

BALTIMORE COUNTY
OFFICE OF COMMUNITY CONSERVATION
HOUSING REHABILITATION PROGRAMS
6401 YORK ROAD, 2ND FLOOR
BALTIMORE, MARYLAND 21212

410-887-3124

GENERAL REQUIREMENTS

AND

SPECIFICATIONS

FOR

REHABILITATION CONTRACTS

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 1A - INSTRUCTIONS TO BIDDERS

- 1.** All contractors must be licensed under the Maryland Home Improvements Law.
- 2.** The Contractors shall maintain such insurance as will protect him/her from claims under workmen's compensation acts and other employee benefits acts, from claims for damages because of bodily injury, including death in the amount of one hundred thousand dollars (\$100,000) each person and three hundred thousand dollars (\$300,000) each occurrence, and from claims for damages to property in the amounts of \$50,000/\$100,000 which may arise both out of and during operations under this Contract, whether such operations be by him/herself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of such insurance shall be filed with the Owner and Baltimore County showing that the insurance will remain in force throughout the life of the Contract.
- 3.** Proposals should be itemized, clear and descriptive and be signed by a person authorized for the firm.
- 4.** Contractors should carefully examine each job site and assess the work required. It shall be the responsibility of the Contractor to foresee problems that may be encountered in the rehabilitation project. Proposal shall be based upon completing all work in the manner described in the Contract documents. The Contract documents include the Deficiency List, the Contract Agreement and the General Requirements and Policies.
- 5.** Proposals will be submitted at no cost or obligation to the Owner. Contractors will be responsible for their own quantity take-offs. The Owner reserves the right to reject any or all bids.
- 6.** Any and all materials, equipment, fixtures and/or appliances proposed to be furnished by the Contractor or his/her subcontractors, must be identified by manufacturer's name and model or catalogues number. Sizes must be listed, if applicable.
- 7.** The Owner shall not include any additional work not included in the Deficiency List unless approved by the Rehabilitation Specialist.
- 8.** The Contractor is hereby notified that contracts are subject to the "Truth In Lending Act" and that the Owner shall have until midnight of the third day following the signing of the Contract documents to rescind the Contract without penalty. The Contract upon the Owner's decision shall be come null and void, and the Contractor shall return the executed Contract to the Owner without delay on notice to him of the decision.
- 9.** Contractors subcontracting work are required to submit proof of licensing of their subcontractors prior to settlement if requested by the Rehabilitation Office.
- 10.** Any changes or amendments relating to the scope of work or price are to be approved in writing by the Housing Rehabilitation Specialist and program Administrator prior to work being performed.

11. Request for payments should be submitted directly to the Housing Rehabilitation Office.
12. Final payments will not be released until all work specified in the Deficiency List is complete and the Housing Rehabilitation is in receipt of copies of the permits.
13. Eligible contractors who have not previously participated on the Baltimore County Housing Rehabilitation Program will be allowed to participate on a probationary period. Pending review of a satisfactory probationary period, the Contractor will be entitled to receive one rehabilitation contract at a time. No additional awards will be made to Contractors until work is satisfactorily completed. The probationary period will last until the Contractor has satisfactorily completed two Housing Rehabilitation Contracts.
14. Baltimore County reserves the right to undertake a credit check of Contractors participating in the Baltimore County Housing Rehabilitation Program. Unsatisfactory credit references will result in the Contractor being removed from the list.
15. Baltimore County reserves the right to request the Contractor to post a performance bond equal to the value of the Contract.
16. Any Contractor who falsely submits a Waiver of Liens will be removed from the Contractors List. Contractors will be subject to legal action.
17. **All project submissions must include a completed signed copy of the Addendum: "GREEN BUILDING PREFERENCE CHECKLIST"**

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 1B - GENERAL CONDITIONS

1. **GENERAL:** The work includes the furnishing of all labor, materials, equipment and permits necessary for the satisfactory completion of the rehabilitation of the property identified in the Deficiency List.
2. **EXTENT OF THE WORK** is described in the Deficiency List and shown on the plans, if any, which are attached thereto. This specification and its addendum describe the material and workmanship, which will be required and are to be included in every contract and subcontract awarded for the execution of the work. The requirements of the Deficiency List shall govern if in conflict with this specification. Any errors or omissions on the Deficiency List may be corrected by the Baltimore County Housing Rehabilitation Office when such corrections are necessary for proper completion of the work, as intended by Baltimore County. Unless the errors or omissions are of major nature no additional compensation will be paid.
3. **CHANGES IN THE WORK**, including substitution of materials, workmanship required by these specifications, or changes in the scope of the work as described in the Deficiency List which may be proposed by the Contractor, or found necessary or desirable as the work progresses, shall be in writing with price change given. Changes shall be approved by the Owner, the Contractor, and the Rehabilitation Specialist, and Housing Rehabilitation Office Administrator before any work incidental thereto is started.
4. **WORKMANSHIP** shall be done in accordance with the standards of several trades known as a "workmanlike manner".
5. **SUPERVISION AND CONSTRUCTION PROCEDURES:** Supervise and direct the work, using his/her best skill and attention. The Contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the Contract.
6. **LABOR AND MATERIALS:**
 - a. Unless otherwise specifically noted, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery necessary for the proper execution and completion of the work.
 - b. The Contractor shall, at all times, enforce strict discipline and good order among employees. All work persons shall be competent and capable of performing the work assigned to them in a satisfactory manner. Helpers and apprentices shall work under the supervision of a skilled tradesperson, or supervisory personnel.

7. WARRANTY AND GUARANTEES:

- a. Warranties and guarantees shall be provided to the Owner stating that all materials and equipment incorporated in the project are new unless otherwise specified and that all work is of good quality, free from faults and defects and in conformance with the specifications. All work not so conforming to these standards may be considered defective by the Owner. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
- b. The warranties and guarantees provided in this paragraph and elsewhere in the specifications shall be in addition to and not in limitation of any other warranty or guarantee or remedy required by law or by the Contract documents.

8. TAXES: The Contractor shall pay all sales, consumer, use and other taxes required by law.

9. PERMITS, FEES AND NOTICES:

- a. The Contractor shall secure and pay for all permits, fees and licenses necessary for the proper execution and completion of the work.
- b. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the work.

