

**UNIVERSITY OF MICHIGAN**  
**DESIGN DELIVERABLES**  
**FEBRUARY 2012**

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).

ITEM	SCHEMATIC PHASE	DESIGN DEVELOPMENT PHASE	CONSTRUCTION DOCUMENT PHASE
<b>GENERAL DESCRIPTION</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Scope of work narrative</li> <li><input type="checkbox"/> 2. Comparison of capacities (see "Building Interior" for area comparison) to program</li> <li><input type="checkbox"/> 3. List of applicable building codes on drawing title sheet</li> <li><input type="checkbox"/> 4. Building code review (describe means of compliance for major code issues and building systems)</li> <li><input type="checkbox"/> 5. List of anticipated building code variance requests</li> <li><input type="checkbox"/> 6. Anticipated building and space occupancy schedules <i>(continued)</i></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 14. Description of construction phasing</li> <li><input type="checkbox"/> 15. Description of any proposed occupancy within construction area</li> <li><input type="checkbox"/> 16. Description of water &amp; vapor characteristics of roof &amp; exterior walls</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 17. Documentation on drawings as required by building codes (specifically to include indication of maximum allowable number of people in each room)</li> <li><input type="checkbox"/> 18. List of all code variances (on drawings cover sheet)</li> <li><input type="checkbox"/> 19. If multiple bid packages, clear indication of scope of each release</li> <li><input type="checkbox"/> 20. Identification of construction phasing, including temporary requirements during each phase <i>(continued)</i></li> </ul>

ITEM	SCHEMATIC PHASE	DESIGN DEVELOPMENT PHASE	CONSTRUCTION DOCUMENT PHASE
<p><i>GENERAL DESCRIPTION (continued)</i></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 7. Life safety (egress) plans with identification of security and access control points</li> <li><input type="checkbox"/> 8. For projects over \$5 million construction cost, UM’s list of outstanding Facility Condition Assessment improvement recommendations with notation as to which will be addressed by the project.</li> <li><input type="checkbox"/> 9. Demonstration of compliance with SID-D "Energy and Water Conservation". See SID-D for deliverables requirements</li> <li><input type="checkbox"/> 10. For projects over \$10 million construction cost, Energy Impact Statement as described in SID-D “Energy and Water Conservation”</li> <li><input type="checkbox"/> 11. List of sustainability features incorporated into project design as described in SID-K "Sustainable Design and LEED Requirements"</li> <li><input type="checkbox"/> 12. For new non-clinical building projects over \$10 million construction cost, information as required to apply for LEED Silver (or higher) certification, and a project-specific LEED Checklist, both as described in SID-K "Sustainable Design and LEED Requirements"</li> <li><input type="checkbox"/> 13. Owner's Project Requirements and Basis of Design documents as described in SID-B “Design Intent Documents”</li> </ul>		<ul style="list-style-type: none"> <li><input type="checkbox"/> 21. When requested by the U-M Design Manager, electronic Microstation or AutoCAD files (with or without the Design Professional's title block) of CD Phase drawings for use by U-M or the Construction Manager as backgrounds for special construction bid packs (e.g. telephone/data and audio/visual wiring bid packs)</li> </ul>

