

Design Requirements for Maintainability & Serviceability of Building Systems:

Every building component shall be designed for safe and efficient maintainability and serviceability by UO Facilities Services (FS), Housing, etc. personnel. Documentation during programming, design phases, and construction documentation shall clearly document all clear and accessible spaces where maintenance is, or may be, required. Such spaces shall be noted 'Maintenance Access' on all drawings submitted for review, and shall be included in final contract documents for construction. Maintenance Access shall be defined as the 3 dimensional obstruction free spaces required to properly and safely service and maintain a built in item or component. Construction coordination is then required to assure the preservation of these mandatory maintenance access spaces and clearances remain obstruction free.

Mandatory Design Meetings, Reviews, and Submittals:

Several levels of document review are mandatory for Facilities personnel. These are necessary in order for FS to become familiar with the project in question, understand the project goals, and review documents for compliance with these Standards. The following points of review may vary depending upon project size, type, scope, complexity, etc. However, they are **not** to be modified without prior approval by both the Campus Planning & Real Estate and Facilities Capital Construction Personnel assigned to the project. Project planning and management for small to medium projects may or may not include CPRE, while larger projects require collaboration with Campus Planning & Real Estate offices:

- Specific Owner and FS personnel will be defined at the beginning of each project jointly by the Project Manager (PM), Capital Construction and Project Planner (PP).
- Owner Personnel schedules will take first priority when scheduling a meeting. All pertinent Owner and FS Personnel must be in attendance.
- All meeting minutes shall be recorded and distributed by the design team.
- All Owner review comments will be coordinated and compiled by the Campus Planning & Real Estate PP into 1 deliverable to the design team; copies will be distributed to all involved.
- The submittal of any and all design documents to the Owner for review implies they are in compliance with the Construction Standards; unless approved Substitution Requests are submitted and approved via the process found in Division 01. If not in compliance, the submittal may be rejected and returned to the design team for completion prior to any Owner review.
- Any and all Owner review comments shall be tracked and responded to by the design team to ensure consideration, implementation, and/or discussion. Any redesign required due to the failure of the design team to adhere to this requirement shall be at the expense of the design team.
- The design team shall be responsible for any expenses associated with corrections and/or redesign of the 100% CD documents that may be required due to deviations or omissions from documented Owner review comments that have not been addressed, answered in writing, and/or deviations or omissions of the Construction Standards that did not follow the Construction Standards Substitution Request process.

Schematic Design (SD):

1. The following requirements are those of specific concern to FS Personnel.
2. It is required that the design team meets with FS personnel during the SD phase to discuss the following:
 - a. Project introduction to FS to the extent known by the design team, Project Planner (PP) or Project Manager (PM) representative.
 - b. Discussion of project specific items such as FS concerns, interests, suggestions, specific building needs, space needs, general scope, program, etc.
 - c. All topics of discussion are to be recorded in the form of meeting minutes by the design team for consideration and tracking in the design process.
 - d. A tracking list of issues is to begin and to be managed by the design team.
3. Building systems and strategies must be documented, reviewed, and approved by the end of SD phase; detailing of systems will follow in DD and CD phases.
4. At completion of 100% SD documents a meeting presentation shall be scheduled with the defined FS personnel and design team prior to official review and comment of SD documents. The discussion should include the following and meeting minutes shall be recorded and distributed by the design team:
 - a. Review of project specifics, building systems selected, scope, etc. per the items listed above.
 - b. Design team items and questions needing FS attention during document review.
 - c. FS project specific questions.
5. At completion of 100% SD document review a meeting shall be scheduled with the defined FS personnel and design team to debrief and discuss FS questions / comments arising from review and recorded comments.
6. Design team shall record meeting minutes and update issues tracking list for distribution to all.
7. Documents for completion of SD shall include the following information at a minimum and as appropriate per the scope:

Schematic Design: Facilities Requirements for 100% SD documentation	
General Description:	<ol style="list-style-type: none"> 1. Scope of work narrative. 2. Building Program. 3. List of applicable building codes on drawing title sheet. 4. Building code review with list of anticipated building code variance requests. 5. Evaluation of anticipated sustainability performance; SEED and LEED-DAS. 6. Defined zones of 'Maintenance Access' per requirement noted in the Standards Introduction. 7. Maintainability of the facility. 8. Proposed routes of access and egress: fire access; emergency life safety egress; ADA access; pedestrian access & egress; etc.
Specification:	<ol style="list-style-type: none"> 1. System and material narrative description in outline form.
Site:	<ol style="list-style-type: none"> 1. Storm water management strategy. 2. Site plans that include the following: <ul style="list-style-type: none"> • Existing conditions • Demolition • Building outline(s) • Future expansion • Site entrance • Roads & driveways • Parking locations • Bike parking locations