10. REPAIRS shall be made to all surfaces damaged by the Contractor resulting from his/her work at no additional cost to the Owner.

- a. Repairs, any damage done by Contract operations, or work persons to yard, lawns, shrubs, trees, plants, driveways, curbs and gutters, or other property either on the Owners property, adjoining property, or in public space, during the construction, shall be repaired or replaced at the Contractor's expense.
- b. Where "repair of existing work" is called for by the Deficiency List, the feature (floor, wall, ceiling, door, window, or trim, etc.) is to be placed in "equal to new condition", taking into account the fact that old buildings cannot be made "as new" and that some lines and surfaces must remain irregular, slightly out of level, or plumb, either by patching or replacement; all damaged or loose or rotted parts of wood, metal or plaster shall be removed and replaced and the finished work shall match adjacent work in design and dimension. Such patching and replacement shall be made to blend with existing work so that the patch or replacement will be inconspicuous.

11. INSPECTION OF THE WORK during normal working hours by authorized inspectors shall be facilitated by the Contractor and the work shall be subject to both the Homeowner and Rehabilitation Specialist's approval and acceptance.

12. CONTRACTS FOR WORK to be executed under this program will stipulate that payments will be made to the Contractor only upon the certification of the Homeowner and the Rehabilitation Specialist.

13. SUBCONTRACTORS shall be bound by the terms and conditions of this Contract insofar as it applies to their work but this shall not relieve the general Contractor, if such a one is awarded the Contract, from the full responsibility to the Owner for the proper completion of all work to be executed under this agreement and he/she shall not be released from this responsibility by any subcontractual agreement he/she may make with others.

14. PROPOSALS will be submitted at the contractor's risk and the Owner reserves the right to reject any or all proposals.

15. BUILDING CODES: All work to be done shall be subject to the regulations of the local effective building code.

16. WORKMEN'S COMPENSATION, CONTRACTOR'S LIABILITY, CONTRACTOR'S CONTINGENT LIABILITY INSURANCE:

The Contractor shall maintain such insurance as will protect him/her from claims under workmen's compensation acts and other employee benefits acts, from claims for damages because of bodily injury, including death in the amount of one hundred thousand dollars (\$100,000) each person and three hundred thousand dollars (\$300,000) each occurrence and from claims for damages to property in the amounts of \$50,000/\$100,000 which may arise both out of and during operations under this Contract, whether such operations be by him/herself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of such insurance shall be filed with the Owner and Baltimore County showing that the insurance will remain in force throughout the life of the Contract.

17. SAFETY PRECAUTIONS AND PROGRAMS: The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work.

a. LEAD ABATEMENT CERTIFICATION

All contractors performing lead abatement shall provide a copy of their EPA certification and state licenses for the designated lead abatement supervisors and all lead abatement workers working on the project prior to commencement of work.

b. LEAD WORKER – PROTECTION

Persons carrying out lead hazard control activities must comply with all applicable federal, state, local laws and regulations related to safety in the workplace.

18. SAFETY OF PERSONS AND PROPERTY:

- a. The Contractor shall take all necessary precautions for the safety of, and provide all necessary protection to prevent damage, injury or loss to:
 1. All employees involved with the work and all other persons who may be affected thereby;
 2. All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site; and
 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

- b. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all necessary safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Owner and Users of adjacent utilities.

19. CLEANING UP: At all times the premises shall be kept free from accumulation of waste materials and rubbish from and about the project as well as all tools, construction equipment, machinery and surplus materials. The Contractor shall clean all glass surfaces and leave the work "broom-clean" or its equivalent, except as otherwise specified. All debris, trash, waste materials, surplus materials, etc. shall be removed from the job site and disposed of by legal means.

20. OCCUPANTS of the premises during the execution of the work will cooperate with the Contractor by the timely removal of furniture and personal effects as much as practicable from the work areas. The Contractor shall make every reasonable effort to protect the occupants' possessions, which must remain in work areas, from loss or damage. If it is determined and agreed between the Homeowner and the Contractor that it is more practical and cost effective to remove furniture, upon signing of a change order and approval by Program Administrator the Contractor shall then use methods that bring the least amount of inconvenience to homeowners. The work shall be completed promptly and ideally the Contractor shall work uninterrupted from start to finish.

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 1C - PAYMENTS

- 1.** Requests for payments shall be made on forms provided by the Baltimore County Housing Rehabilitation Office.
- 2.** Payments will be processed if the percentage of Contract work completed at the time the Payment Request is submitted, equals or exceeds the percentage of Contract price requested. It should be understood that the Contractor's expense to reach a percentage of work completion may not correlate with the percentage of Contract price paid at any particular draw. In all requests for payment, the Owner and Baltimore County or its agent must be satisfied that the value of work accomplished equals or exceeds the amount requested.
- 3.** Upon completion of the rehabilitation work and the submission of all the necessary forms, including Final Payment Request, Block Grant Report and Waiver of Liens duly notarized by the Contractor and confirmation that all permits have been finalized and upon final inspection by the Rehabilitation Specialist the final payment will be processed.
- 4.** Should the Owner or Baltimore County be given formal written notice by persons having done work, furnishing services or material for this Contract that they have not been paid by the Contractor, Baltimore County shall require the Contractor to furnish valid evidence that those parties have been properly compensated.
- 5.** In the event that the Contractor or his subcontractors produce work or provide materials which, in the opinion of the Owner and Baltimore County or its agent, do not comply with the Deficiency List, the General Requirements and Specifications, drawings, local codes, or should the completed work be judged unsatisfactory for other pertinent reasons, payments due the Contractor may be retained in part or full until work in place has been remedied.
- 6.** Payments made to Contractors, or use of rehabilitated structures by their Owners, shall not be interpreted as acceptance of any work that does not fully comply with the Contract documents, Deficiency List, drawings, or the General Requirements and Specifications.
- 7.** Payments will be made by checks payable jointly to Owners and Contractor.
- 8.** Contractors will be contacted for pickup when checks are available from the Housing Rehabilitation Office which will then need to be taken to the Homeowner for signature.
- 9.** Should Contractor request that checks be mailed, it will be mailed to the Homeowners.

