

PIERCE COUNTY HUMAN SERVICES - COMMUNITY ACTION PROGRAMS
CONTRACTOR'S MANUAL AND REHABILITATION STANDARDS

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INTRODUCTION

This Manual was prepared for use by Pierce County Human Services - Community Action Programs for the Home Repair Program. The Manual provides material, equipment and workmanship standards for items to be furnished and installed under rehabilitation contracts. Work items for which a performance standard does not appear in this Manual shall be performed by mechanics skilled in their respective trades in accordance with the best practices of that industry.

The contractor shall be responsible for furnishing all labor, material, equipment and services necessary for the completion of all repairs as listed in the Specification or described in the Contractor's Manual.

All work shall be subject to a final Inspection by a Pierce County Human Services - Community Action Programs Housing Rehabilitation Specialist. Standards for satisfactory completion of work shall be determined by the intent of the Contract, applicable building code requirements, the Specification and this Manual. All work found to be lacking in any of these areas shall be repaired or redone at the contractor's expense.

USE OF CONTRACTOR'S MANUAL

Descriptions in the Manual are grouped by areas of focus that the Housing Rehabilitation Specialist encounters in sequence when conducting a UPCS or HPI inspection. (See table of contents for a breakdown of areas and systems). For example, a description of work relating to an entry door is found in the EXTERIOR section under EXTERIOR DOOR. A clue to systems grouping is given by the number listed in the specification.

Example:

7130 INSTALL NEW DOOR VIEWER

This description would be found in Section #7000 – EXTERIOR DOOR

USE OF STANDARDS

Construction industry standards are practices or technologies used in the construction field to determine the best method of completing a specific project. These standards are considered to be acceptable or correct by members of this industry as well as regulators and governing bodies. They help to govern issues like

safety, quality, materials, and operational principles used in the field. They are developed over time by trade groups, industry associations, and construction officials. While construction standards are not necessarily applicable by law, they are often adopted by law makers and agencies and used to govern practices within the industry.

USE OF SPECIFICATIONS

Construction specifications are documents that instruct contractors about what needs to be done on a construction site. Construction specifications will provide a number of line items, including materials to be used, where they are used, and how much should be used. They are available for review before a contractor bids on a project and are relied upon in order to provide an accurate quote. While specifications may not address all issues during a project, the goal is to cover as much ground as possible. In the event that unexpected issues arise during a project, the construction specifications may outline how to deal with them, either through change order or consultation with the owner or agency.

All repairs are listed by location. A closet is considered to be part of the room in which it is located. If an item is located within a room and requires identification apart from similar items, it is identified by the letters A, B, C and D which will aid in location. While facing a building's entrance, the wall in front of the inspector would be identified as the A wall. Moving clockwise, the next three directions would be the B, C, and D walls. If a kitchen outlet requires repair on a wall facing the back yard, it would be identified as the outlet on the C wall of the kitchen.

Drawings are sometimes included as part of the specification. Anything called for in the drawings but not listed in the specification shall have the same effect as if shown or called out on both.

A line item will be provided for sales tax in each specification. It is the responsibility of the contractor to check with the Washington State Department of Revenue to ensure that sales tax figures are correct on all bids, invoices, or change orders as they apply to the job address.

Further, it is the responsibility of the contractor to apply for, obtain, and have finalized all applicable permits related to work called out by the job specifications or change orders.

ELIGIBILITY EXCEPTIONS AND ALLOWANCES

If during the course of construction, an item normally deemed ineligible for funding due to function, purpose, or lack of association with the living space becomes damaged, moved, or destroyed, it is considered appropriate to repair, re-set, or replace said item to its original intent and condition.

It is also possible to exceed program allowances for items that exceed excepted energy standards, aid in the mobility or safety of an elderly or disabled client or help preserve the integrity of a building system. Examples for each would be Energy Star rated appliances or windows that lower utility bills, a controls forward range for a disabled client, or a front loading clothes washer to preserve an at risk septic system. Allowances for each exception must be within 10% of the agency estimate using the agency's estimating software or be within 10% of a median price point based on a sampling of current market prices documented within the file. If a product exceeds these criteria, the client must make up the difference independent of the program's assistance.

It is also possible to petition the program for an item that the program does not normally provide if it can be proved to be a health or safety benefit or medical necessity by a credentialed medical or health professional. This must be documented by same through official correspondence and a copy of such must be included in the rehabilitation file.

DEFINITIONS

ABS – Acrylonitrile butadiene styrene. A common thermoplastic pipe used for residential plumbing waste systems.

ADA - American with Disabilities Act of 1990 that provides accessibility regulations and guidelines for buildings and facilities.

ADAAG - ADA Accessibility Guideline. A code source for a specific ADA guideline.

APA – American Plywood Association. A non-profit trade association representing engineered wood manufacturers' in testing and product research.

ASTM – American Society for Testing and Materials. An organization that publishes technical standards.

AWC – American Wood Council. An organization that publishes span and load tables for structural lumber.

CARLS – Critical Areas and Resource Land checklist.

CFR – Code of Federal Regulations. Codification of rules or regulations by executive departments and agencies of the federal government.

CDC – Community Development Corporation. A not for profit organization incorporated to provide programs that promote and support community development.

CDM – Community Development Manager. Software designed to manage community development, housing rehabilitation, weatherization programs, and housing development.

CDX – Exterior grade plywood with 'C' and 'D' face veneers.

Change Order – A change in the scope of work that was not specified.

Cost Reasonableness - Review and evaluation of collective elements or costs that make up a contractor's proposal. It should be within 10% of the agency estimate to be deemed reasonable.

EPA – Environmental Protection Agency. A government agency that writes and enforces regulations designed to protect human health and the environment.

Ft – Abbreviation for the measurement, foot or 12 inches.

Housing Rehabilitation Specialist - An employee of Pierce County Human Services who facilitates home repair projects.

HQS – Housing Quality Standards. Sets forth all housing standards that federally funded housing units must meet.

HUD – Housing and Urban Development. A cabinet department to develop and execute policies on housing.

HVAC – Heating, ventilating and air-conditioning systems.

IRC – International Residential Code of 2006. The model residential construction code accepted throughout most of the United States.

Lin – Abbreviation for lineal.

NAHB – National Association of Home Builders. A trade association that promotes policies for housing.

NEC – National Electric Code. The NEC codifies requirements for safe electrical installations into a single standardized source.

NFPA – National Fire Protection Association. Standards and codes for fuel gas installations.

PSCAA – Puget Sound Clean Air Agency. A regional authority that regulates the disposal of asbestos.

Pex – Crossed linked polyethylene tubing used in hydronic radiant heating as well as domestic water systems.

PVC – Polyvinyl chloride. A DWV (drain, waste, and vent) pipe that can be used for potable water as well.

Quest Tubing – A polybutylene water line used primarily in mobile homes that was recalled in 1995 due to failures. It is usually gray in color.

SEPA – State Environmental Policy Act. An environmental review of a sensitive area.

Sq – Abbreviation for square. A unit of measurement.

UMC – Uniform Mechanical Code. The model code to govern the installation and maintenance of HVAC systems.

UPC – Uniform Plumbing Code. The model code to govern the installation of plumbing systems.

Weatherization Technician/Auditor – An employee of Pierce County Human Services who facilitates weatherization projects.

USE OF WORK SCHEDULE

All repairs are listed with locations. A closet is considered to be part of the room in which it is located.

Drawings are part of the Work Schedules. Anything called for on the drawings but not listed in the Work Schedules shall have the same effect as it shown or called out on both.

ADA PERFORMANCE STANDARDS

RAMPS

An accessible ramp shall have a minimum clear width of 36" and a difference of surface elevation of no more than ¼". The cross slope of an accessible ramp cannot exceed 2%. The maximum slope shall not exceed 1:12. The surface shall be slip resistant. There shall be a level landing at the top and bottom of each run matching the width of the run and minimum of 60" in length. A run shall not exceed 30'. Where a ramp changes direction, there must be a level landing of 60"x60". If a ramp has a drop off, it must have a minimum 2" curb. If the ramp has a rise of more than 6" it must be railed on both sides and the rail shall be continuous with a height between 34" and 38". The rail shall have a 1-1/2" stand-off and be no more than 2-1/4" in width. Any ramp exceeding a height of 30" will require a building permit from the local jurisdiction.

LIFTS

All lifts or rails shall be permitted, installed, and finalized by a licensed and certified elevator installer according to engineered specifications in a manner that satisfies all guarantees and warranties.

BARS

Grab bars shall have a slip resistant surface and be no more than 1-1/4" and no less than 1" diameter. Grab bars shall be installed vertically or horizontally, but never diagonally. Grab bars shall have a stand-off of no more than 1-1/2" from the wall. Grab bars shall be mechanically fastened with a minimum of three fasteners per point of attachment penetrating no less than 1-1/2" into the framing.

BATH MODIFICATIONS

Bath modifications shall follow ADA specifications as closely as possible where space and layout allows. The back wall and control wall shall be bared. The head wall does not have to be bared if it has a permanent seat attached. A handheld shower head on a slide bar shall be added to the control wall. Localized conditions

shall dictate the replacement of the mixing valve. If water, waste lines or valves are changed or replaced, a plumbing permit is required.

TOILETS

Toilets shall be centered 16"-18" from a parallel wall when possible. The height between floor and toilet seat shall be 17"-19" above the floor. Flush valves shall be located on the open side of the tank. A grab bar shall be mounted on a parallel wall or fixture if possible.

SINKS

The height of a lavatory shall be no more than 34" above the floor and have 27" of knee clearance. Faucets shall be single lever type. Trap and hot water lines shall be shrouded for protection against user contact.

DOORS

A minimum of 32" is required when a door is opened to a 90 degree position. All doors shall have lever type locks. Swing free hinges are optional.

SHOWERS

See Bath Modifications.

WALLS

All applied components (corner guards, wainscots etc...) shall be installed per manufacturer' specifications. A permit will be required if the wall being altered is a structural wall.

ADA SPECIFICATIONS

1000: WHEELCHAIR RAMP

Contractor to provide ramp where indicated. The maximum slope of ramp shall be 1:12. The maximum rise for any run shall be 30". The minimum clear width of ramp shall be 36". The ramp shall have level landings at the top and bottom of each run. Landings shall be a minimum of 60" in either direction. If ramp has a rise of greater than 6" or a length greater than 72", it shall have handrails on both sides. The clear space between a rail and wall shall be 1-1/2 ". The gripping surface shall be continuous. Top of handrails shall be between 34"-38". Ramps or landings without

rails shall have curbs a minimum 2". Outdoor ramps shall have landings and approaches with sufficient fall so that water will not pond on surfaces. Transitions between surfaces shall be no greater than 1/4" in height.

1005: PATHWAY RAMP

Provide and install pathway ramp. Installation to include drilling of pilot holes needed for pin or bolt attachment to structure or vehicle. Pathway ramps shall not exceed 72" in length. Check for load capacity as needed.

1010: SUITCASE RAMP

Provide and prepare for installation a briefcase or portable bi-fold ramp. Installation to include drilling of pilot holes needed for pin or bolt attachment to structure or vehicle. Demonstrate installation and breakdown of unit to ensure that owner is aware of how to set up and use. Check for load capacity as needed.

1015: PORTABLE TRACK/S

Provide and prepare for installation a portable track set. Installation to include drilling of pilot holes as needed for pin or bolt attachment to structure or vehicle. Demonstrate installation and breakdown of unit to ensure that owner is aware of how to set up and use. Check for load capacity as needed.

1020: RUBBER THRESHOLD

Provide and install EZ-Access THRBE 150-1 rubber threshold wedge ramp where indicated. Ramp shall be 1-1/2"x14"x40" (H x L x W). Ramp shall have a bariatric capacity of 850lbs. Cut to appropriate depth to accommodate rise of barrier. Should rise exceed 1-1/2" order the THRBE 250-1 (2-1/2"). Secure with exterior rated screws with washers for deck or pancake headed blue screws for concrete applications.

1025: DIAMOND PLATE THRESHOLD RAMP

Provide and install a 36"x8" stainless steel diamond plate threshold ramp. Secure at each corner. Use pancake head blue screws if anchoring to concrete surfaces. Provide secure weather resistant backing mid-span for bariatric patients.

1030: STAIRLIFT

Contractor to provide and install a stair-lift where indicated. Unit to include extruded aluminum track mounted to stairs per manufacturers specifications.

Provide VAC grounded 110 outlet as needed. Unit to include handheld control with limit switches top and bottom of run. Unit shall have a 500lb capacity with high back swivel seat, foot and armrests and provide a 5 year parts / 10 year power train warranty. Contractor shall be responsible for relocating original handrail as needed.

1035: PLATFORM LIFT

Contractor to provide and install a vertical platform lift where indicated. Installation to include electrical service to unit and hook up. Unit to include frame, non-skid platform (36"x48"/36" x 56"), 750lb capacity, AC belt driven ball screw drive system with battery backup, powder coat finish, drop down gate/ramp, control panel, fold down thresholds, shut down sensor, top landing gate, and UL listing to accommodate the desired landing to landing height. Controls shall be operated by key and remote. Install per manufacturers specifications.

1040: CEILING LIFT

Contractor to provide and install ceiling track lift. Unit shall be rated a minimum of 400lbs and configured per occupational therapist or case managers instructions. Track shall have charging station, charger power supply, circuit protection current limiter and be securely attached to overhead framing per manufacturers specifications. Drive motor to have adjustable displacement speeds, LED indicators, auxiliary lift controls, emergency stop cord, carry bar and ABS casing. Strap length to be a minimum of 90". Unit to include infrared remote handset.

1045: HOYER LIFT

Contractor to provide and assemble a manual Hoyer Lift. Unit shall have an adjustable base width, easy roll coasters, 6 point body sling, 6 point cradle, 400lb capacity, hydraulic patient lift, stainless steel finish/powder coat, and a minimum 3 year warranty.

1050: BATH LIFT

Contractor to provide, assemble and install a battery powered reclining bath lift. Unit to include battery, motor, control console with safety systems check and illuminated indicators. Chair shall include adjustable padded back rest, padded seat with opening side panels for transfer, and have a payload capacity of 300lbs. Unit to rest on provided cover mat and suctioned feet to protect surface of tub and prevent slippage. Contractor to ensure tub will accommodate the dimensions of the unit before ordering and or installing.

1055: GRAB BAR

Provide and install grab bar/s where indicated. Bar shall have slip resistant surface and be placed as directed by occupational therapist or case manager. Bar shall be 1-1/4" diameter, length as applicable, and stand off from the wall 1-1/2". Secure ends per manufacturers specifications to framing or backing and seal with caulk and or escutcheon.

1060: GRAB BAR (FIBERGLASS APP)

Provide and install grab bar/s for fiberglass enclosure. Use a fastening system that will exceed building code criteria for the installation of grab bars in an acrylic fiberglass surround (Wing-lts or other). Use a stud finder to ensure that wall framing will not interfere with the operation of the anchoring device and install in accordance to manufacturers' instructions. Ensure that the owner of the property is aware of the nature of the installation of this system and has granted permission.

1065: SUPERPOLE

Provide and install a 90" x 1-1/2" diameter white powder coated steel Super-pole. Unit shall have 20" washable, latex free grip and have an expansion mechanism that will extend range up to 99". Unit shall have a minimum 20" top plate and be mechanically secured to framing with screws or bolts. The pole shall have a 5" non-marking rubber ribbed base plate and have a bariatric weight capacity of 450lbs. Consult, client, occupational therapist, or case manager for location and enquire about optional articulating drop down bar. Install per manufacturers' instructions.

1070: ADVANTAGE RAIL

Provide and install an adjustable height (30"-38") x 1-1/2" diameter, white powder coated steel Advantage Rail. Unit shall have a 16" washable, latex free articulating grip housed in a 28," 2-1/4" mast that locks into 8 positions every 45 degrees. The floor plate shall be 7-1/2" in diameter and have a screw pattern of 6, 3/8" bored holes. The pole shall have a bariatric weight capacity of 450lbs. Consult client, occupational therapist, or case manager for location. Install per manufacturers' instructions.

1075: FOUR POINT BAR

Provide and install four point straddle bar. Unit shall be 22"to 30" W x 22" D x 28" H. Unit to be constructed of 1-1/2" satin finished stainless steel with an adjustable cross bar and concealed screw mounts. Install per manufacturers specifications.

1080: SHOWER CONVERSION

Contractor to demo and dispose of fiberglass/steel tub/shower enclosure and sheath walls in 15/32" CDX plywood. Provide and install shower pan and three wall bath system (American Bath Industries of equivalent). Work to include shower pan, interlocking three piece enclosure and accessories as needed. Size pan and enclosure in a manner that will eliminate drywall and floor repair. Provide and install one horizontal stainless steel 1-1/4" grab bar on each wall. Provide and install a chrome plated single handle mixing valve with scald guard, and height adjustable handheld shower head on a slide bar. Install per manufacturer's instructions and caulk perimeter of enclosure and shower pan with appropriate colored silicone sealant. Unit to be backed be a 5 year warranty.

1085: ROLL IN SHOWER

Contractor to demo existing shower/tub enclosure and provide and install a wheelchair accessible shower. Work to include a reinforced acrylic, barrier free pan sized to fit the space. Work to include a reinforced panel kit with interlocking corners, and any necessary trim accessories. Installation to include wheelchair ramp and flexible threshold, padded fold down seat (optional), a stainless steel 1-1/4" bar on each wall, a single lever chrome plated mixing valve with scald guard, and height adjustable shower head on a slide bar. Unit to be backed be a 5 year warranty.

1090: ADA TOILET

Provide and install an ADA or comfort height toilet where indicated. Unit shall be high profile design with UL tested flushing mechanism, elongated seat, 2" flush valve, 2-1/4" glazed trap way, and provide complete tank trim with coupling components. Install on new wax ring with neoprene washer, brass bolts, and new supply lines.

1095: BARIATRIC COMMUNE

Provide and install a bariatric commode. Unit shall have a capacity of 650 lbs. Base: 30". Between Arms: 27". Floor to Seat: 16-1/2"- 20-1/2". Overall Height: 25"-28-3/4". Seat: 22" W x 18-1/2" D. Seat Opening: (" W x 12" D. Seat Arm: 8-1/2" H.

1100: BIDET

Contractor shall locate a dedicated 120 volt GFIC receptacle 6" above the floor and within 32" of the toilet ledge. Provide and install an elongated closed front seat

bidet with 2 spray wands with adjustable water pressure (20-80psi), temperature control and pulsate functions. Unit shall have a heated seat, automatic night light functions, anti-microbial seat and nozzle construction, color matched keypad, power cord and water supply hoses.

1105: BARIATRIC SEAT

Provide and install stainless steel bariatric toilet seat support. Unit to be rated 700lbs. Unit shall be powder coated stainless steel construction with four threaded adjustable feet and adjustable rubber bumpered wall arms. Ensure that unit is bearing on all six points.

1110: ADA SINK

Provide and install a wall hung ADA sink where indicated. The rim or counter surface height of sink not to exceed 34". Knee clearance beneath the sink shall be a minimum 27" in height. Sink width shall be 30" and depth 19". Exposed hot water supplies must be insulated or otherwise routed to avoid contact with user. There shall be no sharp edges or abrasive surfaces below the sink. The faucet must be easily operated with one hand and not require tight grasping or twisting motions.

1115: DOOR MODIFICATION

Remove existing door/s where indicated and replace with like material, style and finished unit/s. Core to be corrugated construction arranged in diagonal cells. Hardware to include 2/3 butt hinges as needed. Move electrical components as needed. Add ADA passage lockset if requested. Door to operate freely, close tightly and have even margins around perimeter. Work to include the patching or repair of original door frame footprint left in floor.

1120: SWING CLEAR HINGES

Contractor to remove existing hinges from door where indicated and replace with expandable swing-free hinges.

1125: SLIDING GLASS DOOR CONVERSION

Remove and dispose of existing 60" sliding glass door. Supply and install 1 3/4" insulated, 6 panel, pre-hung metal panel door with a fixed 2-0 side panel. Door to be installed as per manufacturers' instructions. Include keyed alike deadbolt and doorknob. Supply and install peep hole at a location determined by the

homeowner. Paint door and the exterior trim with two coats of exterior semi-gloss latex enamel to match existing.

1130: POCKET DOOR

Provide and install a 36"x80" pocket door where indicated. Contractor to remove finished wall surface adjacent to door and modify framing to accept door frame. Relocate electrical and plumbing as needed. Install door frame kit. Kit to be rated up to 200lbs and include 1-3/8" door, convex track rails, self-adjusting floor anchors, steel wrapped upright studs, and tricycle hangers. Door to match existing in appearance and finish. Cover effected wall area and restore finished surface to match surrounding area. Provide and install pocket door jamb kit and case to match that of existing.

1135: WALL MOUNT DOOR

Provide and install a 36"x80" wall mount sliding door. (Johnson #2610). Attach aluminum convex door track above the door per manufacturers' instruction by screwing through the mounting flange into framing. Ensure that track is level. Mount matching 1-3/8" door no heavier than 125lbs by tricycle wheel hangers. Cover door track with valence to match surrounding millwork. Provide and install door jamb kit and case to match existing. Install track mounted stop and door guides and ensure that door operates freely without rubbing or catching.

1140: HANDHELD SHOWER HEAD

Contractor to provide and install a handheld shower head, hose and chrome plated slide bar. Bar shall be a minimum of 24" in length. Unit shall have a 60" hose attached to the shower neck and a spray head with multiple spray patterns that clips to the slide bar.

1145: BATH BOARD

Provide and install an adjustable polypropylene bath board. Unit shall be sized to accommodate tub width and be 12"-14" wide with drainage holes to prevent ponding water. Board shall have a weight bearing capacity of 330lbs.

1150: STAINLESS CORNER GUARDS

Provide and install 36"x 2" 90 degree stainless steel corner guards where indicated. Edges to be buffed smooth and be free of cut hazards. Secure through four counter sunk pilot holes per side with flat or oval head screws turned flush into framing.

1155: CORNER GUARDS

Provide and install corner guards as indicated. Units to be class A rated vinyl surface mount type, 40" in length with textured closure caps top and bottom. Units to include aluminum retainer and snap on high impact vinyl cover. Install above existing base per manufacturers specifications. (see Hirshfield or other).

SITE STANDARDS

PHYSICAL CONDITION STANDARDS

EXTERIOR

All exterior areas and premises shall be maintained in a clean, safe, and sanitary condition free of garbage, debris, or items that would endanger the health and safety of the residents or surrounding households.

DRAINAGE

Any deficiencies in grading of hardened surfaces adjacent to the building shall be corrected to ensure surface drainage away from foundation walls and the prevention of soil saturation detrimental to structures and parcel use.

SITE IMPROVEMENT STANDARDS

All excessively cracked or crumbly concrete areas shall be replaced or repaired, and any irregular or uneven concrete walk sections shall be made safe. All cracked, crumbling, or deteriorated concrete or wood steps that pose a threat to the occupants shall be replaced or repaired.

FOUNDATION & PIER

All foundation walls shall be sound and resist the entrance of water or moisture into a basement or crawl space area. If settling significant enough to effect operation of windows or doors has occurred, remediation may be an option if such measures fit within the amount of funds available.

ELIGIBILITY EXCEPTIONS

If during the course of construction, an item normally deemed ineligible for funding due to function, purpose, or lack of association with the living space, becomes

damaged, moved, or destroyed, it is considered appropriate to repair, re-set, or replace said item to its original intent and condition.

PERFORMANCE STANDARDS

CONCRETE

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

The load bearing capacity of the soil shall determine the type of footing, foundation or slab system used. Soils of low bearing capacity necessitate provisions for greater load distribution. On fill material, footings, shall extend to undisturbed soil unless the fill has been sufficiently compacted to insure against excessive differential or overall movement of the structure. Refer any questions to the local building department.

Concrete shall be standard, air-entrained Portland Cement Concrete with water cement ratios as recommended by the Portland Cement Association for the particular application. Aggregate shall be clean and free from organic or other harmful material. No concrete shall be placed on extremely wet or frozen ground, and no concrete shall be placed when the temperature is less than 40 degrees F or greater than 90 degrees F, unless it is properly protected and controlled for such weather in accordance with the recommendations of the American Concrete Institute and the Portland Cement Association. Formwork shall be true to lines and grades and be properly braced and rigid to prevent displacement. Forms shall be constructed so as to not damage concrete when being removed. Concrete shall have proper slump when placed in forms. Concrete for footings and porch-deck slabs shall have a 1-2 inch slump; concrete for sidewalks, driveways and slabs on grade shall have a 2-4 inch slump. However, in no case shall the slump be more than 4-inches. Concrete shall not be deposited in forms from a height greater than

3-feet. All concrete shall be vibrated to prevent honeycombing. After placement, concrete shall be screened to proper elevation. During cold or hot weather, steps shall be taken to maintain appropriate curing temperature and rate of water evaporation. After forms are stripped, honeycombed or defective work shall be immediately repaired. After the rods have been removed, holes shall be plugged or patched with the proper mortar mix. All fins and irregularities shall be removed from concrete. Quality and finish shall be in accordance with recognized standards.

Upon completion of work, concrete surfaces shall be swept clean. All loose concrete particles, mortar, plaster and other foreign matter shall be removed, and concrete slabs shall be washed with water. After drying, the slabs shall be swept clean.

Contractor shall do all cutting and patching into concrete or masonry surfaces as required for the job. The Contractor shall fire-stop all openings where pipes or ducts pass through walls or floors.

FENCE

Fences must have a purpose that will satisfy eligibility requirements for HOME funded projects and must meet local codes and ordinances for height and materials. A fence over 72" in height will require a permit.

MASONRY

All masonry work shall satisfy all local codes and ordinances for design and seismic integrity.

PEST

All pest control treatment shall be administered by a certified exterminator according to national and state standards and procedures. Provide a certificate stating the nature of the infestation and the chemical treatment used and a schedule of all possible follow up or maintenance visits.

SET MOBILE

Secure proof of purchase and a certified installer with an approved WAINS number. Ensure that the project meets all county requirements including fire flow, certificate of water availability, CARLS, SEPA, and landslide hazard, the move must satisfy all L&I requirements and Pierce County Planning and Land Development regulations and finals in terms of anchoring, setbacks and site development standards. Project

complete when certificate of occupancy is obtained. Ensure set back are per county rural 5, 10, 20 and rural separator regulations.

LEVEL MOBILE

Contractor to use opposing wood wedges at bearing points to bring building back to level. Standard for elevation difference is 1:50. Ensure that all blocking and tie downs are installed per code.

DRIVEWAY APPROACH

Construct approach in compliance to Pierce County Public Works & Utilities, Standard Drawings, Section F1.1.

GAS SERVICE

All gas work to be permitted and in adherence with Puget Sound Energy guidelines.

DEMOLITION

All pre-78' demolition work shall be tested for lead paint and asbestos to determine disposal protocol. All material associated with the specification shall be disposed of off-site in a legal manner. If the demolition is greater than 120 sq ft, an asbestos survey shall be conducted prior to demolition. If asbestos is found, notification of the PSCAA is required and the contractor must follow all asbestos disposal regulations and a chain of custody provided to the Housing Rehabilitation Specialist for his or her file.

BOARDING UP HOME

Contractor shall cover all windows and doors with ½ cdx plywood attached to framing perimeter with #10 star-drive screws and minimum 1" zinc plated washers at 12" on center. Post no trespassing sign that are visible from the road.

SIGNAGE

All signage shall be posted per county guidelines.

STREET NUMBERS

Street numbers shall be a minimum of 6" in height and be posted in a manner that is visible from the road.

WELL

Contractor to drill to water table and install casing per TPCHD specifications. Install submersible 3 wire pump, check valve and controls. Provide water samples and a finalized permit for the file.

SIDE SEWER

Use a properly scheduled 4" sewer pipe with a fall not to exceed ¼" per foot. Ensure that your grade is correct, and the bottom of the trench is compacted. Connect the pipe lengths from bottom to top. Bed the pipe in sand or gravel and compact again. Backfill the trench, export soil as needed, restore site with existing material, rock rake, and apply erosion controls as needed. All sewer work will require a permit.

WATER LINE

All water line shall be ¾" nsf poly plastic with brass couplings. Water line shall be bedded in sand for protection and compacted. Bury caution tape 1ft above water line. If crossing a sewage line, the run must be encased in concrete.

DECOMMISSION OIL TANK

A residential oil tank less than 1100 gallons may be filled in place. Pump as clean as possible and fill with pea-gravel or slurry. Remove riser and cap opening. Check with the local fire department of Marshall for alternate methods.

SITE SPECIFICATIONS

2000: PROVIDE AND INSTALL INTERIOR REINFORCED CONCRETE SLAB

Provide a reinforced concrete slab per approved plan. Concrete to be standard five sack (2500 psi) mix with reinforced coil wire mesh placed in center of pour. Steel trowel finished. Install per IBC or IRC requirements.

2010: PROVIDE AND INSTALL CONCRETE RETAINING WALL

Provide reinforced concrete retaining wall and footings. Follow engineered guidelines and current code. Clean up any site debris resulting from the project.

2020: PROVIDE AND INSTALL CONCRETE FOOTING

Provide a reinforced concrete footing according to current IBC or IRC guidelines and local code. Clean up any site debris created by this project.

2030: PROVIDE CONCRETE FOOTING AND FOUNDATION WALL

Provide a reinforced concrete footing and foundation wall. All work to conform to local building code requirements and approved agency plan.

2040: PROVIDE CONCRETE FOUNDATION WALL

Provide a reinforced concerted foundation wall. All work to conform to IBC or IRC guidelines and local code.

