

1.0 Codes and Regulatory Agencies

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» 1.0 Codes and Regulatory Agencies

[Codes and Regulatory Agencies](#) (formerly SID-F Codes and Regulatory Agencies)

is an annotated list of all applicable building codes and standards for the

University of Michigan. Issued March 13, 2024.

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assistance.

2.0 Project Procedures

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» 2.0 Project Procedures

Contains Project related procedures, related documents and templates to be utilized by the design professional.

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline	Other Formats	Last Update	Previous Version	Former Document
2.1 OPR and BOD (Owners Project Requirements and Basis of Design)		November 2022	July 2021	SID-B Owner's Project Requirements and Basis of Design Documents
2.1.1 OPR-BOD-Report-Format	Word Version	November 2022		
2.1.2 Room-Data-Sheet-Format	Excel Version			
2.2 Design Deliverables		May 2026	April 2025	
2.2.1 Pre-Design Deliverables		September 2023	February 2021	
2.3 U of M Owners Review		December 2014	May 2014	SID-L Owner's Review
2.4 Document Standards And Procedures For Project Deliverables		May 2026	June 2023	SID-H Drawing and Construction Documents Standards

<u>2.4.1 UMHC Drawing and Construction Document Standards</u>				
<u>2.4.2 Document Standards & Methods for Electronic Document Submissions</u>		January 2022		
<u>2.5 Project Estimates</u>		April 2024	<u>September 2016</u>	SID-P Project Estimates
<u>2.5.1 UMHC Projects Estimates</u>				
<u>2.6 Insurance Underwriter</u>		January 2015		
<u>2.7 Effective Date</u> Compiled Design Guidelines by Month and Year				
<u>2.8 Project Manual</u>		November 2016; Revised 8/2021		

2.2 Design Deliverables

As part of the deliverables for formal UM review at each of the major phases of design listed below, the Design Professional shall submit this “[Design Deliverables](#)” document to the University’s Design Coordinator. On the “Design Deliverables” document, the Design Professional shall indicate the status of each required item (a check mark is interpreted to mean that an item has been included in the deliverables). On or attached to the “Design Deliverables” document, the Design Professional shall address any item that is NOT included in the review package.

Note that design deliverables for the Design Development phase are to include all items listed in the Design Development column of the “Design Deliverables” table AND, except as specifically stated to the contrary in the table, all items listed in the Schematic Design column of the table (which are to have been further developed during Design Development).

Note that design deliverables for the Construction Document phase are to include all items listed in the Construction Document column of the “Design Deliverables” table AND, except as specifically stated to the contrary in the table, all items listed in the Schematic Design column and all items listed in the Design Development column of the table (which are to have been further developed during the Construction Document phase).

Provides criteria for sustainable design and LEED requirements.

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline	Other Formats	Last Update	Previous Version	Former Document
3.1 Sustainable Design and LEED Requirements		January 2025	February 2023	SID-K Sustainable Design and LEED® Requirements
3.2 Carbon Reduction and Energy and Water Conservation		May 2025	June 2024	SID-D Energy and Water Conservation
3.2.1 Energy and Water Conservation Report Format – Projects \$2M to \$10 M Construction Cost	Word Version	October 2015	July 2013	
3.2.2 Energy and Water Conservation Report Format – Projects Over \$10M	Word Version	November 2017	October 2015	
3.2.3 Energy Impact Statement	Word Version	November 2022	September 2020	
3.2.4 LCCA and Carbon Worksheet	Excel Version	October 2023	November 2022	

Guideline	Other Formats	Last Update	Previous Version	Former Document
3.3 Sustainable Products Portfolio		Retired	May 2014	SID-S Sustainable Products Portfolio
<u>3.4 Recycling Materials</u>		March 2014		SID-O Recycling Materials
<u>3.5 Waste, Recycling, and Compost</u>		March 2019		
<u>3.6 Carbon Maximum Emissions Targets</u>		November 2022		

4.0 Special Instructions to Designers

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» 4.0 Special Instructions to Designers

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline	Last Update	Previous Version	Replaces Document
4.1 Compatibility with Existing Conditions	May 2014	December 1991	SID-C Compatibility with Existing Conditions
4.2 Building Envelope	May 2025	August 2014	SID-A Building Envelope
4.3 Building Commissioning	July 2016	April 2016	SID-G Commissioning
4.3.1 Design Phase Commissioning	November 2016	October 2012	
4.3.2 MEP Design Management	November 2016	October 2012	
4.3.3 Full Construction-Phase Commissioning	September 2018	July 2016	
4.3.4 Reduced Scope Construction Phase	June 2018	July 2016	
4.3.5 Commissioning Plan Procedure	June 2018	July 2016	
4.3.6 General Commissioning Procedures	September 2018	June 2018	
4.4 Site/Civil			

Guideline	Last Update	Previous Version	Replaces Document
<u>4.4.1 Landscape</u>	December 2018	<u>January 2017</u>	SID-T Landscape Materials
<u>4.4.2 Site Furnishing Standards Manual</u>	July 2018	<u>January 2011</u>	
4.4.3 Stormwater Best Management Practices Manual	Removed January 2017	December 2010	
4.4.4 Banners			
<u>4.4.5 Site Signage</u>	February 2016		
<u>4.5 Regulated and Hazardous Materials</u>	July 2008	<u>July 2006</u>	SID-I Regulated and Hazardous Materials
<u>4.6 Utilities for University Buildings</u>	February 2026	<u>May 2020</u>	SID-J University Provided Utilities
<u>4.7 Building Access Control</u>	January 2021	<u>March 2018</u>	SID-Q Building Access Control
<u>4.8 Fall Protection on Rooftops</u>	March 2025	<u>June 2010</u>	SID-R Fall Protection on Rooftops
<u>4.9 Bird Collision Deterrence</u>	July 2023		
<u>4.10 Telecommunication Cabling System</u>	November 2023		
<u>4.11 Radon Mitigation</u>	May 2025		

5.0 Special Building Areas

Contains design criteria and design approach specific to certain building or room types.

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline	Last Update	Previous Version	Replaces Document
5.1 Office Space Guidelines (maintained by Office of Provost). The guidelines provide space-per-person recommendations by position type.			
5.1.1 MM Space Guideline	January 2015		
5.2 Animal Facilities	July 2025	September 2008	SBA-A Animal Facilities
5.3 Loading Docks	August 2014	May 2003	SBA-B Loading Docks
5.4 Telecommunication Rooms	November 2016	November 2014	SBA-C Telecommunication Rooms
5.4.1 Requirements for Telecommunications Rooms in MM Facilities			SBA-C-H: Requirements for Telecommunications Rooms in UMHC Facilities
5.5 Custodial Support Space and Infrastructure	July 2021	January 2018	SBA-D Custodial Closets
5.5.1 MM Custodial Closet at UMHC Facilities			SBA-D-H: Requirements for Custodial Closets in UMHC Facilities

Guideline	Last Update	Previous Version	Replaces Document
<u>5.6 Parking Structures</u>	December 2020 (posted March 2021)	<u>October 2009</u>	SBA-E Parking Structures
<u>5.7 Unit Sub Station Rooms</u>	January 2016	<u>January 2016</u>	SBA-F Unit Sub-Station Rooms
<u>5.8 Personal Rooms</u>	July 2020	<u>April 2016</u>	SBA-G Personal Rooms
<u>5.8.1 MM Lactation Rooms</u>			
<u>5.9 Tunnels</u>	Posted November 2021, Updated August 2021	<u>November 2015</u>	SBA-H Tunnels
<u>5.10 Gender Inclusive Rooms</u>	May 2020	<u>November 2017</u>	SBA-I Gender Inclusive Toilet/Locker Room
<u>5.10.1 MM Gender Inclusive Restrooms, Locker Rooms and Facilities</u>			
<u>5.11 Fire Command Center</u>	September 2016	<u>June 2015</u>	SBA-J Fire Command Center
<u>5.12 Lab Design and Safety</u>	December 2014		
<u>5.13 MM Healthcare Procedure Room Infection Control Types and Requirements</u>			SBA-K-H Healthcare Procedure Room Infection Control Types And Requirements
<u>5.14 MM Patient Care and Support Spaces Room Type Requirements</u>			SBA-L-H Patient Care And Support Spaces Room Type Requirements

Guideline	Last Update	Previous Version	Replaces Document
<u>5.15 MM Patient and Staff Protection: Falls, Bariatrics, Low Vision, Ergonomics</u>			SBA-M-H: UMHC Patient and Staff Protection: Falls, Bariatrics, Low Vision, Ergonomics
<u>5.16 MM Requirements for Critical Pressure Sensitive Rooms</u>			
<u>5.17 MM Requirements for Pharmaceutical Drug Compounding Areas</u>			
<u>5.18 Conference Rooms</u>	June 2022		
<u>5.19 MM Behavioral Health Design Guideline</u>	June 2023		
<u>5.20 UMH HEALTHCARE INSTRUMENT PROCESSING REQUIREMENTS</u>	January 2025		

6.0 Technical Requirements

Technical Sections (CSI Divisions 1 –14, 21–23, 26–28, 31–33) contain system specific design criteria and design approach.

