

**CITY OF WARREN  
GENERAL SPECIFICATIONS FOR  
REHABILITATION OF CITY OWNED HOMES**

**CODES AND STANDARDS**

All specified work must be completed in compliance the building, plumbing, mechanical and electrical codes adopted by the City of Warren and the instructions and standards contained herein.

The Contractor, if observing that the specifications and applicable codes are at variance with one another, shall promptly notify the City of Warren Community Development Inspector in writing and cease all operations until further written instructions are received. Where such a variance exists, the determination of the City shall be final.

**QUANTITIES AND MEASUREMENTS**

Where quantities are set forth in the specifications, such quantities may not be exact, but are intended to reflect both the nature and extent of the work to be performed. Before ordering any materials or doing any work, the Contractor shall take or verify all measurements at the building site as may be required for the proper fitting of the work. The Contractor shall be responsible for the correctness of his or her figures and shall satisfactorily correct without charge any work which does not fit.

**PRODUCT QUALITY AND SELECTION**

All materials shall be provided as specified. Where there is no specification, the Contractor shall provide materials of a suitable grade to successfully perform the function(s) for which they were designed. Specification or approval of materials shall not relieve the Contractor of any warranty with respect thereto or any obligation of liability in connection with the contract. Where a choice of color, texture, or style is available, a minimum of three (3) choices shall be provided to the City to make a selection.

**INSPECTIONS**

The City reserves the right to inspect all materials and workmanship at any time. All work performed under contract is subject to final acceptance by the City's authorized representative(s). These instructions and the codes referenced above shall apply at inspection to determine the adequacy of the work performed. The permit fee provides for two (2) final inspections to accept the specified work. Any subsequent inspections shall be charged to the Contractor per the building department's current fee schedule, these fees are subject to change at anytime. The Contractor shall be responsible for reviewing the job prior to calling for final inspections to insure that all work required under contract has been completed and meets all applicable codes and standards. Serious doubts may arise as to the qualification of any Contractor consistently having inspections in excess of two (2) for final acceptance of work.

**SITE CLEANING, REMOVAL OF DEBRIS AND FINAL CLEANUP**

The Contractor with the prior approval of the City shall trim and/or remove all vegetation, improvements, or obstructions which would interfere with the proper performance of any work item in the specifications at no additional charge. In all cases, all debris incurred on the job must be stored in an orderly manner. At the end of each working day, the premises shall be left in a broom-clean condition. At the completion of the work or at the direction of the City, the Contractor shall remove all work related materials and debris from and about the dwelling and property including all tools, scaffolding, and surplus materials. During winter months, the Contractor shall clean the site daily to insure debris will not become imbedded in ice or covered with snow. Contractor shall be responsible for the removal of all debris discovered during a thaw period even if final payment has been issued.

**ELECTRICAL**

Electrical work shall conform to the code adopted by the City's Building Department at the time the work is performed. The Contractor shall be responsible for obtaining all required permits and inspections and for complete operation to manufacturer's specifications of all electrical units installed or repaired. All new or repaired wiring shall be concealed in floors, walls, partitions, or behind furring. When a fixture, switch, or receptacle is scheduled to be installed new, the item shall be installed complete with all wiring and accessories incidental to its proper functioning. Receptacles, switches, and cover plates shall match finished wall as closely as possible. Fixtures installed new shall be of nationally recognized standard quality, listed by an approved testing lab, suitable for the intended use. The Contractor shall provide the City with a range of styles, colors, and designs from which to select a fixture.

All necessary cutting in walls and floors shall be neatly and carefully done. The Contractor shall be held responsible for repairing all damage caused by his or her work, or through neglect of the laborers, in a workmanlike manner approved by the City. Cutting into parts of the building likely to impair its structural integrity shall not be done without the prior approval of the City. The finish repair of walls, ceilings, siding, or posts where fixtures are removed and not replaced in exact same location shall be the responsibility of the Contractor.

### **HEATING**

All work performed in the repair, assembly, erection, installation, or connection of any heating system shall be in accordance with the manufacturer's recommendations and the Mechanical Code adopted by the City of Warren at the time the work is performed unless otherwise specified. All work shall be performed by a licensed Contractor who shall obtain all permits prior to starting any work.

When a heating unit or system is scheduled to be removed, the furnace or boiler and all equipment incidental to its operation, which is not necessary for the operation of any new unit or system being installed, shall be removed.

Unless otherwise specified all new furnaces must be at least 90% efficient and bear the American Gas Association (AGA) or another approved agency's label. All furnaces installed must carry a minimum ten (10) year warranty on the heat exchanger. Furnace and blower must be Energy Star labeled.

When a new thermostat is called for, it shall be a digital Energy Star labeled, 7 day programmable thermostat with initial settings of 70° for heating and 78° for cooling.

