installing Carpet*

- Install FHA approved carpet. Install over 1/2" medium density pad with a minimum of seams.
- Carpet and pad must meet the Carpet and Rug Institute's Green Label certification.
- Stretch carpet to eliminate puckers, scallops and ripples.
- Include tackless strips, metal edge strips and mending tape.
- Carpet is to cover the entire floor including any closets in the room.
- No carpet in kitchen and bathrooms.

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### 090400 Wallboard Requirements

#### 090500 Paints & Finishes

*Mandatory – All Projects*

##### Application

- All paints and finishes shall meet the Green Seal Standard GS-11.
- All colors/finishes shall be selected by owner/developer.
- Application shall be one coat primer and two coats of finish.
- Doors shall be finished on all six sides.

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## Division 10- Specialties

### 100100 Integrated Pest Management

*Contractor to provide proof to owner/developer that work was done*

- Do not use any insecticides.
- Use Integrated Pest Management methods to control pests.
- Seal all cracks, holes and crevices on interior surfaces and exterior surfaces to prevent access by pests.
- Use Stuff-it copper mesh by Do it Your-Self Pest to plug larger holes prior to finishing with plaster or drywall.
- Do not use steel wool.
- Place a thin dusting of 98% boric acid under all bathroom and kitchen cabinets, in wall cavities, cracks and crevices in the kitchen or baths.

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### 100200 Medicine Cabinets

#### Medicine Cabinet (Shelf)

- The medicine cabinet shall have at least one usable shelf no higher than 44" above the finished floor.

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#### Medicine Cabinet (Mirror)

- The medicine cabinet mirror shall have the bottom reflective edge no higher than 40" above the finished floor.

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### 100300 Mirrors

#### Wall Mirror

*If one is to be installed*

- The mirror shall be mounted with the bottom edge of the reflecting surface no higher than 40" above the finished floor.

### 100400 Bath Hardware

### 100500 Signage

### 100600 Postal Specialites

## Division 11 - Equipment

### 110100 Appliances

- All appliances that can be purchased with an Energy Star rating shall be installed
- The refrigerators shall be an accessible style refrigerator per the Fair Housing Act Guidelines
- Dishwashers
  - CEE Tier 2.
  - Minimum Energy factor of 0.68 or greater.
  - Maximum annual energy use of 325 kilowatt-hours or less.

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### 110110 Under Cabinet Microwave

*New Build and Gut Rehab Only and Only If Range Hood Not Being Installed*

- Install an under cabinet microwave.
- Include metal vent, to the exterior, with all seams sealed with duct mastic, and roof or wall cap/damper assembly flashed appropriately for the exterior finish. Developer's choice of color.

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### 110120 Washing Machine

- Clothes Washers
  - Consortium for Energy Efficiency (CEE) Tier 2 or higher.
  - Minimum Energy Factor of 2.0 or greater.
  - Water factor 6.0 or less.

### 110130 Clothes Dryer

- Minimum 7.0 cubic feet capacity.
- Sensor Dry System.
- 5 Temperature Levels – (High, Medium High, Medium, Low and Ultra Low)

### 110130 Dryer Vent

- Install 4" ridged metal vent tubing from the specified dryer location to a 4" wall mounted dryer vent hood with a back-flow preventer and NO screening.
- Do not fasten with nails, screws or other fasteners that protrude into the interior of the exhaust duct.
- Seal all seams in the system with duct mastic or aluminum foil tape, not duct tape. Secure duct and hood to framing.

### **110140 Kitchen Range Hood**

*New Build and Gut Rehab Only and Only If Under Cabinet Microwave Not Being Installed*

- Install an Energy Star rated, exterior ducted, enameled range hood with integral minimum 2 speed fan control and light switched separately capable of a minimum 150 cfm at a maximum of 3 sones.
- Range hood shall meet ASHRAE 62.2
- Attach hood to cabinet with screws.
- Include metal vent, to the exterior, with all seams sealed with duct mastic, and roof or wall cap/damper assembly flashed appropriately for the exterior finish. Developer's choice of color.