DIVISION 2 - SITE WORK

SECTION 2A - DEMOLITION

1. **DEMOLITION** of all parts to be removed shall be done in a safe, orderly fashion, taking care to avoid damage to parts which are to be left in place by shoring of protective covering as may be necessary. **First consideration shall be to recycle demolition materials. Materials, such as doors, trim or lumber, shall be recycled and shall be kept separate from trash and debris for recycling.** All **other** debris shall be removed from the premises as it is generated and shall not be allowed to accumulate.
2. **DISCONNECTION OF SERVICES:**
 - a. Notify all corporations, companies, individuals, local authorities owning or controlling wires, conduits, pipes or other services affected by demolition before commencing operations.
 - b. Disconnect and cap all pipes and services as required by company or local authority having jurisdiction; however, service in that portion of building not affected must remain in operation.
3. **PERMITS:** Secure and pay for all permits.
4. **NOTICE TO ADJOINING OWNERS:** Give written notice to adjoining property owners affected by demolition work.

DIVISION 2 - SITE WORK

SECTION 2B - EARTH WORK

1. **GRADING:** Within construction limits, rough grade as required to obtain the elevations shown. Compact all fill as required. Where walks and slabs occur, use a gravel sub-bed and bank run gravel from existing grade to finish grade.
2. **TOPSOIL:**
 - a. Topsoil: Free of debris, rock gravel.
 - b. Shall consist of a sandy loam containing 2 to 2.5% organic matter.
 - c. Furnish and place topsoil 4 inches thick over area to be sodded or seeded if called for in the Deficiency List.
 - d. Spread evenly to true contours and hand rake to an even, smooth surface, ready for sodding.
3. **SODDING:** Sod areas indicated on drawings.
 - a. Sod: Minimum 1 to 1 1/2" thick, reasonably free of weeds and crab grass, laid with tight joints. After laying, thoroughly water and tamp or roll until bonded to topsoil.
 - b. Slopes one (1) foot rise in two (2) feet or steeper: carefully pegged to hold sod until roots spread and firmly grip soil beneath.
 - c. Guarantee: Sodded areas, which do not show a prompt catch shall be re-sodded at no expense to the owner.
4. **SEEDING:**

Prepare the area to be seeded by grading, spreading topsoil if required and hand raking. Sow lawn grass seed (Kentucky #31 or equal) into soil by raking or watering. Cover seeded area with straw.

DIVISION 3 - CONCRETE

SECTION 3A - CONCRETE & CEMENT FINISH

1. CONCRETE WORK:

- a. The concrete mix shall conform to the requirements of the local codes or industry standards for the specific purpose to which it is to be put.
- b. No concrete shall be poured when the temperature of the surrounding air is below 40 degrees F. All forms, the ground or other material with which concrete will come in contact, shall be free from frost. Heat shall be provided if needed.
- c. Yard pavement shall be at least 4" thick with a float and broom finish.
- d. Floors shall be at least 4" thick with a steel trowel finish.
- e. Footings: The minimum depth below finished grade for all footings shall be 30 inches. Footing design shall be as shown on the approved plans and work write-up. Concrete strength shall be 2,500 pounds per square inch after 28 days.
- f. Driveway: Poured concrete 6 bag mix shall be a minimum of 5" thick and shall have cork expansion joints at each 10' section beginning at the front property line. Length and width as stated in the work write-up. Install 6 x 6 wire reinforce mesh in concrete. Light broom finish.

DIVISION 4 - MASONRY

SECTION 4A - CONCRETE MASONRY AND BRICK WORK

1. MATERIALS:

- a. All brick, stone or block used shall match adjacent work and samples shall be approved by the owner or his agent before starting the work, unless the work is to be painted or covered.
- b. Mortar shall conform to the requirements of the local code or industry standard for the specific purpose for which it is to be used.

2. INSTALLATION AND WORKMANSHIP:

- a. Tuck pointing shall be done only after the joints have been raked out to a minimum depth of 1/2" and wetted.
- b. All damaged, loose or salmon brick, in area to be rebuilt, must be removed until sound brickwork is encountered.
- c. New brick patches shall be toothed into and match in size, joints and bond, the existing work. Unless the finished wall is to be painted, the color of brick used for patching shall also match adjacent work.
- d. Face brickwork shall be tied to back-up work with headers let into existing back-up codes or industry standard.
- e. New walls shall be anchored to existing work.
- f. Star ties and lintels shall be adequate in size and installed to meet local codes or industry standards.
- g. All masonry shall be protected against freezing for not less than 48 hours after installation and shall not be constructed below 28 degrees F. on rising temperatures or below 36 degrees F. on falling temperatures, without temporary heated enclosures or without heating materials or other precautions necessary to prevent freezing. No frozen masonry shall be built upon.
- h. All joints shall be completely filled with mortar.
- i. Bonding and Reinforcing: Wall reinforcement shall be Dur-o-Wall, or equal wire reinforcing spaced 16" O.C. horizontally throughout entire masonry structure and both interior and exterior walls. Reinforcement shall be continuous laps 6" minimum and shall be full width of wall.

3. **WORK RELATED TO MASONRY:** Contractor shall coordinate placing of all items embedded in masonry.

4. **CHIMNEY:**
 - a. Constructed as per drawings, exposed part: face brick with precast concrete cap, size per drawings.
 - b. Chimney within building: Constructed with common or concrete brick.
 - c. Flue lining: Vitrified clay.

5. **CLEANING:**
 - a. All exposed masonry: Not less than 7 days old; cleaned with solvents like Sure-Klean, Foam Masonry or Grays Ferry, or 2% solution of muratic acid. Thoroughly rinse acids or cleaners with water after cleaning.
 - b. No cleaning until all work has been pointed and grouted.
 - c. Stronger solutions or other methods: Obtain specific approval of the cost estimator.

SECTION 5A - STRUCTURAL STEEL

1. **WORK INCLUDED:**

- a. Structural steel beams, plates and lintels.
- b. Metal plates and fastenings, one-eighth (1/8) inch thick or greater.
- c. Priming of ferrous metal.

2. **SPECIAL REQUIREMENTS:** The current rules and practices set forth in the Code of Standard Practice for Steel Buildings and Bridges and the Specification for the Design, Fabrication and Erection of Structural Steel for Buildings of the American Institute of Steel Construction shall govern this work, except as otherwise noted on drawings or as otherwise specified. Welding shall be in accordance with Standard Code for Arc and Gas Welding in Building Construction of the American Welding Society.