Where "clean and check" or "servicing" of heating systems is called for in the specifications, the work shall be performed by a licensed heating and cooling contractor. The contractor shall thoroughly clean the system and check and adjust controls for proper operation. On forced air systems, this shall include oiling and cleaning the blower motor, installing new air filters, and replacing blower motor belts as necessary. On oil-fired systems, this shall include cleaning fittings and lines and changing the oil filter. On wet heating systems, this shall include bleeding all lines and/or radiators to remove trapped air. On all systems the chimney and flue pipe shall be inspected and cleaned if necessary. The contractor must also make a visual inspection for cracks in the heat exchanger and test for carbon monoxide or other gases leaking from the heat exchanger. A certificate shall be left on the furnace or boiler indicating the Contractor's name, the work or repairs completed and date of servicing. In addition, a letter of analysis shall be provided to the City, stating the property address where the work was performed, the company name, the contractor's license number, the manufacturer, model number, and serial number. The year manufactured and an estimate of the heating systems remaining life expectancy shall also be stated.

No new ductwork shall be installed as exposed ductwork in finished rooms, including closets unless prior approval is obtained from the City. Supply ducts in crawl spaces and unheated attic spaces shall have a minimum R-8 fiberglass vinyl backed blanket insulation.

When heating unit controls are scheduled to be repaired and/or replaced, the heating 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 U.L. listed.

### **COOLING**

All work performed in the repair, assembly, erection, installation, or connection of any cooling system shall be in accordance with the manufacturer's recommendations and the Mechanical Code as adopted by the City of Warren at the time the work is performed. All work shall be performed by a licensed Contractor who shall obtain all permits prior to starting any work. All air conditioning units installed must be sized in accordance with the 2009 Michigan Residential Code with an energy efficiency ratio of 14.5 SEER/12ERR or greater and be Energy Star labeled. A drain to floor is usually acceptable but, a condensate pump is required where a floor drain is not easily accessible or where tubing on the floor will create a hazard. Acceptable brands are, Comfortmaker, Luxaire, Rheem, or equal approved by City prior to installation.

## **PLUMBING**

All plumbing work shall be done in compliance with the requirements of the Plumbing Code adopted by the City of Warren Building Department at the time work is performed. The Contractor shall obtain all permits prior to starting any work. The Contractor shall be responsible for complete operation to manufacturer's specifications of all plumbing units repaired or installed under contract. All work shall be carefully protected from damage due to water, frost, or other causes. Any work damaged through any cause shall be promptly repaired. The Contractor shall provide new materials when re-plumbing waste.

When hot water tanks are installed new, unless otherwise specified, they shall have a minimum 40 gallon capacity and be gas fired units with an efficiency rating of 0.67 or greater and be Energy Star labeled. New temperature and pressure relief valves shall be installed on all new hot water tanks. The relief tube shall extend to within 4 inches of the floor. New 26 gauge galvanized metal flue pipe is required for chimney connections.

Acceptable manufacturers for bathtubs, lavatories, and water closets are as follows: Alger, American Standard, Brigs Crane, Gerber, Kilgore, Kohler, Mansfield, or equal approved by the City prior to purchase and installation. Unless otherwise specified, the color of new fixtures installed shall be white.

Stainless steel sinks installed new shall be a minimum of 7" deep with a sound deadener at the bottom of the bowl. Acceptable manufacturers for stainless steel sinks are as follows: American Standard, Dayton, Elkay, Kohler, Moen, Revere, Sterling, or equal approved by City prior to purchase and installation.

Unless otherwise specified, shower, vanity and kitchen faucets installed shall be metal with a single handle. When faucets for kitchen sinks are installed new, they shall be single lever unless otherwise specified. Acceptable manufacturers for faucets are as follows: American Standard, Delta, Kohler, Moen, Price Pfister, Revere, or equal approved by City prior to purchase and installation. The Contractor shall provide the City with a range of styles of sinks and faucets which meet the specifications from which to make a selection.

All toilets and faucets (laundry tub, shower, vanity and kitchen) installed new shall be water efficient WaterSense labeled products.

Fixtures shall be installed complete and ready to use. Appropriate grounds and supports shall be provided and if necessary, arrangements shall be made with the other trades for the installation of any built-in items, blocking, or supports. 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 accurately match all surrounding work. When removing plumbing fixtures all supply lines and soil and/or waste pipe shall be recessed so as not to project beyond the surface of the wall.

All replacement sewer, water, or gas systems shall be installed complete and final connections shall be made to the sanitary sewer, storm sewer, water main, gas meter, or water meter as appropriate. This shall include all excavation and backfill necessary for the installation of new underground piping. All trenches shall be evenly backfilled and thoroughly compacted using acceptable fill materials. In no case shall the excavation for the trenches undermine or disturb the stability of any building's foundation. Gas piping when installed new or repaired shall be black pipe of sufficient size to adequately handle the required gas volume.

