PROGRAM HANDOUT

MICHIGAN RESIDENTIAL CODE

2015 UPDATE

Including Michigan Amendments and some changes from 2009

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Acknowledgment is hereby made to *Significant Changes to the International Residential Code – 2012 Edition* by Stephen A. Van Note and to the 2015 Edition by Stephen A. Van Note & Sandra Hyde, P.E.

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Chapter 1 – Scope and Administration

R104.11 – Alternative Materials, Design, and Methods of Construction and Equipment –

Michigan Amendment – (2015 Modification) The reason for disapproving an alternative material, design or method must now be in writing.

R105.2 - Work Exempt from Permit – (2012 Modification) Fences 7 foot high now do not require a permit. This is up from 6 feet. – Michigan Amendment took out the exemption for decks.

R105.3.1.1 - Existing Buildings in Flood Hazard Areas – (2015 Modification) Determination of substantial improvements, for existing buildings in flood hazard areas, now falls under the authority of the building official.

R106.1.3 - Information on Braced Wall Design – (2015 Modification) "For buildings and structures utilizing braced wall design, and where required by the building official, brace wall lines shall be identified on the construction documents. Pertinent information including, but not limited to, bracing methods, location and length of braced wall panels and foundation requirements of braced wall panels at top and bottom shall be provided."

R106.1.4 – Truss Design Data - Michigan Amendment - (2009 Addition) "As an alternative to the submission of truss design drawings, Figure R802.10.1, the truss design data sheet, may be provided to the building official as part of the construction documents at the time of application. Truss design drawings shall be submitted to the building official prior to truss installation as required by Section R802.10.1."

R109.1.4 – Frame and Masonry Inspection - Michigan Amendment – (2009 Addition) "… Masonry inspections shall be made after the completed installation of base course flashing as specified in Section R703.7.3 of the code and water-resistive barrier as specified in Section R703.2 of the code and after the masonry construction is completed."

Other Michigan Amendments for Chapter 1 –

R101 – Scope and Application:

General. R104.6 - Right of entry;
R104.9 - Approved materials and equipment;
R106 - Construction Documents;
R108 – Fees;
R109.4 - Approval required;
R110 - Certificate of Occupancy;
R112 - Board of Appeals; and
R114 – Stop Work Order.

Chapter 2 – Definitions

R202 – ATTIC AND HABITABLE ATTIC – Attic: The unfinished space between the ceiling *joist* assembly of the top story and the roof *rafter's* assembly. Attic, Habitable: A finished or unfinished area, not considered a story, complying with all of the following requirements: 1.) the occupiable floor area is at least 70 square feet in accordance with Section R304. 2.) the occupiable floor area has a ceiling height in accordance. Section R305 and 3.) the occupiable space is enclosed by the roof assembly above, knee walls (if applicable) on the sides, and the floor-ceiling assembly below.

R202 – DEFINITION, STRUCTURAL INSULATED PANEL (SIP) – 2009 - Structural Insulated Panel (SIP). A structural sandwich panel that consists of a light-weight foam plastic core securely laminated between two thin, rigid wood structural panel facings. Cap Plate / Core / Facing / Panel Thickness / Spline.

Other <u>Michigan Amendments</u> for Chapter 2: Definitions for Agricultural or Agricultural Purposes; Attic, Uninhabitable both with and without storage; Building; Building Inspector; Building Official; Registered Design Professional; Structural; Sunroom Add.

Chapter 3 – Building Planning

R301.2 & Figure R301.2(4) - Ultimate design wind speed values replace basic wind speed values Table R301.2(2) for 3-second gust (2015 Modification)

R301.2(2) – Component & Cladding Loads – (2015 Modification) This section has been modified due to new criteria of Ultimate Design Wind Speed Values in lieu of Basic Wind Speed and is now divided into new R301.2.1.1.1 categories for determining component and cladding loads. (Our wind speed area is 115 mph.)

R301.2.1.1.1 - Topographic Wind Effects – (2015 Addition) This standard now contains requirements for habitable and nonhabitable sunrooms & must comply with AAMA/NPEA/NSA 2100-2112.

R301.2.1.4 - Wind Exposure Category – (2012 Modification) Wind Exposure Category D now applies to open water, mud and salt flats, and unbroken ice fields.

R301.2.1.5 & Table R301.2(1) – Topographic Wind Effects - (2009 Modification)

"Topographic Wind Effects. In areas designated in Table R301.2(1) as having local historical data documenting structural damage to buildings caused by wind speedup at isolated hills, ridges and escarpments that are abrupt changes from the general topography of the area, topographic wind effects shall be considered in the design of the building in accordance with Section R301.2.1.5.1 or in accordance with the provisions of ASCE 7."

Table R301.2.1.5.1 – Ultimate Design Wind Speed Modification for Topographic Wind Effect – (2015 Modification) Average Slope (in percent) of the Top Half of Hill, Ridge, or Escarpment in Michigan:

@ 0% = 115 Ultimate Design Wind Speed @
10% = 138 Ultimate Design Wind Speed @
15% = 148 Ultimate Design Wind Speed @
20% = 159 Ultimate Design Wind Speed @
25% = 169 Ultimate Design Wind Speed

Figure R301.2(5) and Table R301.2(5) – Michigan Amendment – (2009) Ground Snow Loads – Changes the ground snow loads from the IRC and inserts a table to list Ground Snow Loads by Jurisdiction.

R301.3 – Story Height – (2015 Modification) for wood wall and cold-formed steel framing, insulated concrete form walls, and SIP walls - the story height shall not exceed 11 feet 7 inches and masonry walls shall not exceed 13 foot 7 inches. (was10 foot maximum stud height without engineering)

R301.5 – Minimum Uniformly Distributed Live Loads – Michigan Amendment (2009 Modification) - The definitions for deck and balcony have been removed, and the minimum uniform live load for balconies has been lowered from 60 psf to 40 psf to be consistent with decks. The criteria for determining the live load of a limited attic storage area now considers the required depth of the insulation. Habitable attics and attics served with a fixed stairs have been added to the table with a minimum uniform live load of 30 psf.

R301.5 – Minimum Uniformly Distributed Live Loads – (2009 & 2012 Modifications) The terminology related to live loads has been updated for consistency with ASCE 7-10. Footnotes b. and g. pertaining to attic live loads have been revised to clarify the application. Table R301.5 – Minimum Uniformly Distributed Live Loads (in pounds per square foot). Uninhabitable attics without storage = 10 psf; Uninhabitable attics with

limited storage = 20 psf; Habitable attics and attics served with fixed stairs = 30 psf.

Table R302.1(1) – Exterior Walls – Michigan Amendment - Unprotected roof overhangs are now allowed to project to within 2 feet of the property line when fire blocking is installed between the top of the wall and the roof sheathing.