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<b>SPECIFICATIONS</b>	<input type="checkbox"/> 1. System & material narrative description	<input type="checkbox"/> 2. Outline or preliminary specifications indicating project specific features of major equipment as well as component materials, e.g. “welded Schedule 40 steel pipe”, “quarter sawn oak”, etc. w/ same section numbering as final specification	<input type="checkbox"/> 3. Complete specification including draft front end documents <input type="checkbox"/> 4. List of items which are sole-sourced or dual-sourced and justification for not specifying three acceptable products <input type="checkbox"/> 5. For items listed in UM's "Preferred Manufacturers List", a table of specified items that are NOT indicated in UM's PML, and the justification for specifying these items <input type="checkbox"/> 6. For door hardware sets that require electricity, indicate the proposed sequence of operations for the hardware
<b>SITE</b>	<input type="checkbox"/> 1. Site plans, to include the following: A. Existing conditions B. Demolition C. Building outline(s) D. Future expansion E. Site entrance F. Roads & driveways G. Parking locations H. Bus stop/shelter (if required) I. Loading dock location J. Waste/recycling collection locations K. Walkway locations L. Stairway locations M. Emergency telephone locations N. Utility requirements O. Site utilities P. Preliminary grading plan Q. Soil retention work, if needed <i>(continued)</i>	<input type="checkbox"/> 5. General dimensions & elevations <input type="checkbox"/> 6. Permanent exterior signage <input type="checkbox"/> 7. Parking/roadway plans & elevations <input type="checkbox"/> 8. Vehicle & pedestrian traffic controls (if required) <input type="checkbox"/> 9. Grading plan <input type="checkbox"/> 10. Site lighting plans, simulations, specifications, equipment cut sheets and photometrics (as defined in Design Guideline 16521) <input type="checkbox"/> 11. Concept details of site fixtures & equipment <input type="checkbox"/> 12. Utility plans, elevations & details for local governing agency approval <input type="checkbox"/> 13. Sanitary sewer flow calculations for OSEH approval <input type="checkbox"/> 14. Plan to address existing hazardous/contaminated materials, if applicable  <i>(continued)</i>	<input type="checkbox"/> 18. Extent of construction area <input type="checkbox"/> 19. Area traffic plan, if existing roads/walks are impacted <input type="checkbox"/> 20. Site development phasing <input type="checkbox"/> 21. Construction site access <input type="checkbox"/> 22. Staging area <input type="checkbox"/> 23. Construction signage <input type="checkbox"/> 24. Site details, including hardscape <input type="checkbox"/> 25. Profiles for underground utilities <input type="checkbox"/> 26. Pipe sizes <input type="checkbox"/> 27. Connection details <input type="checkbox"/> 28. Copy of local government review comments on utilities and modifications in right(s)-of-way

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<i>SITE</i> <i>(continued)</i>	<input type="checkbox"/> 2. Site plan for public use (see SID-H) <input type="checkbox"/> 3. Storm water management plan <input type="checkbox"/> 4. Preliminary site lighting plan	<input type="checkbox"/> 15. Soil erosion and sedimentation control plan (for both construction and occupancy) <input type="checkbox"/> 16. Soil erosion and sedimentation control "Design & Review Checklist" described in UM Design Guidelines Section 02215 <input type="checkbox"/> 17. Dewatering plan	
<i>LANDSCAPING</i>	<input type="checkbox"/> 1. Existing conditions <input type="checkbox"/> 2. Landscaping concept <input type="checkbox"/> 3. Existing irrigation	<input type="checkbox"/> 4. Planting plan <input type="checkbox"/> 5. Irrigation plan	<input type="checkbox"/> 6. Protection for existing trees and significant plantings during construction <input type="checkbox"/> 7. Soil preparation & planting specifications <input type="checkbox"/> 8. Guying diagrams <input type="checkbox"/> 9. Piping diagrams <input type="checkbox"/> 10. Pipe sizes <input type="checkbox"/> 11. Landscape and irrigation details and legends
<i>STRUCTURAL</i>	<input type="checkbox"/> 1. Structural scheme plans <input type="checkbox"/> 2. Written description	<input type="checkbox"/> 3. Foundation plan <input type="checkbox"/> 4. Typical floor framing plan <input type="checkbox"/> 5. Framing plans at unique features <input type="checkbox"/> 6. Main member sizing <input type="checkbox"/> 7. Structural sections	<input type="checkbox"/> 8. Definition of control joints <input type="checkbox"/> 9. Beam, column & slab schedules <input type="checkbox"/> 10. Mechanical and electrical concrete house keeping pads <input type="checkbox"/> 11. Foundation details <input type="checkbox"/> 12. Structural details <input type="checkbox"/> 13. Structural notes <input type="checkbox"/> 14. Structural calculations
<i>BUILDING EXTERIOR ENVELOPE</i>	<input type="checkbox"/> 1. Typical elevations <input type="checkbox"/> 2. Fenestration layout <input type="checkbox"/> 3. Material designations <input type="checkbox"/> 4. Overall building cross-sections <input type="checkbox"/> 5. Roof layout	<input type="checkbox"/> 6. All building elevations w/dimensional heights <input type="checkbox"/> 7. Typical wall sections <ul style="list-style-type: none"> <li><input type="checkbox"/> 8. Parapet &amp; coping details</li> <li><input type="checkbox"/> 9. Roof &amp; drainage plan</li> </ul> <input type="checkbox"/> 10. Exterior door details <input type="checkbox"/> 11. Typical window details <input type="checkbox"/> 12. Details of unique features <input type="checkbox"/> 13. Expansion joint locations <input type="checkbox"/> 14. Large scale building cross-sections	<input type="checkbox"/> 15. Roof-mounted equipment <input type="checkbox"/> 16. Roof details <input type="checkbox"/> 17. Exterior details <input type="checkbox"/> 18. Flashing details <input type="checkbox"/> 19. Control joint definition & details

