

Design Standards – Instructions & Narrative

The Maricopa County Facilities Management Department (FMD) Technical Specifications along with this document are intended to provide design professionals hired by FMD with the specific requirements that are to be incorporated in the Contract Documents being prepared.

The FMD Technical Specifications follow the 2019 Master Specification Format. The specification sections provided by FMD shall not be renamed or renumbered. If there are any questions or concerns regarding any of the information provided by FMD, the design professional is encouraged to ask the FMD Project Manager. Below is a list of items the Design Professional should have been provided. **The design professional shall indicate the items received in their initial fee proposal.**

- FMD Design Standards - Instructions & Narrative (This document)
- Specifications & Appendix Table of Contents
- FMD Technical Specifications (multiple divisions – see table of contents to ensure all are provided)
- FMD General Conditions (Division 00) – **MAY NOT BE MODIFIED IN ANY WAY**
- FMD General Requirements (Division 01)
- Office of Enterprise and Technology (OET) Design Standards (Appendix A)
- Owner Provided Toilet Accessories (Appendix B)
- Maricopa County Brand Guidelines (Appendix C)
- Relevant Construction Contract (CMR, DBB, JOC) - for reference only

FMD encourages the design professional to review this package of documents very carefully and provide it to any subconsultant that should also be familiar with this information. FMD has not provided a technical specification for each section identified in the Master Specifications Template. The design professional can use this narrative along with the table of contents to identify all the technical specification sections being provided by FMD. Any relevant project specific specification section not provided by FMD will be provided by the design professional. Additionally, the design professional will be responsible for the completion of the execution portion (Part III) and to fill any gaps in the technical specifications provided by FMD. Finally, below are instructions for incorporating FMD's General Conditions (Division 00), General Requirements (Division 01) and abbreviated Section Statements (below) for specification sections FMD has not provided a technical specification for. If any of the section statements listed below are relevant to the project, the design profession shall ensure that any item or system being specified, minimally meets these requirements.

The intent of this specification narrative is to provide direction to design professionals and contractors to levels of expected minimum quality, practices, and material selection. The design professional shall use this guide in conjunction with complete project technical specification prepared for each specific project by the design professional to meet the specific needs of each individual project.

Design professionals are required to incorporate these standards and specifications into each milestone deliverable. If these standards and specifications are not incorporated, FMD will reject the design submittal and will not authorize the consultant to progress into the next phase of design. Any cost(s) and or delay(s) that result from the design professional's failure to incorporate these requirements are the sole responsibility of the design professional. The design professional will also bear the financial responsibility to replace any items that are specified that contradict or do not follow the design standards and specifications provided and have not received prior approval from FMD.

Division 00 - General Conditions

Upon Notice-to-Proceed with the design of a Project the appointed FMD Project Manager shall provide FMD's General Conditions to the Design Professional for all Design-Bid-Build (DBB) or Construction Manager at Risk (CMR) Projects. The FMD Project Manager shall also provide the General Conditions to the Design Professional under a Job Order Contract (JOC) Project when a Design Professional is assigned to the Project. **The General Conditions are intended to be applicable all Projects and shall not be modified.** The General Conditions shall be included with the Design Professional's Technical Specifications for the Project. **If the Design Professional would like to provide an additional general conditions section(s) not provided by FMD, they shall be provided to the FMD Project Manager for review and approval.**

Division 01 – General Requirements

Upon Notice-to-Proceed for the design of a Project, the appointed FMD Project Manager shall provide FMD's General Requirements to the Design Professional for all Design-Bid-Build (DBB) or Construction Manager at Risk (CMR) Projects. The FMD Project Manager shall also provide the General Requirements to the Design Professional under a Job Order Contract (JOC) Project when a Design Professional is assigned to the Project. The General Requirements shall be included with the Design Professional's Technical Specifications for the Project. Numbering and section names for each division shall not be changed. **If the Design Professional would like to provide additional general requirements sections not provided by FMD, they shall be provided to the FMD Project Manager for review and approval.**

Some sections of the General Requirements are intended to be standard for all projects and shall not be modified. However, if a section or language within a section is not applicable to a Project the Design Professional shall delete or edit as applicable to the Project.