R302.2 and R302.3 – Dwelling Unit Separation – Michigan Amendment - (2009 Amendment and is now included in the 2015 IRC) This change increases the 1-hour fire separation back to the 2-hour fire separation when an automatic fire sprinkler system is not installed in the townhouse dwelling unit.

R302.2.2 – Parapet Exception – (2012 Modification) When a parapet is not installed, openings and penetrations of the roof are no longer permitted within 4 feet of the separating wall between townhouse dwelling units.

R302.5 – Garage Openings and Penetrations – (2009 Modification) When gypsum board is required on a garage ceiling for separation from dwelling, the space around penetrations must be filled with approved material to prevent the free passage of frame and products of combustion.

R302.5.1 – Garage Opening Protection – Michigan Amendment – Self-closing devices for the door between the house and the garage were not included in the MRC.

R302.6 & Table R302.6 – Garage Separation – (2015 Clarification) Garage separation only requires ½ inch gypsum board unless there is living space above the garage where it requires ⅝ inch gypsum board.

R302.13 – Fire protection of Floors – Michigan Amendment – (2015 Clarification) Fire protection of ceilings of basements and crawl spaces has been deleted from the residential code for Michigan and do not apply.

R303.4 – Mechanical Ventilation – (2012 Modification) When used for satisfying the ventilation requirements for dwellings, mechanical ventilation must now comply with new provisions in Section M1507 for whole-house ventilation of habitable rooms and local exhaust of bathrooms.

R303.4 – Mechanical Ventilation – (2012 Addition) A whole-house mechanical ventilation system is now required for any dwelling that is tested with a blower door test and determined to have an air infiltration rate of less than 5 air changes per hour.

R303.5.2 – Exhaust Openings – Michigan Amendment - "Outside exhaust openings shall be located so as not to create a nuisance. Exhaust openings shall not be directed onto walkways. Exhaust openings shall not terminate within 3 feet of a ventilation section in a soffit."

R303.7 & R303.8 – Illumination of Stairways – (2015 Modification) Interior and exterior stairway illumination provisions have been placed in separate sections and the language has been clarified. A switch is not required where remote, central, or automatic control of lighting is provided for interior stairways.

R304.1 – Minimum Habitable Room Areas – (2015 Modification) The minimum floor area requirement for at least one habitable room of 120 square feet has been deleted - leaving 70 square feet as the only minimum except kitchens.

R305 – Minimum Ceiling Height – (2015 Modification) The minimum ceiling height for bathrooms, toilet rooms, and laundry rooms has been reduced to 6 feet 8 inches. The 6 feet 4 inches minimum below beams, girders, ducts, or other obstructions has been expanded to basements with habitable space.

R308.4 – Hazardous Locations Requiring Safety Glazing – (2012 Clarification) Glazing requirements are based on the size of the panels and height above the floor if within 18 inches of the floor or within 24 inches of the hinge side of an in-swinging door.

R308.4.2 – Glazing Adjacent to Doors – (2015 Modification) Glazing installed perpendicular to a door in a closed position and within 24 inches of the door now only requires safety glazing if it is on the hinge side of an in-swinging door.

R308.4.5 – Glazing and Wet Surfaces – (2015 Modification) Safety glazing is required where the water's edge of a bathtub, hot tub, spa, whirlpool, or swimming pool is less than or equal to 60 inches away or from the edge of a shower, sauna, or steam room.

R308.4.6 – Glazing Adjacent to Stairs and Ramps – (2012 Modification) Glazing installed adjacent to the stairs or landings where the glazing is less than 36 inches above the nosing of the treads or surface of the landing shall be considered to be a hazardous location. This corresponds to the height provision of a guard railing.

R308.4.7 – Glazing Adjacent to the Bottom of Stair Landings – (2015 Clarification) Glazing installed adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a 60-inch horizontal arc less than 180 degrees from the bottom tread nosing shall be considered to be a hazardous location.

R310 – Emergency Escape and Rescue Openings – (2015 Clarification – No Technical Changes) "Basements, habitable attics, and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way. Exception: Storm shelters and basements used only to house mechanical equipment not exceeding a total floor area of 200 square feet."

R310 – Emergency Escape and Rescue Openings – (2015 Clarification) This section has been reorganized to clarify where emergency escape and rescue openings must be used and how.

R310.1 – Emergency Escape and Rescue Openings for Habitable Attics – (2009 Modification) An Emergency Escape & Rescue Opening is now required in any attic that is considered to be habitable.

R310.2.2 – Emergency Escape & Rescue Openings Sill Height – (2012 Clarification) The maximum sill height of 44 inches is now measured from the floor to the bottom of the clear opening.

R310.5 & R310.6 – Emergency Escape and Rescue Openings for Additions, Alterations and Repairs – (2015 Clarification) The basement of a dwelling addition does not require an emergency escape and rescue opening if there is access to a basement that does have an emergency escape and rescue opening. Remodeling of an existing basement does not trigger the emergency escape and rescue opening requirements unless a new bedroom is created.

R311.2 – Means of Egress – Michigan Amendment - The required exit door shall be a side-hinged door of not less than 3 feet in width and 6 feet, 8 inches in height. Other exterior hinged or sliding doors shall not be less than 24 inches in width and 6 feet, 6 inches in height. Interior doors shall be not less than 24 inches in width and 6 feet, 6 inches in height.

R311.3.1 – Floor Elevation at the Required Egress Door – (2012 Clarification) Finished floors at the required egress door shall be not more than 1½ inches lower than the top of the threshold. Exception: The landing or floor on the exterior side shall be not more than 7¾ inches below the top of the threshold provided the door does not swing over the landing or floor.

R311.6.4 – Modular Ramps – Michigan Amendment - Modular ramp systems approved

pursuant to the act are not required to comply with the requirements of Section R403.1.4 of the code. (Michigan requires a 42 inch deep foundation)

R311.7.4 – Walk Line Across Winder Treads – (2009 Addition) New provision defining the walk line intended to clarify the tread depth requirement for winders. Measurement of stair treads and risers exclusive of carpet will result in more consistent application of the code. A new exception to uniform tread depth now provides that winders are permitted for a turn in a stairway of otherwise rectangular treads.
Michigan Amendment: Maximum riser of 8¼ inches and minimum tread depth of 9 inches.

R311.7.3 and R311.7.4 – Stair Treads and Risers – Michigan Amendment – Maximum riser shall be 8¼ inches and minimum tread depth shall be 9 inches measured from the rough material not including carpet.

R311.7.3 & R311.7.5.1 – Stairway Vertical Rise and Open Risers – (2009 Modification) The total vertical rise in a stairway without an intermediate landing has increased from 144 inches to 147 inches. Further, open risers are permitted provided that the openings located more than 30 inches as measured vertically to the floor or grade below do not permit the passage of a 4-inch-diameter sphere.

