

EPC Single-Family Rehabilitation Specifications

El Paso Collaborative for Community and Economic Development (hereafter known as EPC)

I. General Requirements

Unless otherwise stipulated, as provided by the Owner and EPC Residential Construction Contract, the General Specifications contained herein shall be considered the Minimum Acceptable Performance Standards for work financed through the Neighborhood Stabilization Program of the EPC. Materials or workmanship of a lesser grade or standard shall not be accepted unless approval is obtained from EPC.

As practical, any deviations proposed from the General Specifications should be discussed with EPC Rehabilitation Staff in advance and clearly identified within the bids of General Contractors for approval prior to contract execution. Any material/equipment or manner of workmanship not in accord with the General Specifications shall be reason for bid rejection or the withholding of a requested payment.

a. DEFINITIONS

"Install" means to purchase, set up, test and warrant a new component. "Replace" means to remove and dispose of original material in a responsible and environmentally-friendly manner, purchase new material, deliver, install, test and warrant. "Repair" means to return a building component to like new condition through replacement, adjustment and recoating of parts. "Reinstall" means to remove, clean, store and install a component. "Contractor" refers to the Developer/Owner/Contractor when Developer/Owner/Contractor acts as the general contractor performing rehabilitation work based on the Scope of Work (SOW).

b. PERMITS

Note: In addition to the provisions of the General Specifications, all work, as applicable, shall satisfy the requirements of the City of El Paso and Horizon City Building, Electrical, Plumbing, Mechanical, and Housing Codes as well as minimum Housing Quality Standards.

ELECTRICAL PERMIT REQUIRED

Before the lapse of the first ten (10) days from the date written on the Notice to Proceed, the contractor shall create any documentation necessary to apply for, pay for, and receive an electrical permit on behalf of the owner.

PLUMBING PERMIT REQUIRED

Before the lapse of the first ten (10) days from the date written on the Notice to Proceed, the contractor shall create any documentation necessary to apply for, pay for, and receive a plumbing permit on behalf of the owner.

HVAC PERMIT REQUIRED

Before the lapse of the first ten (10) days from the date written on the Notice to Proceed, the contractor shall create a heating distribution layout and perform heat/cooling loss calculations and all other documentation needed to apply for, pay for, and receive an HVAC permit on behalf of the owner.

OTHER PERMIT REQUIREMENTS

Before the lapse of the first ten (10) days from the date written on the Notice to Proceed, the contractor shall create any documentation necessary to apply for, pay for, and receive any appropriate permit that is specified in the Scope of Work. The contractor shall coordinate with the El Paso Collaborative about specific permits that may be required for specific item(s) on the SOW.

c. GREEN COMMUNITIES CRITERIA

This project is designed to allow for the inclusion of Green Communities Criteria, created by Enterprise Community Partners. For green items that may be incorporated into the rehabilitation of NSP properties, those items will be labeled with the suffix **[GREEN SPEC]**. Below are some standards that will be required to be adhered to by the El Paso Collaborative:

* All paints and primers must meet the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>

* Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. - <http://www.aqmd.gov/rules/reg/reg11/r1168.pdf>

* All caulks and sealants, including floor finishes, must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District <http://www.baaqmd.gov/dst/regulations/rg0851.pdf> and may not exceed 250 grams of VOC per liter of coating as thinned to the manufacturer's maximum recommendation, excluding the volume of any water, exempt compounds, or colorant added to the tint bases.

* All particleboard components shall meet ANSI A208.1 for formaldehyde emission limits or all exposed particleboard edges shall be sealed with a low-VOC sealant or have a factory applied low-VOC 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 low-VOC sealant or have a factory applied low-VOC sealant prior to installation.

d. VERIFY QUANTITIES/MEASUREMENTS

All quantities stated in the attached specifications for this address are for the contractor's convenience and must be verified by the contractor at a mandatory site inspection prior to bid submission. Discrepancies in quantities found by the contractor or sub-contractor must be communicated to the Developer or Consortium Member prior to the submission of a bid. Claims for additional funds due to discrepancies in quantities shall not be honored if submitted after the bid submission.

e. CONTRACTOR PRE-BID SITE VISIT

Contractors must inspect the property with all pertinent utilities active: gas, electric, and water. Submission of a bid is presumptive evidence that the bidder has thoroughly examined the site and is conversant with the requirements of the local jurisdiction.

f. NEW MATERIALS REQUIRED

All materials used in connection with the SOW are to be new, of first quality and without defects - unless stated otherwise or pre-approved by EPC or Consortium Member.

g. ONE-YEAR GENERAL WARRANTY

Developer or contractor shall remedy any defect due to faulty material or workmanship and pay for all damage to other work resulting therefrom, which appear within one year from final payment. Further, Developer/contractor shall furnish EPC with all manufacturers' and suppliers' written warranties covering items furnished under pertinent contract prior to release of the final payment.

II. Items in the 'Scope of Work'

a. ROOF

RAFTER, SISTER 2"X 8"

Sister a 2"x 8" to damaged rafter using a triangulated nailing pattern and cement coated nails, 8" on center.

RAFTER, 2"X 8" REPLACE

Dispose of existing roofing and defective rafter. Install a 2"x 8" pine rafter, crown up, from ridge board to fascia. Re-nail sheathing with coated sinkers to new rafter.

FRAME ROOF, PITCHED

Frame roof structure to match existing pitch with pre-engineered trusses or rafters sized to local code. Install 3/8" plywood deck with clips 2' on center nailed 6" on center.

FRAME ROOF, FLAT 2"X 8"

Frame roof structure for flat roof using 2"x8" pine, 16" on center and 1/2" CDX sheathing.

ROOF SHEATHING 1/2"

Install 1/2" CDX plywood sheathing nailed 8" on center using plywood clips.

ROOF, REPAIR AND RE-COAT

Cut out and repair bubbles, reinstall flashing and hot mop roof with 1-1/2 pounds of asphalt per square foot to provide a leak free installation for 3 years.

ROOF, 3-PLY BUILT-UP

Remove gravel and debris. Install a 3-ply built-up fiberglass roof of one coated glass base sheet and two plies of Type IV fiberglass, hot mopped. Install gravel stop, flashing and vent collars with .019 grade aluminum. Flood coat & embed aggregate. Dispose of all debris from roof and yard. Provide a 10 year warranty.

TAR PAPER

Install 2 layers of #15 felt tar-paper to all roof sheathing. Use 1 ½ in. roofing nails to secure tar paper to roof sheathing.

ROOF, 90 LB. ROLL

Install 90 lb. mineralized fiberglass roll roofing using a 4" minimum overlap, nailed 6" on center with asphalt roofing cement per manufacturer's specs. Replace all flashing with .019 grade aluminum.

STRIP ROOF TO SHEATHING

Protect the building and plant material from damage by removal of existing roofing. Remove all roof materials down to the roof deck and remove or set all nails. Properly dispose of roofing materials.

ROOF-OVER, FIBERGLASS SHINGLE

Install roof-over original roof material using 220 lb. self-sealing, fiberglass/asphalt, strip shingles with a 30- year warranty. Replace defective flashing with .019 grade aluminum.

TEAR OFF AND RE-ROOF SHINGLES

Remove and dispose of all roofing & defective sheathing. Cut a 1" wide vent at ridge board. Replace up to 5 SF of sheathing per 100 SF of roof using pine board or CDX plywood of matching thickness. Nail 2 layers of 15 lb felt. Install preformed white aluminum, drip edge, and vent pipe boots. Install 220 lb fiberglass asphalt, architectural shingle with a 30-yr warranty. Replace all flashing. Install shingle-over ridge vent.

4585 REROOF, 1/2" DECK/FIBERGLASS SHINGLE

Remove roof to deck. Install 1/2" CDX plywood over entire roof. Install 36 inch wide strips of Grace Ice and Water Shield at the eaves and in the valleys. Install 2 layers of 15-lb. felt as underlayment on the remainder of the decking. Install Owens Corning self-sealing, 30-year warranty fiberglass/ asphalt strip shingles. Replace all flashing, including valleys, with .019 grade aluminum. Install step flashing at all wall junctures.

FLASH CHIMNEY

Step flash top and down sides of chimney 1/2" into mortar joints using .027 aluminum or copper. Counter flash completed assembly with aluminum or modified bitumen. Guarantee assembly from leaks for 10 years.

GUTTER, 5" SEAMLESS ALUMINUM

Dispose of gutter. Install 5", K- type, seamless, .027 gauge aluminum gutter to service roof. White or brown color choice by owner.

DOWNSPOUT, 5" SEAMLESS ALUMINUM

Dispose of existing downspout. Install 5", square, seamless, .027 gauge, white, aluminum downspout. Strap at least 3' on center.

SPLASH BLOCK

Place concrete or plastic splash block at end of downspout directing the storm water away from the building.

VENT, ALUMINUM RIDGE

Install mill finish, aluminum ridge vent per manufacturer's specs.

RIDGE VENT, SHINGLE OVER

Cut vent slot into roof deck and install, per manufacturer's specifications, a shingle-over ridge vent with screening or a corrugated construction to prohibit entry by insects.

VENT, GABLE

Install a screened, aluminum, rectangular or square gable vent with at least 4 square feet of free air space.

VENT, DRIP EDGE

Install "Air Vent" Air Pro Flow™ Vented Drip Edge. <http://www.airvent.com/professional/products/intake-ventedDE.shtml>

VENT, SOFFIT, CONTINUOUS

Install "Air Vent" aluminum soffit vent models SV201 or SV202.
<http://www.airvent.com/pdf/installation/ContinuousSoffit-install.pdf>

VENT, SOFFIT, RECTANGULAR

Cut a hole in the soffit and install an aluminum 4"x 16" screened, rectangular soffit vent with a factory applied finish and fastened with screws of a matching color.

ROOF VENTILATION, COMBINED SOFFIT AND RIDGE

Install 1 SF of combined continuous soffit and ridge ventilation soffit ventilation for every 300 SF of attic floor area. Use "Air Vent" aluminum soffit vent models SV201 or SV202 and "Shingle Over" style Ridge ventilation. 40% of the total required ventilation must be provided by the free air space rating of Ridge vents. 60% of the total required ventilation must be provided by the free air space rating of soffit vents. All vents must be screened or be of a corrugated construction to prevent the intrusion of insects and if exposed must have a factory applied finish.

ROOF FLASHING, REPAIR

Inspect, clean and reinstall copper or aluminum flashing to create a leak free seam. Seal all exposed nails with roofing cement.

FASCIA 1"X 6"

Install a 1"x 6", #2 pine fascia with bevel cut joints using galvanized finish nails. Caulk over joints, and prime.

SOFFIT

Install 3/8" BCX plywood soffit.

b. Siding and Sealing

SEALING

Contractor should use ECO-BOND's Multi-Purpose Adhesive/Sealant, or similar brand and similar model, to seal all joints, gaps, or cracks on siding. ECO-BOND specs include:

- Multi-purpose environmentally friendly adhesive that bonds to a variety of common building materials for general, all-purpose adhesion and sealing
- Non-toxic, solvent, isocyanate and carcinogen free formulation
- Safe to use around children and pets
- Tack free time of 65 minutes
- Use with a standard caulking gun for best results
- Waterproof and mold and mildew resistant finish
- Meets USDA requirements for non-food contact
- Meets requirements of California regulations for CARB, SCAQMD, BAQMD, CA Proposition 65
- Qualifies for points under both the LEED and NAHB Green Building program
- High performance qualities include 170 psi shear strength, 166 psi tensile strength and 250% elongation
- MFG Brand Name : Eco-Bond

SIDING COMPOSITE PANEL

Contractor should install SFI-certified, 96 in. composite board panels with a primed and paint-ready finish. Use Eco-Bond 10.1 oz. Multi-Purpose caulk adhesive, or similar brand and model, to seal all joints, gaps, or cracks on siding.

BLOCK WALL REPAIR

Remove damaged block and patch wall by toothing replacement block of same dimensions into wall.

GLASS BLOCK

Block opening with 6"x 6"x 4" thick glass block replacement with tooled joints both sides.

BRICK WALL REPAIR

Remove damaged brick and tooth replacement brick into wall. Match brick and tooling as closely as possible.