2050: REMOVE AND REPLACE FOUNDATION WALL/OR FOOTING

Remove damaged foundation wall. Support adjacent surfaces. Provide pre-cast concrete foundation wall. Wall to be reinforced vertically and horizontally. Fasten wall to footing with appropriate fasteners. Contractor to contact bidding agent for wall design. All work to conform to local building code requirements.

2060: INSTALL FOUNDATION VENT

Install foundation vents as per current code and or approved plan.

2070: REMOVE AND REPLACE EXISTING PATIO

Remove and replace existing patio. Prep sub-surface as required. Slope to drain away from the foundation. Dispose of debris in legal manner according to county/city guidelines.

2080: REMOVE AND REPLACE CONCRETE DRIVEWAY SLAB

Remove existing concrete driveway/slab. Dispose of debris in a legal manner per county/city regulations. Prepare sub-surface as required. Provide a concrete driveway/slab. Concrete to be a minimum of 3-1/2", minimum five sack (2500psi) mix. Concrete surface to be sloped to drain, as per county code, edges finished smooth and driveway surface broom finished. Protect against elements.

2090: CONCRETE WALKWAY

Supply and construct a concrete walkway. Prep and dispose of soil, rock and debris off site. Concrete to be a min of 3-1/2" thick and to be ___" wide. Slope to drain surface, finish edges smooth, sidewalk broom finished, forms removed, soil/sod restored. Protect from the elements when pouring. Concrete to be 5 sack mix.

2100: CHAIN LINK FENCE

Supply and install 2 1/4" mesh galvanized steel chain link fence. Install per manufacturer's recommendation. The fence posts shall be a minimum 16 gage and be set in a 6" diameter hole in concrete to a depth of 16". Fence to be 5' high with posts set at 10' intervals with a top bar and the bottom of the fence at ground level. The gate(s) shall be 4' wide and have a gate fork latch.

2110: FENCE

Supply and install cedar fence as marked. Dig a hole approximately 8" in diameter, 24" deep. Place the incised .40 ACQ pressure treated 4x4 posts (8' o.c.) in the hole. Mix concrete as per the manufacturer's recommendations and place evenly around the post. Make sure that the post is plumb in both directions. Allow the concrete to cure as per the manufacturer. Supply and install three .40 incised pressure treated 2x4 rails that are screwed with either hot dipped galvanized, zinc coated or stainless screws. Make sure that the rails are level. Attach the 5/8"x5 1/4"x6' boards with four hot dipped galvanized nails or screws. The bottom of the fence boards shall not contact the ground.

2200: PROVIDE AND INSTALL CONCRETE BLOCK WALL

Provide 8"X8"X16" standard 2 core reinforced block with 9ga. metal ladder reinforcement every other course. Use a 1/2" bond and a 3/8 concave mortar joint. When mortar has hardened, clean all residue from face of block. All work to conform to local building code requirements.

2210: REPAIR CONCRETE BLOCK WALL

Re-point and repair concrete masonry unit wall. Cut-out cracked, damaged, spilled, or missing mortar to a depth of at least 1". Blow clean with 60 PSI air or brush clean with appropriate brush to remove all dust and debris. Moisten block with clear water adjacent block. Mix Portland cement mortar-sand mix to a workable consistency. Place mortar in bed and force into joint. Tool to match adjacent surfaces. Do not place mortar when temperature is below 40 degrees F. When mortar dries, brush off residue remaining on block.

2220: PROVIDE & INSTALL CONCRETE BLOCK WALL (2)

Provide nominal 8"X8"X16" standard Z core reinforced 1 with block retaining wall. Cores are to be fully grouted and reinforced with #4 rebar every other core. Vertical reinforcement to be attached to horizontal reinforcement in footing. Footing to be

concrete set below the frost line and on undisturbed soil. When mortar has hardened, clean all residue from face of block. All work to conform to local building code requirements. All work to conform to the IRC and local codes.

2300: POSSUM REMOVAL FROM CRAWL

Start the work one hour before dark. Seal all foundation vents with cardboard or plywood or plastic. Remove entry door to the crawlspace. Enter the crawlspace as far as possible without ticking off the possum. Make sure that the possum does not get between you and the crawlspace opening. If the possum does get between you and the opening,,make a new opening ASAP. Set off three bug bombs as you leave the crawlspace. Leave the door off the crawlspace. Go watch a rerun of Bay Watch or other heavy drama on TV for an hour or two. Reinstall the door to the crawlspace. Open all the foundation vents.

2310: PEST CONTROL

Apply treatment according to national and Washington state pest control standards and procedures. Provide a certificate from the company applying the pest control chemical treatment as to the applicability, content, and date of the application.

2400: SET MOBILE

Contractor shall arrange to move and set mobile. Work to include tear down of existing porches, skirting, and unblocking of mobile. Contractor to arrange site work preparation that provides staking, gravel bed, runners, and 5% grade over 10ft to allow for positive storm water drainage away from building. Move to include all permits, tax cert, trucks, pilot cars/drivers, crawler, axels, wheels and tires. Provide vapor barrier, block, level, tie down, bolting of undercarriage and ridgeline, inside and outside trim/finish, shingle centerline with matching 30yr product, relay carpet, and any needed painting. Hook up all utilities and obtain finals for electrical, septic/sewer, water, site development, and blocking/foundation. Provide and install vinyl snap lock skirting and porches with landings to code. Call for final. Obtain certificate of occupancy from county before final retainage.

2410: EXCAVATE FOR FOUNDATION

Excavate soil for foundation system. Soil to be removed to specified elevation on drawings/specs. Where footings are placed, the soil shall not be disturbed to a depth greater than 1". Excavate only to required depth. Elevation standard between

high and low elevations shall be 2" within a 50' radius. Stage spoils in a manner that will aid in backfill. Export spoils as needed.

2420: LEVEL HOME

Contractor to determine high point of home and raise entire perimeter and all interior bearing points to that elevation. Install cribbing or temporary supports as needed and connections all necessary components to the foundation, pads or blocking in compliance to local building code.

2430: FOUNDATION DRAIN LINE

Provide 4" perforated ABS poly flex pipe sloped to drain 12" below grade. Provide 8" deep, 16" wide bed of 3/4" gravel while ensuring pipe is centered in installation. Holes to face gravel bed above pipe. Cover gravel bed with filter fabric and backfill in 6" compacted lifts.

2440: SITE DEBRIS CLEANUP

Remove all debris or refuse generated by work performed or related to this job. This removal shall include organic and inorganic materials. Dispose of said material in a manner consistent with county/city ordinance.

2450: PROVIDE GRAVEL DRIVEWAY

Provide gravel driveway according to existing surface needs and county codes.

2460: DRIVEWAY APPROACH

Contractor to provide and construct a driveway approach to county specifications. Approach shall accommodate a minimum 15' wide driveway and have 10' radius sweeps to pavement edge of street. Approach shall consist of a minimum 2" compacted asphalt layer over a minimum 2" compacted crushed 5/8 minus binder. Approach shall not drain onto road surface. Contractor should reference Pierce County Public Works & Utilities standards drawing Section F1.1 for further details and applicability.

2470: PROVIDE AND INSTALL NEW GAS SERVICE

Provide and install new gas service for entire structure. Include taps, line from supply through structure wall, shut-off valves and gas meter. Fill all trenches, grade smooth and seed. Contractor is responsible for notifying the proper authorities of

disconnect, securing permits, and locates. Contractor shall repair all damaged surfaces to original condition. All construction related debris shall be removed from the site.

2480: REMOVE CARPORT

Remove and dispose of entire carport. This includes all roofing, structure, and fasteners. If the structure is not to be reused, cut the members off flush with the paving and grind smooth, then fill any voids with like material. Repair any adjacent areas such as siding and trim that may have been disturbed.

2490: BOARDING UP HOMES

All windows, doors and any other opening as called out by the Rehabilitation Specialist shall be secured. All 4X8 material shall be a minimum of 1/2 inch CDX plywood. The plywood shall cover the entire window, door or other specified opening. The plywood shall be attached with #8 or #10 star-drive screws with a fender washers on each screw. The plywood shall be attached to the framing members of the home. The screw shall penetrate the framing material by at least 1 1/2" inches. Nailing shall not be permitted. A Pierce County "NO TRESPASSING" sign, supplied by the County, shall be mounted on the front of the building. The sign shall be attached in the same manner as the plywood.

2500: INSTALL MAILBOX

Provide mailbox where indicated. Mount box per manufacturer Recommendations and USPS regulations. Box to be installed straight and level.

2510: INSTALL PRIVATE STREET SIGN

Signage must meet county specifications.

2520: INSTALL HOUSE NUMBERS

Provide minimum 6" metal house numbers in a prominent place facing the street. Numbers to be installed in a straight and legible manner. Numbers to be secured with brass, galvanized steel or aluminum fasteners (assure material compatibility).

2600: DANGEROUS TREE REMOVAL

Note: Tree removal does not include removing the stump unless its removal is also listed in the work schedule. When trees are removed, they shall be cut down to a

point as close to the finish grade as possible. All debris shall be removed, and the entire area shall be raked and/or broom-swept clean.

2610: INSTALL WATER WELL & PUMP

Provide water well and pump. Contractor shall be responsible for drilling well to appropriate depth-no less than 50ft, applying for permit, testing samples, and complying with all local health requirements, installation of well casing, submersible 8gpm, 3 wire, 1/3hp pump with control boxes, check valve, and 12 mos. warranty. Pump standard is Teel 8 GPM series group D240V or equal, precharged 20 gal water pressure tank located inside building. Work also to include the installation of a grounded 3 wire 240V 30amp underground service. Water line shall run from pump into the home. All work shall comply with local plumbing codes and requirements of NEC and local health agencies. Grade, seed, straw and water disturbed soil.

2620: PROVIDE AND INSTALL NEW WATER SERVICE

Supply and install a new 3/4" Nsf Poly Plastic waterline from the meter to home. Acquire all permits required by the local jurisdictions and include all fees. Provide brass gate valve shut-off at house. Restore site to original elevation, rake off and remove from site all stone and debris related to work performed. Line to be placed in sand/gravel bed or 1" foam pipe insulation before backfilling.

2630: REPLACE WATERLINE

Supply and install a new 3/4" Nsf Poly Plastic waterline from the meter to home. Acquire all permits required by the local jurisdictions. Provide brass gate valve shut-off at house. Restore site to original elevation, rake off and remove from the site all stone and debris. Place line in sand/gravel bed or 1" foam pipe insulation before backfilling.

2640: REPAIR EXISTING WASTE LINE

Repair existing waste line. Seal all joints to stop and prevent leaks. Replace deteriorated sections with new matching materials. Restore site to original condition.

2650: PROVIDE AND INSTALL WASTE SERVICE

Provide PVC/ABS tight line. Size and install per code and usage. Contractor to excavate, place pipe, arrange inspections, backfill, and restore site to original condition.

2660: PROVIDE AND INSTALL SIDE SEWER CONNECTION

Supply and install a side sewer connection from house to existing county stub-out. Size pipe and install per local codes. The main shall be encased in concrete per code wherever water lines are crossed. Contractor to excavate, place pipe, arrange inspections, backfill, and restore site to original condition. Work to include asphalt / curb and gutter / sidewalk repair as needed. Export of spoils and import of structural fill as needed. To include any compaction, bonds, permits, fee's, and staking as required. Rake off and remover all rocks, stones and debris from the site and restore to original appearance. Homeowner to reseed or provide ground cover for disturbed area.

2670: DECOMMISSION OIL TANK

A tank may be filled in place if it has a capacity less than 1100 gallons and has been out of service for less than one year. Check with the local fire marshal and/or building department for permitting requirements. Pump the tank completely and clean. Fill the tank with an approved inert material (pea gravel or other) and cap. All oil, rinse water, and sludge must be disposed of properly. Obtaining proper permits is the responsibility of the owner unless the contractor includes this process in their service.

2680: REMOVE OIL TANK

Check with the local fire marshal and/or building department for permitting requirements. Pump tank dry and properly dispose of contents. Excavate around tank to allow for removal while ensuring that area underneath tank does not become covered. Take soil samples to test for leakage. If contaminated move on to remediation. If clean, backfill with compacted 6" lifts until original grade is achieved. It is recommended that the removal process be recorded with photos and that the owner obtain documentation of the soils test and the proper disposal of the tank.

EXTERIOR STANDARDS

EXTERIOR BUILDING STANDARD

All building exteriors shall be maintained in good repair and shall be structurally sound and sanitary so as not to pose a threat to the health, safety, or welfare of the occupants and to protect the occupants from adverse effects of their environment.

EXTERIOR WALL CLADDING STANDARD

All exterior siding materials shall be free of holes, cracks, broken or rotted materials which might admit rain or dampness into the walls or occupied spaces of the building. Recalled products may be replaced if funding is available.

PAINTING STANDARD

All painted surfaces shall be free of peeling, chipped, or blistered paint. Coatings shall block the intrusion of moisture through the siding and into the interior. Any mold or mildew on the siding surface does not constitute repainting and is the responsibility of the homeowner.

WINDOW STANDARD

Every habitable room (a space used for living, sleeping, eating, or cooking but not including bathrooms, halls, storage rooms, utility rooms, and recreation rooms) shall have at least one open-able window. Any openable window shall be equipped with a screen.

All windows including hardware shall operate satisfactorily and give evidence of continuing acceptable service. Defective glass or locking mechanisms shall be replaced or corrected. All window glazing shall be weather-tight, without cracks or holes, and windows shall not allow the significant entry of air or water.

EXTERIOR DOOR STANDARD

All exterior doors, including hardware, shall operate satisfactorily and give evidence of continuing acceptable service. Defective glass shall be replaced. All exterior doors shall have locks that are in good repair and be capable of tightly securing the door. For the purposes of egress, locks shall be readily operable from the inside without the use of keys. All exterior doors shall be weather-stripped so that there is no significant entry of air or water into the structure.

PORCHES, DECKS, AND BALCONIES STANDARD

All exterior porches, landings, decks, and balconies in deteriorated condition or which pose a threat to the health and safety of the resident, or which serve no useful purpose to their owner shall be removed corrected.

ROOF STANDARD

All roofs shall have a watertight and reasonably durable covering free of holes, cracks, excessively worn surfaces, or other defects that indicate a potential for the infiltration of rain or excessive moisture into the structure. A roof, or portion of a roof that is not expected to remain watertight for a period of five years shall be replaced.

GUTTERS AND DOWNSPOUTS STANDARD

Every home shall have a controlled method for the disposal of water from the roof where necessary to prevent damage to the property. All deteriorated gutters and downspouts which may allow the significant entry of water into or under the structure shall be replaced. Downspouts that cannot be connected to drain tile shall terminate at splash blocks in conjunction with proper site grading.

CHIMNEY STANDARDS

All chimneys must be structurally safe, durable, smoke-tight, and capable of withstanding the action of flue gasses. If masonry, any loose or powdery mortar shall be tuck pointed.

PERFORMANCE STANDARDS

ROOFING

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

All mobile home roof replacement applications require a permit from Labor & Industries. Roof replacements in unincorporated Pierce County do not require permits if the application is under 700lbs per square. The contractor should check

with the building department for local town and city requirements. Coatings do not require a permit. All structural repairs to a roof will require a permit.

ASPHALT

All asphalt roofing applications shall be performed in strict accordance to manufacturers' specifications in terms of substrate, vapor barrier, valley applications, flashing, and fastening as these items pertain to slope, wind conditions, or various intricacies called out in the work order or the local permitting agency. Architectural shingles may not be applied to a slope of less than 4:12. A minimum 30 year roof shall be applied in all cases. A three year warranty on labor shall be applied. All job related debris shall be removed from the job site. Gutters and downspouts shall be cleaned at jobs end and the contractor shall ensure the free operation of all roof vented fans to ensure that construction debris has not hindered operation of same.

METAL COATS

Inspect roof for non-compatible coatings. Remove all organic matter. Lap seal and fiber mesh around all penetrations. Apply specified product in accordance to manufacturers' recommendations. Clean all gutters and downspouts and remove all construction related debris. Provide a minimum three year warranty on all labor.

EPDM

(Ethylene propylene diene monomer) roofing minimum slope: ¼:12. EPDM must comply with ASTM standards. Provide a ten year material warranty per layer.

MOSS

Moss shall be treated with a product approved by the EPA or local health department and removed when ready in a manner that will not compromise existing roofing material.

TORCHDOWN

New Torch down roofing material shall be installed by a factory approved installer, according to current manufacturer recommendations and/or UBC sections 1501 to 1513, and Tables 15-E, 15-F, and 15-G. Inter-ply bitumen must be installed by a certified roofer in continuous firmly bonded film with no voids between plies of material. Approximately 25lbs of asphalt per square is required. The temperature must be maintained at manufacturers' proper range.

STANDING SEAM

Contractor shall provide and install a standing seam roof over a bare deck. All vapor barriers, clips, boots, flashing, and rake components shall be installed in accordance to manufacturers' specifications.

GUTTERS & DOWNSPOUTS

Gutters shall be 22 gauge continuous 5" metal k-line profile attached mechanically every 4' with a slope of 1:15. Downspouts or drops shall be spaced no more than 30', be mechanically fastened to the side of the building, and shall terminate with an elbow on splash block directed away from the building.

BUILT IN GUTTER

Repair all sheathing with AC/CDX plywood. All scuppers shall be galvanized and mopped and fastened securely. Seal alligatored surfaces with a new hot mop application.

ROOF SHEATHING

Roof sheathing shall be replaced with ½" CDX plywood fastened with 8 penny galvanized nails at 6" o.c. at the edges and 8" o.c. in the field. Soffit material shall be ½" ACX (good face down).

ROOF TRUSS

All roof truss repairs shall come with engineered stamped calculations or be signed off as replication the original factory design by Labor & Industries in the case of a manufactured home and shall be permitted.

FASCIA & BARGE

All fascia and barge board shall be dimensionally consistent with existing and shall be of a rot resistant species or a primed white wood. All vertical cuts shall be plumb and miters parallel within 1/16".

CORRUGATED AWNING

Awning material shall be corrugated polycarbonate material applied per manufacturers' instructions

CHIMNEY

CHIMNEY CERTIFICATION

Chimney safety inspections shall be performed by a licensed specialist and include a written statement as to the condition and functionality of an existing chimney.

CHIMNEY SWEEP

Chimney shall be cleaned by a licensed specialist. All accumulation of creosote and soot shall be removed and contained in a manner that keeps the interior atmosphere of the home safe.

CHIMNEY CAP

Caps shall be galvanized 22 gauge steel sealed at all points of penetration with a high heat silicone.

TUCKPOINTING

Remove all loose mortar and organic material and replace with new mortar mix designed to meet ASTM C 270 type N mortar. Strike joints to compact material.

SIDING

INTENT

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

Remove all damaged sections before repairing existing siding. Wall sheathing beneath must be solid. Repair as necessary. New siding shall match existing as closely as possible. Replace all trim incidental to this repair and caulk as necessary.

Check with the local jurisdiction for permitting requirements.

WOOD CLAPBOARD

Replace asphalt-saturated felt as necessary. New bevel siding can be either lapped or rabbet, depending upon the particular installation. Minimum head lap for lapped siding shall be 1-inch. Minimum head lap for rabbet siding shall be 1/2-inch. Nail siding to each stud with corrosion-resistant nails. Nails shall be long enough to penetrate at least 1-inch into studs. Butt joints of siding shall occur over studs. Stagger the joints in adjacent pieces.

WOOD SHINGLES AND SHAKES

Replace asphalt-saturated felt as necessary. Corrosion-resistant nails for single and double coursing should be long enough to penetrate sheathing. Use threaded nails over 3/8-inch plywood sheathing. When siding is double coursing, attach under-coursing with one or more 3d nails or staples. Joints shall be no closer than 1-1/2 inches to joint of under-coursing in the same course. Break joints in next course of single coursing at least 1-1/2 inches. Provide starter course at bottom of wall.

CEMENT BOARD SIDING (FLEXBOARD)

New siding shall be 3/16-inch asbestos cement board siding. Asbestos board installed over existing wood skirting either rotted and/or in contact with soil, is an improper installation. When siding is scheduled to be installed new, existing skirting is to be removed complete. Install sufficient framing or backing for new asbestos board. Any wood shall be at least 6-inches above grade.

CEMENT SHINGLE SIDING

New sections of cement siding shall be attached to sheathing with corrosion-resistant small head nails. Over the plywood sheathing, use threaded nails. Nails shall be long enough to penetrate sheathing. Embed siding in the caulking compound whenever siding butts against wood trim or masonry. Install asphalt-saturated, coated backer strips behind each vertical joint. A minimum head lap shall be 1/2 inch.

SIDING AND TRIM - ALUMINUM OR VINYL

When a house is scheduled to be resided, the openings shall be trimmed out with aluminum or vinyl as specified and all existing wood trim (fascia, soffit, corner, etc.) shall be covered with aluminum or vinyl unless otherwise noted.

When replacing damaged sections of siding, replace vapor barrier as necessary. When installing new siding, existing surfaces shall be made smooth and all rotted material shall be removed and replaced. Then apply building paper or felt over existing siding. All accessories used for the installation of new siding shall be provided. New siding shall be unbacked. Install as per manufacturer's recommendations. Provide for the escape of water vapor by ventilating each space behind siding. Ventilation may be obtained by weather protected horizontal openings or by the installation of siding over furring. Starter strip of siding shall be separated from foundation wall by a layer of sheathing paper or by a heavy bituminous coating. Ends of siding abutting wood trim shall be squarely cut and tightly fitted. Siding over heads of openings shall be installed as flashing and drip unless separate aluminum flashing is used.

HARDBOARD LAP SIDING

New hardboard lap siding shall be factory primed or can be pre-finished. Nominal thickness of siding shall be 7/16 inch. Install new siding by using furring strips over existing siding or by first removing it and then applying new siding. All existing material to remain must be solid to provide a firm and adequate nailing base. Use building paper or felt wind barrier when siding is installed directly to studs or over wood sheathing. Use starter strip at bottom edge. Bottom edge of first course of siding shall be 1/8-inch below starter strip. Butt joints shall occur over studs; adjacent pieces shall just touch lightly.

Stagger joints in adjacent pieces. A head lap shall be 1-inch. Nail the siding with corrosion resistant or stainless steel nails. Nails shall be long enough to penetrate at least 1-inch into studs. Inside corners shall be wood, outside corners can be metal or wood. Trim all openings and install flashing as necessary. Shim wherever siding butts against trim and caulk with a silicone sealant.

T-111 SIDING

Panels shall be APA exterior rated 15/32 rough sawn plywood installed per Manufacturers' instructions.

PORCHES / DECKS

GENERAL INSTRUCTIONS

Any porch or deck over 30" in height will require a permit. A handrail is required if the stair has 4 or more risers and it must have returns. A guardrail is required when

a landing or stair is over 30" above the ground and shall be a minimum of 36" in height. Pickets shall be no more than 4" apart. Stair treads shall be a minimum of 10" in depth and a maximum of 7-3/4" in height with a variance of no more than 3/8". If a door opens outward, the landing must be within 1.5" of the inside floor level. All framing must be treated or resistant to decay.

VINYL SKIRTING

Vinyl skirting shall be snap lock type panels 16" wide with built-in center venting and shall carry a 25 year manufacturers' warranty. Installation shall include top and bottom u-channels and flip up valance. Voids should be limited to 1/4" or less to prevent vermin infiltration.

WROUGHT IRON RAIL

All wrought iron rail installations shall be code for lateral force resistance and picket spacing. Material shall be primed iron with black powder coat.

DECKING / PORCHES / STAIRS & RAILS

Anchoring, undercarriage, framing, surface, rails and stairs shall all meet current IRC and Pierce County Planning and Land Development codes and regulations.

ALUMINUM AWNING

Contractor to install per manufacturers' instructions and Pierce County Planning and Land Development permitting and construction requirements.

DOORS

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

Doors, windows and hardware not scheduled for repairs or replacement are assumed to be in place and to operate properly. If work includes the alteration of an opening a permit is required.

Whenever window assemblies, sash or doors are being replaced, frames, headers and sills shall be repaired as necessary to provide a square, plumb, level and rigid enclosure for the new installation. Install new item as per manufacturer's recommendations. Flashing shall be repaired or replaced as necessary. All openings between wood, masonry and metal shall be caulked with a silicone sealant. Should the openings be deeper than 1/4-inch, they shall be first packed with a backing (flexible polyurethane, polyethylene, polyvinyl chloride, cured polysulfide, sponge rubber, neoprene or butyl rod) manufactured for this purpose to within 1/4 inch of the face surface and then filled with silicone sealant. All new sash or doors shall fit tightly in their frames and shall operate smoothly and easily. Contractor shall repair or replace all trim incidental to the operation of the sash or doors.

New glass shall be Grade B, or better, unless otherwise specified. Bathroom sash, both new and existing, shall have obscure glass. The lower sash for double-hung shall be obscure glass. Other types of bathroom sash shall have obscure glass as is appropriate to their design.

All hardware within a room shall be similar in style and finish. New finish hardware shall be furnished with the necessary screws, bolts or other fastenings of a suitable size and type to anchor the hardware in position for heavy use and long life. These fastenings shall harmonize with the hardware as to material and finish. The finish hardware shall be securely fitted on properly prepared surfaces in conformity with the hardware instructions and templates. Carpentry cuts for the finish hardware shall be carefully and accurately made. The screws shall be turned not to the point of distorting the hardware and in no case hammered into place. New doorknobs shall be positioned at the height of the existing doorknobs in each building and the other hardware positioned in accordance with good general practice.

PREHUNG DOOR

Door type to be as specified. Jamb to be sized to fit wall width and finished surface. Door to be shimmed and nailed into place in a manner that provides even margins around the entire perimeter and adequate margins for paint or finish layers. Door to fit snug to door stop and latch firmly into place when closed. Hardware to be as specified. Casing around door to be as specified with miters that are exactly parallel

and closed. All nail or brad penetrations to be filled with matching putty or filler prepped for paint.

PEEP HOLE

Place peep hole at a height appropriate for occupant's height.

DOORBELL

Install doorbell per manufacturers' instructions.

OVERHEAD DOOR

Door to be anodized sheet aluminum panel door with primer. No insulated panels or special hardware permitted. Install per manufacturers' instructions. To include two remotes, counterbalance torsion type spring, weather seal and safety sensors. Gap tolerance shall not exceed 1/2".

PULL DOWN ATTIC STAIRS

Pull down wood stairs to include pull cord, return springs and rail. Must fit flush with ceiling when retracted.

ATTIC ACCESS DOOR

Panel to sit on corrugated window well or other and must have positive drainage away from the building. Gap tolerance shall not exceed 1/2".

SLIDING GLASS DOOR

Door frame to be PVC matched to depth of wall. Door to have tempered safety glass. Glazing to meet or exceed energy code. Locking unit to operate freely and door to close tightly and square. Door to have a screen. Case door as needed on interior with exactly parallel miters and prep for finish as needed.

STORM DOOR

Storm door to be of metal construction with self-storing tempered glass vent and fiberglass mesh ventilation screen. Hardware to include hinges, pneumatic closer and chain with locking door handle. Door to close snug to frame around entire perimeter and have even margins.

DOOR LOCKSET

Lockset must be of metal construction rated for exterior use. It must have a strike plate firmly attached to framing and allow a 1" throw of the bolt. Provide two keys.

WEATHERSTRIP

Use extruded vinyl compressible seal weather-strip. Application not to interfere with operation of door nor allow any visible day light around entire perimeter of door.

GARAGE DOOR OPENER

Unit shall be minimum ½ horse screw driven door opener. To include two remotes, wall hung keypad, two time lights, and two infrared sensors.

ROUGH FRAME

Rough work includes the repair or replacement of all framing members; the repair or replacement of all seriously damaged or otherwise defective structural members; some cutting through joists and other structural members to provide, for new or replacement plumbing stacks, drains, piping, duct work, etc. the framing of new walls, including sheathing and insulation for exterior walls; the building of new garages and carports; the installation of new access panels or doors to crawl spaces, attic spaces and bathtub plumbing; the repair or the building of new wood porches, including framing, columns, deck, ceiling, railings, skirt and steps; the rebuilding of stairways; the repair or installation of folding stairs; the repair, replacement or installation of softwood and plywood sub-flooring; the insulation of walls, ceilings and floors; the installation of vapor barriers; and the replacement or installation of miscellaneous metal items. It is the intent of these specifications that all walls, ceilings and floors are returned to a solid condition.

GENERAL INSTRUCTIONS

Any alteration of a structural wall or component will require a permit.

WOOD JOISTS

Repair or replacement of joists shall replicate existing or surrounding material code permitting except when code requires exceeding old or antiquated methodology.

SILL PLATE

Use .40 PSI incised mud sill of appropriate dimension and attaché per IRC with appropriately sized hot dipped bolts, washers and nuts. Use seal sealer as needed.

WOOD FOUNDATION

Wood foundation installation to strictly follow PALS approved engineered plans and permitting procedures.

PRESSURE TREATED WOOD POSTS

Pressure treated wood post installation to sit in z-rated metal saddle and have positive connections top and bottom and lateral restraints or knee braces as needed. If structure height requires permitting, installation to be per current IRC and local guidelines.

WEATHERIZATION

VAPOR BARRIER

To be 6 mil black poly layer applied per current IRC and local requirements.

INSULATION

All provisions of the general procedures shall apply to all sections of insulation specifications.

Compliance with locally adopted public codes or regulations affecting work under these specifications shall be required. Where local codes or regulations permit lower standards than required by these specifications, the standards contained herein shall govern. Community Development does not assume responsibility for enforcing or determining compliance with local codes, regulations, or interpretations.