R311.7.6 – Landings for Stairways – (2015 Modification) The minimum width perpendicular to the direction of travel shall be no less than the width of the flight served. Landings of shapes other than square or rectangular shall be permitted provided the depth at the walk line and the total area is not less than that of a quarter circle with a radius equal to the required landing width.

R311.7.10.1 – Spiral Stairways – (2015 Modification) "Spiral stairways are permitted, provided that the clear width at and below the handrail is not less than 26 inches and the walkline radius is not greater than 24½ inches. Each tread shall have a tread depth of not less than 6¾ inches at the walkline. All treads shall be identical, and the rise shall be not more than 9½ inches. Headroom shall be not less than 6 feet, 6 inches."

R311.8 – Ramps – (2015 Modification) Ramps that do not serve the required egress door are now permitted to have a slope not greater than 1 unit vertical to 8 units horizontal. Ramps serving an egress door must still be installed at 1 unit vertical to 12 units horizontal.

R312.1.2 – Guards – (2015 Modification) The 2009 provision that required the guard height be measured from the surface of the adjacent fixed seating has been removed from

the 2015 Code.

R312.2.1 – Window Fall Protection – (2015 Clarification) In dwelling units, where the top of the sill of an operable window opening is located less than 24 inches above the finished floor and greater than 72 inches above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of three provisions: 1. Operable window openings that will not allow a 4-inch-diameter sphere to pass through the opening where the opening is in its largest opened position; 2. Operable windows that are provided with window fall prevention devices; or 3. Operable windows that are provided with window opening control devices.

R314.2.2 – Smoke Alarms for Alterations, Repairs and Additions – Michigan Amendment – (2015 Modification) When alterations, repairs, or additions requiring a permit occur, or when 1 or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings. Exceptions: 1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section. 2. Installations, alteration, or repairs of electrical, plumbing, or mechanical systems are exempt from the requirements of this section.

R314.3 – Smoke Alarms – Locations – (2015 Modification) Smoke alarms shall be installed not less than 3 feet horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3 and ionization smoke alarms shall not be installed less than 20 feet horizontally from a permanently installed cooking appliance unless it is equipped with a alarm–silencing switch then it can be 10 feet.

R314.4 – Interconnection of Smoke Alarms – Michigan Amendment – (2012 Modification) Wireless technology is now allowed for interconnecting smoke alarms throughout the structure. Further, interconnection of smoke alarms in existing areas shall not be required.

R314.5 & R314.7.4 – Combination Alarms – (2015 Modification) Combination smoke and carbon monoxide alarms shall be permitted to be used in lieu of smoke alarms and they are permitted to be installed in fire alarm systems in lieu of smoke detectors, provided they are listed in accordance with UL 268 and UL 2075.

R315 – Carbon Monoxide Alarms – (2015 Modification) For new construction, an approved

carbon monoxide alarm shall be provided in dwelling units where either or both of the following conditions exist: 1. The dwelling unit contains a fuel-fired appliance. 2. Has an attached garage with an opening that communicates with the dwelling unit. Where required, alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms.

R315.2.2 – Carbon Monoxide Alarms for Alterations, Repairs and Additions – (2015 Modification) Where alterations, repairs and additions requiring a permit occur, or where one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with carbon monoxide alarms located as required for new dwellings. Exceptions: Work involving the exterior surfaces of dwellings, such as the replacement of roofing, siding, doors, or the addition of a porch or deck, or plumbing or mechanical systems are exempt from the requirements.

R317.1 Location for Protection Against Decay – This is a 2009 modification that allowed the distance from grade for wood to be reduced from the required 6 inch to 2 inches where a concrete slab exists. There is now an exception for deck posts supported by concrete piers or metal pedestals to be reduced to 1inch.

R319.1 – Address Numbers – This is a reminder that prescribes the minimum size of address numbers and requires a contrasting background for visibility from the street or road fronting the property.

R321 – Elevators and Platform Lifts – Michigan Amendment - Where provided, passenger elevators, limited-use/limited-application elevators or private residence elevators and platform lifts shall comply with the Michigan Elevator Rules R 408.7001 to R 408.8695.

Chapter 4 – Foundations

R403.1.1 – Minimum Footing Size – (2015 Modification) Minimum footing size and thickness is now divided into three expanded tables based on the type of construction being supported: light frame, light frame with veneer, and concrete or masonry. The values are also based on the type of foundation: slab on grade, crawl space, or basement.

R403.1.6 – Foundation Anchorage – (2015 Modification) Now allows anchor straps if approved by the Building Official and removes redundant language and clarifies the anchorage requirements for wood sill and sole plates.

R404.4 – Retaining Walls – (2015 Modification) Retaining walls that are freestanding and

not supported at the top, with more than 48 inches of unbalanced backfill must be designed by an engineer. Retaining walls exceeding 24 inches in height that resist lateral loads in addition to soil, shall be designed in accordance with accepted engineering practices to ensure stability against overturning, sliding, excessive foundation pressure and water uplift.

R405.1 – Foundation Drainage – (2012 Modification) Except where otherwise recommended by the manufacturer, perforated drains shall be surrounded with an approved filter membrane or the filter membrane shall cover the washed gravel or crushed rock covering the drain.

Chapter 5 – Floors

R501.3 – Fire Protection of Floors – A Michigan Amendment has taken this 2012 provision out of the code. Floor assemblies, not required elsewhere in this code to be fire resistance rated, shall be provided with a ½ inch gypsum wallboard membrane, ⅝ inch wood structural panel membrane, or equivalent on the underside of the floor framing member.

Tables R502.3.1(1) & R502.3.1(2) – Floor Joist Spans for Common Lumber Species – (2015 Modification) Floor joist span lengths in the prescriptive tables of the Code have changed for Southern Pine (SP), Douglas Fir-Larch (DFL), and Hemlock Fir (HF).

R507.2 – Deck Ledger Connection to Band Joist – (2012 Modification & 2015 Clarification) All deck provisions have been relocated to a new section. The prescriptive provisions related to the placement of bolts and lags for deck ledger attachment to the band joist have been revised to correlate with the National Design Specification (NDS) for Wood Construction.

R507.2.4 – Deck Flashing – Michigan Amendment – (2015 Modification) "An approved corrosion-resistant flashing as required by Section R703.8 shall be installed above the attached ledger as shown in Figure R507.2.1(2) or as approved."

R507.5 – Deck Joist & Lateral Restraint at Supports – (2015 Addition) A new section and table provides a prescriptive method for maximum allowable spans for wood deck joists and stipulates that joists are permitted to cantilever a maximum of ¼ of the actual joist span.

R507.6 – Deck Beams – (2015 Addition) A new section and table provides a prescriptive

method for maximum allowable spans for wood deck beams and stipulates that beams are permitted to cantilever at each end a maximum of ¼ of the actual beam span. Splices of multi-span beams shall be located at interior post locations.