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### **110150 Garbage Disposal**

- Install a disposal with a minimum 1/2 hp rating.

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### **110160 Dehumidifier**

- Provide an Energy Star rated (50 pint minimum) dehumidifier in the basement. Install a drain hose from the dehumidifier to the floor drain to eliminate the need to empty the water storage tank. Hung sewer units shall provide for drainage of water from the dehumidifier.

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## **Division 12 - Furnishings**

## **Division 13 Special Construction**

## **Division 14 Conveying Systems**

## **Division 15 Mechanical Systems**

### **150110 Plumbing General Requirements**

#### **150111 Bathrooms**

Design an accessible floor space, using the Fair Housing Act Design Manual



#### **150112 First Floor Full Bathroom**

##### **First Floor Bedroom and Full Bathroom**

*New Build, Double Conversions and Gut Rehabs If Possible*

- Plans shall include the construction of a first floor bedroom and an accessible/usable full bathroom. However, when a 1st floor bedroom and a full accessible/usable bathroom is not possible due to limited square footage conditions, build an accessible/usable half bath. If an accessible/usable half bath is not possible, then construct a standard operational half bathroom.



#### **150113 First Floor Half Bath**

*All Projects Without A First Floor Full Bath, Except Moderate Rehab*

- Construct an accessible/usable half bath. If an accessible/usable half bath is not possible, then construct a standard operational half bathroom.



#### **150200 Laundry Room**

*New Build, Double Conversions and Gut Rehab If Possible*

- Construct a complete laundry room on a habitable floor level where square footage will allow.
- It is mandatory that a laundry room be constructed on a habitable floor, on all projects presented as meeting 100% Accessible/Universal Design.



## **150300 Bathtub/Shower Unit (Complete)**

### **Bathtub/Shower Unit (Complete)**

Install new tub and surround (as green compliant as possible). Install a lever operated pop-up drain and overflow, all drain pipes, shower rod, a single lever shower diverter tub/shower faucet or an approved equal with an anti-scald device and a hand held adjustable height showerhead with a maximum 2.0 GPM flow rate.

Shower controls shall be no higher than 48" or lower than 18" from the tub/shower floor.

All tubs shall have non-slip bottoms and a wide flat edge that can be sat on when entering and exiting the bathtub.

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## **150400 Water Lines**

Note: All water lines in gut rehab and new builds are to be run inside an insulated conditioned/enveloped space

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Owner/Developer to choose all styles/colors/finishes

## **150500 Sewer Lines**

### **Existing Sewer Lines**

*Mandatory*

- Developer shall run camera thru existing lines before specifications are written.

## **150610 Floor Drains**

*Mandatory on all projects, except those with hung sewer lines*

- Install back water valves in basement floor drain.

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## 150700 Sinks

### Bathroom Sink(s)

*Developer to Choose*

- Install wall mounted sink. Counter surface is to be no higher than 34" above finished floor. Provide a clearance of at least 29" above the finished floor to the bottom.
- Install pedestal sink with top being no higher than 34" above finished floor.
- Install cantilevered sink, with the top being no higher than a 34" above the finished floor, with a removable cabinet underneath.
- Install a 24" or wider, plywood vanity with cultured marble integrated top (no higher than 36") bowl and backsplash and single lever brass bodied faucet with a maximum 2.0 GPM flow rate. Include PVC DWV with Air Admittance Valve, type L copper with brass bodied stops or PEX supply piping, and protective covering on all supply and waste lines.

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### 150710 Single Bowl Sink

- Install a 22-gauge, 25" x 22" x 8" deep, single bowl with self rimming kitchen sink including a steel, metal body faucet rated at 2.0 GPM or less, with a 15 year drip- free warranty, grease trap, supply lines, full port ball type shut-off valves and protective covering on all supply and drain lines. NOTE: All copper is to be soldered (no compression fittings) and all PVC fittings glued. No exceptions.

