

CITY OF WARREN

GENERAL INSTRUCTIONS TO CONTRACTOR

CODES AND STANDARDS

All work must be done as stated in these specifications subject to 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 or applicable codes are at variance with one another, shall promptly notify the City of Warren Planning Department 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.

SPECIFICATION INTERPRETATIONS AND CHANGES

Specifications must be bid as written. If there is any question as to the true meaning of any part of the specifications or as to the need for any change in the specifications, a written request for an interpretation or change must be submitted to the City. Any interpretation of the specifications or change in specifications will be made only by addendum issued by the City of Warren.

INSPECTION PRIOR TO BIDDING

Prior to bidding, the property which is the subject of the specifications must be inspected by the Contractor who shall be bound to any conditions that such inspection would disclose. No bid will be accepted unless it has the original signature of the City's designee acknowledging that the Contractor has indeed inspected the property and has full knowledge and understanding as to the extent of the work being bid on.

PERMITS AND OTHER CONTRACTOR RESPONSIBILITIES

The Contractor shall obtain at his or her own expense, such permits, certificates and or licenses as may be required for the performance of work specified before work is started. Building permits are needed for all jobs with additional heating, plumbing, electrical, and special permits needed where applicable. The Contractor must furnish all labor, materials, equipment and services necessary for and incidental to the completion of each item of work contained in the specifications unless otherwise stipulated and all work under the contract shall be performed in a skillful and workmanlike manner.

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. An attempt to inspect the property after a final inspection has been called shall count as an inspection.

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. Should this condition occur, the Contractor shall be responsible for the removal of all debris when such conditions are discovered during a thaw period even though final payment may have 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. The City shall approve the range of choices to be offered.

The Contractor shall be held responsible for all damage caused by his or her work or through neglect of the laborers. All necessary cutting in walls and floors shall be neatly and carefully done. All cutting or damage shall be repaired in a workmanlike manner approved by the City. Cutting into the structural 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, siding, and 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. The forced air furnace shall have a minimum efficiency rating of 90%. All work shall be performed by a licensed Contractor who shall obtain all permits prior to starting any work. The Contractor is responsible for inspection requests. All violations must be repaired within 10 days of notification.

When a new furnace is called for in the specifications, the following equipment shall be accepted: Armstrong, Carrier, Comfortmaker, Luxaire, Lennox, Rheem, York, or approved equal by the City prior to installation. When a new thermostat is called for, it shall be a Digital type or equal approved by the CDBG Inspector. All equipment must meet or exceed January 1, 1992, Federal A.F.U.E. Efficiency Standards or be not less than 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. All furnaces must be installed with a new U.L. approved exhaust duct or flue.

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 be of a fiberglass vinyl backed blanket insulation type.

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.

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.

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 to structure (1 ton per 600 sq. ft). 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 gas fired units with a minimum **80** percent recovery efficiency. Acceptable manufacturers for hot water tanks are as follows: Bradford-White, Lochinvar, More-Flo, State or equal approved by City prior to purchase and installation. 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 approved exhaust duct or flue shall be installed.

Acceptable manufacturers for bathtubs, lavatories, and water closets are as follows: Alger, American Standard, Brigs Crane, 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.

When stainless steel sinks are installed new, they 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. 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 The 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 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 sewer main, gas meter, or water meter. 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 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. Asphalt shingles shall not be installed on roof slopes below two units vertical in 12 units horizontal (2:12). Double-layer underlayment shall be required on roof slopes below four units vertical in 12 units horizontal (4:12). Single-layer underlayment is required on all other roof slopes. Asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle, or not less

than two fasteners per individual shingles. Shingle head-lap shall not be less than 2 inches (51 mm). The Contractor shall use self-sealing tab-type shingles with a minimum 20 year warranty. 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. Where the installation of new roll roofing is called for, it shall be mineral surface asphalt, with a minimum weight of 90 lb. per square, coverage and underlayment shall be the same as for asphalt shingle roofing described above, and end lap shall be 19 inches minimum for a 3 foot wide roll. 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 vents is called for, they shall be aluminum 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. Vents shall prevent the entrance of rain and snow. The ratio of total net free ventilating area to area of ceiling shall not be less than 1/150, except that the ratio may be 1/300 if a vapor barrier is provided on the warm side of the insulation or if at least 50 percent of the required ventilating area is provided by vents located in the upper portion of the space.