R507.7 – Deck Joist and Beam Bearing – (2015 Addition) A new section provides that the ends of each joist and beam shall have not less than 1½ inches of bearing on wood or metal and not less than 3 inches on concrete or masonry for the entire width of the beam. Joist framing into the side of a ledger board or beam shall be supported by approved joist hangers. Joist bearing on a beam shall be connected to the beam to resist lateral displacement.

Chapter 6 – Wall Construction

R601.3 – Vapor Retarders - Michigan Amendment - "Class I or II vapor retarders shall be provided on the interior side of frame walls in Zones 5, 6, 7, 8 and Marine 4. Exceptions: 1. As permitted in Table R702.7.1. 2. Class III or no vapor retarder shall be permitted on the interior side of below grade wall assemblies. Class I or II vapor retarders shall be permitted on the interior side of the wall assembly when no air permeable insulation is installed in the below grade wall assemblies. 3. Construction where moisture or freezing will not damage the materials."

Table R602.3(1) – Fastener Schedule for Structural Members - This table has been reorganized and updated again to reflect currently accepted industry standards and manufacturer's recommendations.

Table R602.3(5) – Size, Height, and Spacing of Wood Studs - Table R602.3.1 has been deleted and the exception for walls greater than 10 feet has been added: "Where snow loads are less than or equal to 25 pounds per square foot, and the ultimate design wind speed is less than or equal to 130 mph, 2x6 studs supporting a roof load with not more than 6 feet of tributary length shall have a maximum height of 18 feet where spaced at 16 inches on center, or 20 feet where spaced at 12 inches on center. Studs shall be minimum No. 2 grade lumber." Example: 2x6 continuous studs in an 18-foot height gable end wall. (The gable end wall studs do not support a roof load.)

Example: 2x6 continuous studs used in a 20-foot tall wall supporting a projection with roof framing parallel to the wall and the following four limits: Snow load ≤ 25 psf; Wind speed ≤ 130 mph; 2 x 6 construction; Roof load tributary width ≤ 6 feet. (This means for studs that carry a roof load)

R602.7.1 – Single Member Headers – (2015 Additions) The code now includes prescriptive provisions for single member headers under limited conditions.

R602.10 – Braced Wall Lines and Braced Wall Panels – (2012 & 2015 Modifications) The fame wall bracing provisions have been entirely rewritten. Different bracing methods are now permitted on different braced wall lines. "Buildings shall be braced in accordance with this section or, when applicable, Section R602.12. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1. "

R602.10.5 & R602.10.6.2 – Minimum Length of a Braced Wall Panel – (2012 & 2015 Modifications) The contributing length of continuously sheathed Portal Frames and Portal Frames with Hold Downs, in low-seismic regions, has increased by 50%. Use "**APA Simplified Wall Bracing Method Using Wood Structural Panel Continuous Sheathing**" (Reference: Form No. SR-102B/Revised February 2013/010 phone 253-620-7400 or www.apawood.org.)

R606.3.5 – Grouting Requirements for Masonry Construction – (2015 Modification) With reorganization of the masonry wall provisions in the 2015 IRC, the section covering provisions for grouting above-ground masonry walls now combines all the requirements for single, multi-wythe, and reinforced masonry construction in one section. Clarifications address grout placement, cleanouts, and construction for all three types of masonry construction.

Chapter 7 – Wall Covering

R703.4 – Flashing – (2012 & 2015 Modification) "Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components."

"Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the

water-resistive barrier for subsequent drainage. "

R703.5 – Wood, Hardboard, and Wood Structural Panel Siding – (2015 Modification) "Wood siding applied vertically shall be nailed to horizontal nailing strips or blocking set not more than 24 inches on center. Panel Siding ⅜ inch wood structural panel siding shall not be applied directly to studs spaced more than 16 inches on center where the long dimension is parallel to studs. Wood structural panel siding 7/16 inch or thinner shall not be applied directly to studs spaced more than 24 inches on center."

R703.8.4.2 – Grout Fill Behind Masonry Veneer – (2015 Modification) Mortar is no longer permitted to fill the air space behind anchored masonry veneer. Grout must now be used and under some conditions can actually replace the air space.

Figure R703.8 – Masonry Veneer Wall Details – Michigan Amendment - Figure R703.8 has been inserted for clarification of (4) Masonry Wall Details those being water-resistive barrier, air space, flashings and weep holes.

R703.9.1 – Exterior Insulation and Finish System (EIFS) – (2015 Modification) EIFS shall comply with the following:

1. ASTM E2568.
2. Shall be limited to applications over concrete or masonry wall assemblies.
3. Flashings shall comply with R703.8.
4. Installed in accordance with the manufacturer's installation inst.
5. Shall terminate not less than 6 inches above the finished ground level.
6. Decorative trim shall not be face-nailed through the EIFS.

R703.11.1 - Vinyl Siding Attachment - Fasteners – (2015 Clarification) Unless specified otherwise by the manufacturer's instructions, fasteners for vinyl siding shall be 0.12-inch shank diameter nails with a 0.313-inch head or 16 gauge staples with a ⅜ inch to ½ inch crown. Fasteners shall penetrate into building framing by a minimum of 1¼ inches.

R703.12 – Adhered Masonry Veneer – (2012 Addition) This new section sets minimum clearances and flashing requirements. On exterior stud walls, adhered masonry veneer shall be installed to a minimum of 4 inches above the earth, or minimum of 2 inches above paved areas, or minimum of ½ inch above exterior walking surfaces

which are supported by the same foundation that supports the exterior wall. Foundation flashings and weeps are also defined.

R703.13 & R703.14 – Insulated Vinyl Siding and Polypropylene Siding – (2015 Addition) This new section sets minimum requirements for insulated vinyl siding and polypropylene siding including certification and labeling, installation, and fire separation. (Note: 5 foot minimum for fire separation distance and 10 foot to building on other lot.)

R703.15, R703.16 & R703.17 – Cladding Attachment Over Foam Sheathing – (2015 Addition) Three new sections set minimum requirements for cladding attachment over foam sheathing to wood framing, cold formed steel framing and masonry or concrete walls. Prescriptive requirements are given for light-frame construction.

Chapter 8 – Roof-Ceiling Construction

R802.10.1 - Wood Truss Design Drawings and Roof Loading Data Sheet - Michigan Amendment – The truss design data sheet, Figure R802.10.1, may be provided to the building official at the time of permit application, as an alternative to design drawings as permitted in Section R106.1.4. Note: Truss design drawings shall be on the job at frame inspection.

R806.5 – Unvented Attic & Unvented Enclosed Rafter Assemblies – (2015 Modification) Created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:

1. The unvented attic space is completely within the building thermal envelope.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, a minimum ¼-inch vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7, and 8 any air-impermeable insulation shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall be located in accordance with the following: Sections 5.1 and 5.2 of the code.