### 150720 Double Bowl Sink

- Install a 22-gauge 33" x 22" x 8" double bowl with self rimming kitchen sink including a steel, metal body faucet, rated at 2.0 GPM or less, with a 15 year drip- free warranty, grease trap, supply lines, full port ball type shut-off valves and protective covering on all supply and drain lines.
- ▶ **NOTE:** All copper is to be soldered (no compression fittings) & all PVC fittings glued. No exceptions.
- Faucets shall have single-lever or dual-lever style handles.

*Mandatory on all 100% Accessible/Universal Design Units Only.*

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## 150800 Water Heaters

### 150810 Water Heaters Installation Requirements

#### Installation

- For safety, set water heater temperatures at 120 degrees Fahrenheit.
- Water heater to be located within 30' of pipe run of all bathrooms and kitchen.

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## 150810 Water Heaters

### Hot Water Tank

*Moderate Rehab Only*

- Install new 40-gallon Energy Star rated efficient gas water heater, glass-lined, insulated to R-7, with a 10-year warranty, to code. Installation to include pressure and temperature relief valve, discharge tube to within 6" of floor, and all connections to gas and electric systems. If the hot water heater is located in a basement with a floor drain the discharge tube shall be directed to the drain. If it is located on an upper floor or if there is no floor drain, install a catch pan drained to the exterior.

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## 150811 Power Vented Hot Water Tank

*All New Builds and Gut Rehabs*

- Install an Energy Star rated, natural gas, 40-gallon, glass-lined, 90+ efficient, power-vented, and insulated to R-7, water heater with a 10 year warranty. Include pressure & temperature relief valve, discharge tube to within 6" of floor, condensate pump, owner's manual & all duct work to power vent to exterior.
- Provide separate electrical circuit & new gas piping from shut-off valve to fixture. If the HWH is located in a basement with a floor drain the discharge tube shall be directed to the drain. If it is located on an upper floor or if there is no floor drain, install a catch pan drained to the exterior.

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## 150812 Tankless Water Heater W/Storage Tank

*Size To The Number Of Bathrooms*

- Install a natural gas, interior, tankless water heater system with a minimum 7 gallon per minute flow rate. Include pressure and temperature relief valve, discharge tube to within 6" of floor, owner's manual and all venting, piping.
- Provide separate electrical circuit and gas inlet and water inlet and outlet shut-off valves, to code.

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## 150813 Electric Water Heater

- Install only when natural gas is not available in the area.

## 150900 Plumbing Fixtures

### 150910 Kitchen Faucet w/ Sprayer

- Install all metal, washer-less with a maximum flow rate of 2.0 GPM. If using a faucet with a higher rate than 2.0 GPM, It must be Retro-Fitted with a different aerator to accommodate the 2.0 GPM or less standard. Installation shall include supply lines and shut off valves. Sprayer may be separate or faucet/sprayer combination style.

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### 150920 Bathroom Lavatory Faucets

- Install all metal, washer-less faucet with drain pop-up lever, with a maximum flow rate of 2.0 GPM.
- Lavatory faucets shall have single-lever or dual-lever style handles.  
*Mandatory on all 100% Accessible/Universal Design Units Only.*
- Installation shall include supply lines and shut off valves.

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### 150930 Bathroom Sinks

- Install wall mounted sink. Counter surface is to be no higher than 34' above finished floor. Provide a clearance of at least 29" above the finished floor to the bottom.
- Install pedestal sink with top being no higher than 34" above finished floor.
- Install cantilevered sink with the top being no higher than a 34" above the finished floor, with a removable cabinet underneath.
- Install a 24" or wider, plywood vanity with cultured marble integrated top (no higher than 36") bowl and backsplash and single lever brass bodied faucet with maximum 2.0 GPM flow rate. Include PVC DWV with Air Admittance Valve, type I, copper with brass bodied stops or PEX supply piping, and escutcheon plates on all supply and waste lines.

