

- i. **Updates to the below sections of the [Consultant Procedures and Design Guidelines](#) / Section 3 – Division Guidelines / Division Guidelines / Divisions 14 - 33**

DIVISION 21 – FIRE SUPPRESSION

21 0100 Fire Protection System Design: Minor modification under Contract Drawings: See 2.5.4; and Specifications, see 15.2 -removed requirement for campus PM to approve the use of flexible braided hose sprinkler drop option on non-MUHC projects.

DIVISION 22 – PLUMBING

22 1000 Plumbing Piping and Specialties: Modified the use of mechanical pressed copper fittings option; clarified that this section is for above ground piping only (See Design Guideline 2.a.); Clarified extent of this section in the building (See 2.e); Added language in paragraph 3 prohibiting cellular (foam) core PVC; Modified 3.c. to match IMC language regarding air plenum; Added language in paragraph 7 prohibiting cellular (foam) core PVC and modified language to match IMC regarding air plenums; Added language in 9.c. to clarify typical design of special piping in labs.

22 3000 Plumbing Equipment: See left margin for edits to clarify references related to this section. Under REFERENCES, added references to other design guidelines related to this section.

22 4000 Plumbing Fixtures: Added **MS&T** campus requirement for hard-wired sensor operated flush valves. See 1.2 and 2.2.

DIVISION 23 – HEATING, VENTILATING, AND AIRCONDITIONING

23 0002 Biocontainment Laboratory Design Criteria: See left margin for minor revisions. Under DESIGN GUIDELINES, deleted 2 out of date paragraphs under 2.6 Electrical.

23 0003 General Chemistry Laboratories: Under DESIGN GUIDELINES, replaced “Phoenix valves” with “laboratory air control valves”; Deleted last 2 sentences of paragraph 2.4.2 regarding option for tempered water systems for emergency shower systems; Deleted 2 out of date paragraphs under 2.5 Electrical.

23 0900 JCI Control Systems (MU): Added paragraph 3.01 H.

23 0900 Control Systems (UMKC): This document has been completely revised. Provided in Word and PDF format.

23 3816 Fume Hoods: See notation in left margin for all revisions. Updates include face velocity reduction to 80 fpm if specifically approved by campus EH&S and the fume hoods are specified of the low flow (60 FPM face velocity or less) design.

DIVISION 26 – ELECTRICAL

26 0533 Raceway and Boxes for Electrical Systems: Revised paragraph 16.

26 0553 Identification For Electrical Systems: Under DESIGN GUIDELINES, added “power” panels in paragraph 4.

26 2923 Variable Frequency Motor Controllers: In 2.01 MANUFACTURERS, A. Toshiba – Model Q9+ removed as it is no longer manufactured. D. Added Danfoss model VLT FC 102 drives for HVAC applications for MS&T campus; In 2.04 COMPONENTS, Added B – For MS&T, BACnet option included. In 2.03 OPERATING REQUIREMENTS, E. Changed the acceleration/deceleration times. Was (0.1 to 6000 seconds), changed to (0.1 to 1800 seconds).

26 5100 Interior Lighting: Clarified MU’s strong preference regarding emergency lighting.

DIVISION 27 – COMMUNICATIONS

No updates

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 3100 Fire Alarm Systems: Under DESIGN GUIDELINES, updated paragraphs 4.1.7-4.1.10 regarding fire alarm coverage requirements and outages of renovation and phased projects. Inserted sentence “Exposed conduit to be factory painted red” to new 7.14.

DIVISION 31 – EARTHWORK

31 0000 Earthwork: Added 2 sentences in paragraph 2.4.5 to clearly label the soils/geotechnical report in the bidding documents as “For Information Only. This report is not a contract document”.

DIVISION 33 - UTILITIES

Section 33 1113 Water Distribution Piping: Under DESIGN GUIDELINES, several updates to paragraphs 1.1 – 1.3; Added provision for MS&T regarding 1.7 Trace Wire and 2.5 Identification (see notation in left margin). Under REFERENCES, added and updated references to this design guideline to other design guidelines.

33 3100 Sanitary Sewer Systems: Under DESIGN GUIDELINES, updated paragraph 1 to match MO HB 1867; Added “with fines” to paragraph 6; Updated paragraph 10.1-10.3; Updated 11.8 of Manholes; Updated provision for MS&T in paragraph 13.2.

33 4000 Storm Drainage System: This document has been updated throughout to better organize the requirements. HDPE option is available at MS&T only.

Appendix for MUHC Planning Design & Construction Guidelines dated November 30, 2023.