R807.1 – Attic Access – (2015 Modification) Attics where there is at least 30 square feet of space that is a minimum of 30 inches in height measured from the bottom of the top chord of the truss or rafter and the top of the bottom cord of the truss or the ceiling joist, requires an attic access.

Chapter 9 – Roof Assemblies

R905.2.8.5 – Roof Drip Edge – (2012 Addition) A Drip Edge is now required for both the eave and the rake for all asphalt shingled roofs.

R905.7.5 & R905.8.6 – Wood Shingle and Wood Shake Application – (2015 Modification) The minimum requirements for application of wood shingles and wood shakes are expanded. Fastener type is clarified and a new table lists minimum sizes for box nails. Labeling requirements for fastener packaging have also been added.

R905.16 – Photovoltaic Shingles – (2015 Modification) Additional requirements and limits for photovoltaic shingles have been added to this section.

R907 – Rooftop-Mounted Photovoltaic Systems – (2015 Addition) This code provision describes the requirements and limits of rooftop-mounted systems.

R909.2 – Rooftop-Mounted Photovoltaic Panel Systems – Michigan Amendment - "Rooftop mounted panel systems shall be designed to structurally support the system and withstand gravity loads in accordance with Chapter 3. The roof upon which these systems are installed shall be designed and constructed to support the loads imposed by such systems in accordance with Chapter 8 and installed in accordance with the manufacturer's instruction. Roof penetrations shall be flashed and sealed in accordance with this chapter."

Chapter 10 – Chimneys and Fireplaces

R1003.9.1 & R1003.9.3 – Masonry Chimney Caps and Rain Caps – (2012 Addition) New language includes provisions for commonly used masonry chimney caps and rain caps consistent with ASTM C 1283 and C 315.

R1003.9.1 – Masonry Chimney Caps – Michigan Amendment - Masonry chimneys shall have a concrete, metal, or stone cap sloped a minimum of 10 degrees to shed water, a drip edge or slot and shall be flashed in accordance with Figure R1003.9.1(1). The joint space between the flue liner and the cap shall be filled with compressible filler and caulked with a suitable sealant to allow for expansion and contraction of the materials.

R1005.7 – Factory-Built Chimney Offsets – (2012 Addition) Factory-built chimney assemblies must be installed vertically with no offsets greater than 30 degrees. No more than (4) elbows are permitted within the entire length of the chimney assembly.

Chapter 11 – Energy Conservation/Efficiency

N1101.16 – Certificate (Mandatory) – Michigan Amendment - A permanent certificate shall be posted on or in the electrical distribution panel, and shall meet all of the following:
(a) Be affixed or attached so it does not cover or obstruct the visibility of the circuit directory label.
(b) Be completed by the builder or registered design professional.
(c) List the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation, crawlspace wall and or floors, and U-values for fenestrations.
(d) List the types of efficiencies of heating, cooling and service water heater

equipment. (e) If a gas-fired unvented room heater, electric furnace, or baseboard electric heater is installed in the residence, then the certificate shall list "gas-fired unvented room heater.

Table N1102.1.1 – Insulation and Fenestration Requirements by Component – Michigan Amendment – Zone 5A:
Fenestrations U-Factor = 0.32 was 0.35;
Skylights U-Factor = 0.55 was 0.60;
Ceilings stayed the same at R-38;
Wood Frame Walls stayed at R-20 or 13+5;
Mass Walls stayed the same at R-13/17;
Floors stayed the same at R-30;
Basement Walls stayed the same at R-10/13;
Slab & Depth stayed the same at R-10 for 2 feet; and
Crawl Space Wall went from R-10/13 (the same as basements) to R-15/19.

N1102.1.3 – R-Value Computations for Insulated Siding – Michigan Amendment has taken this provision out of the MRC. The 2015 IRC now allows insulated siding to be used in the calculation for satisfying the wall insulation R-value. The labeled R-value for the siding must be reduced by R-0.6 for calculation purposes.

N1102.2.1 – Ceiling With Attic Spaces – (2015 Modification) When Section N1102.1.1 would require R-38 in the ceiling, R-30 shall be deemed to satisfy the requirement for R-38 wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves.

N1102.4 – Sealing of the Building Thermal Envelope – (2015 Modification) Attic access openings and rim joist junctions have been added to the list of specific locations requiring sealing to prevent air infiltration. Single member headers are now allowed in the code to comply with the thermal envelope requirements.

N1002.4.1.2 – Air Leakage and Testing (Prescriptive) – Michigan Amendment - "The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements and be installed in accordance with the manufacturer's instructions and the criteria listed in the Table." Further, the building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding 4 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 pascals).

N1102.4.4 – Recessed Lighting (Mandatory) – Michigan Amendment - "Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage

between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0cfm when tested. All recessed luminaries shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling."

N1103.2.1 – Insulation (Prescriptive) – Michigan Amendment - "All portions of the air distribution system shall be installed in accordance with Section M1601 and be insulated to an installed R-6 when system components are located within the building but outside the conditioned space, and R-8 when located outside to the building thermal envelope. When located within a building envelope assembly, at least R-8 shall be applied between the duct and that portion of the assembly farthest from conditioned space."

N1103.2.2 – Sealing (Mandatory) – Michigan Amendment - "Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the International Mechanical Code or the MRC.
Exceptions: 1. Air impermeable spray foam product may be applied without additional joint seals. 2. Where a duct connection is made that is partially inaccessible, 3 screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect. 3. Continuously welded and locking type longitudinal joints and seams. Duct tightness shall be verified by either: Post-construction Tests or Rough-in test except if the ducts and air handlers are located entirely within the building thermal envelope."

N1103.3 – Mechanical System Piping Insulation (Mandatory) - "Mechanical system piping capable of carrying fluids above 105 degrees F or below 55 degrees F shall be insulated to a minimum of R-3."
"Pipe insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance, and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted."

N1103.4 – Circulating Hot Water Systems (Mandatory) – Michigan Amendment - "Circulating hot water systems shall be provided with an automatic or readily accessible manual switch that can turn off the hot-water circulating pump when the system is not in use. Insulation for hot water pipe with a minimum thermal resistance (R-value) of R-3 shall be applied to the following:
1. Piping larger than ¾ inch nominal diameter.
2. Piping serving more than 1 dwelling unit.
3. Piping located outside the conditioned space.
4. Piping from the water heater to a distribution manifold.
5. Piping located under a floor slab.
6. Buried piping.
7. Supply and return piping in recirculation systems other than demand recirculation systems. "

N1104.1 – Lighting Equipment (Mandatory) – (2015 Modification) The code has now been revised to require at least 75 percent of the lamps in permanently installed lighting fixtures to be high-efficacy lamps or a minimum of 75 percent of the permanently installed lighting fixtures to contain only high-efficacy lamps.
Exception: Low-voltage lighting shall not be required to utilize high-efficacy lamps.