For University of Michigan Hospitals and Health Centers (UMHHC) funded projects, click [here](#) for a list of Technical Requirements specific to work at UMHHC.

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline
6.1 Architectural
6.2 Mechanical
6.3 Electrical
6.4 Site/Civil

6.1 Architectural

1 General Requirements

Guideline	Last Update	Previous Version
013100 Coordination	July 2014	
013639 Tree Preservation	May 2020	
017329 Roofing Materials Cutting and Patching	July 2020	
017823 Operations, Maintenance and Training	February 2008	

3 Concrete

Guideline	Last Update	Previous Version
033000 Concrete	July 2014	

4 Masonry

Guideline	Last Update	Previous Version
042000 Unit Masonry	March 2014	

5 Metals

Guideline	Last Update	Previous Version
051000 Metals	May 2014	

6 Wood And Plastics

Guideline	Last Update	Previous Version

7 Thermal And Moisture Protection

Guideline	Last Update	Previous Version
072700 Air Barriers	Replaced by Building Envelope	
075000 Roofing Systems and Accessories	May 2026	June 2020
078413 Firestopping	July 2014	
079200 Joint Sealant	June 2014	

8 Doors And Windows

Guideline	Last Update	Previous Version
081113 Hollow Metal Doors and Frames	October 2014	

Guideline	Last Update	Previous Version
<u>081416 Flush Wood Doors</u>	July 2014	
08370 Frames, Power Operated Doors	Removed October 2014 and incorporated into 081113 Hollow Metal Doors and Frames and 087100 Finish Hardware	
<u>084113 Aluminum Framed Entrance and Storefront Systems</u>	January 2012	
<u>084413 Glazed Aluminum Curtain Wall</u>	November 2011	
<u>085113 Aluminum Windows</u>	August 2025	<u>January 2012</u>
<u>087100 Finish Hardware</u>	November 2023	
<u>088000 Glazing</u>	May 2026	<u>January 2023</u>

9 Finishes

Guideline	Last Update	Previous Version
<u>092116 Gypsum Board Assemblies</u>	January 2014	
<u>093000 Ceramic Tile and Waterproofing</u>	February 2024	
<u>095100 Acoustic Ceilings</u>	November 2017	
<u>096229 Cork Flooring</u>	May 2014	
<u>096500 Resilient Flooring</u>	May 2015	

Guideline	Last Update	Previous Version
099100 Low-Emitting Paint And Coating Products	Removed July 2020. This information is now covered sufficiently by LEED and industry standard.	

10 Specialties

Guideline	Last Update	Previous Version
101400 Signage	February 2026	April 2025
102113 Toilet Compartments	May 2022	
102800 Toilet Accessories	June 2025	January 2025
104400 Fire Extinguishers	September 2014	

11 Equipment

Guideline	Last Update	Previous Version
115313 Laboratory Fume Hoods, Bsc’s, Specialty Hoods And Acid Flammable Cabinets	July 2011	

12 Furnishings

Guideline	Last Update	Previous Version
122000 Window Treatment	March 2014	
123553 Laboratory Casework	May 2015	

13 Special Construction

Guideline	Last Update	Previous Version
<u>132100 Controlled Environment Rooms</u>	September 2014	

14 Conveying Systems

Guideline	Last Update	Previous Version
<u>140000 Conveying Systems – General Requirements</u>	December 2023	
144200 Wheelchair Lifts	Request from Designer	

6.2 Mechanical

21 Fire Protection

Guideline	Last Update	Previous Version	Replaces
210000 Fire Protection	March 2015	May 2003	15300 Fire Protection

22 Plumbing

Guideline	Last Update	Previous Version	Replaces
220000 Plumbing Design	April 2014	July 1992	15450 Domestic Hot Water 15455 Water Booster Pumps
220010 Plumbing Specialties	April 2026	December 2021	15430 Plumbing Specialties
220020 High Purity Water Systems	December 2005	July 1990	15460 High Purity Water Systems
220513 Motors	September 2012	April 2009	15170 Motors
220514 Variable Frequency Drives	January 2025	November 2008	15960 Variable Frequency Drives
220519 Thermometers and Gauges	April 2014	May 2003	15130 Thermometers and Gauges
220523 Valves	September 2021	April 2014	15100 Valves

Guideline	Last Update	Previous Version	Replaces
220553 Mechanical Identification and Painting	January 2025	April 1995	15190 Mechanical Identification and Painting
220719 Mechanical Insulation	Posted June 2020, Revised March 2019	April 1995	15250 Mechanical Insulation
221113 Basic Piping Materials and Methods	October 2025	August 2025	15060 Basic Piping Materials and Methods 15140 Pipe Hangers

23 HVAC

Guideline	Last Update	Previous Version	Replaces
230000 Basic Mechanical Requirements	June 2013	January 2001	15010 Basic Mechanical Requirements
230010 HVAC Design	June 2013		15070 HVAC Design
230011 Fans and Accessories	September 2012	July 1990	15870 Fans and Accessories
230012 Air Filters	September 2022	May 2007	15885 Air Filters
230013 Air Handling Units	September 2022	April 2014	15855 Air Handling Units 15850 Air Blending Devices
230014 Packaged Roof Top Air Conditioning Units	August 2024	May 2003	15780 Packaged Roof Top Air Conditioning Units
230015 Fan Coil Units and Blower Coil Units	April 2014	May 2003	15830 Fan Coil Units and Blower Coils Units

Guideline	Last Update	Previous Version	Replaces
<u>230016 Computer Room Air Conditioning</u>	April 2014	<u>March 2004</u>	15785 Computer Room Units
<u>230017 Window Air Conditioning Units</u>	July 1990		15784 Window Air Conditioning Units
<u>230020 Duct System Design</u>	September 2008	<u>February 2007</u>	15890 Duct System Design
<u>230021 Terminal Air Flow Units</u>	March 2009		15896 Terminal Air Flow Units
<u>230022 Grills, Registers, Diffusers and Air Balancing Accessories</u>	April 1991		15880 Grills, Registers, Diffusers and Air Balancing Accessories
<u>230030 Laboratory Ventilation Design</u>	June 2025	<u>January 2025</u>	15910 Laboratory Ventilation
<u>230040 Hydronic Systems and Specialties</u>	May 2003	<u>February 1999</u>	15515 Hydronic Systems and Specialties
<u>230041 Pumps</u>	January 2025	<u>October 2005</u>	15160 Pumps
<u>230050 Chilled Water Systems</u>	January 2025	<u>November 2018</u>	15680 Chilled Water Systems
230051 Water Chillers	Retired November 2018	<u>October 2005</u>	15681 Water Chillers
230052 Cooling Towers	Retired November 2018	<u>May 2003</u>	15710 Cooling Towers
<u>230060 Mechanical Sound & Vibration Control</u>	March 2004	<u>July 1992</u>	15240 Mechanical Sound & Vibration Control

Guideline	Last Update	Previous Version	Replaces
<u>230593 Testing, Adjusting and Balancing</u>	September 2008		15990 Testing, Adjusting and Balancing
<u>230900 Mechanical Systems Controls</u>	November 2020	<u>August 2015</u>	15975 Mechanical Systems Controls
230930 Refrigerant Monitoring System	Retired November 2018	<u>August 2015</u>	
<u>232216 Steam Specialties</u>	April 1991		15525 Steam Specialties
<u>235000 Hot Water Heating Systems</u>	July 2017		