Unless otherwise stipulated, the contractor shall furnish all materials, labor, tools, services, and equipment necessary for the execution and completion of all work under these specifications. All materials shall be new and both workmanship and materials shall be of good quality.

All work shall be done in a workmanlike manner, using craftsmen skilled in their trades. The contractor shall be prompt and on schedule and complete work in the time frame agreed upon.

PAINTING

PAINTING

Use 100% acrylic latex over prepped or stable surface. Spray then back-brush field. Finish shall be uniform and free of drips, streaks or blemishes. Contractor shall be responsible for all cleanup of overspray on landscaping, areas not meant to be painted, or personal property. Contrasting or trim paint line of separation shall be clean and not vary or bleed more than 1/8".

MILDEW

Use an EPA approved product to prep surface before painting to prevent flashing.

WOOD SEALER

Use an EPA approved wood sealer. Follow instructions provided on label.

EXTERIOR SPECIFICATIONS

ROOFING

3000: INSTALL NEW ROOF (MOBILE)

Contractor shall remove and dispose of all old roofing material, vents, and boots and install new 30 year 3-tab composite shingle. Contractor to provide and install drip edge at eave in a manner that flashes gutter fin and apply Grace Ice & Water Shield or equivalent at eaves, gable ends and valleys (if any). Apply synthetic underlayment over entire roof deck per L&I specifications. Provide and install new vent boots, roof vents, and skylight or chimney flashing. Install peel and stick roll flashing around skylight dam (if any) with a minimum 2" vertical exposure. Vent roof at 1:150, if low venting exists, and 1:300, if there is none. Install shingles per manufacturers specifications and to adhere to manufacturer's warranty, especially as it applies to low slope roofs. All valleys to be woven or over W-metal. Incidental roof penetrations such as antennae wire shall use threaded fasteners and be sealed with elastomeric sealant. Seal skylight dams at corners. Clean up and haul away job debris and ensure that bath fan and vents, range hood and vents, and gutters and downspouts are clean, free of obstructions and working properly. Contractor to provide cost per sheet for sheathing replacement in this bid. Contractor responsible for obtaining applicable permits.

3010: METAL CLAD ROOF

Inspect roof for defects or non-compatible coatings at seams or penetrations to ensure that entire roof surface is in suitable condition to accept specified application. Prep roof surface by removing any and all organic matter, loose material, or improper coatings that would inhibit adhesion of coatings. Lap seal and fiberglass mesh all seams and around venting penetrations (M300 Rubbermatic and PolyWeb or equivalent). Apply MFM Peel and Seal to all vital areas (skylight headers, surface fissures, gutters, scuppers and rumble screws). Prime roof surface with a petroleum based primer. Completely recoat roof with Fields F650 Solarshield fibered aluminum. Stir product before use and apply at a rate of 1.5 gallons per 100 square feet. Contractor to ensure that gutters and downspouts are free of all construction debris and operating as designed.

3020: REROOF SINGLE FAMILY DWELLING

Tear off all roofing material, felt, vents, and plumbing vent boots. Inspect sheathing condition and replace damaged material with new 1/2" CDX plywood. Contractor to provide cost per sheet for sheathing replacement in this bid. Contractor to provide and install d-metal at eaves in a manner that flash over the gutter fin and apply drip edge on gables so that the entire perimeter is covered. See R905.2.8.5. Apply synthetic underlayment per standard practice over the entire roof deck. Install rake or drip metal over any exposed plywood edges as needed. Apply 30yr laminated fiberglass composition shingles per manufacturers specifications. (Note to owner: the manufacturer's warranty requires fastener penetration completely through the sheathing. This will include the soffit.) All valleys to be woven or over w-metal. Provide and install new attic vents. Add additional venting if necessary to meet current code. Install new pipe flashings. Replace skylight, wall and chimney flashing. Incidental roof penetrations such as antennae wire shall use threaded fasteners and be sealed with elastomeric sealant. Clean up and haul away job debris and ensure that bath fan and vents, range hood and vents, and gutters and downspouts are clean, free of obstructions and working properly. Contractor responsible for obtaining applicable permits.

3030: CLEAN ROOF (MOSS)

Treat roof with a moss killer. Apply to roof and let sit until the moss blackens and dies. This will help release its hold on essential roof granules if the building has composition roofing. Gently brush off moss, remove from gutters and dispose of. (Potassium salts, zinc sulfide, zinc chloride, copper, and bleach formulas have

varying degrees of effectiveness and impacts on plants and animals - the severity of the moss bloom may dictate product selection).

3040: INSTALL EPDM ROOFING

Provide an EPDM membrane roof where indicated. This work is to include mechanically fastened EPDM 60 mil roofing membrane, flashings, separator sheet, and substrate repairs. Substrate repairs shall include the replacement of damaged or missing sheathing, re-securing loose sheathing, and removing any sharp or unnecessary protrusions. Installation shall be by a recognized roofing contractor certified by manufacturer's specifications. A 10 year material warranty shall be issued upon completion in addition to a 1 year workmanship warranty.

3050: TORCH DOWN ROOFING

Remove and dispose of existing roof coverings and vents of the low pitched roof. Remove all protruding fasteners. Supply and install torch down roofing. Provide a torch applied modified bitumen roof where indicated. This work is to include base sheet, top mineral cap sheet, adhesives, substrate repairs, flashings and fasteners. Install minimum six inch header at rake edges, eaves and protrusions. Installation shall be by a recognized roofing contractor certified by manufacturer to perform the installation. The standard shall be Firestone "Polyglas", GAF "Rubberoid" "Flintlastic" or equal. All installation details, materials and procedures shall be in strict accordance with manufacturer specifications. A 10 year material warranty shall be issued upon completion in addition to a one-year workmanship warranty. Install metal drip edge on all exposed sheathed rake or gable edges. Install new roof vents or ridge vent as per current code.

3060: STANDING SEAM ROOF

Contractor to provide and install standing seam metal roof. Where weight is an issue, roof should be stripped to the deck, cleaned, and an approved vapor barrier applied. Panels shall be 24 gage acrylic coat or Galvalume, 12' to 16" in width with 1" ribs. Nail strip shall be used in lieu of clips in high wind areas. Panels to be secured with pancake screws at 12" to 24" intervals in center of slot with 1/4 turn left for expansion. Eaves and valleys shall be hemmed. Work to include all associated eave, transition, valley, gable, and ridge trim. Work to include all electrical and pipe boots installed per manufacturers specifications. If venting ridge use closure material in lieu of z-flashing. If installation is a mobile home, roof must be bonded to the chassis with #6 wire.

3070: INSTALL NEW STEP FLASHING

Provide 29 ga. aluminum step flashing where indicated. Flashing to extend a minimum of 5" above decks, less than 3:12 a minimum of 2" above 3:12. Secure to deck with aluminum roofing nails. Apply roofing cement to produce a weather tight seal. Plumbing vents and similar openings shall use pre-formed step flashing secured to both deck and chimney. Flashing shall be job formed step flashing secured to both deck and penetration. Assure there are no dissimilar metals in direct contact--separate with suitable material to prevent corrosion.

3080: INSTALL NEW GUTTER

Supply and install 5" continuous white metal gutter with matching accessories. Install with a slope of 1/8" per foot (max. 1/4" per foot). Maximum support spacing shall be 4' o.c. All connections shall be caulked and riveted. Riveted & caulked outlet shall be installed at each drop.

3090: INSTALL NEW DOWNSPOUTS

Provide and install new 2"X3" white metal downspouts with matching fasteners. Max. support spacing shall be 6'0" c.o.. All connections shall be caulked and mechanically fastened. Connect into existing drain lines. If an underground drainage system does not exist or function, supply and install an elbow and splash blocks. A minimum of one downspout per 1,000 sq./ft. of roof area and/or one downspout per every 35 linear feet of gutter.

3100: REMOVE & REPLACE GUTTERS AND DOWNSPOUTS

Remove existing gutters and downspouts without damaging surrounding materials. Provide and install new 5" K-line continuous metal gutters and downspouts with architectural polyester finish and matching fasteners. Gutters shall have positive drainage toward drops and be connected to framing with screw type pins if possible. Downspouts shall be spaced in no more that 30ft intervals and at each corner of the building. Downspout shall connect to existing drain lines if present. If drain line does not exist, elbow shall be directed away from building. Downspout to be a min. 2"x 3" 26ga. All miters and end caps shall be thoroughly sealed with a polymer sealant.

3110: REPAIR BUILT-IN GUTTER

Repair built-in gutter. Remove/cutout damaged portions and install all new materials to provide a watertight seal. Seal all joints and seams with appropriate

sealant. Assure all thermal expansion are operating freely and are watertight. Repair and/or replace all damaged or missing flashing. Clean and coat exposed metal surfaces which are beginning to deteriorate but are not structurally damaged. Work is to produce a completely watertight gutter.

3120: PROVIDE & INSTALL WOOD ROOF SHEATHING

Provide & install 1/2" plywood or 7/16" OSB over skip sheathing. Use 1/2" APA CDX to 7/16" OSB when spanning 2' centers. Install with long dimensions of panel across supports, span shall not exceed manufacturer's recommendations. Edge support shall be provided by the use of panel clips or lumber blocking between joists. End joists shall occur over framing and bear on the support a minimum of 1/2". All work shall conform to the IRC and local building codes.

3130: REPLACE DAMAGED ROOF SHEATHING

Replace all damaged roof sheathing without damaging existing framing members. Provide and install new CDX sheathing to match existing. All material shall span 2 or more members. Single span is not permitted. All exposed surfaces shall be protected against weather damage. All debris to be removed from the site. Pricing to be per sheet.

3140: REPAIR/REPLACE FASCIA/TRIM

Repair/replace the existing fascia board. Remove and dispose of damaged material. Install new pine or cedar material. Secure every 24" with the appropriate size nails. Prime all material. Re-install any trim or gutters removed during this work.

3150: ROOF TRUSS

Provide 4/12 pitched wood trusses. The trusses shall be designed and constructed at a plant that has been certified by the Truss Plate Institute. The trusses shall be installed (braced, crossed braced, etc.) as per the truss manufacturer. Fasten to wall with a metal Simpson type seismic/hurricane clip.

3160: REPAIR BARGE BOARD

Repair the existing barge board and trim. Repair and/or replace the wood trim as needed to produce a structurally sound barge board. Match the adjacent trim as nearly as possible. Prime and paint the new wood.

3170: REPAIR EXISTING ROOF RAFTER

Repair existing roof rafter, by scabbing equivalent size members full length to the weakened rafter. Fasten to rafters by using 3/8" bolt, nut, and washer every 12". In addition to nails 6" c.o..

3180: PROVIDE AND INSTALL WOOD ROOF RAFTER

Provide wood roof rafter. Wood to be Grade B or better. Size according to span. Joists to bear on existing wall structure. All installations shall meet local building code requirements.

3190: REPAIR EXISTING SOFFIT

Repair existing soffit. Remove damaged portions and replace with similar materials. Match color, style and texture of adjacent materials. Repair and re-secure loose portions and repair framing and sub surfaces as required. Reinstall vents and repair vents and screening if necessary.

3200: CORRUGATED AWNING

Contractor to replace corrugated sheathing with new SunTuf polycarbonate sheets (solar gray). Installation to include horizontal and vertical closure strips, wall connector, and EPDM washered fasteners. Install per manufacturer's recommendations. Dispose of all old materials.

CHIMNEY

4000: CHIMNEY CERTIFICATION

Contractor to provide safety certification for wood stove.

4010: CLEAN CHIMNEY

Clean fireplace/stove. Remove all ashes from the fireplace and ash dump. Clean all dirt and soot from the walls, floor, and damper of the fireplace. All debris shall be removed from the site.

4020: INSTALL NEW METAL CHIMNEY

Provide and install new 10" diameter stainless chimney. Chimney shall be pre-manufactured assembly approved for residential use. Install and support per

manufacturer recommendations. Chimney shall meet all local and state building codes.

4030: INSTALL CHIMNEY CAP

Provide heavy gauge pre-manufactured chimney cap. Bolt/secure to chimney per manufacturer recommendations. Unit to include ash screen.

4040: TUCKPOINTING

Remove all loose mortar from structure. Tuck-point all joints and cracks from which the mortar has eroded, deteriorated, or fallen out. In all cases, the masonry shall be watertight and uniform in appearance. The color of mortar used for tuck-pointing shall match existing as closely as possible.

SIDING

5000: INSTALL WOOD BEVELED SIDING

Provide wood beveled board siding where indicated. Lap siding Hardi Board siding 6" to 8" wide as per manufacturer spec. Wood to be cedar, redwood, spruce, or white pine B grade or better. Boards to be 3/4 " to 1 1/4" thick and 4--6" wide. Siding to be installed elsewhere if required. Siding to be securely nailed to sheathing every 48" with steel nails (5d). Lap shall be at least 1".

5010: REPAIR WOOD SHINGLE SIDING

Repair wood shingle siding. Repair to include the replacement of damaged and/or deteriorated siding and re-securing loose siding, and the installation of missing siding. All repair to match existing as nearly as possible. Fasteners to be galvanized steel nails (5d).

5020: CEMENT PLANK BEVELED SIDING

Supply and install cement plank beveled siding as per manufacturer's installation instruction (available at all home centers). Install the siding over 7/16 OSB sheathing. Rigid foam insulation under the siding cannot exceed 1". A weather resistive barrier is required (Tyvek) under the siding. The siding shall be ____" wide and factory primed. The siding shall be finish painted within six weeks of installation. Hardi Plank, Chem-Plank or equal.

5030: CEMENT PANEL SIDING

Supply and install cement plank panels as per the manufacturer's installation instruction (available at all home centers). Do not under drive or over drive nails. Keep fasteners 3/8" away from the edge and 2" away from corners. Use "Z" flashing on all horizontal joints. The siding should be finished painted within six weeks of installation. Hardi Plank, Chem-Plank or equal.

5040: REPAIR BEVELED SIDING

Repair wood beveled siding. Repair to include the replacement of damaged and/or deteriorated siding and re-securing loose siding, and the installation of missing siding. All repairs to match existing as closely as possible. Fasteners to be galvanized steel nails (5d).

5050: VINYL SIDING

Supply and install double 5" solid vinyl siding color homogenous throughout. Nominal thickness .44". Install per manufacturer's recommendations over 1/2" rigid insulation backer board. All accessories shall be of solid vinyl.

5060: INSTALL T -111 SIDING

Provide 5/8" APA exterior plywood siding with 4" or 8" grooves. Install as per APA Guidelines. Wafer board T-111 is not acceptable.

5070: VINYL SKIRTING

Contractor to provide and install pvc skirting system (ProGuard or equivalent). Installation to be in accordance with manufacturers specifications. Ensure that ground elevations are eased so that bottom or F-track is free of voids that would allow rodent infiltration. A minimum of every third panel should be vented with an option to vent every other panel or all. Top front and back tracks to be installed level or consistent with belly band/skirt board.

PORCHES / DECKS

6000: PROVIDE AND INSTALL WROUGHT IRON HANDRAIL

Provide wrought iron handrail. Securely fasten to wall and stair with appropriate anchors or compound. Minimum height 30" above tread. Prime with oil based metal paint primer and finish coat as requested.

6010: INSTALL TREATED WOOD DECKING

Provide and install new pressure-treated (.40 psi) wood decking. Use 2X6" pressure treated decking with radius edges spaced 1/8" to 1/4" apart. Secure the decking to the deck structure specified elsewhere in this report. The decking shall not span free distance greater than 2.4" and shall bear on the support member of a minimum of 3/4". All joints shall occur at these supports--joints to be butt joints unless indicated otherwise. The decking shall be secured with galvanized self-tapping screws (decoritized type) or tooth galvanized nails-screws preferred. All fasteners shall be installed without splitting the decking.

6020: REPAIR EXISTING WOOD DECKING

Repair existing wood decking Repair/replace damaged or missing members. Secure loose portions with appropriate fasteners. Deck surface to be level and without raised portions that would constitute a tripping hazard.

6030: REPLACE WOOD DECKING

Replace existing wood decking with new pressure-treated (.40 psi) wood decking. Decking to be 2X6" spaced 1/8" to 1/4" apart unless T&G indicated. The decking shall not span free distances greater than 2.4" and shall bear on support members a minimum of 3/4". All joints shall occur over supports-joints to be butt joints unless indicated otherwise. Secure with galvanized self-tapping screws without splitting decking.

6040: WOOD RAMP

Supply and construct a handicap ramp as per American Disabilities Act Handbook. The ramp shall have level landings at the top and bottom. The landing shall be at least as wide as the ramp and a minimum of 60" long. All structural members shall be .40 psi ACQ pressure treated wood. The ramp surface shall be 3/4" Tuff Tread. All edges of the Tuff Tread shall be treated with a preservative (i.e. End Cut). The ramp shall have a 1 in 12 slope with a max. length of travel between landings of 30'. Switch back landings shall be 4' x 8'. The clear width of the ramp shall be 36". Handrail shall be 34" to 38" above the surface of the ramp and shall be a minimum of 1 1/2" any wall of obstruction. The handrails shall end at the post. Intermediate rails/guards shall be placed that a 4" ball cannot pass through them. The horizontal posts shall not be more than 6 feet apart. The supporting joist shall be 2x6 with 2x6 cross framing at no more than 24" on center. All plywood joints shall be over a 2x6 support. All hardware shall be zinc plated, hot dipped galvanized or stainless steel.

6050: WOOD STAIRS

Riser to be a minimum of 3/4" thickness, stringers to be minimum 1-1/2" thickness. Lumber to be #2 and/or better. Fasten stair riser with appropriate anchors. Treads to be 1-1/8" minimum thickness. All railings to conform to current IRC and local codes on height and spacing.

6060: PROVIDE & INSTALL PRESSURED TREATED WOOD STAIRS

Provide pressure treated wood stair system. Stair stringers to be constructed of 2X12" #2 and better lumber. Stringers to bear on a 4X4" pressure treated posts (.40 psi) concrete footing or a 4" concrete pad. The step width and the riser height shall meet or exceed current building codes. Treads to be at least 36" wide. Rise height to be 6-1/2" to 8" and shall be uniform and consistent over the entire run. All fasteners shall be galvanized steel.

6070: REPAIR EXISTING WOOD STAIRS

Repair existing wood stair structure. To include rescrubbing and fastening loose stringers, risers, and treads. Repair and/or replace damaged or deteriorated portions or the stair system. Install pressure treated wood where possible. Stair to be stable and secure, providing safe use.

6080: PROVIDE & INSTALL WOOD HANDRAIL WITH STILES

Provide wood handrail and balusters. The rail shall be supported on pressure treated wood 2X2" balusters spaced that a 4" sphere cannot pass through. These balusters shall be secured to the deck structure with a minimum of 2 galvanized screws and the end of the baluster shall be beveled. The rail cap shall be constructed with 1X6", 1X4", 2X6" or 2X6" member. The top of the rail shall be between 30" and 36" above the deck. The rail cap shall be secured with galvanized screws and shall be capable of withstanding an imposed load of 200lbs in any direction. The contractor is instructed to communicate his design intentions to the Housing Rehabilitation Specialist.

6090: INSTALL UTILITY HANDRAIL

Supply and install handrail to the second floor. The handgrip portion of the handrails shall not be less than 1 1/2 inches nor more than 2 inches in cross-section dimension. The rail height shall be 34 inches to 38 inches above the floor/tread. The handrail adjacent to a wall shall have a space of not less than 1 1/2 inches between the wall and the handrail. The handrail brackets shall be securely attached

to wall-framing and the rail itself. Rail supports shall not be more than 4 feet apart. The handrail ends must return to the wall or end on a newel post. The handrail shall be free of any rough edges/surfaces. Finish the handrail with a coat of Wipe-on Poly or Wipe-on Oil stain finish.

6100: INSTALL ALUMINUM AWNING

Provide aluminum to code and with permit awning where indicated in the work write-up. Work to include the installation of the awning, securing to the wall framing and installation of supports as required by the design and manufacturer. Awning to satisfactorily resist the uplift forces common to the installation location.

DOORS

7000: INSTALL PRE-HUNG METAL DOOR

Remove and dispose of the existing exterior door. Supply and install 1 3/4" insulated, 6 panel, pre-hung panel metal door. Door to be installed as per the manufacturer's recommendations. Include keyed alike deadbolt and keyed doorknob. Supply and install peep hole at a location determined by the homeowner. Paint the door and the exterior trim with two coats of exterior semi-gloss latex enamel.

7010: PEEP HOLE

Install brass peep hole in the center of the door as per the manufacturer's instructions. The height of the peep hole shall be determined by the homeowner.

7020: REPAIR EXISTING DOOR

Repair existing door, to include replacement or repair of door frame, stops, stiles, rails, veneers, panels, hinges, bumpers, and sweeps to allow free and smooth operation permitting the door to close tightly against stops on all three sides and not bind or drag. Screw and glue damaged stiles and rails. Replace stripped hinge screws--dowel and glue. Replace hinges if required. Patch-fill and sand dents, waners, and other damage to the leaf. Match existing finish. This work includes the repair of latch mechanisms when it is not specified that these mechanisms be replaced. These latches shall operate freely and smoothly and shall latch securely. Clean these latches when complete with work.

7030: INSTALL NEW OVERHEAD GARAGE DOOR

Remove and dispose of the existing garage door. Supply and install an insulated white door as per the manufacturer's recommendations. Weather strip the bottom top and sides. Size door for opening so that a tight seal is made at all edges. Door is to operate smoothly and freely. Coplay, Wayne Dalton or equal.

7040: INSTALL PULL DOWN ATTIC STAIRS

Provide pull down wood access steps. Steps to be installed to the new or existing frame. Steps to include return spring and handrail. Cut opening, if required, and provide framing and patching of plaster or drywall as needed. Hardware is to include butt hinges, (as required by the size of the opening). All other hardware is specified elsewhere, if needed.

7050: INSTALL ATTIC ACCESS DOOR

Provide 3/4" AD or AC plywood access door. All edges are to be filled/sealed with filler. Install to the new or existing frame. Cut opening if required and provide framing and patching of plaster or drywall as needed. Hardware is to include butt hinges (as required by the size of the opening) and bolt latch. All other hardware is specified elsewhere, if needed. Trim opening 1/2" X 2" wood casing. When a ceiling access panel is specified in work write-up, eliminate hardware specified above, and install wood ledgers to carry the access panel. Insulate the panel by stapling an oversized R-11 fiberglass batt to the panel; paint the plywood prior to installation. When the access panel is larger than 2'X2', provide wood framing for the panel.

7060: NEW SLIDING GLASS DOOR

Provide new vinyl sliding glass door. New door to match the same size width as the existing door. Check door height prior to ordering. Glazing to meet or exceed Energy Code. To be installed to the new or existing opening. Hardware to include locking handle, locking mechanism, and screen.

7070: INSTALL NEW STORM DOOR

Provide 1 1/4" insulated metal storm door with self-storing glass and screen. Glass to be safety-glazed float glass. Screen cloth shall be of fiberglass mesh. To be installed to the existing door opening. Hardware is to include: 3 hinges or piano hinge heavy duty pneumatic closer and chain. Weather strip shall be resistant to deterioration from weather.

7080: SELF-STORING STORM DOOR

Provide insulated metal storm door with self-storing glass and screen. Glass to be safety glazed float glass. Screen cloth shall be of fiberglass mesh. To be installed to the existing door opening. Hardware is to include: 3 hinges or piano hinges heavy duty pneumatic closer and chain. Weather strip shall be resistant to deterioration from weather.

7090: INSTALL DOOR LOCKSET

Provide plated steel and/or brass deadbolt lock set. Lock set to be installed in door according to manufacturer Templates and instructions. Install not lower than 38". Lock to be keyed on exterior and turn knob on the interior. Key the lock with the same key as is used on key-in-knob latch if applicable. Lock throw to be minimum 1". Install a new reinforced strike. Strike to be secured with 3" screws and a finish strike with curved lip to protect jamb. Schlage series B or equal. Provide 2 keys.

7100: WEATHER STRIP

Provide extruded vinyl compressible seal weather-strip. Install to the new or existing door and frame. Installation of weather-stripping shall not interfere with the operation of the door.

7110: INSTALL DOOR VIEWER

Provide metal 200 deg. Peep sight of polished brass. Install in door at a height of 5'6" AFF without marring door. Install in the center of the door.

7120: STORM DOORS

New storm doors shall be aluminum or vinyl. All meeting rails shall be interlocking and weather tight. All sashes shall be easily removed for maintenance and reglazing or repair. Glass shall be safety glass. Screening shall be 18 X16 gray fiberglass screen cloth or 18 X 16 anodized aluminum screen cloth. Door shall be weather-stripped at bottom rail or an aluminum threshold with integral weather-stripping shall be provided. Door shall lock with a turn button on the inside but need not be keyed. All storm doors shall have safety door checks and closures. Frame shall fit weather tight in existing masonry or wood frame. Caulk at frame with silicone sealant. The bead shall be at least 3/8 inch in surface.

7130: GARAGE DOOR OPENER

Provide and install 1/2 horsepower screw drive garage door opener. To include two remotes controls, a wall hung keypad, dual infrared sensors, and two timed lights.

ROUGH FRAMING

8000: PROVIDE AND INSTALL WOOD JOIST

Provide wood joist. Wood to be #2 or better. Size according to span. Joists to bear on beam or foundation wall a minimum of 1 1/2". Birding to be used as required to stabilize joist at intervals of 8'. All installations shall meet local building codes and IBC. requirements.

8010: REPAIR EXISTING WOOD JOIST

Repair existing joist by scabbing equivalent size members to joist with nails in a staggered pattern 6" oc. Place the new member adjacent to the damaged member and span the entire distance with the proper sized new joist. The new member shall bear on a beam, foundation, wall or column at the ends of its span and shall be secured to the existing joist with nails. Install bridging, if free spans exceed 8'0". Notify agency if other structural problems related to this work are found.

8020: PROVIDE AND INSTALL SILL PLATE

Provide 2X4" or 2X6" incised pressure treated wood .40 PSI sill plates. Plate to be fastened to foundation with 1/2X10" anchor bolts, 6' o.c., or follow current IBC guidelines.

8030: PROVIDE & INSTALL WOOD STUD WALL

Provide a 2"X6" wood stud wall for exterior walls and 2"X4" for interior walls. Install straight and true. Use platform framing details. Wall framing to be spaced 16" or 24" o.c., depending on code. Lumber to be #2, standard or better or stud grade. Assemble and fasten with appropriate nails and anchors. All work shall meet local building codes and IRC. requirements.

8040: REPLACE EXISTING STUD WALL

Replace existing stud wall. Wall to be spaced 16"oc. Support adjacent surfaces. Lumber to be grade #2 or better standard or stud grade. Assemble and fasten with appropriate nails and anchors. Install per code requirements.

8050: PROVIDE & INSTALL WOOD FOUNDATION

Provide permanent wood foundation. Lumber to be pressure treated and be stamped "FDN". Wall construction to include footing plate, bottom plate, vertical studs, top plate, and marine grade structural plywood. Wall to be placed on gravel sand, footer or crushed stone depending on soil conditions. Fasten wall with appropriate fasteners. Contractor to contact bidding agent for wall design. All work to conform to local building code requirements.

8060: PROVIDE & INSTALL PRESSURED TREATED WOOD POSTS

Provide pressure treated (CCA) wood deck column where indicated in work write-up. Column to be 4"X4" but sized for the imposed load according to local codes. Column to be set for a minimum of 42" below grade in an 8" dia. X 24" deep concrete footing on concrete pillar blocks. Backfill and compact. Attach column to deck structure with appropriate metal fasteners (galvanized). Posts to be straight and true and shall satisfactorily bear the imposed live and dead loads.

WEATHERIZATION

9000: VAPOR BARRIER (GROUND COVER)

Supply and install a 6 mil black poly vapor barrier in crawl space. All joints shall be lapped at least 6". All tears and holes shall be taped with duct tape to assure a tight vapor barrier. All penetrations shall be carefully cut around and sealed as tightly as possible.

9010: FLOOR INSULATION

Supply and install new un-faced fiberglass batt insulation between the floor joists. If post and beam between the beams. The insulation shall be a minimum of R-30...the cavity must be filled. Install insulation with 100 lb. poly/nylon twine or metal insulation supports (Simpson IS Series or equal). The twine or metal shall be installed 12 inches on center (shoelace/zig zag) with 3/8" crown staples 5/8" long. All work shall meet the Washington State Energy Standards.

9020: ATTIC INSULATION

Supply and install attic insulation. If there is knob & tube wiring in the attic it shall be inspected and approved by a licensed electrical contractor before any insulation is installed. The insulation can be fiberglass batt or blown cellulose with a minimum value of R-38. If there is low venting, baffles should be installed to keep the vents

open. The vents shall be kept open and free of debris and insulation. A plywood frame should be installed at the attic opening to prevent insulation from falling through the opening. Attic access doors shall be weather striped. There shall be a minimum of 1 inch between the insulation and the roof sheathing. The insulation shall be installed at least 2 inches from recessed lighting fixtures unless they are UL Rated Type-IC. All work shall meet the Washington State Energy Code.

9030: WALL INSULATION

Supply and install wall insulation. If new construction or exposed studs the insulation can be BIBS, high density fiberglass or blown cellulose with a fiber mesh. Fill the wall cavity. All Work shall meet the Washington State Energy Code.

