

2010-1. General

- 1.1. This section outlines the submittal requirements at each design stage and the responsibilities of the Designer of Record during each phase. Submittals are required at 20 percent completion (schematic design), 40 percent completion (design development), 70 percent completion (preliminary construction documents), 99 percent completion (completed construction documents), and 100 percent completion (final construction documents). Drawings in every submittal shall be as discussed in Section 2040, with the exception of design presentation boards. Specifications formatting is discussed in further detail in Section 2050.
- 1.2. **Written Comments.** After each review, the Designer of Record will be furnished written comments to be annotated and returned to the BIA. Comments shall be annotated as A=Concur, D=Do Not Concur, or E=Exception.
 - 1.2.1. Comments annotated with D or E shall be explained to justify noncompliance with the comment. Comments annotated with A may also be annotated with additional comments. These annotations will, in addition to explanations previously required, include a brief annotation for all comments concurred with as to what action was taken and where.
 - 1.2.2. The Designer of Record shall furnish all annotated comments to the BIA no later than 14 calendar days after receipt of all comments associated with the particular submittal.
 - 1.2.3. After each submittal, the Designer of Record shall make any corrections necessary. The Designer of Record shall not proceed or initiate any work on any successive design level prior to receipt of approval of the preceding design level.

2010-2. 20 Percent Completion – Schematic Design Submittal

- 2.1. **General.** The 20 percent completion schematic design submittal will comprise the documents necessary to illustrate the general scope, scale, arrangement, and relationships of project components. At this stage, the design will be conceptual. The content of the schematic design package shall include, but not be limited to, the following information:

20% Submittal Requirements – Schematic Design Phase				
General				
Item No.	Submittal Requirement	Yes	No	N/A
1	Update any previous schedule for milestones, submittals, contracting, and construction.			
2	Develop probable costs based on the schematic design information. In the event the project cost estimate exceeds the established budget, the Designer of Record shall make recommendations and notify, in writing, the Contracting Officer for further direction.			
3	Coordinate LEED documentation for 20% schematic design, illustrating proposed strategies for compliance with LEED requirements and ways to achieve certification goals.			

20% Submittal Requirements – Schematic Design Phase				
Civil				
Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives in the civil narrative and drawings.			
2	Include graphic design of schematic land use.			
3	Show physical influences.			
4	Show property lines, north arrow, and scale.			
5	Show site access points.			
6	Show existing natural features.			
7	Show proposed roads and parking.			
8	Provide recommendations for controlling runoff.			
9	Show existing water and sanitation facilities with respective appurtenances indicated.			
10	Provide a detailed outline of proposed water and sanitation facilities, indicating point of connection to existing systems.			
11	Indicate all necessary valves, fire hydrants, ground storage tanks, pump stations, etc.			
12	Submit a chemical analysis of the water supply.			
13	Indicate all necessary treatment plants, manholes, lift stations, force mains, septic tanks, grease traps, oil/water separators, etc.			
14	Provide preliminary opinion of estimated cost.			
15	Provide a site survey.			
16	Provide a geotechnical report (if not provided with preliminary plan).			

20% Submittal Requirements – Schematic Design Phase				
Landscape				
Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives in the landscape narrative and drawings.			
2	Develop conceptual design solutions for land forms, lawns, and plantings based on program requirements, physical site characteristics, design objectives, and environmental determinates.			
3	Provide a conceptual layout of outdoor recreational areas, including fields, lawns, play pads, etc.			

20% Submittal Requirements – Schematic Design Phase				
Architectural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives in the architectural narrative and drawings.			
2	Provide conceptual site plan and building plans, including room numbers and areas.			
3	Include an approximate footprint, areas, and volumes that meet the POR and adjacency requirements.			
4	Provide building shading and solar control analysis.			
5	Provide preliminary building sections and elevations.			
6	Provide a preliminary selection of building systems and materials.			
7	Provide perspective sketches and/or study models (electronic and/or physical) as required to describe the design.			
8	Coordinate architectural work with that of engineering and other design disciplines involved in the project.			
9	Review and check documents prepared for the project.			

20% Submittal Requirements – Schematic Design Phase				
Structural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives in the structural narrative and drawings.			
2	Include structural design criteria.			