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### 150940 Water Closets

#### 150941 Single Flush Commode

- Install a 1.28 GPF close coupled commode tested through the latest Maximum Performance (MaP) testing sponsored by Canadian Water and Wastewater Association (CWWA), the California Urban Water Conservation Council (CUWCC), the U.S.-Canadian Alliance for Water Efficiency (AWE) and Veritec Consulting Inc. that has shown to score 800 or better on the MaP Flush Performance test (grams of solid waste removed in a single flush. Include seat, supply pipe, shut-off valve, and wax seal.

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#### 150942 Dual Flush Commode

- Install a Dual Flush, 2 piece, close coupled commode with flow rates of 1.6 and .9 GPF for its respective high and low flushes, tested through the latest Maximum Performance (MaP) testing sponsored by Canadian Water and Wastewater Association (CWWA), the California Urban Water Conservation Council (CUWCC), the U.S.-Canadian Alliance for Water Efficiency (AWE) and Veritec Consulting Inc. that has shown to score 800 or better on the MaP Flush Performance test (grams of solid waste removed in a single flush. Include seat, supply pipe, shut-off valve, and wax seal.

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## 151000 Radon Gas Requirements

*Mandatory, All Projects*

- ▶ **NOTE:** Only an Ohio licensed mitigator can test and treat a home for radon gas.
- Install a passive radon gas vent system during construction with an electric outlet installed in the attic or basement no more than 3 feet from the vent pipe, to make the system an active system if needed after testing for radon gas.
- The active system shall reduce the radon to be below the EPA action level. <http://www.epa.gov/radon/pubs/mitstds.html>
- After house has been completed a radon test shall be performed. If the radon test results are higher than the EPA action level for radon of 4pCi/l, 1) an active radon mitigation system shall be installed, and 2) the house shall be retested. In the event the second test is high, radon mitigation work and subsequent tests shall continue until the proper levels have been met.
- **REPORTING:** Developer shall submit a copy of the Radon test report to the City of Columbus or Franklin County upon completion of the test.

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## 151100 HVAC General Requirements

*Mandatory – All New and Replacement Installation*

- Size heating and cooling equipment in accordance with the Air Conditioning Contractors of America (ACCA) Manual, Parts J and S, American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) handbooks, or an equivalent software, to prevent short-cycling of heating or air conditioning and ensure adequate dehumidification. Contractor is to supply copy of their calculation report. Installation of an improper size furnace and or air conditioner will be replaced by the contractor, at their expense.
- HVAC contractor shall perform/verify the following:
  - Start-up procedure according to manufactures instructions.
  - Refrigerant charge verified by super-heat and/or sub-cooling method.
  - Burner set to fire at nameplate input.
  - Air handler setting/fan speed.
  - Total airflow within 10% of design flow.
  - Total external system static should not exceed equipment capability at rated flow.
- **NO HVAC DURING CONSTRUCTION** – Mask off all HVAC outlets during construction. Avoid any use of the HVAC equipment during construction if at all possible. Otherwise, have all HVAC ducts and coils cleaned by a professional company at the time of completion on the project.

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### 151111 Natural Gas Furnace

- Use the Air Conditioning Contractors of America (ACCA) 8th Edition of their Manual J Heat loss calculation tool (<http://www.acca.org/tech/manualj>) and use ACCA's Manual S for equipment selection.
- ▶ **NOTE:** Provide both Manual J and S reports with first Draw documents. Size furnace to the living unit considering any areas which may be added or subtracted from the plan.
- Remove existing furnace & dispose of in legal dump.
- FURNACE: install a 90+ gas fired forced air furnace with minimum Annual Fuel Utilization Efficiency (AFUE) rating of 92% on 2" patio block to existing duct work & gas line.
- New furnace to be vented with PVC piping per manufacturer's specifications.
- New furnace will have minimum limited warranty of 20 years on the heat exchanger and 5 years on parts.
- Include auto set back thermostat control, vent pipe and new shut-off valve.
- Rework cold air return if necessary to ensure easy access, good fit & easy replacement of air filter.
- An exterior return air filter box shall be installed on one side, both sides, or bottom of new furnace.
- Seal all exposed duct joints as a part of this item with duct mastic.