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<b>BUILDING INTERIOR</b>	<ul style="list-style-type: none"> <li>1. Typical floor plans (min 1/16" scale) w/ legends</li> <li><input type="checkbox"/> 2. Floor plans for room numbering &amp; public use (see SID-H)</li> <li><input type="checkbox"/> 3. Demolition plans</li> <li><input type="checkbox"/> 4. All room numbers (comply with Design Guidelines Section 10400)</li> <li><input type="checkbox"/> 5. Area use identification &amp; area in square ft.</li> <li><input type="checkbox"/> 6. Mechanical, electrical &amp; other service closets &amp; rooms</li> <li><input type="checkbox"/> 7. Circulation paths</li> <li><input type="checkbox"/> 8. Area tabulations compared to program requirements</li> <li><input type="checkbox"/> 9. Show flexibility for expansion &amp; alterations</li> <li><input type="checkbox"/> 10. Preliminary layout of major spaces w/ fixed equipment</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 11. All floor plans (min 1/16" scale)</li> <li><input type="checkbox"/> 12. Enlarged plans at elevation changes (such as stairs)</li> <li><input type="checkbox"/> 13. Enlarged plans at toilet rooms</li> <li><input type="checkbox"/> 14. Reflected ceiling plans</li> <li><input type="checkbox"/> 15. Wall types, fire ratings, smoke control zones</li> <li><input type="checkbox"/> 16. Plan to address existing hazardous materials, if applicable</li> <li><input type="checkbox"/> 17. Fixed seating</li> <li><input type="checkbox"/> 18. Defined seating, serving, &amp; kitchen facilities</li> <li><input type="checkbox"/> 19. Equipment &amp; furniture layouts</li> <li><input type="checkbox"/> 20. Important interior elevations</li> <li><input type="checkbox"/> 21. Details of unique features</li> <li><input type="checkbox"/> 22. Details of fixed equipment</li> <li><input type="checkbox"/> 23. Preliminary finish schedule</li> <li><input type="checkbox"/> 24. Preliminary door schedule</li> <li><input type="checkbox"/> 25. Informational signage</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 26. Dimensioned floor plans</li> <li><input type="checkbox"/> 27. Enlarged plans</li> <li><input type="checkbox"/> 28. Partition details</li> <li><input type="checkbox"/> 29. Interior details</li> <li><input type="checkbox"/> 30. Interior elevations</li> <li><input type="checkbox"/> 31. Finish schedules</li> <li><input type="checkbox"/> 32. Door &amp; hardware schedules</li> <li><input type="checkbox"/> 33. Room signage</li> <li><input type="checkbox"/> 34. Schedule of proposed movable equipment that is NOT indicated on documents (for reference)</li> <li><input type="checkbox"/> 35. Schedule of lab fixtures (turrets, etc.), if applicable</li> </ul>
<b>ELEVATORS</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Elevator locations</li> <li><input type="checkbox"/> 2. Equipment room locations</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 3. Elevator shaft section</li> <li><input type="checkbox"/> 4. Equipment description</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 5. Dimensioned plans</li> <li><input type="checkbox"/> 6. Sections &amp; details of hydraulic cylinder, if applicable</li> <li><input type="checkbox"/> 7. Description of shaft sump pits</li> <li><input type="checkbox"/> 8. Elevator car &amp; equipment support details</li> <li><input type="checkbox"/> 9. Description of controls &amp; fixtures</li> <li><input type="checkbox"/> 10. Door &amp; frame details</li> <li><input type="checkbox"/> 11. Interior details including lighting</li> </ul>
<b>HVAC</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Identify all systems <i>(continued)</i></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 9. Overall building air flow diagram indicating air handlers, exhaust fans, duct risers, and duct mains  <i>(continued)</i></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 21. Detailed piping and duct design with all sizes indicated  <i>(continued)</i></li> </ul>