20% Submittal Requirements – Schematic Design Phase				
Mechanical/Fire Protection				
Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives in the mechanical narrative and drawings, including: <ul style="list-style-type: none"> • Scope of project • Preliminary systems selections <ul style="list-style-type: none"> - HVAC, controls/EMS, plumbing, and fire protection • Energy sources • Utility availability/capacities • Established building energy budget 			
2	Provide design analysis, including: <ul style="list-style-type: none"> • Building preliminary energy modeling • Matrix of LCCA options <ul style="list-style-type: none"> - including solar hot water • Supporting data/calculations • Fire protection design analysis 			
3	<ul style="list-style-type: none"> • Review LEED requirements and provide strategies for compliance 			

20% Submittal Requirements – Schematic Design Phase				
Electrical				
Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives in the electrical narrative and drawings.			
2	Coordinate with utility company and provide available power characteristics.			
3	Provide generator recommendation.			
4	Provide lightning protection recommendation.			
5	Provide renewable energy source recommendation.			
6	Indicate lighting power density.			
7	Include a legend.			
8	Provide power plans, including: <ul style="list-style-type: none"> • Typical room layouts • Major equipment locations 			
9	Provide lighting plans, including: <ul style="list-style-type: none"> • Typical room layouts • Typical room point-by-point foot-candle calculations 			

10	Provide a one-line diagram, including: <ul style="list-style-type: none"> • System voltage and phase • Preliminary equipment sizes • Conduit and wire sizing is not required 			
11	Provide sample schedules, including: <ul style="list-style-type: none"> • Panel schedule • Switchboard • Motor control center • Feeder schedule • Mechanical schedule • Luminaire schedule • Transformer schedule • Kitchen equipment schedule 			

20% Submittal Requirements – Schematic Design Phase

Information Technology

Item No.	Submittal Requirement	Yes	No	N/A
1	Communicate conceptual design solutions and alternatives for the IT systems in IT narrative and drawings. The narrative should also include the application of the IT Systems Selection Matrix used to determine the systems to be included.			
2	Provide generalized plan views of a typical telecommunications room, entrance facility, classroom, and office, along with any other appropriate major spaces. These may either be inserted within the narrative or included as separate drawings.			
3	Indicate general space requirements and locations for major IT components.			

2010-3. 40 Percent Completion – Design Development Submittal

- 3.1. General.** Based upon the approved schematic design, design development documents are refinements of the project design. In the design development phase, the Designer of Record will establish the scope, relationships, forms, size, and appearance of the project. The design development package shall constitute a 40 percent construction documents level of detail. Plans, sections, elevations, typical construction details, and system and equipment layouts are included in this phase. Major materials and systems will be identified in the specifications, and minimum quality standards will be established. The content of the design development package shall include, but not be limited to, the following information:

40% Submittal Requirements – Design Development Phase				
General				
Item No.	Submittal Requirement	Yes	No	N/A
1	Update the previous schedule for milestones, submittals, contracting, and construction.			
2	Develop probable costs based upon the design development information. Cost estimates are to be presented by division and section according to CSI <i>MasterFormat</i> . In the event the project cost estimate exceeds the established budget, the Designer of Record shall make recommendations and, during the preliminary construction documents phase, make any changes necessary to bring the project within budget.			
3	For projects over \$1 million, a value engineering study is required. The Designer of Record shall assist the BIA with the value engineering effort. This effort will include the evaluation of value engineering recommendations for review by the BIA. The Designer of Record shall incorporate approved value engineering changes during the 70% preliminary construction documents phase.			
4	Coordinate LEED documentation for 40% design development, indicating proposed strategies for compliance with LEED requirements and ways to achieve certification goals.			
5	The Designer of Record shall annotate the review comments in the development of data for the next design level. If any review comment requires clarification and/or amplification to assure understanding, the Designer of Record shall notify the Contracting Officer in writing.			
6	Incorporate all approved comments from the BIA review of the 20% schematic design submittal.			

40% Submittal Requirements – Design Development Phase				
Civil				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative.			
2	Provide basic site design.			
3	Describe project location, as well as factors and objectives influencing the site plan.			
4	Show existing site features, including topography, acreage, boundaries, benchmark (B.M.) datum, etc.			
5	Indicate requirements for flood protection.			
6	Indicate items requiring removal/relocation.			
7	Indicate site geometry, including setback or clearance requirements.			
8	Indicate erosion control measures implemented.			
9	Provide storm management plan with USGBC designs implemented to the fullest extent possible.			
10	Indicate easement requirements.			
11	Indicate existing site features such as buildings, streets, curbs, walks, fences, planted areas, site screens, plazas, courtyards, fountains, watercourses, ponds, elevation of high water, rock outcrops, etc.			
12	Indicate planned finished floor elevations and critical spot elevations.			
13	Indicate preliminary design analysis and calculations for site earthwork (cut or fill requirements and rough estimate of quantities) and drainage control.			
14	Indicate complete drainage concept using either finished contours or slope arrows, and estimate storm drain pipe sizes.			
15	Indicate existing utilities within the topography; show removals, relocations, and new work for utilities on separate plans; indicate critical depths and overhead clearances. (Utilities include gas, electric, drainage lines, etc.)			
16	Show schematic layout of wastewater and water collection and treatment systems, indicating invert elevations of all new and existing sanitary sewer and waterlines and top and invert elevations of all new and existing manholes.			
17	Indicate existing soil conditions affecting design.			
18	Indicate design values for flexible and rigid pavements.			