SIDING, HARDIPLANK [GREEN SPEC]

Prepare surface by removing nails, repairing sheathing, applying house-wrap strictly to manufacturer's specifications. Install 1"x8 1/4" Hardiplank lap siding to the surface using hot-dipped galvanized nails or stainless steel nails driven at least 1" into studs. Stagger joints in adjacent pieces and center all butt joints over studs. Either install joints with a 3-mm gap filled with Hardiplank caulking compound or butt together without jointing compound. In this second option install a piece of PVC sheeting behind joint. On areas where Hardiplank butts up against an accessory, fill joint with a 6-mm fillet, of Hardiplank caulking.

SIDING, CLAPBOARD REPLACE

Remove damaged siding to the joint over nearest stud. Apply matching pine siding to walls with galvanized nails. Break all seams over studs (Prime ready for top coat).

SIDING, CEDAR SHINGLE REPAIR

Remove damaged and deteriorated shingles. Install 18" #1 cedar shingles with an 8" exposure using aluminum or galvanized nails.

SIDING, VINYL

Hang Aside Conquest vinyl clapboard siding including all cornice, corner, door and window trim after replacing all deteriorated exterior building components. Wrap home with Tyvek vapor/ infiltration barrier and apply owner's choice of siding color, exposure and texture with 50 year warranty.

TRIM, WRAP WITH VINYL

Replace missing or rotten trim with dimensional pine stock. Wrap all exposed trim with vinyl, including required starter pieces.

SIDING, ALUMINUM REPAIR

Secure aluminum siding and replace missing or damaged siding, matching existing as closely as possible. Use pop rivets, if needed.

STUCCO, PATCH

Remove damaged stucco and wire, attach new wire to patch area and apply scratch, brown and color coats (Feather patch into the surrounding surfaces). Match existing color and finish as closely as possible to existing stucco.

SIDING, REPAIR CEMENT SHINGLES

Replace all damaged and missing cement shingles with fiberglass-cement shingles with matching edge detail. Use galvanized 6d nails and caulk all seams at openings and trim.

c. Windows

CLEANING AND LUBRICATION

Contractor shall ensure that all windows are clean of dirt and grime and lubricated for easy open-and-close operation. All windows must function efficiently for safety reasons.

LOCKING MECHANISMS

All window locking mechanisms must function properly and easily for safety reasons.

SEALING

Contractor should use ECO-BOND's Multi-Purpose Adhesive/Sealant, or similar brand and similar model, to seal windows. ECO-BOND specs include:

- Multi-purpose environmentally friendly adhesive that bonds to a variety of common building materials for general, all-purpose adhesion and sealing
- Non-toxic, solvent, isocyanate and carcinogen free formulation
- Safe to use around children and pets
- Tack free time of 65 minutes
- Use with a standard caulking gun for best results
- Waterproof and mold and mildew resistant finish
- Meets USDA requirements for non-food contact
- Meets requirements of California regulations for CARB, SCAQMD, BAQMD, CA Proposition 65
- Qualifies for points under both the LEED and NAHB Green Building program
- High performance qualities include 170 psi shear strength, 166 psi tensile strength and 250% elongation
- MFG Brand Name : Eco-Bond

SASH LOCK

Screw a brass plated sash lock on double hung window to tightly draw sash together.

SASH CORDS

Install nylon reinforced cotton sash cords or chain to sash and counterweights.

WINDOW REPAIR

Repair window without replacing sash. Replace broken and cracked glass with double strength glass. Remove loose glazing compound and re-glaze. Repair and adjust window to open and close smoothly, with brass plated lifts and locks, and sash chains or nylon reinforced cords. Raise the top sash, secure it in place with exposed finish nails or screws and caulk.

GLASS REPLACE, WOOD SASH

Remove broken pane of glass, glazing and points. Install double strength glass, points and glazing compound ready for paint.

GLASS BLOCK

Install 4" thick glass block in opening, per manufacturer's specs, tool joints, install expansion spacers around perimeter and mortar to existing foundation or framing. Trim exterior and interior to match existing.

TRIM, WINDOW SET, INTERIOR

Trim window including header, stops, casings, stool and apron in 2-1/2" wide finger jointed pine.

WOOD SASH, SINGLE GLAZED

Field measure, order and install a single glazed replacement sash matching existing mullion configuration, including vinyl replacement channels. Prime both sides.

WOOD SASH, DOUBLE GLAZED

Field measure, order and install a double glazed replacement sash that matches the existing mullion configuration including vinyl replacement channels. Prime both sides.

WINDOW, WOOD DBL HNG/SGL GLZ

Dispose of and replace a wood, double hung, single glazed, one-over-one window and jamb, complete with screen, snap-in mullion, hardware, weather-stripping, interior stool, apron, casing, and outside casing (prime before installing). Repair all walls disturbed by removal and installation {paint both sides (enamel)}. Clean glass. In bathroom, use obscure glass.

WINDOW, WOOD DBL HNG/DBL GLZ

Dispose of window unit and install a wood, double hung, double glazed, one-over-one window and jamb complete with screen, snap-in mullion, hardware, weather-stripping, interior stool, apron, casing, and outside casing (prime before installing). Repair all walls disturbed by removal and installation {paint both sides (acrylic)}. Clean glass. In bathroom, use obscure glass.

WINDOW, WOOD DBL HNG/DBL GLZ, REPLACEMENT PAC

Replace existing window unit with a wood, exterior aluminum clad, double hung, double glazed, one-over-one replacement window kit complete with 2 sash, insulated and weather stripped vinyl jamb liners, screen, hardware, and weather-stripping. Use Marvin Tilt Pac Kit or Kolbe and Kolbe Classic Replacement Sash Kit. Repair all walls disturbed by removal and installation. Clean glass. In bathroom, use obscure glass.

WINDOW, WOOD BASEMENT UNIT

Dispose of basement window unit. Install a single-lite window, plumb and level, back primed, caulked. Repair masonry as necessary to complete installation. Provide screen and storm insert.

WINDOW, VINYL DOUBLE HUNG/DOUBLE GLAZE

Field measure, order and install a vinyl, double hung, double glazed, one-over-one window and jamb including screen, caulk, interior casing and exterior trim. Install half screen.

STORM WINDOW, VINYL

Field measure, fabricate, caulk and install an enameled, vinyl, double hung, triple track storm window with fiberglass screen. Storm window meeting rails must align with meeting rails on prime window and weep holes must drain.

d. Bathrooms

BASEBOARD, RANCH

Install non finger-jointed 9/16" x 3-1/2" ranch base with finish nails or tee headed brads.

BASEBOARD, 1"X4"

Install 1"x4", #2-grade pine base with finish nails or tee headed brads.

SHOE MOLDING

Install pine shoe molding nailed 2' on center to create the tightest possible seal between the baseboard and floor using finish nails or tee headed brads.

SEALING

Contractor should use ECO-BOND's Multi-Purpose Adhesive/Sealant, or similar brand and similar model, to seal perimeter of flooring, perimeter of commodes, perimeter of bathtubs, perimeter of sinks, and perimeter of vanities. ECO-BOND specs include:

- Multi-purpose environmentally friendly adhesive that bonds to a variety of common building materials for general, all-purpose adhesion and sealing
- Non-toxic, solvent, isocyanate and carcinogen free formulation
- Safe to use around children and pets
- Tack free time of 65 minutes
- Use with a standard caulking gun for best results
- Waterproof and mold and mildew resistant finish
- Meets USDA requirements for non-food contact

- Meets requirements of California regulations for CARB, SCAQMD, BAQMD, CA Proposition 65
- Qualifies for points under both the LEED and NAHB Green Building program
- High performance qualities include 170 psi shear strength, 166 psi tensile strength and 250% elongation
- MFG Brand Name : Eco-Bond

TOWEL BAR

Install a 16" chrome-plated steel towel bar, screwed securely to studs, or use butterfly toggle anchors to secure one side to drywall.

MEDICINE CABINET, SURF MOUNT

Install a 16"x22" metal, surface mounted medicine cabinet with hinged plate glass mirror and two shelves.

ACCESSORY SET, 6-PIECE CHROME

Install a chrome-plated steel bathroom accessory set consisting of two 24" towel bars, soap dish, tumbler holder, soap and grab, and toilet paper holder (\$55 allowance per set), or otherwise noted by EPC.

e. Heating/Cooling

HVAC, PASSIVE FRESH AIR INTAKE **[GREEN SPEC]**

Install a Tamarack passive intake vent (www.efi.org) 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.

FURNACE 80+AFUE GAS - REPLACE

Size furnace to the living area dimensions, considering areas which may be added or subtracted from the plan. Remove existing furnace, recycle all metal components and dispose of all other materials in a code legal dump. FURNACE: install an 80+ gas fired forced air furnace with minimum AFUE rating of 80% on 2" patio block to existing duct work & gas line. New furnace is to be vented with piping per manufacturer's specifications and building codes. New furnace will have minimum limited warranties of: 20 years on heat exchangers; 5 years on parts. Include auto set back thermostat controls, vent pipe & 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 sides, or bottom of new furnace. Seal all exposed duct joints as a part of this item with Duct Mastic. Remove all existing cloth duct tape prior to installing mastic.

ACTIVE FRESH AIR INTAKE-FORCED AIR SYS, APRILAIRE **[GREEN SPEC]**

Install an Aprilaire Model 8126 Ventilation Control System with temperature and humidity shut-offs 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.

ACTIVE FRESH AIR INTAKE-FORCED AIR SYS, SKUTTLE **[GREEN SPEC]**

Install 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 and adjust damper to operate as specified. 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. <http://www.skuttle.com/216.html>

HEAT PUMP, REPLACE, 16 SEER **[GREEN SPEC]**

Size furnace to the living area dimensions, considering areas which may be added or subtracted from the plan. Remove existing Heat Pump after removing all CFC and HCFCs, recycle all metal components and dispose of all

other materials in a code legal dump. Install a minimum 16 SEER (12.5 EER & 8.5 HSPF) Heat Pump to existing duct work & gas line. Heat Pump will have minimum limited warranties of 5 years on parts. New outdoor heat pump shall be installed on a code approved outdoor pad or lintels and be set on 6" pump-up legs. Include auto set back thermostat controls. Insure that the system ductwork is capable of handling 400-cubic-feet per minute per-ton of airflow. Re-work cold air return if necessary to ensure easy access, good fit & easy replacement of air filter. Seal all exposed duct joints as a part of this item with Duct Mastic. Remove all existing cloth duct tape prior to installing mastic.

HEAT PUMP, REPLACE, 13 SEER **[GREEN SPEC]**

Size furnace to the living area dimensions, considering areas which may be added or subtracted from the plan. Remove existing Heat Pump after removing all CFC and HCFCs, recycle all metal components and dispose of all other materials in a code legal dump. Install a 13 SEER Heat Pump to existing duct work & gas line. Heat Pump will have minimum limited warranties of 5 years on parts. New outdoor heat pump shall be installed on a code approved outdoor pad or lintels and be set on 6" pump-up legs. Include auto set back thermostat controls. Insure that the system ductwork is capable of handling 400-cubic-feet per-minute per-ton of airflow. Re-work cold air return if necessary to ensure easy access, good fit & easy replacement of air filter. Seal all exposed duct joints as a part of this item with Duct Mastic. Remove all existing cloth duct tape prior to installing mastic.

BURNER MAINTENANCE

Clean burner and combustion chamber, inspect and replace nozzle if required, oil motor and all pumps, adjust air/fuel oil mixture to manufacturer's recommendations. Replace oil filter.

HEAT DUCT AND REGISTER

Install low-velocity insulated metal or flexible duct work from main trunk to floor or wall register.

DUCT SEALING **[GREEN SPEC]**

Seal joints, collars, flex duct connections and seams in ductwork and plenums with fiberglass mesh and a 1/16th inch coating of duct mastic (about the thickness of a nickel). Do not use tape.

RETURN AIR TRANSFER GRILL 12X6 **[GREEN SPEC]**

Install a Tamarack Return Air Pathway (RAP) 12.6 (12" x 6") Sound and light restricted by-pass grill to air balance forced air system - www.tamtech.com. Install in stud cavity between specified room and common space to provide return air. Seal to wall finish and install flange trim.

