

UGA DESIGN & CONSTRUCTION SUPPLEMENTAL GENERAL REQUIREMENTS & STANDARDS CHANGE LOG

(revisions from May 01, 2023 version to July 30, 2024)

00 00 07 - Design Professional Design Process Requirements

- 1.E.v.i: Revised "DVC" to "DCV"
- 1.E.ix: Added "(i.e. "positive" or "negative" to adjacent spaces and/or the building exterior)"
- 1.E.xvi: Added new item "Calculated building total Chilled Water and Heating Hot Water Volumes"
- 1.N: Added new item "On projects that will incorporate new alarms or emergency sensors for any facilities that may require a public safety response, DP shall work with UGA PM to coordinate with the UGA Associate Vice President for Public Safety."
- 1.O: Added new item "The building envelope shall be designed so as to prevent the ingress of bats and other vermin."
- 1.P: Added new item "DP shall include housekeeping pads for all major floor-mounted mechanical, electrical, and plumbing equipment (AHUs, water-cooled chillers, pumps, ATS, switchgear, dry-type transformers, water heaters, compressors, etc.)."

00 00 08 – Design Professional Documentation Requirements & Deliverables

- 1.C.ix: Revised and added subpoints 1.C.ix.a through 1.C.ix.c
- 1.C.x: Revised "Microsoft Word files shall be 2013 or later" to "Microsoft Word files shall be in '.docx' format and be 2016 or later"
- 1.C.xi: Deleted "...and shall be delivered by flash drive."
- 1.C.Xii: Revised "...version 2007..." to "...version 2017..."
- 1.D.vi: Deleted this item (all subsequent items renumbered)
- 1.D.vii: Revised "...FMD Building Inventory..." to "FMD Facilities Inventory"

00 00 10.01 – BIM Execution Plan

- 4-2: Revised "??" to "Software compatible with Commercial Building Tax Deductions per energy.gov" for the Energy Model Authoring Tool.
- 00 73 01 Sole Source / Sole Brand
 - 2.H.II: Added new subpoint "Initial Contract Year 1: 11/01/2023 10/31/2024, subject to annual renewal through 10/31/2028"

01 35 13.01 – Special Project Procedures – Utility & Systems Outages

• 1.D: Added new item "UGA PM must contact the UGA Police Department Communications Center by phone (706-542-0090) to inform them of any work that may interfere with existing alarm operations before work starts."

01 41 26.01 - Right of Way Encroachment / Roadway Ownership

• 1.B.i: Revised "...at the end of this section." to "...on the UGA OUA website at the following address:

https://www.architects.uga.edu/sites/default/files/documents/field/maps/current/ugaown edroads11x17.pdf"



01 41 26.04 – Fire Marshal Construction Inspection Requirements

- 1.F.viii.3: Revised "...indicting..." to "...indicating..."
- 1.F.ix.3: Revised "...amps per hour..." to "...amp-hours..."
- 01 41 26.06 Dining Services
 - 2.D.v: Added "...vinyl-clad..."

01 77 00 – Project Closeout

- 1.E.i: Deleted "...CD-ROM(s),..."
- 1.E.ii.b: Revised "...2007..." to "...2017..."
- 1.E.ii.c: Revised ".doc" to ".docx"

01 91 13 – General Commissioning Requirements

- 1.D.ii: Revised format and clarified members of the Commissioning Team.
- 1.D.ii: Deleted "...hired..."
- 1.E.1.1.ii.e: Revised to "Metrics shall include system data as described in Informative Annex K, ASHRAE Guideline 1.1 and tailored to the specific project."
- 1.E.1.1.iv.a: Revised and added subpoints a.i and a.ii.
- 1.F: Revised to "Systems to be considered for commissioning shall include..."

07 00 00 – General Thermal & Moisture Protection

- 1.B.i.g: Revised "pane" to "panel"
- 1.B.i.j: Revised "as" to "are"
- 1.B.ii.c: Revised and added subpoints c.a through c.c
- 1.B.ii.d: Added "...if roof is not accessible via lift or other similar equipment after building construction is complete."
- 1.B.iii.d: Revised "...is required by the Contractor." to "...is required to be performed by the Contractor."