PAINTING

10000: APPLY EXTERIOR FLAT ACRYLIC PAINT

Paint exterior siding and trim on house. Spray and back brush field, edges and channels. Roll/brush all trim. Prior to application, assure surfaces are smooth, clean, dry and ready to receive paint. Holes and imperfections should be filled and sanded with patching compound as approved by the paint manufacturer. Finish shall be uniform and even without streaks, spots or runs and shall completely cover. Any overspray shall be properly removed as per NAHB Standards. Apply one coat satin/eggshell acrylic latex exterior paint. If covering old work, make sure that all loose paint has been scraped and primed with 100% acrylic latex primer. If performing new work...prime with 100% acrylic latex primer. Apply cover coat per manufacturer specifications. Contractor is responsible for the cleanup of all overspray.

10010: MILDEW/MOLDED ON SIDING & TRIM

If there is any mildew or mold on the siding and trim it should be removed before priming and painting. Bleach is not a registered EPA mold killing product. A product like Impact or equal shall be used. Use as per the manufacturer's recommendations. Do not prime or paint until the surface moisture is below 19%.

10020: APPLY CLEAR WOOD SEALER

Provide two coats clear wood sealer. Prior to application, assure that surfaces are smooth, clean, dry, and ready to receive sealer. Small imperfections should be filled and sanded with a quality wood filler matching existing wood color. Sealer should coat evenly. Prevent airborne dust and dirt from entering finish. Apply when temp.

is 50 degrees or above for 24 hours. Allow 24 hours between coats. Standard is Sherwin Williams, Semi-Transparent wood preservative A-14T5 or Thompson water seal. For concrete and stone, use SWP concrete and terrazzo sealer.

INTERIOR STANDARDS

INTERIOR STANDARD

The interior of the structure and its equipment shall be maintained in good repair, protect the occupants from the elements and be structurally sound and be in sanitary condition so as not to pose a threat to the health, safety, and welfare of the occupants.

BASEMENT AND CELLARS STANDARD

Basement and cellars shall not allow significant entry of ground water from the walls or floor. All basement hatchways shall be sound, secure, and maintained to prevent the entrance of rodents, rain and surface water into the structure.

CRAWL SPACE STANDARD

All crawl spaces shall provide a sufficient number of ventilation openings to meet code. The crawl space shall be insulated in accordance to code if possible and be free of openings or gaps in the walls or skirting that would allow for the infiltration of pests or rodents.

WALLS AND CEILINGS STANDARD

All walls and ceilings shall be in good, clean, and sanitary condition. All peeling paint, cracked, punctured or loose plaster, decayed wood, and other defective surface conditions shall be repaired. Finish paint is optional.

FLOORS STANDARD

Wet rooms (kitchens, bathrooms, and utility rooms shall have durable, easily maintainable, waterproof, non-absorptive floor covering over suitable underlayment. All rooms shall be free of holes or tripping hazards.

BATHROOM STANDARD

The home shall have at least on complete bathroom consisting of a toilet, tub or shower and a sink. An adequate supply of hot water shall be provided to the tub,

shower, and lavatory and cold water shall be supplied to all fixtures. A bathroom without a window shall be equipped with an exhaust fan.

KITCHEN STANDARD

Every dwelling unit shall have a kitchen area which contains a sink with hot and cold running water, counter workspace, a means of cooking and refrigeration, and a space for storing of cooking utensils. Appliances shall be fully functioning and have an expected remaining life of at least five years.

APPLIANCE STANDARD

General household appliances are not provided under this program unless their purchase is warranted by the condition of the existing units or the units are not expected to have a useful life of less than five years. Upgrades for energy usage will be considered. Microwave ovens are not considered a necessary appliance but if one exists that serves as a range hood and is not in working condition, it may be replaced with a new unit.

STAIRS STANDARD

All stairs shall provide safe ascent and descent. Stairs with more than three risers shall be railed. Riser height shall not vary more than ¼". Construction of new risers must meet current code when possible.

LAUNDRY/UTILITY AREA STANDARD

Laundry/utility areas shall have hot and cold running water and waste lines of sufficient size and volume. There shall be an adequate power or gas supply for all related appliances. All dryers shall be vented to the exterior and comply with the IRC.

FIREPLACE AND FLUE STANDARD

Fireplaces or free standing stoves shall be stable, structurally safe, and with an approved chimney. This program will not purchase woodstoves or free standing fireplaces. Units that contain these devices shall be inspected by a licensed contractor. Repairs to chimneys will be considered if the unit can be made to meet code at a reasonable cost.

ATTIC STANDARD

All attic spaces shall be weather-tight, ventilated, and insulated to provide maximum allowable energy conservation. All attic spaces shall have a means of access. Any visible defective wiring or improperly vented appliance shall be corrected.

INSULATION AND WEATHERIZATION STANDARD

Cavity should be filled if possible. In certain cases, weatherization measures may be delivered by a public utility or other government agency.

EGRESS STANDARD

A safe, continuous, and unobstructed means of egress shall be provided from the interior of a dwelling to the exterior. All exterior doors shall be operable from the inside without the use of a key and access to and from, shall be provided without the passing through another dwelling unit.

STRUCTURAL SYSTEM STANDARD

All structural components shall be in sound condition and considered serviceable for the expected useful life of the rehabilitated building. Structural members which are in a seriously deteriorated condition shall be replaced and all loosely jointed structural members shall be restored to the original rigidity.

PERFORMANCE STANDARDS

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

Any structural alteration will require a permit. This includes all flooring or sheathing in the structural envelope of a mobile home and a permit must be drawn from Labor & Industries.

ROUGH FRAME

ROUGH FRAME

All interior framing to be performed to IRC standards or specified and engineered plans. Dimensional lumber to be #2 or better and kiln dried. Crowns should not exceed ¼" over 96". Checks in grain should not exceed 25% of the dimensional width of a component. Wanes should not exceed 33% the width of a component.

PLYWOOD SUBFLOOR

All subfloor plywood shall be ¾" APA rated CDX. Butts shall bear on a minimum 5/8" surface and be nailed at 6" o.c. with 8 penny vinyl coated nails. The field shall be nailed off at 8" o.c. with the same fasteners.

UNDERLAYMENT

All underlayment applications shall be in strict accordance to the manufacturers' recommendations of the finished floor surface.

BEAMS / JOISTS

All beams and floor joist shall be sized according to AWC span and load tables and installed per county or agency approved designs.

FLOORING

HARDWOOD FLOOR

Prior to sanding, contractor shall check that floors have been re-nailed to eliminate all squeaking. All nails shall be counter-sunk, and their holes shall be filled. Floors shall be swept clean before and after sanding. Floors shall be machine-sanded beginning with No. 2 paper and graduating to No. 00. Where machine sanding is impossible, they shall be hand scraped and hand sanded to give a smooth even finish. A minimum amount of wood surface shall be removed. Stain new sections of wood flooring as necessary to match existing. Where flooring is open grain wood, apply one coat of a paste wood filler, rub in filler across the grain and then with the

grain. Remove excess filler and allow drying thoroughly. Then apply one coat of penetrating floor sealer and two (2) coats of clear spar varnish. Alternate finish may be combined sealer and varnish or liquid polyurethane finish. Apply as per manufacturer's recommendations. Apply one coat of wax over finish. Furnish and lay building paper to protect floor finish.

LAMINATE FLOOR

Do not install in full bathrooms.

Installation site should have a consistent room temperature of 60-75 degrees F and humidity of 35-55% for 14 days prior, during and until occupied, to allow for proper acclimation of flooring. The building should be closed with all doors and windows in place. All concrete, masonry, drywall, paint and other "wet" work should be thoroughly dry before installation of flooring. Wood subfloor must not exceed 13% moisture content.

Prior to installation, clean, scrape, smooth and sweep all subflooring surfaces. Level flooring to within 1/8" in 6', sand high areas and joints if necessary. If low areas are to be filled, do not apply more than 1/8" at a time of Cementous leveling compound or milk additive latex patch with a minimum 3,000-PSI compressive strength. Follow instructions of leveling compound manufacturer. Screw down any loose areas in subfloor that squeak. Replace any water-damaged, swollen or delaminated subflooring or underlayment.

Installation over concrete requires a minimum of 6 mil. poly film moisture barrier between the ground and concrete. Do not use a concrete sealer or install over a concrete sealed floor. Acoustic concrete must be primed with the concrete manufacturer's recommended primer/surface hardener.

Install flooring perpendicular to floor joists and existing wood flooring whenever possible. If installing parallel with existing wood flooring, it may be necessary to install an additional 1/4" layer of plywood to stabilize the flooring. Installation of flooring should be parallel to the longest wall for best visual effect. Undercut all door casings to accommodate the width of flooring in order to allow for flooring to be installed under trim. Stagger end joints in adjacent rows a minimum of 6". Allow 1/4" around entire perimeter of flooring for expansion. Install necessary reducer strip, threshold, T-molding and base molding as recommended by manufacturer. Install all flooring as per current manufacturer's specifications.

Upon completion, clean flooring with the manufacturer recommended wood flooring cleaner. Cover flooring with drop cloths to protect finish.

VINYL FLOOR

New installations shall be as listed in the work schedules, either asphalt tile, vinyl asbestos tile (VAT) or un-backed sheet vinyl. When sheet vinyl is being installed in areas of excessive moisture i.e. bathrooms and utility rooms the vinyl shall be installed seamless.

No tile is to be used in moisture areas, such as kitchens, baths or utility rooms.

New asphalt tile shall be 1/8-inch thick, 9-inches X 9-inches or 12-inches X 12 inches, residential grade new VAT shall be at least 1/16-inch thick, 9-inches X 9-inches or 12-inches X 12-inches, residential grade new sheet vinyl shall be .065 - .070 inch thick. When damaged or missing tiles are to be replaced, new tile shall match existing in type, size, thickness, color, pattern and texture.

Colors and patterns shall be homogeneous throughout the full thickness of tiles.

All surfaces to receive resilient flooring shall be dry, clean and level. All cracks depressions and voids shall be filled or repaired. Concrete floors shall not vary from a level surface more than 1/8 inch in 10 feet in any direction. Where leveling is required, leveling latex for concrete shall be used. Prime concrete slabs on grade or below grade with a cutback before applying adhesive. For all installations, use an adhesive recommended by the resilient flooring manufacturer and apply as per instructions. Before being laid, tile shall be removed from the boxes and scrambled to achieve a thoroughly variegated appearance in the finished installation. Tile shall be laid starting at the center of the room and working towards the walls. Scribe flooring to walls where necessary. All new flooring shall extend under base shoe molding. The color transition between rooms with different floor colors shall occur at the center of the door when the door is closed. Resilient flooring shall be laid with tight joints at all points of contact. Tile stops shall be installed at all exposed edges and changes of material; bathroom doorways shall have threshold as described above; and stair treads shall have edging as described above. When resilient flooring has been sufficiently sealed, the floor shall be cleaned, waxed and buffed. Lay building paper.

CARPET

New carpeting shall be 100% continuous filament nylon, with jute and latex backing, over 40-ounce rubber carpet cushioning. Carpeting shall be at least 32-ounce pile and 1/8 inch gauge, with at least 8-1/2 stitches/inch. Carpeting shall conform to FHA UM-44B specifications.

Prior to installation, contractor shall check that floors have been re-nailed to eliminate all squeaking. All rough edges at joints in underlay shall be sanded smooth. Carpet stripping shall be "Robert's Tackless Stripping" or equal. Carpeting shall be installed smooth and even over all surfaces to be covered. It shall be cut evenly and close fitting to walls and all other projections. It shall be cut to fit closely to and through thresholds where carpet joins together in doorways. Cross seams shall be held to an absolute minimum. All carpet shall be lined up so that all lines (weaving) of carpet match as woven both width and length. Fill strips in carpeting shall not be less than 9-inches in width or less than 36-inches in length. The finished installation shall be free from scraps, ripples, scallops and puckers. Carpet stops shall be installed at all exposed edges and changes of material. After installation has been completed, clean all dirt and debris and clean any spots from carpet with proper spot remover. Remove all loose threads with sharp scissors and vacuum clean carpeting. Lay non-staining building paper.

CARPET CLEANING

Cleaning shall be done with a non-staining steam solution by a professional cleaning services company.

TILE

Ceramic tile shall be set with a polymer added mortar for floor and wall applications or mastic spread for countertop applications. Use of sanded or unsanded grout will be determined by the size of the joint (<:1/8" sanded, >:1/8" unsanded). All grout joints to be sealed after removal of haze from face of tile. Natural stone shall be sealed with a compatible sealant. High / low tolerances between tiles, or "lippage" shall not to exceed 1/16". Install over manufacturer recommended substrate.

TRANSITION STRIPS

All transition strip types to be as specified and secured per manufacturers' instructions.

UNDERLAY

All new underlay shall be plywood, particleboard or hardboard. It shall bear the label of a recognized grading association as to grade and type. Type and grade shall be suitable for its intended use. Minimum thickness: plywood shall be 3/8-inch except that 1/4-inch plywood may be used over plywood sub-flooring or T& G boards not more than 3-inches wide; particleboard shall be 3/8-inches. Plywood shall be interior type underlayment except that plywood for bathrooms and utility rooms shall be exterior type, C-C plugged underlayment. Particle board is unacceptable as underlayment for resilient flooring and ceramic tile. Hardboard shall be tempered hardboard underlayment developed for use under resilient flooring. It shall not be used as underlayment in bathrooms. 1/4-inch underlayment shall be securely nailed every 3-inches O.C. at the perimeter and every 6-inches O.C. at intermediate supports. 3/8-inch underlayment shall be securely nailed every 6-inches O.C. at the perimeter and every 8-inches O.C. at intermediate supports.

When finish flooring (ceramic tile, carpeting or resilient flooring) is to be installed directly over subflooring, sub-flooring shall be combination sub-floor underlayment plywood. Types and grades shall be the same as for plywood underlayment. Plywood shall be 1/2-inch thick over joists 16-inches O.C.; 5/8-inch thick over joists 20-inches O.C.; and 3/4-inch thick over joists 24-inches O.C. Sub-flooring shall be securely nailed every 6-inches O.C. at the perimeter and every 10-inches O.C. at intermediate supports.

DRYWALL

INTENT

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

Quantities listed in the Work Schedules are approximate and are only intended to lead the contractor to the area(s) needing repair. Small quantities of drywall (for

example, 2-square feet) can hardly be repaired. Therefore, the contractor shall replace as much drywall as is necessary to make satisfactory repairs.

When installing new drywall over existing surfaces, it is not intended that the plaster will be removed. However, if plaster is removed, either because it is severely damaged or because the contractor would rather remove it, then it becomes his responsibility to insulate any exterior walls.

DRYWALL

Drywall for new installations (over framing members) shall be 1/2-inch on walls and ceiling, except that for installations requiring an 1 hour fire rating, drywall shall be 5/8 inch "Firestop" or as required by local code. Drywall over existing wall and ceiling surfaces shall be 1/2-inch except that 3/8 inch may be used on ceilings when the finish surfaces will be smooth and free of bulges.

New drywall shall be tapered gypsum wallboard. When going over existing surfaces, first remove all damaged plaster and fur walls or ceilings so that the finished product is properly aligned. For all installations, edges and ends of wallboard shall occur on framing members, except those edges and ends which are perpendicular to the framing members. To minimize end joints, use wallboard for maximum lengths. Wallboard shall be first applied to ceiling, then to walls. When both sides of partitions are to receive wallboard, stagger joints on opposite sides. Protect all vertical exterior corners with corrosion-resistant metal corner beads. When butting up to the existing, trim, cut the drywall carefully and use casing beads for all exposed edges. Where surfaces are to be painted or wallpapered, joints shall be taped and both joints and nail depressions shall have three coats of joint cement (spackling paste) applied as per the manufacturer's recommendations. All edges shall be feathered.

Finished surfaces shall be sanded smooth and left straight and well aligned. Optional finish for ceilings (except in kitchens, bathrooms, utility rooms, etc.) may be texture spray. Texture spray shall be medium texture, hard finish only - no coarse, polystyrene or other soft finish allowed. After taping and finishing drywall, prime ceilings with a vinyl primer or equivalent. Then apply texture spray as per manufacturer's recommendations. Paint may be added to the mixture when approved by the manufacturer; coordinate color with the painter. No finishing of drywall shall be done unless inside temperature is at least 55 degrees F. This temperature shall be maintained during and up to completion of finishing, including drying. Moisture-proof drywall shall be used in areas subject to moisture,

in bathrooms and in laundry and kitchen areas adjacent to sinks. All edges holes and joints shall be treated with a water-resistant sealant designed for this purpose. Conventional wallboard tape shall not be used.

ACOUSTIC CEILING

Acoustical ceiling tiles shall be installed per manufactures' instructions.

INTERIOR DOORS

INTERIOR DOORS

Door type to be as specified. Jamb to be sized to fit wall width and finished surface. Door to be shimmed and nailed into place in a manner that provides even margins around the entire perimeter and adequate margins for paint or finish layers. Door to fit snug to door stop and latch firmly into place when closed. Hardware to be as specified. Casing around door to be as specified with miters that are exactly parallel and closed. All nail or brad penetrations to be filled with matching putty or filler prepped for paint.

SLIDING GLASS DOOR

Door frame to be PVC matched to depth of wall. Door to have tempered safety glass. Glazing to meet or exceed energy code. Locking unit to operate freely and door to close tightly and square. Door to have a screen. Case door as needed on interior with exactly parallel miters and prep for finish as needed.

WINDOWS

REPAIR WINDOWS

When replacing specific window components, unit should operate as smoothly and freely designed and securely lock if open able.

VINYL WINDOWS

Windows shall be extruded rigid polyvinyl chloride (PVC) and conform to current Washington State Energy Code. Unit shall be square and level and operate smoothly. Window shall be free of air and water infiltration. If window is vented type, a screen shall be included. For the purposes of thermal efficiency, low-E glass and argon gas shall be allowed if requested by the owner.

SKYLIGHTS

Skylight shall be of tempered safety glass and glazed to current Washington State Energy Code. All head and pan flashing shall be well sealed at step flashing transitions with an Elastomeric or silicone sealant.

BATHROOM

ENCLOSURE MODIFICATIONS

All enclosure modifications shall be done as specified and to include all applicable permits. To include backing for ADA components as needed. Finished surfaces to be neatly caulked with a bathroom rated mildew resistant sealant.

VENTILATION

Bath fans shall be 70 CFM or greater, be 1 one or less, and have ducting insulated to R-4.

SINKS

Sinks shall be porcelain finished metal or ceramic type unless integral cultured marble is specified.

SHOWER VALVE

Shower valves shall be single lever type with replaceable seats and scald guard regulator.

TOILET

Toilet shall be 1.6 gallon water saver type with complete tank assembly. Installation to include toilet seat, new supply, and wax ring with neoprene washer.

VANITY

Vanity shall have composite or plywood wood box and come with two hinged doors and tracked drawers to allow for storage. Finish and hardware to be as specified. Vanity to be level and securely attached to framing.

KITCHEN

CABINETS

Contractor should verify, in the field, all cabinet and countertop dimensions listed in the Work Schedules and shown on the drawings.

Front frames and drawer fronts shall be hardwood construction. Doors shall be hardwood or have hardwood veneer on both faces. (Base cabinets shall have solid doors - no panel doors allowed). Drawer fronts and doors may also be faced with high-pressure plastic laminate (Formica). Should new cabinets adjoin existing acceptable cabinets, the new cabinets shall match the existing in general construction style and appearance (finish). When existing cabinets to remain are painted, then new wood cabinets need not be pre-finished. Otherwise style and finish shall be as listed in the Work Schedules.

Both wall and base cabinet assemblies shall consist of individual units joined into continuous section, and with the exception of sink units and bottoms and backs for drawer cabinets, all units shall be fully enclosed with backs, bottoms and panels, and tops for wall cabinets. Face frames, when used, shall be of necessary thickness to provide rigid construction. Corner and lineal bracing shall be provided as necessary to insure rigidity and proper joining of components. Fixed shelves shall be recessed into grooves in the ends and in the fronts and backs or be supported by cleats all around. Adjustable shelves shall be supported on ends. Base cabinets designed to rest directly on the floor shall provide for a toe space at least 2-inches deep and 3-inches high. All exposed construction joints shall be fitted in a workmanlike manner, nails set, and holes filled. Swinging doors shall have a device sufficient to hold doors closed. Device may be spring catch, magnetic catch, self-closing hinges or equivalent. Doors shall be properly aligned and operate freely. When appropriate to their design, doors and drawers shall have brass finish pulls and knobs. Cabinet finish shall be clean and free from scratches and other defects. Cabinet units shall be installed level, plumb, and true to line. They shall be fastened to suitable grounds as per manufacturer's instructions. Use closer, filler strips and finish moldings as necessary for sanitary and appearance purposes. Upper cabinets over range space shall be 18-inches high. Upper cabinets over refrigerator space shall be 12-inches high.

COUNTERTOPS

Top material shall be securely bonded to 3/4-inch plywood or other equivalent material. Top material shall be laminated plastic sheet at least 1/16-inch thick.

Countertop shall be custom made, with self-edge. Front edge shall be approximately 1-1/2 inch. When scheduled, a 4-inch back splash shall be provided with the abutting wall. Flat rim sinks shall have stainless steel edging (Hudee-type sink rim).

Should new countertop adjoin existing countertop, the new material shall match the existing in pattern, colors and finish.

SINK

Kitchen sink shall be 20 gauge stainless steel construction with self rimming fully sealed edge sized to cabinet box specification. Connect to hot and cold supplies and waste system. Installation to be leak free.

GARBAGE DISPOSAL

Disposal shall be ½ horsepower continuous feed with manual reset. Shredder to be stainless steel and hopper corrosion resistant. Mount to have a sound deadener. Hook to existing waste line.

APPLIANCES

RANGE HOOD

Range to be 30" unless specified otherwise. 120 volt, 2 speed, 160 CFM, with a light and vented to the exterior of the building.

GAS DRYER

Dryer to be on 120 volt 20 amp circuit and be fed with ½ black IPS steel gas feed with shutoff valve. The installation shall include a rigid metal exhaust duct to the exterior. Duct not to exceed 25 feet and shall terminate with a louvered head.

ELECTRIC DRYER

Dryer to be Energy Star rated 240volt unit. The installation shall include a rigid metal exhaust to the exterior. Duct not to exceed 25 feet and shall terminate with a louvered head.

CLOTHES WASHER

Clothes washer shall be Energy Star rated. Installation to include new supply hoses. Front loader shall be allowed in case where septic system is at risk. These units shall be 3.5 cubic feet capacity. Install straight and level in both cases.

GAS RANGE

Installation to include a 120V 20 amp circuit and be fed with ½ black IPS steel gas feed with shutoff valve. Install level and plumb.

ELECTRIC RANGE

Range shall be Energy Star rated with pig tail. Install straight and level.

REFRIGERATOR

Unit shall be Energy Star rated. Unit to include frost free freezer, shelves, dual vegetable keeper, ice trays, temperature adjust, and interior light. Minimum volume of 18 cubic feet.

DISHWASHER

Unit shall be Energy Star rated with new waste line and hot water line with gate valve shut off.

MILLWORK

Rough work includes the repair or replacement of all framing members; the repair or replacement of all seriously damaged or otherwise defective structural members; some cutting through joists and other structural members to provide, for new or replacement plumbing stacks, drains, piping, duct work, etc. the framing of new walls, including sheathing and insulation for exterior walls; the building of new garages and carports; the installation of new access panels or doors to crawl spaces, attic spaces and bathtub plumbing; the repair or the building of new wood porches, including framing, columns, deck, ceiling, railings, skirt and steps; the rebuilding of stairways; the repair or installation of folding stairs; the repair, replacement or installation of softwood and plywood sub-flooring; the insulation of walls, ceilings and floors; the installation of vapor barriers; and the replacement or installation of miscellaneous metal items. It is the intent of these specifications that all walls, ceilings and floors are returned to a solid condition.

HANDRAIL

All rail to comply with current local code in terms of grip-ability and returns. Rail to be continuous and anchored to framing.

SHELVING

Shelving to be as specified and to rest securely to hardware anchored to hardware and rated to carry the desired load.

CLOSET ROD & SHELF

Shelf shall be a minimum 12 inches in depth. Rod shall be integrated into shelf brackets anchored into framing.

PANELING

Temper product at room temperature before installing as instructed.

PAINTING

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

Secure loose material and reset nails as necessary. Also remove all miscellaneous nails, hooks, screws, tacks, etc. Remaining holes, those no larger than a dime, shall be filled with linseed oil putty or caulking compound, depending on the surface material. All vents in surfaces to be painted shall first be swept clean and have paint-plugged squares removed. (if any area to be painted shows signs of mildew, those areas shall be treated with a good fungicide and the entire area shall be thoroughly dry before painting is begun).

LATEX CAULK

Install all caulking per manufacturers' label. Application to be of uniform thickness and width.

INTERIOR PAINT

All applications to be 100% acrylic latex unless stated otherwise. Surface prep should have removed all loose material and produced a smooth and dry surface. Prime if needed. Coating shall be even and uniform and completely cover underlying color. Allow a minimum of four hours in between coats. No runs or drips should be visible. All surrounding surfaces not meant to receive paint should be masked and protected from drips or overspray.

INTERIOR SPECIFICATIONS

ROUGH FRAME

11000: PROVIDE AND INSTALL METAL STUD WALL

Provide a 3-5/8" standard metal stud wall. Minimum base steel 018". Stud wall shall be spaced 16" o.c. and fastened with pan head screws. Anchor to foundation wall.

11010: PROVIDE & INSTALL WOOD STUD WALL

Provide a 2"X6" wood stud wall for exterior walls and 2"X4" for interior walls. Install straight and true. Use platform framing details. Wall framing to be spaced 16" or 24" o.c., depending on code. Lumber to be #2, standard or better or stud grade. Assemble and fasten with appropriate nails and anchors. All work shall meet local building codes and IRC. requirements.

11020: REPLACE EXISTING STUD WALL

Replace existing stud wall. Wall to be spaced 16"oc. Support adjacent surfaces. Lumber to be grade #2 or better standard or stud grade. Assemble and fasten with appropriate nails and anchors. Install per code requirements.

11030: PROVIDE AND INSTALL PLYWOOD SUBFLOOR

Provide and install 3/4" CDX plywood subfloor. Install level and smooth. Nail and glue with minimum 8 penny box nails 6" o.c. at butts and 8" in the field. Joints to occur at mid -point of supports. Span is not to exceed 16".

11040: REPLACE EXISTING SUBFLOOR

Replace existing subfloor. Remove exist and dispose of same. Provide and install APA rated 3/4" structural plywood sub-floor. Install level and smooth. Nail and glue as required. Joints to occur at the mid- point of supporting joists/beams. Span is not to exceed APA guidelines.

11050: PROVIDE & INSTALL PLYWOOD UNDERLAYMENT

Provide 1/4" APA underlayment grade plywood or luan. Plywood to be leveled and secured by nailing, (1 1/4" 3d annular thread c.o..) (1 1/1"6" c.o.--3"oc. at perimeter or stapling). Install with grain perpendicular to floorboards. Install level and allow 1/32" between butt joints. Fill any voids with appropriate leveling compound and sand smooth.

11060: PROVIDE AND INSTALL UNDERLAYMENT

Provide 1/4" Masonite type underlayment. Material to be leveled and secured by nailing 1" 2d or stapling.

11070: PROVIDE WOOD BEAM

Wood to be #2 or better. Size according to span. Beam to bear on columns and foundation walls a min of 6" and provide cleats to secure to posts. Use vapor barrier where in contact with concrete. All work to meet local building code. All joists shall be securely fastened to beam.

11080: WOOD "I" BEAMS

Supply and install wood/plywood "I" beam joists. Members to be sized as per manufacturers sizing for an L-480 design. "I" joists are for interior work only. Install as per the manufacturer's recommendations. Submit information on manufacturer and size to the Housing Rehabilitation Specialist. All work shall meet IRC.

11090: PROVIDE & INSTALL PRESSURED TREATED WOOD FLOOR JOIST

Provide pressure treated wood floor joists. Wood to be #2 or better and have grade samples from grading agency and treating agency. Joists to bear on a beam or foundation wall a minimum of 6". Use manufacturer's approved fasteners. Install per local building codes.

11100: PROVIDE & INSTALL PRESSURED TREATED WOOD POSTS

Provide pressure treated (CCA) wood deck column where indicated in work write-up. Column to be 4"X4" but sized for the imposed load according to local codes. Column to be set for a minimum of 42" below grade in an 8" dia. X 24" deep concrete footing on concrete pillar blocks. Backfill and compact. Attach column to deck structure with appropriate metal fasteners (galvanized). Posts to be straight and true and shall satisfactorily bear the imposed live and dead loads.

11110: PROVIDE & INSTALL PRESSURE TREATED WOOD BEAM

Provide incised pressure treated (.40 psi) wood beam. Beam to bear on columns or loading bearing walls a minimum of 3 1/2".

FLOORING

12000: REPAIR HARDWOOD FLOOR

Repair strip hardwood floor. Repair to include the repair and/or replacement of damaged, cracked, or missing portions of the flooring. If a portion is to be replaced -remove the entire board and install new. All repairs to be toothed into the existing and shall match the existing flooring in color, size, and texture as much as possible. Secure all loose members with concealed nailing. Fill all voids larger than 1/16" with wood patch and sand smooth. Voids or separations greater than 1/4" shall not be filled, but new flooring shall be cut and installed such that the void or separation is less than 1/4". Drive all nails below surface and fill or blind nail depending on type of flooring selected. Squeaks are to be minimized but need not be eliminated.

12010: REPAIR WATER DAMAGED FLOOR

Contractor to remove all fixtures and appliances from the affected area. Remove finished surface and cut away compromised or damaged underlayment as needed. Assess subfloor for damage and provide a price per square foot for change out and price per lineal foot for change out or framing. Restore all framing, subfloor, and underlayment to original condition and current code and prep underlayment for finished surface treatment and resetting of fixtures or appliances.