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### 151112 Electric Heating

#### 151113 Furnance Filters

- ▶ **Note:** Upon completion of the project and after the ducts and furnace has been cleaned, install a new furnace filter and leave one extra for future homeowner use. Use Nature Air, 3M-Filtrete or any other brand of filter that has at least a MERV (Minimum Efficiency Reporting Value) 11 rating.

### 151120 Air Conditioning Requirements

- Install an Energy Star, minimum 14 SEER rated air conditioner (SEER, the Seasonal Energy Efficiency Ratio, measures Energy efficiency), the higher the SEER, the greater the level of efficiency.
- Sizing and proper installation are critical to the Energy efficiency and home comfort, so it is important to hire a qualified technician.
- Air Conditioner shall use Puron instead of Freon.

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## 151130 Air Intake

### 151131 Fresh Air Intakes & Returns

*Choose one of the following systems*

- ▶ **Note:** Developer may choose to install an Energy Recovery Ventilator (ERV).
- **Active/Forced Air System:**  
Install a Ventilation Control System with temperature and humidity shut-offs or a 6-inch duct Skuttle 216 Make Up Air Control to add fresh exterior air to the return plenum of the forced air HVAC system. Use 30 gauge rigid duct insulated with minimum R-6 vinyl or foil faced duct insulation. The inlet should be carefully located on an outside wall to avoid the addition of contaminants or moisture into the return air system and must be placed a minimum of 10 feet away from sources of auto exhausts, clothes dryer exhaust, outside cooking facilities, laundry dryer vent, exhaust vent of heating units or bath and kitchen exhaust fan vents. Ventilation System does not utilize an intake duct to the return side of the HVAC system unless it is designed to operate intermittently and automatically based on a time and to restrict outdoor air intake when not in use (e.g., motorized damper).
- **Passive Fresh Air Intake:**  
Install a passive intake vent, installed through the specified exterior wall, flashed to be weather-tight, and sealed to the building envelope's air barrier and interior & exterior finishes. The inlet should be carefully located on an outside wall to avoid the addition of contaminants or moisture into the return air system and must be placed a minimum of 10 feet away from sources of auto exhausts, clothes dryer exhaust, outside cooking facilities, laundry dryer vent, exhaust vent of heating units or bath and kitchen exhaust fan vents.
- **Return Air Transfer:**  
In absence of cold air returns, the bedrooms shall be pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, sound and light restricted bypass grill, and to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential  $\leq 3$  Pa (0.012 in. w.c.) with respect to the main body of the house when all bedroom doors are closed and all air handlers are operating. Seal to wall finish and install flange trim.

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## 151200 Duct Work

*Size to manual D*

- Install all duct work, cold air returns and floor/wall registers to code. Seal all joints, collars, flex duct, connections and seams in metal duct work, gaps at/on elbows, register boot seams and plenums with a 1/16" coating of UL 181A or UL 181B listed duct mastic over approved fiberglass mesh tape of 9 x 9 minimum weave per inch and a thickness of a minimum of 0.006" .
- Do not install ducts in exterior walls unless extra insulation is added to maintain the overall UA for exterior wall without ducts.
- In standard rehab project, use at least R-6 insulation around ducts in unconditioned spaces.
- In new construction and gut rehabs, all ductwork shall be contained within insulated envelope to prevent conditioned air loss in unconditioned areas.
- Ducts in interior wall cavities must be fully ducted (i.e., do not use the wall cavity as the duct).
- THERMO-PAN - can be used in lieu of sheet metal in constructing return air ducts between joists and stud cavities. All connections and seams shall still be sealed with a 1/16" coating of UL 181A or UL 181B listed duct mastic over UL 181A or UL 181B fiberglass mesh tape of 9 x 9 minimum weave per inch and a thickness of a minimum of 0.006". (Back panel and sides shall be inspected and approved by the rehab tech before installing the front sheet metal panel).