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<p><i>HVAC</i> <i>(continued)</i></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 2. One-line diagrams for each air, hydronic, steam, condensate and all other HVAC related systems, and other materials as required to describe the fundamental design concept for all mechanical systems</li> <li><input type="checkbox"/> 3. Indication of the amount of redundancy for all major pieces of mechanical equipment, e.g. “two pumps 100% capacity each”</li> <li><input type="checkbox"/> 4. Major equipment locations</li> <li><input type="checkbox"/> 5. Air intake &amp; discharge locations</li> <li><input type="checkbox"/> 6. Gross HVAC zoning, and typical individual space zoning (e.g. VAV boxes per office =?)</li> <li><input type="checkbox"/> 7. Mechanical legend</li> <li><input type="checkbox"/> 8. Special occupancy zones</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 10. Plans indicating shaft, chase, recess requirements</li> <li><input type="checkbox"/> 11. Duct layout for typical spaces</li> <li><input type="checkbox"/> 12. Equipment schedules (major equipment)</li> <li><input type="checkbox"/> 13. Equipment locations (w/enlarged mechanical plans)</li> <li><input type="checkbox"/> 14. Indication of typical locations of fire dampers, smoke dampers, and combination F/S dampers</li> <li><input type="checkbox"/> 15. Control diagrams (concept form) for all mechanical and plumbing systems</li> <li><input type="checkbox"/> 16. Outline of major control sequences of operation</li> <li><input type="checkbox"/> 17. M/E smoke control schemes</li> <li><input type="checkbox"/> 18. Preliminary floor plans of mechanical rooms w/all components and required service access areas drawn to scale</li> <li><input type="checkbox"/> 19. Preliminary calculations</li> <li><input type="checkbox"/> 20. Meter locations and types</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 22. Floor plans w/ all components and required service access areas drawn to actual scale. On the plans, indicate duct sizes and air flow quantities relative to each room, including CFM in and out of all doors. Indicate location of control panels</li> <li><input type="checkbox"/> 23. Lab air valves and volume control boxes (note that each is to be identified by a unique number assigned by the engineer). Provide a schedule that indicates the control sequence that applies to each room (room #, room descriptor, control sequence #)</li> <li><input type="checkbox"/> 24. Detailed floor plans of mechanical rooms w/ all components and required service access areas drawn to actual scale</li> <li><input type="checkbox"/> 25. Cross-sections through mechanical rooms and areas where there are installation/coordination issues (tight space, zoning of utilities). Indicate required service access areas</li> <li><input type="checkbox"/> 26. In common mechanical space, indication of space zoning by system</li> <li><input type="checkbox"/> 27. Connection to fire alarm &amp; campus control systems</li> <li><input type="checkbox"/> 28. Equipment details, including structural support requirements</li> <li><input type="checkbox"/> 29. Penetration/sleeve details</li> <li><input type="checkbox"/> 30. Installation details</li> <li><input type="checkbox"/> 31. Duct construction schedule (on the drawings), indicating materials and pressure class for each duct system <i>(continued)</i></li> </ul>