3. **MATERIALS:** Structural steel shall conform to ASTM Designation A86.

4. **WELDING:** In accordance with A.W.S. Code, by qualified operator.

5. **PAINTING:**

- a. Rust-O-Leum #769 Damp proof Red Primer or equal.
- b. Parts inaccessible after assembly: two shop coats, preferably of different colors.
- c. Contact surfaces: cleaned before assembly, not painted.
- d. After erection: touch up all burned or abraded areas.

DIVISION 5 - METALS

SECTION 5B - MISCELLANEOUS METAL

1. **MATERIALS:** All materials: New and of best merchandise quality of type hereinafter specified.
2. **PAINT:** Shop Coat: Rust-O-Leum #769 or equal.
3. **FLUE COLLAR:** 12 gauge galvanized sheet metal.
4. **ANCHOR BOLTS:** 1/2" to 18" spaced not more than 8' O.C., or two (2) bolts to each member.
5. **AREA WALLS:** 14 gauge galvanized steel; size and shape as per drawings.
6. **PIPE RAILING:** 1-1/2" diameter galvanized steel pipe, with closed ends and brackets as detailed.
7. **INSERT AND SLEEVES:**
 - a. Inserts: Suitable and approved type of support of piping, mechanical equipment of apparatus.
 - b. Sleeves: Metal, suitable type and size where pipes pass through masonry floors and walls.
8. **BUILDING IRON:**
 - a. Size and type as shown or required.
 - b. To carpenter, mason and other trades for installation.
9. **MISCELLANEOUS ANGLES, CHANNELS, ETC.:**
 - a. Items of Structural Steel: Where noted on drawings or otherwise called for on structural drawings.
 - b. Holes: As required for nailing or bolting.
10. **IRON RAILINGS:** Where called for in the work write-up, iron railings and hand railings shall be shop fabricated wrought iron, or steel pipe 1 1/2" diameter, as called for. Railings shall be standard design and weight, installed and anchored securely to the floor, walls, walk, or steps which it serves.

DIVISION 6 - CARPENTRY

SECTION 6A - FLOOR, WALL AND CEILING INSULATION

1. INSTALLATION:

- a. In all exterior walls, if called for in Deficiency List between studs, install blanket insulation, recessed from inside face of studs. Staple to wood studs, vapor barrier toward room side.
- b. Fill all spaces between doors or window frames and structural members with strips of insulation, pack full.
- c. In crawl space, staple between joists: Vapor barrier toward the ground.
- d. Ceilings: Staple insulation between the ceiling joist, vapor barrier toward the room side.
- e. All insulation: applied in strict accordance with manufacturer's directions.
- f. The use of advanced infiltration reduction practices (better air sealing practices) is encouraged.

2. INSULATION

It is required that the following R-Values, or any combination thereof, be utilized for whichever purpose it is intended.

R-30 - Attics or uppermost ceiling in dwelling. Only accessible areas of attics are to be insulated unless otherwise specified in the Deficiency List.

R-19 - Walls or floors over unheated crawl spaces.

NOMINAL R-Values for Various Thicknesses of Insulation (in inches).

R-Value	Batts or	Blankets	Loose and	Blow Fill	Cellulose	Vermiculite	Perlite
R-11	3 1/2 in.	3 in.	5 in.	4 in.	3 in.	5 in.	4 in.
R-13	4	3 1/2	6	4 1/2	3 1/2	6	5
R-19	6	5	8 1/2	6 1/2	5	9	7
R-22	7	6	10	7 1/2	6	10 1/2	8
R-26	8	7	12	9	7	12 1/2	9 1/2
R-30	9 1/2	8	13 1/2	10	8	14	11
R-33	10 1/2	9	15	11	9	15 1/2	12
R-38	12	10 1/2	17	13	10	18	14

Rigid board insulation (polystyrene, urethane, glass fiber etc.) can only be used below grade and must be covered with a minimum of 1/2" gypsum board or other finishing material for fire safety.

USE OF UREA - FORMALDEHYDE FOAM IS PROHIBITED

All insulation material must meet either federal or American Society of Testing Materials (ASTM) specifications.

Batts or blanket insulation is to be installed with the barrier to the lived in side of space to be insulated.

If two layers of insulation are needed, or if new materials are being added to insulation already in place, the second layer should be of the type that does not have a vapor barrier. If this type is not available, either remove or slit vapor barriers in various places. This is essential to prevent moisture build-up which reduces insulation value and could cause structural damage. Insulation is not to be packed around "hot spots" such as recessed light fixtures, electric motor, etc. Batts or blanket insulation shall be kept 3" away from such "hot spots". In the event loose insulation is being used, a baffle shall be installed. In either case the top of fixture, etc., is to remain exposed. To avoid obstruction of ventilation care should be exercised that insulation, whether blanket or blown in fill, does not shift into vents or eaves. Batts or blanket insulation for wall installation shall be of the type that vapor barrier flange can either be stapled or nailed at a maximum of 12" intervals.

DIVISION 7 - MOISTURE PROTECTION

SECTION 7A - BUILT-UP ROOFING

1. **RE-ROOFING:**

a. Over old built-up roofing:

- (1) The old roofing should be carefully inspected and all wrinkles, buckles, blisters and areas containing moisture must be completely removed and patched.
- (2) The application of the new roof covering over surface thus prepared should proceed following the specification that would apply over the underlying deck.
- (3) However, under no circumstances should new roofing be mopped solidly to old roofing but should be channel mopped or nailed, depending on the type of deck involved. A coated base sheet is recommended as the first course in re-roofing.

2. **GUARANTEE:**

- a. Guarantee of the roof shall include all items which contribute to waterproof quality of the roof and all items that form any part of it (flashing, skylights, top lights, etc.) Contractor is responsible for the whole and therefore, condition of the roof deck, adjacent walls, insulation, etc., cannot be recognized as a contributing factor to leaks or other failures.
- b. The Contractor shall guarantee all roofing, flashing, etc., against leaks, all defects of workmanship and materials and all defects developing under natural wear and tear for a period of one to three (3) years and should any leaks occur within this period, repairs to the roof and damage to other portions of the building caused by such leakage will be made good, without cost to the owner.