07 54 23 - THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING

- 2.E: Add new item 2.E "Walkway pads shall be included for access from roof access point to all equipment access locations, if applicable, to facilitate maintenance."
- 14 20 00 Elevators
 - 1.D: Added new subpoint "Design Professional and UGA PM shall discuss current applicable code requirements for elevator vestibules with UGA Fire Safety office no later than the end of the Schematic Design phase."
 - 2.E.iv.a: Revised "Standard" to "Cellular-connected"
 - 2.G: Added "Fire Rated Access Panels" with subpoint 1.G.i "Enclosures for smoke detectors in elevator hoist ways or similar that are required to be fire rated shall be JJM Enclosure or approved equal."

22 00 00 – General Plumbing Requirements

• 1.G: Added "...and slope floor to drains."



- 1.H: Corrected duplicate text
- 1.M: Corrected reference to Appendix A
- 22 07 00 Plumbing Insulation
 - 1.A: Added new subpoint "1.A.iii 23 07 19– HVAC Piping and Hydronic Equipment Insulation"
 - 1.B: Revised to "All hot, cold, and tempered water piping shall be insulated unless an exception is allowed by the UGA PM due to project conditions."
- 22 10 00 Plumbing Piping
 - 2.G 2.I: Removed duplicated requirements (captured earlier within 22 00 00)
- 22 11 23 Facility Natural Gas Piping
 - 1.C: Added new item "Natural gas shut off valves for labs shall be located in the corridor at an accessible height (i.e. does not require a ladder)."
- 22 15 13 Compressed Air Piping
 - 3.B: Removed text reference and associated piping installation detail.
- 23 00 00 General Mechanical Requirements (HVAC)
 - 1.D.xvi: Revised to "General electrical..."
 - 1.D.xvii: Revised to "Conduit, junction boxes, gauges, meters, sensors, etc. associated with an AHU can be mounted to that AHU using self-tapping screws..."
 - 1.D.xviii: Revised to include "...secondary..."
 - 1.D.xxii: Deleted "...AutoCAD ..." (two instances)
 - 1.D.xxvi: Added "... DP shall obtain approval from UGA PM for conditioning strategy for IT/Data rooms early in design."
 - 1.D.xxx: Revised to "...evaluate..."
 - 1.D.xxxii: Added new item "When selecting/scheduling equipment, DP shall choose equipment that operate at low and full loads while maintaining required conditions (temperature and humidity)."
 - 1.D.xxxiii: Added new item "For projects that connect to a campus loop, the DP shall require on the drawings for the mechanical contractor to verify which pipe is being connected to within the mechanical room with temperature and/or pressure measurements to prevent connecting to the wrong pipe (i.e. supply instead of return and vice versa)."
 - 1.D.xxxiv: Added new item "DP shall provide a detail for any hydronic dP sensor connections and include a means for TAB to verify calibration of the sensor."

23 05 14 – Variable Frequency Drive

- 2.C: Revised to "VSD Controller replacement..."
- 2.M: Revised to "...report fan power (kW) to the..."

23 05 19 – Meters & Gauges

- 1.B.i: Deleted "...- 100psi"
- 1.B.ii: Revised to "Heating Hot Water"
- 2.E.i: Revised to "Gauges (pressure and/or temperature)..."



• 2.F – 2.G: Separated out some content into new item (2.G) for clarity. Text/content remained the same.

23 05 23 – General-Duty Valves for HVAC Piping

- 2.B: Removed weblink and revised to "...operated. Chain storage buckets (Babbitt Bucket or approved equal) shall be provided for all chain operated valves."
- 2.F: Added "...with UGA PM approval at pumps for chilled or heating hot water (not allowed on condenser water or steam piping)."

23 05 53 – Identification for HVAC Piping & Equipment

- 3.C.iii.b: Revised to "...rooms, the marker shall reference the area(s) served. Review naming with UGA PM."
- 3.C.iii.d: New subpoint "Terminal Units shall be provided with the following additional information on the equipment marker: Served By AHU #-##"
- 3.E.i: Added identification details for "Process Chilled Water Supply" and "Process Chilled Water Return" to the "Pipe Identification Color Scheme" table.
- 3.E.i "Pipe Identified Color Scheme" table Note 2.ii.d: Corrected "...steal..." to "...steel..."