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<b>HVAC</b> <i>(continued)</i>			<input type="checkbox"/> 32. Detailed controls drawings, including clear differentiation of trade responsibility for control, fire, and control power wiring <input type="checkbox"/> 33. Detailed sequences of operation including the specific setpoints for all control loops that will result in attainment of the required design criteria, as well as alarm setpoints and time delays <input type="checkbox"/> 34. Design calculations
<b>PLUMBING &amp; PIPING</b>	<input type="checkbox"/> 1. One-line (riser) diagrams for every plumbing system (e.g. domestic water, sanitary, storm, gas, RODI, etc.) and other materials as required to describe the fundamental design concept for all plumbing systems <input type="checkbox"/> 2. Indication of the amount of redundancy for all major pieces of mechanical equipment, e.g. “two pumps 100% capacity each” <input type="checkbox"/> 3. Main water supply, storm, and sanitary leads <input type="checkbox"/> 4. Major equipment locations <input type="checkbox"/> 5. Restroom location(s) <input type="checkbox"/> 6. Plumbing legend	<input type="checkbox"/> 7. Updated design criteria for each plumbing system (including set points, water quality levels, etc.) <input type="checkbox"/> 8. Preliminary piping plans (domestic & process) with indication of required service access areas <input type="checkbox"/> 9. Meter locations <input type="checkbox"/> 10. Back flow prevention locations <input type="checkbox"/> 11. Fixture schedules, to include lab fixtures <input type="checkbox"/> 12. Equipment schedules (major equipment) <input type="checkbox"/> 13. Preliminary floor plans of mechanical rooms w/all components and required service access areas drawn to scale	<input type="checkbox"/> 14. Water riser diagram, including assumed fixture counts per floor connection <input type="checkbox"/> 15. Waste and vent riser diagrams including assumed fixture counts per floor connection <input type="checkbox"/> 16. Foundation drains <input type="checkbox"/> 17. Detailed piping design with all pipe sizes indicated <input type="checkbox"/> 18. Typical plumbing details, including structural support requirements <input type="checkbox"/> 19. Water heating piping details <input type="checkbox"/> 20. Penetration/sleeve details <input type="checkbox"/> 21. Design calculations
<b>FIRE PROTECTION</b> <i>(MECHANICAL)</i>	<input type="checkbox"/> 1. One-line diagrams for each fire protection system, and other materials as required to describe the fundamental design concept for all fire protection systems <input type="checkbox"/> 2. Report documenting adequacy of utility <i>(continued)</i>	<input type="checkbox"/> 7. Location of test headers and fire department connections <input type="checkbox"/> 8. Preliminary piping plans <input type="checkbox"/> 9. Preliminary floor plans of mechanical rooms w/all components and required service access areas drawn to scale <input type="checkbox"/> 10. Fire pump sizing calculations	<input type="checkbox"/> 11. Fire protection service entrance details <input type="checkbox"/> 12. Fire protection plans (incl. header and riser layout) with indication of any required service access areas <input type="checkbox"/> 13. Detailed piping design with all major pipe sizes indicated <i>(continued)</i>

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<b>FIRE PROTECTION (MECHANICAL) (continued)</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 3. Connection to utility</li> <li><input type="checkbox"/> 4. Location of fire pump and controller, jockey pump and sprinkler valves</li> <li><input type="checkbox"/> 5. Sprinkler legend</li> <li><input type="checkbox"/> 6. Optional F.P. systems</li> </ul>		<ul style="list-style-type: none"> <li><input type="checkbox"/> 14. Location of all sprinkler zone valves, drains, and fire hose connections</li> <li><input type="checkbox"/> 15. Zoning extents, for areas where the contractor will size the piping</li> <li><input type="checkbox"/> 16. Typical sprinkler installation details, including structural support details</li> <li><input type="checkbox"/> 17. Penetration/sleeve details</li> <li><input type="checkbox"/> 18. Design calculations</li> </ul>
<b>LIGHTING</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Electrical symbols legend</li> <li><input type="checkbox"/> 2. General drawing notes</li> <li><input type="checkbox"/> 3. General photometric levels</li> <li><input type="checkbox"/> 4. Fixture, lamp, and controls descriptions</li> <li><input type="checkbox"/> 5. Preliminary interior lighting plans</li> <li><input type="checkbox"/> 6. Preliminary outdoor lighting plans</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 7. Typical interior lighting and control plans</li> <li><input type="checkbox"/> 8. Outdoor lighting and control plans</li> <li><input type="checkbox"/> 9. Fixture types and schedule</li> <li><input type="checkbox"/> 10. Control system and control device descriptions</li> <li><input type="checkbox"/> 11. Typical photometric calculations</li> <li><input type="checkbox"/> 12. Dimming, daylighting and low voltage control zones</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 13. Interior and exterior lighting plans, including control systems and devices, lighting panels, switching and circuiting</li> <li><input type="checkbox"/> 14. Lighting control system schematics and wiring diagrams</li> <li><input type="checkbox"/> 15. Lighting control system detailed sequences of operation</li> <li><input type="checkbox"/> 16. Installation details, including structural support details</li> <li><input type="checkbox"/> 17. Normal lighting photometric calculations</li> <li><input type="checkbox"/> 18. Emergency lighting photometric calculations on 2' grid for State BFS approval</li> <li><input type="checkbox"/> 19. General notes on conduit and wire sizes for lighting branch circuits</li> </ul>
<b>ELECTRICAL POWER DISTRIBUTION</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Electrical demolition</li> <li><input type="checkbox"/> 2. One-line diagrams with equipment ratings</li> <li><input type="checkbox"/> 3. Manhole, duct bank, and building entry locations</li> <li><input type="checkbox"/> 4. Exterior equipment locations</li> <li><input type="checkbox"/> 5. Substation, generator and ATS descriptions <i>(continued)</i></li> <li><input type="checkbox"/> 6. Substation, generator, and</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 9. Manhole, duct bank, and building entry plans and details</li> <li><input type="checkbox"/> 10. Normal power riser diagram with circuit breaker, fuse, conduit and wire sizes</li> <li><input type="checkbox"/> 11. Emergency power riser diagram with circuit breaker, fuse, conduit and wire sizes</li> <li><input type="checkbox"/> 12. Grounding riser diagram <i>(continued)</i></li> <li><input type="checkbox"/> 13. Fault current and coordination studies</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 22. Details of power service to building</li> <li><input type="checkbox"/> 23. Power plans, including primary cable raceways, feeder conduits, electrical loads, duplex and special receptacles, and circuiting</li> <li><input type="checkbox"/> 24. Emergency power system plans, controls, and details <i>(continued)</i></li> <li><input type="checkbox"/> 25. Connections to other building</li> </ul>