6.3 Electrical

26 Electrical

Guideline	Last Update	Previous Version	Replaces
260500 Common Work Results for Electrical	February 2016	October 2013	16010 Basic Electrical Requirements
260513 Medium, Low and Control Voltage Cables	March 2014	September 2000	16120 Wires and Cables
260526 Grounding and Bonding for Electrical	March 2014	March 2005	16450 Grounding
260533 Electrical Materials and Methods	March 2014	October 2002	16050 Basic Electrical Materials and Methods
260543 Underground Services for Electrical Systems	February 2019	October 2014	16110 Underground Electrical Service
260800 Electrical Acceptance Tests	March 2014	May 2009	16950 Electrical Acceptance Tests
260933 Lighting Dimming Controls	March 2014		16550 Lighting Controls Systems
261000 Medium Voltage Electrical Distribution	April 2019	December 2015	16305 High Voltage Distribution
261010 Electrical Power Systems	March 2014	September 2000	16300 Electrical Power Systems

Guideline	Last Update	Previous Version	Replaces
<u>261100 Unit Substations</u>	February 2023	<u>July 2018</u>	16310 Unit Substations
<u>262000 Low Voltage Electrical Distribution</u>	March 2014		16400 Service and Distribution
<u>262726 Wiring Devices</u>	March 2014		16140 Wiring Devices
<u>262900 Motor Controls</u>	March 2014		16480 Motor Controls
<u>262923 Variable Frequency Drives</u>	March 2014	<u>July 1994</u>	16156 Variable Speed Drives
<u>262940 Heating Cables and Mats</u>	March 2014		16850 Heating Cables and Mats
<u>263000 Engine-Generator System</u>	March 2016	<u>March 2014</u>	16231 Engine-Generator System
<u>263100 Photovoltaic-Energy Equipment</u>	February 2026		
<u>264100 Lightning Protection</u>	March 2014	<u>April 2006</u>	16670 Lightning Protection System
<u>265100 Interior Lighting</u>	June 2018	<u>September 2017</u>	16511 Interior Lighting
<u>265600 Exterior Lighting</u>	February 2015	<u>May 2008</u>	16521 Outdoor Lighting

27 Communications

Guideline	Last Update	Previous Version	Replaces
<u>272000 Voice and Data Communications</u>	August 2024	<u>March 2014</u>	16740 Telecommunications System
<u>273523 Emergency Responder Radio Coverage</u>	February 2020	<u>November 2014</u>	16760 Special Communications Systems
<u>273524 CPSR Cellular Phone Signal Reinforcement</u>	June 2022		
<u>275313 Clock Systems</u>	March 2014	<u>September 2000</u>	16730 Clock System

28 Electronic Safety And Security

Guideline	Last Update	Previous Version	Replaces
<u>281600 Security Systems</u>	March 2014	July 1990	16725 Security System
<u>283100 Fire Detection and Alarm</u>	October 2017	<u>February 2016</u>	16720 Fire Alarm System

6.4 Site/Civil

31 Earthwork

Guideline	Last Update	Previous Version	Replaces
310000 Sitework	January 2017	November 2010	020000 Sitework
312500 Soil Erosion and Sedimentation Control	January 2017	November 2010	02215 Soil Erosion and Sedimentation Control

32 Exterior Improvements

Guideline	Last Update	Previous Version	Replaces
321000 Walks, Roads and Parking Paving	January 2017	November 2010	02510 Walks, Roads and Parking Paving
321723 Pavement Markings	Posted November 2021, updated August 2021		
328400 Irrigation	December 2018	November 2010	02810 Automatic Lawn Irrigation

33 Utilities

Guideline	Last Update	Previous Version	Replaces
331000 Water Supply Systems	April 1995		02665 Water Supply Systems
334443 Vortex-Type Hydrodynamic Separators	September 2020		

7.0 Master Specifications

This section of the U-M Design Guidelines Website contains guide Master Specifications for the design and construction of facilities at the University of Michigan. The U-M Master Specifications were developed by Architecture and Engineering, for projects designed by our in-house design staff. They are maintained by roughly the same group that maintains the Design Guidelines Technical Sections. At this time we allow A/Es to use their own master specification, but strongly encourage them to use our Master Specification as a guide. Certain Design Guideline Technical Sections require that a related U-M Master Specification section be used as the basis for the A/Es project specific specification.

In all cases when U-M Master Specifications are used they must be edited as required to be made project specific. The Master Specifications include extensive hidden notes to the designer, which should be deleted prior to issuing for bid. The Master Specification is divided by CSI Division. Most sections are available in both Acrobat (pdf) and Word (doc) format.

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline
7.1 Architectural
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7.1 Architectural

Master Specifications are provided as Microsoft Word documents which open in Microsoft Office Live. Once opened in Office Live, they can be downloaded or printed to PDF via the document icon menu in the lower right corner of the browser window.

Division 01 General Requirements

Master Specification	Last Revision
Division 01 General Requirements 011000 Summary	July 2026
011400 Work Restrictions	
012100 Allowances	
012200 Unit Prices	
012300 Alternates	
013100 Project Management And Coordination	
013200 Construction Progress Documentation	
013220 – Photographic Documentation	July 2022
013300 Submittal Procedures	
013500 Special Procedures for Fire Marshal Review and Inspection	
014200 References	

Master Specification	Last Revision
015000 Temporary Facilities And Controls	
015639 Temporary Tree and Plant Protection	
015719 Construction Air Quality	
016000 Product Requirements	
017300 Execution	
017329 Cutting And Patching	
017700 Closeout Procedures	
017823 Operation And Maintenance Manuals	
019100 Project Commissioning	

Division02 Existing Conditions

Master Specification	Last Revision
<u>024119 Selective Demolition</u>	August 2017
<u>028110 Regulated Construction Waste Remediation</u>	August 2019
<u>028213 Asbestos Remediation</u>	July 2026
<u>028214 Asbestos Remediation – Floor Tile and Mastic</u>	July 2026
<u>028215 Asbestos Remediation – Roofing Material</u>	July 2026
<u>028300 Lead Remediation</u>	August 2017

Master Specification	Last Revision
<u>028333 Lead Remediation – Renovation, Repair and Painting in Child-Occupied Facilities and Target Housing</u>	August 2017
<u>028400 PCB Remediation</u>	August 2017

Division03 Concrete

Master Specification	Last Revision
<u>033053 Miscellaneous Cast-In-Place Concrete</u>	November 2023
<u>035416 Hydraulic Cement Underlayment</u>	July 2015
<u>037300 Tunnels Concrete Restoration</u>	November 2023

Division04 Masonry

Master Specification	Last Revision
042000 Unit Masonry – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>042010 Unit Masonry Assemblies (Limited Applications).</u>	September 2025

Division05 Metals

Master Specification	Last Revision
051200 Structural Steel Framing – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>053100 Steel Decking</u>	December 2012

Master Specification	Last Revision
<u>055000 Metal Fabrications</u>	December 2012
055800 Formed-Metal Fabrications – Removed June 3, 2020, no longer internally maintained.	December 2012

Division06 Woods, Plastics And Composites

Master Specification	Last Revision
<u>061000 Rough Carpentry</u>	December 2012
<u>064023 Interior Architectural Woodwork</u>	December 2012

Division07 Thermal And Moisture Protections

Master Specification	Last Revision
<u>071025 Utility Tunnel Waterproofing</u>	January 2022
<u>075316 Chlorosulfonate-Polyethylene (CSPE) Roofing</u>	December 2012
<u>075323 Ethylene-Propylene-Diene-Monomer (EPDM) Roofing</u>	November 2022
<u>078413 Penetration Firestopping</u>	December 2012
<u>079200 Joint Sealants</u>	December 2012

Division08 Openings

Master Specification	Last Revision
<u>081113 Hollow Metal Doors and Frames</u>	April 2022
<u>081416 Flush Wood Doors</u>	December 2012
<u>083113 Access Doors and Frames</u>	May 2014
083313 Coiling Counter Doors – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>084113 Aluminum-Framed Entrances and Storefronts</u>	May 2013
084413 Glazed Aluminum Curtain Walls – Removed June 3, 2020, no longer internally maintained.	March 2013
085113 Aluminum Windows – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>087100 Door Hardware</u>	November 2017
088000 Glazing (exterior) – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>088010 Glazing (Interior Applications)</u>	December 2012
<u>089000 Louvers and Vents</u>	December 2012

Division09 Finishes

Master Specification	Last Revision
<u>092116 Gypsum Board Assemblies</u>	September 2025