23 05 93 – Testing, Adjusting, & Balancing (TAB) for HVAC

- 1.B: Revised to include "...pressure setpoints (hydronic dP, duct static), "adjustable" points, modifications to existing systems (for renovations), accounting for system diversity, etc."
- 1.C.vi: Revised "...accessibility..." to "...access..."
- 1.D: Main text revised to "Building access during balancing: The Contractor shall provide the TAB Subcontractor with uninterrupted access to all areas of the building. Large HVAC systems may require access to the same area several times throughout the balancing process. The Contractor shall coordinate with the TAB Subcontractor to identify tasks in the project scope which will require shutting down HVAC systems or hinder building access during the performance of TAB work. The Contractor shall account for these in the project schedule and coordinate work among other subcontractors. These shall be addressed in the balancing plan and may include the following" (subpoints unchanged)
- 3.C: Corrected subpoint number (previously was a duplicate of 3.B); all subsequent subpoint labels corrected, as well.
- 3.C: Revised to "...Standards, latest edition,..."
- 3.D (previously 3.C): Revised "...humidities..." to "...relative humidity..."
- 3.D (previously 3.C): Revised "...pressures..." to "...pressure relationships..."
- 3.E (previously 3.D): Revised to "Reports shall include manufacturer's performance curves, tables, and/or graphs with specified "design" and "measured" operating points indicated. The curves shall clearly show efficiency, brake horsepower, speeds, etc. for designed and measured."
- 3.F (previously 3.E): Deleted redundant text "...verify by..."
- 3.G (previously 3.F): Revised "...are under an overall positive pressure ..." to "...maintain their proper pressure setting..."
- 3.I (previously 3.H): Deleted "...recommendations ..."
- 3.J (previously 3.I): Revised to add subpoints 3.J.i 3.J.iii
- 3.L (previously 3.K): Revised "Three copies of the complete test report..." to "The complete TAB report shall be submitted in searchable, electronic format..."



23 07 13 - Duct Insulation

- 1. B: Revised "...included in this section." to "...(see Appendix A)."
- 3.A.ii: Added "...or approved equal."
- 3..A.iv: Added "...or approved equal."
- 3.A.vi: Added "...or approved equal..."

23 07 19 - HVAC Piping Insulation

• 3.C: Added "See Appendix A"

23 09 23 – Building Automation and Temperature Control System (BAS)

- 1.D: Revised "...Controls..." to "...Control Sequences..."
- 1.N: Added "...latest version of..." (two instances)
- 1.U.ii.g: Deleted "...or closed."
- 1.U.ii.j: Revised "Graphics shall show water flow in real-time and set-point for GPM, temperature and pressure drop and pump amps draw and Kw." to "Graphics for pumps shall show water flow (GPM), temperature, pressure drop, and electrical data (amps and kW). Include "actual" and "setpoint", if applicable."
- 1.U.ii.k: Revised "...up to 1 year..." to "...2 years..."
- 1.U.ii.l: Revised to "Point names shall be process-specific, unique, and intuitive. Use consistent naming across controls drawings, controls programming, and controls graphics."
- 1.U.ii.s: Deleted redundant item
- 1.U.iii.c: Added subpoints 1.U.iii.c.1 1.U.iii.c.3
- 1.U.iv.g: Added new item "Rooms on the graphic should be identified by room number."
- 1.U.v.a: Revised "...'open' or 'closed.'" to "...the percent open."
- 1.V.i.b: Revised to "All points shall be trended continuously including software, hardware, calculated/virtual, and network inputs (ANI, BNI, etc.)..."
- 1.X.i.b: Deleted "...other than Internet Explorer."
- 2.E: Added "...latest version of...or approved equal."
- 2.F: Added "...latest version of...or approved equal."
- 3.E: Revised "The graphic screen for each item of equipment and system shall have a link to the associated 'as-built' sequence of operation." to "When adding or renovating systems/equipment, the new/revised control sequence shall be added to the Main building screen on the Building Level Graphic."

23 21 13 – Hydronic Piping

- 2.A: Deleted "..., leak detection wiring, connectors and monitoring panel"
- 2.B: Added new item 2.B "Above ground chilled water and heating hot water piping shall be welded schedule 40 black steel for all piping larger than 2" and shall be soldered type "L" copper for piping 2" or smaller." (all subsequent item numbers adjusted).