12020: PROVIDE AND INSTALL LAMINATE FLOOR

Remove old flooring as needed and inspect floor condition. Surface should be flat with a maximum difference between adjacent high and low points of 3/16 of an inch in a 10-foot radius and must be clean. Fill excessive voids or low points with a

Portland cement based leveling compound (Ardex) and let dry. If laying over concrete, use 6-mil polyethylene with a minimum 8" lap as a moisture barrier. Figure square footage and add 10%. Acclimate material in the room to be installed a minimum of 48 hours. Provide and install 1/8" sound foam under application. A 1/4" expansion space must be provided around the perimeter of the room. Fixed objects such as door jambs and casings must be undercut. The expansion space in wet rooms needs to be completely filled with a 100% mildew resistant silicone to prevent water getting underneath the floor in the following areas. Bathroom perimeter, in front of kitchen appliances, sink, utility appliances, and all exterior doors. Apply 1/4 round, base, stair nose, carpet transitions, and hard surface reducers per manufacturer's specifications.

12030: INSTALL NEW VINYL FLOOR

Provide and install new sheet vinyl. Install according to manufacturer recommendations. Install in strict accordance with manufacturer Instructions. Install in a manner which reduces the number of seams. Seal seams with manufacturer seam sealer. Install an underlayment that is approved by the manufacturer of the flooring. Install rubber or vinyl base-moldings as per industry standards.

12040: REPLACE VINYL BASE

Replace existing vinyl trim. Remove existing trim using care not to damage wall and floor surfaces--repair as needed. Install new trim with waterproof adhesive recommended by manufacturer Trim to be 1/8" minimum thick with cove base solid molded color minimum height 2" with matching performed corners and end stops. Trim to comply with FD SS-W-40a Type I rubber or Type II vinyl. In baths, kitchens and laundry rooms, apply a thin bead of silicone caulk at the vinyl floor covering and wall surface joint to provide a watertight joint.

12050: INSTALL NEW CARPET

Provide nylon fiber carpet and padding. Pad to be re-bond type 8 pound FHA approved. Install with minimum seams. Seams to be hot taped and carpet to be secured to floor with tack strips around perimeter.

12060: REPLACING CARPET

Replace existing carpet and pad. New pad to be re-bound minimum 7/16" thick, 6 lb., FHA approved. Install carpet with minimum number of seams. Seams to be hot

taped and carpet to be secured to floor with tack strips around perimeter. Stretch tight. Carpet to include an anti-static filament and shall be stain blocked.

12070: CLEAN CARPETS

Carpet shall be cleaned with a non-staining steam/vacuum soap solution. Test a small portion prior to cleaning entire floor to assure no discoloration occurs. Work to be performed by a professional company providing these services.

12080: REPAIR CERAMIC TILE

Repair ceramic tile to include re-setting loose tiles. Replace damaged tile. Match existing tile and grout as closely as possible.

12090: TRANSITION STRIPS

New divider edge shall be aluminum, approximately one inch wide. It shall be attached with countersunk Flathead aluminum screws. Divider edge for resilient flooring may be a standard preformed vinyl strip cemented to the floor. Tile stop for bathroom flooring shall be threshold as described below.

12100: UNDERLAY

All new underlay shall be plywood, particleboard or hardboard. It shall bear the label of a recognized grading association as to grade and type. Apply per finished surface manufacturers' instructions.

DRYWALL

13000: INSTALL NEW DRYWALL

Provide 1/2" drywall for wall applications and 5/8" for ceiling applications. Attach with drywall screws per manufacturer specs. Screws shall not be driven closer than 3/8" from the edges or ends of plasterboard and heads shall be seated slightly below the surface without breaking the paper. All outside corners shall receive metal corner beads, installed true and straight. Tape and finish joints and screw heads. Sand and prep for finishes. Joints to occur at supports. Note that 3/8" drywall is acceptable when laminating over existing surfaces but smooth out any imperfections in surface prior to laminating. INCLUDE PVA PRIMER OVER ALL NEW DRYWALL SURFACES. All drywall applications shall conform to the IRC. The rehabilitation specialist and the homeowner to approve the drywall prior to finish painting.

13010: REPAIR DRYWALL

Cut a square-shaped section around damaged area, slope edges inward at 45 degrees. Cut a corresponding plug from a plaster board panel of same type and thickness as original. Sand edges to an exact fit; provide an extra piece of gypsum board cemented to the inside of damaged wall to prevent replacement gypsum board from falling into the wall cavity. Finish the opening as a butt joint w/tape and compound. At the contractor's option, an entire sheet of drywall or portion of drywall may be removed and replaced and finished to match existing (no paint).

13020: INSTALL 5/8" TYPE "X" SHEETROCK

Provide 5/8" type "X" fire code gypsum board where indicated. Install with drywall screws of the appropriate length to engage the framing at least 1/2". Install galvanized metal corner beads. Tape and seal with commercially available compounds. Fill all fasteners and finish so that finishes may be applied. The application of finishes will be specified elsewhere, if required. Final assembly shall meet all local codes for such an application.

13030: CLEAN SURFACES

Remove all dirt, stains, and/or foreign materials from surface without damaging existing surface. Use cleaning chemicals as needed according to manufacturer instructions. Use care so as to not damage surfaces.

13040: APPLY MUD & TAPE

Apply compound and reinforcing tape over all joints. Apply 3 coats of compound, bedding, cover coat, and skim joint. Sand lightly after each coat. Do not damage paper while sanding. Surface shall be smooth and ready for paint without further sanding. 2 coat fasteners.

13050: ACOUSTICAL TILE/CEILING

Replacement tile for the repair of acoustical tile ceilings shall match existing. Furring strips shall be repaired or replaced as necessary. New Installation: First, do a border layout so that tiles for parallel edge rows are approximately the same width. Attach tile with staples or nails to furring strips as per manufacturer's recommendations. Tile shall be a 1/2-inch hardwood fiberboard. Size shall be 12-inches X 12-inches, 12-inches X 24-inches or 16-inches X 16-inches. Joints shall be tongue and groove with beveled edges. Finish shall be vinyl latex coating. Finished ceiling shall be level.

INTERIOR DOORS

14000: REMOVE & REPLACE PRE-HUNG HOLLOW CORE DOOR

Remove existing door and replace with a 1 3/8" pre-hung hollow core swing flush wood door and frame. Core to be corrugated construction arranged in diagonal cells. Frame construction as a rigid unit. Hardware is to include 2 butt hinges. All other hardware is specified elsewhere, if needed. Contractor to remove existing door from the site. Masonite Corp., Legacy or equivalent.

14010: BI-FOLD DOORS

New bi-fold doors shall be either 1-3/8 inch flush-type, hollow core wood doors or as scheduled. When scheduled, louvered doors shall be full louvered types. Doors shall be installed complete with new hardware. When two pairs of doors are being installed, a door aligner shall be provided where the center panels meet. Hinge doorstops shall be installed for all bi-fold doors. All hardware (doorknobs, hinges, etc.) shall be polished brass or brushed aluminum finish. When doors are to be natural finish, they shall be stain grade wood or they may be pre-finished (wood grain). When doors are to be painted, they may be paint grade.

14020: SLIDING DOORS

New doors for bypassing installations shall be 1-3/8 inch flush-type, hollow core wood doors. New doors for pocket installations shall be as scheduled either French-type or hollow core. Doors shall be installed complete with new hardware. Two recessed door pulls (large diameter type) and one doorstop shall be polished brass or brushed aluminum finish. When doors are to be natural finish, they shall be stain grade wood or they may be pre-finished (wood grain). When doors are to be painted, they may be paint grade.

14030: ACCESS PANELS

New access panels shall be 3/8-inch plywood with beveled edges. Plywood shall be A-D interior type. Access panels to attic spaces above shall be lay-in types. Access panels to leave spaces and bathtub plumbing shall be attached with screws and grommets.

WINDOWS

15000: REPAIR WINDOW UNITS(S) TO PERMIT "LIKE NEW" OPERATION

Repair to include the repair and/or replacement of any damaged or non-functional sashes, frames, balances, screens, muttoms, locks, handles, ropes, chains, glass, hinges, stops, weather-stripping and caulk. When finished, all units should operate smoothly and freely.

15010: WINDOW BLINDS

Supply and install off-white horizontal blinds on all windows and patio door. Levolor VBC or equal. Install the blinds as per the manufacturer's recommendations.

15020: VINYL WINDOWS

Replace existing window unit(s) with extruded rigid polyvinyl chloride (PVC) replacement window(s). The windows shall conform to current Washington State Energy Code. Window to include matching removable screen sash. Caulk joints after installation. Unit to be square and level to assure proper operation. New window installation shall be consistent with the elevation of existing windows. The installation shall be as the manufacturer's recommendations. Dispose of old unit off-site. Repair of adjacent surfaces and installation of interior/exterior trim shall be included when adjacent siding and trim has been cut back or removed to facilitate installation. All work shall meet IRC. The windows shall be Milgard or equal with a ten year warranty.

15030: SKYLIGHTS

Skylights shall be fully tempered glass, heat-strengthened glass, wired glass or approved rigid plastics meeting UBC requirements of Section 2603.7. Skylights set at an angle of less than 45 degrees from the horizontal plane shall be mounted at least 4 inches above the plane of the roof on a curb constructed of materials as required for the frame. Approved rigid plastic domes to be used on slopes less than 15 degrees. Skylights installed at a slope of 15 degrees or more from the vertical plane shall be fully tempered glass, heat-strengthened glass or wired glass. Installation shall meet all current manufacturers' specifications. Skylights shall be Velux, Westurn, Milgard, Andersen or pre-approved equal. Skylight installation shall be consistent with UBC Sections 2409.1 to 2409.6, 2603.7.1, Table 24-A, and Graph 24-1.

BATHROOM

16000: INSTALL NEW TUB SURROUND (LAMINATE)

Remove and dispose of existing material around the tub. Provide and install new single-piece or multi-piece, plastic laminate tub/shower surround over new 1/2 inch green-board drywall. If grab bars are to be installed, 1/2 inch plywood shall be used instead of 1/2 inch green-board. Repair/replace structural members that are unsound. Use Wilsonart, Formica-brand or equal plastic laminate. Follow manufacturer recommendations on installation.

16010: INSTALL NEW TUB SURROUND (INTEGRAL PLYWOOD)

Remove and dispose of existing surround. Ensure wall cover is sound and provide and install 3/4" laminate, high density foam, and integral plywood panels. Provide a price per foot change out of wall cover in advance. Scribe panels to walls or fixture as needed and adhere to walls per manufacturers specifications. Trim out valve and caulk or seal surround edges and seams as required. American Bath Industries or equivalent.

16020: INSTALL BATH FAN & LIGHT

Provide and install ceiling ventilator with light. Unit should ventilate at a minimum rate of 70 CFM. Unit to include duct caps, timer switch and power supply. Unit to be installed according to manufacturer Recommendations. Unit installation to include bulb. Discharge to building exterior-not attic or crawl with duct work as per energy code. All duct work from the fan shall be insulated to R-4.

16030: INSTALL BATH FAN

Provide and install ceiling ventilator. Unit should ventilate at a minimum rate of 70CFM. Unit to include duct, cap, timer switch wiring. Unit to be grounded and installed according to manufacturer recommendations. Discharge to exterior through Broan, Nutone or equal as per Energy Code. All duct work from the fan shall be insulated to R-4

16040: BATH FAN /HEAT LIGHT

Provide and install ceiling ventilator, heater and light unit. Unit should ventilate at a minimum rate of 70 CFM. Heater to be of resistance type. Unit to include duct cap, timer switch and power supply. Unit to be installed according to manufacturer's recommendations. Unit installation to include bulb. Discharge to building exterior-

not attic or crawl with duct work as per Energy Code. All duct work from the fan shall be insulated to R-4.

16050: REPAIR EXHAUST FAN

Repair exhaust fan. Work to include repair/replacement of motor, duct, electrical service, bulb switches, weather fitting, stripping and attachment. Lubricate motor if applicable. Assure unit is operating smoothly and properly.

16060: PROVIDE AND INSTALL NEW SURFACE-MOUNTED MEDICINE CABINET

Cabinet shall be 15"wX36"hX4 1/2"d. Door shall have 1/8" thick safety mirror. Unit itself shall be 24ga.steel with baked white enamel finish or stainless steel. Light shall be 4 bulb incandescent or 20 watt fluorescent either top or dual side mounts. Door may be slide or swing. Parker-Scovill 900 series or equal. Submit sample or UT sheet to owner for approval. Disconnect any electrical outlet on cabinet, if it is not ground fault protected.

16070: INSTALL GRAB BAR

Provide new 1 3/4" diameter grab bar. Length to suit owner. Attach following manufacturer recommendations.

16080: INSTALL BATH ACCESSORIES

Provide and install new bathroom accessories which shall include a soap dish, a 24" towel bar, a toilet tissue holder, and a 1" diameter shower curtain rod. Attach per manufacturer recommendations.

16090: INSTALL SHOWER CURTAIN ROD

Provide and install new 1" diameter shower curtain rod. Attach per manufacturer Recommendations.

16100: REFINISH TUB

Thoroughly clean tub with cleanser and score with water resistant sandpaper. Rinse and let dry then wipe clean with a tack cloth. Mask off area to be protected and apply primer reducer. Apply primer coat and provide air flow to the room until dry. Apply topcoat with a sprayer and allow to dry 48 hours before use.

16110: REPLACE EXISTING TUB/SHOWER WITH SHOWER ONLY

Size will be 5' or as large as demoed space will accommodate or homeowner preference. Change shower valve to single lever scald guard style. Surround is to be laminate, fiberglass, or pre-made shower wall kit, over 1/2" CDX plywood, installed as per manufacturer rec. Install grab bars on each wall as homeowner requests. Install a soap dish or shower caddy. Install handheld shower on a 24" glide bar. Install a shower rod & curtain. All work shall meet all local and state plumbing codes. All debris shall be removed from the site.

16120: INSTALL 5FT TUB

Provide and install new 5ft bathtub or 1 piece; 2 piece; 3 piece; 4 piece fiberglass tub. Fittings to include a trip-waste and overflow-chrome plated. Connect to existing or new drain line. Install trip-waste and adjust so that the tub will hold water. If required, provide additional floor framing member to support the concentrated load of tub. The tub should bear on minimum of 3 joists and 3/4" subfloor. American Standard or approved equal shall be used.

16130: INSTALL INTEGRAL BATH SINK

Provide cultured marble countertop with integral sink basin. Cultured marble to consist of filled thermal set polyester composites, pigments with glossy gel coat. Unit to include built-in back splash. Unit to be sized to vanity base cabinet. Faucets and other fittings shall be specified elsewhere. Unit to meet ANSI-Z124.3.

16140: INSTALL TUB/SHOWER VALVE

Provide single lever-type faucet. Faucet installation to include piping to faucet, spout, and shower head, faucet assembly and caulking. Diverted valve, lever for tub/shower use, acrylic knob. Delta, Kohler or Crane C2309 or equal.

16150: INSTALL BATH SINK FAUCET

Provide lever type faucet. The faucet shall be connected to the new or existing supply. The faucet shall be a single lever chrome faucet with replaceable seats. The faucet shall be connected to a pop-up drain assembly. Standard is Delta 500 series or approved equal.

16160: INSTALL NEW TOILET

Remove & dispose of existing toilet. Supply and install new toilet. Toilet shall be water saver type. Include toilet seat and all necessary fittings and seals to connect toilet to existing or new water supply and waste lines. In all installations, include new gate valve angle stops and flex water lines. Installation shall meet the UPC, IRC and all local and state plumbing codes. American Standard, Kohler, or approved equal shall be used.

16170: INSTALL 36"x36" FIBERGLASS SHOWER STALL

Shower stall shall include 3 walls and a non-skid floor pan. Install per manufacturer recommendations. Plumbing fittings shall be specified elsewhere in this report.

16180: INSTALL ENAMELED STEEL SINK

Provide and install new enameled cast iron bathroom sink. Sink shall be an oval self-rimming type. Install in countertop, connect to existing drain line. Faucet shall be specified elsewhere in this report.

16190: BATH VANITY

Remove and dispose of the existing vanity, top, sink, faucets and angle stops. Supply and install new ____ inch base cabinet #_____, vanity top #_____, sink #_____ faucet # _____, gate valve angle stops and supply lines. Install as per the manufacturer's recommendation and the National Association of Home Builders Residential Construction Performance Guidelines.

KITCHEN

17000: REPAIR WOOD CABINETS

Repair existing wood cabinet(s). To include replacement/repair of damaged or missing components and hardware. Cabinets to be securely attached. Cabinets to operate smoothly and shall be 'like-new' in their operation. Work includes repair and/or replacement of door and drawer hardware, handles, knobs, floors, backs, fasteners, shelves, brackets, drawers and other components required to make a free and fit set.

17010: KITCHEN CABINETS

Remove and dispose of the existing kitchen cabinets. Supply and install cabinets and hardware. Cabinets shall be from stock; no special order cabinets. Crown moldings, plate rails, decorative trim is not permitted. Install the cabinets as per the manufacturer's recommendations and the NAHB Residential Construction Performance Guidelines.

17020: PRE FORMED COUNTERTOP

Remove and dispose of the existing counters. Provide and install pre-formed high pressure laminate with backsplash. Fasten to base cabinet with appropriate adhesive, fasteners and miter bolts. Use color match sealant on all miters and wipe clean. Counter to be level and true. Install as per manufacture's recommendations and the NAHB Residential Construction Performance Guidelines.

17030: LAMINATE TOPS

Contractor to provide and install 3/4 particle board deck to configure to the layout of cabinetry while providing a consistent and straight overhang and self-edge that does not interfere with the operation of doors, drawers or cutting boards. The deck shall be securely fastened to boxes and over-laid with a laminate. Contractor to secure with contact cement and ensure that the application is free of air pockets or gaps. Self-edge to be routed flush while not marring the surface. Backsplash to be bull nose tile application unless stated otherwise. Any and all seams shall be within industry standards and sealed with a matching sealant from the manufacturer.

17040: INSTALL STAINLESS STEEL KITCHEN SINK

Provide and install new self-rimming double bowl stainless steel kitchen sink. Minimum size 32"X21". Include all necessary fittings and hardware to install and connect to existing drain lines. Faucets shall be specified elsewhere in this report. Sink to be 20ga. stainless steel type 302 with rounded corners and beveled deck edges with #4 finish. Accessories to include two stainless steel strainers/stoppers.

17050: INSTALL KITCHEN FAUCET

Provide and install kitchen faucet. Ensure proper configuration based on faucets hot and cold inlet shanks and sinks mounting holes. Confer with owner as to number of handles, finish, handle type, and spout type. Mount per manufacturer's instructions and connect to hot and cold angle stops with new braided supplies of appropriate length.

17060: GARBAGE DISPOSAL

New garbage disposal shall be 1/2 horsepower, continuous feed type, with manual reset. Shredder shall be stainless steel and hopper shall be corrosion resistant. Disposal shall be installed complete. Mount shall be sound deadening. Modify the existing drain piping as necessary to accommodate a new appliance.

APPLIANCES

18000: INSTALL NEW RANGE HOOD

Provide 30" ducted 120V, 2 speed, 160 CFM (minimum) range hood with light. Cut opening through wall or run to roof for venting. Duct length not to exceed 10ft. Provide exterior wall cap, caulk and seal to assure weather tightness. Connect fan to 15 amp branch circuit. Install unit above range and attach to wall cabinets. Installation to be per manufacturer. recommendations and to include 40 watt bulb.

18010: REMOVE EXISTING APPLIANCE

Remove existing appliance from existing location and dispose of according to owner's instructions. Terminate all fuel supplies per code and remove any ducting and repair or replace damaged or missing surfaces effected by the removal of ducting.

18020: GAS CLOTHES DRYER

Remove and dispose of the existing gas clothes dryer. Supply and install a new gas dryer. Installation shall include: 120V 20 amp circuit and receptacle located within 2 feet of the dryer. 1/2" black IPS steel gas feed with shutoff valve and no more than 4 feet of natural gas rated flex pipe from the rigid line to the dryer. The installation shall include a rigid metal exhaust duct system. The diameter of the exhaust duct shall be as required by the clothes dryer's listing and the manufacturer's installation instructions. The duct shall terminate outside the building. Screens shall not be installed at the duct termination but only a hooded back draft damper. The maximum length of the duct shall not exceed 25 feet. Exhaust ducts shall not be connected with sheet metal screws that extend into the duct. The flexible transition duct used to connect the dryer to the rigid duct shall not exceed 8 feet. Unit to be installed level and straight with adjacent surfaces.

18030: ELECTRIC CLOTHES DRYER

Remove and dispose of the existing clothes dryer. Supply and install a new Energy Star rated 240V dryer. The installation shall include a rigid metal exhaust duct system. The diameter of the exhaust duct shall be as required by the clothes dryer's listing and the manufacturer's installation instructions. The duct shall terminate outside the building. Screens shall not be installed at the duct termination but only a hooded back draft damper. The maximum length of the duct shall not exceed 25 feet. Exhaust ducts shall not be connected with sheet metal screws that extend into the duct. The flexible transition duct used to connect the dryer to the rigid duct shall not exceed 8 feet. Unit to be installed level and straight with adjacent surfaces.

18040: CLOTHES WASHER

Remove and dispose of the existing clothes washer. Supply and install a new Energy Star rated clothes washer. Installation shall include new reinforced supply hoses. Install straight and level.

18050: FRONT LOADER

Remove and dispose of existing washer. Provide and install new Energy Star rated 3.5 cu. ft. large capacity front load washer. Installation shall include new reinforced supply hoses. Install straight and level.

18060: GAS RANGE

Remove and dispose of the existing gas range. Supply and install a new natural gas range. Installation shall include: 120V 20 amp circuit and receptacle located behind the range. 1/2" black IPS steel gas feed with shutoff valve within 3ft of appliance, straps, and flexible connector not to exceed 6 feet. The unit shall be installed level and plumb.

18070: PROVIDE & INSTALL NEW REFRIGERATOR

Provide new Energy Star rated refrigerator/freezer where indicated. Unit to include frost free freezer, shelves, veg. Keeper, ice trays, temp adjustment, and interior light. Minimum volume 18cuft. No automatic ice makers allowed.

18080: DISHWASHER

Remove and dispose of the existing dishwasher. Supply and install new Energy Star rated dishwasher with a new waste line, new hot water line and gate valve shutoff. All work per national and local codes.

18090: ELECTRIC RANGE

Remove and dispose of the existing electric range. Supply and install a new Energy Star rated 30" electric range with plug cord. Replace the stove receptacle if it is damaged. Unit to be installed level and straight with adjacent surfaces

MILLWORK

19000: SHELVING

New shelving shall be 3/4-inch #2 fir, 3/4-inch edge banded particleboard, or 3/4-inch A-B interior plywood (exposed edges faced with solid wood edge material). Each shelf in closets or storage rooms shall be supported on a continuous wood cleat at the walls; where hook strips occur under a bottom shelf, the shelf may be supported on the hook strip. The shelving shall be securely braced against warping and sagging and be scribed to the adjacent construction. Intermediate supports shall be provided for shelves over 4'.0" long.

19010: CLOSET ROD AND SHELF

All clothes closets shall have one clothes pole and one shelf. New shelf shall be 1-inch X 12-inch (nominal dimension) fir, 3/4-inch X 12-inch particleboard or 3/4-inch X 12-inch plywood. See further description of shelving below. Rod shall be wood or finished metal. Provide intermediate support for rods and shelves over 4'.0" long. New closet rod and shelf may be combination metal rod and shelf.

19020: PROVIDE & INSTALL WOOD PANELING

Provide new owner chosen paneling with a minimum thickness of 3/16". Allow to stand a minimum of 24 hours in room to be installed to condition for humidity and temperature. Align panel edges centered on the face of the studs. Countersink all fasteners and fill with putty from a color matched putty stick or use color coated nails to blend with color of panels. Nail panels directly to stud framing or furring with at least 3d nails spaced at 6" along perimeter of each panel and 12" along each stud or furring strip inside panel edges. Max. span between supports is 24".

PAINTING

20000: INSTALL LATEX CAULK

Provide and install new latex caulking. Follow manufacturer recommendations for surface preparations. Protect all adjacent surfaces from stray caulking. Caulking shall be of uniform thickness and width. DAP Alex Plus or equal.

20010: PAINT (INTERIOR SEMI-GLOSS)

Apply one coat semi-gloss acrylic latex paint in the bath, kitchen, and utility room. Apply scrub able flat acrylic latex paint in all other areas. Prime all new drywall with one coat PVS primer. Wash all existing painted surfaces with TSP before painting. Prior to application, assure surfaces are smooth, clean, dry and ready to receive paint. Holes and imperfections should be filed and sanded with patching compound. (continued)

Patches/repairs to dry a minimum of 24 hours before painting. Paint to dry a minimum of 4 hours between coats. Use care to prevent coating electrical devices, door/window hardware, trim or adj. surfaces or coverings. Standard is Sherwin Williams, Parker Paint, Kelly Moore or Rodda Paint. Other brands to be approved by the rehabilitation specialist. All colors must be approved by the homeowner. The contractor is responsible for the cleanup of all over spray.

20020: APPLY METAL PRIMER

Apply metal primer. Scrape, sand, and otherwise clean loose material from surface. Apply primer to clean, dry surface per manufacturer specs. Aluminum to receive zinc chromate primer, galvanized steel to receive galvanized type primer. Standards are Sherwin Williams -Alum-Zinc Chromate primer, Galvanized B50, Iron-Kem Kromik.

20030: APPLY INTERIOR FLAT LATEX

Apply one coat flat acrylic latex finish. Prime all bare surfaces with 100% latex primer.

Prior to application, assure surfaces are smooth, clean, dry, and ready to receive paint. Holes and imperfections should be filled and sanded with patching compound. Finish shall be uniform and even without streaks, spots, or runs.

Patches/repairs to dry a minimum of 48 hours before painting. Paint to dry minimum 24 hours between coats. Use care to prevent coating electrical devices, door/window hardware, trim or adjacent surfaces or coverings. Standard is Sherwin William, Parker Paint, Kelly Moore or equal. Other brands to be approved by the rehabilitation specialist. The contractor is responsible for the cleanup of all overspray.

20040: APPLY EXTERIOR FLAT ACRYLIC PAINT

Paint exterior siding and trim on house. Spray and back brush field, edges and channels. Roll/brush all trim. Prior to application, assure surfaces are smooth, clean, dry and ready to receive paint. Holes and imperfections should be filled and sanded with patching compound as approved by the paint manufacturer. Finish shall be uniform and even without streaks, spots or runs and shall completely cover. Any overspray shall be properly removed as per NAHB Standards. Apply one coat satin/eggshell acrylic latex exterior paint. If covering old work, make sure that all loose paint has been scraped and primed with 100% acrylic latex primer. If performing new work...prime with 100% acrylic latex primer. Apply cover coat per manufacturer specifications. Contractor is responsible for the cleanup of all overspray.

SYSTEMS STANDARDS

ELECTRICAL SYSTEMS STANDARD

All existing electrical equipment shall be in good operating condition. If hazards are identified, corrections or alterations to existing equipment or wiring shall be performed by a certified electrician and shall conform to the National Electric Code.

MAIN ELECTRICAL STANDARD

All electrical services shall be safe, secure, and weather-tight. All main panel boxes shall be properly grounded and easily accessible to all occupants in all dwelling units dependent on that electrical service. All Federal Pacific and Zinsco panels should be inspected for change-out by a certified electrician with an Administrator's License. Any panel make and model that has been recalled shall be replaced (Zinsco, Federal Pacific).

RECEPTACLE STANDARD

Each habitable room shall contain two duplex receptacle outlets. Every bathroom, kitchen, and laundry area shall be GFCI protected. All garage and exterior outlets

shall be GFCI. Exterior outlets shall be weather tight. Electric dryers shall have a 220 volt outlet.

LIGHTING FIXTURE STANDARD

Every hall, interior stairway, toilet compartment, bathroom, kitchen, and furnace room shall contain at least one lighting fixture. If bedrooms do not contain a fixed lighting fixture, a switched outlet for a lamp must be present. For energy consumption purposes, upgrading fixtures to energy star or changing incandescent bulbs to CFL's or LED's is permissible.

FIRE SAFETY STANDARD

All units rehabilitated under this program shall have certified and approved smoke detection devices installed in the unit at completion. Units shall have a 10 year lithium battery and occupy each level of the home.

PLUMBING SYSTEMS STANDARD

The plumbing system shall operate free of fouling / clogging and not have cross connections which permit contamination of the water supply. There shall be sufficient plumbing to supply potable water to all fixtures in the kitchen, bath and laundry rooms.

WATER SERVICE ENTRY / WATER DISTRIBUTION STANDARD

All water lines shall be properly connected to an approved water system. All sinks, bathtubs, and showers shall be supplied with hot and cold running water, and all toilets shall be supplied with cold running water. Interior water lines shall supply sufficient volume and pressure and be free of leaks.

DRAIN WASTE AND VENT PIPING STANDARD

Every sink, bathtub, shower, toilet and other plumbing fixture shall be properly connected to either a public sewer system or to an approved private sewage disposal system and shall be properly vented.

WATER HEATER STANDARD

Every building or unit within a building shall have at least a 40 gallon hot water tank. No gas or oil fired water heaters shall be located in the bedroom, clothes closet, under a stairway, or in a confined space with access through any of the

above locations. All water heaters are to be equipped with a temperature/pressure relief valve with a discharge line vented to the exterior. All water heaters shall have a shut off valve on the cold water supply line atop the heater.