Master Specification	Last Revision
092300 Gypsum Plastering – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>093000 Tiling</u>	December 2012
093033 Stone Tiling – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>095100 Acoustical Ceilings</u>	September 2016
096466 Wood Athletic Flooring – Removed June 3, 2020, no longer internally maintained.	September 2016
<u>096500 Resilient Flooring</u>	September 2016
096723 Resinous Flooring – Removed June 3, 2020, no longer internally maintained.	September 2016
<u>096813 Tile Carpeting</u>	September 2016
<u>096816 Sheet Carpeting</u>	September 2016
098433 Sound Absorbing Wall Units – Removed June 3, 2020, no longer internally maintained.	September 2016
<u>099100 Painting</u>	September 2025
099110 Electrostatically Applied Coating – Removed June 3, 2020, no longer internally maintained.	December 2012
099310 Wood Floor Finish – Removed June 3, 2020, no longer internally maintained.	September 2016

Division10 Specialties

Master Specification	Last Revision
<u>101100 Visual Display Units</u>	September 2016

Master Specification	Last Revision
101400 Signage – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>102113 Toilet Compartments</u>	September 2016
102213 Wire Mesh Partitions – Removed June 3, 2020, no longer internally maintained.	December 2012
102239 Folding Panel Partitions – Removed June 3, 2020, no longer internally maintained.	September 2016
<u>102800 Toilet and Bath Accessories</u>	June 2025
<u>104400 Fire Protection Specialties</u>	June 2015
105113 Metal Lockers – Removed June 3, 2020, no longer internally maintained.	December 2012

Division 11 Equipment

Master Specification	Last Revision
115213 Projection Screens – Removed June 3, 2020, no longer internally maintained.	December 2012
115300 Laboratory Equipment – Removed June 3, 2020, no longer internally maintained.	December 2012
<u>115313 Laboratory Fume Hoods</u>	December 2013
<u>115314 Fume Hood Refurbishment</u>	December 2012

Division12 Furnishings

Master Specification	Last Revision
<u>122000 Window Treatment</u>	May 2013
<u>122200 Curtains and Drapes</u>	December 2012
<u>123553 Laboratory Casework</u>	May 2013
124600 Furnishing Accessories – Removed June 3, 2020, no longer internally maintained.	December 2012
124813 Entrance Floor Mats and Frames – Removed June 3, 2020, no longer internally maintained.	December 2012

Division13 Special Construction

Master Specification	Last Revision
<u>132100 Controlled Environment Rooms</u>	May 2013

Division14 Conveying Equipment

Master Specification	Last Revision
<u>142100 Electric Traction Elevator</u>	December 2023
<u>142216 Wheelchair Lifts</u>	December 2023
<u>142400 Hydraulic Elevators</u>	December 2023

7.2 Mechanical

Division 21 Fire Suppression

PDF Version	Word Version	Last Revision	Replaces Section
211313 Wet and Dry Pipe Sprinkler Systems	Word Document	August 2018	15300
213113 Fire Pumps	Word Document	December 2012	15320

Division 22 Plumbing

PDF Version	Word Version	Last Revision	Replaces Section
220500 Common Work Results for Mechanical	Word Document	August 2017	15010
220513 Motors	Word Document	October 2016	15170
220514 Variable Frequency Drives	Word Document	January 2021	15960
220514A Variable Frequency Drives(Constant Torque).	Word Document	June 2025	
220516 Pipe Expansion Joints	Word Document	October 2022	15125

PDF Version	Word Version	Last Revision	Replaces Section
<u>220519 Thermometers, Pressure Gauges & Accessories</u>	<u>Word Document</u>	January 2021	15130
<u>220523 Valves</u>	<u>Word Document</u>	April 2024	15100
<u>220533 Heat Tracing for Piping</u>	<u>Word Document</u>	December 2020	15128
<u>220548 Vibration Control</u>	<u>Word Document</u>	January 2019	15240
<u>220553 Mechanical Identification</u>	<u>Word Document</u>	April 2024	15190
<u>220719 Mechanical Systems Insulation</u>	<u>Word Document</u>	November 2022	15250
<u>221113 Piping Materials & Methods</u>	<u>Word Document</u>	October 2025	15060
<u>221119 Domestic Water Piping Specialties</u>	<u>Word Document</u>	April 2018	15411
<u>221123 Domestic Water Booster Pumps</u>	<u>Word Document</u>	January 2014	15412
<u>221319 Drainage Specialties</u>	<u>Word Document</u>	November 2021	15420
<u>221333 Packaged Submersible Storm and Sanitary Pumps</u>	<u>Word Document</u>	December 2012	
<u>221500 Compressed Air Accessories</u>	<u>Word Document</u>	April 2018	15481
<u>223116 Water Softener</u>	<u>Word Document</u>	April 2024	15455

PDF Version	Word Version	Last Revision	Replaces Section
224200 Plumbing Fixtures	Word Document	March 2023	15440
226313 Medical Gas Certification (Hospital Projects)	Word Document	December 2016	15482

Division 23 HVAC

PDF Version	Word Version	Last Revision	Replaces Section
230593 Testing Adjusting & Balancing (TAB)	Word Document	June 2025	15990
230900 Mechanical Systems Controls	Word Document	May 2024	15975
230901 Mechanical Systems Controls TURNKEY	Word Document	June 2023	
230905 Mechanical Systems Controls (Hospital Projects)	Word Document	July 2026	
230910 VAV/Combination Sash Fume Hood Laboratory Controls-DDC	Word Document	June 2021	15912
230920 Lab Terminal Air Flow Units & Controls	Word Document	June 2015	15910
230930 Refrigerant Detection & Alarm	Word Document	November 2018	15635

PDF Version	Word Version	Last Revision	Replaces Section
<u>231113 Fuel Oil Systems</u>	<u>Word Document</u>	December 2012	15483
<u>231123 Facility Natural Gas Piping</u>	<u>Word Document</u>	June 2025	15488
<u>232116 Hydronic Piping Specialties</u>	<u>Word Document</u>	January 2023	15515
<u>232123 Plumbing and Hydronic Pumps</u>	<u>Word Document</u>	April 2018	15160
<u>232216 Steam & Condensate Piping Specialties</u>	<u>Word Document</u>	December 2012	15525
<u>232300 Refrigerant Piping</u>	<u>Word Document</u>	April 2018	15530
<u>232513 Chemical Water Treatment – Closed Loop</u>	<u>Word Document</u>	February 2026	15189
<u>232516 – Chemical Water Treatment – Open Loop Systems</u>	<u>Word Document</u>	February 2026	
<u>232519 Steam Boiler Chemical Water Treatment</u>	<u>Word Document</u>	December 2012	15188
<u>233100 HVAC Ducts & Casings</u>	<u>Word Document</u>	June 2025	15890
<u>233300 Air Duct Accessories & RGDs</u>	<u>Word Document</u>	June 2025	15895
<u>233400 Fans</u>	<u>Word Document</u>	June 2025	15870
<u>233600 Air Terminal Units</u>	<u>Word Document</u>	January 2024	15896

PDF Version	Word Version	Last Revision	Replaces Section
<u>234000 HVAC Air Cleaning Devices</u>	<u>Word Document</u>	June 2025	15885
<u>235100 Breechings, Chimneys & Stacks</u>	<u>Word Document</u>	April 2018	15575
<u>235150 Venting Systems For Specialty Gas Fired Appliances</u>	<u>Word Document</u>	October 2023	
<u>235239 Fire Tube Boilers (Hot Water)</u>	<u>Word Document</u>	October 2023	15557
<u>235240 Fire Tube Boilers (Steam)</u>	<u>Word Document</u>	April 2018	15558
<u>235300 Heating Boiler Feed Water & Blow-down Equip</u>	<u>Word Document</u>	December 2012	15559
<u>235716 Steam-To-Water Heat Exchangers</u>	<u>Word Document</u>	November 2022	
<u>235719 Plate Type Liquid to Liquid Heat Exchanger</u>	<u>Word Document</u>	January 2014	
<u>236416 Centrifugal Water Chillers</u>	<u>Word Document</u>	February 2013	15684
<u>236500 Cooling Towers</u>	<u>Word Document</u>	March 2013	15710
<u>237213 Rotary Air-to-Air Energy Recovery Wheels</u>	<u>Word Document</u>	January 2024	
<u>237323 Custom Air Handling Units</u>	<u>Word Document</u>	June 2025	15854

PDF Version	Word Version	Last Revision	Replaces Section
237324 Semi-Custom Air Handling Units	Word Document	January 2024	15855
238200 Terminal Heating Units – Hot Water	Word Document	February 2022	
238216 Coils and Drain Pans	Word Document	June 2025	15820
238219 Floor Mounted Fan Coil Units (Un-ducted).	Word Document	January 2020	15763
238220 Horizontal Fan Coil Units	Word Document	August 2020	15764
238221 Blower Coil Units	Word Document	August 2020	15765
238245 Chilled Beams	Word Document	October 2022	
238413 Steam Humidifiers	Word Document	June 2025	15810