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. Where a footing is not required, protection against rats shall be provided in accordance with the Building Code adopted by the City 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 concrete shall be provided in accordance with the Building Code adopted by the City of Warren at the time the work is performed. All concrete shall be an approved type. Beneath concrete slabs (drives, walks, patios, step pads etc.) there shall be a 4 inch base well tamped and drained and uniformly graded. Construction joints and expansion joints shall be provided in accordance with the Building Code adopted by the City of Warren at the time the work is performed. 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. When repairs are made, the width of all new sections of concrete shall match the width of existing sections. All wearing surfaces shall receive a broomed finish. 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 caulks 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. Pre-cast concrete steps run and rise shall conform to the Building Code adopted by the City of Warren at the time the work is performed.

Block foundation walls replaced or installed new shall be a minimum of 8 inches thick and shall have poured-in-place concrete footings no less than 8 inches thick that extend at least 42 inches below finish grade. Block face shells shall provide a 1-1/2 inch wide mortar bed. Joints shall not exceed 3/4 inch. Joints shall be tooled smooth except those being below grade on the exterior face. The joint between wall and footing shall be tight and have a cove of elastic caulking compound on the exterior side. The location of control joints shall be determined by the height of the wall. The top course shall be filled or capped with at least 4 inches of solid masonry or wire mesh reinforced concrete unless the sill plate bears on both inner and outer face shells.

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, plastering masonry walls with not less than 3/8 inch Portland cement mortar. Plastering 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

Where vinyl replacement windows are specified, they shall be solid vinyl or vinyl clad aluminum with 7/8 inch insulated Low-E glass with a minimum 5 year warranty and a fenestration index not to exceed U-35. Exterior side of windows shall be vinyl or aluminum trim and properly sealed. Acceptable vinyl replacement windows are as follows: American Standard, Astro, Continental, Great Lakes, Kaufman, Nova, Polytech, Royal, Statewide, Weather King, or equal approved by the City prior to

purchase and installation. Frames, headers, and sills shall be repaired as necessary to provide a square, plumb, level, and rigid enclosure for the new installation. Window 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. Finger jointed material (for jamb, apron, etc.) is acceptable when primed and painted. All new windows are to be adjusted for proper operation after installation. When replacement windows are installed, all existing trim shall be removed and reinstalled after window installation is completed. Any trim damaged during removal shall be replaced with new. For all trim, new or reinstalled, the Contractor is to counter sink nails and fill nail holes. All openings between wood, masonry, and metal shall be caulked with a silicone sealant. New sash shall fit tightly in frames and operate smoothly and easily. For bathroom windows, the lower sash for double hung and the lower 2/3 for steel casement shall be obscure glass as is appropriate to their design. The Contractor shall provide a new white window unless otherwise specified. The Contractor shall not remove specification stickers from the newly installed windows until a Final Building Inspection has been approved. When installing a new window in the tub area where the walls are covered with ceramic tile, the window shall be trimmed with bull nose tile and a tile or marble sill shall be installed.

When the specifications call for repair of windows, any sash painted shut shall be freed and each sash and its hardware shall be readjusted for smooth and easy operation. Sash and frames shall be repaired as necessary to make the window serviceable, weather tight, properly glazed and protected against deterioration. All broken, rotted, bent, or otherwise unusable parts shall be replaced. Sash shall fit tightly in frame to prevent infiltration of dust, water, and wind. Replacement sash shall match existing as closely as possible. Sash locks shall be repaired or realigned as necessary. Missing or inoperable hardware shall be replaced with new. This includes a lock and handle which can be used for opening the window. Finish and style of new hardware shall match existing as closely as possible and the new hardware shall be die cast. Punched metal will not be accepted. When existing weights or counterbalances for double-hung windows are found to be inoperative new "Quickie" or "Jiffy" spring window controls shall be acceptable. Compression springs shall be polished stainless steel and shall be securely fastened to the jamb.