RETURN AIR TRANSFER GRILL 12X12 **[GREEN SPEC]**

Install a Tamarack Return Air Pathway (RAP) 12.12 (12" x 12") Sound and light restricted by-pass grill to air balance forced air system - www.tamtech.com. Install in stud cavity between specified room and common space to provide return air. Seal to wall finish and install flange trim.

SETBACK THERMOSTAT

Install a LuxPro PSP511Ca thermostat (or similar model in another brand) with the following settings: 6:00-8:00 a.m. 67 degrees F - 8:00 a.m. - 4:30 p.m. 62 degrees F - 4:30-10:30 p.m. 68 degrees F - 10:30 p.m. - 6:00 a.m. 62 degrees F.

FLUE THIMBLE

Remove flue and old chimney attachment. Install a ceramic clay insert into chimney. Point up all holes and reinstall flue.

FLUE REPLACE

Install a pre-fabricated, double-walled, UL listed, galvanized steel, 8" flue inside chimney.

DRYER VENT **[GREEN SPEC]**

Install 4" rigid aluminum 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.

EVAPORATIVE COOLERS

Contractor shall remove existing evaporative cooler, stand, and roof jack and dispose of them in an environmentally and responsible manner. Contractor shall install a new roof jack, stand, and an evaporative cooler. Contractor shall install one of only two evaporative coolers :

1. Mastercool (Champion Series) down or side discharge evaporative cooler that can accommodate 1/2, 3/4 or 1 hp motor; or
2. Aerocool (Trophy Series) down or side discharge evaporative cooler that can accommodate 1/2, 3/4 or 1 hp motor.

Size evaporative cooler to the living area dimensions, considering areas which may be added or subtracted from the plan.

VENTILATION, ASHRAE 62.2-GENERAL REQUIREMENTS, 2008 [GREEN SPEC]

Install a ventilation system to meet ASHRAE 62.2 for residential structures under 4 stories when you are undertaking "Substantial Rehabilitation." See <http://www.ashrae.org/technology/page/548> and <http://www.buildingscience.com/documents/reports/rr-0502-review-of-residential-ventilation-technologies/>

f. Electrical

ELECTRIC PANEL, RELOCATE

Relocate panel to inside of structure. Include all required materials to meet National Electric Code.

ELECTRIC SERVICE, 100-AMP

Replace existing electrical service with a residential, 100-amp, single phase, 3-wire electric service. Include a main disconnect, 12-circuit panel board, meter socket, weather head, service cable, and ground rod and cable. Seal exterior service penetrations to maintain a waterproof building envelope.

ELECTRIC SERVICE, 200-AMP

Replace existing electrical service with a residential, 200-amp service, main disconnect, 110/220-volt, 24-circuit panel board, meter socket, weather head, service cable, and ground rod and cable. Seal exterior service penetrations to maintain a waterproof building envelope.

GFCI CIRCUIT BREAKER

Install a ground fault interrupt breaker in distribution panel to control all "wet area" outlets.

ARC-FAULT CIRCUIT BREAKER

Install an Arc-Fault circuit breaker in the distribution panel to protect all bedroom outlets.

RECEPTACLE REPLACE

Replace receptacle with ivory duplex receptacle and ivory metal cover plate.

RECEPTACLE, WIRE 15-AMP

Install an ivory, duplex, 15-amp receptacle and metal cover plate using copper Romex. Fish wire and repair all tear out.

20-AMP CIRCUIT, RECEPTACLE

Install 20-amp ivory duplex receptacle with a matching plastic cover plate on a separate circuit with an individual over protection device. Fish wire and repair all tear out.

GFCI DEVICE

Replace receptacle with a surfaced mounted ground fault circuit interrupt receptacle.

RECEPTACLE, GFCI BATH

Install a flush mounted, ground fault circuit interrupted ivory duplex receptacle adjacent to lavatory using copper NM cable. Fish wire and repair all tear out.

RECEPTACLE, GFCI COUNTERTOP 15-AMP

Install a flush mounted, ground fault circuit interrupted, ivory, duplex receptacle and ivory cover plate using #14 copper NM cable, controlled by a 15-amp circuit breaker. Fish wire and repair all tear out.

WASHER CIRCUIT 110\20-AMP

Install a flush or surface mounted duplex outlet for a washing machine on a separate 20-amp circuit using #12 copper NM cable.

DRYER CIRCUIT, 30-AMP

Install 220 volt, 30 amp, and surface mounted receptacle on an individual circuit.

WEATHERPROOF RECEPTACLE

Install a 15-amp, ground fault protected, surface mounted, weatherproof, PVC or non-ferrous box and receptacle using #14 copper NM conductors in EMT. Receptacle cover shall be permanently connected to box.

SWITCH REPLACE

Replace light switch with single pole, ivory toggle switch and ivory metal cover plate. Use plastic cover plates in bath area.

SWITCH LIGHT

Install a single pole, ivory switch and metal cover plate using Romex to control fixture. Fish wire and repair all tear out.

SWITCH WALL RECEPTACLE

Install a single pole, ivory switch with metal cover plate controlling the lower receptacle in a duplex receptacle. Install a receptacle with #14 copper NM cable in same stud space as switch adjacent to door.

3-WAY SWITCHES

Install two, 3-way ivory switches at opposite sides of room at strike side of door to control an existing fixture, using #14 copper NM cable. Fish wire and patch all tear out.

FIXTURE AND 3-WAY SWITCHES

Install a ceiling-mounted, UL approved, 2 bulb light fixture controlled by a pair of ivory 3-way switches mounted at the strike side of the doors, or at top and bottom of stairwell. Fish wire and repair all tear out.

LIGHT FIXTURE, PULL CHAIN

Install a porcelain pull-chain lamp fixture with a lamp on an approved electrical box.

LIGHT FIXTURE, REPLACE

Replace a ceiling-mounted, 2-bulb, UL approved, incandescent light fixture with shade and lamps.

LIGHT FIXTURE GLOBE

Install a glass light fixture globe on ceiling fixture.

LIGHT FIXTURE AND SWITCH

Install a ceiling-mounted, UL approved, 2-bulb light fixture controlled by an ivory switch with a metal cover located at the strike side of the door. Fish wire and repair all tear out.

ENERGY STAR KITCHEN CEILING FIXTURE [GREEN SPEC]

Install an Energy Star approved, 4 - 4' tube, instant start florescent ceiling light fixture, with an acrylic diffuser such as the Lowes - American Fluorescent - Item #: 184346 - Model: PLW432RC. Connect to existing wiring.

ENERGY STAR INTERIOR CEILING FIXTURE [GREEN SPEC]

Install an Energy Star approved, 13-watt florescent ceiling light fixture such as a Lowes Good Earth Lighting 1-Light White Ceiling Flush-mount Item #: 221292 -Model: G2401-TWH-I. Connect to existing wiring.

ENERGY STAR INTERIOR WALL FIXTURE [GREEN SPEC]

Install an Energy Star approved 13-watt fluorescent wall fixture such as the Lowes Good Earth Lighting 1-Light Brushed Nickel Contemporary Pocket Wall Sconce Item #: 227470 Model: G3155-NK-I. Connect to existing wiring.

CFL REPLACEMENT LAMP [GREEN SPEC]

Install a 9-watt compact fluorescent (CFL) medium screw base lamp in the specified light fixture properly disposing of any existing lamp.

SMOKE DETECTOR, HARD WIRED

Install a UL approved, ceiling-mounted smoke and heat detector permanently wired into a receptacle box.

FAN/LIGHT FIXTURE-ENERGY STAR, 2008 [GREEN SPEC]

Install an Energy Star approved ceiling-mounted Fan/Light fixture rated for a min 100 watts w/ an exterior ducted vent fan capable of min. 80-CFM operating at 1 Sones or less, vented w/ damper to exterior such as NuTone QTREN080FLT. Switch fan & light using a single switch with a time delay for the fan such as the EFI Fan/Light Time Delay Switch part # 5100.505 (in Ivory) http://www.energyfederation.org/consumer/default.php/cPath/39_766_134 or equipped with a humidistat sensor. Install 4" metal duct and vent to the exterior ideally through a wall or gable end using a 4" hooded vent with damper. All duct seams shall be sealed with duct mastic. Insulate the ductwork with vinyl or foil faced R-6 minimum duct insulation. Repair any damage to the ceiling installation and air seal fan/light assembly to the ceiling with low-VOC caulk.

FAN/LIGHT FIXTURE-ENERGY STAR, CONTINUOUS, MOTION DETECTOR SWITCHED [GREEN SPEC]

Install a Panasonic Whisper Green-Lite Model # FV-08VKML1 ceiling mounted Fan/Light fixture with a modulating DC motor capable of 80 CFM operating at less than .3 Sones, switched by a built in motion detector and night light, vented w/ damper to exterior. Install 4" galvanized metal duct (not flex duct) and vent to the exterior ideally through a wall or gable end using a 4" hooded vent with damper. All duct seams and connections shall be sealed with duct mastic. Insulate the ductwork with vinyl or foil faced R-6 minimum duct insulation. Repair any damage to the ceiling installation and air seal fan/light assembly to the ceiling with low-VOC caulk. Set the continuous level of ventilation to meet ASHRAE 62.2 and set the time delay switch to 20 minutes.

FAN/LIGHT FIXTURE-ENERGY STAR, CONTINUOUS, WITH SWITCH ACTIVATED BOOST [GREEN SPEC]

Install a Panasonic Whisper Green-Lite Model # FV-08VKSL1 ceiling mounted Fan/Light fixture, or other model with comparable features, with a modulating DC motor capable of 80-CFM operating at less than .3 Sones, with a night light, vented w/ damper to exterior. Switch fan & light using a single switch with a time delay for the fan such as the EFI Fan/Light Time Delay Switch part # 5100.505 (in Ivory) http://www.energyfederation.org/consumer/default.php/cPath/39_766_134 or equipped with a humidistat sensor. Install 4" galvanized metal duct (not flex duct) and vent to the exterior ideally through a wall or gable end using a 4" hooded vent with damper. All duct seams and connections shall be sealed with duct mastic. Insulate the ductwork with vinyl or foil faced R-6 minimum duct insulation. Repair any damage to the ceiling installation and air seal

fan/light assembly to the ceiling with low-VOC caulk. Set the continuous level of ventilation to meet ASHRAE 62.2 and set the time delay switch to 20 minutes.

RANGE HOOD EXTERIOR VENTED

Install an 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 10 Sones. Attach hood to cabinet with screws. Include metal vent with all seams sealed with duct mastic, and roof or wall cap/damper assembly flashed appropriately for the exterior finish.

RANGE HOOD VENTLESS

When appropriate, install an enameled range hood with integral minimum 2-speed fan control and light switched separately capable of a minimum 150-cfm at a maximum of 10 Sones. Attach hood to cabinet with screws.

PHONE OUTLET

Install a plaster ring and phone jack wired to the phone service. Stapled, surface-mounted wire is not acceptable unless prior written approval is given by EPC.

ENERGY STAR CEILING FAN LIGHT FIXTURE [GREEN SPEC]

Install an ENERGY STAR® approved Farmington 52-inch white ceiling fan Model # B552QI-WH at Home Depot with a ENERGY STAR® approved Progress Lighting Air Pro light fixture Model # P2620-30EBWB at Home Depot switched at the room entrance.

REWIRE TO CODE, PER ROOM

Rewire unit to current National Electric Code including but not limited to: surface mount GFI in bathroom & kitchen; 15-amp grounded receptacles on all usable walls; switched lights in all halls, kitchens, bathrooms and furnace areas; hard wired smoke detectors; cover plates; counter receptacles; and circuits. Fish all wire and repair all tear-out (does not include service entrance).

UPDATE EXISTING ELECTRIC, BATHROOM, 2008 [GREEN SPEC]

Update the electrical fixtures in the bathroom including:

- 1) One 20A GFCI receptacle located near sink with a 20-AMP circuit.
- 2) An Energy Star approved, ceiling mounted Fan/Light fixture w/ an exterior ducted vent fan capable of min. 80-CFM operating at 1 Sones or less and vented w/ damper to exterior such as NuTone QTREN080FLT. Switch fan & light using a single switch with a time delay for the fan such as the EFI Fan/Light Time Delay Switch part # 5100.505 (in Ivory) (set for a 20 minute delay) or equipped with a humidistat sensor. Install metal duct and vent to the exterior ideally through a wall or gable end. All duct seams shall be sealed with duct mastic. Insulate the ductwork with vinyl or foil faced R-6 minimum duct insulation. Repair any damage to the ceiling from installation and air seal fan/light assembly to the ceiling with low-VOC caulk.
- 3) One wall mounted vanity light fixture such as the Good Earth Lighting 2-Light Brushed Nickel Contemporary Item #: 121104 Model: G1132-BN-I Fixture above the sink.