Division 25 Integrated Automation

PDF Version	Word Version	Last Revision	Replaces Section
250000 INTEGRATED AUTOMATION (HOSPITAL PROJECTS).	Word Document	April 2026	MS230924

7.3 Electrical

Division 26 Electrical

PDF Version	Word Version	Last Revision	Replaces Section
260500 Common Work Results for Electrical	Word Document	April 2016	16010
260513 Medium, Low & Control Voltage Cables	Word Document	November 2014	16120
260526 Grounding & Bonding for Electrical	Word Document	December 2012	16450
260533 Electrical Materials & Methods	Word Document	April 2026	16050
260543 Underground Services for Electrical Systems	Word Document	March 2014	16110
260800 Electrical Acceptance Tests	Word Document	December 2022	16950
261000 Medium Voltage Electrical Distribution	Word Document	December 2012	16300
261100 Unit Substations	Word Document	November 2023	16313 16315 16316
261102 Installation of Pre-Purchased Unit Substations	Word Document	December 2012	16314

PDF Version	Word Version	Last Revision	Replaces Section
262000 Low Voltage Electrical Distribution	Word Document	March 2019	16400
262726 Wiring Devices	Word Document	July 2024	16140
262900 Motor Controls	Word Document	August 2013	16480
263000 Engine-Generator System	Word Document	November 2024	16231
263323 Central Battery Inverters	Word Document	September 2020	
263353 Static Uninterruptible Power Supply	Word Document	February 2021	
264313 Surge Protection For Low-Voltage Electrical Power Circuits	Word Document	July 2020	
265100 Interior Lighting	Word Document	June 2015	16511
265600 Exterior Lighting	Word Document	September 2025	16521

Division 27 Communications

PDF Version	Word Version	Last Revision	Replaces Section
272000 Voice & Data Communications	Word Document	August 2024	16740
275313 Clock Systems	Word Document	January 2019	16730

Division 28 Electronic Safety And Security

PDF Version	Word Version	Last Revision	Replaces Section
<u>281300 Access Control & Monitoring System</u>	<u>Word Document</u>	April 2026	16727
<u>281600 Security Systems</u>	<u>Word Document</u>	December 2012	16724
<u>283100 Fire Detection and Alarm System</u>	<u>Word Document</u>	September 2022	16720 16720AA
<u>283102 Fire Detection and Alarm System (Hospital Projects)</u>	<u>Word Document</u>	September 2013	16720-H

Division 31 Earthwork

PDF Version	Word Version	Last Revision	Replaces Section
312000 Earth Moving	Word Document	December 2012	02300
312323 Fill	Word Document	December 2012	02315
312326 Flowable Fill	Word Document	December 2012	02310
312500 Erosion and Sedimentation Controls	Word Document	January 2017	02215

Division 32 Exterior Improvements

PDF Version	Word Version	Last Revision	Replaces Section
329210 Lawn Repair	Word Document	December 2012	02935

Division 33 Utilities

PDF Version	Word Version	Last Revision	Replaces Section
331100 Water Distribution Piping	Word Document	July 2017	
333100 Sanitary Sewer	Word Document	June 2017	
334100 Storm Utility Drainage	Word Document	February 2017	
336100 Hydronic Utilities	Word Document	November 2018	
336200 QA/QC for Tunnel Projects	Word Document	January 2022	

PDF Version	Word Version	Last Revision	Replaces Section
<u>336313 Underground Steam and Condensate Distribution Piping</u>	<u>Word Document</u>	January 2022	
<u>336330 Utility Tunnels – Steam & Condensate Distribution Systems</u>	<u>Word Document</u>	January 2026	
<u>336333 Thermal Energy Utility Metering</u>	<u>Word Document</u>	January 2026	

Preferred List of Manufacturers (PML) contains specific manufacturers that are acceptable for use on U-M projects. This section is divided by CSI number. When the A/E uses U-M Master Specifications for a project, adding manufacturers from the PML as approved manufacturers in the specification is optional.

For U-M Health funded projects, refer to the [U-M Health Preferred Manufacturers Lists](#).

[Preferred Manufacturers List General Procedures](#)

[Request for Addition or Change of Listing to U-M Preferred Manufacturers List](#)

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline	Last Update	Replaces Document
8.1 Substitutions	February 2015	SID-E Substitutions
8.2 Architectural	April 2024	
8.3 Mechanical	July 2022	
8.4 Electrical	August 2025	
8.5 Site/Civil		

[U-M Design Guidelines Technical Committees, Committee Chairs and Email Addresses](#)

9.0 Standard Details and Schedules

Standard Details express typical University requirements, and thus should be used in place of the equivalent A/E detail. Professional judgement is required to make Standard Details project specific.

For University of Michigan Hospitals and Health Centers (UMHHC) funded projects, click [here](#) for a list of Technical Requirements specific to work at UMHHC.

If you have trouble accessing a document, please contact the [DG Editor](#) for assistance.

Guideline
9.1 Architectural
9.2 Mechanical
9.3 Electrical
9.4 Site/Civil

9.1 Architectural

9.1 Architectural

Architectural Design Details, Schedules and Tables	Last Revision
SBA 5.5 Proposed Layout Custodial Room	January 2018
SBA 5.5 Proposed Layout Custodial Suite	January 2018

9.2 Mechanical

Master Details for metering are located under 9.4 Site/Civil.

Section 211313 – Wet And Dry Pipe Sprinkler Systems (15300)

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 2211313 001 Fire Service System	January 2014	PDF	Microstation	AutoCAD
MT 221113 001 Piping System Pressure Test	July 2002	PDF	Microstation	AutoCAD
MD 211313 002 Fire Pump System	March 2013	PDF	Microstation	AutoCAD

Section 220020 – High Purity Water Systems

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 220020 001 High Purity Water System	July 2019	PDF	Microstation	AutoCAD

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 220020 002 RO MakeUP System Clean Steam humid	July 2019	PDF	Microstation	AutoCAD
MD 220020 003 Water Softener for Boilers	July 2019	PDF	Microstation	AutoCAD

Section 220516 – Pipe Expansion Joints (15125)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 220516 001 DHW Expansion Joint	March 2007	PDF	Microstation	AutoCAD
MS 220516 001 Expansion Joint	July 2009	PDF	Microstation	AutoCAD

Section 220519 – Thermometers, Pressure Gauges & Accessories (15130)

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 220519 001 Thermometer	May 2004	PDF	Microstation	AutoCAD
MD 220519 002 Pressure Gauge	May 2004	PDF	Microstation	AutoCAD

Section 220523 – Valves (15100)

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 220523 001 DHW Valve	February 2009	PDF	Microstation	AutoCAD
MD 220523 002 Companion Flange	September 2007	PDF	Microstation	AutoCAD

Section 220719 – Mechanical Systems Insulation (15250)

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 220719 001 Steam Insulation Jacket	September 2007	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>
MD 220719 002 DHW Insulation Jacket	September 2007	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>
MD 220719 003 Duct Blanket Fiberglass	December 2003	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>

Section 221119 – Domestic Water Piping Specialties (15411)

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 221119 001 Domestic Water System Service	March 2013	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>

Section 230900 – Mechanical

Systems Controls (15975)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 230900 001 Differential Pressure Transmitter Liquid	October 2020	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>
MD 230900 002 DDC Panel Assembly	October 2020	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>
MD 230900 003 Mechanical Controls Symbols	September 2020	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>
MD 230900 004 Mechanical Controls Blocks	September 2020	<u>PDF</u>	<u>Microstation</u>	<u>AutoCad</u>
MD 230900 005 Vivarium Non-Holding Room Control Drawing	February 2021	<u>PDF</u>	<u>Microstation</u>	<u>AutoCad</u>
MD 230900 006 Vivarium Surgery Room Control Drawing	February 2021	<u>PDF</u>	<u>Microstation</u>	<u>AutoCad</u>
MD 230900 007 Vivarium Cage Wash Room Control Drawing	February 2021	<u>PDF</u>	<u>Microstation</u>	<u>AutoCad</u>

Section 230920 – Lab Terminal

Air Flow Units & Controls

(15910)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 230920 001 Typical Lab DDC Architecture	June 2016	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>