DOORWALLS

The above windows specification and below door specification also apply to the installation of door walls. All door walls shall match vinyl windows when windows are installed. Units should be 7/8" insulated Low E glass with a fenestration index not to exceed U-35. Manufacturer of unit should be approved by the City prior to installation.

STORM DOORS

Storm doors installed new shall be a minimum 1-1/4 inch thick solid core. They shall be aluminum or vinyl clad. 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: Larson, Better-Built, 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. Replacement screening shall match existing as closely as possible.

ENTRY DOORS

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 and the steel shall be no less than 24 gauge. Acceptable manufacturers of steel doors are as follows: Alumnux, Better-Built, Larson, Perma Door, Season Master, Trapp, Weather King or equal approved by the City prior to purchase and installation. 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 jambs and stops for entry doors shall be clear white pine. Finger jointed material is unacceptable. Moisture content shall not be above normally accepted standards.

INTERIOR DOORS

Interior doors installed new shall be a minimum 1-3/8 inch thick, Masonite, flush or six panel, hollow core doors with good quality, working hardware or a minimum 1-3/8 inch thick, Masonite, flush or six panel, bi-fold doors to 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 fitted so that door margins are no more than 1/8 inch from top and sides and 3/4 inch from bottom and they shall be adjusted for proper operation.

EXTERIOR DOOR SILLS, THRESHOLDS, AND WEATHER STRIPPING

New wood door sills and thresholds shall have fully adjustable sills. New metal thresholds shall be aluminum with a vinyl insert. New solid vinyl thresholds shall be designed for use at exterior doorways. 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 whether installed new or repaired shall be weather stripped and spacing between door jamb and rough framed opening shall be lightly packed with insulation. Weather stripping shall be installed continuously around the door casing to prevent infiltration of dust, water, and wind.

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 installed new shall be aluminum, .027 gauge, 5 inch K-type, spiked, and ferruled. 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 or 3 inch corrugated round aluminum. Down spouts 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. When installing new or repairing down spouts, 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.

Unless otherwise specified, all materials and methods shall be in accordance with The Building Code adopted by the City at the time the work is performed. The grade of board lumber shall be suitable for its intended use. In general loose knot holes shall not exceed 1/3 of the width of the piece. Splits are unacceptable. Boards with defects may be used if the defects are sawn out. Lumber shall bear the label of a recognized grading association showing grade and type. Moisture content shall not be above normally accepted standards. Plywood shall bear the label of a recognized grading association showing grade and type. Grade and type shall be suitable for its intended use.

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, 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 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 ratproof steel. Foundation access doors and vents shall be properly trimmed out.

HANDRAILS AND 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. New interior handrails, unless otherwise specified, shall be 2 inch diameter white pine. 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. Metal handrails, railings, and columns installed new or repaired shall be complete with all newel posts, rails, balusters, base plates, and rails supports. Metal posts shall be 1 inch square heavy gauge steel tubing and metal railings shall be wrought or cast iron or as specified. Metal railings shall be single-welded construction welded to posts. Railings shall be securely anchored to porches, steps, and retaining walls. Columns shall have adjustable bases. Metal shall be factory primed and ready for paint unless otherwise specified. Vinyl or PVC Handrails and Guardrails are to be used on exterior porches or stairs. Acceptable manufacturers are Certain Teed, Genova, LB Plastics, Westech, HB&G or equal approved by the City prior to purchase and installation.

REBUILDING WOOD STAIRWAYS

When the specifications call for rebuilding exterior wood stairways, all treads, risers, stringers, and railings shall be new pressure treated wood and all nails shall be galvanized. When the specifications call for rebuilding interior wood stairways, No. 2 construction grade lumber shall be used. In all cases, materials and design shall be in accordance with the Building Code adopted by the City of Warren Building Department at the time the work is performed.

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, two 24 inch towel bars, and shower curtain rod for bathtub unless otherwise specified in specifications. 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 drywall nails or 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 moistureproof 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 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. New floor tile shall be standard grade, glazed ceramic mosaic or ceramic tile. New floor tile installation shall be complete with ceramic tile cove base.