## **ROOFING**

All new roofing shall be installed using Dimensional shingles with a minimum 30 year warranty and meet manufacturer's specifications with all installations conforming to the requirements of the Building Code adopted by the City of Warren at the time work is performed. New roofing installations shall be complete with new flashing at chimneys and vents, new vent stack covers, new rake edge, new drip edge, new valleys, and rain and ice guard. Starter strip and edges of roofing shall project over eaves or rake edge approximately 1 inch. Nails shall be corrosion - resistant roofing nails and shall be long enough to penetrate sheathing or roof boards. The Contractor shall offer the City a range of colors of roofing materials which meet the specifications from which to make a selection.

When existing roofing is brittle, badly cupped, or rotted or when there are 2 or more layers, new material shall not be placed over existing. In these situations, the Contractor shall first strip existing roof complete down to wood sheathing then call for an open roof inspection and repair sheathing, rafters, and roof deck as required by City.

Where new sheathing is to be installed it shall be 1/2 inch CDX plywood, except that 3/8 inch may be used over existing wood board sheathing. Exterior type CDX shall be used when surfaces such as overhangs and ceilings in carports or porches are exposed to weather. Plywood shall be installed with outer plies at right angles to rafters or joists, and shall be staggered so that end joints in adjacent panels break over different supports. Nails shall have threaded shanks and staples shall be galvanized. Where sheathing is to be repaired, the finish surface shall be even with the existing sheathing.

When repairing an existing roof, the Contractor shall check and repair or remove and replace as needed all fascia boards and all other roof boards including the last roofing boards at eaves and the end of the roofing boards at the gable edges and all flashings and other metal appurtenances. Any roofing used to make repairs shall match the existing as closely as possible in color, texture, and style.

Where installing new or repairing an existing roof, all loose, brittle, cracked, rotted and broken caulking shall be removed and replaced with new silicone sealant. New silicone sealant shall also be used at all roof openings and exposed roof edges as necessary. Any surface soiled during caulking shall be cleaned immediately.

Where the installation of new roof is called for, new roof vents shall be installed and the size, style and number shall be sufficient to provide adequate air-flow in accordance with the Building Code adopted by the City of Warren at the time work is performed. The color shall match the roof as closely as possible. All separate attic spaces which are sealed off from the rest of the house shall be cross ventilated.

#### **EXCAVATING, MASONRY, AND CONCRETE**

Where excavations are made under walks, drives, or cement slabs, they shall be filled with well tamped sand.

The Contractor shall do all cutting and patching onto concrete or masonry surfaces as required for the job.

All mortar shall be an appropriate type mixed in proper proportions. Where tuck pointing is called for all joints and cracks from which the mortar has eroded, deteriorated, or fallen out shall be repaired. Loose mortar shall be scraped, the area shall be moistened and an approved compound applied. All excess mortar shall be removed. Materials shall be repaired or replaced in such a manner as to produce a finish, size, shape, texture and color which closely matches existing surfaces. In all cases the masonry shall be watertight and uniform in appearance.

Continuous concrete footings for installation of new or repair of existing foundations, porches, and steps shall be provided in accordance with the Building Code adopted by the City of Warren at the time work is performed. Unless otherwise specified, all footings shall extend at least 42 inches below finish grade. Inspections are required before footings are poured. After work is completed and inspections have been made, disturbed earth shall be replaced and tamped to grade so as to eliminate settlement. In all cases, excess earth shall be removed from the premises and the site shall be properly backfilled and raked clean.

All new concrete slabs (drives, walks, patios, step pads etc.) and required construction/expansion joints shall be provided in accordance with the Building Code adopted by the City of Warren at the time the work is performed. Beneath concrete slabs there shall be a 4 inch base of sand and/or crushed stone well tamped and drained and uniformly graded. All wear surfaces shall receive a broom finish. **Apply William Meadows Cure and Seal CS309 or approved equal to all concrete slabs exposed to the weather.** In all cases, the site shall be properly backfilled and all debris shall be removed. The finish grade of all new concrete slabs shall be approximately parallel with adjacent soil, drives, or walks and shall be constructed so as not to impede the drainage of surface water away from the house and off the property.

Unless otherwise specified, the width of all new sections of concrete shall match the width of existing sections.

All City sidewalks and approaches must be inspected by the City Engineering Department.

When sealing or repairing cracks in concrete, the Contractor shall use rubber or silicone cement caulk which matches the existing concrete as closely as possible.

Concrete step pads installed new shall be at least as wide as the existing steps and a minimum of 3-1/2 inches thick.