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## 151210 General Construction

### 151220 Slab Homes

- Duct work shall not be run in or under the slab, due to the possibility of condensation or water infiltration which will cause mold and mildew.

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### 151230 Attic Ductwork

- Duct work running thru the attic shall have insulated wrap installed to a R-11 before installing attic insulation.

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### 151300 Thermostats

- Install a 7-day Energy Star rated, programmable thermostat with large readable digital numbers.
- Install with the top of the control no higher than 48" at center AFF.

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### 151400 Attached Garages

- Install an Energy Star rated exhaust fan ventilation system with motion activated sensor with a 15-minute timer to exhaust garage air to the outside.
- Ensure a tightly-sealed door between the garage and living area. Also, provide continuous air barrier between garage and living areas including air seal penetrations at, walls, ceiling, and floors.
- Area between the garage ceiling and second room floor, shall be insulated to a R-30 rating or better.

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## Division 16 - Electrical

### 160100 Electrical General Requirements

#### 160110 Device Locations

##### Electric Device Height

*Measure To The Center Of Device AFF*

- Wall Outlet – 18"
- Wall Switch – 42"
- Phone Jack – 18"
- Cable Connection – 18"
- Thermostat – 48"
- Door Bell Button – 42"
- Must use large rocker or touch-sensitive lighted switch instead of standard toggle switch.

*Mandatory on all 100% Accessible/Universal Design Units Only*



- ▶ **NOTE:** If an outlet or switch is obstructed by a base cabinet or countertop, then the maximum height for the switch or outlet shall be 46" above finished floor.

##### Garages

- Install an additional grounded ceiling mounted outlet as a power source for a automatic overhead garage door opener.

### 160200 Electrical Service

##### Main Service Box

- Install a 200 amp, 3-wire service complete with breaker type panel box with all circuits labeled and balanced. Leave provision for at least 4 additional circuits.
- Provide separate appliance circuits in kitchen.
- New service is to have arc fault breakers, per local code. Include new exterior meter panel.
- Service box shall be installed on first floor if possible.

*Mandatory on all units being presented as 100% Accessible/Universal Design.*

### 160300 Electrical Fixtures

#### 160301 Interior Ceiling Light

- Install an Energy Star rated florescent ceiling light fixture.



### **160302 Interior Recessed Light Fixtures**

- Install Energy Star rated fixture and shall be boxed, air sealed and properly insulated.  
(E) (G)

### **160303 Interior Wall Light**

- Install an Energy Star rated fluorescent wall fixture.  
(E) (G)

### **160304 Kitchen Ceiling Light**

- Install an Energy Star rated florescent ceiling light fixture.  
(E) (G)

### **160305 Basement Light Fixtures**

- Install fluorescent fixtures or porcelain fixtures with CFL bulbs.  
(E) (G)

### **160306 Exterior Wall Entry Door/Porch Light Fixture**

- Install an Energy Star rated fixture that has the following features.
- Photo cell that turns light on at dusk and off at dawn.
- Dusk to dawn low level lighting.
- Motion detector that turns on lamp to full brightness.  
(E) (G)

### **160307 Bathroom Ceiling Fans, With Or Without Light**

- Shall meet ASHRAE 62.2 and be no louder than 2.0 sones.
- One bathroom shall be a continuous motion fan with motion activated fan boost.
- All other bathrooms shall be either a time delay fan or have a humidistat sensor.  
(E) (G) (H)

### **160308 Ceiling Fan, With or Without Light Fixture**

- Install one Energy Star rated ceiling fan with 3-speed setting, in all the living/family rooms and one in each bedroom. Length of fan blade is to accommodate the room square footage. If fan has light fixture, use CFL bulbs only in the fixture.  
(E) (G)

### 160309 Ceiling Fan Switch

- Single pole, 3-speed fan control with light switch. Installed no higher than 42" from the finished floor.
- Use slide-to-off ceiling fan switch.