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<b><i>ELECTRICAL POWER DISTRIBUTION (continued)</i></b>	<ul style="list-style-type: none"> <li>electric room locations</li> <li><input type="checkbox"/> 7. Preliminary substation and generator room plans</li> <li><input type="checkbox"/> 8. Panel numbering scheme</li> </ul>	<ul style="list-style-type: none"> <li>used to specify equipment ratings</li> <li><input type="checkbox"/> 14. Substation standard details</li> <li><input type="checkbox"/> 15. List of equipment on emergency power</li> <li><input type="checkbox"/> 16. Electrical load calculations</li> <li><input type="checkbox"/> 17. Panel schedules</li> <li><input type="checkbox"/> 18. Preliminary short circuit and protective device coordination study</li> <li><input type="checkbox"/> 19. Electrical equipment location plans</li> <li><input type="checkbox"/> 20. Typical electrical outlet location plans</li> <li><input type="checkbox"/> 21. Plan for temporary power during construction.</li> </ul>	<ul style="list-style-type: none"> <li>systems, including fire alarm and HVAC systems</li> <li><input type="checkbox"/> 26. Details of non-standard electrical installations</li> <li><input type="checkbox"/> 27. Conduit and wire sizes for services, feeders, and special branch circuits</li> <li><input type="checkbox"/> 28. General notes on conduit and wire sizes for 20 amp single phase branch circuits</li> <li><input type="checkbox"/> 29. Notes identifying locations of separate and shared neutrals</li> <li><input type="checkbox"/> 30. MCC elevations</li> <li><input type="checkbox"/> 31. Grounding details</li> <li><input type="checkbox"/> 32. Roof and floor penetration details</li> </ul>
<b><i>FIRE ALARM</i></b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. System description</li> <li><input type="checkbox"/> 2. FA panel locations</li> <li><input type="checkbox"/> 3. MOSCAD panel location</li> <li><input type="checkbox"/> 4. Preliminary FA device and appliance location plans</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 5. Riser diagram</li> <li><input type="checkbox"/> 6. MOSCAD standard detail</li> <li><input type="checkbox"/> 7. FA panel, device and appliance location plans</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 8. Detailed FA panel, device and appliance location plans including duct detectors, fire/smoke dampers, sprinkler flow and tamper switches, monitor and control modules, door hold-opens, door lock releases, etc.</li> <li><input type="checkbox"/> 9. Strobe light candela ratings</li> <li><input type="checkbox"/> 10. General notes on conduit and wire sizes</li> <li><input type="checkbox"/> 11. Details of connections to HVAC, fire pump, fire suppression, door hold-open, door lock, and MOSCAD systems</li> <li><input type="checkbox"/> 12. Detailed sequences of operation</li> </ul>
<b><i>COMMUNICATIONS (INCLUDING VOICE, DATA, &amp; VIDEO SYSTEMS)</i></b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Manhole, duct bank , and building entry locations</li> <li><input type="checkbox"/> 2. Building Entrance (BE) and local Telephone Room (TR) locations <i>(continued)</i></li> <li><input type="checkbox"/> 3. Riser diagram</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 5. BE and TR locations, sizes, and door swings</li> <li><input type="checkbox"/> 6. Backboard locations in BE and TR's <i>(continued)</i></li> <li><input type="checkbox"/> 7. Raceway and grounding riser diagrams <i>(continued)</i></li> <li><input type="checkbox"/> 8. Conduit and cable tray plans with</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 15. Detailed voice, data and video outlet locations</li> <li><input type="checkbox"/> 16. Details of telecommunications service to the building</li> <li><input type="checkbox"/> 17. Floor box schedule <i>(continued)</i></li> <li><input type="checkbox"/> 18. Conduit, outlet box and floor box</li> </ul>