- 2.F (previously 2.E): Separated out as two subpoints for clarity.
- 3.E: Deleted "The manufacturer's representative shall check the leak detection wiring, for continuity, prior to back filling."

23 21 23 – Hydronic Pumps

- 2.B: Revised to as subpoint i. through i.v for clarity; added "copper or other braided metal"
- 2.F: Revised "SCR" to "SGR"
- 3.H: Deleted "When selecting variable speed pumps, the designer shall consider pump efficiencies at less than 100% design flow"
- 23 22 13 Steam & Condensate Heating Piping
 - 1.B: Revised "Heating shall be steam; supply pressure to the building is 100 psig; reduce inside building at pipe entry; provide drip set immediately upstream of PRV station" to "Typical steam supply pressure entering buildings connected to the main UGA Athens campus steam loop is 95 psig. Pressure shall be reduced inside building at pipe entry and a drip set shall be provided immediately upstream of PRV station."
 - 2.B.iii: Added new item in its entirety including subpoints i. and ii. (all subsequent item numbers adjusted)
 - 2.B.iv.a (previously 2.B.iii.a): removed broken weblink
 - 3.A: Combined 3.A and previous 3.A.i as follows "Aboveground steam and condensate piping shall be installed to slope in the direction of flow and comply with the following for welding and testing:" (all subpoints renumbered 3.A.i through 3.A.v.)
- 23 22 16 Steam & Condensate Heating Piping Specialties
 - 2.A.vii: Relocated previous item 2.B ("Basis of Design shall be Thermaxx or Shannon Insultech") to a new subpoint.
 - 2.G.ii (previously 2.H): Added new subpoint "Paper type gaskets shall not be used."
 - 2.N.ii (previously 2.O): Added new subpoint "Condensate receiver units shall be installed elevated by iron angle frame to lift unit by 6 inches off floor"
 - 2.0: Added new item "Steam vault ladders shall be Pipeline VL-100 vault ladder (aluminum or stainless steel) with extendable handrails or approved equal."
 - 3.A: Added "...located above ground and/or in vaults ..."
 - 3.A: Replaced "...tightened..." with "...repaired..."
 - 3.A: Replaced "...as needed (at least twice, after 2 months and after 9 months during the warranty period)." with "...before end of warranty."

23 31 13 – Metal Ducts

• 1.B: Revised "Duct distribution layout shall allow the total air flows on all air moving devices to be accurately measured air flow measuring devices and by pitot traverses (by TAB agency)." to "DP shall layout ductwork to allow the total air flows on all air moving devices to be accurately measured by TAB utilizing air flow measuring devices via pitot traverses."

23 36 01 – VAV Terminal Units



- 2.D: Corrected "...from. In w.g. to..." to "...from 0.3 in w.g. (maximum, on the low end) to..."
- 2.J: Added new item "Terminal units with hydronic heating coils shall include an integral access panel upstream of the coil for inspection and cleaning of the coil. Access panel shall be on the bottom side of the unit unless side access panel is warranted for coordination with existing conditions."
- 23 41 33 HEPA Filtration
 - 2.A.i.i: Corrected "...buy..." to "...by..."
- 23 52 00 Heating Boilers
 - 2.B.i: Added "...or through integral boiler controls. Review with UGA PM."
- 23 64 16.13 Air-Cooled Water Chillers
 - 2.B: Deleted "...and shall utilize R134a"
 - 2.C: Added new item "DP shall review refrigerant type with UGA PM" (all subsequent item numbers adjusted)