DIVISION 7 - MOISTURE PROTECTION

SECTION 7B - ASPHALT SHINGLE ROOFING

1. MATERIALS:

- a. Singles: Asphalt or fiberglass. Color to be selected by Owner.

Shingles or patching shall match existing roof for size and joints and color if possible.

- b. Hips and Ridges: Shall be laid in such a way to obtain a triple coverage with a 5" exposure and a 5" headlap.
- c. Valleys: .024 gauge aluminum, 20" wide. Valley shall be fastened with nails and asphalt cement.
- d. Flashing: Install .019 gauge aluminum step flashing and counter flashing at intersections of roof with flues and chimneys, dormer or other walls, sky lights, etc.
- e. Asphalt Cement: Shall be an approved brand of waterproof elastic asphalt cement. Color to match as nearly as possible the color of the shingles.
- f. Roofing Felt: Shall be one (1) layer of 15 lb. Roofing felt. Shall be in accordance with the Asphalt Roofing Industry. Roofs with less than 4" in 12" pitch shall have two layers of 15# felt laid with 18" laps.
- g. Metal Collars: Install metal collars around all plumbing vent stacks, service pipes and flue vents, caulk around pipes or vents with roofing mastic cement.
- h. Nail: Galvanized dipped, or aluminum roofing nail 1" for single layer roofs and 1 1/2" for re-roofing over existing roof.

2. INSTALLATION:

- a. Remove existing deteriorated roofing, replace all defective sheating to match existing. Re-nail loose sheating.
- b. Felt shall be laid in horizontal layers with joints lapped toward eaves and at ends at least 2 inches and well secured along laps and at ends as necessary to properly hold the felt in place and protect the structure until covered by shingles. All felt shall be preserved, unbroken, tight and whole.
- c. Shingles shall be laid in horizontal courses with the standard 5" head lap and each course shall break joints with the preceding one. Shingles at the eaves or cornice line shall be canted 1/4"

- d. Shingles overlapping sheet metal work shall have nails placed so as to avoid puncturing the sheet metal. Exposed nails shall be permissible only in the top course where unavoidable.
- e. Neatly fit shingles around all projections through roof.
- f. Cover all exposed nail heads with elastic cement, spread thickly over exposed surface of under course of shingle, nailed securely in place and pointed with elastic cement.
- g. On completion all shingles must be sound, whole and clean, and the roof shall be left in every respect tight and a neat example of workmanship.

3. RE-SHINGLED ROOF:

- a. Examine existing roof.
- b. Remove all torn or broken and unaligned shingles.
- c. Patch roofing felt as required.
- d. Replace shingles in the same manner as specified for new shingle roof.

- 4. GUARANTEE:** The Contractor shall furnish to the Owner a guarantee from the date of acceptance, covering the roofing, materials for the manufacturer's stated period and to guarantee all labor for a period of five years.

DIVISION 7 - MOISTURE PROTECTION

SECTION 7C - SHEET METAL WORK

1. INSTALLATION:

- a. Provide suitable provision for expansion, contraction and weather tightness.
- b. Flashing shall be continuous, adequate for all work requiring flashing and counter flashing where roofing intersects walls, chimneys and flues.
- c. Approved corrosion-resistive flashing shall be provided at the top and sides of all exterior window and door openings in such manner as to be leak proof.

2. GUTTERING AND FITTINGS:

- a. Materials:

No less than 28 gauge and 5" aluminum, half round or K type aluminum pre-painted or galvanized gutters.

- b. Installation: Use full length sections where practical, install end caps, miters, drop outlets, slip joint connectors and other fittings as required to make a complete installation. Join sections and fittings by use of gutter mastic sealant and pop rivets installed in accordance with the Gutter Manufacturers instructions, or if galvanized iron is used solder joints may be used in accordance to general practice of the trade. Use hangers of same material as gutter material, patented strap hangers, bar hangers or combination hangers.

3. DOWNSPOUTS & FITTINGS:

- a. Materials:

No less than 28 gauge 3" round aluminum or galvanized, or as specified.

- b. Installation: Use full length sections where practical, install elbows and other fittings as required to make a complete system. Join sections by inserting crimped end approximately 1 1/2" into the other section or elbow and fastening with pop or solder. Hang downspouts with patented clip hangers securely attached to the wall or metal conductor straps. Fasten downspout pipe to hangers to prevent slipping down.

Provide pre-cast concrete splash blocks for each downspout.

- c. Downspouts shall discharge into a drain or be directed away from buildings and adjacent properties by the use of splash blocks.

DIVISION 7 - MOISTURE PROTECTION

SECTION 7D - WATERPROOFING

1. APPLICATIONS:

- a. Foundations walls, where shown or required, mix and apply metallic compound as per manufacturer's directions, to basement block walls.
- b. Apply 1/2" coat of waterproof cement parging, troweled smooth.
- c. Vapor Barrier:
 - (1) Under concrete slabs on grade, apply one (1) ply polyethylene film, lap joints at least 12".
 - (2) In crawl space apply 4 mil polyethylene on grade. Lap joints 6" and fit wall tight.
- d. Drain Tile: Around perimeter of #56 of Spec.
- e. Membrane Waterproofing: At all ceramic tile floors over habitable areas.

SECTION 8A - GLASS AND GLAZING

1. **MATERIALS:**

- a. All glass for glazing or re-glazing shall bear labels and labels shall not be removed until glass has been inspected and approved.

2. **SETTING:**

- a. Accurately cut and fit all glass; set without springing or forcing. Run glazing compound neatly, cleanly and even with inside of glazing rabbet.
- b. Glass in steel sash: Set in full and complete bed of glazing compound on all sides. Installation: In strict accordance with Steel Sash Manufacturer's recommendations.

3. **ACCEPTANCE:** Improperly set glass, broken glass, or glass which does not fully meet requirements of grade and type, will not be accepted.

4. **WINDOWS:**

- a. Where new windows are called for in the Deficiency List, vinyl or aluminum energy efficient windows, with Energy Star Rating and positive locking devices, should be installed in accordance with the manufacturers specifications.
- b. Windows shall, in all cases, maintain proportion of existing openings and be compatible with existing openings.
- c. Where sash cords are to be installed, chain is to be used. Channels shall not be used unless specified.
- d. When replacement or repair is required all mouldings, casings, trim, stops and beads to be firmly secured to the frame.
- e. In the case of double hung sashes, both upper and lower sashes are to be made operable unless otherwise specified.
- f. Whenever new windows are installed trim should be wrapped with coil stock aluminum unless otherwise specified.
- g. Skylights shall be glazed with 1/4" wire glass.
- h. Prime all wood sash before the placing of putty or glazing compound.