N1106 – Energy Rating Index Compliance Alternative – Michigan Amendment - Scope: This section establishes criteria for compliance using an energy rating index (ERI) analysis. Compliance with this section requires that the mandatory provisions identified in Sections N1101.2, (Intent) and N1103.4.2, (Hot Water Pipe Insulation) be met. The building thermal envelope shall be greater than or equal to levels of efficiency and solar heat gain coefficient in Table 402.1.2 or 402.1.4 of the 2009 IECC.

Chapters 13 through 23 – Mechanical

M1411.6 – Locking Access Port Caps – (2012 Modification in the IRC) This IRC code change required a separate secured enclosure or room that would have allowed the A/C unit to be locked to protect the refrigerant. This code modification was rejected by a Michigan Amendment and is not included in the 2015 MRC.

M1502.4.2 – Duct Installation – Michigan Amendment – "Dryer exhaust ducts shall be supported at 4 foot intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct."

M1502.4.4 & M1502.4.5 – Dryer Exhaust Duct Power Ventilators – (2015 Addition) The code now recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers and requires the installation to be in accordance with the manufacturer's instructions.

M1503.4 – Makeup Air for Range Hoods – (2015 Modification) Automatic operation of a mechanical damper is no longer required for supplying makeup air for kitchen exhaust systems exceeding a rating of 400 cubic feet per minute. Transfer openings are permitted to obtain makeup air from rooms other than the kitchen.

M1506.2 – Exhaust Duct Length – (2015 Addition) The code now establishes maximum exhaust duct lengths based on duct diameter, type of duct and exhaust fan airflow rating. Duct length shall not be limited where the duct system complies with the manufacturer's design criteria or where the flow rate of the installed ventilating equipment is verified by the installer or approved third party.

M1506.3 – Exhaust Openings – (2012 Addition) Air exhaust openings shall terminate not less than 3 feet from property lines; 3 feet from operable and non-operable openings into the building; and 10 feet from mechanical air intakes except where the opening is located 3 feet above the air intake. Openings shall comply with Sections R303.5.2, (Exhaust Openings) and R303.6, (Protection).

M1507 – Mechanical Ventilation – (2012 Addition) Prescriptive design criteria for whole–house ventilation systems have been added to the mechanical ventilation provisions. Mechanical ventilation of kitchens and bathrooms is now described as local exhaust. New definitions for whole-house ventilation and local exhaust have been added to Section R202.

M1601.1 – Above Ground Duct Systems – (2012 Modification) Stud cavities of exterior walls are no longer permitted to be used for return air plenums.

M1601.4.1 – Joints, Seams and Connections – (2015 Modification) Types of mastics used to seal sheet metal ducts must be listed to UL 181 B as has been required for sealing flexible ducts. Snap-lock and button-lock seams are no longer exempt from the sealing requirements.

M1601.4.10 – Floor Register Location – Michigan Amendment - Floor registers located in rooms or spaces containing water closets shall now be located a minimum of 3 feet from the water closet.

M1602 – Return Air – (2015 Modification) The provisions for return air have been simplified and clarified to improve understanding while preserving the intent of keeping contaminants out of the airstream of the heating, ventilation and air-conditioning system. The provisions for outdoor air openings have been removed and the code now references the applicable provisions for outdoor air in Chapter 3.

Chapter 24 – Fuel Gas

G2404.11 – Condensate Pumps – (2015 Addition) Condensate pumps located in uninhabitable spaces, such as attics and crawl spaces, shall be connected to the appliance or equipment served such that when the pump fails, the appliance or equipment will be prevented from operating. Pumps shall be installed in accordance with the manufacturer's instructions.

G2408.2.1 – Appliance Installation in Garages – (2009 Addition) "In residential garages where appliances are installed in a separate, enclosed space having access only from outside of the garage, such appliances shall be permitted to be installed at floor level, provided that the required combustion air is taken from the exterior of the garage."

G2411.1.1 – Electrical Bonding of Corrugated Stainless Steel Tubing – (2015 Modification) & Michigan Amendment - Corrugated stainless steel tubing gas piping systems shall be bonded to the electrical service grounding electrode system or, where provided, lightning protection electrode system. The bonding jumper shall be not smaller than 3 AWG copper wire or equivalent and not longer than 75 feet.

G2412 &G2415 – Pipe Identification and Certification – (2012 Addition) All pipe, tubing, and fittings used in a fuel-gas system now require a manufacturer's mark and third-party testing or certification. New definitions are now furnished to supplement the provisions.

G2415.7 – Protection of Concealed Piping Against Physical Damage – (2015 Modification) Protection of piping that will be concealed now addresses piping parallel to framing members and piping within framing members. The new text requires that the protection extend well beyond the edge of members that are bored or notched.

G2421.2 – Medium-Pressure Regulators – (2015 Modification) Medium-Pressure (MP) line regulators installed in rigid piping must have a union installed within 1 foot of the regulator to allow for removal.

G2422.1.2.1 – Maximum Length of Connectors – (Clarification) The maximum length of appliance connectors has increased from 3 feet to 6 feet. Measurements shall be made along the centerline of the connector and only one connector shall be used for each appliance.

G2422.1 – Connecting Portable and Movable Appliances – (2015 Modification) Where appliances, such as gas grills, fire pits or patio heaters, are equipped with casters or are otherwise subject to periodic movement or relocation for purposes such as routine cleaning and maintenance, such appliances shall be connected to the supply system piping by means of an appliance connector listed as complying with ANSI Z21.69 or by rigid metallic pipe and fittings. Such flexible connectors shall be installed and protected against physical damage in accordance with the manufacturer's instructions.

G2426.7.1 – Door Clearance to Vent Terminals – (2015 Addition) Appliance and equipment

vent terminals shall be located such that doors cannot swing within 12 inches horizontally of the vent terminal. Door stops or closers shall not be installed to obtain this clearance.

G2427.8 – Venting System Termination Location – (2015 Modification) The text now addresses the location of sidewall vent terminals with respect to adjoining building. A 10-foot separation is now required when a vent discharges in the direction of an opening in an adjacent building.

G2447.2 – Prohibited Location of Commercial Cooking Appliances – (2015 Modification) The code has been modified to allow for the installation of cooking appliances that are listed as both commercial and domestic appliances.

Chapters 25 through 33 – Plumbing

P2502.1 & P2503.4 – Inspection and Tests for Building Sewers – (2015 Clarification) The code clarifies the method for examining existing building sewers and building drains when the entire sanitary drainage system is replaced. Internal examination is now required to verify the size, slope, and condition of the existing piping. There is a new provision prescribing a pressure test be completed for a forced sewer at a test pressure of 5 psi greater than the pump rating.

P2503.5.1 – Drain, Waste and Vent Systems Testing – (2012 Modification) The Michigan Amendment has added back in air testing for DWV piping. Water testing is still allowed by filling the system with water with not less than 10 feet above the highest fitting connection in that section. This test requires only a visual inspection. It now also allows the system to be tested with a maintained pressure of 5 pounds per square inch or 10 inches of mercury column. This pressure shall be held without introduction of additional air for a period of 15 minutes.