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<b>COMMUNICATIONS (INCLUDING VOICE, DATA, &amp; VIDEO SYSTEMS) (continued)</b>	<input type="checkbox"/> 4. Preliminary cable tray plans	conduit and cable tray sizes <input type="checkbox"/> 9. Material cut-sheets <input type="checkbox"/> 10. List of equipment to share telecom rooms <input type="checkbox"/> 11. BE and TR heat loads <input type="checkbox"/> 12. Typical voice, data and video outlet location plans <input type="checkbox"/> 13. Emergency phone locations and types (wall or pedestal) <input type="checkbox"/> 14. Courtesy phone locations	installation details <input type="checkbox"/> 19. Power outlet locations in the BE and TR's <input type="checkbox"/> 20. Locations of non-telecom equipment in the BE and TR's
<b>SECURITY (INCLUDING CCTV AND CARD ACCESS CONTROL SYSTEMS)</b>	<input type="checkbox"/> 1. System descriptions <input type="checkbox"/> 2. Panel locations <input type="checkbox"/> 3. Preliminary device location plans	<input type="checkbox"/> 4. Riser diagrams <input type="checkbox"/> 5. Equipment location plans <input type="checkbox"/> 6. Security office layout <input type="checkbox"/> 7. Card access control equipment closet layout and elevations	<input type="checkbox"/> 8. Detailed equipment location plans <input type="checkbox"/> 9. Equipment schedules <input type="checkbox"/> 10. Concealed and exposed raceways <input type="checkbox"/> 11. Wiring diagrams <input type="checkbox"/> 12. Installation details <input type="checkbox"/> 13. Detailed sequences of operation
<b>A/V AND SPECIAL SYSTEMS</b>	<input type="checkbox"/> 1. System descriptions <input type="checkbox"/> 2. Panel locations <input type="checkbox"/> 3. Preliminary device location plans	<input type="checkbox"/> 4. Riser diagrams <input type="checkbox"/> 5. Equipment descriptions <input type="checkbox"/> 6. A/V equipment location plans <input type="checkbox"/> 7. Clock and other equipment location plans	<input type="checkbox"/> 8. Detailed equipment location plans <input type="checkbox"/> 9. Equipment schedules <input type="checkbox"/> 10. Wiring diagrams <input type="checkbox"/> 11. Installation details (including cabinets, hangers, and connection boxes) <input type="checkbox"/> 12. Detailed sequences of operation
<b>OTHER GRAPHICS</b>	<input type="checkbox"/> 1. Renderings, models, or other graphics as necessary to clearly present concept	<input type="checkbox"/> 2. Updated renderings, models and graphics required only as appropriate for design development	<input type="checkbox"/> 3. Updated renderings, models and graphics required only as appropriate for construction document preparation
<b>COST</b>	<input type="checkbox"/> 1. Preliminary cost estimate. For projects with cost greater than \$500,000, use format described in UM Design Guidelines SID-P "Project Estimates"		
<b>NOTES</b>	<ol style="list-style-type: none"> <li><i>All movable furnishings and artwork are considered to be independent of the architectural design project. (continued)</i></li> <li><i>Submittals of deliverables for DD and CD phases are to be preceded by a complete response to UM review comments on the</i></li> </ol>		

ITEM	SCHEMATIC PHASE	DESIGN DEVELOPMENT PHASE	CONSTRUCTION DOCUMENT PHASE
<p><i>NOTES (continued)</i></p>	<p><i>previous phase of design work.</i></p> <p>3. <i>No individual volume of drawings is to exceed 25 lbs in weight. No individual specification book volume is to exceed three inches in thickness.</i></p>		