Section 230930 – Refrigerant

Detection & Alarm (15635)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 230930 001 Refrigerant Monitor Control	August 2015	<u>PDF</u>	<u>Microstation</u>	<u>AutoCAD</u>

Section 232116 – Hydronic Piping Specialties (15515)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 232116 001 Water System Air Vent	June 2004	PDF	Microstation	AutoCAD
MD 232116 002 Coalescing Separator	November 2012	PDF	Microstation	AutoCAD

Section 232123 – Plumbing And Hydronic Pumps (15160)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 232123 001 End Suction Pump Installation	August 2025	PDF	Microstation	AutoCAD
MD 232123 002 Pump Base	September 2024	PDF	Microstation	AutoCAD
MD 232123 003 Vertical Split Case Pump	November 2012	PDF	Microstation	AutoCAD
MD 232123 004 Inline Pump and Piping	August 2025	PDF	Microstation	AutoCAD

Section 232216 – Steam & Condensate Piping Specialties (15525)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 232216 001 F&T Steam Trap Assembly	November 2009	PDF	Microstation	AutoCAD
MD 232216 002 Bucket Steam Trap Assembly	November 2009	PDF	Microstation	AutoCAD

Section 232513 – Chemical Water Treatment – Closed Loop (15189)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 232513 001 Glycol Feed System	March 2012	PDF	Microstation	AutoCAD
MD 232513 002 Closed System Makeup	October 2017	PDF	Microstation	AutoCAD
MD 232513 003 Closed System Shot Feeder	November 2018	PDF	Microstation	AutoCAD

Section 233600 – Air Terminal Units (15896)

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 233600 001 Draw Thru Coil Condensate Drain	May 2004	PDF	Microstation	AutoCAD
MD 233600 002 Blow Thru Coil Condensate Drain	May 2004	PDF	Microstation	AutoCAD
MS 236416 002 Air Cooled Chiller	January 2003	PDF	Microstation	AutoCAD
MD 233600 003 HWH Duct-Mounted Reheat Coil	December 2023	PDF	Microstation	AutoCAD
MD 233600 004 Supply Air DDC TAU Clearance	July 2009	PDF	Microstation	AutoCAD

Section 233660 – Up-Feed Hot Water Fin-Tube Piping

Mechanical Details (MD– Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 233660 008 Up-Feed Hot Water Fin-Tube Piping	December 2020	PDF	Microstation	AutoCAD

Section 233660 – Down-Feed

Hot Water Fin-Tube Piping

Mechanical Details (MD-Master Detail, MS-Master Schedule, MT-Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 233660 012 Down-Feed Hot Water Fin-Tube Piping	December 2020	PDF	Microstation	AutoCAD
MS 235240 001 Steam Boiler	April 2003	PDF	Microstation	AutoCAD
MS 235300 001 Preheat Boiler Feed Unit and Pump	April 2003	PDF	Microstation	AutoCAD

Section – 235716 Steam To Water Heat Exchanger

Mechanical Details (MD-Master Detail, MS-Master Schedule, MT-Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 235716 001 Critical Steam to Water Heat Exchanger P & ID	November 2019	PDF	Microstation	AutoCAD
MD 235716 002 Non-Critical Steam to Water Heat Exchanger P & ID	November 2019	PDF	Microstation	AutoCAD
MD 235716 002 Water Cooled Chiller VSD Filter Manifold	August 2022	PDF	Microstation	AutoCAD

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 235716 003 Steam to Water Heat Exchanger Piping Detail	February 2017	PDF	Microstation	AutoCAD

Section 236416 – Centrifugal Water Chillers (15684)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 236416 001 Electric Drive Water Cooled Chiller	September 2024	PDF	Microstation	AutoCAD
MS 236416 001 Electric Water Cooled Centrifugal Screw Scroll Chiller	January 2003	PDF	Microstation	AutoCAD

Section 236500 – Cooling Towers (15710)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 236500 001 Cooling Tower LPS Freeze Protection	April 2007	PDF	Microstation	AutoCAD

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 236500 002 Seasonal Tower Piping	November 2007	PDF	Microstation	AutoCAD
MD 236500 003 Condenser Water Treatment Equip	May 2013	PDF	Microstation	AutoCAD
MS 236500 001 Cooling Tower	April 2007	PDF	Microstation	AutoCAD
MD 236500 004 Cooling Tower Schematic	December 2019	PDF	Microstation	AutoCAD

Section – 238216 Coils And Drain Pans (15820)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 238216 001 HWH Stacked Coil	June 2006	PDF	Microstation	AutoCAD
MD 238216 002 HWH Stacked Coil w_Mixing Valve	June 2006	PDF	Microstation	AutoCAD
MD 238216 003 CHW Stacked Coil	June 2006	PDF	Microstation	AutoCAD
MD 238216 004 CHW Stacked Coil w_Mixing Valve	June 2006	PDF	Microstation	AutoCAD

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 238216 005 STM Stacked Coil	June 2003	PDF	Microstation	AutoCAD
MD 238216 006 HWH Stacked Coil (pumped)	July 2021	PDF	Microstation	AutoCAD
MD 238216 007 HWH Single Coil (pumped)	July 2021	PDF	Microstation	AutoCAD
MD 238216 008 CWH Stacked Coil (pumped)	July 2021	PDF	Microstation	AutoCAD
MD 238216 009 CWH Single Coil (pumped)	July 2021	PDF	Microstation	AutoCAD

Section 238220 – Horizontal Fan Coil Units (15764)

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 238220 001 Fan Coil Unit Installation	July 2007	PDF	Microstation	AutoCAD

Section 238245 – 001 Chilled

Beams Piping

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
MD 238245 001 Chilled Beams Piping Detail	April 2022	PDF	Microstation	AutoCAD
MS 238245 001 Chilled Beams Piping Schedule	April 2022	PDF	Microstation	AutoCAD

Tunnel Toolkit

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
Title Block (reference)	October 2023	PDF	Microstation	AutoCAD
Tunnel Kit Coversheet	October 2023	PDF	Microstation	AutoCAD
m101 (reference 1)	April 2015	PDF	Microstation	AutoCAD
t101 (reference 2)	April 2015	PDF	Microstation	AutoCAD
TK – 01	October 2023	PDF	Microstation	AutoCAD
TK – 02	October 2023	PDF	Microstation	AutoCAD
TK – 03	October 2023	PDF	Microstation	AutoCAD

Mechanical Details (MD–Master Detail, MS–Master Schedule, MT–Master Table)	Last Update	PDF	Microstation	AutoCAD
TK – 04	October 2023	PDF	Microstation	AutoCAD
TK – 05	October 2023	PDF	Microstation	AutoCAD
TK – 06	October 2023	PDF	Microstation	AutoCAD
TK – 07	October 2023	PDF	Microstation	AutoCAD
TK – 08	October 2023	PDF	Microstation	AutoCAD
TK-12 Tunnel Temporary Shoring Detail	October 2023	PDF	Microstation	AutoCAD

9.3 Electrical

Electrical Standard Details

Guideline	Last Updated
26051301 – Aluminum Wire Terminations (under review)	April 2014
26051302 – Aluminum Conductor Option	April 2014
26052601 – Ground Bus Detail	November 2013
26052602 – Isolated Ground Receptacle Wiring Diagram-alt	March 2014
26052603 – Transformer Pad Grounding Detail-alt	March 2014
26052604 – Manhole Grounding	April 2014
26052605 – Power Manole Grounding With Non-metallic Racks	March 2014
26052606 – Typical Column Grounding Detail	March 2014
26052607 – Ground Bus Detail Telcom	January 2019
26052608 – Power Manhole For High Water Table Grounding With Non-metalic Racks	March 2014
26053301 – Conduit Penetration Thru Existing Floor	April 2014
26053302 – Conduit Penetration Thru New Floor	April 2014
26053303 – Hilti Conduit Penetration	April 2014
26053304 – Conduit Penetration Thru Existing Roof	April 2014