P2603.2.1 – Protection Against Physical Damage - (2015 Modification) For piping installed through bored holes or in notches, the minimum clearance distance from the concealed piping to the edge of the framing member has been reduced from 1½ inches to 1¼ inches. Protection is required for piping installed less than 1¼ inches from the framing.

P2603.3 – Protection Against Corrosion – (2015 Modification) Metallic piping, except for cast iron, ductile iron and galvanized steel, shall not be placed in direct contact with steel framing members, concrete or masonry. Metallic piping shall not be placed in direct contact with corrosive soil. Where sheathing is used to prevent direct contact, the sheathing material thickness shall be not less than 0.008 inch and shall be made of plastic. Where sheathing protects piping that penetrates concrete or masonry walls or floors, the sheathing shall be installed in a manner that allows movement of the piping within the sheathing.

P2603.5.1 – Sewer Depth – Michigan Amendment - A building sewer that connects to a private disposal system shall be a minimum of 8 inches to the top of the pipe below finished grade at the point of septic tank connection. Building sewers shall be installed a minimum of 42 inches below grade. Exception: When permitted by the code official.

P2605.1 – Piping Support – (2015 Modification) Support spacing requirements for PEX and PE-RT, (Polyethylene of Raised Temperature) tubing 1¼ inches and grater in diameter have been added to Table P2605.1. This section clarifies the mid-story guide requirements for some types of vertical pipe 2 inches and smaller in diameter.

P2609.1 & P2609.4 – Identification and Certification – (2012 Modification) Each length of pipe and each pipe fitting, trap, fixture, material, and device utilized in a plumbing system shall bear the identification of the manufacturer and any markings required by the applicable referenced standards and shall be listed by a third party certification agency as complying with the standard.

P2709.1 & 2709.2 – Shower Receptors and Linings – (2012 Modification) The 2015 edition of the IRC now requires the height of shower liners to extend only 2 inches above the finished thresholds in lieu of the previous 3 inch requirement.
Michigan Amendment –The provisions in this section have reverted back to the 2009 edition that requires the lining material to extend not less than 3 inches beyond or around the rough jambs and not less than 3 inches above finished thresholds.

P2709.2.4 – Liquid Type, Trowel Applied, Load Bearing, Bonded Waterproof Materials – (2012 Addition) Liquid type, trowel applied, load bearing, bonded waterproof materials are now accepted and shall meet the requirements of ANSI A118.10 and shall be applied in accordance with the manufacturer's instructions.

P2801.6 – Required Water Heater Pan – (2012 Clarification) Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following: 1. Galvanized steel or aluminum of not less than 0.0236 inch in thickness; 2. Plastic not less than 0,036 inch in thickness; or 3. Other approved materials. A plastic pan shall not be installed beneath a gas-fired water heater.

P2801 – Water Heater Drain Valves and Pans – (2015 Modification) The code now specifically requires drain valves with a threaded outlet for water heaters. The water heated pan requirements have been expanded to accept aluminum and plastic pans of the prescribed thickness. The code clarifies that a pan drain is not required where a water heater is replaced and there is no existing drain.

P2803.6.1 – Requirements for Discharge Pipe – Michigan Amendment - Relief valves shall not discharge so as to be a hazard, a potential cause of damage, or a nuisance. A relief valve discharge pipe shall be provided for each individual relief valve and shall meet all the following: (a) Shall terminate atmospherically not more than 4 inches from the floor with an unthreaded end; (b) Shall not be interconnected; (c) Valves shall not be connected in the relief valve discharge pipe; and (d) Shall be rigid pipe approved for water distribution and with a minimum temperature rating of 210 degrees Fahrenheit.

P2901 & P2910 through P2913 – Nonpotable Water Systems – (2015 Modification) Nonpotable water outlets, such as hose connections, that utilize nonpotable water must be identified with a warning and a symbol that nonpotable water is being used. The color purple is established for identifying distribution piping conveying nonpotable water. New Sections P2910 – P2913 are extracted from the International Green Construction Code (IgCC) and intend to provide guidance on the collection, storage, and distribution of various types of nonpotable water for residential buildings.

Chapters 29 & 30 – Other Michigan Amendments

P2902.5.4 – Connection to Automatic Fire Sprinkler Systems;
P2904.1 – Dwelling Unit Fire Sprinkler Systems;
P2906.3.1 – Heat-fusion Joints for Polyethylene Plastic Pipe;
P2906.10.1 – Heat-fusion Joints for Polyolefin Plastic;
P3003.12.1 – Heat-fusion Joints for Polypropylene Plastic Pipe; and
P300.13.2 – Solvent Cementing

P3005.2 – Cleanout at the Base of Stacks – (2015 Modification) This section has been completely reorganized and reworded. Base cleanout plugs are only permitted for

metallic piping. Where located at a finished wall, the cleanout must be within 1½ inches of the finished surface. A cleanout is no longer required at the base of each waste or soil stack.

P3008.1 – Backwater Valves – (2015 Modification) There is now an exception for existing buildings to allow sewers to discharge through a backwater valves.
Exception: In existing buildings, fixtures above the elevation of the manhole cover of the next upstream manhole in the public sewer shall not be prohibited from discharging thorough a backwater valve.

P3103.1 & P3103.2 – Roof extension & Frost Closure – Michigan Amendment - All open vent pipes that extend through a roof shall terminate at least 1 foot above the roof, except that if a roof is to be used for any purpose other than weather protection, (such as observation or a sunbathing deck) then the vent extension shall be run not less than 7 feet above the roof. To prevent frost closure, every vent extension though a roof shall be not less than 3 inches in diameter and shall be made inside the building with a minimum of 1 foot below roof or inside the wall.

Chapter 31 – Other Michigan Amendments

P3105.1 Distance of Trap from Vent;
P3105.4 Vertical Leg for Waste Fixture Drains; and
P3111.2.2 Connection of Combination Waste and Vent System

P3201.2 – Trap Seal Protection Against Evaporation – (2015 Modification & Re-write) Trap seal protection against evaporation can now be accomplished in a variety of ways, including trap seal primer valves supplied with nonpotable water and barrier-type trap seal protection devices.

Chapters 34 through 43 – Electrical

Chapter 34 through 38 – Michigan Amendments:

E3401 – Applicability – The provisions of Chapters 34 – 43 establish the general scope of the electrical system and equipment requirements of the code;
E3401.2 – Scope;
E3401.5 – General;
E3401.6 – Requirements;
E3401.7 – Photovoltaic Panels and Modules;

E3401.8 – Inverters;
E3402.2 – Penetrations of Fire-resistance-rated Assemblies;
E3405.2 – Working Clearances for Energized Equipment and Panels;
E3601.6.3 - Separate Outdoor Electric Space Conditioning Equipment;
E3604.2.1 – Overhead Service and Service-entrance Conduct Installation;
E3705.4.1 - Conductors Rated 60 Degrees C;
Table E3801.4 – Allowable Application for Wiring Methods; and
E3803.6 – Raceway Seals.