When repairing chimneys, all surfaces shall be thoroughly cleaned of all dirt, dust and loose particles by wire brushing. Any previous coatings other than cement based coatings shall also be removed. Loose or defective mortar joints and cracks in surfaces shall be repaired. Particular attention shall be paid to the chimney cap which shall be repaired as necessary to prevent moisture from entering the block. If the block has large voids or pores, continuous filler shall be applied over the entire surface to be waterproofed followed by a coating of silicone waterproofing applied according to the manufacturer's recommendation.

### **WATERPROOFING AND DAMP-PROOFING EXTERIOR WALLS**

When the specifications call for waterproofing or damp-proofing exterior walls, the Contractor shall complete the following steps. Excavate to footing. Clean all dirt, oil, loose particles, concrete laitance, paint, and adhesives from surfaces (wire brushing, sand blasting and acid bathing are acceptable methods of cleaning). Repair all loose or defective mortar joints and cracks in surfaces to be damp-proofed. Check bleeders for proper drainage and repair or replace as necessary. Where necessary, parge unit masonry walls with not less than 3/8 inch Portland cement mortar. Parging shall cover the foundation wall from the footing to 3 inches above grade. Remove existing and provide new drain tile or perforated pipe properly placed at the perimeter of the footing. Perforated pipe shall be placed in continuous sections between fittings. The invert of the pipe or tile shall not be higher than the floor elevation. The top of joints or the top of perforations shall be protected with an approved filter membrane material. The pipe or tile shall be placed on not less than 2 inches of gravel or crushed stone and covered with not less than 6 inches of the same material. The gravel or crushed stone shall be sized so that no more than 10 percent of the material passes a No. 4 sieve (that is no more than 10 percent shall be less than 16 mm in diameter). The foundation perimeter drain shall discharge by gravity or mechanical means into an approved drainage system.

A bituminous tar waterproofing material shall be applied to the exterior surface of the walls to be damp-proofed. This material shall extend from the top of the footing to 3 inches above ground level. A vapor barrier of visqueen or any other approved material capable of bridging nonstructural cracks shall be applied to the walls. Joints in the membrane shall be lapped and sealed in accordance with the manufacturer's recommendations.

An open inspection is required before backfilling. All excavated material shall be disposed of and new material used for backfilling. Backfill material shall be soil which is free of organic material, construction debris, and large rocks. The backfill shall be placed in lifts and compacted in a manner which does not damage the damp-proofing material.

### **WINDOWS AND DOORWALLS**

Windows and doorwalls installed new shall be solid vinyl or vinyl clad wood with 7/ Low-E glass with argon gas and a minimum 10 year warranty. They shall meet or exceed energy efficiency standards with a minimum U-factor of 0.32. The exterior side shall be trimmed with vinyl or aluminum and properly sealed. Unless otherwise specified, all window sashes must be operational. Frames, headers, and sills shall be repaired as necessary to provide a square, plumb, level, and rigid enclosure for the new installation. Window and doorwall assemblies shall be installed complete with all operating hardware including locking mechanisms. New finish hardware shall be furnished with the necessary screws, bolts or other fasteners of a suitable size and type to anchor the hardware in position for heavy use and long life. All existing trim shall be removed and reinstalled after installation is completed. Any trim damaged during removal shall be replaced with new. For all trim, new or reinstalled, the Contractor must counter sink nails and fill nail holes. All openings between wood, masonry, and metal shall be caulked with a silicone sealant. New sashes shall fit tightly in frames and operate smoothly and easily. The color of new windows shall be white unless otherwise specified. All new windows and doorwalls are to be adjusted for proper operation after installation. The Contractor shall remove all stickers and clean all glass.

## **STORM DOORS**

Storm doors installed new shall be minimum 1-1/4 inch aluminum. They shall have heavy duty pneumatic closers and high quality hardware. They shall have sashes which can be easily removed for maintenance, re-glazing, or repair. Acceptable manufacturers of storm doors are as follows: Fox, Anderson, Trapp, or equal approved by the City prior to purchase and installation. The City shall be given a choice of colors and styles.

Storm doors installed new or repaired shall have operable locking hardware, safety door checks, and closers in good condition. They shall fit weather tight in existing masonry or wood opening. They shall be caulked at the frame with silicone sealant. They shall have glass and screen window inserts which fit tightly into the door.

## **EXTERIOR DOORS, THRESHOLDS AND WEATHER STRIPPING**

Steel entry doors installed new shall be new construction solid core and they shall be primed by the manufacturer. These doors shall be no less than 1-3/4 inch thick. Entry doors shall meet or exceed energy efficiency standards with a maximum U-factor of 0.60. The Contractor shall provide a range of colors and styles which meet the specifications and the above standards from which to make a selection.