23 64 16.16 - Water-Cooled Water Chillers

- 1.B: Deleted "For any water-cooled chiller above 300 tons, selection must be based upon life-cycle costs analysis for at least 10 separate, entering conditions accounting for varying entering condenser water temperatures and anticipated capacity operating points. The life-cycle analysis shall account for anticipated maintenance costs, first cost, and energy costs over the life of the machine."
- 1.B.iii: Added new item "Design Professional shall review refrigerant type with UGA PM."
- 1.D: Added "...including coordination with associated equipment (FCUs, AHUs, etc.)."
- 1.J: Revised "...when flow is detected." to "...when excessive flow (adjustable setpoint with the BAS) is detected."
- 23 65 00 Cooling Towers
 - 1.A: Added "23 21 13 Hydronic Piping" and "23 21 23 Hydronic Pumps"
- 23 73 00 Central-Station Air Handling Units:
 - 1.B: Added "...energy recovery options,..."
 - 1.D: Revised "...a permanent label secured..." to "...a permanent, engraved metal tag (or approved equal by UGA PM) secured..."
 - 2.A.ii: Revised "...modular..." to "...semi-custom..."
 - 2.A.ii: Revised "...min. 16 gauge G-90 galvanized steel and inner wall shall be min. ..." to "...minimum of 16 gauge G-90 galvanized steel (or 12 gauge aluminum). Inner wall shall be a minimum of ..."
 - 2.A.ii: Added "AHU construction shall provide a thermal break between inner and outer casing. AHUs installed outdoors or in mechanical rooms without mechanical cooling shall have casings with a minimum thickness of 3-inches. Outdoor units shall have an integral, sloped, standing seam roof."
 - 2.A.iv: Deleted "...and shall be..."



- 2.A.iv: Added "...including fully welded seams, no floor penetrations, and an upturned on the perimeter of each section."
- 2.A.vii.g: Added new item "All stacked coils to be individually supported so that replacement of coil sections may occur without removal of the other coils."
- 2.A.vii.h: Added new item "All coil sections shall be provided with access panels on both sides of the AHU to ensure ease of removal and replacement. One side shall be used for coil pull (DP shall coordinate proper clearances during design)."
- 2.A.vii.i: Added new item "All units with staggered coils shall extend piping to the exterior of the cabinet. No field penetrations to the cabinet will be allowed."
- 2.A.viii.c: Deleted "...,IAQ type,..."
- 2.A.viii.d: Added new item "Drain pan grating shall be provided for safety and ease of maintenance."
- 2.A.xiii: Revised to "Units shall have access doors at filters, coils (up-stream, down-stream and between coils), and fans. If a filter is directly upstream of a coil, access may be provided through the filter rack and not a separate section, if mechanical room space requirements are not adequate for a separate access section. Access doors shall be a minimum of 24-inches wide and be the same thickness as the AHU cabinet. Access doors shall have metal hardware and open against cabinet pressure"
- 2.A.xiv.f: Added text "AHU shall include manual shut-off switch near access door to turn off UV lights during maintenance."
- 2.A.xiv.j: Added new item "Observation window into UV section shall have appropriate tint or similar for safety of observer."
- 2.A.xvi: Added "Aluminum base rail material can be reviewed as a possible alternate."
- 2.A.xvii: Added "...timer..."
- 2.A.xviii.j: Added new item "Unit shall be provided with an empty run of controls conduit with a junction box in each section. No field penetrations of the unit cabinet will be allowed. Conduit shall avoid coil pull locations."
- 2.A.xviii.k: Added new item "For units with 4 or more fans, DP shall review with UGA PM if supplemental motor removal structure is needed (I-beam with trolley or similar)."
- 23 74 00 Packaged Outdoor HVAC Equipment
 - 1. E: Revised "...60%..." to "...55%..."
- 26 00 00 General Electric Requirements
 - 1.B: Added "DP shall also coordinate location and size of electrical rooms for cost effective and safe electrical power distribution and maintenance."
 - 1.I: Added new item "Electrical equipment identification tags shall comply with requirements shown in UGA Standard Details (See Appendix A)."
- 26 24 13 Switchgears and Switchboards
 - 2.H: Revised "All switchgear / switchgear breakers" to "All switchgear / switchboard breakers..."
- 26 32 00 Packaged Generator Assemblies