If an asterisk (*) is indicated in the title of a section, it is the Design Professional's responsibility to edit the entire section to fit the project requirements.

If an asterisk (*) is indicated in the body of a section, it is the Design Professional's responsibility to edit the verbiage within the body of the section to fit the Project Requirements.

Upon completion of the edits to the General Requirements all asterisks (*) should be removed. They are only intended to draw the Design Professional's attention to the section or language within a section. The Design Professional shall be responsible for reviewing all sections of the General Requirements for required edits and not depend solely on the asterisks (*)Section Statements:

Abbreviated Section Statements

VERY IMPORTANT: for the following CSI Divisions, Maricopa County Facilities Management does not provide a boiler plate specification for the consultant to utilize. The design professional is expected to incorporate the following information into each respective specification developed for each project.

014215 Terminology

COMMON ABBREVIATIONS (MAG - MARICOPA ASSOCIATION OF GOVERNMENTS)

- A. FMD-Facilities Management Department
- B. IT-Information Technology
- C. JOC-Job Order Contracting
- D. MC-Maricopa County
- E. MCSO-Maricopa County Sheriff's Office
- F. O&M-Operations and Maintenance
- G. OET-Office of Enterprise Technology
- H. OMB-Office of Management and Budget
- I. D.P. or A.E.-Design Professional or Architect/Engineer
- J. P&D-Planning and Development Department
- K. MCDEQ-Maricopa County Department of Environmental Quality

TERMS (GENERAL)

- A. ACCESS DOOR: Small doors not included in door schedules which are typically a prefabricated assembly including frame and door.
- B. ACCESS PANEL: A section of finish which can be opened.
- C. ACOUSTICAL SEALANT: Non-hardening caulking or sponge tape used to seal partitions to structural ceiling, walls and floor to reduce sound transmissions.
- D. ANCHOR BOLT: A bolt that is embedded in masonry or cast-in-place in concrete.
- E. AS-BUILT DRAWING: A drawing or print marked by the Contractor to show actual conditions as constructed. For Architect's drawing, see RECORD DRAWING.
- F. BACKING: A continuous material behind entire area of finish, as opposed to intermittent or edge support.

- G. BATT INSULATION: Roll type insulation for installation between studs or joists, either pressed fit or stapled. See also BLANKET INSULATION.
- H. BLANKET INSULATION: Roll type insulation for installation over suspended ceiling or on plane wall surfaces. Either laid loose or secured with stick clips. See also BATT INSULATION.
- I. BUILDING PAPER: Sheathing paper or felt.
- J. CAULK, CAULKING: Non-elastomeric fillers and joints subject to little movement, generally indoors.
- K. CASING BEAD: Plaster stop.
- L. CEMENT PLASTER: Portland cement plasters used at interior spaces.
- M. COLD JOINT: Use to describe a joint where the material on one side of the joint is to be set or hard before the other side is installed and no particular bonding is expected.
- N. CONTROL JOINT: A joint to limit cracking, or a joint which is necessary to the construction process but continuity or bonding is required.
- O. DAMPPROOFING: A coating intended to resist vapor transmission and dampness, but not designed to resist a head of water.

017843 Spare Parts and Maintenance Materials

SPARE PARTS AND TOOLS

- A. Package in clearly identified boxes, as follows:
 - 1. Indicate manufacturer's name, part name and stock number.
 - 2. Indicate what the piece of equipment part or tool is for.
 - 3. Indicate name, address, and phone number of closest supplier.

MAINTENANCE MATERIALS

- A. Package in clearly identified boxes.
 - 1. Indicate trade name and stock number.
 - 2. Indicate which item material is to be used with.
 - 3. Indicate name, address, and phone number of closest supplier.

EXTRA MATERIALS (ATTIC STOCK)

- A. Package in clearly identified container, or install where indicated.
 - 1. Indicate trade name, stock number, size, color, etc.
 - 2. Indicate where product is to be used.
 - 3. Indicate name, address, and phone number of closest supplier.