Unless otherwise specified, when new doors are installed, all existing moldings and trim shall be removed and reinstalled after installation is complete. Any trim or molding damaged during removal shall be replaced with new. For all trim, new or reinstalled, Contractor is to counter sink nails and fill nail holes. Unless otherwise specified Contractor is responsible for priming and painting or finish staining trim. All hardware installed for these doors shall be good quality and include both knob with lock and thumb latch deadbolt lock. New finish hardware shall be furnished with the necessary screws, bolts, or other fasteners of a suitable size and type to anchor the hardware in position for heavy use and long life. Frames, headers, and sills shall be repaired as necessary to provide a square, plumb, level, and rigid enclosure for the new installation. All openings between wood, masonry, and metal shall be caulked with a silicone sealant.

New thresholds shall be aluminum with a vinyl insert. All thresholds shall be water return type, with integral weather stripping, shall fit watertight with door, and shall be caulked at the exterior edge. Entry doors shall be installed with magnetic weather stripping built into the door frame. Aluminum trim and caulking shall be installed continuously around the door brick mold to prevent infiltration of dust, water, and wind.

## **INTERIOR DOORS**

Interior doors installed new shall be a minimum 1-3/8 inch thick, flush or six panel, hollow core doors with good quality, working hardware. If all doors are not being replaced, new doors should closely match existing interior doors. Frames and headers shall be repaired as necessary to provide a square, plumb, level, and rigid enclosure for the new installation. All openings between wood, masonry, and metal shall be caulked with a silicone sealant. New finish hardware shall be furnished with the necessary screws, bolts or other fasteners of a suitable size and type to anchor the hardware in position for heavy use and long life.

Interior doors installed new or repaired shall be adjusted for proper operation.

## **CAULKING AND WEATHER STRIPPING**

Exterior joints around window and door frames, between wall cavities and windows or door frames, between wall foundations, between wall and roof, between wall panels, at penetrations such as utility services through walls, floors and roofs and all other openings in the exterior envelope shall be caulked; weather stripped, or otherwise sealed in a workmanlike manner.

## **GUTTERS AND DOWN SPOUTS**

All gutters new shall be aluminum, .027 gauge, 5 inch K-type, installed with screws and hangers. All joints, connections and splices shall be made watertight by caulking or using watertight slip joints manufactured for this purpose. When installing new or repairing existing gutters, exposed gutter straps are not allowed. The Contractor shall repair all defective fascia boards prior to installing new or repairing existing gutters. All new down spouts shall be 2 inch by 3 inch corrugated rectangular. Downspouts shall be properly attached to gutters and shall be securely fastened with strap or cast hangers at top and bottom. The Contractor shall provide at least one additional hanger for every 6 feet of down spout. The Contractor shall provide 18" – 24" extensions on downspouts.

When installing new or repairing downspouts, they shall be disconnected from storm drains and the conductor boot shall be filled with a masonry plug. When installing new, the Contractor shall provide the City with a range of colors from which to make a selection. Splash blocks shall be cast stone or concrete, at least 12 inches by 24 inches. Splash blocks shall be set so that water drains away from the house and into the flow of water off the property.

### **CARPENTRY**

When items are to be removed, they shall be removed with a minimum amount of damage to the surrounding surfaces.

All trim installed inside house for windows, doors, moldings etc. shall be solid wood (finger jointed is acceptable if trim is primed).

### **KITCHEN CABINETS AND VANITIES**

Kitchen cabinets installed new shall meet American National Standards (A.N.S.I.) and Kitchen Cabinet Manufacturers Association A616-1 1990. They shall have backs, bottoms, sides, and tops with the exception that backs are not required on sink base cabinets but are preferred. The following shall be accepted: Merillat, Kraft maid, or Kitchen Kompact (Richwood or Chadwood series) or equal approved by the City prior to purchase and installation. When vanities are installed new the following shall be accepted: Merillat, Kraft maid, or Kitchen Kompact (Richwood, or Chadwood series) or equal approved by the City prior to purchase and installation. The installation of new kitchen cabinets and vanities shall include all hardware, guides, slides, and hinges incidental to their operation. All new drawers shall have full length side guides and slides. The Contractor shall provide the City with a range of cabinets and vanities which meet the specifications and above standards from which to make a selection.

### **FOUNDATION VENTS AND ACCESS DOORS**

Crawl spaces shall be properly ventilated in accordance with the Building Code adopted by the City at the time the work is performed. In addition, all screened foundation vents shall be covered with louvers which shall be cast alloy or stamped galvanized metal or approved equal and equipped with tight fitting closures manually operable from outside. Foundation access doors shall be rat-proof steel. Foundation access doors and vents shall be properly trimmed out.