*Mandatory on all 100% Accessible/Universal Design Units Only).*

Ⓐ

### 160310 Smoke Alarms

- Install one interconnected, hard-wired smoke detector with battery back-up in each sleeping room, outside each separate sleeping area in the immediate area of the bedrooms and on each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics.
- ▶ **Exception:** Smoke alarms in existing areas shall not be required to be interconnected and hard wired where the alterations or repairs do not result in the removal or opening-up of interior wall or ceiling exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.


Ⓒ Ⓓ

### 160311 Carbon Monoxide Detectors

- Install one on each floor area and basement, all to be hardwired and inter-connected.
- ▶ **Exception:** Carbon monoxide detectors in existing areas shall not be required to be interconnected and hard wired where the alterations or repairs do not result in the removal or opening-up of interior wall or ceiling exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.

Ⓒ Ⓓ



 Mayor Michael B. Coleman	City of Columbus Department of Development Housing Division	Issue Date:
<b>NSP AWARE INSPECTION RECORD</b>		
750 Piedmont Rd. Columbus, OH 43224		

<b>Developer:</b>	<b>Project Information:</b>
-------------------	-----------------------------

Construction Type	New Build	Gut Rehab	Moderate Rehab	Commercial/ Mixed Use
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AWARE Inspection Type	Date	Housing Inspector Signature
Air Infiltration Package		
Insulation		
Final		

In order to schedule an inspection, contact the proper individual below:			
Name:	Title:	Phone #:	E-mail Address:
Tim Tilton	Rehab Tech.	724-3009	<a href="mailto:twilton@columbus.gov">twilton@columbus.gov</a>
Shane Sheaf	Rehab Tech.	645-7580	<a href="mailto:sasheaf@columbus.gov">sasheaf@columbus.gov</a>
Steve Riggs	Rehab Tech.	645-6680	<a href="mailto:sbriggs@columbus.gov">sbriggs@columbus.gov</a>
*** All inspections shall be scheduled with a 24 hour notice ***			

Comments:



**AWARE Inspection Record**

<b>Developer:</b>	<b>Project Information:</b>

Check which applies:	<b>New Build</b>	<b>Gut Rehab</b>	<b>Moderate Rehab</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Inspection Type	Date	Inspector Signature
Air Filtration Package		
Insulation		
Final		

To schedule an inspection, contact the proper individual below.			
Name	Title	Phone	Email
Rick Erbe	Housing Inspector	614-525-7305	rxerbe@franklincountyohio.gov
<b>*** All inspections must be scheduled with at least 24 hours notice ***</b>			

Additional Comments:

**City of Columbus  
 AWARE Final Documentation Checklist**



<b>Developer:</b>	
<b>Project:</b>	
<b>Address:</b>	

<b>Document</b>	<b>Date Received</b>
<b>HERS Rating</b>	
<b>Blower Door Test</b>	
<b>Radon Testing</b>	
<b>Final Lead Clearance</b>	
<b>Final Asbestos Clearance</b>	
<b>Materials List</b>	
<b>Contractor Project Photos (Pre-Insulation)</b>	
<b>City of Columbus Certificate of Occupancy</b>	
<b>AWARE Inspection Card- Complete Signatures</b>	
<b>Energy Star v3 Certificate</b>	
<b>Final Invoice</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	

Rehab Tech



SIGNATURE

DATE



**Franklin County  
 AWARE Final Documentation Checklist**

<b>Developer:</b>	
<b>Project:</b>	
<b>Address:</b>	

Document	Date Received
<b>HERS Rating</b>	
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<b>Final Asbestos Clearance</b>	
<b>Materials List</b>	
<b>Contractor Photos</b>	
<b>Certificate of Occupancy</b>	
<b>AWARE Inspection Card w/ Signatures</b>	
<b>Final Invoice</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	
<b>Other:</b>	

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**Rehab Tech Signature**

**Date**



## City of Columbus Development Department AWARE Home Choice Certification

In recognition of: **A**ccessible  
**W**ater Conservation  
**A**ir Quality  
**R**esource Conscious  
**E**nergy Efficient



**AWARE**

For Sustainable Accessible Living

**Developer:** \_\_\_\_\_

**General Contractor:** \_\_\_\_\_

**This certifies your home located at:** \_\_\_\_\_

Is environmentally friendly and energy efficient in accordance with  
the City of Columbus AWARE Program.