5. STORM WINDOWS:

Aluminum storm windows shall be provided with all necessary hardware, glass, screen and miscellaneous equipment as required to provide a complete serviceable installation for various window types such as double hung, casements, slider or awning type windows.

The windows shall be assembled and secured in a workmanlike manner, perform as specified and assure a neat weather-tight installation. All joints shall be closely fitted, securely fastened and shall be of adequate strength to maintain the structural value of members connected. Stabilizer bar shall be installed on all storm windows.

Storm windows shall be of a combination aluminum self storing type, consisting of a main frame with triple slides or runways for the independent sliding of two (2) sash and one (1) screen insert.

The main frame shall be provided with a full expander on both sides, top and bottom to provide for out of square openings. Weep holes shall be covered and designed to prevent entrance of water from outside.

Installation shall comply in every respect to manufacturers specifications.

DIVISION 9 - FINISHES

SECTION 9A - CERAMIC TILE WORK

- 1.** Grout and Buttering Mix: Waterproof grout mix with up to one part sand added to each two parts of Portland Cement. Sand shall have no fine under 80 grit and no coarse over 30 grit. Color shall be white.
- 2.** Pure Coat: Pure Portland Cement mixed with water into a trowelable wet slurry.
- 3.** Mortar Setting Bed: Mixed in the proportions of one part Portland Cement, one part hydrated lime, six parts of clean sharp sand.
- 4.** Setting material for walls: Organic adhesive.
- 5.** Installation: All work and materials installed in accordance with specifications for ceramic tile as published by Tile Council of America, Inc.
- 6.** Color and Patterns: Provide homeowner with at least five examples for selection.
- 7.** Accessories: At each tub recess and shower, one soap and grab dish.
- 8.** Cleaning: Thoroughly clean after grouting and pointing has sufficiently set. Remove all traces of cement or foreign matter. Cover exposed hardware and plumbing trim liable to injury with Vaseline. Following cleaning, remove Vaseline and clean and polish metal work.

DIVISION 9 - FINISHES

SECTION 9B - RESILIENT FLOORING

1. MATERIALS:

- a. Linoleum tile 12" x 12" 3/32 or 1/16 as specified.
- b. Baseboard: Existing unless otherwise stated in Deficiency List.
- c. Low VOC Adhesive: Per tile manufacturer's recommendation and application.
- d. Sheet Goods: .090 or .050 as specified.

2. COLORS AND DESIGN:

Standard grade allowance for purchase \$55.00 per box of 45 square feet as selected by the Owner. Submit samples to the Owner for selection. Allowance for sheet goods to be between \$15.00 - \$20.00 per square yard.

3. INSTALLATION:

Surface Preparation:

Existing: Clean all surfaces, fill cracks in wood with wood filler and fill cracks in concrete with flash patching. Prepare surface to smooth condition. (All flash patch will be guaranteed against shrinking.)

New Surface: Clean, set flush all nails in wood surface and fill joints over 1/16" with wood filler. New concrete must set for 60 days before tile installation.

Molding: Install new oak shoe molding around all baseboard in rooms after installation of new tile. Apply one coat varnish finish.

Tile and Room Temperature: Room temperature and tile temperature must be maintained at 72 degrees, 48 hours before, during and after installation.

DIVISION 9 - FINISHES

SECTION 9C - PAINTING

1. PREPARATION OF SURFACES:

- a. Painted wood surfaces to be repainted shall be cleaned by best means possible to remove loose and scaly paint and rough spots. Where previous paint coats have chipped and peeled, the edge shall be sanded down to obtain a smooth surface before new paint is applied. If sanded to bare wood, surfaces shall be primed prior to finish coat.
- b. Plaster or all board surfaces to be painted or papered shall be sound, smooth and free from holes, cracks or irregularities. All loose wallpaper shall be removed and edges sanded smooth.
- c. Metal surfaces must be cleaned of all loose or peeling paint and rust scale. Clean with wire brush or scrape and sand to smooth condition.
- d. Caulking and filling: Caulk around the exterior perimeter of all window and door frames, fill all cracks, holes, nail holes and defects in wood with putty, caulking or other suitable fillers or replace damaged sections. Caulk all cracks between trim and wall areas. Caulk all exterior cracks that occur in construction i.e. fascia.
- e. Re-glaze window sash with new glazing compound after removing flaking, peeling and loose putty.
- f. Foundation walls and Masonry: Clean and scrape surfaces free of dirt, scaling paint and other foreign materials.
- g. Asbestos Siding: (Same as paragraph above).

2. MATERIALS:

- a. All paints used must be lead free **and certified as low or no VOC (odorless paint).**
- b. All paint and other finish materials shall be standard brands of good quality. It shall be the proper material for application to the surface on which it is applied.
- c. All paint shall be delivered to the site in manufacturer's sealed containers. Each container shall be labeled, giving manufacturer's name, type of paint, color and instructions.
- d. Before proceeding with painting, color samples shall be shown the Owner for his selection.
- e. The finish coat in kitchens and bathrooms shall provide a durable and washable surface.

3. APPLICATION:

- a. Do not apply exterior paint in damp, rainy weather or until the surface has thoroughly dried from the affects of such weather. Do not apply paint when temperature is below 50 degrees F. When applying masonry paint to masonry or asbestos siding, dampen the surfaces before applying paint as recommended by the paint manufacturer.
- b. Finished work shall be uniform, or approved color, smooth and free from runs, sags or defective brushing or rolling. Make edges of paint adjoining other materials of colors sharp and clean.
- c. Paint application shall consist of one coat primer to all new surfaces. Surfaces which have been previously cleaned, flaking, peeling or chalking paint and new repairs shall be primed. Apply two coats to all surfaces. Coat the top and bottom edges of exterior doors and sash a minimum of one coat.
- d. Protect floors, furniture, shrubs, walks and other areas during work by drop cloths or other suitable covering. Clean all paint spatters, smears, spills etc. from tile, hardware, mirrors, appliances, plumbing fixtures, window glass, exterior portions of house not calling for paint or other areas not intended to be painted. Leave premises broom clean, free of all trash, empty containers, tools and equipment.