ENTRANCE LIGHT

Install an exterior, waterproof, wall mounted, single bulb fixture outside exterior door. Include wire box, interior switch and lamp. Fish wire and repair all tear out.

ENTRANCE LIGHT FIXTURE, REPLACE

Remove damaged light fixture and replace with an exterior, waterproof, single bulb fixture.

EXTERIOR LIGHT FIXTURE-REPLACE [GREEN SPEC]

Install a two lamp halogen, dusk to dawn light fixture with motion activated higher light level function, such as a Heath Zenith - Twin 150 Watt Quartz - Item #: 182159 - Model: SL-5512-BZA from Home Depot. Connect to existing wiring.

FLOOD LIGHT, DOUBLE BULB

Install a building mounted, double lamp, incandescent flood light (an interior or photoelectric switch). Any exposed exterior wiring shall be run in conduit.

g. Plumbing

TUB SURROUND, PREFAB

Install a white fiberglass or acrylic, 3- or 5-piece, tub surround kit with a built-in soap dish. Caulk all joints with white, mildew resistant silicone caulk. Prepare substrate and attach panels using manufacturer's recommended adhesive and fasteners.

FIBERGLASS TUB

Install a white fiberglass or acrylic tub. Caulk all joints with 40-yr white, mildew resistant silicone caulk. Prepare and install substrate (greenboard) or cement board to surrounding wall and install wall tile and grout accordingly.

TUB END WALL

Frame a 2"x 4", 30" wide partition at tub end for full ceiling height. Provide blocking for a showerhead fitting and a 2'x 2' access panel. Hang water resistant drywall, tape and finish with 3 coats of compound. Use metal corner bead around access panel opening. Make stops for access panel and use 4 round-headed screws to install panel of 1/2" BCX plywood with smooth, sanded edges.

WATER SERVICE, COPPER K LINE

Excavate to 36", lay 1" type K, copper pipe and refill trench for water service. Lay line without joints from meter hub to main shut off valve inside structure. Contractor to apply and pay for all permits, repair concrete cuts and coordinate installation of new meter. Owner to pay all water tap fees. Backfill, seed and mulch disturbed yard areas.

SUPPLY, PEX

Install PEX (cross-linked polyethylene) tubing to supply domestic water to the specified plumbing fixtures. Maintain manufacturer's required clearance from heating appliance vents, recessed lights or other heat sources. Installation will protect PEX tubing from direct sunlight. Protect PEX tubing with sleeves where abrasion may occur and use nail plates where PEX tubing penetrates wall stud or joists and has the potential for being struck with a screw or nail. Allow for manufacturer's required slack to compensate for expansion and contraction. Provide shutoff valves at each fixture. Complete a pressure-test of the system prior to charging with water.

SUPPLY, COPPER

Install type L rigid copper supply lines to specified fixtures with silver/tin solder. No solder containing lead is allowed. Install 3/4" pipe to branches and provide shut off valves at all fixtures. Provide dielectric unions at iron pipe joints. Complete a pressure-test of the system prior to charging with water.

SHUT-OFF VALVE

Install PVC or chromed brass shut-off valve on existing fixture supply line.

WASTE LINES INSPECT, REPORT

Test waste lines for leaks and proper venting. Identify defects and submit to EPC a priced list of recommended repairs to bring structure into compliance with the current plumbing code.

WASTE LINE, SNAKE

Power snake drains to clear lines for fixtures to main street sewer.

DRAIN, WASTE, VENT, PVC

Install schedule 40 PVC pipe and fittings, solvent welded after a dyed cleaning step. Install pipe with hangers 3' on center without critical damage to structural members.

TRAP, REPLACE

Replace trap and all corroded waste line from wall stub out to fixture with PVC or polypropylene.

SEWER SERVICE, 4" PVC

Install a 4" PVC sewer line from structure and connect to the public sanitary sewer system. Install clean-outs as required. Re-grade yard in work area, sow grass seed and spread straw to reestablish lawn. Contractor is to apply for and pay for all permits and road repairs. Developer is to pay for sewer tap fees.

GAS LINE, PRESSURE TEST

Cap all gas lines prior to filling the distribution system with 120 lbs. of compressed air. Maintain pressure for 24 hours. Locate and seal any leaks in the system.

GAS LINE

Hang 3/4" main and 1/2" fixture gas supply lines of schedule 40 black steel pipe with malleable iron screwed fittings. Install brass stop valves at all equipment.

GAS SHUT-OFF VALVE

Install bronze, square head, gas cock valve for fixture.

GAS DRYER HOOK UP

Install schedule-40 black iron pipe and gas cock to dryer location. Install metal exhaust vent to exterior of structure with draft prevention wall cap.

FAUCET REPAIR, KITCHEN

Inspect valve seat, and grind until level or replace. Replace washers or rings and repack stem to refurbish faucet.

FAUCET, KITCHEN SINGLE LEVER **[GREEN SPEC]**

Install a single lever, washer-less, metal bodied faucet with 15-year drip-free guarantee and maximum flow of 2 gallons per minute (2.0 GPM).

SINK, SINGLE BOWL COMPLETE **[GREEN SPEC]**

Install a 22-gauge, 25"x22"x7" deep, single bowl, stainless steel, 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 & escutcheon plates on all supply & drain lines. NOTE: All copper is to be soldered (no compression fittings) & all PVC fittings except for the trap glued.

SINK, DOUBLE BOWL COMPLETE **[GREEN SPEC]**

Install a 22-gauge 33" x 22" x 7" double bowl, stainless steel, 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 & escutcheon plates on all supply & drain lines. NOTE: All copper is to be soldered (no compression fittings) & all PVC fittings glued.

FAUCET REPAIR, BATH

Inspect valve seat, and grind until level or replace. Replace washers or rings and repack stem to refurbish faucet.

FAUCET, LAVATORY SINGLE LEVER **[GREEN SPEC]**

Install a washer-less, single control, metal bodied faucet with a 15-year drip-free warranty and a maximum flow rate of 2.0 GPM. Include chromed brass shut off valves and trap if not existing.

SHOWER HEAD, 2-GPM **[GREEN SPEC]**

Install a chrome-plated brass shower head with a maximum 2.0 gallons per minute flow rate. Include arm where required. Note: any low-flow showerhead should be controlled by a valve that has been designed, tested, and verified to function safely at the reduced flow rate.

BATHTUB, 5' STEEL COMPLETE

Install a 5' white, enameled, formed steel, tub complete with lever operated pop up drain and overflow, PVC waste, single lever shower diverter and Delta 6122 water saving shower head.

BATHTUB/SHOWER, 5' FIBERGLASS, COMPLETE [GREEN SPEC]

Install a 5', 4 piece, Sterling Advantage™, 60" x 30" x 72" Product #: 61030126 Tub/Shower - Complete Unit - <http://www.sterlingplumbing.com/home.strl> - fiberglass tub and shower unit complete with lever operated pop up drain and overflow, PVC waste, single lever shower diverter, shower rod and Delta Faucet "Monitor" Model 1343 tub/shower faucet - <http://www.deltafaucet.com/> - & a shower head with a maximum 2.0 GPM flow rate. (Note: exterior wall sections behind the tub shower unit must be completely air-sealed prior to installation)

SHOWERSTALL, FIBERGLASS

Install a 36"x36" one piece, fiberglass shower stall including PVC waste, molded base, metal two handle shower diverter, shower rod and Delta 6122 shower head.

TOILET SEAT

Install a white, wood or plastic, top mounted toilet seat and lid.

COMMODOE, REFURBISH

Install an anti-siphon fill valve. Replace flap valve and adjust water height to effect proper flushing action.

COMMODOE, REPLACE, 1.3-1.6 GPF, 2008 [GREEN SPEC]

Install a 1.6 - 1.3 GPF close coupled, white, vitreous china commode such as an American Standard FloWise Compact Cadet 3 EL 2403.128, or any 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). See the following link for the January 2008 report. http://www.cwwa.ca/pdf_files/Map%2011th%20Edition%20Full%20Report1.pdf Include a manufacturer's approved plastic or pressed wood white seat, supply pipe, shut-off valve, and wax seal.

COMMODOE, REPLACE Dual Flush, 2008 [GREEN SPEC]

Install a "Dual Flush," 2 piece, close coupled, white, vitreous china commode with flow rates of 1.6 and .9 GPF for its respective high and low flushes, such as a TOTO Aquia CST414M Elongated Front, Dual Flush commode Toilet Kit, or any 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). See the following link for the January 2008 report. http://www.cwwa.ca/pdf_files/Map%2011th%20Edition%20Full%20Report1.pdf Include a manufacturer's approved plastic or pressed wood white seat, supply pipe, shut-off valve, and wax seal.

COMMODOE, REPLACE 1.1 GPF, 2008 [GREEN SPEC]

Install a 1.1 GPF close coupled, white, vitreous china commode such as an Kohler Wellworth K-3531-TR Pressure Lite Elongated, or any 1.1 GPF 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). See the following link for the January 2008 report. http://www.cwwa.ca/pdf_files/Map%2011th%20Edition%20Full%20Report1.pdf Include a manufacturer's approved plastic or pressed wood white seat, supply pipe, shut-off valve, and wax seal.

DISCHARGE TUBE

Install temperature and pressure relief discharge tube on water heater. Bottom of tube shall be within 6" of floor or to outside of structure.

WATER HEATER, 30 GALLON GAS

Install a 30-gallon, glass lined, high recovery, insulated to R-7, gas water heater with a 10-year warranty. Include pressure and temperature relief valve, discharge tube to within 6" of floor or to outside of structure, vent, thimble, and gas piping from shut-off valve to fixture. Dispose of old water heater in code legal dump.

WATER HEATER, 40 GALLON GAS

Install a 40- gallon, glass lined, high recovery, insulated to R-7, gas water heater with a 10-year warranty. Include pressure and temperature relief valve, discharge tube to within 6" of floor or to outside of structure, vent, thimble, and gas piping from shut-off valve to fixture. Dispose of old water heater in code legal dump.

HWH - 90+ 40 GAL GAS POWER VENTED [GREEN SPEC]

Install a 40-gallon, glass lined, 90+ efficient power-vented, insulated to R-7, gas water heater with a 10-year warranty. Include pressure & temperature relief valve, discharge tube to within 6" of floor, condensate pump, follow owner's manual & all duct work to power vent to exterior. Provide separate electrical circuit & new gas piping from shut-off valve to fixture. Dispose of old water heater in code legal dump. 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. Recycle the existing HWH.

HWH-TANKLESS [GREEN SPEC]

Replace existing HWH with a gas fired, closed combustion, tank less water heater with a minimum 7 gallon per minute flow rate. Include pressure & temperature relief valve, discharge tube to within 6" of floor, follow the owner's manual & all venting piping. Provide separate electrical circuit & gas inlet and water inlet and outlet shut-off valves. 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. Recycle the existing HWH.

WATER HEATER, 30 GAL ELECTRIC

Dispose of water heater in legal dump. Install a 30-gallon, low profile, high recovery, glass lined, insulated to R-7, double element, and electric water heater with a 10-year warranty. Include pressure and temperature relief valve, discharge tube to within 6" of floor or to outside of structure, shut-off valve and electric supply.

WATER HEATER, 40 GAL. ELECTRIC

Dispose of water heater in legal dump. Install a 40-gallon, low profile, high recovery, glass lined, insulated to R-7, double element, and electric water heater with 10-year warranty. Include pressure and temperature relief valve, discharge tube to within 6" of floor or to outside of structure, shut-off valve and electric supply.

LAUNDRY TUB, SNGL BOWL REPLACE

Remove existing sink to code legal dump. Install single bowl, 24" fiberglass laundry tray to fit under faucet. Hook up waste line.