Schematic Design: Facilities Requirements for 100% SD documentation continued	
Site continued:	<ul style="list-style-type: none"> • Loading dock location • Waste & recycling collection location • Walkway and stairway locations • Emergency telephone locations • Utility requirements • Site utilities • Preliminary grading plan • Soil remediation work by Owner, if needed • Site lighting layout concept
Landscaping:	<ol style="list-style-type: none"> 1. Existing conditions 2. Landscaping concept 3. Existing & new irrigation zones
Structural:	<ol style="list-style-type: none"> 1. Structural scheme 2. Written description
Building Exterior Envelope:	<ol style="list-style-type: none"> 1. Typical elevations 2. Fenestration layout 3. Material designations 4. Overall building cross-sections 5. Roof layout 6. Energy code support information required for SEED / LEED
Building Interior:	<ol style="list-style-type: none"> 1. Typical floor plans with legends 2. Demolition 3. Beginning of room numbering complying with 'Room Numbering Guide' Appendix 4. Area use identification & area in square feet 5. Mechanical, electrical, and other service closets and rooms 6. Circulation paths 7. Area tabulations compared to program requirements 8. Show flexibility for expansion and alterations 9. Preliminary layout of major spaces with fixed equipment
Elevators:	<ol style="list-style-type: none"> 1. Elevator locations 2. Equipment room locations
HVAC:	<ol style="list-style-type: none"> 1. 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. 2. Indication of the amount of redundancy for all major pieces of mechanical equipment. Ex: 2 pumps with 100% capacity each, etc. 3. Major equipment locations 4. Air intake and discharge locations for major systems 5. Strategy for HVAC zoning and typical individual space zoning. Ex: VAV boxes per office = x, etc. 6. Mechanical legend 7. Special occupancy zones if any 8. Dimensioned 3 dimensional clear maintenance space to be maintained at all service points on fan coil units, filter banks, motor locations, dampers, etc shall be graphically shown. 9. General layout of mechanical rooms

Schematic Design: Facilities Requirements for 100% SD documentation continued	
HVAC continued:	<ol style="list-style-type: none"> 10. One-line diagrams for every plumbing system (ex: domestic water, sanitary, storm, gas, etc.) and other materials as required to describe the fundamental design concept for all plumbing systems. 11. Indication of the amount of redundancy for all major pieces of mechanical equipment. Ex: 2 pumps with 100% capacity each, etc. 12. Building water supply, storm, and sanitary leads. 13. Major equipment locations. 14. Restroom locations 15. Plumbing legend
Fire Protection:	<ol style="list-style-type: none"> 1. One-line diagrams for each plumbing system and other materials as required describing the fundamental design concept for all fire protection systems. 2. Report documenting adequacy of utility system, flow, etc. 3. Location of connections to utilities 4. Location of fire pump and controller 1. Fire Alarm system description. 2. FA panel / subpanel locations. 5. Preliminary FA device and appliance location plans.
Lighting:	<ol style="list-style-type: none"> 1. Electrical symbols legend 2. General drawing notes 3. General photometric levels 4. Fixture, lamp, and controls descriptions 5. Preliminary interior lighting plans. 6. Preliminary outdoor lighting plans.
Electrical Power Distribution:	<ol style="list-style-type: none"> 1. Electrical demolition 2. One-line diagrams 3. Manhole, duct bank, and building entry locations. 4. Exterior equipment locations. 5. Substation, generator, and ATS descriptions. 6. Substation, generator, and electrical room locations.
Communications (Voice, Data, & Video Systems):	<ol style="list-style-type: none"> 1. Manhole, duct bank, and building entry locations. 2. Building entrance and phone/data room locations. 3. Riser diagram. 4. Preliminary cable tray plans. 5. Communication room plan layouts
Security (CCTV and Access Control Systems):	<ol style="list-style-type: none"> 1. System descriptions. 2. Panel locations.
A/V and Special Systems:	<ol style="list-style-type: none"> 1. System descriptions. 2. Panel locations.
Other Graphics:	<ol style="list-style-type: none"> 1. Renderings, models, or other graphics as necessary to clearly present concept.