E3608.1.2 – Concrete-Encased Electrodes - Michigan Amendment - These provisions for concrete-encased electrodes have been broken into separate parts to clarify the meaning and application.
E3608.1.2.1 - Verification of the installation (the inspection) of the electrode is now included within a Michigan Amendment.
E3609.7.1 – Corrugated stainless steel tubing is now required to be bonded to the electrical service grounding electrode.

E3608.4 – Supplemental Electrode Required – (2012 Clarification) A rod, pipe, or plate electrode requires a supplemental electrode unless testing confirms that the single electrode has a resistance to earth of 25 ohms or less.

E3901.7 – Outdoor Outlets – (2012 Modification) An outdoor outlet is now required for any size of deck, porch, or balcony that is accessible from inside the dwelling unit.

E3901.9 – Basements, Garages and Accessory Buildings – (2015 Modification) Garage receptacle outlets must be served by a separate branch circuit that does not supply other outlets. At least one receptacle outlet is required for each car space in a garage.

E3901.11 – Receptacle Outlets in Foyers - Michigan Amendment - Foyers that are not part of a hallway in accordance with Section E3901.10 and that have an area that is greater than 100 square feet shall have a receptacle located in each wall space 3 feet or more in width. Doorways, door-side windows that extend to the floor and similar openings shall not be considered as wall space. Michigan revised this requirement from 60 square feet up to 100 square feet.

E3902.2 & E3902.5 – Ground-Fault Circuit-Interrupter (GFCI) Protection – (2009 Modification) This 2009 modification required that ground-fault circuit-interrupter protection be required for all 125-volt, single-phase, 15- and 20-ampere receptacles installed in garages and unfinished basement areas except those for fire or burglar

alarm systems. YES – This means for a sump pump, refrigerator and a freezer.

E3902.8, E3902.9 & E3902.10 – Ground-Fault Circuit Interrupter Protection – (2015 Modification) Laundry areas have been added to the list of locations requiring ground-fault circuit interrupter (GFCI) protection. Receptacles within 6 feet of bathtubs and showers, and receptacles for dishwashers also require GFCI protection.

E3902.14 – Location of Ground Fault Circuit Interrupters – This section was added in 2012 and then modified in 2015. Ground-fault circuit interrupters shall be installed in a readily accessible location.

E3901.11 – Arc-Fault Protection – Michigan Amendment has deleted this section completely - Arc-fault protection for branch circuits has been expanded to include all habitable spaces (except kitchens), hallways, closets, and similar areas. Only a combination type arc-fault circuit interrupter is permitted and it must protect the entire branch circuit.

E3905.3.2 – Securing to Box – Michigan Amendment - All permitted wiring methods shall be secured to the boxes.
Exception: Where nonmetallic-sheathed cable is used with boxes not larger than a nominal size of 2¼ inches by 4 inches mounted in walls or ceilings, and where the cable is fastened within 8 inches of the box measured along the sheath, and where the sheath extends through a cable knockout and where the sheath extends through a cable knockout not less than ¼ inch, securing the cable to the box shall not be required. Multiple cable entries shall be permitted in a single cable knockout opening.

E3908.8 – Boxes at Fan Outlets – (2012 Modification) When a ceiling outlet box is wired for a future ceiling fan, the box must be listed for the support of a ceiling fan. "Where spare, separately switched, ungrounded conductors are provided to a ceiling mounted outlet box, and such box is in a location acceptable for a ceiling-suspended (paddle) fan, the outlet box or outlet box system shall be listed for sole support of the ceiling-suspended (paddle) fan."

E3908.8.1 through E4101.8 – Other Michigan Amendments-
E3908.8.1 – Grounding of flexible metal conduit.
E3908.8.2 – Grounding of liquid-tight flexible metal conduit.
E3908.9 – Equipment fastened in place or connected by permanent wiring methods.
E3908.10 – Methods of equipment grounding.
E4002.16 – Replacements, grounding-type, non-grounding-type receptacles, and ground-fault circuit interrupters.
E4101.8 Frames of ranges and clothes dryers.

E4001.15 – Switches Controlling Lighting Loads – (2012 Addition) - Unless a means of access for rewiring is provided, a grounded circuit conductor must be provided at the switch outlet.

E4002.14 – Tamper-Resistant Receptacles – (2012 Modification) - In areas specified in Section E3901.1, 125-volt, 15- and 20-ampere receptacles shall be listed tamper-resistant receptacles. Exceptions: Receptacles in the following location shall not be required to be tamper resistant: 1. Receptacles located more than 5.5 feet above the floor. 2. Receptacles that are part of a luminaire or appliances. 3. A single receptacle for a single appliance or a duplex receptacle for two appliances where such receptacles are located in spaces dedicated for the appliances served and, under conditions of normal use, the appliances are not easily moved from one place to another. The appliances shall be cord-and-plug connected in accordance with E3909.4.

E4203.4.3 – Location of Low-Voltage Luminaires Adjacent to Swimming Pools – (2015 Modification) - Listed low-voltage luminaries meeting the prescribed conditions are permitted to be located less than 5 feet from the water's edge of swimming pools, spas, and hot tubs.

E4204.2 – Bonded Parts of Pools, Spas, and Hot Tubs – (2012 Modification) - Where walls are at least 5 feet high and less than 3 feet from the edge of the pool, equipotential bonding is required on the pool side of the wall only. Metal parts, including awnings, fences, and door and window frames constructed of metal, require bonding if located within 5 feet of the edge of the pool.

Appendix F – Figure AF101 – Passive Radon Gas Controls - EPA

Map of Michigan Radon Zones – Michigan Amendment - This appendix contains requirements for new construction in jurisdictions where radon-resistant construction is required. These requirements are intended to provide a passive means of resisting radon gas entry and prepare the dwelling for post-construction radon mitigation, if necessary. Active construction techniques, rather than passive techniques, shall be permitted to be used where approved.

AF103 – Radon-Resistant Construction Details for Four Foundation Types – These details were inserted to clarify the installation of a radon-resistant system.

Appendix J – Existing Buildings and Structures – This section has been in the MRC for several years; however, is not used as it was intended. "The purpose of these provisions is to encourage the continued use or reuse of legally existing buildings and structures. These provisions are intended to permit work in existing buildings that is consistent with the purpose of this code. Compliance with these provisions shall be deemed to meet the requirements of this code.

Appendix R – Light Straw-Clay Construction – The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance. The scope of this appendix states it shall govern the use of light straw-clay as a nonbearing building material and wall infill system.

The End