### **RAILINGS**

Where repair of an existing or installation of a new handrail or railings is called for the material and design shall be a practical match for the existing installation and the installation shall comply with the Building Code adopted by the City at the time the work is performed.

Unless otherwise specified, new interior handrails, shall be 2 inch diameter solid wood (spruce) with no knots. All ends must be returned to the wall. They shall be secured to the wall with metal brackets, anchored in the wall studs with wood screws. The Contractor is to finish handrails unless otherwise specified.

Unless otherwise specified, new exterior railings shall be heavy duty aluminum, factory primed and finish painted, securely anchored to porches, steps, and retaining walls.

### **METAL OR CERAMIC BATH ACCESSORIES**

When installation of new metal or ceramic bath accessories is called for in the specifications, the accessory package shall include bathtub soap holder, toilet tissue holder, and two 24 inch towel bars. Metal accessories shall be secured with screws on wall studs and caulked. Ceramic accessories shall be secured with waterproof adhesive and grouted. When all new ceramic bath accessories are to be installed, the City shall select the color otherwise replacement accessories shall match existing as closely as possible.

## **DRYWALL**

When the repair of drywall is called for in the specifications the quantities listed are approximate and are only intended to lead the Contractor to the areas needing repair. The Contractor shall replace as much drywall as is necessary to make satisfactory repairs.

When the specifications call for the installation of new or the repair of existing drywall, it shall be gypsum wall board with a paintable paper faced surface and tapered edges for standard joint treatment. Acceptable manufacturers of drywall are as follows: Celotex, Georgia-Pacific, National Gypsum, U.S. Gypsum, or equal approved by the City prior to purchase and installation. All drywall shall be installed with glue and screws which are a minimum 1-1/4 inch in length. Edges and ends of the wall board shall occur on framing members, except those edges and ends which are perpendicular to the framing members. New wall board shall be installed in lengths and directions that will minimize the number of end joints, and avoid end joints in central areas of ceilings. Wall board shall be applied to ceiling first then to walls. The Contractor shall cut drywall carefully and provide casing beads at exposed edges of wall board. All vertical exterior corners shall be protected with corrosion-resistant metal corner beads. Where new drywall abuts existing, the thickness of the new drywall shall match that of the existing wall board. The Contractor shall provide drywall sealant at edges, interruptions and openings through drywall work. Sealant shall be concealed behind the edge of board wherever possible. Where exposed to view, the sealant shall be paintable plastic elastic sealant; otherwise the sealant shall be nondrying mastic as recommended by the drywall manufacturer. When a room is scheduled to be completely drywalled all existing trim shall be removed and reinstalled after drywall installation is completed. Any trim damaged during removal shall be replaced with new. All trim new or reinstalled shall be finished by the Contractor unless otherwise specified in specifications. All nail holes shall be counter sunk and filled with wood filler. All joints shall be taped and both joints and nail depressions shall have three coats of joint cement applied as per manufacturer's recommendations. All edges shall be feathered. Finish surfaces shall be sanded smooth, left straight and well aligned, and sealed with drywall primer sealer. 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.

When moisture proof drywall is called for in the specifications all edges, holes, and joints shall be treated with a water resistant sealant designed for this purpose. Conventional wall board tape shall not be used. In tub and shower area locations, the edge of the wall board shall be set 1/4 inch above the fixture.

## **CERAMIC WALL TILE**

When installing new tile the color and pattern shall be selected by the City. New wall tile shall be standard grade 4-1/4 by 4-1/4 inch glazed ceramic tile. It shall extend to the tub area ceiling and to a point at least 4 feet above the floor or to existing wainscot on the other bathroom walls when specified. Tub wall tile shall be installed over 1/2" Dura-roc, Wonderboard, Dense shield, or equal approved by the City prior to installation. An open inspection is required before the installation of ceramic wall tile.

When installing tile, the base surface shall be smooth and plumb or level. Prior to the application of adhesive, the base surface shall be sealed. Sealer shall provide a firm and durable bond to the base material. Tile adhesive shall be chemical resistant, water cleanable, tile-setting epoxy. Adhesive shall be applied to the entire surface to be tiled with a notched spreader blade. All tile installations shall be properly trimmed using caps, bull noses, and bases. A minimum 24 hour drying period shall be required to allow for the evaporation of volatiles from the adhesive. All tile joints shall be filled with pointing grout. Grout shall be forced into joints taking care that no open joints are left. Joints shall then be properly sponged and tooled. Joints between tub and tile and joints between tile and any other dissimilar material shall be caulked with a thick 100% silicone sealant. The Contractor shall make sure that the joints where the bathroom floor meets walls are watertight. Any surfaces soiled during tile installation shall be cleaned immediately. When installing a new window in the tub area where the walls area is covered with ceramic tile, the window shall be trimmed with bull nose tile with a tile or marble sill.