Design Development (DD):

1. The following requirements are those of specific concern to Facilities Personnel.
2. Following FS input of SD documents, consultants shall prepare the next level of DD documents.
3. At completion of 100% DD documents a meeting presentation shall be scheduled with the defined FS personnel and design team prior to review and comment on DD document review. The discussion shall include the following and meeting minutes shall be recorded and distributed:
 - a. Building systems additions and/or refinements.
 - b. Design team items and questions needing FS attention during document review.
 - c. FS project specific questions.
4. At completion of FS review of 100% DD documents a meeting shall be scheduled with the defined FS personnel and design team to debrief and discuss FS questions / comments arising from review and recorded comments.
5. Design team shall record meeting minutes and update issues tracking list for distribution to all.
6. Documents for completion of DD shall include the following information at a minimum and as appropriate per the scope:

Design Development: Facilities Requirements for 100% DD documentation	
General Description:	<ol style="list-style-type: none"> 1. Maintained and developed SD items listed above. 2. Specifics of building systems and components with three-dimensional accuracy. 3. Description of construction phasing. 4. Description of any proposed occupancy within construction area. 5. Description of water & vapor characteristics for roof & exterior walls. 6. All 'Maintenance Access' zones should be identified
Specification:	<ol style="list-style-type: none"> 1. Outline specifications indicating features of major equipment as well as component materials (ex: 'welded schedule 40 steel pipe', etc.) with same section numbering as final specification. 2. Provide complete systems descriptions and where possible material selections 3. Specifications to conform to materials and standards set in UO Campus Construction Standards 4. List of sole-source materials and/or systems
Site:	<ol style="list-style-type: none"> 1. General dimensions and elevations. 2. Permanent exterior signage. 3. Parking / roadway plans and elevations. 4. Vehicle and pedestrian traffic controls, as needed. 5. Grading plan. 6. Site lighting plan with photo metrics 7. Concept details of site fixtures and equipment. 8. Utility plans, elevations, and details for tunnels, chilled water system, steam system, storm water system, power distribution, etc. 9. Sanitary sewer flow calculations. 10. Plan to address existing hazardous / contaminated materials, as needed. 11. Soil erosion and sedimentation control plan. 12. Dewatering plan, as needed.
Landscaping:	<ol style="list-style-type: none"> 1. Soils description and plan. 2. Planting plan. 3. Irrigation plan.
Structural:	<ol style="list-style-type: none"> 1. Foundation plan. 2. Typical floor framing plan.

Design Development: Facilities Requirements for 100% DD documentation continued	
Structural continued:	<ol style="list-style-type: none"> 3. Framing plans at unique features. 4. Main member sizing. 5. Structural sections. 6. Tunnel connections.
Building Exterior Envelope:	<ol style="list-style-type: none"> 1. All building elevations with dimensioned heights. 2. Typical wall heights. 3. Roof and drainage plans. 4. Exterior door details. 5. Typical window details. 6. Details of unique features. 7. Expansion joint locations. 8. Large scale building cross-sections.
Building Interior:	<ol style="list-style-type: none"> 1. All floor plans. 2. Enlarged plans at elevation changes such as stairs. 3. Enlarged plans at toilet rooms. 4. Reflected ceiling plans. 5. Wall types, fire ratings, and smoke control zones. 6. Plan to address existing hazardous materials, if applicable. 7. Fixed seating. 8. Defined seating, serving, and kitchen facilities. 9. Equipment and furniture layouts. 10. Important interior elevations. 11. Details of unique features. 12. Details of fixed equipment. 13. Preliminary finish and door schedules. 14. Door and hardware schedules. 15. Informational signage.
Elevators:	<ol style="list-style-type: none"> 1. Elevator shaft section. 2. Equipment description.
HVAC:	<ol style="list-style-type: none"> 1. Overall HVAC diagram indicating air handlers, exhaust fans, duct risers, and duct mains. 2. Plans indicating shaft, chase, and recess requirements. 3. Duct layout for typical spaces. 4. Equipment schedules. 5. Equipment locations with enlarged mechanical room plan(s). 6. Indication of typical locations of fire dampers, smoke dampers, and combination fire / smoke dampers. 7. Control diagrams (concept form) for all mechanical and plumbing systems. Clarification? 8. Outline of major control sequence of operation. 9. Mechanical and electrical smoke control schemes. 10. Enlarged preliminary floor plans of mechanical rooms with all components and required service areas drawn to scale. 11. Preliminary calculations. 12. Meter locations and types. 13. Campus utility feeds. 14. Variable Frequency Drives (VFD) for HVAC description and locations.