WELL HOUSE STANDARD

When it is not possible to place a pressure tank and other equipment within the dwelling in a safe manner, a well house may be provided. All well houses shall be constructed using a concrete slab floor, provide sufficient power for a pump and light, be weathertight and provide insulation from freezing.

WELL STANDARD

Decommissioned wells shall be capped in accordance with state code. All new water wells and all repairs to existing systems shall be installed or performed by certified contractors in accordance with state and local codes and regulations.

SEPTIC SYSTEM STANDARD

All septic systems shall be operating in a safe and sanitary manner. The installation of new systems or the repair of existing systems will be completed by a licensed contractor in each specialty area. All work must meet current applicable codes and regulations and be permitted and inspected by the TPCHD.

MECHANICAL EQUIPMENT STANDARD

All mechanical equipment in the building shall provide for safety in operation and adequate capacity for intended use. All mechanical equipment shall be protected from excessive moisture, blockages, corrosion, or other destructive elements. (Air conditioners excluded).

HEATING MECHANISMS STANDARD

Every heating system shall be capable of maintaining an interior temperature of at least 70F within all habitable areas at a point three feet above the floor. All duct work shall properly function from the heat source to the register vent and from the return air supply to the heat source. All fuel burning equipment shall be connected to an approved chimney, flue, or vent and shall not allow exhaust gasses to enter the living areas.

FUEL SUPPLY STANDARD

All natural gas, oil, and liquid propane gas piping shall be free of leaks and all lines shall be free of corrosion that potentially could cause a fuel leak.

PERFORMANCE STANDARDS

ELECTRICAL

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

Incidental items not mentioned in the specifications or listed in the Work Schedules that can legitimately and reasonably be inferred to belong to the work described or be necessary in good practice to provide a complete system shall be furnished and installed as though specified in every detail.

All material and equipment used shall conform to the latest U.L. (Underwriters, Laboratory), A.N.S.I. (American National Standards Institute), and F.S. (Federal Specifications) standards, as well as to all other applicable standards. All materials and equipment used shall be clearly marked to permit identification of manufacturer, model and type.

The contractor shall furnish all instruments, gauges and equipment required for testing and shall perform those tests required by the related authorities. Equipment, materials or work found to be defective during testing shall be replaced by new work and be re-tested until proven satisfactory.

The contractor shall be responsible for securing all permits, approvals, inspections and licenses required for the work of this section.

All new materials shall be in good condition. Each type of material shall be the same quality throughout the project.

All finished parts of the materials and equipment for the work of this section shall be protected against damage from whatever cause during the progress of the work and until final completion. All electrical materials and equipment in storage and during construction shall be covered in such a manner that no finish surfaces will be damaged-or marred.

All wiring, fixtures, switches, receptacles, etc. shall be installed complete with all accessories.

Fixtures, equipment and materials furnished by others, which require the contractor, shall connect electrical wiring, connections, or related electrical work, up.

The contractor shall in no case install permanent electrical equipment that may be damaged by the roughing-in for heating, ventilating, or plumbing equipment.

The contractor shall do all drilling, cutting and patching required for the installation of the work under this section. All patching shall be of the same materials, workmanship and finishes as the original work and shall accurately match all surrounding work.

All remaining electrical equipment and exposed wiring not in use shall be disconnected and removed. See also Section #400. 20" General Instructions" under DEBRIS.

NEW ELECTRICAL SERVICE

New service shall be a minimum of 150 AMP or 200 AMP with electric heating, except where local jurisdictions require a minimum of 200 AMP for all new installations. Service shall include new service mast or service knob with support where necessary. Service shall be underground where required. Coordinate installation with local utility company. Locate new panel inside the house whenever possible.

New panel shall be 200 AMP with room for at least 12 circuits. Panel box shall be flush or surface-mounted as required. It shall be circuit breaker with thermal magnetic breakers. If fuse-type, fuses shall be IS - type with adapters. Prior approval may be required if panel is to be located on exterior. of house; this panel shall be factory-built rain tight type. Panel box shall be placed in a convenient and

protected location. Service equipment shall not be located in coal bins, bathrooms, clothes closets, attics, above plumbing fixtures or above laundry and kitchen appliances. Sufficient clearance and accessibility shall be provided when installed in basement near laundry trays, oil tanks or other permanent obstructions. Each living unit shall have an individual disconnect and circuit protecting device. Where more than one living unit is supplied from a single service entrance panel, the panel shall be located in a common area accessible to all units. The disconnect and circuit-protecting devices for each unit shall be clearly identified.

After installation each lighting panel shall be tested with the mains disconnected from the feeder, the branches connected, the wall switches closed, and the fixtures permanently connected but without lamps. Each individual power circuit shall be tested at the panel with the power equipment connected for proper operation. All circuits in the panel shall be clearly identified.

CIRCUITS

When a living unit is being rewired, in addition to the special circuits serving kitchen, laundry, etc. provide as follows. For units up to 500 square feet provide at least two 15 ampere circuits for lighting and general use and one additional 15 ampere circuit for each additional 500 square feet or fraction thereof.

New one-circuit service to garage shall be an independent branch circuit of 20 ampere capacity. Service shall include new underground conductor, a keyless (switched) fixture for each parking space and at least one grounded (GFI) receptacle. Service shall be installed complete with all wiring and accessories.

New furnace circuit shall be an independent branch circuit of 15 or 20 ampere capacity. Contractor shall wire the circuit from the panel box to a junction box located near the heating unit. Installation shall include disconnect switch. Coordinate installation with the heating contractor.

New laundry circuit shall be an independent branch circuit of 20-ampere capacity. - Receptacle for washing machine shall be a 15 ampere, 125 volt, duplex grounding type mounted on the wall behind or adjacent to each set of laundry trays. When installed new, the wall receptacle shall not be higher than 48 inches above the floor.

New small appliance circuits shall be 20-ampere capacity branch circuits except that Seattle requires these circuits to be three-wire 115/230 or 120/208 volt circuits with split-type receptacle outlets. Kitchen areas shall have at least one small appliance circuit. When one circuit is scheduled to be installed, a minimum of three grounded

receptacles shall be wired to this circuit. When two circuits are scheduled to be installed, a minimum of two grounded receptacles shall be wired to each circuit. When these circuits also serve pantry, dinette, breakfast room and dining area, the receptacles for these areas shall be equally divided between the extended circuits.

New attic circuit shall be an independent 15-ampere branch circuit provided for an unfinished attic space adaptable for living. Circuit shall include one receptacle.

GFI circuit protection shall be provided for all garage, basement, crawl-space and exterior outlets. All outlets within 6 feet of a water source shall have GFI protection. All hydro massage or Jacuzzi tubs shall have GFI protection. At least one GFI outlet shall be provided for a minimum of 10 feet and a maximum of 20 feet from pool walls (no outlet shall be allowed that is less than 10 feet from pool walls). Temporary power shall have GFI protection for all 125volt, 15, 20 and 30amp outlets.

CONDUCTORS AND ACCESSORIES

Hot water heater circuit wiring shall be No. 10 AWG.

Dryer circuit wiring shall be No. 10 AWG. Range circuit wiring shall be No. 6 AWG. Branch circuit wiring for 20-ampere circuits shall be No. 12 AWG and all other branch circuit wiring shall be no smaller than No. 14 AWG. Unless otherwise required by local codes, all new wiring shall be Romex. 15 and 20 AMP circuits shall be 2-wire Romex with or without a grounding wire as required by code.

All conductors shall be plainly marked or tagged as follows

- Underwriters' Laboratories, Inc. label.
- Size, kind and insulation of the wire.
- Name of the manufacturing company and the trade name of the wire
- Month and year when manufactured (date shall not exceed 8 months prior to the date of delivery to the site, except for feeders).

Outlet boxes shall be the pressed steel knockout type or be cast iron with drilled, tapped and plugged holes and be hot-dipped galvanized or sherardized. Outlet boxes may also be approved non-metallic types. All boxes shall be of the proper code size for the number of wires or conduits passing through or terminating in that box. Approved factory-made knockout seals shall be used in all boxes where the knockouts are not intact. All outlet boxes shall be accurately placed and securely fastened to the structure independently of the conductor. The plaster

rings shall be set flush with the finished surface of the ceiling or wall. The hangers for the light outlets shall have adjustable studs.

When work is completed, the wiring and connections shall be tested for continuity, short circuits and improper ground in accordance with the applicable code requirements.

FURNACE OR BOILER WIRING AND DISCONNECT

A readily accessible disconnect switch shall be mounted on the exterior of the furnace or on a surface adjacent to the furnace. Heating equipment, which is not readily accessible, shall have an additional disconnect installed at the nearest readily accessible location. All electrical wiring shall comply with the National Electrical Code. Only those motors, which are an integral part of the heating equipment, may be connected to the furnace circuit.

New package shall include a doorbell button for the main entrance door, wiring, chimes, or bell, and transformer. A mechanical bell is unacceptable.

INSTALL NEW, REPLACE, RELOCATE AND REMOVE ITEMS

When an item is scheduled to be installed new, a new fixture, switch or receptacle shall be installed complete with all wiring and accessories.

When an item is scheduled to be replaced, the existing device shall be removed and a new fixture, switch or receptacle shall be installed and connected up to the existing wiring.

When an item is scheduled to be relocated, it shall be removed complete (or when the existing outlet box and wiring cannot be removed, a blank cover plate shall be installed) and a new fixture, switch or receptacle shall be installed complete in a code approved or more appropriate location.

When an item is scheduled to be removed, it shall be removed complete, or when the existing outlet box and wiring cannot be removed, a blank cover plate shall be installed.

COVER PLATES

New cover plates shall finish flush with drywall, plaster or other finished surface. Color shall match receptacle or switch.

CONVENIENCE RECEPTACLE

When receptacles are scheduled to be installed new or replaced, they shall be installed complete with new cover plates. When all switches and receptacles in a room are new, they shall be off white or ivory color. New convenience receptacles shall be flush duplex receptacles. Receptacles for kitchens, bathrooms and laundry areas, whether replacement or new, shall be 3-wire "U" ground duplex receptacles; receptacles shall be grounded. New receptacles shall be conveniently spaced in each room. New receptacles shall not be located in the baseboard. Bathroom receptacles shall be GFI type.

BASEBOARD AND FLOOR MOUNTED RECEPTACLES

These receptacles shall be removed automatically when the unit is being rewired.

SWITCHES

When switches are scheduled to be installed new or replaced, they shall be installed complete with new cover plates. When all switches and receptacles in a room are new, they shall be off white or ivory color. New switches shall be flush toggle switches, either single pole, 3-way or 4-way as scheduled. All existing two button push switches shall be replaced.

LIGHTING FIXTURES

Each lighting fixture in the unit shall be furnished with a lamp bulb or bulbs of appropriate type and wattage. New lighting fixtures shall bear either the UL or the ETL label.

New exterior fixtures shall be wet location types. Wall and ceiling-mounted fixtures shall be cast aluminum with black satin finish.

New keyless and pull-chain fixtures shall be porcelain. All pull-chain fixtures shall have a single convenience outlet.

Ceiling-mounted fixture for living room shall be 12-inch round glass. Ceiling-mounted fixture for dining room shall be 12-inch round glass. Ceiling-mounted fixture for bedroom shall be 12-inch square glass. Ceiling-mounted fixture for kitchen shall be 10-inch round glass. Wall-mounted fixture for bathroom shall be white glass sidewall fixture, two (2) light styles. Ceiling-mounted fixture for bathroom shall be 6-inch round glass. Ceiling-mounted fixture for hallway shall be 6-inch-round glass-enclosed fixture. Ceiling-mounted fixture for stairway shall be 6-

inch round glass-enclosed fixture. Fixtures for basement, second floor and attic stairways are to be located directly over the stairway section or at the head or the foot of the stairs.

SURFACE-MOUNTED CONDUCTORS

Surface-mounted conductors are unacceptable and shall be, as listed in the Work Schedules, removed complete and new wiring installed.

EXHAUST FANS

Replacement fans, whether for kitchens, bathrooms or attics, shall match existing in quality and air delivery.

HVAC STANDARDS

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

Incidental items not mentioned in the specifications or listed in the Specifications that can legitimately and reasonably be inferred to belong to the work described or be necessary in good practice to provide a complete system shall be furnished and installed as though called out in every detail.

All materials, equipment, piping, fittings, fixtures, etc., shall conform to the latest A.N.S.I. (American National Standards Institute), A.S.T.M. (American Society for Testing Materials), A.S.M.E. (American Society of Mechanical Engineers), and F.S. (Federal Specifications) standards. All equipment and materials used shall be new and clearly marked to permit identification of manufacturer, model and type.

The contractor shall furnish all instruments, gauges and equipment required for testing and shall perform those tests required by the related authorities.

Equipment, materials or work found to be defective during testing shall be replaced by new work and be re-tested until proven satisfactory.

The contractor shall be responsible for securing all permits, approvals, inspections and licenses required for the work of this section.

Except as modified herein, the construction and installation of all equipment, accessories and appurtenances shall comply with the published standards, requirements and recommendations of the National Fire Protection Association and National Board of Fire Underwriters.

All equipment and items installed under this section shall operate safely and without leakage, undue wear, noise, vibration or corrosion.

All drilling, patching and cutting necessary for the proper installation of work under this section shall be done by the contractor. All patching shall be of the same materials, workmanship and finish as the original work and shall accurately match all surrounding work.

The contractor shall connect equipment and materials furnished by others, which require connection to the heating or ventilating systems, up.

Equipment shall be rigidly installed and so connected as not to exert undue strain on fuel piping or other connections.

All piping, ductwork and equipment shall be installed without critical damage to structural members.

The contractor shall provide sleeving as required and upon completion of rough-in work, sleeves shall be made sound and fire-tight.

The contractor shall install chrome-plated escutcheons where exposed piping passes through floors, walls and ceilings.

All heating and ventilating equipment not required to remain shall be removed by the contractor. See also Section # 400.20 "General Instructions" under DEBRIS. Upon completion of the work, the contractor shall attach consecutively numbered tags to all piping and valves. The contractor shall supply to the owner a chart showing all valves and pipe numbers, their location and controls. The entire new and existing installation shall be left in a neat, clean and usable condition.

REMOVING HEATING UNITS OR SYSTEMS

When a steam or hot water system is scheduled to be removed, the boiler, piping, radiators or convectors, and all equipment incidental to its operation shall be removed complete. When a heating unit is scheduled to be removed, the furnace or boiler and all equipment incidental to the operation shall be removed complete. This shall include all trunk lines or other exposed ductwork that is scheduled to be replaced. Oil tanks, which are no longer functional, when aboveground, shall be removed complete, and when buried shall be disconnected and have fill pipe and vent pipe removed. When a space heater is scheduled to be removed, also remove the vent pipe and cap the gas line back at a tee.

NOTE: When asbestos material is present, contractor shall be responsible to have it removed by a firm licensed for asbestos handling.

NEW FORCED AIR SYSTEMS

This is an instruction to the contractor. It means that a furnace and at least all trunk lines and take-off shall be installed new. See the Work Schedules for a list of items to be installed with their locations.

NEW HEATING UNITS

A new furnace or boiler shall be installed complete with new disconnect switch, flue pipe, blower motor for forced warm air furnaces, and all controls, wiring, accessories, valves and fuel piping necessary to make the unit operational. Also thoroughly clean the chimney and where applicable, oil tank, fittings and lines.

Note that the electrical contractor will wire a separate circuit (if one does not already exist) from the panel box to a junction box located near the heating unit. But it is the heating contractor's responsibility to coordinate installation of the junction box and to wire the unit.

New units shall have ratings sufficient to ensure proper heating of all habitable rooms within the living unit they are intended to serve. Such determinations shall be made in accordance with the best practices of the National Warm Air Heating and Air Conditioning Association, the Institute of Boiler and Radiator Manufacturers, or the "Guide" of the American Society of Heating. This shall include heat loss calculations when required by the local authorities. Furnaces or boilers shall be able to maintain a room temperature of 70 degrees F at a point three feet above the floor in all habitable rooms. Heating systems shall be designed, installed,

and balanced or adjusted to provide for the distribution of heat to all habitable rooms and other spaces in accordance with the calculated heat loss of the spaces to be heated.

All work performed in the assembly, erection, installation, connection, etc., shall be in accordance with the manufacturer's recommendations and local codes. Mechanical equipment shall be so installed and located that inspection, routine maintenance, repair and/or replacement is possible without removing items of permanent construction. Listed furnaces shall be installed in accordance with their listing. Unlisted warm air furnaces shall be installed with a minimum clearance of 6-inches between the top bonnet plenum (or between the top of any extended plenum or duct within 3-feet of such furnace) and any combustible material. All approved gas or oil burners shall bear the manufacturer's identification marking, the burner trade name and the model number or size installed.

NEW OIL TANKS

Where applicable, disconnect existing oil tank and remove fill and vent pipes. Existing oil tanks inside the house shall be removed. Buried tank shall be filled with sand or concrete per local fire department requirements or removed.

New tank shall be installed complete. Tank shall be at least 275-gallon capacity. Unless soil conditions preclude such installation, tank shall be buried. Where necessary, set tank on concrete slab and strap down. Tank shall have two coats of asphalt emulsion or other rust inhibitor coating. Tubing for supply and circulating lines shall be copper. Fill and vent lines shall be wrought iron with double swing joints to accommodate any settlement of the tank. Backfill hole with soft earth or sand. Top 3-inches shall be topsoil suitable for plant growth. Replace sod or re-sod as necessary.

DUCT WORK AND REGISTERS

Sheet metal shall be not lighter than 26 gauge galvanized sheet metal. The sheet metal work shall be accurately formed, be fitted snugly, have exposed edges folded under at least 1/2-inch and leave no sharp corners exposed. All ductwork shall be properly supported with hangers or floor rest channels. No new ductwork shall be installed as exposed ductwork in finishing rooms, including closets, unless so noted on the drawings.

Balancing dampers shall be installed and/or ductwork shall be sized to control the flow of air to all supply registers. Dampers shall be labeled, indicating the rooms served.

New supply outlets may be installed in floors or in walls, except those floor outlets are unacceptable for bathrooms. When in the floor, outlets shall be no closer than 6-inches to any wall. Supply outlets on outside walls should be located in front of windows. Basements need not have separate supply outlets unless scheduled. However, an outlet shall be provided on the plenum. All supply registers shall be equipped with shutoff dampers. Return air inlets shall be located in walls or in floors, as is appropriate to their size and function.

Where scheduled, supply ducts in crawl spaces and unheated attic spaces shall have 2-inch flexible blanket insulation or 1 inch rigid insulation unless the space has tightly closing ventilating louvers. Then insulation shall be 1 inch flexible blanket insulation or 3/4 inch thick rigid insulation. When ducts are used for cooling, insulation shall be covered with a sealed joint vapor barrier.

CLEANING AND ADJUSTING HEATING UNITS

When heating units are scheduled to be cleaned and adjusted, the contractor shall thoroughly clean and adjust the system so that it is operating properly. When necessary replace the thermostat. On forced air systems this shall include cleaning the blower motor. Also install new air filters and replace blower motor belts as necessary. On oil-fired systems this shall include cleaning the oil tank (removing condensation and whatever sediment possible), fittings and lines and cleaning or replacing fuel line filters as necessary. Ductwork shall be cleaned and vacuumed at all accessible openings. Special attention shall be paid to duct runs with floor registers. Also clean the flue, pipe and chimney.

CONTROLS/CONTROL PACKAGES

When heating unit controls are scheduled to be repaired and/or replaced, the contractor shall examine all the controls for that particular unit, including the thermostat, and repair or replace those controls found to be defective operating and limit or safety devices shall be AGA approved or UL listed.

ELECTRIC BASEBOARD HEATING

Prior to installation, provide heat loss calculations as required by local authorities. New baseboard shall be able to maintain a temperature of 70 degrees F at a point

three feet above the floor in all habitable rooms without overloading or scorching walls. New heaters shall be medium density type, limited to 250 watts per foot of baseboard. Where possible, install on outside walls and under windows. Each room shall have its own thermostat or thermostats, except for bathroom heaters designed for manual switch operation. Thermostats shall be separate from baseboard and located, not above baseboard, but on inside walls adjacent to doors.

FAN FORCED ELECTRIC HEATERS

Fan forced electric heater shall be installed in accordance with the manufacturer's recommendations and code requirements. Each unit shall have a wall mounted thermostat unless otherwise specified.

EXHAUST FAN AND VENTED RANGE HOOD

Ventilating equipment shall comply with and be tested and rated in accordance with Air Moving and Conditioning Association Bulletin 210. Evidence of compliance will be a Home Ventilating Institute or Manufacturer's label showing capacity. Ductwork where required shall be designed for the shortest practical run to the exterior. Exhaust fans shall discharge directly to outside air. Discharge openings through roofs or exterior walls shall be protected against the entrance of rain and snow. Exhaust fan units shall be installed complete with louvers or back draft dampers which will automatically close and prevent a reverse flow of air when fan is not in operation.

When a bathroom exhaust fan is scheduled to be installed new, it shall be installed complete with switch, ductwork and all accessories. Fan motor shall be moisture proof and UL listed. Fan shall be wall switched switch shall be separate from light switch. Air delivery of fan unit shall be no less than 60 CFM; fan shall provide a minimum of eight (8) air changes per hour. The grille shall be anodized aluminum. Undercut door if necessary.

When a kitchen exhaust fan is scheduled to be installed new, it shall be installed complete with switch, ductwork and all accessories. Fan motor shall be UL listed. Fan shall be wall switched; switch shall be separate from light switch. Air delivery of fan unit shall be no less than 90 CFM; fan shall provide a minimum of 15 air changes per hour. Grille shall be anodized aluminum.

New range hood shall be 30-inch wide standard builder's model or equal. Range hood shall be installed complete with ductwork and all accessories. Unit shall include recessed light and removable, washable grease filter.

PLUMBING STANDARDS

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

GENERAL INSTRUCTIONS

Incidental items not mentioned in the specifications or listed in the Work Schedules that can legitimately and reasonably be inferred to belong to the work described or be necessary in good practice to provide a complete system shall be furnished and installed as though called out in every detail.

All materials, piping, fittings, fixtures, etc. shall conform to the latest A.N.S.I. (American National Standards Institute), A.S.T.M. (American Society for Testing and Materials), C.S. (Commercial Standards) and F.S. (Federal Specifications) standards. All equipment and materials used shall be new and clearly marked to permit identification of manufacturer, model and type.

The contractor shall furnish all instruments, gauges and equipment required for testing and shall perform those tests required by the related authorities. Equipment, materials or work found to be defective during testing shall be replaced by new work and be re-tested until proven satisfactory.

The contractor shall be responsible for securing all permits, approvals, inspections and licenses required for the work of this section.

All replacement sewer, water and gas systems shall be installed complete and, if necessary, final connections shall be made to the sewer main, gas meter and water meter.

All equipment and items installed under this section shall operate safely, without leakage, undue noise, vibration, corrosion or water hammer. All fixtures shall be securely supported so that no strain is placed on the connected piping. All work, fixtures and materials shall be protected at all times.

All excavation and backfill necessary for the installation of new underground piping shall be a part of the work of this section. The trenches shall be run in straight lines with the bottom properly pitched to, give support to the piping along its full length. The trenches shall be backfilled evenly and be thoroughly compacted using acceptable fill materials. In no case shall the excavation for the trenches undermine or disturb the stability of the building foundations.

When rough-in for new equipment requires connections to the existing plumbing system, the contractor shall obtain all necessary data on locations, sizes, connections, fittings and arrangements needed to assure the proper installation of that equipment.

All drilling, cutting, and patching necessary for the proper installation of work under this section shall be done by the contractor. All patching shall be of the same materials, workmanship and finish as the original work and shall accurately matches all surrounding work.

Fixtures and equipment furnished by others, which require the contractor shall connect plumbing connections to waste, water, vent or gas piping up.

All work shall be done without critical damage to structural members.

Sleeving shall be provided as required and upon completion of rough-in work, sleeves shall be made sound and fire tight.

Penetration of stud and masonry walls, floors and ceilings shall be fire-stopped.

All joints and connections in the plumbing and drainage system shall be gas and watertight for the pressures required by the test of the system, with the exception of those portions of the piping which are installed for the purpose of leading ground or seepage water to the underground storm drains or side sewers.

The contractor shall be required to wet test all plumbing systems at the expected working pressure of the system after repairs and/or replacements have been made.

Existing plumbing systems, or portions thereof, including building sewers (side sewers), to remain in use shall operate free of fouling and clogging, and shall not have cross-connections which may cause contamination of the water supply by being back siphoned.

Gas lines shall be blown clean with compressed air; all valves and filters shall be checked.

All remaining plumbing fixtures and piping not in use shall be disconnected and removed by the contractor. See also Section # 400 - DEBRIS.

Upon completion of the work, the contractor shall attach consecutively numbered tags to all piping and valves. The contractor shall supply to the owner a chart showing all valves and pipe numbers, their location and controls.

The entire new and existing installation shall be left in a neat, clean and usable condition. A minimum of 50 degrees F shall be maintained as freeze protection for plumbing fixtures during winter conditions.

NOTE: New piping at the exterior of a building shall be at least 18 inches below grade. Piping shall run parallel to the building construction and be neat and workmanlike. It shall be concealed in walls, below the floor, above the ceiling or in furred spaces. Piping shall be properly supported and be pitched to drain. Water and gas piping shall be run level without pockets and as straight as possible. New hot and cold water supply lines shall be at least 6 inches apart where such piping is parallel. Swing joints shall provide for expansion and contraction. New soil, waste, vent and drainage piping shall be run at a uniform grade of at least 1/4-inch per foot (20 grade), unless otherwise approved by local jurisdiction. Lines under slabs shall have as short a run as possible and the runs shall be as straight as possible. Copper piping shall be wrapped with plastic tape where it comes in contact with any metal other than brass or lead. All connections between copper or brass and steel piping shall be made with dielectric couplings. All metallic piping shall be bonded together. Screwed pipe joints shall have threads cut the full thickness with new, clean dies. The joints shall be carefully reamed, and red lead shall be applied smoothly to the male threads and to the threads left exposed after fabrication. Twenty-four inch air cushions shall be provided at the ends of all new water supplies piping to absorb shock.

WATER SERVICE

New water service shall be of sufficient size to permit a continuous and ample flow of water to all fixtures at all times. Frictional losses due to piping, meter, valves, fittings and faucets shall be considered when piping size is being determined. The water service pipe shall be installed in such a manner and shall possess the necessary strength and durability to prevent leakage under all likely adverse conditions, such as corrosion or strains due to temperature change, settlement, vibrations and superimposed loads.

GATE VALVES

There shall be a readily accessible full way gate valve on the discharge side of each water meter. There shall also be a full way gate valve with bleeder screw on the cold water supply to each water heater at or near the water heater.

SILCOCKS

Two silcocks shall be provided for each house and be located to provide a source of water for both the front and the rear of the property. The silcocks shall be the frost proof type or shall have a separate accessible stop and waste valve.

WATER SUPPLY DISTRIBUTION PIPING

NEW HORIZONTAL RUNS

New horizontal runs shall include all water supply piping in the basement and/or crawl space plus new gate valves, pressure reducing valve when required by local code, all necessary supply shutoffs, two silcocks and, when laundry facilities are located in the basement, automatic washer supply outlets and laundry tray fittings and rough trim. New piping shall be hard temper Type M copper tubing. New branch supply piping shall be no less than 1/2 inch.

TOTAL RE-PIPE

A total re-pipe shall include all new horizontal runs and vertical risers plus new gate valves, pressure reducing valve when required by local code, all necessary supply shutoffs, two silcocks, automatic washer supply outlets and, where laundry facilities are existing or to be installed new, laundry tray fittings and rough trim. New piping shall be hard temper Type M copper tubing. New branch supply piping shall be no less than 1/2-inch.

SUMP PUMPS

Discharge line of sump pump shall have an accessible backwater valve and gate valve. The connection from the discharge line to any horizontal sanitary drainage piping shall be made from the top through a "wye" branch fitting. Sump shall be watertight and have a gas tight metal cover of sufficient strength to withstand normal wear. Sump shall be vented as required by local code.

BUILDING SEWER (SIDE SEWER)

All sanitary plumbing outlets shall be connected to combined or sanitary sewer systems when they are available. New building sewer shall be constructed of cast iron, vitrified clay, concrete or plastic approved by local jurisdiction. The sewer shall be constructed with watertight joints, be on a grade of not less than 1/8 inch per foot, be laid on a firm bed, and be at a depth not less than 15 inches below grade. No T's or 90-degree ells shall be used. Clean-outs shall be installed as required by code.

SOIL AND WASTE PIPING

Soil and waste piping and fittings shall be extra heavy or service weight cast iron, Galvanized steel pipe, copper pipe or hard temper Type K, L, M or DWV Copper tubing or plastic approved by local jurisdiction. Soil stacks shall rest solidly at the base on masonry piers or heavy iron posts and is supported at intervals of No more than 10 feet by stout wall hangers or brackets or on beams at each floor.

No soil or waste pipe shall be installed or permitted outside a building or be in any Place where it may be subjected to freezing temperatures, unless adequate Provisions are made to protect it from frost.

VENT PIPING (SOIL, WASTE AND VENT STACKS)

New vent piping shall be schedule 40 galvanized steel pipe standard black cast Iron screwed fittings, DWV copper tubing or plastic approved by local jurisdiction. Vent piping shall extend at least 6-inches above finish roof surfaces. Re-vent piping shall be at least 1/2 of the diameter of the drain to which it is connected or be a minimum of 1-1/4 inches in diameter. Re-vent shall tie into the soil stack or waste stack at a point at least 6-inches above the last fixture connection to the stack. No vent piping shall be installed on the exterior of a building.