- 1.D: Added new item "The Design Professional shall provide a detail for the generator pad (thickness, rebar, edges, etc.) in addition to any general information provided by the generator manufacturer"
- 26 56 13 Lighting Poles & Standards
 - 1.B: Revised to "Concrete pole bases shall extend a maximum of 3" above finished grade in landscaped areas and be flush with finished grade in hardscape areas. On sloped grades within landscaped areas, the maximum of 3" above finished grade shall be on the highest elevation side of the land contour."
- 28 13 00 Security and Access Control
 - 2.A.i: Removed entire subpoint; all subsequent subpoints re-numbered.
 - 2.F: Revised header to "Genetec System Intelligent Controller"
 - 2.F.ii: Added "Genetec..."
- 28 20 00 Video Surveillance System
 - 1.A.xvii.d: Added new subpoint "All areas of refuge where a communication interface is required" (previous item "1.A.xvii.d renumbered to "1.A.xvii.e")
- 33 00 00 General Utilities Requirements
 - 1.B: Revised "FMD-energy services" to "FMD UEM"
 - 1.C: Added "...all..."
 - 1.D: Revised to "Utility Detection Wire/Tape:" and added subpoints 1.D.i (new) and 1.D.ii (previously "1.D").
 - 1.D.i: New subpoint "For all underground utilities, a tracer wire of copper, copper clad steel, or stainless steel shall be installed. Wire shall be 12 awg or larger, coated with 45 mil or larger HDPE sheathing, and APWA color coded. The tracer wire should be placed on the bed of the trench, ditch, under the utility, and must be grounded via a ground rod at each end of the main runs."
 - 1.D.ii (previously "1.D"): Revised to include "In addition to tracer wire,..." and "Tape shall be APWA color coded."
- 33 12 13.13 Water Supply Backflow Preventer Assemblies
 - 1.C: Added new item "RPZ backflow preventer drain sizes shall be a minimum of 2.5x the supply line size and shall also be required to include a flood control valve to prevent flooding in the event of catastrophic failure."
- 33 30 00 Sanitary Sewerage Utilities Sanitary Sewer Collection System
 - 1.C: Revised "Sanitary sewer piping shall be installed in a 6-inch minimum sand bed. If piping is PVC, gravel is acceptable for other piping materials." to "Sanitary sewer piping shall be installed in a 6-inch minimum sand bed if piping is PVC. A gravel bed is acceptable for other piping materials."
 - 1.E: Added new item "Acid neutralization tanks are not needed. It is not required by USG Design Criteria for Laboratories (2019) and the UGA Research Safety Committee determined that general UGA guidance and other administrative controls could mitigate the need for them."



Appendix A – Table of Contents

- Revised header text
- 11 53 13 Laboratory Fume Hoods: Removed subitem "11 53 13-B Exhaust Duct Flanged Connection"
- 23 20 00 HVAC Piping Schematics: Removed subitem "23 20 00 F Condensate Drain Traps"
- 23 20 00 HVAC Piping Schematics: Removed subitem "23 20 00 G Pump & Gauge Manifold Piping: Horizontal Split Case Pump"
- 23 31 13 Metal Ducts: Removed subitem "23 31 13-A Duct Transitions" (renumbered subsequent details sheet references)
- 23 31 13 Metal Ducts: Removed subitem "23 31 13-C Duct Branch Take-offs" (renumbered subsequent details sheet references)
- 23 31 13 Metal Ducts: Removed subitem "23 31 13-D Fire Damper Details" (renumbered subsequent details sheet references)
- 23 31 13 Metal Ducts: Removed subitem "23 31 13-F Return Grille Details" (renumbered subsequent details sheet references)
- 23 31 13 Metal Ducts: Removed subitem "23 31 13-G Exhaust Grille Connection" (renumbered subsequent details sheet references)
- 23 31 13 Metal Ducts: Removed subitem "23 31 13-H Transfer Duct" (renumbered subsequent details sheet references)
- 33 60 00 Hydronic and Steam Energy Utilities: Added as item including "33 60 00-A -Steam Vault Details"

Appendix A

- 11 53 13-B: Removed entire detail sheet.
- 23 20 00-E: Deleted second pump detail (without typical end suction pump strainer). Added Note 1. Removed compressed air details.
- 23 20 00-F: Removed entire detail sheet.
- 23 20 00-G: Removed entire detail sheet.
- 23 21 13-A: Deleted Note 2.
- 23 21 13-B: Deleted Note 2.
- 23 31 13-A: Removed entire detail sheet.
- 23 31 13-A (previously 23 31 13-B): Removed "Detail for Ductwork Supported from Floor".
- 23 31 13-C: Removed entire detail sheet.
- 23 31 13-D: Removed entire detail sheet.
- 23 31 13-F: Removed entire detail sheet.
- 23 31 13-G: Removed entire detail sheet.
- 23 31 13-H: Removed entire detail sheet.
- 26 00 00-A: Added entire detail sheet
- 33 60 00-A: Added entire detail sheets (1-3).