Design Development: Facilities Requirements for 100% DD documentation continued	
HVAC continued:	<ol style="list-style-type: none"> 15. Dimensioned 3 dimensional clear maintenance space to be maintained at all service points on fan coil units, filter banks, motor locations, dampers, etc shall be graphically shown. 16. General layout of mechanical rooms with sections both ways 17. All ducts 12” or greater in any dimension to be shown graphically full size
Plumbing & Piping:	<ol style="list-style-type: none"> 1. Design criteria for each system including set points, water quality levels, etc. 2. Preliminary piping plans (domestic & process) with indication of required service access areas. 3. Meter locations and types. 4. Back flow prevention locations. 5. Fixtures schedules 6. Equipment schedules 7. Enlarged preliminary floor plans of mechanical rooms with all components and required service areas drawn to scale.
Fire Protection (Mechanical):	<ol style="list-style-type: none"> 1. Location of test headers and fire department connections. 2. Preliminary piping plans. 3. Enlarged preliminary floor plans of mechanical rooms with all components and required service areas drawn to scale. 4. Fire pump sizing calculations and devices when applicable.
Fire Alarm:	<ol style="list-style-type: none"> 1. Riser diagram. 2. FA panel, device, and appliance location plans.
Lighting:	<ol style="list-style-type: none"> 1. Typical interior lighting and control plans. 2. Outdoor lighting and control plans. 3. Fixture types, schedules, and cut sheets. 4. Control system and control device descriptions. 5. Photometric calculations and diagrams. 6. Dimming, daylighting, and low voltage control zones. 7. Documentation of energy code to support SEED, and LEED compliance level.
Electrical Power Distribution:	<ol style="list-style-type: none"> 1. Manhole, duct bank, and building entry plans and details. 2. Normal power riser diagram with circuit breaker sizes. 3. Standby and Emergency power diagram with circuit breaker sizes. 4. Grounding riser diagram. 5. List of equipment on standby / emergency power. 6. Electrical load calculations. 7. Panel schedules and locations. 8. Electrical equipment location plans. 9. Typical electrical outlet location plans. 10. Plan for temporary power during construction.
Communications (Voice, Data, & Video Systems):	<ol style="list-style-type: none"> 1. Building entry and phone/data room locations, sizes, and door swings. 2. Backboard locations. 3. Raceway and grounding riser diagrams. 4. Conduit and cable tray plans with conduit and cable tray sizes. 5. Material cut-sheets. 6. Building entry and phone/data room heat loads. 7. Typical voice, data, and video outlet location plans. 8. Emergency phone locations and types (wall or pedestal). 9. Courtesy phone locations.

Design Development: Facilities Requirements for 100% DD documentation continued	
Communications (Voice, Data, & Video Systems) continued:	<ol style="list-style-type: none">10. Emergency phone locations.11. Communication room plan layouts12. Interior elevations
Security (CCTV and Access Control Systems):	<ol style="list-style-type: none">1. Riser diagrams.2. Equipment location plans.3. Security office layout, if applicable.4. Card access control equipment closet layout and elevations.
A/V and Special Systems:	<ol style="list-style-type: none">1. Riser diagrams.2. Equipment descriptions.3. A/V equipment location plans.4. Clock and other equipment location plans.
Other Graphics:	<ol style="list-style-type: none">1. Updated renderings, models, etc. required as appropriate for design development.