DRIPLESS CENTER, WASHER HOOK-UP

Install PVC stand pipe, hot and cold hose bibs, and 20-amp outlet on a separate circuit to service a washing machine.

FAUCET, LAUNDRY TUB

Install a two handle, brass faucet with hose threading on laundry tub.

CLOTHES WASHING MACHINE HOOK-UP

Install a two-inch PVC stand pipe with trap, and a single lever "quick shutoff" washing machine valve with hot and cold threaded hose outlets to service a washing machine.

HOSE BIBB, REPAIR

Replace the packing in the valve stem and reassemble the hose Bibb to be leak free.

HOSE BIBB WITH ANTI-SIPHON VALVE

Install a bronze, freeze-free hose Bibb on outside of structure with inside shut-off valve and backflow preventer. Seal exterior penetration with silicone caulk.

BATH FIXTURES-WATER SAVING-2008 [GREEN SPEC]

Install a 1.1 GPF close coupled, white, vitreous china commode such as an Kohler Wellworth K-3531-TR Pressure Lite Elongated, or any 1.1 GPF 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). See the following link for the January 2008 report. http://www.cwwa.ca/pdf_files/Map%2011th%20Edition%20Full%20Report1.pdf Include a manufacturer's approved plastic or pressed wood white seat, supply pipe, shut-off valve, and wax seal, a 1.75 GPM showerhead, and 1.5 GPM bath vanity faucets. (Refer to Green Communities Criteria 4.1c for 5 points, "Upgrade Water-Conserving Fixtures.")

DRAIN/WASTE/VENT, 1 BATH HSE

Remove all drain, waste and wet vent lines to code legal dump. Install schedule-40 PVC or cast iron DWV lines to service one 3-piece bath, kitchen and laundry area from the foundation perimeter to roof vent term

h. Drywall/Texture

DRYWALL, RE-NAIL & RE-TAPE

Re-nail or screw gypsum surface 6" on center. Scrape seams and nail pops. Using fiberglass mesh, cut out seam and re-tapes where tape is missing, damaged or bubbled. Finish with 2 coats of compound, wet sand, ready for paint.

DRYWALL, PATCH, LARGE

Cut back defective gypsum to expose half of the studs on each side of the hole. Cut and tightly fit drywall patch. Glue and nail or screw patch. Apply tape and 3 coats of compound feathered out at least 8". Sand and make ready for paint.

LAMINATE 3/8" DRYWALL

Hang 3/8" gypsum over wall or ceiling surface with screws 8" on center and a bead of construction adhesive 20" on center. Butt drywall to door and window casing and apply J channel molding. Remove top molding from 3-piece base and reinstall after surface is paint-ready. Tape, 3-coat finish and sand make ready for paint.

DRYWALL, LAMINATE WATER RESIST

Hang 1/2" water resistant drywall over existing surface with screws 8" on center and 3/8" adhesive beads 16" on center. Remove top molding from 3-piece base. Butt drywall to door and window casing. Tape, 3-coat finish, and sand ready for paint. Install 3/8" ogee or shoe molding.

DRYWALL, 1/2"

Hang, tape and 3-coat finish 1/2" drywall. Apply a 3/8" bead of adhesive to each framing member and screw or nail 8" on center. Run boards with long dimension horizontal. Wet sand and make ready for paint.

DRYWALL, WATER RESISTANT

Hang, tape and 3-coat finish 1/2" water resistant drywall in wet area. Apply a 3/8" bead of adhesive to framing member and screw or nail 8" on center. Sand and make ready for paint.

PATCH PLASTER

Cut back damaged plaster. Cut out cracks 1/4" wide in a vee-joint. Re-nail all loose laths. Install 1/8" flat rib metal lath where wood is not reusable. Apply basecoat, allowing at least 1/16" for finish coat. After 24 hour cure, apply finish coat.

TEXTURE

Texture pattern should be either *Knockdown* or *Orange Peel*.

i. Doors

DOOR, REWORK EXTERIOR

Plane, sand, adjust and/or repair exterior door and jamb to assure weather tight, smoothly operating door and lock set.

DOOR CASING, REPLACE

Dispose of all cracked, split or damaged door casing. Install casing to match existing as closely as possible. Include drip cap.

DOOR, REPLACE ENTRANCE HARDWARE

Replace exterior door mortise lock with a "Weslock Modernizer" or equal. Install double cylinder mortised deadbolt. Locks shall be keyed alike. Provide 2 sets of keys to the homeowner.

DOOR, EXTERIOR FLUSH, SOLID CORE

Install a 1-5/8" solid core, flush panel, exterior wood or fiberglass door with entrance lock set, and mortised dead (for wood doors) bolt keyed alike. Include three 3"x4" butt hinges, vinyl bulb threshold, spring metal weather-stripping, and wide angle peep sight (prime and topcoat).

DOOR, EXTERIOR PANELED

Install a 1-5/8" 4-panel, exterior wood door with entrance lock set and mortised dead bolt keyed alike. Include three 3"x4" butt hinges, interlocking threshold, spring metal weather-stripping, and wide angle peep sight (prime and top coat).

DOOR, PRE-HUNG METAL ENTRANCE

Dispose of door and frame. Install a pre-hung insulated, metal or fiberglass, 6-panel entrance door and jamb including interior and exterior casing, jambup weather-stripping, interlocking threshold, one entrance and one mortised deadbolt keyed alike (prime and top coat).

DOOR, CRAWL SPACE ACCESS

Install a 3/4" CDX plywood access door in a 2"x 4" preservative treated frame. Provide galvanized iron hinges and hasp.

SCREEN DOOR-WOODEN

Replace screen door with wood framed screen door, wood paneled lower half, screen on top half. Include closer and screen door type latch-set (prime and paint).

STORM DOOR, ALUMINUM

Install an aluminum combination storm and screen door with white baked enamel aluminum finish and top chain.

DOOR, REMOVE

Dispose of interior door. Remove butts. Fill holes in jamb (sand smooth).

RE-WORK INTERIOR DOOR

Re-hang door. Adjust door and lock set to operate properly. If door rubs carpeting, trim bottom of door to clear carpeting.

PASSAGE LOCK

Install a brass-plated, 2-1/2" back-set door knob set.

LOCKSET, BEDROOM

Install a back-set, brass plated privacy lock set.

LOCKSET, BATHROOM

Install a back-set, privacy lock set with a brass plated exterior knob and a chrome plated interior knob.

DOOR STOP, BASEBOARD MOUNT

Install a baseboard mounted, solid metal door stop.

TRIM, DOOR SET FINGER JOINTED

Trim both sides of interior door, including header, stops, and casings. Use 2-1/2" wide clamshell, finger-jointed pine.

TRIM, DOOR SET 1"x4"

Trim both sides of interior door, including header, stops and casings. Use 1"x4", #2 grade pine or better.

DOOR, FLUSH INT, HOLLOW CORE

Install flush, hollow-core, door on existing jamb. Include privacy lock set and 2 butt hinges.

DOOR, PRE-HUNG PASSAGE

Install a 1-3/8" pre-hung, flush, luaun door and split jamb including casing sides, 2 butt hinges and a privacy lock set.

DOOR, WOOD BIFOLD

Hang a flush, hollow core, wood bi-fold door including overhead track, all hardware and casing on one side, plumb and centered within the opening.

j. Paint

SEALING

Contractor should use ECO-BOND's Multi-Purpose Adhesive/Sealant, or similar brand and similar model, to seal all joints, gaps, or cracks on prior to paint application. ECO-BOND specs include:

- Multi-purpose environmentally friendly adhesive that bonds to a variety of common building materials for general, all-purpose adhesion and sealing
- Non-toxic, solvent, isocyanate and carcinogen free formulation
- Safe to use around children and pets
- Tack free time of 65 minutes
- Use with a standard caulking gun for best results
- Waterproof and mold and mildew resistant finish
- Meets USDA requirements for non-food contact
- Meets requirements of California regulations for CARB, SCAQMD, BAQMD, CA Proposition 65
- Qualifies for points under both the LEED and NAHB Green Building program
- High performance qualities include 170 psi shear strength, 166 psi tensile strength and 250% elongation
- MFG Brand Name : Eco-Bond

PREPARE & PAINT WOOD FLOOR

Scrape and rough sand with 36-grit paper and a sanding stick, entire floor deck. Vacuum and tack-rag wood surface. Apply two coats premixed pigmented polyurethane floor finish, per manufacturer's recommendations.

PREP & PAINT VACANT ROOM w/ PAINTED TRIM-LOW VOC **[GREEN SPEC]**

NOTE: Refer To HUD and EPA LEAD HAZARD CONTROL REQUIREMENTS PAINT FILM STABILIZATION:

WALL SURFACE PREPARATION: Using lead-safe work practices remove & dispose of all loose material & dust prior to installation of new materials. All cracked or loose plaster is to be repaired with a bedding coat of Durabond & fiberglass mesh tape. If plaster & lath boards are loose, re-secure or remove & replace with drywall patch.

CEILINGS & WALLS: Prime as necessary to seal stains, raw plaster, etc. Paint ceilings two coats in FLAT CEILING WHITE & walls in EGGSHELL OR SATIN finish cut-in neatly to trim & at all corners & edges. TRIM & DOORS: Prep by de-glossing painted trim prior to finish painting. Apply two coats LATEX SEMI-GLOSS paint to cover completely & uniformly. PAINTS: Use Sherwin-Williams or approved best grade paints and primers meeting the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>. Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.

PREP & PAINT VACANT ROOM w/ NATURAL TRIM, LOW-VOC **[GREEN SPEC]**

NOTE: Refer To HUD and EPA LEAD HAZARD CONTROL REQUIREMENTS PAINT FILM STABILIZATION:

WALL SURFACE PREPARATION: Using lead-safe work practices remove & dispose of all loose material & dust prior to installation of new materials. All cracked or loose plaster is to be repaired with a bedding coat of Durabond & fiberglass mesh tape. If plaster & lath boards are loose, re-secure or remove & replace with drywall patch. TRIM REPAIR: Repair all trim as necessary w/ A STAINABLE WOOD FILLER shaped & sanded to match existing cross sections exactly. Sanding of any surfaces contacting or adjoining a lead-based painted surface shall be done with appropriate procedures such as a HEPA filtered sanding vacuum or a wet sanding method. CEILING & WALLS: Prime as necessary to seal stains, raw plaster, etc. Paint ceilings two coats in FLAT CEILING WHITE & walls in EGGSHELL OR SATIN finish cut-in neatly to trim & at all corners & edges. NATURAL TRIM & DOORS: Clean & prep all trim. Rub down & remove all paint, marks, dirt etc. & blend finish in areas where it has been removed (gouges, etc.). Coat all trim using a combination stain/water based polyurethane finish of natural or golden oak color. PAINTS: Use Sherwin-Williams or approved best grade paints and primers meeting the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.

VAPOR BARRIER PRIMER, LOW-VOC [GREEN SPEC]

Using lead-safe work practices remove & dispose of all loose material & dust prior to installation of new materials. All cracked or loose plaster is to be repaired with a bedding coat of Durabond & fiberglass mesh tape. If plaster & lath boards are loose, re-secure or remove & replace with drywall patch. CEILING & WALLS: Prime specified areas with a low-VOC Vapor barrier primer such as Vimasco 749 Vapor-Blok to produce a coating with a perm rating of less than 1. PAINTS: Use Sherwin-Williams or approved best grade paints and primers meeting the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>.

PREPARE & PAINT EXTERIOR TRIM, LOW-VOC [GREEN SPEC]

NOTE: Refer To HUD and EPA LEAD HAZARD CONTROL REQUIREMENTS PAINT FILM STABILIZATION:

Using lead-safe work practices remove & properly dispose all loose materials prior to installation of new materials. Using lead-safe work practices prepare existing trim surfaces specified for stabilization prior to paint application by securing, replacing or repairing all loose, broken, rotted, or deteriorated materials to provide a sound surface for paint application. Prepare trim surfaces by removing all loose paint using lead-safe work practices & according to paint manufacturer's recommendations. Use a 25-year or better paintable low-VOC caulk matched for color to fill all cracks, voids, holes, etc. prior to painting. Apply a compatible exterior low-VOC primer to all bare areas. Apply two coats of quality exterior low-VOC paint to specified trim. All paints and primers must meet the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>. Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District. Match existing color as close as possible. All work to be done in a neat & professional manner. Use care to protect all surfaces not intended for paint coverage.