DIVISION 10 - EQUIPMENT

SECTION 10A - KITCHEN EQUIPMENT

1. **GENERAL:** All provisions of Division 1 form part of this section.
2. **WORK INCLUDED:** All kitchen equipment and cabinets as shown or included in the Deficiency List.
3. **MATERIALS:**
 - a. Cabinets shall be of sturdy construction with a durable finish. Cabinets shall have a plywood, formica, hardwood or other similar finish. **Cabinets constructed with no added Urea Formaldehyde are strongly recommended.**
 - b. All manufactured units shall comply with ANSI A161.1 "Recommended Minimum Construction and Performance Standards for Kitchen and Vanity Cabinets" or an equivalent standard. All cabinets shall bear the label of an independent agency that certifies minimum construction standards have been met.
 - c. Counter tops shall be plastic laminated to 3/4" plywood or equivalent material. Back and end splashes shall be provided against all abutting vertical surfaces.
4. **RANGE:** Unit to be 30", four burners with up front infinite heat, safety controls and smokeless boiler pan **and Energy Star certified.** Retail cost to be between \$375.00 - \$430.00. Color to be selected by Owner.
5. **STARTER SET:** Shall comprise of wall and base cabinets. Base cabinets to consist of two 15" base, one 48" sink base. Wall cabinets to be two 12" x 30" and one 30" x 18" cabinet complete with stainless steel sink and single lever washerless faucet. Installation to include all supply lines and stop valves. Finish areas disturbed by removal of old cabinets to match adjacent surfaces. Retail price of materials to be between \$750.00 - \$862.00.
6. **INSTALLATION:** Furnish and install all equipment specified or shown, mechanical and electrical connections as specified under other division.

DIVISION 11 - MECHANICAL

SECTION 11A - PLUMBING

1. **SANITARY WASTE AND DRAINAGE PIPING:**

- a. Above ground shall be all cast-iron, galvanized steel, copper or approved plastic pipe. Only those materials which satisfy local and state plumbing codes will be acceptable.
- b. All piping passing through the roof shall be flashed with metal flashing.

2. **WATER PIPING:**

- a. Above ground shall be type L copper tubing with wrought copper solder joint fittings.
- b. Valves shall be 150# brass with ends similar to fittings.
- c. Unions shall be provided to permit removal of equipment without cutting piping.

3. **GAS PIPING:**

- a. Shall be black steel pipe.
- b. Provide 125# brass stops where required.

4. **WATER HEATER:**

- a. Shall be glass lined, gas fired or electric, complete with all controls and with a 10 year tank warranty. The size or number of the water heater required will be in the proposal.
- b. A pressure-temperature relief valve with a drip leg shall be provided for each water heater.
- c. **Tankless water heaters are encouraged.**

5. **PLUMBING FIXTURES** which exist and are to remain, shall be placed in good working order. Replace all missing or damaged parts with new parts of same design.

- a. Fittings shall be chrome plated and supplies to each fixture shall be provided with stop valves to permit removal without shutting off service.
- b. Bathroom Fixtures:
 1. Water closet shall be a vitreous china, free standing, close-coupled closet combination with reverse trap bowl, extended rear shelf, tank and cover, china caps, complete with tank fittings and supply stop valve. Color to be white unless otherwise specified.

2. **Low flush (1.6 gpf or less)** lavatory to be vitreous china ledge back type, front overflow, acid resistant, minimum size 17" x 19", wall hung, with trap, mixing faucet set, "pop up" waste and supplied with stop valves unless otherwise approved by the Rehabilitation Specialist. Color to be white unless otherwise specified.
3. Bathtub shall be 5 feet long enameled steel tub with over rim bath filler and supply stop valves, or as called for in the Deficiency List. **If a shower is included it shall utilize a low flow (2.0 gpm or less) showerhead.**
4. Accessories: The Contractor shall include a monetary allowance for furnishing and installing the following accessories in each bathroom. The Owner shall select the accessories to be installed within the allowance:

- Soap dish at bathtub
- Soap dish at lavatory
- Toilet paper holder at water closet
- Towel bar
- Mirror and medicine cabinet

DIVISION 11 - MECHANICAL

SECTION 11B - HEATING

1. **GENERAL**: All provisions of Division 1 form a part of this section.
2. **HEATING PLANT**: If existing and to remain, shall be thoroughly cleaned and all worn or damaged parts, fittings and accessories replaced and the entire system tested and left in perfect working condition.
3. **NEW PLANTS**: If called for in the Deficiency List will be described in a supplement to this specification. **High efficiency, sealed combustion units are to be used.** Units are to be properly sized to the dimensions and conditions of the property and should meet all code requirements.
4. **EXISTING PLANTS** which are to be expanded, modernized or altered will be described in a supplement to this specification.
5. **CERTIFICATION**: Contractor to forward a written statement to Baltimore County Housing Rehabilitation Program certifying that the heating plat has the capacity to evenly heat the property and to maintain an interior temperature of 68 degrees F. when exterior is at 0 degrees F. All installations shall be guaranteed for one year against defects in workmanship. Material to be guaranteed according to manufacturer.

DIVISION 11 - MECHANICAL

SECTION 12A - ELECTRICAL

1. EXISTING EQUIPMENT:

- a. Existing electrical equipment throughout the building which is not required and becomes superfluous shall be disconnected and removed.
- b. Existing materials found to be in good condition and complying with the National Electric Code may be left in service.

2. WIRING:

- a. Wiring shall be as follows:
 - (1) Concealed branch circuits - Type TW wire in EMT or Type AC armored cable (BX).
 - (2) Exposed branch circuits - Type TW wire in EMT or in approved surface raceway.
 - (3) Service and feeders - Type RH/RW in EMT or in rigid galvanized conduit or approved service entrance cable, minimum size #3 6's.
- b. Wiring shall be run concealed wherever possible. Where wiring must be run exposed, it shall be run in EMT firmly fastened to ceilings or walls with approved fasteners. 18" of wiring may be run exposed (BX only - except in 4th fire zone).
- c. Minimum wire size shall be No. 14 AWG.
- d. Minimum wire size shall be No. 12 AWG for appliance circuits.
- e. Minimum wire size shall be No. 10 AWG for feeders and panels.
- f. Ordinary 419 on receptacles.