Construction Documents (CD):

1. The following requirements are those of specific concern to Facilities Personnel.
2. Following FS input of DD documents, consultants shall prepare the next level of CD documents:
3. 50% and 95%/100% CD documents (at a minimum) shall be reviewed by FS to ensure that all items have been addressed and incorporated appropriately. The decision to provide either or both a 95% CD or 100% CD set must be discussed with and decided by the Owner.
4. At issuance of 50%, and 95%/100% CD's (at a minimum) and prior to FS review, meeting presentations shall be scheduled with previously defined FS personnel and design team prior to official FS review and comment on CD document review. At a minimum the discussion shall include any changed items from previous reviews, unanswered questions, concerns from all parties.
5. At completion of FS review of 50% and 95%/100% CD documents discussions shall be scheduled with defined FS personnel and design team to debrief and discuss questions / comments arising from review and recorded comments.
6. Design team shall record meeting minutes and update issues tracking list for distribution to all.
7. Project bidding and or submission of plans to the City for permitting may **not** occur until 100% CD documents are complete and reviewed by the Owner (FS and CPRE) **unless** prior written Owner approval is obtained (approval from both FS and CPRE).
8. Documents for completion of CD shall include the following information at a minimum and as appropriate per the scope:

Construction Documents: Facilities Requirements for 50% and subsequent 95%/100% CD documentation	
General Description:	<ol style="list-style-type: none"> 1. Maintained and developed SD items listed above. 2. Documentation on drawings as required by building codes; specifically to include indication of maximum allowable number of people in each room. 3. If multiple bid packages, clear indication of scope for each release. 4. Identification of construction phasing, including temporary requirements during each phase of construction.
Specification:	<ol style="list-style-type: none"> 1. Complete specification for all divisions and trades, including draft front end documents. 2. List of items which are sole-sourced or dual-sourced and justification for not specifying three acceptable products.
Site:	<ol style="list-style-type: none"> 1. Extent of construction area. 2. Area traffic plan, if existing roads / walks are impacted. 3. Site development phasing. 4. Construction site access. 5. Staging area. 6. Construction signage. 7. Site details, including hardscapes. 8. Profiles for underground utilities. 9. Pipe sizes. 10. Connection details. 11. Local government review comments on utilities and modifications in right(s)-of-way. 12. Final photometric of site lighting.
Landscaping:	<ol style="list-style-type: none"> 1. Protection for existing trees and significant plantings during construction. 2. Soil preparation and planting specifications. 3. Guying diagrams. 4. Piping diagrams. 5. Pipe sizes. 6. Landscape and irrigation details and legends.

Construction Documents: Facilities Requirements for 50% and subsequent 95%/100% CD documentation continued	
Structural:	<ol style="list-style-type: none"> 1. Definition of control joints. 2. Beam, column, and slab schedules. 3. Mechanical and electrical house keeping pads. 4. Foundation details. 5. Structural details and notes. 6. Structural calculations.
Building Exterior Envelope:	<ol style="list-style-type: none"> 1. Roof-mounted equipment. 2. Roof details. 3. Exterior details. 4. Flashing details. 5. Control joint definition and details.
Building Interior:	<ol style="list-style-type: none"> 1. Dimensioned floor plans. 2. Enlarged plans. 3. Partition details. 4. Interior details. 5. Interior elevations. 6. Finish schedules. 7. Door and hardware schedules. 8. Room signage. 9. Schedule of proposed movable equipment that is NOT indicated on documents. 10. Schedule of lab fixtures (turrets, etc.), if applicable. 11. Parapet & coping details.
Elevators:	<ol style="list-style-type: none"> 1. Dimensioned plans. 2. Sections and details of hydraulic cylinder, if applicable. 3. Description of shaft sump pits. 4. Elevator car and equipment support details. 5. Description of controls and fixtures. 6. Door and frame details. 7. Interior Details including lighting.
HVAC:	<ol style="list-style-type: none"> 1. Detailed piping and duct design with all sizes indicated. 2. Floor plans with all components and required service access areas drawn to scale. On the plans, indicate ducts sizes and air flow quantities relative to each room, including CFM in and out of all doors. Indicate location of control panels. 3. Lab air valves and volume control boxes. Provide a schedule that indicates the control sequence that applies to each room. 4. Detailed and enlarged floor plans of mechanical rooms with all components and required service areas drawn to scale. 5. Enlarged cross-sections through mechanical rooms and areas where there are installation / coordination issues (tight space, zoning of utilities, etc.). Indicate required service access areas. 6. In common mechanical space, indication of space zoning by system. 7. Connection to fire alarm and campus control systems. 8. Equipment details, including structural support requirements. 9. Penetration and sleeve details. 10. Installation details. 11. Duct construction schedule indicating materials and pressure class for each duct system; either on drawings or in specifications.