## **VINYL FLOORING**

Unless otherwise specified, new sheet vinyl shall be .08 inch (2.0 mm) thick residential grade no wax installed to manufacturer specifications. Acceptable manufacturers include: Armstrong, Congoleum, Mannington, Tarkett, or equal approved by City prior to purchase and installation. Sheet vinyl shall be installed full size with a minimum



of seams. When installed in areas of excessive moisture (bathrooms and utility rooms), the installation shall be seamless. Joints where bathroom floors meet walls shall be watertight.

All new flooring shall be installed to manufacturer's specifications including preparation of underlayment or other base. All new flooring shall extend under base or shoe molding. The transition between rooms with different floor coverings 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. The color and pattern of the new flooring shall be selected by the City from a range of options offered by the Contractor which meet the specifications and the standards above.

New underlayment shall be plywood or other approved material. Tempered hardboard and particle board shall not be used as underlayment for resilient flooring. When plywood is used as underlayment for bathrooms and utility rooms it shall be exterior type C-C plugged underlayment. Plywood shall be 3/8 inch except that 1/4 inch plywood may be used over plywood subflooring or T and G board not more than 3 inches wide. 1/4 inch underlayment shall be securely nailed every 3 inches O.C. at the perimeter and every 8 inches O.C. at intermediate supports. When resilient flooring is to be installed directly over subflooring, subflooring shall be combination subfloor-underlayment plywood. All subfloor joints shall be sanded smooth prior to installation. Types and grades shall be the same as for plywood underlayment. When replacing specific areas of subfloor, plywood subflooring shall match existing subfloor thickness. Where entire subfloor is to be replaced, it shall be 3/4" inch thick T&G CDX laid perpendicular to floor joists. CDX Subflooring shall be glued and securely nailed every 6 inches O.C. at the perimeter and every 10 inches O.C. at intermediate supports.

Unless otherwise specified, aluminum transitions strips shall be installed between areas with different types of floor coverings.

Where new flooring is installed on stairs or landings, aluminum nosing not to exceed 1-1/4" shall be installed on each tread and landing per manufacturer's recommendations.

Prior to installing new no wax sheet vinyl over cement floors, they shall be prepared and leveled with Ardex graystone floor filler (or equal approved by the City) according to the manufacturer's instructions.

### **CARPETING**

Carpeting shall be minimum 30 oz. face weight - FHA approved 100% Nylon or Olefin/Nylon blend (no irregulars) with minimum .380 pile height and a minimum 6 lb., 7/16" rebond foam pad. Carpet shall have a minimum 3.0 (P.A.R) or durability rating with a minimum 10 year warranty. There shall be tackless installation of pad and carpet. Perimeter tack strips may be used on carpet only. Pad to be field stapled. Carpet shall be wall to wall for floors and complete tread and riser coverage not including stringers for stairs. Pad coverage is to be equal with carpet. New threshold carpet bars are to be installed where needed. All debris is to be removed and hauled away.

### **REFINISHING HARDWOOD FLOORS**

The contractor will carefully remove any floor mounted elements and store in location selected by the City of Warren. The floor borders shall be protected from damage during sanding and other floor refinishing operations. The contractor will also be responsible for filling in all holes in the floor. The floors will be machine sanded to remove stains, indentations and old finish. Sand floor in the direction of wood grain, removing only the amount of wood necessary to remove old finish, up to 1/16" depth. Use hand-held sanders at the edges of the floor. Final sanding shall be with 00 grade sandpaper. The floor will be vacuumed cleaned, removing sanding dust with tack cloth and immediately applying stain finish. Use penetrating, permanent oil-based stain such as "Oil Stain" (Sherwin Williams) or approved equal. Apply stain to wood floor (color to be picked out by the City of Warren). Apply floor sealer two (2) coats in accordance with manufacturer's printed instructions, including machine buffing with steel wool as recommended by the manufacturer. Sealer to be penetrating type, pliable, wood-hardening finish/sealer such as "Penetrating Seal #21" (Hillyard Chemical Company), or approved equal. Do not allow traffic on floor until final finishing is complete. The contractor will install a 1/4 round molding stained to match the color of the floor and then will reinstall floor mounted accessories in original locations while protecting wood flooring during reinstallation. The contractor will put down a "rosin" type material to protect the floors.

**REFINISHING CONCRETE FLOORS:** - 2 (two) part epoxy with flakes

Carefully remove any floor mounted elements and store in location selected by (City of Warren). Check moisture levels in the concrete and make sure that they are within manufactures specifications. Remove any existing floor coverings on concrete and scrape/grind the floor and remove any existing imperfections; glue, tiles etc. Fill in all cracks and holes in the floor. Use a broom and wet-dry vacuum to thoroughly clean debris from the floor. A pressure washer may be required to remove heavy stains. Remove grease with a degreaser using a stiff brush. Rinse degreaser and allow floor to dry within manufacture specs, per instructions. Mix two part epoxy per manufacture directions. Using a brush or edger to trim the perimeter and then use a long handled roller to apply an even coat on the floor (should be applied in 4' x4') sections so the decorative flakes can easily be scattered in the freshly coated surface. Do not allow anyone to walk/work on the floor for five (5) days after epoxy has been applied.