Rita Parise  
Housing Administrator

\_\_\_\_\_ Date





Franklin County - Economic Development and Planning  
AWARE Home Choice Certification

In recognition of: **A**ccessible  
**W**ater Conservation  
**A**ir Quality  
**R**esource Conscious  
**E**nergy Efficient



Developer: \_\_\_\_\_

General Contractor: \_\_\_\_\_

This certifies that your home located at: \_\_\_\_\_

Is environmentally friendly and energy efficient in accordance with  
the Franklin County AWARE program.

James R. Schimmer \_\_\_\_\_ Date \_\_\_\_\_  
Director



THE CITY OF  
**COLUMBUS**  
MICHAEL B. COLEMAN, MAYOR



This home was renovated  
in a 100% smoke free  
environment in order to:

- Preserve Property Value
- Protect Health
- Reduce The Risk of Fire

Columbus &  
Franklin County



By asking family members to smoke outside, you  
can maintain the smoke free status of your home.

breathe better.  
live better.

Address

---

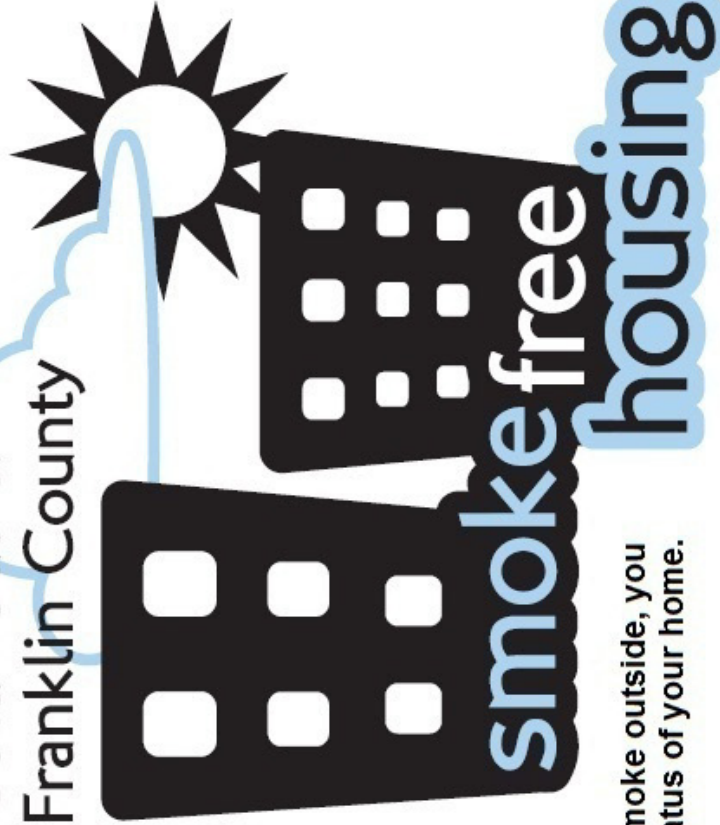
Signed

---

Date



Columbus &  
Franklin County



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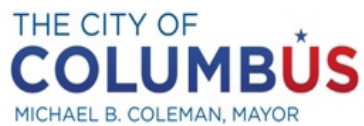
breathe better.  
live better.

Address \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_



**Produced by:**



City of Columbus  
Department of Development  
Housing Division  
50 West Gay Street, 3rd Floor  
Columbus, Ohio 43215

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[www.columbus.gov](http://www.columbus.gov)



Economic Development and Planning Department  
150 South Front Street  
FSL Suite 10  
Columbus, Ohio 43215

Tel. 614-525-3094  
Fax 614-525-7155  
[www.franklincountyohio.gov/edp](http://www.franklincountyohio.gov/edp)