PREPARE & PAINT EXTERIOR WOOD, LOW VOC [GREEN SPEC]

NOTE: Refer To HUD and EPA LEAD HAZARD CONTROL REQUIREMENTS PAINT FILM STABILIZATION:

Using lead-safe work practices remove & properly dispose all loose materials prior to installation of new materials. Using lead-safe work practices prepare existing wood surfaces specified for stabilization prior to paint application by securing, replacing or repairing all loose, broken, rotted, or deteriorated materials to provide a sound surface for paint application. Prepare trim surfaces by removing all loose paint using lead-safe work practices & according to paint manufacturer's recommendations. Use a 25-year or better paintable low-VOC caulk matched for color to fill all cracks, voids, holes, etc. prior to painting. Apply a compatible exterior low-VOC primer to all bare wood areas. Apply two coats of quality exterior low-VOC paint to specified wood. All paints and primers must meet the Green Seal G-11 Environmental Standard <http://www.greenseal.org/certification/standards/paints.cfm>. Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District. Match existing color as close as possible. All work to be done in a neat & professional manner. Use care to protect all surfaces not intended for paint coverage.

PREPARE & PAINT EXTERIOR MASONRY

Protect ground with drop cloth. Scrape or pressure wash all loose, peeling, cracked and blistered paint from surface. Spot prime with latex primer, paint one top coat with latex.

k. Flooring

FLOOR, REFINISH WOOD LOW-VOC [GREEN SPEC]

Counter sink all nails and fill holes. Drum sand and edge floor finishing with 120 grit sandpaper. Vacuum and tack rag room. Apply a coat of Minwax Water Based Polyurethane Base Coat followed by 3 coats of Minwax Water-Based Polyurethane for Floors, or a floor finish that complies with regulation 8, rule 51, of the Bay Area Air Quality Management District and may not exceed 250 grams of VOC per liter of coating as thinned to the manufacturer's maximum recommendation, excluding the volume of any water, exempt compounds, or colorant added to the tint bases.

FLOOR, TONGUE AND GROOVE

Chisel out damaged flooring, stagger end joints at least 6". Blind nail where possible using tongue and groove wood strip flooring to match original as closely as possible. Apply 3 coats of floor varnish to patched area.

FLOOR, BAMBOO T&G

Prepare floor by re-nailing deck tightly to joists with screw shank nails, 8" OC. Install prefinished tongue and groove bamboo, with moisture content of 6-8% using a flooring nailer. Apply one coat of polyurethane floor coating. Install finger-jointed ranch baseboard and 3/4" oak shoe molding with finish nails or tee headed brads.

BASEBOARD, RANCH

Install non finger-jointed 9/16" x 3-1/2" ranch base with finish nails or tee headed brads.

BASEBOARD, 1"x4"

Install 1"x4", #2-grade pine base with finish nails or tee headed brads.

SHOE MOLDING

Install pine shoe molding nailed 2' on center to create the tightest possible seal between the baseboard and floor using finish nails or tee headed brads.

CERAMIC TILE, REGROUT, CAULK

Dig out loose grout 1/4". Remove all caulking and clean surface with mildew remover. Apply latex-Portland grout and white, mildew resistant silicone caulk to all seams, fixture lips and pipe penetrations.

CERAMIC TILE, REPAIR

Remove damaged tiles. Cut and thin set ceramic tile of matching color and size. Re-grout entire surface and apply mildew resistant white silicone caulk to all seams, fixture lips and pipe penetrations.

CERAMIC FLOOR TILE

Using adhesive, lay (\$3.00/SF allowance) ceramic floor tile over 1/2" reinforced cement board, screwed to subfloor. After at least 24 hours drying time, apply latex-Portland grout. Clean floor and apply mildew resistant white silicone caulk to all edge seams and pipe penetrations.

VINYL TILE FLOOR, REPAIR

Remove damaged floor tiles, clean adhesive from deck. Install tiles per manufacturer's recommendations to match original – in style, pattern and color – as closely as possible.

UNDERLAY AND VINYL TILE

Install 1/4" underlayment grade plywood using 7d screw shank or cement coated nails, or narrow crown staples, 6" on center allowing a 1/4" gap at wall. Lay 12"x12"x1/8" vinyl composition tile, color group B as made by Armstrong or Azrock, per manufacturer's recommendations. Square to room its axis. Include metal edge strips at openings, and shoe molding or 4" vinyl base around perimeter.

VINYL SHEET GOODS

Re-fasten all loose and warped underlayment and fill voids with patching compound. Install 070" vinyl sheet goods with a minimum of seams per manufacturer's recommendations. Caulk edges of vinyl with clear silicone. Install metal edge strips in openings and shoe molding or 4" vinyl base around perimeter.

UNDERLAY & VINYL SHEET GOODS

Install 1/4" underlayment grade plywood, using 7d screw shank or cement coated nails, or narrow crown staples, 6" on center allowing a 1/4" gap at wall. Install 070" thick, backed vinyl sheet goods w/ minimum seams, per manufacturer's recommendations. Caulk edges of vinyl w/clear silicone caulk to create positive seal. Install metal edge strips in openings & shoe molding or 4" vinyl base around perimeter.

CARPET AND PAD, REMOVE

Remove carpet, pad, metal edge strips and tack strips to a code legal dump.

CARPET (FHA-Approved) & PAD, GREEN LABEL [GREEN SPEC]

Install FHA approved, Nylon/Olefin blend Berber weave carpet. Install over a matched 1/2" medium density rebound pad w/ a minimum of seams. Carpet and pad must meet the Carpet and Rug Institute's Green Label certification. Stretch carpet to eliminate puckers, scallops & ripples. Include tackless strips, metal edge strips & mending tape to cover entire floor including closets. Use same carpet in all locations specified

CARPET (CUT PILE) & PAD, GREEN LABEL [GREEN SPEC]

Install FHA approved, Nylon/Olefin blend cut pile weave carpet. Install over a matched 1/2" medium density rebound pad w/ a minimum of seams. Carpet and pad must meet the Carpet and Rug Institute's Green Label certification. Stretch carpet to eliminate puckers, scallops & ripples. Include tackless strips, metal edge strips & mending tape to cover entire floor including closets. Use same carpet in all locations specified. Refer to Green Communities Criteria GC 7-4.

I. Appliances

GAS STOVE, 30"

Dispose of old stove. Install a 30" wide, pilotless, 4-burner, gas stove including gas oven and electrical connections.

ELECTRIC STOVE, 30"

Dispose of old stove. Install a 30" wide electric stove, 4-burner, including oven and electrical connections.

REFRIGERATOR, 18 CF ENERGY STAR [GREEN SPEC]

Dispose of old refrigerator. Install an ENERGY STAR approved 2-door, top freezer, frost free refrigerator with at least 17.5-cubic feet.

DISHWASHER, 2-CYCLE

Provide and install a 24" 2-cycle, built- in dishwasher including all alterations and connections to plumbing and electric system.

RANGE HOOD EXTERIOR VENTED

Install an 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 10 Sones. Attach hood to cabinet with screws. Include metal vent with all seams sealed with duct mastic, and roof or wall cap/damper assembly flashed appropriately for the exterior finish.

RANGE HOOD VENTLESS

When appropriate, install an enameled range hood with integral minimum 2-speed fan control and light switched separately capable of a minimum 150-cfm at a maximum of 10 Sones. Attach hood to cabinet with screws.

m. Cabinets/Vanity

CABINETS, REPAIR

Repair base and hanging cabinets by re-hanging plumb and level and replacing missing hardware, doors and drawers. Securely refasten loose hardware. Clean all surfaces with heavy duty detergent.

CABINET, WOOD BASE-PLYWOOD [GREEN SPEC]

Install base cabinets constructed of solid hardwood face-frames, doors and draw fronts with ½" plywood carcasses & floors. Drawer boxes shall be plywood; joined using metal or plastic corner bracing. Install bright brass or brushed chrome knobs & pulls on all doors & drawers even when routed finger grooves exist.

CABINET, WOOD BASE, LOW-VOC [GREEN SPEC]

Install base cabinets constructed of solid hardwood face-frames, doors and draw fronts. Drawer boxes shall be plywood. Carcasses will be joined using metal or plastic corner bracing. All particleboard components shall meet ANSI A208.1 for formaldehyde emission limits or all exposed particleboard edges 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. Install bright brass or brushed chrome knobs & pulls on all doors & drawers even when routed finger grooves exist.

CABINET, WOOD WALL-PLYWOOD [GREEN SPEC]

Remove & dispose off site all existing upper cabinets, counters, ledgers, etc. NOTE: Upper cabinets will be either: a) 42" installed to ceiling OR b) will be 36" trimmed with a stained oak crown, OR c) will be 36" with a trimmed drywall or plywood soffit. Install upper cabinets constructed of solid hardwood face-frames and doors with 1/2" plywood carcasses & floors. Carcasses will be joined using metal or plastic corner bracing. Install bright brass or brushed chrome knobs & pulls on all doors even when finger grooves exist.

CABINET, WOOD WALL, LOW-VOC [GREEN SPEC]

Remove & dispose off site all existing upper cabinets, counters, ledgers, etc. NOTE: Upper cabinets will be either: a) 42" installed to ceiling OR b) will be 36" trimmed with a stained oak crown, OR c) will be 36" with a trimmed drywall or plywood soffit. Install upper cabinets constructed of solid hardwood face-frames and doors. Carcasses will be joined using metal or plastic corner bracing. All particleboard components shall meet ANSI A208.1 for formaldehyde emission limits or all exposed particleboard edges 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. Install bright brass or brushed chrome knobs & pulls on all doors even when finger grooves exist.

REPLACE COUNTER TOP, PLASTIC LAMINATE [GREEN SPEC]

Dispose of existing counter top. Field measure for sizing, 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.

REFINISHING

Remove all doors from the cabinets/vanities and remove all hardware. Sand and strip all existing door and cabinet surfaces down to the wood grain, making sure that all surfaces are free of grease and dirt. Fill dents, chips and nicks with wood putty. Sand the putty smooth after it dries. Wipe the wood with a damp cloth (to remove all dust particles) and let dry. Apply water-based, environmentally-friendly stain or polyurethane finish to all newly-sanded wood grain.

n. Foundation

REGRADE FOUNDATION [GREEN SPEC]

Provide and grade a loam topsoil to create at least a 1 to 4 positive drainage away from house 4' from foundation.

REPAIRING CRACKS

Choose the correct repair product. Even for minor cracks, a hydro-plug type product is best. These are readily available at most local home improvement stores. They set very fast, expanding to the point that they can be used even if water is continually seeping in as you work. Begin outside by digging alongside the crack in a fashion that will allow you to reach down and spread the product effectively. This can either involve a short distance or in extreme cases much further down, even to the footing. Hopefully, your repair does not go that far. Once the digging is complete, clean the surface around the crack with a brush.

Put the safety glasses on and using the hammer and chisel, begin at the top working your way down as far as necessary. Chisel about an inch on each side of the crack and it is best if the bottom of the work is slightly wider than the surface. This will help bind the product. Then, with the brush, clean the entire area, removing the dust and small particles. Chisel the same way inside except that it will need to extend the full length of the crack, even if you did not go that far on the outside. Chisel as before, removing debris and dust as you go.

Read and understand the mixing directions for your hydro-plug product. Mix only what you think you can apply in a few minutes. It sets very fast. Before mixing, make sure that the newly chiseled area you will be working in is moist. Mix material and water in the bucket and stir thoroughly with the stick. Protect the floor with the drop cloth or tarp.

Start from the top, working your way down by using the small trowel and applying the product firmly into the chiseled repair area. As you work your way down, scrape the excess off smooth to the foundation surface. Work all the way to the bottom of the repair in the same manner. Scoop up the product that falls to the floor so that it does not stick and become unsightly. Do the same on the outside now.

Slow the process down for cracks that are actively leaking by working the product in and actually holding it in place as it begins to set. This will allow the expansion in that area, stopping the leak. It is slower and you may have excess material to scrape off, but the leak will stop.

o. Framing/Demolition/General Carpentry

RAILING, WOOD REPAIR

Tighten loose balusters and replace broken and missing ones. Tighten top and bottom rails and posts. Match existing parts with replacements as closely as possible.