Construction Documents: Facilities Requirements for 50% and subsequent 95%/100% CD documentation continued	
HVAC continued:	<ol style="list-style-type: none"> 12. Detailed controls drawings, including clear differentiation of trade responsibility for control, fire, and control power wiring. 13. Detailed sequences of operation including the initial values for all control loops that will result in attainment of the required design criteria, as well as alarm set points and time delays. Final values establishment during system commissioning. 14. Design calculations. 15. Dimensioned 3 dimensional clear maintenance space to be maintained at all service points on fan coil units, filter banks, motor locations, dampers, etc shall be graphically shown. 16. Detailed layout of mechanical rooms with sections both ways 17. All ducts 12" or greater in any dimension to be shown graphically full size
Plumbing & Piping:	<ol style="list-style-type: none"> 1. Water riser diagram, including assumed fixture counts per floor connection. (May not be required for 1 to 2 story buildings; project decision.) 2. Waste and vent riser diagrams including assumed fixture counts per floor connection. (May not be required for 1 to 2 story buildings; project decision.) 3. Foundation drains; unless identified in Architectural. 4. Detailed piping design with all pipe sizes indicated. 5. Typical plumbing details, including structural support requirements. 6. Water heating piping details. 7. Penetration and sleeve details. 8. Design calculations. (May not be required; project decision.)
Fire Protection (Mechanical):	<ol style="list-style-type: none"> 1. Fire protection service entrance details. 2. Fire protection plans (including header and riser layout) with indication of any required service access areas. 3. Detailed piping design with all major pipe sizes indicated. 4. Location of all sprinkler zone valve and drain connections. 5. Zoning extents, for areas where the contractor will size the piping. 6. Typical sprinkler installation details, including structural support requirements. 7. Penetration and sleeve details. 8. Design calculations. (May not be required if a design-build system; project decision.)
Fire Alarm:	<ol style="list-style-type: none"> 1. 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. 2. Strobe light candela ratings. 3. General notes on conduit and wire sizes. 4. Details of connections to HVAC, fire pump, fire suppression, door hold-open, and door lock systems. 5. Detailed sequence of operations.
Lighting:	<ol style="list-style-type: none"> 1. Interior and exterior lighting plans, including control systems and devices, lighting panels, switching, and circuiting. 2. Lighting control system and wiring diagrams. 3. Installation details, including structural support details. 4. Normal lighting photometric calculations. 5. Emergency lighting photometric calculations. 6. Final fixtures cut sheets. 7. General notes on conduit and wire sizes for lighting branch circuits.

Construction Documents: Facilities Requirements for 50% and subsequent 95%/100% CD documentation continued	
Electrical Power Distribution:	<ol style="list-style-type: none"> 1. Details of power service to the building. 2. Power plans, including primary cable raceways, feeder conduits, electrical loads, duplex and special receptacles, and circuiting. 3. Standby and emergency power system plans, controls, and details. 4. Connections to other building systems, including fire alarm and HVAC systems. 5. Details of non-standard electrical installations. 6. Conduit and wire sizes for services, feeders, and special branch circuits. 7. General notes on conduit and wire sizes for 10 amp single phase branch circuits. 8. Notes identifying locations of separate and shared neutrals. 9. MCC elevations. 10. Grounding details. 11. Roof and floor penetration details. 12. Design calculations.
Communications (Voice, Data, & Video Systems):	<ol style="list-style-type: none"> 1. Detailed voice, data, and video outlet locations. 2. Details of telecommunications services to the building. 3. Floor box schedule. 4. Conduit, outlet box, and floor box installation details. 5. Power outlet locations in the building entry and phone/data rooms. 6. Communication room plan layouts 7. Interior elevations
Security (CCTV and Access Control Systems):	<ol style="list-style-type: none"> 1. Detailed equipment location plans. 2. Equipment schedules. 3. Concealed and exposed raceways. 4. Wiring diagrams. 5. Installation details.
A/V and Special Systems:	<ol style="list-style-type: none"> 1. Detailed Equipment location plans. 2. Equipment schedules. 3. Wiring diagrams. 4. Installation details including cabinets, hangers, and connection boxes.
Other Graphics:	<ol style="list-style-type: none"> 1. Updated renderings, models, or other graphics required only as appropriate for construction document preparation.

End of Section