New piping passing through the roof shall be flashed with a not lighter than 26 gauge galvanized iron flashing assembly set in waterproof mastic compound. The

flashing shall be caulked around the vent. Flat roof flashing shall be the commercial type with a horizontal leg equal all around the base.

ROUTING DRAINS AND BUILDING OR SIDE SEWERS

Drains scheduled to be routed shall be cleaned with a power driven rotary clean-out apparatus similar to the Roto-Rooter device. Cleaning area drains shall include either replacing or recaulking the drainage strainers. Building sewers or side sewers scheduled to be routed shall be cleaned all the way to the main sewer connections. Drains when routed shall be free of all miscellaneous debris so as to allow the free and unobstructed flow of liquids and solids.

FUEL PIPING

New fuel piping shall be black pipe or copper tubing. Pipe shall not be bent, and offsets shall be made with fittings. Installation shall comply with all the requirements of the local utility company.

NOTE: New plumbing fixtures shall be standard builder's models or equal. Fixtures shall be installed complete and ready to use. Appropriate grounds and supports shall be provided for each fixture and equipment item. Arrangements shall be made with the other trades for the installation of any build-in items, blocking or necessary supports. Coordinate installation of plumbing fixtures with flooring contractor. New washers shall be installed in all existing faucets not replaced. New and existing fixtures shall be cleaned of plaster, grease, paint and other foreign materials. Chrome shall be thoroughly polished. Color of new fixtures shall match existing or be white. See package explanations below for further description of the fixtures.

WATER HEATERS

Package shall include new glass-lined water heater, type and size as scheduled. Heater shall be installed complete with wiring or fuel piping and draft diverter and vent, as appropriate to type. Water heater shall be standard builder's model, or equal, with 5-year warranty. Heater shall be American Gas Association certified or UL listed. It shall be equipped with a temperature and pressure relief valve and an overflow pipe to within 6 inches of the floor or to location required by local code. Water heater shall have white baked enamel finish. New water heater shall comply with latest energy efficiency insulation standards.

Fume pipe shall be at least No. 26 U.S. Standard gauge galvanized sheet metal. It shall have a minimum slope of 1/4-inch per foot with no horizontal length of the fume pipe exceeding 75% of the height of the chimney or vent. It shall be supported at intervals of no more than 6 feet. Flue or vent connections shall have a diameter not less than the vent outlet of the heater. The fume pipe shall extend just beyond the fire clay flue lining, but no fume pipe shall be vented into a chimney, which is used as a fireplace.

GARBAGE DISPOSAL

New garbage disposal shall be 1/2 horsepower, continuous feed type, with manual reset. Shredder shall be stainless steel and hopper shall be corrosion resistant. Disposal shall be installed complete. Mount shall be sound deadening. Modify the existing drain piping as necessary to accommodate a new appliance.

FIXTURE TRIM

All new exposed trim, fittings and pipe finished spaces shall be chrome-plated brass or be covered with chrome-plated brass sleeves, except that laundry tray trim may be rough brass. No new trim shall be installed such that its outlet is below the rim of the fixture.

LAUNDRY TRAY

Laundry tray shall be single or double-tub type, as scheduled. Package shall include new one piece fiberglass (reinforced polyester resin) tray with integral soap dish, swing type faucet set strainers) and strainer plug(s), trap and self-leveling legs or pedestal. Capacity of each tub shall be not less than 20 gallons.

WALL MOUNTED LAVATORY

Package shall include new porcelain enameled cast iron lavatory, faucets with trip waste, fixture stops and supplies, trap, and wall hanger and legs.

VANITY LAVATORY

Package shall include new vanity sink base, countertop with backslash, porcelain enameled steel lavatory, center set faucets with trip waste, fixture stops and supplies, and trap. Quality of vanity sink base and countertop shall equal that for new kitchen cabinets and countertops.

WATER CLOSET

Package shall include new vitreous china bowl (siphon jet action type) with close-coupled tank and cover, plastic seat, flange and waxed ring, bolts and caps, fixture stop and supply and float or flush valve with trip lever. The fixture shall satisfy the water conservation standards and have the 1.6 GPW low flush capability.

BATHTUB

Package shall include new porcelain enameled steel bathtub, pop-up waste and overflow with trap, fixture supply shutoffs or straight valve screw shutoffs where necessary, and when scheduled, concealed shower diverter with trim and fittings. Tub will generally be recess type, but bathroom layout may require corner tub. Refer to floor plan drawings.

Junction of ceramic tile and tub shall be grouted, and junction of plastic waterproof material and tub shall be caulked with a silicone rubber sealant.

SHOWER STALL

Package shall include new fiberglass (reinforced polyester resin) integral shower and wall surround (including base and drain assembly), fixture supply shutoffs where necessary, diverter with trim and fittings, integral soap dish, and curtain rod. Base shall have slip-resistant surface. Install as per manufacturer's recommendations. Shower stall shall be installed on a smooth concrete or plywood sub-floor. Plywood shall be 3/8 inch C-C plugged exterior type plywood underlay. Provide sufficient backing to support the sides of the pan and provide adequate support for the drain assembly to prevent shifting or settling. At least one layer of 15# asphalt-saturated felt shall be placed between the sub-floor and the shower pan. The shower head shall satisfy the water conservation standards and have the 2.5 GPW maximum flow capability.

KITCHEN SINK

Package shall include new porcelain enameled steel or stainless steel countertop sink as specified, swing type faucet set with spray attachment and hose, removable cup strainers, fixture stops and supplies, and waste with trap. Sink shall have ledge. The entire unit shall be undercoated with sound dampening material. A new sink will generally be double compartment sink except that space restrictions may require single compartment sink. Sink shall be at least 7 1/2-inches deep.

SEPTIC STANDARDS

The contractor shall be responsible for furnishing all labor, material, equipment, and services necessary for, and incidental to completion of all repairs as listed in the work schedules or described in the Contractor's Manual. Work items for which a performance standard does not appear in this manual shall be performed by mechanics, skilled in their respective trades, in accordance with the best practices of the trade. All work shall be subject to final inspection. Standards for satisfactory completion shall be determined by the intent of the contract, all applicable Building Code requirements, the work schedules, and the Contractor's Manual. All work that does not meet the standard for satisfactory completion or inspection shall be repaired or corrected at the Contractor's expense.

It is the intent of these specifications that the following septic systems be placed in a proper and legal operating condition as required by the Tacoma Pierce County Health Department guidelines.

It is the intent of these specifications that the following septic systems be placed in a proper and legal operating condition as required by local codes.

- Microfast System
- Glendon Bio-Filter
- Gravity System
- Pressure System
- Terra-Lift

GENERAL INSTRUCTIONS

Incidental items not mentioned in the specifications or listed in the approved septic design that can legitimately and reasonably be inferred to belong to the work described or be necessary in good practice to provide a complete system shall be furnished and installed as though called out in every detail.

All materials, piping, fittings, fixtures, etc. shall conform to the latest A.N.S.I. (American National Standards Institute), A.S.T.M. (American Society for Testing and Materials), C.S. (Commercial Standards) and F.S. (Federal Specifications) standards. All equipment and materials used shall be new and clearly marked to permit identification of manufacturer, model and type.

The contractor shall furnish all instruments, gauges and equipment required for testing and shall perform those tests required by the related authorities.

Equipment, materials or work found to be defective during testing shall be replaced by new work and be re-tested until proven satisfactory.

The contractor shall be responsible for securing all permits, approvals, inspections and licenses required for the work of this section.

All equipment and items installed under this section shall operate safely, without leakage, undue noise, vibration, corrosion or water hammer. All fixtures shall be securely supported so that no strain is placed on the connected piping. All work, fixtures and materials shall be protected at all times.

All excavation and backfill necessary for the installation of new underground piping shall be a part of the work of this section. The trenches shall be run in straight lines with the bottom properly pitched to, give support to the piping along its full length. The trenches shall be backfilled evenly and be thoroughly compacted using acceptable fill materials. In no case shall the excavation for the trenches undermine or disturb the stability of the building foundations.

When rough-in for new equipment requires connections to the existing septic system, the contractor shall obtain all necessary data on locations, sizes, connections, fittings and arrangements needed to assure the proper installation of that equipment.

All drilling, cutting, and patching necessary for the proper installation of work under this section shall be done by the contractor. All patching shall be of the same materials, workmanship and finish as the original work and shall accurately matches all surrounding work.

Fixtures and equipment furnished by others, which require the contractor shall connect plumbing connections to waste, water, vent or gas piping up.

All work shall be done without critical damage to structural members.

Sleeving shall be provided as required and upon completion of rough-in work, sleeves shall be made sound and fire tight.

Penetration of stud and masonry walls, floors and ceilings shall be fire-stopped.

All joints and connections in the septic system shall be gas and watertight for the pressures required by the test of the system, with the exception of those portions of the piping which are installed for the purpose of leading ground or seepage water to the underground storm drains or side sewers.

The contractor shall be required to wet test all septic systems at the expected working pressure of the system after repairs and/or replacements have been made.

Existing septic systems, or portions thereof, including building sewers (side sewers), to remain in use shall operate free of fouling and clogging, and shall not have cross-connections which may cause contamination of the water supply by being back siphoned.

Gas lines shall be blown clean with compressed air; all valves and filters shall be checked.

All remaining plumbing fixtures and piping not in use shall be disconnected and removed by the contractor. See also Section # 400 - DEBRIS.

Upon completion of the work, the contractor shall attach consecutively numbered tags to all piping and valves. The contractor shall supply to the owner a chart showing all valves and pipe numbers, their location and controls.

The entire new and existing installation shall be left in a neat, clean and usable condition. A minimum of 50 degrees F shall be maintained as freeze protection for plumbing fixtures during winter conditions.

SYSTEMS SPECIFICATIONS

ELECTRICAL

21000: REPLACE KNOB & TUBE WIRING

Replace knob and tube wiring with Type NM or MNC (UF) "Romex". Connections between knob and tube and Romex shall be made in an approved junction box. Remove and dispose of existing knob and tube. Size new wire according to circuit size. Replacement to comply with local code.

21010: REPLACE ELECTRICAL SWITCHES/OUTLETS

Replace electrical device. This work is to include replacing all outlets and switches. Provide covers and align flush with walls. Also assure all connections are tight and wires are not bare or present a safety hazard.

21020: INSTALL DUPLEX RECEPTACLE

Remove existing electrical device and dispose. Provide new grounded 120V device, depending on branch circuit wire and local codes. Installation to include all fasteners and new cover. Receptacle to be secure and cover to be even with adjoining surfaces and straight. All work to be done according to local electrical codes. Color of device and cover to be approved by owner.

21030: INSTALL GFIC

Provide 15 amp 120V ground fault electrical receptacle. Receptacle shall be installed according to manufacturer Recommendations with positive and neutral lines installed as specified by manufacturer Installation to include outlet box, branch wiring of the appropriate size, all fasteners, grounding devices and cover.

21040: INSTALL 20 AMP RECEPTACLE

Provide 120V 20 amp receptacle on separate circuit. Installation to include box, mounting surface, branch wiring and cover. Receptacle to be secured and cover to be even with adjoining surfaces and straight. Receptacle to be installed on a separate circuit with breaker. All work to be done according to Electrical Code (NEC).

21050: INSTALL SINGLE POLE SWITCH

Provide 120V electrical switch. Switch to be located a minimum of 30" above floor level and 2'0" from sinks, laundry tubs or other water source. Installation to include switch of appropriate type, switch box, branch wiring of appropriate size, all fasteners, grounding devices and cover. Switch to be secure and cover to be even with the adjacent surfaces and straight. All work is to be done according to local codes and the N.E.C.

21060: INSTALL THREE WAY LIGHT SOURCE

Provide three way switch where indicated. Work to include: three way, switch-Leviton or equal, switch box, branch wiring and connection to other devices, all fasteners, grounding devices and cover. Switch to be located a minimum of 30" AFF and 2 ft. from sinks/tubs and shall be secured straight and flush with wall. All work to be done per local code and NEC. Color of device to be approved by owner.

21070: REPLACE LIGHT SWITCH

Replace switch. Remove existing. Provide three-way switch where indicated. Work to include three-way switch-Leviton or equal, switch box, branch wiring, (if existing wiring is not of the required type), all fasteners grounding devices, and cover. Switch to be locate a minimum 30" AFF and 2 ft. from sinks/tubs and shall be secured straight and flush with wall. All work to be done per local code and NEC., Color of device to be approved by homeowner.

21080: DUPLEX RECEPTACLE

Provide minimum 120V grounded electrical receptacle. Installation to include outlet box, branch wiring of the appropriate size, all fasteners, grounding device and cover. Receptacle to be secure and cover to be even with adjoining surfaces and straight. All work to be done according to the NEC and local electrical code.

21090: TROUBLESHOOT CIRCUIT

_____ circuit is reading _____. Assess and correct so that all outlets and switches are wired properly.

21100: INSTALL 200 AMP SERVICE

Remove and dispose of the existing panel. Supply and install a 200 amp panel with a main breaker. The panel should be capable of having 40 single pole circuits. Include a meter base, mast and all associated grounding requirements. Connect all of the circuits to the new circuit breakers. Balance the load in the panel. The unit shall be placed to meet IRC, NEC and local requirements. Review the placement of the panel with the Housing Rehabilitation Specialist prior to installing.

21110: ELECTRICAL SERVICE

Provide underground residential electrical service and hook up. All secondary trenching shall be a minimum of 24" in depth and have laid in it a minimum 2.5" schedule 40 conduit with a bell end break of 24"-36" at the transformer and meter base. Contractor shall spool a minimum of 10' of single phase, 3 wire cable within two feet of a transformer or 35' within 2' of a pole. Both ends of conduit shall be sealed with an elastic sealant that does not harden. Call for locate before digging (811). Joint utilities shall have 6" separation for wire work, 12" for gas, and 48" for water. Work to include L&I electrical permit, engineering and hook-up fees. Backfill to original grade after final. Compact a 1ft lift to prevent settling place warning tape 12" above cable.

21120: REWIRE ENTIRE HOUSE

Re-wire house entire. This work shall include the following and any work associated with the following: new 200amp panel and service, replace all knob and tube and underground Romex-all circuits to be grounded, circuits to kitchen and dining room shall be 20amp and all others to be either 20 or 15amp. Install 2 GFIC's and an individual circuit to refrigerator in kitchen, bath to have 1 GFIC and a light/fan combination, each room shall have a minimum of 4 receptacles per spacing rule enforced by local agency, replace all fixtures and devices and cover plates throughout the interior and exterior of the home. All work to be performed per the NEC and shall be inspected by the appropriate agency.

21130: INSTALL FLUORESCENT LIGHT

Supply and install a ceiling mounted fluorescent light. Light to be installed per manufacturer recommendations and all codes. Installation shall include 20amp circuit and a single pole switch.

21140: INSTALL NEW LIGHT FIXTURES

Supply and install light fixtures in the following rooms _____
_____. I install the lighting as per manufacturer's recommendations and local electrical codes. Installation shall include 20 amp circuit wiring if none exists. Supply working bulbs for all fixtures.

21150: REPLACE EXISTING LIGHT FIXTURE

Remove and dispose of the existing fixture in the following rooms _____
_____. Supply and install lighting as per manufacturer's recommendations and local electrical codes. Installation shall include 20 amp circuit wiring if none exists.

21160: DUSK TO DAWN WALL MOUNTED LIGHT

Supply and install an Energy Star 26-watt white fluorescent dusk to dawn wall light. Light to be installed per manufacturer recommendations and all codes. The light should be operated with a single pole switch on the interior of the home. When installing, use care not to damage adjacent surfaces.

21170: MOTION SENSOR FLOOD LIGHT

Supply and install a two bulb motion sensor flood light with light bulb covers and a photoelectric switch. Light to be installed per manufacturer recommendations and all codes. The light should be operated with a single pole switch on the interior of the home. When installing, use care not to damage adjacent surfaces. Provide 75 watt incandesce flood light bulbs.

21180: CEILING FAN

Provide and install ceiling fan. Fixture to include light kit, motor, blades, and requisite bulbs. Ensure that j-box is secure to framing and will support the weight of the fixture upon mounting. Install according to manufacturer's specifications and ensure that unit is balanced and operates smoothly.

21190: INSTALL SMOKE DETECTORS

Supply and install new battery operated smoke detectors in each bedroom, adjoining sleeping areas and the attached garage. Install as per manufacturers recommendations. The unit shall have a long-life lithium battery warranted for 10 years. First Alert Ultimate Smoke & Fire model SA302CN or equal.

21200: ELECTRICAL INSPECTION

Contractor to order an electrical safety inspection by a certified and licensed electrician. Work to include switch and outlet operation and condition, lighting safety and security, check of grounding systems, surge protection, arc fault interrupters, heating and air conditioning systems, and a check of the Electrical Panel for appropriate labels, amps and operation.

HVAC SPECIFICATIONS

22000: INSTALL NEW "B" VENT

Provide metal type "B" flue from appliance to exterior of the building. The flue shall be secured at least every 6lft and shall tightly seal at the union of the device and the chimney. All work to comply with local codes and the UMC.

22010: INSTALL WALL FURNACE

Provide 65,000 BTU through wall furnace and thermostat where indicated. Work to include cutting the opening through the wall, header, flashing, trim, and associated

brackets and installation of electrical service from electrical panel including all wire, breakers, and disconnects required. Installation shall be in strict accordance with local building codes, national electrical code and the manufacturer specifications and installation instructions. The unit shall be Williams or equivalent. Wall furnace shall be capable of maintaining a temperature of at least 70 degrees in all habitable rooms when outside temperature is 20 degrees.

22020: CLEAN FURNACE

Remove any residue from burners, combustion chamber and flue. Inspect flue and repair as needed to assure proper draft. Clean and oil blower and motor. Clean permanent filter(s) or replace disposable filter(s). Adjust pilot light and flame, test furnace to insure proper operation of motors, burner and controls.

22030: INSTALL ELECTRIC FURNACE

Remove and dispose of the existing furnace. Supply and install a new forced air electric furnace. Connect to existing power supply and duct work in accordance with manufacturer recommendations. The new furnace shall be sized to handle the requirements of the structure. The furnace shall carry a minimum 1 year warranty on all components. Supply and install a new energy saving thermostat that is approved by the furnace manufacturer. All work to comply with energy and building codes. Bryant, Coleman, Trane, Rheem or Carrier or equal.

22040: GAS FURNACE

Remove and dispose of existing gas furnace. Supply and install a 95% efficient, 60,000 BTU gas furnace. Connect to existing duct work. Install new PVC vent and combustion air pipes through roof or wall as applicable. Provide and install new thermostat and condensate pump. Connect to existing thermostat wire and gas pipe. Provide ground for circuit if needed. Install per manufacturer's recommendations and all applicable codes. Inspect flue and replace if it does not meet current code. Coleman, Trane, Lennox, or equal as approved by the Housing Rehabilitation Specialist. Provide duct test as needed.

22050: HEAT PUMP

Provide and install a split system air source heat pump (ASHP) with separate indoor (evaporator) and outdoor (condenser). Unit shall be rated Energy Star Tier 2, with values equal to or greater than 14.5 (SEER) seasonal energy efficiency ratio, 12 (EER) energy efficiency ratio, and 8.2 (HSPF) heating seasonal performance factor.

Installation to include complete chassis and base components and any needed electrical runs or connections. Work shall be permitted and signed off by the local regulating authority.

22060: FRESH AIR SOURCE

A fresh air source shall be provided for warm air furnaces having no access to fresh air. Acceptable sources of fresh air are louvers installed near the units or windows located in the vicinity of the units.

22070: INSTALL CAN HEATER

Provide 240V electric recessed can heater, with fan. Installation to include 240V 20 amp branch circuit connected to thermostat directly if none already exists. Installation to include a remotely located thermostat. Thermostat to be located no less than 4 ft from heater and shall be adjustable from 50 to 90 degrees. All work to be done per NEC.

22080: REPLACE BASEBOARD HEATERS

Replace electric baseboard heater. Remove existing unit. Provide 240V electric baseboard heater. Installation to include connection to existing circuit, installation of radiator and remotely located thermostat. Unit to consist of 240V aluminum finish tube element, cold rolled steel with factory finish, end plates and finished corner. Thermostat to be located no less than 4 feet from radiator and shall be adjustable from 50 to 90 degrees F and shall include a shut-off. All work to be done per NEC.

22090: INSTALL DRYER VENT

Provide and install new 4" diameter metal dryer vent. Length of run as per code and manufacturer recommendations. Vent shall be run from dryer to exterior. Include all new connections and vent cap. Connections shall be airtight and the duct shall be securely fastened to wall and/or ceiling structures.

22100: INSTALL WHOLE HOUSE FAN

Provide whole house fan. Work to include: 120V 20amp circuit, junction box, timer switch, fan assembly cutting opening, trimming opening, finishing opening to match adjacent surfaces. Fan unit shall consist of 1/3hp motor with overload protection, rubber isolation pad to produce vibration free operation, shutter assembly, 30" blade, UL listed, HVI test certification, and variable speed timer switch. When

installing, do not cut ceiling structure. Secure and install per manufacturer spec. Standard is Emerson.

22110: INSTALL ELECTRONIC AIR CLEANER

Provide and install electrostatic air cleaner. Install in existing heating system. Unit and installation to include electrical connection, flow monitor to control operation of unit, indicator light, removable reusable filters, pre-filter, ionizing/collecting cell of tungsten wire, removable ionizing filters, electric interlock, 18ga galvanized steel case and filter frames, CFM of at least 1,600. Unit to be UL listed, CSA certified and exceed ASHRAE test 52-76 and be capable of filtering contaminants to at least .02 microns. Install in strict accordance with manufacturer instructions.

22120: INSTALL HVAC THERMOSTAT

Provide and install new thermostat to control HVAC system. Include all necessary wiring and connections. Adjust to test to insure proper operation.

22130: REPLACE THERMOSTAT

Replace thermostat. Remove existing. Provide setback/programmable thermostat where indicated. Work to include wiring, connection to HVAC controls, thermostat unit and calibration. Thermostat unit to consist of: wall plate, 42-80 degree range, adjacent heat anticipation of 0.1 to 1.2 amps. Honeywell or equal.

22140: SERVICE HEAT PUMP

Contractor to service heat pump. Work to include assessment of fuse, filter, pressure switch, refrigerant, and motor fan. Unit is a ___ ton _____. Model number_____.

PLUMBING SPECIFICATIONS

23000: INSTALL COPPER PIPING

Provide new copper piping sized to carry required amounts of water and pressure. Piping shall meet building codes. All fittings shall be of similar material. All joints shall be sealed and free from all leaks. Support pipe to structure as per current code.

23010: REPIPE HOUSE (PEX)

Remove all Qwest tubing from home and replace with Cross Linked Polyethylene. If the Hot Water Tank is centrally located, a Manifold / Home Run installation is preferable so as to limit connections and equalize pressure to fixtures. If this is not practical, use the Trunk and Branch method. Minimize fittings, group fixtures together, minimize pipe lengths, select appropriate pipe diameter, bundle runs, provide solid attachment to framing, use color coded piping for simplicity, and insulate pipes in non-heated areas. Brass pressure fittings with two crimp rings are preferred over push fittings, or cold expansion fittings in covered spaces. All fittings should meet ASTM standards and have a third party listing such as UL or NSF. All angle stops and supply lines to fixtures to be changed out with new. All work shall conform to current code, be permitted and inspected.

23020: INSTALL NEW WATER LINES

Supply and install new water lines from the meter to the home. The line should be 1 inch minimum, 40/200 psi rated poly pipe. Adequate precaution shall be taken to ensure proper compactness of backfill around piping without damage to such piping. Trenches shall be backfilled in thin layers to 12 inches above the top of the piping with clean earth, which shall not contain stones, boulders, cinder fill, frozen earth, construction debris or other materials which would damage or break the piping or cause corrosive action. All connections shall be brass with double stainless steel pipe clamps. Supply and install a shut-off gate valve in a meter box at the home. Main supply inside of dwelling shall be 3/4" copper type M or CPVC. Back fill to original grade. Installation shall meet current UPC and local plumbing codes.

23030: INSTALL SHUT-OFF VALVE

Provide and install new approved shut off valve. All joints shall be sealed in accordance with local and state codes. Exposed shut-offs shall have a high chrome finish and have chrome wall flange. Connect to existing or new water supply line and fixtures.

23040: INSTALL TUB/SHOWER VALVE

Provide single lever-type faucet. Faucet installation to include piping to faucet, spout, and shower head, faucet assembly and caulking. Diverted valve, lever for tub/shower use, acrylic knob. Delta, Kohler or Crane C2309 or equal.

23050: INSTALL HOSE BIB

Provide and install new hose bib. Hose bib discharge shall be threaded to accept a standard garden hose and be anti-siphon. Connect hose bib to existing or new water supply. All work shall meet local and state plumbing codes.

23060: SUMP PUMP

Supply and install a new sump pump system. Supply and install a pump basin (18"W x 18"D x 30"H). Installation to include 120V 20 amp GFI receptacle within 3ft of pump. The pit top is to be 2 inches above the grade. PVC discharge pipe as per manufacturer recommendation. Work must comply with local plumbing codes. Pump to be 1/2 HP vertical float switch SS submersible. Rigid SP-500 or equal...as approved by Housing Rehabilitation Specialist.

23070: VALVE BOX

Provide and install valve box with cover where indicated. Box to consist of structural polyethylene with overlapping lip cover and UV inhibitor. Black with green cover.

23080: INSTALL BLACK GAS PIPE

Provide and install new fuel supply piping. Size line to carry required amount of fuel. Pipe shall be black IPS steel. Piping shall meet all local and state building codes. All fittings shall be of similar materials. All joints shall be sealed and free from leaks. Support pipe to structure as per code.

23090: CLEAN DRAIN LINES

Clean using a power snake to remove all objects from drain lines which impede the flow of water. All debris removed from the pipe shall be removed from the site. Care shall be taken not to damage pipes and/or plumbing fixtures.

23100: ABS DRAIN LINE

Remove damaged sections of drainpipe. Provide and install new ABS drainpipe to match existing in size. If installing new plumbing liens, lines are to be sized to current code. Include all necessary connections, fittings and elbows. All work shall meet the UPC local and state plumbing codes. All debris shall be removed from site.

23110: INSTALL NEW ABS DRAIN LINES

Provide and install new ABS drain line. Drain shall be sized to meet code and fixture requirements. Connect to existing or new main waste service line. Slope to drain. 1/4":12". Include all necessary connections, elbows, traps and cleanouts. All work shall meet local and state plumbing codes. Where drain or stack penetrates ceiling/floor assemblies, grout with fire stop material approved by local building department.

23120: INSTALL GAS WATER HEATER

Provide and install new 75% or higher efficiency natural gas/LP water heater. Water heater shall be glass lined steel tank with a minimum R-8 valve and minimum 9 year warranty. Installation shall include all connections, stack pipe connected to chimney and pressure relief valve. Water tank shall be mounted a minimum of 1 1/2" AFF. All work shall meet all local and state plumbing codes. A.O. Smith or approved equal.

23130: ELECTRIC WATER HEATER

Remove and dispose of the existing water heater, shut off valves and flex piping. Supply and install a new 50 gallon 240V electric water heater. The water heater shall have a minimum 9 year warranty. Installation shall include new hot and cold flex water lines, gate valves on both lines and earthquake strapping. The temperature/pressure relief valve shall be piped to the exterior. Repair any damage caused in removing the existing water heater. All work shall meet all IRC, local codes and state electrical and plumbing codes.

23140: INSTALL LAUNDRY JACK BOX

Provide laundry jack box where indicated. This installation shall include both the hot and cold water service to the jack box via 1/2" copper piping or CPVC, 1 1/2" PVC drain line. Secure box to wall and locate within 2ft of washer location.

23150: SUMP PUMP

Discharge line of sump pump shall have an accessible backwater valve and gate valve. The connection from the discharge line to any horizontal sanitary drainage piping shall be made from the top through a "wye" branch fitting. Sump shall be watertight and have a gas tight metal cover of sufficient strength to withstand normal wear. Sump shall be vented as required by local code.

23160: REPLACE LAUNDRY TRAY

Laundry tray shall be single or double-tub type as scheduled. Package shall include new one piece fiberglass (reinforced polyester resin) tray with integral soap dish, swing type faucet set, strainer, plug, trap and self-leveling legs or pedestal. Capacity of each tub shall be no less than 20 gallons.

SEPTIC SPECIFICATIONS

24000: PUMP & CLEAN SEPTIC TANK

Contractor locate tank and pump contents. Provide riser to grade if none exists. Work to include disposal of contents, RME fee, and inspection of all baffles, filters, chambers and equipment. Contractor to provide a written assessment of the systems status.

24010: TANK REPAIR

Contractor to repair septic tank bottom. Wash out and pump dry septic tank. Check side walls for cracks and or form holes and patch with Jet Set of equivalent. Remove all loose concrete and debris from tank bottom and pour a minimum 4" cement overlay to cover crack or defects. Bid to include confined space entry and County O&M fees.

24020: TERRALIFT

Contractor shall locate and terralift existing drain field to ensure that all laterals are receiving and absorbing effluent and are in working order. Contractor shall expose all drain lines and jet entire system. Work to include repair or replacement of drain field pipe as needed. Contractor shall install risers to grade to provide access to each lateral for future service. Work to include installation of new outlet baffle filter. If pressure system exists, inspect pump chamber and perform pressure and drawdown tests.