TREAD REPLACEMENT, INTERIOR

Chisel out damaged tread. Install nailers on each stringer for replacement tread. Install 5/4" pine stepping stock tread with glue and screw shank nails.

HANDRAIL BRACE

Install brass handrail brace screwed directly to stud and handrail.

HANDRAIL, REPLACE INTERIOR

Install 2" round hardwood handrail with braces screwed to studs and handrail.

HANDRAIL WITH BALUSTERS

Install oak handrail and newel post, and pine turned balusters 6" on center.

STAIRCASE, INTERIOR CLOSED

Remove closed staircase and dispose of in code legal dump. Resize opening to accept a 36" wide prefabricated staircase (Double all headers with 2" stock). Install staircase with white pine stepping stock treads, balusters, and railing. Apply 2 coats of clear finish to all exposed wood and trim.

STAIRCASE, REPLACE BASEMENT

Dispose of entire basement staircase and handrail. Construct an open staircase using 2"x12" pine stringers and 5/4" pine stepping stock treads. Install wood handrail, one side, 32" above tread nosing. Stringers are to rest on a 2"x12" preservative treated pine sill.

ATTIC ACCESS (Hatch)

Cut and frame an attic access hatch of 3/8" plywood at least 74"x24". Trim with casing to match room, prime topcoat, weather-strip with closed cell foam and insulate with 1" closed-cell polystyrene.

ATTIC DAM

Install 8" plywood wall around the perimeter of attic hatch hole to serve as a dam. Dam will contain loose-fill insulation and not allow it to spill when attic hatch is removed for attic entrance.

DECK JOIST, 2"X 6" PTP

Install 2"x 6" preservative treated pine joist, level, and crown up.

DECK, TONGUE-AND-GROOVE

Install 3/4" yellow pine tongue-and-groove decking to existing joists with concealed galvanized nails to match existing material.

POST, 4"X 4"

Support porch roof and remove damaged post. Replace damaged deck with matching 1" pine strip flooring. Install a 4"x 4" preservative treated post on a 2"x 8"x 8" PTP plinth block.

PORCH CEILING, 1/4" BC PLYWOOD

Cover porch ceiling with 1/4" BCX plywood. Install cove molding at perimeter and 2" wide batten strips at seams.

PORCH CEILING, T&G

Dispose of damaged ceiling material. Install tongue-and-groove stripping, blind nailed to joists.

PORCH GUARD RAIL REPAIR-WOOD

Replace missing or defective balusters, support posts and railing with same size stock.

WOOD STAIR HANDRAIL, REPLACE EXT

Install preservative treated, code approved, grab-able handrail supported by 4"x 4" treated posts, 4' on center. Rail is to be free from cracks, splinters, and rough edges. Set first post in a 12"x 8"x 12" concrete sleeve, bolt remaining posts to stringer with 7" lags.

GUARD RAIL, WOOD

Dispose of any existing railing. Construct a preservative treated pine railing using 2"x 4" top and bottom rails, and 2"x 2" balusters face nailed 6" on center. Create a 3'6" high railing between 4"x 4" end posts.

PORCH LATTICE, REPLACE

Dispose of any existing lattice around porch crawl space. Frame opening with 1"x 4" preservative treated pine with vertical members 24" on center. Install 1/4"x 2" pine lattice on frame.

PORCH, REBUILD

Remove deteriorated porch. Construct 12"x 12" masonry piers, 2"x 10" joists with 1/2" tongue and groove flooring to support child-proof wood railing and 4"x 4" posts for roof. Construct roof structure with 2"x 6" rafters, 1/2" plywood deck, fiberglass shingles, aluminum gutter and downspouts and 1/4" plywood ceiling. Structural lumber and deck shall be preservative treated.

TREAD REPLACEMENT, EXTERIOR

Dispose of damaged tread. Install 1-5/8" preservative treated pine stepping stock with screw shank nails.

STEPS/LANDING, REPLACE EXTERIOR

Dispose of existing steps and landing. Construct a replacement unit with two 2"x 12" preservative treated pine stringers, 5/4" PTP stepping stock treads, on a solid concrete footer. Frame the stairs 3' wide connecting to a 5'x 6' landing, of 2"x 6"s and 2"x 4" deck. Construct a wood handrail on one side 32" above tread nosing.

DEMO OUTBUILDING

Disconnect and cap off all electrical and plumbing services. Demolish outbuilding to 12" below grade and dispose of debris in code legal dump. Rake yard clean including nails and glass. The contractor shall protect and secure from damage all other structures, sidewalks, paved areas, shrubbery, and lawn areas.

DEMO PORCH

Demolish entire porch including roof, columns/posts, deck, railing/walls, substructure, lattice and steps and dispose of in code legal dump. Rake yard clean. Patch disturbed dwelling trim and siding, and match them it as closely as possible to existing trim and siding.

HAUL OFF DEBRIS TO LANDFILL

Remove, temporarily store on site, and legally dispose of all debris resulting from construction activities. Interior shall be vacuumed clean, yard raked and free of glass, nails and lead suspect paint chips.

HOUSE NUMBER SET

Install 3" high metal or PVC house numbers on a pine backer-board (dimensions of board will be provided on SOW) painted with 2 coats of low-VOC exterior latex paint.

CLOSET POLE

Field measure and install 1-1/2" diameter wood closet pole and sockets.

CLOSET SHELF

Install 1"x 12" closet shelf of #2 grade pine or B/C plywood, from wall to wall, supported on three sides by hook strip. If there exists more than a 4' span, use center support bracket (If plywood, fill all cracks, holes and front edge cuts with putty, and sand smooth).

CLOSET, BEDROOM

Construct a 28" deep by 4' wide closet in bedroom along wall. Hang, tape and 3 coat finish 1/2" gypsum to both sides of the 2"x 3" framing. Hang a 3'x 6'-8" louvered pine bi-fold door including overhead track and hardware. Install a 1"x 12" plywood shelf, 1-3/8" hanger rod and 1"x 4" interior base. Match exterior base to room (prep and prime ready to paint).

p. Insulation

WEATHER-STRIP WINDOW

Weather-strip both sash of double hung window with spring zinc or bronze weather-stripping to create a positive seal.

WEATHER-STRIP DOOR

Weather-strip wood door with spring bronze and a vinyl door sweep.

AIR-SEAL BUILDING ENVELOPE **[GREEN SPEC]**

Seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with low-VOC caulk (if <1/4") or expanding foam (if > 1/4"). 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. 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. Seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather-stripping on attic doors or hatches. Air sealing must be done prior to the installation of insulation.

AIR-SEAL, ISOLATE GARAGE **[GREEN SPEC]**

Seal all accessible cracks, gaps and holes in the building envelope between the conditioned space and the attached garage with low-VOC caulk (if <1/4") or expanding foam (if > 1/4"). Seal all wall penetrations created by plumbing, gas lines, electrical boxes and outlets. Take care to seal all joints without excess sealant. Insure an air-seal between the conditioned space and the attached garage at all drywall surfaces. Weather-strip the entrance door to the house.

INSULATE WALL, R-13 BATT

Staple 3-1/2" thick, R-13; foil faced fiberglass roll insulation to studs per manufacturer's specifications.

WALL INSULATION, DENSE PACK CELULOSE **[GREEN SPEC]**

After Air Sealing (Spec # 16-4903) drill 2 1/8" to 2 9/16" access holes for each stud cavity in the areas specified in interior or exterior locations. Install blow in borax treated (no ammonium sulfate permitted), cellulose insulation per manufacturer's specifications and dense-packed into all specified wall cavities to a minimum density of 3.5 Lbs. per Cubic Foot for the entire cavity. Use a 1" to 1 1/4" ID vinyl "wall tube attached to the standard cellulose blower tubing to place the cellulose deep into the wall cavity. Check each stud cavity for blocking and other obstructions prior to blowing. Carefully seal all drilled holes with wood or foam plugs and patch all holes to match surrounding materials if the surface is exposed. In balloon framed houses insure that blown cellulose is blocked from entering floor cavities such as 2nd floor floors. See these links for additional information:

<http://www.karg.com/PDF%20files/Presentations/Dense%20Pack%20Cellulose%20Insulation.pdf>

And

<http://www.karg.com/PDF%20files/Insulaton%20density/Sidewall%20Tips%20Pfeiffer%20Wilson%20Fitzgerald%202003.pdf>

WALL INSULATION, DAMP SPRAY CELLULOSE-2X4 WALL **[GREEN SPEC]**

After all mechanical systems, including but not limited to ductwork, plumbing and wiring, has been installed and after air sealing install a damp-spray cellulose product at a density of 3.25 Pounds per Cubic Foot that conforms to the Consumer Product Safety Commission's 16 Code of Federal Regulations (CFR) Part 1209. Protect electrical boxes, ductwork outlets and other components in the wall whose performance would be compromised by the application of the cellulose. The installation shall completely fill the specified cavities of the building envelope without voids. After spraying the cellulose will be scrubbed off of the face of the interior side of the framing so that the surface of the installed cellulose is flush with the framing, and so that the finished wall surface may be installed directly on the face of the framing without obstruction. The worksite shall be cleaned to remove overspray and scrubbed cellulose. The installation shall be allowed to cure to the manufacturer's requirements prior to the installation of a wall finish.

INSULATE WALL, R-19 BATT

Staple 6" thick, R-19; foil faced fiberglass wall insulation to studs per manufacturer's specifications.

INSULATE WALL/CEILING/FLOOR CAVITY-CLOSED CELL FOAM **[GREEN SPEC]**

Install closed cell polyurethane spray foam into the specified building envelope cavity to the R Value specified. Moisture content of all components of the cavity must be less than 11% at the time of the application of the foam. The developer must supply the EPC with the ASTM E84 test results or the ICE-ES "ES Report (www.ice-es.org) for the foam product being installed in advance of the installation so that the approved maximum thickness of each pass and total approved thickness is understood in advance of the installation.

INSULATE CEILING, R-30 BATT

Loose lay 12" thick R-30 un-faced fiberglass batts between the ceiling joists carefully fitting the fiberglass around obstructions such as wires, pipes ductwork and building components to insure a consistent and continuous R30 rating.

ATTIC R-30 CELLULOSE [GREEN SPEC]

After Air Sealing (Spec # 16-4903) Install blow in borax treated (no ammonium sulfate permitted), cellulose insulation per manufacturer's specifications to R-30. Maintain ventilation routes from soffit and other vents with baffles. Replace all material removed or cut to gain access to match existing materials. NOTE: If access to attic is via a fixed staircase insulate stairs to attic, landing & interior stairwell walls as part of this item dense-packing the cellulose into closed floor, stair and wall cavities to a minimum density of 3.5 Lbs. per Cubic Foot. If access is via a hatch insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape. If access is via a fold down stair insulate the stair with an airtight 2" thick reflective foil faced polyisocyanurate foam box with seams and seal the edges with a compatible foil tape.

ATTIC R-38 CELLULOSE [GREEN SPEC]

After Air Sealing (Spec # 16-4903) blow in borax treated (no ammonium sulfate permitted), cellulose insulation per manufacturer's specifications to R-38. Maintain ventilation routes from soffit and other vents with baffles. Replace all material removed or cut to gain access to match existing materials. NOTE: If access to attic is via a fixed staircase insulate stairs to attic, landing & interior stairwell walls as part of this item dense-packing the cellulose into closed floor, stair and wall cavities to a minimum density of 3.5 Lbs. per Cubic Foot. If access is via a hatch insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape. If access is via a fold down stair insulate the stair with an airtight 2" thick reflective foil faced polyisocyanurate foam box with seams and seal the edges with a compatible foil tape.

ATTIC R-45 CELLULOSE [GREEN SPEC]

After Air Sealing (Spec # 16-4903) blow in borax treated (no ammonium sulfate permitted), cellulose insulation per manufacturer's specifications to R-45. Maintain ventilation routes from soffit and other vents with baffles. Replace all material removed or cut to gain access to match existing materials. NOTE: If access to attic is via a fixed staircase: insulate stairs to attic, landing & interior stairwell walls as part of this item dense-packing the cellulose into closed floor, stair and wall cavities to a minimum density of 3.5 Lbs. per Cubic Foot. If access is via a hatch: insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape. If access is via a fold down stair: insulate the stair with an airtight 2" thick reflective foil faced polyisocyanurate foam box with seams and seal the edges with a compatible foil tape.