When repairing existing tile, all cracked, loose, chipped or otherwise defective tile shall be removed. Then the setting bed or wall board shall be repaired as necessary to provide a level surface for installation of replacement tile. Replacement tile shall be installed to match existing as closely as possible in size, color, texture and glaze. When replacement tile does not match existing, complete rows or areas shall be replaced and the rows or areas shall be carried into the edge of the tub. When installing replacement tiles adjacent areas shall be washed with an approved solution to remove any oil film present.

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.

When installing a new threshold adjacent to a ceramic tile floor, it shall be natural or synthetic (manufactured) marble. Thresholds installed new or existing thresholds reinstalled shall fit the opening and set tightly between the door jambs so that a watertight seal is made.

FLOORING

When flooring is to be repaired, replacement material shall match existing in type, size, thickness, color, pattern and texture.

Asphalt tile shall be used only where damaged sections of asphalt tile are being replaced unless otherwise specified. Asphalt tile shall be a minimum of 1/8 inch thick and each tile shall be 9 inches by 9 inches or 12 inches by 12 inches square. Colors and patterns shall be homogeneous throughout the full thickness of tile. 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 working towards the walls.

New sheet vinyl shall be residential grade, inlaid type, installed to manufacturer specifications. Acceptable manufacturers of sheet vinyl are as follows: Armstrong, Congoleum, Mannington, Tarket, or equal approved by the City prior to purchase and installation. It shall be installed full size with a minimum of seams. Where water resistant floors are specified, only no wax sheet vinyl shall be accepted. 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 shoe molding. The color 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, metal thresholds shall be installed between areas with different types of floor coverings. New metal thresholds for bathroom doorways shall be aluminum and shall prevent water used for cleaning and water from flooded fixtures from flowing into adjacent rooms or areas. They shall be attached with countersunk flathead aluminum screws.

Where new flooring is installed or existing flooring is repaired on stairs or landings, there shall be stair tread nosing on each tread and landing not to exceed 1-1/4". If new tread coverings are installed using vinyl flooring, it shall have an aluminum nosing installed per manufacturer's recommendations with screws only.

Rubber plastic or vinyl cove base must be used in areas of excessive moisture when flooring is installed. Wood shoe molding is unacceptable in these areas. When existing cove base is repaired, replacement cove base shall match existing in color, material, and height. When new cove base is installed, the City shall select the color from a range of options offered by the Contractor. The Contractor installing new flooring shall use preformed corner pieces and an adhesive recommended by the manufacturer. The base shall be neatly installed and firmly cemented to the walls and floors.

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.

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 R-19. Insulation installed in ceilings shall be a minimum R-30. Insulation installed in crawl spaces shall be paper faced and R-21 insulation 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 following siding will be accepted: Alsc0, Vipco, Wolverine, or equal approved prior to purchase and installation by the City. 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.

When repair or replacement of cement siding is called for, predrilled holes shall be used to attach replacement sections to sheathing with corrosion resistant small headed nails. Threaded nails shall be used when installing siding over plywood sheathing. Nails shall be long enough to penetrate sheathing. Whenever vinyl siding abuts against wood trim or masonry, it shall be embedded in caulking compound. Felt paper shall be installed as necessary behind each vertical joint. The minimum head-lap shall be 1/2 inch. Replacement sections shall be painted to match existing siding.

PAINING

When the specifications call for painting, the Contractor shall clean, sand, repair, caulk, putty, spot prime, and otherwise prepare as needed all interior or exterior surfaces to be painted including, woodwork, trim, heat registers, and radiators. No lead based paint shall be used. The following paints interior or exterior as appropriate to the job will be acceptable: Benjamin Moore, Dutch Boy, Glidden, Mac-O-Lac, Pratt Lambert, Sears Weather Beater, Sherwin Williams, or equal approved by the City prior to purchase and installation. The Contractor shall provide the City with a selection of colors of paint which meet the specifications and the above stated standards from which to choose.

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 9 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 construction, the contractor must 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. Contact Macomb County Health Officer as to method of control.