Guideline	Last Updated
<u>26053305 – Conduit Penetration Thru Roof</u>	April 2014
<u>26053306 – Conduit Penetration Thru New Roof</u>	April 2014
<u>26053307 – New Conduit Thru New Membrane Roof</u>	April 2014
<u>26053308 – Existing Conduit Thru New Membrane Roof</u>	April 2014
<u>26053309 – Conduit Roof Support</u>	April 2014
<u>26053310 – Conduit Wall Penetration</u>	April 2014
<u>26053311 – Conduit Penetration Thru Interior Wall</u>	April 2014
<u>26053312 – Bench & Wall Plugmold Detail</u>	April 2014
<u>26053313 – Dual Channel Raceway Installation</u>	February 2015
<u>26053314 – Dual Channel Surface Raceway</u>	April 2014
<u>26053315 – Metallic Raceway With Modular Furniture Feed</u>	February 2015
<u>26053316 – Dual Channel Faceplate Installation</u>	April 2014
<u>26053317 – Benchtop Vertical Raceway Power</u>	April 2014
<u>26053318 – Benchtop Vertical Raceway Data</u>	April 2014
<u>26053319 – End Of Bench Vertical Raceway</u>	April 2014
<u>26053320 – Dual Channel Non-metallic Raceway</u>	April 2014
<u>26053321 – Dual Channel Non-metallic Raceway</u>	April 2014
<u>26053322 – Non-metallic Surface Raceway</u>	April 2014
<u>26053323 – Wire Harness</u>	April 2014

Guideline	Last Updated
<u>26053324 – Ceiling Mounted Speaker</u>	April 2014
<u>26053325 – Hanging Receptacle</u>	April 2014
<u>26053328 – Wall Mtd Ups Recep Pnl Detail</u>	April 2014
<u>26053329 – Power Furniture Interface Detail</u>	April 2014
<u>26053330 – Cable Tray Mounting Detail</u>	April 2014
<u>26053331 – Aluminum Indoor Cable Tray Clamping Detail</u>	April 2014
<u>26053332 – Center Hung Cable Tray</u>	April 2014
<u>26053333 – Cable Tray Penetration Through Fire Rated Wall</u>	April 2014
<u>26053334 – Tray Mounted Raceway</u>	April 2014
<u>26053335 – Fumehood Electrical Service Detail</u>	April 2014
<u>26053336 – Walk-in Fumehood Electrical Service Detail</u>	April 2014
<u>26053337 – Island Bench Detail</u>	April 2014
<u>26053338 – Window Ac Unit Electrical Detail</u>	April 2014
<u>26053339 – Power-telephone & Data Cable Connections</u>	April 2014
<u>26053340 – Av Raceway Detail</u>	April 2014
<u>26053341 – Power Pole Detail</u>	April 2014
<u>26053342 – Vertical Raceway For Existing Walls</u>	April 2014
<u>26054301 – Underground Power Duct Sections</u>	July 2014

Guideline	Last Updated
<u>26054302 – Underground Telecommunication Duct Sections</u>	April 2014
<u>26054303 – Duct Bank Spacer & Reinforcing Details</u>	April 2014
<u>26054304 – 10x10x7 Pre-cast Power Manhole</u>	April 2014
<u>26054305 – 12x5x6-6 Pre-cast Telecommunications Manhole</u>	April 2014
<u>26054306 – 8-8x8-8x7 Pre-cast Power Manhole</u>	April 2014
<u>26054307 – 8x4x6 Pre-cast Telecommunications Manhole</u>	April 2014
<u>26054308 – Detroit Edison Manhole</u>	April 2014
<u>26054309 – Neck & Cover Details For Cast In Place Manholes</u>	April 2014
<u>26054310 – Angle Entrance Detail At Manholes</u>	April 2014
<u>26054311 – Duct Reinforcing At Manholes-vaults-buildings</u>	April 2014
<u>26054312 – Cable Support Detail Within Power Manholes</u>	April 2014
<u>26054313 – Cable Support Detail Within Power Manholes</u>	April 2014
<u>26054314 – 4x4x4 Pre-cast Itcs Handhole</u>	April 2014
<u>26054316 – Trench Detail</u>	April 2014
<u>26054317 – Post Mounted Underground Service</u>	April 2014
<u>26054319 – Power Manhole Bell End Installation</u>	April 2014
<u>26054320 – Orangeburg To Pvc Transition</u>	April 2014

Guideline	Last Updated
<u>26054321 – Casing Details With Sled</u>	April 2014
<u>26054322 – 8x6x7 Pre-cast Telecommunications Manhole</u>	April 2014
<u>26054323 – Miss Dig</u>	April 2014
<u>26110001 – Single Ended Substation</u>	November 2018
<u>26110002 – Double Ended Substation</u>	November 2018
<u>26110003 – Substation Fire Pump Disconnect</u>	Removed November 2018
<u>26110004 – Maintenance Back Feed Tap Box</u>	April 2014
<u>26110005 – Concrete Equipment Pad</u>	April 2014
<u>26110006 – Switch Anchoring Detail</u>	April 2014
<u>26110007 – Leveling Channel Detail</u>	April 2014
<u>26200001 – Service Entrance Transformer Wiring Diagram</u>	April 2014
<u>26200002 – Step Down Transformer Wiring Diagram</u>	August 2020
<u>26200003 – Panel Naming Procedure</u>	April 2014
<u>26272601 – Small Room Line Voltage Lighting Control Diagram</u>	August 2020
<u>26272602 – Small Room Low Voltage Lighting Control Diagram</u>	August 2020
<u>26272603 – Single Zone Low Voltage Lighting Control Diagram</u>	August 2020
<u>26272604 – Emergency Lighting Low Voltage Lighting Control Diagram</u>	August 2020

Guideline	Last Updated
<u>26272605 – Multi Zone Low Voltage Lighting Control Diagram</u>	August 2020
<u>26272606 – Daylight Harvesting Low Voltage Lighting Control Diagram</u>	August 2020
<u>26272607 – Multiple Preset Scene Low Voltage Lighting Control Diagram</u>	August 2020
<u>26290001 – MCC One Line Diagram</u>	April 2014
<u>26290002- Control Wiring Diagram</u>	April 2014
<u>26290003 – Motor Control Center Installation Det</u>	April 2014
<u>26510001 – Exit Sign Mounting Detail</u>	April 2014
<u>26510002 – Student Exit Sign Mounting Detail</u>	April 2014
<u>26510003 – Surface Or Hanging Emergency Lighting Fixture</u>	April 2014
<u>26510004 – Elevator Shaft Lighting</u>	April 2014
<u>26510005 -recessed Can Emergency Lighting Fixture</u>	April 2014
<u>26510006 – Emergency Light Battery Exerciser</u>	April 2014
<u>26510007 – Inner Lamp Switch Dim Detail (type F) F Fixtures</u>	April 2014
<u>26510008 – Cable Way- Hallway Cove Light Detail</u>	April 2014
<u>26510009 – Elevator Shaft Lighting</u>	April 2014
<u>26510010 – Recessed Emergency Lighting Fixture</u>	April 2014
<u>26510011 – Schematic For Os F (lights- Hvac Fcu)</u>	April 2014
<u>26510012 – Schematic For Os S (lights Hvac Fcu Dual)</u>	April 2014

Guideline	Last Updated
<u>26510013 – Schematic For Os F (lights- Hvac)</u>	April 2014
<u>26510014 – High Bay Fixture Mounting</u>	April 2014
<u>26510015 – Cove Light Mounting Detail</u>	April 2014
<u>26560002 – Riser For Site Lighting Power Source</u>	April 2014
<u>26560003 – Pedestrian Pole Base Against Seatwall</u>	December 2022
<u>26560004 – Site Lighting Trench Detail</u>	May 2015
<u>26560005 – Underground Sleeve Detail</u>	April 2014
<u>26560006 – Typical Pole Wiring Detail</u>	December 2022
<u>26560007 – Single Globe Unit</u>	May 2015
<u>26560008 – Double Globe Unit</u>	May 2015
<u>26560009 – Five Globe Unit</u>	May 2015
<u>26560010 – Street Light Fixture Detail</u>	December 2022
<u>26560011 – Pedestrian Light Pole Base In Pavement</u>	December 2022
<u>26560012 – Pedestrian Light Pole Base In A Seatwall</u>	December 2022
<u>26560013 – Pedestrian Light Pole Base In Lawn</u>	December 2022
<u>26560014 – Parking Lot Fixture Detail</u>	December 2022
<u>26560015 – Pole Base Detail For Walkway Lighting</u>	December 2022
<u>26560016 – Pedestrian Light Wall Mounted</u>	May 2015
<u>26560017 – Pedestrian Pole Base Plan View</u>	December 2022
<u>26560018 – Musco Electrical Enclosure Detail</u>	April 2014