ATTIC INSULATION - CELLULOSE, DENSE PACK [GREEN SPEC]

After Air Sealing (Spec # 16-4903) Install blow in borax treated (no ammonium sulfate permitted) cellulose insulation dense-packed into closed floor cavities to a minimum density of 3.5 Lbs. per CF. Maintain ventilation routes from soffit and other vents with baffles. Replace all material removed or cut to gain access to match existing materials. NOTE: If access to attic is via a fixed staircase: insulate stairs to attic, landing & interior stairwell walls as part of this item. If access is via a hatch: insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape. If access is via a fold down stair: insulate the stair with an airtight 2" thick reflective foil faced polyisocyanurate foam box with seams and seal the edges with a compatible foil tape.

VAPOR BARRIER, CRAWL SPACE

Lay 6 mil poly vapor barrier on ground in crawl space and 6" up foundation walls. Overlap seams by 2' and secure with duct tape.

SEAL AND INSULATE, CRAWL SPACE

Install a 6-mil poly vapor barrier on ground in crawl space and up foundation walls to the top of the masonry leaving an inspection gap of 3 inches between the lowest wood component and the plastic. Fasten the plastic to the masonry wall with mechanical fasteners and large washers and seal the plastic to the masonry with Low VOC caulking rated to adhere plastic. Overlap seams in the plastic by 2 feet and seal the seams with fiberglass mesh tape and mastic. The end product 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 EPC, install a minimum R-13 of Dow THERMAX foam board on the outside walls of the crawl space sealing the seams between the boards with foil tape approved by Dow for use with THERMAX. The layer of THERMAX shall be complete without voids and any gaps shall be sealed with polyurethane foam sealant.

INSULATE DOMESTIC WATER SUPPLY PIPE [GREEN SPEC]

Insulate exposed hot and cold water mains with closed cell polyethylene slip-on pipe insulation, sized to fit the pipe's diameter. Seal seams with either 5-mil Pipe Insulation sealing tape or Closure Clips designed for pipe insulation placed every 4 inches. Seal all butt joints between sections of pipe with 5-mil Pipe Insulation sealing tape. Neatly miter all angled junctions.

INSULATE DUCT, FIBERGLASS

Wrap ducts/pipes with 1-1/2" foil scrim R-4 fiberglass insulation. Secure and seal all seams with duct tape.

INSULATE RIM JOIST, FIBERGLASS [GREEN SPEC]

After Air Sealing is complete, staple R-19 fiberglass batts with Kraft faced backing to the interior of the rim joist at the entire perimeter of the basement and/or crawl space exterior walls. Installation will extend from the subfloor for the first floor to the top of the foundation wall. The batts will be neatly cut to fit precisely with no compression of the fiberglass fibers, and cut to fit neatly around wires, pipes and other components that interfere.

INSULATE RIM JOIST, FOAM [GREEN SPEC]

After cleaning the area thoroughly, apply expanding foam 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 such as Dow FROTH-PAK FS Foam or Handy-Foam Two Component E-84 Class 1 Foam. 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.

INSULATE RIM JOIST, FOAM BOARD [GREEN SPEC]

After Air Sealing is complete, carefully install 3 layers of 1-inch Dow THERMAX™ board along the entire perimeter of the exterior of the building at the Rim Joist. Cut and carefully friction fit the boards between joists perpendicular to the rim joist. Fasten the straight runs of rim joist with construction-grade Polyurethane Adhesive and tack in place with mechanical fasteners. Seal all seams between foam boards with THERMAX™ aluminum foil or white foil tape. Seal the edges of the foam boards to all adjoining flooring, joists, masonry and sill plates with a Low-VOC caulk. Carefully trim and fit foam boards around penetrations through the rim joist and seal with caulk as stated above.

q. Masonry/Concrete

STEPS, REPAIR CONCRETE

The following allowance is provided to the contractor as a limit to the level of repairs required to the specified concrete step(s).

STEPS AND LANDINGS, CONCRETE

Excavate level & compact to 85% a well drained subgrade. Reinforce with 6x6 welded wire fabric. Form and pour 4000-psi, 3% air entrained, concrete steps on 12"x12" continuous footing, leading to a 4'x5' landing. Steps shall be uniform and even, 3' wide, 7-3/4" rise and 10" run. Cure with a sprayable membrane. Broom finish across direction of traffic and remove forms.

DEMO CONCRETE

Break up concrete and remove off site to code legal dump.

FOOTING, PIER

Excavate a square, straight sided 4' deep hole below the frost line to solid bearing. Pour a 24" x24"x18" pier footing. Cast a rod to anchor pier.

CONCRETE SLAB PATCH

Break up deteriorated slab section, grade and compact soil to 95%. Apply a bonding agent per manufacturer's specs on exposed concrete. Pour a 4", 2200 psi concrete slab to match elevation of surrounding slab. Float and steel trowel finish.

BASEMENT SLAB INSTALLATION [GREEN SPEC]

Install a continuous 4" thick basement slab using a 3,000 psi mix. Make sure that the soil is uniformly and properly compacted, Install a 4" bed of 3/4" clean (no fines) gravel on top of the soil, provide expansion joints (also known as isolation joints) around the inside perimeter of the foundation using standard isolation joint material, and install 6-mil polyethylene sheet directly under the concrete to create a continuous vapor barrier ideally in one sheet but lapped 12" and taped at seams if seams are absolutely necessary. Install a 2 inch layer of gravel on top of the vapor barrier and place the concrete. Include plastic reinforcing fibers in the mix, like Fibermesh (Fibermesh Co., 4019 Industry Dr., Chattanooga, TN 37416; 615/892-7243. 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 at 8" intervals.

CONCRETE REPAIR, OVERLAY

Remove portions of deteriorating concrete to solid surface or 1/2" minimum depth. Clean, acid wash and thoroughly rinse area. Apply a latex bonding agent per the manufacturer's specs. Resurface with a plastic, patching cement mixture. Finish matching surrounding surface.

FOUNDATON, PARGET

Remove all loose broken and deteriorated material. Parget foundation wall with 3/8" thick coat of waterproof cement (Match existing finish as closely as possible).

FOUNDATION VENT, SMALL

Install an operable galvanized steel foundation vent protected by heavy gauge steel screening with at least 45-square-inches of free open space.

FOUNDATION VENT, LARGE

Install an operable galvanized steel foundation vent protected by heavy gauge steel screening with at least 100-square-inches of free open space.

FOUNDATION VENT SCREEN, REPLACE

Replace foundation vent screen with heavy duty galvanized steel screening.

BLOCK WALL REPAIR

Remove damaged block and patch wall by toothing replacement block of same dimensions into wall.

GLASS BLOCK

Block opening with 6"x 6"x 4" thick glass block with tooled joints both sides.

MASONRY, CLEAN

Remove stains, graffiti and dirt from masonry wall using high pressure water and chemical mix.

MASONRY, REPOINT (ROCKWALL)

Cut out mortar at least 1/2". Remove all loose material with clear water. Saturate joints with water and repoint in 1/2" lifts using Portland cement mortar. Fill concave joints and clean rock face.

1235 BRICK WALL REPAIR

SF

Remove damaged brick and tooth replacement brick into wall. Match brick and tooling as closely as possible.

CHIMNEY, RE-POINT

Repair chimney above roof area by cutting out mortar at least 1/2", removing all loose material, and re-pointing using Portland cement mortar. Saturate joints with water before applying mortar. Match color as closely as possible. Replace all missing and defective materials with matching materials. Clean mortar and other debris from adjoining surfaces and gutter.

CHIMNEY CAP

Replace chimney cap with a 2'x2' precast, concrete cap cemented in place.

MASONRY CHIMNEY, REBUILD

Tear down chimney to below lowest point on roof. Rebuild chimney using new 4" thick solid bricks without cored holes. The color of brick should be chosen to match existing brick as closely as possible. Chimney to a height required by the Building Code. Install roof flashing, chimney cap and terra cotta flue liner.

r. Clean-up

FINAL CLEAN

Remove from site all construction materials, tools and debris. Sweep clean all exterior work areas. Vacuum all interior work areas, removing all visible dust, stains, labels and tags. Clean all windows referenced in specifications.

s. Landscaping

TREE and PLANT

Texas law requires utilities and line owners to register their underground facilities in every county - and for excavators to contact every potentially affected operator before they start to dig. Prior to digging on the property, contact the statewide "One Call" service at 811 to investigate if the property has underground facilities that may be affected by the planting. The service will then route your call to the appropriate local "one call" center that can best assist you with your needs. If this service is unable to provide the required information, then call your local electric and gas service for assistance.

Do not plant the tree close to underground or overhead utilities. Locate the tree at least 20 feet away from any building. Mark out a planting area four times wider than the root ball diameter. Loosen this area to an 8-inch depth. In the center of the planting area, dig a hole at least twice as wide as the root ball and no deeper than the depth of the soil in the root ball. The bottom of the ball should rest on solid, undisturbed soil. When finished the soil at the base of the tree must be at the same level on the tree as it was in the container. Acceptable trees to be planted in the American southwest include, but are not limited to: Western Soapberry, Mexican Olive, Escarpment Live Oak, Huisache, Afgan Pine, Desert Willow, Mimosa, Vitex, Mexican Elders, etc. For a more detailed list of acceptable trees to be planted in El Paso, Texas, please visit:

<http://aggie-horticulture.tamu.edu/ornamentals/elpasoplants/nativetrees.html>.

REMOVE TREE AND GRIND STUMP

Remove tree and dispose it in code legal dump. Grind stump to 12" below grade. Install top soil to hole where portion of stump has been removed.

ROCK

Measure the length and width of the area where the rock will be installed using a tape measure. Multiply the width and the length to arrive at the square footage for the area. Divide the square footage number by 80 to determine the number of tons of landscaping rock you need. Using the above example you would divide 216 by 80 to arrive at 2.7 tons of rock. This provides a 3-inch-deep layer, which is appropriate for most installations. Order the appropriate number of tons of landscape rock.

Remove all weeds from the landscaped area. Place a roll of weed barrier fabric at the edge of the planting and unroll it until you reach the other end. Cut the fabric off the roll using scissors. Place the roll of weed barrier fabric next to the first row and overlap the edges by 4 inches. Unroll the fabric until reaching the end of the area. Continue until all of the area is covered in weed barrier fabric.

Shovel the landscaping rock on top of the weed barrier fabric starting at the edge farthest away from building and walls. Continue adding rock using this method until the entire area has been covered in a 3-inch-thick layer of landscaping rock. Smooth out the top of the landscaping rock using a wide-toothed rake until the surface is uniform. Spray the top of the landscaping rock with water from a garden hose to rinse away any dust and dirt from the top.

t. Other

FENCE, CHAIN-LINK 4' HIGH

Dispose of any existing fence. Install a 4' high, galvanized, chain-link fence using 11-gauge wire, 1-5/8" line posts and 2" corner posts on 10' centers, with a 1-3/8" top rail. Gate posts shall be 2-1/2". Set posts at least 36" deep in a 9" diameter concrete sleeve. Installation of sections shall be in a straight line unless otherwise stated.

GATE, CHAIN-LINK 4' HIGH

Hang a 4' high, 42-inch wide, 11-gauge galvanized gate with a 1 3/8" frame, two off- set type hinges and latch.

FENCE, STOCKADE 6' HIGH

Dispose of any existing fence. Install a 6" high wood stockade fence. Use all preservative treated lumber, 4"x4" ground contact rated posts set at least 36" deep in 9" diameter concrete sleeves 8' on center. 2"x4" top and bottom rails, 1"x3" split rail fence boards. Installation of sections shall be in a straight line unless otherwise stated.

METAL GUARD RAIL, WROUGHT

Design, fabricate, prime, topcoat and install a one-piece steel railing of 2" flat top and bottom rails and 1/4" balustrades 6" on center.

MAILBOX

Dispose of mailbox and install a steel, black enamel finish, letter-size mail box with magazine rack and lock-eye for padlock.