Restoration of site to grade shall be limited to existing materials only. Importing of new or extra material and or planting/seeding shall be the responsibility of the homeowner.

24030: DECOMMISSION SEPTIC TANK

Pump tank. Decommission septic tank by breaking top of tank and backfilling with course gravel topped by 12" of topsoil. Compact and mound topsoil 2" above grad

and seed, straw, and water until grass is established. Disconnect and cap drain line from building.

24040: INSTALL SEPTIC TANK & DRAIN FIELD

All work shall comply with designer's specification and meet Health Dept. requirements.

24050: WHITEWATER SEPTIC SYSTEM

Contractor to install whitewater aerobic treatment system per approved design. Contractor to provide and install aerobic treatment unit (ATU) (access at finish grade), and ultraviolet treatment unit (UV) (access at finish grade), in 1000 gallon treatment tank sized for 360 gallons per day, 38 gpm pump in 1000 gallon pump tank (access at finish grade), all necessary Such 40 PVC piping and valves, control panel, and laterals constructed to specifications. Contractor to pump clean and decommission old tank or tanks. System must be pressure checked and adjusted, and control panel installed and working before final approval and designer must submit an approved as-built to the Health Department before completion of contract.

24060: MICROFAST SEPTIC SYSTEM

Contractor shall decommission existing tank per county regulations. Contractor to install .5 MicroFast septic system per Tacoma Pierce County Health Department approved design. System designed to handle gallons per day. Primary drain field to consist of 450 lineal feet of per designer specifications. Install to include proprietary (FAST) Aerobic Treatment Unit with locking lids on risers to grade, flow meter, and vacuum breakers. Contractor to provide all specified materials and install in strict accordance to design criteria. Materials to include drain media, piping, control valve, tanks, risers, pump, separator, bioreactor, honeycomb media, baffles, control box and blower. Work to include electrical and permit unless stated otherwise. Designer to sign off and produce As-Built prior to final payment. Sight restoration limited to existing materials.

24070: GLENDON BIO-FILTER

Contractor to complete installation of Glendon Bio-Filter septic system as designed by _____. Scope of work to include installation of an 1125 gallon, two compartment septic tank and an 1125 gallon pump tank with installation of specified pump, control panels, cleanouts, baffles, and risers to grade. Price to

include transport lines to pods and installation of three M-31 pods with all sand, gravel and associated material. Contractor to provide and install jute netting over pods and instruct the client on planting and erosion control. Existing tank (if any) to be pumped, decommissioned and related paperwork submitted to the Health Department. Wiring of the system shall be the responsibility of the contractor. Contractor shall visit site before providing bid and contact designer for release of permit upon signing contract. Contractor shall ensure that placement of system exactly matches designers As-Built. Contractor shall provide a two year guarantee for the Bio Filter and a one year guarantee on the pump and control panel from the date of the installation.

24080: INSTALL SEPTIC SYSTEM

All work shall comply with designer's (_____) specifications and shall be inspected and approved by the Tacoma-Pierce County Health Department. The installation to include backfill to original grade, testing of the system and electrical as needed. The installer shall provide care instructions for maintaining the system.

Restoration of grass lawn or landscaping shall be the responsibility of the homeowner.

LEAD PAINT STANDARDS

LEAD BASED PAINT HAZARD REDUCTION REQUIREMENTS

LBP 100.1: INTENT

It is the intent of this supplement to provide working details to reduce the risk of lead based paint hazards. The general contractor may be required to provide HUD/EPA/WAC certified lead abatement sub-contractors to perform all stabilization and abatement work. This shall include all labor, materials, equipment and disposal of waste necessary and incidental to complete all repairs as stated in the bid specifications. The general contractor shall ensure that safe work practices, as defined HUD, WAC,

EPA, OSHA and WISHA, are strictly followed. Protection of the occupants and the workers during the lead hazard reduction work will be in accordance with HUD, WAC and EPA instructions.

LBP 100.2: GENERAL

Pierce County Community Services, if necessary, may provide a WAC/EPA/HUD certified Risk Assessor to monitor job progress and ensure worker and homeowner safety. The Pierce County Community Services representative and their Consultant shall be contacted when the lead hazard reduction work has been completed and the site properly cleaned to schedule a visual inspection and required clearance sampling. A certified Risk Assessor may perform a visual inspection and clearance sampling upon completion of the project. Sampling may include soil and wipe samples collected from the work area. If any sample is deemed unacceptable through laboratory analysis, the contractor shall re-clean the work area and an additional visual inspection and sampling shall be performed. The cost for the additional sampling and inspection shall be borne by the Contractor.

Department of Housing and Urban Development

- 24 CFR Parts 35, 36, 37 HUD Lead- Based Paint Regulations

HUD Guidelines for the Evaluation and Control of Lead- Based Paint Hazards in Housing

Occupational Safety and Health Administration

- 29 CFR 1910 General Industry Standards
- 29 CFR 1910.1025 Lead Standard for General Industry
- 29 CFR 1910.134 Respiratory Protection
- 29 CFR 1910.1200 Hazard Communication
- 29 CFR 1910.245 Specifications for Accident Prevention (Sign and Tags)
- 29 CFR 1926 Construction Industry Standards
- 29 CFR 1926.62 Construction Industry Lead Standard

Environmental Protection Agency

- 40 CFR Part 261 United States Environmental Protection Agency Regulations

LBP 100.3: PAINT STABILIZATION

Paint stabilization may include removal of all loose, cracked, chipped peeling, dusting or any other deteriorated painted surfaces. Pressure washing is not acceptable. Wet scraping, wet sanding, chemical strippers, heat guns not exceeding 1,100-degrees F., and HEPA vacuum filtered needle guns are some of the approved methods for paint removal. All work shall be performed by certified lead based

paint workers using HUD "Safe-Work Practices". Clean all areas where stabilization was performed with a HEPA vacuum, then apply acceptable primer to all stabilized surfaces. All waste generated from this procedure shall be collected and properly disposed of.

LBP 100.4: PAINT OR COMPONENT REMOVAL/ABATEMENT

When paint or a component is specified to be removed, they are to be removed completely. Paint removal shall mean all layers of paint down to the substrate. This may be accomplished by chemical stripping, wet scraping, wet sanding, heat guns not exceeding 1,100-degrees F., or a HEPA vacuum filtered needle gun. Component removal shall include all parts of the component system. The certified lead abatement firm shall provide supervision of the project as defined in WAC 365- 230 to ensure that "HUD Safe Work Practices" are followed and that all material needing to be removed has been removed and properly disposed of.

LBP 100.5: LEAD HAZARD REDUCTION STRATEGIES AND PROCEDURES

Prior to commencement of any stabilization or abatement work, the Lead Contractor shall be responsible to notify the owner(s) and/or resident(s) of the scope of work and procedures that will be followed during the abatement or stabilization process. This is extremely important if children under six occupy or regularly visit the residence. If the resident(s) are to be relocated, they must remain off site while the job is being done and until the site has met the required clearance standards for their safe return.

Once the initial consultations are successfully completed, the Lead Contractor shall set-up project boundaries and containment methods that shall be employed on the job site. Project boundaries shall be clearly marked, and access shall be restricted. The exterior of the building and all entrances and exits to the work area shall be clearly marked with OSHA approved signage stating "WARNING- LEAD WORK AREA- POISON- NO SMOKING OR EATING" prior to commencement of any lead hazard reduction work.

Lead Hazard Reduction procedures shall consist of the following

Interior Containment

Remove all possible objects from the work area. Carpeting should be removed and cleaned. Complete removal and replacement of carpeting is recommended;

replacement should be of hard surface flooring (for example, tile, wood flooring or vinyl) that permits the cleaning of dust.

Cover all remaining objects, furniture, fixtures, and objects or surfaces that would be difficult to clean with 6-mil plastic. Secure plastic with tape or staples; if staples are used, ensure that the finished surfaces are not damaged when removed.

Openings to rooms or attached units shall be sealed off from the work area with 6-mil plastic and tape.

Cover the entire floor of the containment area with two layers of 6-mil plastic securely taped to the perimeter walls. The top layer shall be removed with any debris that may result from lead hazard reduction work; the second layer shall be removed only after lead hazard work is completed, after containment plastic is removed and prior to final cleanup procedures.

All windows shall be closed and forced-air heating and air conditioning systems shall be shut down prior to lead hazard reduction activities. HEPA vacuum all air intake and exhaust points inside containment areas prior to sealing off completely with 6-mil plastic and tape.

Exterior Containment

Remove all possible objects from the work area. Place 6-mil plastic as close to the building foundation as possible and secure it to the building if at all possible; secure around the perimeter with weights or stakes. For a containment that will handle liquid waste, the plastic shall be raised around the perimeter and shall be extended far enough to contain runoff; seal all seams with tape

Abatement Procedures

A certified supervisor or project designer is required for each abatement project and shall be on-site during all worksite preparation and during post-abatement cleanup of work areas. At all other times, the certified supervisor or project designer shall be on-site or available by telephone, pager, or answering service, and be able to be present at the worksite in no more than two hours.

All abatement procedures are to be performed inside a properly constructed containment area only and shall be conducted by a certified Lead-Based Abatement contractor and properly trained and certified workers.

If paint is scheduled to be removed from its substrate, it may be removed by wet scraping and wet sanding, the use of a heat gun under 1100-degrees F, hand-held power tools used in conjunction with HEPA exhaust control filtration, on-site chemical strippers (using appropriate respiratory protection), or off-site chemical stripping. The use of open-flame burning or torching, uncontained hydro blasting or pressure washing, grinding, sanding or sandblasting without HEPA exhaust filtration, dry sanding or scraping (only permitted in conjunction with heat guns or around electrical outlets), the use of a heat gun over 1100-degrees F, and the usage of methylene chloride based chemical strippers are expressly prohibited.

To control dust during abatement, mist or wet-spray the affected item and the surrounding area before commencement of abatement. Make sure to dry surrounding areas after the removal of the component(s) so as not to damage surrounding areas.

Once you have removed a component, wrap it carefully with 6-mil plastic and seal completely with tape for proper disposal.

If windows or doors are scheduled to be removed, the interior side of the unit shall be double covered with 6-mil plastic. The floor and/or ground immediately below the window or door shall be sufficiently covered to prevent contamination. Doors shall be tightly covered and taped around the perimeter and to the floor; windows shall be J-bagged (allows for trough at bottom of window to catch debris) and securely taped around the perimeter.

Abatements that include paint, soil, interior dust, and exterior dust shall be completed in this order: 1) Abate lead-based paint on the outside of the building first; 2) Control all identified lead-contaminated soil; 3) Control exterior dust; 4) Control interior lead-based paint; 5) Control interior lead dust. This order of abatement shall be followed with all abatement combination possibilities.

A thorough cleanup of the entire work area shall be conducted each and every day. This daily cleanup shall consist of the following: 1) removal of all debris; 2) HEPA vacuuming, wet cleaning, HEPA vacuuming (horizontal surfaces only); 3) cleaning the exterior directly surrounding the containment; 4) patching and repairing plastic sheeting as required; and, 5) if containments are to be left overnight, secure the containment and worksite to restrict entry.

Enclosure- encloses a painted surface with a durable substance such as drywall, paneling, metal and vinyl siding, Hardi siding, plywood, wood or tile flooring, metal coil-stock, or some other construction material designed to last a minimum of

twenty years. All enclosure products should be applied with fasteners and adhesives and installed according to current manufacturer's specifications. Before enclosing a surface, clearly mark or identify the surface as containing lead-based paint every 3' in height along the entire length of the surface. All seams, edges and joints must be sealed or caulked to prevent dust from escaping.

Encapsulation- coats and seals the lead-based paint with a durable coating applied as a liquid to the painted surface. To be considered an acceptable encapsulant, the coating must meet or exceed ASTM E1795-04 Standard Specification for Non-Reinforced Liquid Coating Encapsulation Products for Leaded Paint in Buildings. Encapsulants are not to be used on surfaces subject to friction or rubbing such as windows or doors. Before installing encapsulants ensure that the existing paint is stable and well-adhered to its substrate. If the existing paint is not stable and well-adhered, stabilization and priming of the surface must be done in accordance with HUD "Safe Work Practices" prior to application of encapsulant. Installation shall meet all current manufacturers' specifications.

Soil Abatement- replaces contaminated bare soil or permanently covers bare soil so as to be separated from human contact. If soil is to be abated, WAC 365-230 requirements for soil abatement shall be observed. Soil abatement shall be consistent with one of the following: 1) replacement with soil that has a lead concentration no greater than 250 ppm; or, 2) shall be permanently covered with a relatively impermeable material, such as pavement, asphalt or concrete. Soil that is replaced shall be installed at a level 2-inches above the previous level to allow for settling.

Interim Controls

Interim control measures include paint stabilization of deteriorated paint, treatments for impact and friction surfaces, treatment of chewable surfaces, dust-lead hazard control, and treatments for soil-lead hazards. Interim control measures must be completed using HUD "Safe Work Practices" (24 CFR Part 35, Section 35.1350).

Interim controls of lead-based paint hazards shall be conducted by persons who have been trained in accordance with 29 CFR 1926.59 and either be supervised by an individual certified as a lead-based paint abatement supervisor or have successfully completed a HUD-approved "Safe Work Practices" training course.

Occupants shall not be permitted to enter the worksite during lead hazard reduction activities until after clearance has been achieved.

A warning sign shall be posted at each entry to a room where lead hazard reduction activities are conducted when occupants are present; or at each main and secondary entryway to a building from which occupants have been relocated; or, for an exterior hazard reduction activity, where it is easily read 20 feet from the edge of the hazard reduction worksite.

De minimis levels- HUD "Safe Work Practices" are not required when lead hazard reduction activities do not disturb painted surfaces that total more than: 1) 20 square feet on exterior surfaces; 2) 2 square feet in any one room or interior space; or 3) 10 percent of the total surface area on an interior or exterior type of component with a small surface area. (e.g., windowsill, baseboard, trim).

A thorough cleanup of the entire work area shall be conducted each and every day. This daily cleanup shall consist of the following: 1) removal of all debris; 2) HEPA vacuuming, wet cleaning, HEPA vacuuming (horizontal surfaces only); 3) cleaning the exterior directly surrounding the containment; 4) patching and repairing plastic sheeting as required; and, 5) if containments are to be left overnight, secure the containment and worksite to restrict entry.

Paint Stabilization-

Correct all interior and exterior water leaks to the building envelope that may be causing the physical deterioration of the various substrates

Any physical defect in the substrate of a painted surface or component that is causing deterioration of the surface or component shall be repaired before treating the surface or component. Examples of defective substrate conditions include dry-rot, rust, moisture-related defects, crumbling plaster, and missing siding or other components that are not securely fastened.

Before applying new paint, prepare the surface by removing all loose, chipping, cracking, peeling, or chalking paint by wet scraping and sanding, the use of a heat gun under 1100-degrees F, hand-held power tools used in conjunction with HEPA exhaust control filtration, on-site chemical strippers (using appropriate respiratory protection), or off-site chemical stripping. The use of open-flame burning or torching, uncontained hydro blasting or pressure washing, grinding, sanding or sandblasting without HEPA exhaust filtration, dry sanding or scraping (only permitted in conjunction with heat guns or around electrical outlets), the use of a heat gun over 1100-degrees F, and the usage of methylene chloride based chemical strippers are expressly prohibited.

Clean, degloss, neutralize and rinse stabilized surfaces prior to application of primer and paint. Surfaces should be dry and free of debris prior to painting.

Apply one coat of primer and at least one coat of paint to all surfaces that have been stabilized. Allow sufficient time for each coat of paint to dry fully. All paint shall be applied in accordance with all current manufacturers' specifications.

Paint stabilization shall incorporate the use of HUD "Safe Work Practices" in accordance with 24 CFR Part 35.

Friction and impact surfaces-

Examples of friction and impact surfaces include but are not limited to, windows, doors, stair treads and risers, baseboards, walls where doorknobs have knocked against, drawers and cabinets, porches, decks, interior floors, and any other surface that are abraded, rubbed or impacted.

All deteriorated paint on a friction or impact surface component that is not scheduled to be removed shall be stabilized.

As an additional protection measure, the installation of rubber or felt bumpers at all points of friction or impact is recommended.

Interim controls for friction or impact surfaces does not include covering of such surfaces with a coating or other treatment, such as painting the surface, that does not protect lead-based paint from impact or abrasion.

Interim control measures for friction surfaces shall eliminate friction points or treat the friction surface so that paint is no longer subject to abrasion. For windows, install channel guides or slide systems that reduce or eliminate the abrasion of painted surfaces. If window troughs are badly weathered, cap with caulk-backed, metal coil stock or other approved material. For doors, mist and plane, or rehang door to eliminate friction points. For paint on stair treads and floors, install a durable cover such as wood or tile, carpeting, rubber tread guards, or vinyl sheet goods. For drawers and cabinets, strip paint from drawers and drawer guides or plane impact points and repaint. Strip paint from all cabinet doors or replace doors.

Interim control measures for impact surfaces shall protect the lead painted surface from impact. For baseboards, remove and dispose of the base shoe molding and replace it. For abraded or damaged outside wall corners, install new plastic or wood corner bead. For doors, remove and dispose of the doorstop from the jamb if

possible; to prevent the door from striking a wall or baseboard install new wall or hinge mounted door stops.

Chewable surfaces-

Chewable surfaces are required to be treated only if there is evidence that a child of less than 6 years of age has chewed on the painted surface, and lead-based paint is known or presumed to be present on the surface.

Treatments shall make the lead-based paint inaccessible for chewing by children of less than 6 years of age by either the removal of the components completely or by means of enclosure or coatings that cannot be penetrated by the teeth of such children.

Dust-lead hazard control-

Dust-lead hazard, as provided in WAC 365-230, shall mean surface dust in a residential dwelling or child-occupied facility that contains a mass-per-area concentration of lead equal to or exceeding 40 µg/ft² on floors or 250 µg/ft² on interior windowsills based on wipe samples.

All horizontal surfaces, such as floors, stairs, windowsills and troughs, that are rough, pitted, or porous shall be sealed with an appropriate sealer or covered with a smooth, cleanable covering, such as metal coil stock, plastic, polyurethane, tile, wood, vinyl, laminate, or other acceptable smooth, cleanable covering.

Dust control shall involve a thorough cleaning of all horizontal surfaces, such as interior windowsills, window troughs, shelves, floors, and stairs, but excluding ceilings.

Other potential dust traps that require thorough cleaning, other than horizontal surfaces, carpeting, rugs and mats, include radiators, floor grates and registers, drapes, blinds, upholstered furnishings and children's toys.

Clean from top to bottom and vacuum before wet cleaning. On multistory dwellings, start at the top level in the rear room, furthest from the floors/rooms entrance and work in one direction toward the front; repeat this process for the remaining floors/rooms in sequence. Within a room start with the highest horizontal surface and work down. A typical cleaning sequence would be as follows: top of window heads, tops of sashes, mullions, and interior and exterior windowsills and troughs, radiators, baseboards, floors, and finally vents/registers and horizontal components of the ventilation ducts that can be easily reached.

When at all possible, area rugs and wall-to-wall carpeting in an area where dust-lead hazards have been identified shall be removed and replaced with smooth, easily cleanable, hard-surface flooring, such as wood, tile or vinyl sheet goods.

All floor surfaces, including those beneath a rug shall be cleaned where possible by methods of HEPA vacuuming, wet wiping with a high phosphate or lead-specific solution like TSP, and then HEPA vacuuming again.

If carpeting is not scheduled to be replaced, HEPA vacuum the carpeting at a rate no faster than 2 minutes per 10 square feet in a side-to-side direction, followed by another pass at the same rate in a direction perpendicular to the direction of the first vacuuming, for a total of 4 minutes per 10 square feet.

Replace air filters in the forced air systems at the time of cleaning.

Soil-lead hazards-

Soil-lead hazard, as provided in WAC 365-230, shall mean bare soil on a residential real property or on the property of a child-occupied facility that contains total lead equal to or exceeding 250 parts per million (mg/g) based on soil samples.

Acceptable interim control methods for soil-lead hazards are impermanent surface coverings and land use controls. New bark, gravel, or other materials should not contain more than 200 µg/g of lead. Adequate erosion control measures shall be used in conjunction with impermanent surface coverings.

Land use controls may be used to reduce exposure to soil-lead hazards only if they effectively control access to areas with soil-lead hazards, and only if the residents have reasonable alternatives to using the areas to be controlled.

If land use controls are used for a soil area that is subject to erosion, measures shall be taken to contain the soil and control dispersion of lead.

Cleanup Procedures

Occupants shall not be permitted to enter an area where lead hazard reduction work or abatement has been conducted until cleaning is completed and final clearance has been achieved.

Clearance levels for lead dust shall be as provided in WAC 365-230 as follows: 40 µg/ft² on floors; 250 µg/ft² for windowsills; and 400 µg/ft² on window troughs.

A thorough cleanup of the entire work area shall be conducted each and every day. This daily cleanup shall consist of the following: 1) removal of all debris; 2) HEPA vacuuming, wet cleaning, HEPA vacuuming (horizontal surfaces only); 3) cleaning the exterior directly surrounding the containment; 4) patching and repairing plastic sheeting as required; and, 5) if containments are to be left overnight, secure the containment and worksite to restrict entry.

For final cleaning, wait at least 1 hour after active lead hazard control activity has ceased in order to let dust particles settle.

Removal of plastic sheathing used for containment purposes should begin with upper-level plastic, working toward the floor, with removal of the floor plastic last. Before removing any plastic, spray or mist the plastic with water to hold down dust, and then fold it inwards to trap any remaining dust inside. Place all used plastic and any waste material inside double 4-mil or single 6-mil plastic bags and seal them tightly before removing from the premises.

Clean from top to bottom and HEPA vacuum before wet cleaning, then HEPA vacuum again. On multistory dwellings, start at the top level in the rear room, furthest from the floors/rooms entrance and work in one direction toward the front; repeat this process for the remaining floors/rooms in sequence. Within a room start with the highest horizontal surface and work down. A typical cleaning sequence would be as follows: top of window heads, tops of sashes, mullions, and interior and exterior windowsills and troughs, radiators, baseboards, floors, and finally vents/registers and horizontal components of the ventilation ducts that can be easily reached.

Wash all surfaces with a lead specific detergent, high-phosphate detergent, or other suitable cleaning agent to dislodge any ground-in contamination, then rinse. Change the cleaning solution after every room is cleaned (e.g., filtering, gravitational separation), if any, have been satisfied. Wastewater shall not be disposed of into storm drains or onto the ground.

Decontamination of all tools, equipment, and worker protection gear is required before it leaves containment areas.

After the final cleaning is completed, the certified supervisor shall visually evaluate the entire work area to ensure that all work has been completed and all visible dust and debris have been removed. If the visual examination results are unsatisfactory, affected surfaces must be retreated and/or recleaned.

After satisfactorily passing the initial visual inspection by the certified supervisor, all floors without an intact, nonporous surface or coating should be sealed to allow for easier cleaning by the occupants. Wooden floors should be sealed with polyurethane or other durable enamel based paint. Vinyl tile, linoleum, and other similar floors should be sealed with an appropriate wax. Concrete floors should be sealed with a concrete sealer or other durable epoxy based paint. An alternative to sealing floors would be the installation of new vinyl tile, sheet vinyl, wood flooring or tile that would cover the surface of the porous floor completely.

After painting/sealing is complete, the entire work area should be thoroughly cleaned again following the same HEPA/Wet Wash/HEPA cycle from ceiling to floor as previously described.

Clearance dust sampling of a worksite shall be conducted a minimum of one hour after final cleanup is complete.

Clearance activities and dust sampling of the worksite shall be conducted by a certified risk assessor or certified lead-based paint inspector and shall consist of a visual assessment, dust sampling, submission of samples for analysis of lead by an accredited NLLAP laboratory, interpretation of sampling results, and preparation of a clearance report.

All surfaces represented by a failed clearance sample or visual inspection shall be recleaned and retested until the applicable clearance level is met.

LEAD PAINT SPECIFICATIONS

25000: LEAD SAFE WORK PRACTICES

This building was constructed prior to 1978 and has not had a paint inspection or a risk assessment. The presumption is that lead paint is present and a certified Renovator, Repair and Painting (RRP) contractor shall employ Safe Work Practices when disturbing more than 2 square feet of painted surface in any given room or 20 square feet of a painted surface on the exterior (di minimis levels). If work exceeds di minimis levels, a clearance test will be required from an EPA certified lead based paint (LBP) inspector or risk assessor.

Manufactured Home Replacement Standards

A manufactured home (formerly known as a mobile home) is built to the Manufactured Home Construction and Safety Standards (HUD Code) and displays a red certification label on the exterior of each transportable section. Manufactured

homes are built in the controlled environment of a manufacturing plant and are transported in one or more sections on a permanent chassis and are inspected and certified before transport.

Upon arrival on site, the sections are placed on a permanent foundation, permitted and inspected by local building departments. Porches, skirting, storm water control and approaches are also permitted and inspected by building officials. The combination of the factory certification and finalized permits culminating in a "Certificate of Occupancy" issued by the building department meet or exceeds the Home Rehabilitation Standards and takes the place of the Housing Programs Inspection Checklist.

Manufactured Home Replacement Specifications

900: BASE PRICE MANUFACTURED HOME

Dealer to provide a base price for a 3 bedroom, 2 bath, _____square foot, (make_____) and (model _____, manufactured home. No options or upgrades shall be allowed without program authorization.

905: DELIVERY / TRANSPORT

Dealer to arrange for the delivery and set up of the above specified manufactured home. Price to include state registered hauler, spotter, and mini-cat/crawler if needed.

910: SET-UP / INSTALL

Dealer to arrange for the set-up and delivery of the above specified manufactured home. Work to include:

- 1) The staking of the building footprint in accordance with county specified set-backs.
- 2) The blocking and leveling of the home on concrete foundation runners, installing tie-downs and providing a vapor barrier per code. Minimum height between ground and belly shall be 18" and minimum height between ground and beams shall be 12".
- 3) The restoration of the exterior marriage line: Siding and roof cap.
- 4) The restoration of the interior marriage line: Tape, texture, and paint. Stretching of carpet and joining of finished floors and or surfaces.
- 5) The water and sewer stub-outs.

- 6) The completion of the dryer vent run, cross-over duct, and water heater discharge line to code.
- 7) The removal of all set-up and construction related debris.

915: PERMITS

The bid shall include all permits related to this project: Hauling, Building, Foundation, Site Development, Electrical (Sewer/Septic, Well, as needed). If the building is more than 150ft from the road, an on-site Emergency Vehicle Access will be required and bid on here. The contractor shall provide copies of all finalized permits and a certificate of occupancy to the Community Development Corporation before submitting a request for final payment.

920: DEMOLITION

Work to include the demolition and disposal of existing structures as needed. The contractor shall be responsible for obtaining a Puget Sound Clean Air permit and an asbestos inspection report for the demolition of the mobile. A copy of each shall be submitted the Community Development Corporation before completion.

925: SITEWORK

The contractor shall be responsible for placing the building per Pierce County Planning and Land Development and Tacoma Pierce County Health Department set back requirements. The contractor shall provide proper grading for the project and provide tree removal, erosion control, curtain drain, or infiltration system as needed or called out by PALS or TPCHD during the permitting process.

930: DRIVEWAY APPROACH

The contractor shall provide an asphalt driveway approach installed per Public Works & Utilities, Pierce County Standard Drawings, Section F, 1.1.

Provide rip-rap driveway approach as an alternate if called out by Pierce County Planning and Land Development.

935: DRIVEWAY

Provide concrete runners of appropriate size as called out by the home manufacturer or the instructions of an engineer or architect that meet frost depth requirements for this region.

If using prefabricated pier pads, provide an engineer's certification stating that they are installed according to HUD/FHA/VA permanent foundation standards. Please provide this documentation to the Community Development Corporation at the time of the loan signing.

Anchors shall be spaced according to home manufacturers or engineers' instructions.

940: UTILITY HOOK-UP

The contractor shall connect the water line to the building. This work to include the connection of hose bibs as needed.

The contractor shall connect the electrical service to the building. Work to include the relocation of the pedestal and providing underground service as needed.

The contractor shall connect the septic or sewer line to the building. This work to include provisions for O&M and RME fees as needed.

945: PORCHES

The contractor to provide a 4'x6' porch at the front entrance of the home, and a 4'x4' porch at the rear entrance of the home. If the home has a sliding glass door in the rear, size the corresponding porch accordingly. All structures shall be free standing and built to code. Porches shall provide 4'x4' concrete level landings at the base of each set of risers.

950: SKIRTING

The Contractor shall provide and install concrete split-block skirting for the perimeter of the home.

Ventilation shall be a minimum ratio of 1:150 and a minimum 18"x24" access panel shall be provided.

Finished grade shall fall away from drip line at a rate of 5% or 2" in the first 10' away from the building.

955: GUTTERS & DOWNSPOUTS

Provide and install continuous metal gutters and downspouts that terminate on splash block facing away from the building. Downspouts shall carry no more than 30' lineal feet of gutter load and shall be placed one at each corner of the building.

960: FINALS

Contractor to provide and install a building address to code.

Contractor to verify that the Installers Tag/HUD Sticker is on the building.

Contractor to provide copies of all finalized permits and a Certificate of Occupancy to the Community Development Corporation before final payment.

Contractor to complete manufactured home title elimination and record same with county auditor.

965: RETAIL FLOOR PLAN

Dealer to provide a quote for the cost of flooring charges needed for this project. Provide the number of months built into this quote.