- B. Coordinate extra stock for specific items per the instruction of the Owner or Owner's Representative.

055213 Pipe and Tube Railings

PERFORMANCE AND MATERIALS – Design Standard

- A. Engage a qualified professional Engineer as defined in Section 014000 Quality Requirements to design railings, including attachment to building construction.

- B. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated as a minimum:
 - 1) Handrails and Top Rails of Guards:
 - 1) Uniform load of 50 lbf/ ft. applied in any direction.
 - 2) Concentrated load of 200 lbf applied in any direction.
 - 3) Uniform and concentrated loads need not be assumed to act concurrently.

 - 2) Infill of Guards:
 - 1) Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft. .
 - 2) Infill load and other loads need not be assumed to act concurrently.

- C. Brackets, Flanges and Anchors to be cast of formed metal of same type of material and finish as supported rails unless otherwise indicated.

- D. Tubing: ASTM A500 (cold formed) or ASTM A513

- E. Pipe: ASTM A53/A53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), or equal.

- F. Provide galvanized finish for exterior installations and where indicated.

- G. Special conditions may require additional engineering design.

064023 Interior Architectural Woodwork

MATERIALS AND ACCESSORIES – Design Standards

- A. Fabricate architectural woodwork and cabinets in conformance with Premium Grade Standards in accordance with applicable standard specified herein under "Quality Assurance."

- B. Plastic laminate countertops may be used in non-wet areas. Use of Plastic laminate countertop finish is project specific and should be reviewed by FMD.

- C. Exposed fasteners are not allowed in the finish Work on exposed and semi-exposed surfaces.

- D. Cap shelves, doors, and other exposed edges with 3/8 inch matching hardwood or matching plastic laminate edging as applicable. Use one piece for full length only.
- E. Cap semi-exposed edges with 3/8 inch matching hardwood or matching plastic laminate edging as applicable. Use one piece for full length only.
- F. Door and Drawer Fronts: European Overlay with concealed hinges.
- G. Drawer Boxes: Fabricate drawer boxes from Baltic Birch plywood or a material of equal quality.
 - 1. Fabricate sides and back from minimum 1/2 inch (9-ply) plywood.
 - 2. Fabricate bottoms from minimum 3/8 inch (7-ply) plywood.
- H. Shelves: Fabricate shelves with 3/4 inch thick wood particleboard cores with plastic laminate finish or melamine finish, all sides and edges, unless otherwise indicated.
- I. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners and lightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- J. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
- K. Provide cutouts for appliances, outlet boxes, fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal contact surfaces of cut edges.
- L. Sand Work smooth and set fasteners; apply wood filler.
- M. Seal surfaces in contact with cementitious materials.
- N. Seal internal surfaces of cabinets with two coats of sealer, except where cabinets are constructed of prefinished plywood or finished internally with a melamine finish.

099600 High Performance Coatings

MATERIALS AND ACCESSORIES – Design standards

- A. High performance coatings should be pre-approved by FMD.

101400 Signage

MATERIALS AND ACCESSORIES – Design Standards

- A. Identification and way-finding signage on County projects shall be coordinated with the FMD Project Manager other than code required signage which is the responsibility of the Design Professional.
- B. Design Team shall coordinate signage requirements with the FMD Project Manager and the User groups.

- C. "Emergency" type signage and required vehicular signage shall conform to the requirements of the Jurisdiction having precedence. This includes accessibility signage as required by the 2010 Americans with Disabilities Act.