Guideline	Last Updated
<u>26560019 – Musco Base & Pole Electrical Detail</u>	April 2014
<u>26560020 – Musco Pole Top Assembly Electrical Detail</u>	April 2014
<u>26560021 – Slipfitter Mtd Detail</u>	May 2015
<u>26560022 – Wall Mounting Detail</u>	May 2015
<u>26560024 – Riser For Building-Mounted Exterior Lighting Power Source</u>	May 2015
<u>26560025 – Pedestrian Top Wall</u>	May 2015
<u>26560026 – Pedestrian Top Wall</u>	April 2014
<u>27200001 – Bldg Elevation Telecommunication Rm Arrangements</u>	April 2014
<u>27200002 – Elevation Communication Detail</u>	April 2014
<u>27200003 – Telcom Rack Power Detail</u>	April 2014
<u>27200005 – Typ UM Emergency Phone Kiosk</u>	January 2026
<u>27200006 – Emergency Phone Freestanding</u>	November 2014
<u>27200007 – Emergency Phone Wall Mount</u>	November 2014
<u>27200008 – Mounting of #293SL Telephone</u>	November 2014
<u>27200010 – Two-Way Comm System</u>	March 2026
28130001 – Typ Raceway Installation At Single Door With Electric Strike (Request from Design Manager)	April 2014
28130002 – Typ Raceway Installation At Single Door With Electric Moritse Device(Request from Design Manager)	April 2014

Guideline	Last Updated
28130003 – Typ Raceway Installation At Single Door With E-type Electric Panic Device(Request from Design Manager)	April 2014
28130004 – Typ Raceway Installation At Single Door With EI-type Electric Panic Device(Request from Design Manager)	April 2014
28130006 – Typ Raceway Installation At Double Door With EI-type Electric Panic Device(Request from Design Manager)	April 2014
28130007 – Control Wiring For Door Hold Opens(Request from Design Manager)	April 2014
28130008 – Typ Raceway Installation At Doors With Monitoring Sensor(Request from Design Manager)	April 2014
28130009 – Typ Raceway At Single Fire Rated Door(Request from Design Manager)	April 2014
28130010- Card Reader And Door Actuator Mounting(Request from Design Manager)	April 2014
28130011 – Typ Raceway Installation At Door Hold Open Devices(Request from Design Manager)	April 2014
<u>28130012 – Card Reader Pedestal Detail</u>	April 2018
28130013 – Installation For Main 1st Card Reader Panel Assembly In Bldg(Request from Design Manager)	April 2014
28130014 – Ncrc Single Door W Elec Mortice(Request from Design Manager)	April 2014
<u>28160015 – MC-Edge RTU Electrical Detail</u>	January 2023
<u>28160016 – Audio System Block Diag (classrm Hearing Assist).</u>	April 2014
<u>28160017 – Hearing Assist Antenna(classrm Hearing Assist).</u>	April 2014

Guideline	Last Updated
<u>28310001 – Duct Smoke Detector Installation</u>	April 2014
<u>28310004 – Riser For Hearing Impaired Strobe Detail #3</u>	April 2014
<u>28310005 – Smoke Det Interface Conn Temp Controls</u>	April 2014
<u>28310006 – Smoke Det Interface Addressable System</u>	April 2014
<u>28310007 – Smoke Det Interface Hardwired System</u>	April 2014
<u>28310008 – Smoke Det Interface No Fire Alarm System</u>	April 2014
<u>28310009 – Overall Interconnection Diagram</u>	April 2014
<u>28310010 – Elevator Recall Control Wiring</u>	September 2014
<u>28310011 – Elevator Recall Control Program Matrix</u>	September 2014
<u>28310012 – Elevator Recall Control Schematic Diagram</u>	September 2014

9.4 Site/Civil

Notes

Guideline	Last Updated	PDF	Microstation	AutoCAD
Notes – Civil Standard	July 2019	PDF	MS Word	
Notes – SESC And EHS	July 2019	PDF	MS Word	

Concrete Curb Details

Guideline	Last Updated
Curb & Gutter Details Composite	December 2023
18" Gutter Pan	January 2017
Straight Curb	January 2017
Fastener Strip Detail	January 2017

Concrete Sidewalk Details

Guideline	Last Updated
Standard Sidewalk Detail	January 2017
Thickened Edge Walk Detail	January 2017
Pavement Expansion Joint	January 2017

Guideline	Last Updated
Sidewalk Control Joint Layout	January 2017
MDOT Sidewalk Ramp R028J	January 2018

Landscape

Guideline	Last Updated
New Seed Area	July 2018
Sod Joint	July 2018
Tree Planting	July 2018
Evergreen Planting	July 2018
Shrub Planting	July 2018
Shrub Bed Planting	July 2018
Aluminum Edging	July 2018
Groundcover	July 2018
Vine Planting	July 2018
Bulb Planting	July 2018

Mechanical Details

Guideline	Last Updated
Medium Pressure to Low Pressure Steam PRV Station Diagram	January 2026

Guideline	Last Updated
<u>Utility Maintained- Insertion Type Flow Measuring Device Detail(Steam Application)</u>	January 2026
<u>Utility Maintained – Floor Mounted Building Condensate Return Unit</u>	January 2026
<u>Multiple Utilities Plant Hydronic Flow Meter Pipping Diagram</u>	January 2026
<u>Hydronic Flow Meter BTU Computer Diagram</u>	January 2026
<u>BTU Meter Wiring Detail</u>	January 2026

Miscellaneous Details

Guideline	Last Updated
<u>Bike Racks – Various Surfaces</u>	October 2022
<u>Bicycle Hoops – Typical Layout</u>	January 2017
<u>Concrete Wheel Stops</u>	January 2017
<u>Bollard</u>	January 2017
<u>Sign Mount Detail</u>	January 2017
<u>Landscape Island Topsoil Detail</u>	January 2017
<u>Frost Free Stoop</u>	January 2017
<u>Road Utility Location Plan</u>	January 2017
<u>City of Ann Arbor Utility Material Requirements</u> (note that U-M material requirements meet or exceed City requirements)	February 2020

Pavement Details

Guideline	Last Updated
<u>Parking Lot Pavement</u>	January 2017
<u>Road Pavement</u>	January 2017
<u>Milled Edge</u>	January 2017
<u>Bituminous Walk Path</u>	January 2017
<u>Pervious Concrete Detail</u>	January 2017
<u>Porous Concrete Detail</u>	January 2017

Paver Details

Guideline	Last Updated
<u>Paver – Permeable System On Porous Concrete</u>	January 2017
<u>Precast Paver On Concrete Base</u>	January 2017

Sanitary Sewer Details

Guideline	Last Updated
<u>City of Ann Arbor Standard Details</u>	November 2015

Site Furnishings Details

Guideline	Last Updated
<u>Bench Specification</u>	January 2017
<u>Chair Specifications</u>	January 2017
<u>Memorial Bench Specifications</u>	January 2017
<u>Table Specifications</u>	January 2017
<u>Trash Receptacle Specifications</u>	January 2017

Soil Erosion Details

Guideline	Last Updated
<u>Inlet Filter Sack</u>	January 2017
<u>Soil Erosion Blanket</u>	January 2017
<u>Silt Fence</u>	January 2017
<u>Rip-Rap Detail</u>	January 2017
<u>Seeded Area</u>	January 2017
<u>Anti-Tracking Pad Detail</u>	January 2017
<u>Straw Wattle Detail</u>	January 2017
<u>Trench Drain Filter Fabric</u>	January 2017
<u>Stone Inlet Filter</u>	January 2017
Straw Bale – Removed June 2018	January 2017

Storm Details

Guideline	Last Updated
<u>2' Diameter Storm Inlet</u>	January 2017
<u>4' Diameter Precast Catch Basin</u>	January 2017
<u>4' Diameter Precast Storm Manhole</u>	September 2017
<u>Double Storm Catch Basin</u>	January 2017
<u>Underdrain</u>	January 2017
<u>Underdrain With Curb & Gutter</u>	January 2017
<u>MH Cover Adjustment And Structure Rebuild</u>	January 2017

Trench Details

Guideline	Last Updated
<u>Utility Trench With Asphalt Patch</u>	January 2017
<u>Utility Trench With Concrete Patch</u>	January 2017
<u>Utility Trench Gravel Patch</u>	January 2017
<u>Utility Trench Green Belt</u>	January 2017

Wall Details

Guideline	Last Updated
<u>Typical 30" To 56" Retaining Wall Detail</u>	January 2017

Guideline	Last Updated
<u>Typical Concrete Seatwall</u>	January 2017
<u>Typical Wall Jointing & Corners</u>	January 2017

Water Main Details

Guideline	Last Updated
<u>City of Ann Arbor Water Main Standard Details</u>	November 2015