3. WIRING DEVICES:

- a. Where 15 amp. 125 volt duplex receptacles are required, provide any brand which is U.L. approved.
- b. Where 20 amp. 250 volt receptacles are required, provide any brand which is U. L. approved.
- c. Single pole room lighting switches shall be any brand which is U.L. approved. Three-way and four-way switches shall be any brand which is U.L. approved.

- d. Plates for all switches and receptacles shall be 0.04 inch brass, except where within reach from bathtub, in which case non-conducting type (including screws) shall be used.

4. SERVICE, FEEDER AND SAFETY SWITCHES:

- a. Minimum service should be 100 amp. 3 wire.
- b. Service feeder and safety switches shall be U.L. approved.
- c. Provide type "S" fuses as required in all disconnect switches or circuit breakers.

5. PANEL BOXES:

- a. Panel boxes shall be enclosed code gauge sheet steel cabinets with doors and catches.
- b. Panel circuits shall be protected by automatic circuit breakers or type "S" fuses.
- c. All circuits should be identified on panel.

- 6. LIGHTING FIXTURES:** Provide all lighting fixtures complete with lamps, glassware, mounting hardware, frames and trim, stems, ballasts, sockets, etc., to provide a complete operating fixture at each location, as called for in the Deficiency List. Fixtures shall be Energy Star labeled and installed with compact fluorescent bulbs. Cost of unit to be between \$10.00 - \$14.00

- 7. FURNACE CONNECTION:** Electrical connections required for the heating plant are to be made and included in the heating contract.

- 8. CUTTING, FITTING AND PATCHING:** Perform all cutting of walls, floors, ceilings, partitions, etc. for the passage of electrical work, closing of superfluous openings around same in connection with the work under this item, including the removal of all debris caused thereby.

- 9. OLD SERVICE:** It shall be the responsibility of the general contractor to remove the old service, including wall brackets, repair, point up, putty/spackle, seal wall and finish wall surfaces to match existing surfaces.

ADDENDUM
GREEN BUILDING PREFERENCE CHECKLIST

SUBMIT WITH BID

Baltimore County Office of Community Conservation (OCC) strongly endorses the use of environmentally sensitive ("green") building materials and systems in housing renovation projects.

This checklist provides an outline of the green building practices recommended by the OCC. Some of them are to be included in all projects and are identified as "Required". The other practices are not required but strongly recommended. **Please indicate what recommended practice are being utilized in your project and submit the Checklist with your bid. Submissions that do not have additional features checked or that do not submit the form will not be processed.**

The use of this checklist is intended to encourage the use of green building methods and practices in the earliest stages of project planning. The checklist is divided into a number of categories. Each category has a list of required and recommended green practices. Based upon the intended scope of each project, budgetary constraints, availability of materials, and other factors, the goal is for as many of these recommended practices as possible to be incorporated into the project.

A written request justifying why any required practice cannot be achieved must be submitted. OCC staff **must** approve the request prior to beginning any work.

Categories:	Check if Included In Project
A. Site	
Recycle Job Site Construction & Demolition Waste	Required
B. Structural Frame	
Use FSC Certified Wood for Framing	
Use Wood I-Joists for Floors and Ceilings	
Use Web Floor Trusses	
Use OSB for Subfloors and Sheathing	
C. Exterior and Interior Finishes	
Use Treated Wood That Does Not Contain Chromium/Arsenic	Required
Use Recycled Content Composite Wood Products	
Install House Wrap under Siding	Required
Use FSC Certified Materials for Interior Finish	
Use Finger-Jointed or Recycled-Content Trim	
Select FSC Certified Wood Flooring	
Use Rapidly Renewable Flooring Materials (Such As Bamboo)	
Use Recycled Content Ceramic Tiles	
Install Natural Linoleum in Place of Vinyl	Required
Install Recycled Content Carpet with Low VOCs	Required
D. Plumbing	
Install Tankless Hot Water Heater	
Insulate Hot and Cold Water Pipes	
Use low flow Faucets and Showerheads (2.0 Gallons Per Minute)	Required
Replace Toilets with Ultra-Low Flush Toilets (1.6 Gallons Per Flush)	Required
E. Electrical	
Install Compact Fluorescent Light Bulbs (CFLs)	Required
Install Energy Star Labeled Fixtures	Required
Install Lighting Controls (Dimmer Switches)	Required
Install High Efficiency Ceiling Fans with CFLs	

GREEN BUILDING PREFERENCE CHECKLIST – PAGE 2.	
F. Appliances	
Install Energy Star Appliances	Required
Install Washing Machine with Water and Energy Conservation Features	
G. Insulation	
Use Advanced Infiltration Reduction Practices (Better Air Sealing Practices)	Required
Use Alternative Insulation Products (i.e., Cellulose, Cotton, Spray-Foam)	
H. Windows	
Install Energy-Efficient Windows	Required
a. Double-Paneled	
b. Low-Emissivity (Low-E)	
c. Low Conductivity Frames	
Install Low Heat Transmission Glazing	
I. Heating, Ventilation and Air Conditioning	
Use Duct Mastic on All Duct Joints	Required
Install Ductwork within Conditioned Space	
Vent Range Hood to the Outside	Required
Vent Bathroom Exhaust Fans to Outside (Use Low Noise Fans (Sone Rating of 1.5 or Lower) With High Efficient Motors And High Air Flow)	Required
Clean all Ducts Before Occupancy	Required
Install Attic Ventilation Systems	
Install Whole House Fan	
Install Sealed Combustion Furnace Units	Required
Install 13 SEER/11 EER or higher AC	Required
Vent Close-Dryer to the Outside	Required
J. Indoor Air Quality	
Use Low/No-VOC Paint	Required
Use Low VOC, Water-Based Wood Finishes	
Use Low/No VOC Adhesives	Required
Use Furniture with no added Urea Formaldehyde	
Upgrade HVAC Air Filtration/Cleaning System	
K. Green Certification	
The Contractor has one or more crew members take an introductory course in building science.	
The Contractor has at least one person certified by the Maryland Home Performance with Energy Star program.	

Signature: _____ **Date:** _____

Company: _____

Project: _____