**INSULATION**

When installing new insulation or reinstalling existing insulation, proper fire clearance and ventilation shall be provided. A 3 inch fire clearance is required at light fixtures, fans, flues, chimneys, etc. Baffles shall be provided at eaves to allow 2 inch clearance for air flow from soffit vents. All air ducts and wall cavities which open into basements or crawl spaces must be sealed. When a vapor barrier is called for it shall be installed to the warm side of the opening. Insulation installed in walls shall be a minimum 3.5 inch R-15 and insulation installed in ceilings shall be a minimum 12 inch R-38. Insulation installed in crawl spaces shall be paper faced and a minimum 3.5 inch R-15 installed after a minimum 6 mill vapor barrier is in place on the ground and half way up the wall. Foam insulation shall not be accepted except as sheathing. The following insulation will be accepted: Owens-Corning, Guardian, Mansville, or equal approved by the City prior to purchase and installation.

**SIDING**

When the specifications call for repairing existing siding, all damaged sections of siding shall be removed. Replacement siding shall match existing as closely as possible in color, material, and style. All trim incidental to the repair shall be replaced and joints shall be caulked as necessary with particular attention given to areas where siding abuts wood trim or other materials. When replacing damaged sections of siding, replace vapor barrier as necessary.

When the specifications call for siding a structure, it shall be covered with vinyl and trimmed out with aluminum. New siding is to be solid color, wood grained texture with 12 feet panel lengths. All existing wood trim (fascia, soffit, corners, etc.) shall be covered with aluminum and vented as needed to meet code. Aluminum trim shall include solid corners, box casings, full sills, vertical soffits on all overhangs, and full fascia boards (not crown moldings) unless otherwise noted. Vinyl siding shall be installed over minimum 1/2 inch foam sheathing with nails penetrating wall studs. When vinyl siding is installed over cinder block or other hard surfaces furring strips spaced every 16 inches shall be used behind the siding with minimum 1/2 inch foam sheathing installed between the furring strips. When installing new siding, existing surfaces shall be made smooth and all rotted material shall be removed and replaced. Siding shall be applied with corrosion resistant nails. Nails shall be long enough to penetrate studs, blocking or wood sheathing. Head-lap and coursing shall be required to prevent entrance of moisture into walls. Joints in adjacent pieces of horizontal siding shall be staggered. All exterior protrusions such as, lights, dryer vents, GFCI's shall receive proper siding blocks. Gable vents installed should be vinyl or aluminum to match siding color or trim color. The Contractor shall provide the City with a selection of colors and styles of siding which meet the specifications and the above stated standards from which to choose. Color coordinated silicone sealant shall be used on all joints or openings.

Whenever vinyl siding abuts against wood trim or masonry, a J-mold or approved termination shall be installed.

**PAINTING**

Repair, caulk, putty, sand and clean all surfaces to be painted and vacuum rooms where painting will occur. Prime with one coat Stain Kilz primer or equal. Finish paint with 2 coats of Latex paint (applied to achieve good coverage per industry standards). Use, eggshell on walls, flat paint on ceiling, and semi-gloss on trim. Ceilings, doors, and trim shall be painted white. City shall choose one other color for walls.

### **FENCING**

Where the installation of new or repair of existing chain link fences is called for, they shall be four feet high, unless otherwise stated, with two inch mesh, and 11-1/2 gauge wire. All terminal and corner posts are to be 2-1/2 inch outside diameter sunk three feet deep in a minimum 8 inch diameter concrete footing. All line posts shall be spaced a maximum of 10 feet apart sunk three feet deep in a minimum 8 inch diameter concrete footing.

### **RODENT CONTROL**

If rodent problems are discovered during rehabilitation work, Contractor must inform City and take steps to resolve them. The Contractor is to be responsible for rat control before removal of any houses, garages, and other structures, appurtenances or any part thereof.

### **TREE REMOVAL**

Extreme care shall be taken so as to prevent limbs, branches, and trunks from falling and creating damage to adjacent homes, driveways, sidewalks, streets and other property, both public and private.

Limbs and branches larger than four (4) inches in diameter shall be lowered to the ground through the use of ropes or other mechanical devices.

The Contractor shall grind all stumps to a minimum of eighteen (18) inches below grade and remove stump mulch to within four (4) inches of ground level.