123661 Solid Surfaced Countertops

MATERIALS AND ACCESSORIES – Design Standards

- A. Solid surface countertop design is preferred but not a standard. Detention and other specialty types of countertops shall be discussed and approved by Maricopa County FMD on a per project basis.
- B. Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA SS-1.
- C. Manufacturers:
 - 1) Avonite Surfaces, a brand of Aristech Surfaces, LLC.
 - 2) Diamond Surfaces USA.
 - 3) Dupont Corian, E. I. du Pont de Nemours and Company.
 - 4) Wilsonart.
 - 5) Or product of equal performance standard.
- D. Solid Surface Material as identified in the project documents.
- E. Type: Provide Standard type unless Special Purpose type is indicated.
- F. Integral Sink Bowls: Comply with CSA B45.5/IAPMO Z124.
- G. Colors and Patterns: As selected by Architect from manufacturer's full range.
- H. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.
- I. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards". AWI certification is not required.
- J. Grade: Custom

220001 Plumbing Identification Standards

IDENTIFICATION

- A. Equipment: Equipment shall be identified with engraved plates made of 3/32" thick laminated black Bakelite with white core. Engrave to produce 3/8" high white lettering on black background. Engraved plates shall be screwed on. The identification shall correspond to the designation used on construction drawings and shall include, but not be limited to, the following: pumps, boilers, water heaters, water softeners, valves, etc.

B. Valves:

1. Carefully prepare chart or diagram for each piping system, indicating by number each valve in the system and each valve's location and function. Numbers used on valves shall correspond with chart.
2. Mount one of each chart in every mechanical equipment room applicable. Mount each chart in aluminum frame with clear glass front and secure to wall where directed.
3. Bind a copy of each chart in maintenance manuals.
4. Provide each valve with a brass or aluminum disc not less than 1-1/4" diameter and bearing 3/8" high, engraved numbers corresponding to those shown on chart. Fasten tag to valve with #14 brass wire. Incorporate valve chart into as-built drawings.

C. Pipe:

1. Mark each individual pipe with Brady, Seton, Brimar, or Set Mark identification markers with flow arrows of Snap-On type after pipe has been painted or insulated.
2. Install stencils at all major branch takeoffs, risers and at 10-foot intervals on straight runs and at each entrance or exit from pipe shafts. Markers shall be located for maximum visibility from expected personnel approach.
3. Identification material sizes shall be as follows:
 - a. 2" and Under: 1/2" high letters.
 - b. Over 2": 1" high letters.
4. Provide a typewritten schedule of all markers used, with identification framed under glass and posted in the Mechanical Equipment Room.
5. **Identify pipe with following:**

| <u>Service</u> | <u>Abbreviation</u> |
|----------------------------|---------------------|
| Chilled Water Supply | CHWS |
| Chilled Water Return | CHWR |
| Domestic Cold Water | CW |
| Domestic Hot Water | HW |
| Domestic 140° Hot Water | HW (140°) |
| Domestic Hot Water Return | HWR |
| Drinking Water | DW |
| Heating Hot Water | HHW |
| Heating Hot Water – Return | HHWR |
| Low Pressure Steam | LPS Steam |
| Vent | V |
| Solar Thermal Water | STW |
| Storm Drains | SD |
| Tempered Water | Tempered Water |

6. Pipe markers for piping not listed above shall conform to the latest ANSI and OSHA requirements.

260553 Electrical Identification Standards

| Breakdown of Equipment / Panel / Outlets Naming Convention | | | | | | | |
|------------------------------------------------------------|-------------------------|--------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|
| Label Example | Building # | Level (Floor) | Geographical Building Quadrant | Emergency Power Designation (If any) | Device | Power Type H or L (High or Low) | Number Designation (Sequenced in order) |
| 3301-LL-SE-EPPH01 | 3301 | LL | SE | E | PP | H | 01 |
| Description | FMD Bldg #, not address | Options: LL 1 2 ... R | Options: NW NE SW SE From Elevator Lobby | *Options: "E" or nothing If "E", use RED Label If no "E", use Black Label | *Options: PP, DP, , DISC, TX, MCC, SES ATS, | Options: H or L High Range (480Y/277) Low Range (208Y/120V) | *Consecutive numbering Must Ask FMD Bldg. Supervisor / Electrician |
| | 3305-1-SW-PPL01 | 3305 | 1 | SW | | PP | L |

All other equipment, component and device identification should be determined at the time of design. Owner provided items should be coordinated and noted in the project documents.

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