19	Indicate road design including all dimensions, slopes, and paralleling structures (curbs, sidewalks, guardrails, traffic signs, markings, fencing, etc.).			
20	Indicate parking and open storage areas, number, sizes, locations, access, etc.			
21	Indicate new work and connections to existing distribution system on water and sanitary site plans.			
22	Include details to obtain adequate cost estimates for items such as lift stations, septic tanks, oil separators, etc.			
23	Update to 40% design development phase cost estimate.			
24	Provide outline or draft specifications.			
25	Provide detailed calculations and criteria for the items listed above.			
26	Review comments and provide responses.			

40% Submittal Requirements – Design Development Phase

Landscape

Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative. Additional submittal requirements include the following:			
2	Preliminary landscape plan			
3	Preliminary irrigation plan			
4	Typical landscape details			
5	Outline or draft specifications			

40% Submittal Requirements – Design Development Phase				
Architectural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative. Additional submittal requirements include the following:			
2	Plans, including code plans, floor plans, roof plans, and reflected ceiling plans. Code plans shall include areas for each space. Plans shall include major dimensions.			
3	Building sections and elevations			
4	Critical interior elevations			
5	Typical details and wall sections			
6	Typical casework elevations			
7	Final materials selections			
8	Equipment layouts			
9	Furniture, furnishings, and equipment selections			
10	Typical interior details of construction			
11	Perspective sketches and/or study models (electronic or physical) as required to describe the design			
12	Outline or draft specifications			

40% Submittal Requirements – Design Development Phase				
Structural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative. Additional submittal requirements include the following:			
2	Final structural design criteria			
3	Structural foundation plan identifying the foundation system and defining representative sizes and depths			
4	Structural floor framing plan identifying the floor framing system and lateral system with representative member sizes			
5	Structural roof framing plan identifying the roof framing system and lateral system with representative member sizes			
6	Representative details defining critical dimensions of the structure			
7	Outline or draft specifications			

40% Submittal Requirements – Design Development Phase				
Mechanical/Fire Protection				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative. Additional submittal requirements include the following:			
2	Finalized design analysis, including: <ul style="list-style-type: none"> • Recommended LCCA items 			
3	Mechanical and plumbing legends (separate drawings)			
4	Preliminary mechanical schedules			
5	Outline or draft specifications			
6	Full-building HVAC plans illustrating: <ul style="list-style-type: none"> • Equipment locations • Initial mechanical room layouts • One-line of ductwork layout • One-line of main piping layout • Piping/HVAC flow diagrams 			
7	Full-building plumbing plans illustrating: <ul style="list-style-type: none"> • Water and sewer entrances • One-line of roof drainage • One-line of main plumbing lines • Initial riser diagrams 			
8	Temperature controls/EMS design, including: <ul style="list-style-type: none"> • Control diagrams • I/O list in outline specification • Sequence of operation in outline specification • Temperature control zone plan 			
9	Fire protection design, including: <ul style="list-style-type: none"> • Draft performance specification • Plan for location of utility interface, fire protection header, etc. • Flow test results 			

10	Preliminary calculations, including: <ul style="list-style-type: none"> • Heating and cooling load • Utility pipe sizing • Plumbing fixture count • Pipe stress (preliminary) • Acoustical evaluation (preliminary) • Friction calculations – air/liquid (preliminary) • Other 			
11	Makeup water test analysis results, including: <ul style="list-style-type: none"> • Water treatment recommendations 			
12	Review of design for compliance with LEED requirements: <ul style="list-style-type: none"> • Energy budget met • No CFCS or HCFCs • Early involvement of Commissioning Agent • Zone control strategies achieved • Other 			

40% Submittal Requirements – Design Development Phase				
Electrical				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative. Additional submittal requirements include the following:			
2	Site plans illustrating: <ul style="list-style-type: none"> • Utility company coordination • Utility transformer location • Feeder routing, overhead vs. underground • All exterior light fixture locations 			
3	Renewable energy source location			
4	Full-building power plans illustrating: <ul style="list-style-type: none"> • Panel, switchgear, and transformer locations • Receptacle locations 			
5	Full-building lighting plans illustrating: <ul style="list-style-type: none"> • All interior fixture locations • Fixture designations • Specialty area point-by-point foot-candle calculations • Exterior point-by-point foot-candle calculations 			
6	Fire alarm plans illustrating: <ul style="list-style-type: none"> • Device locations 			
7	One-line diagram illustrating: <ul style="list-style-type: none"> • Preliminary load calculations 			
8	Luminaire schedule			
9	Outline or draft specifications			

40% Submittal Requirements – Design Development Phase				
Information Technology				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include design development level completion of all previous 20% submittal requirements, including an updated design narrative. Additional submittal requirements include the following:			
2	Outline or draft specifications			
3	Preliminary drawings, including but not limited to: <ul style="list-style-type: none"> • Title sheet with IT-specific symbols • Site plan • Riser diagram for communications cabling systems • Riser diagram for pathway/raceway/sleeves • One-line diagrams for all applicable systems • Scaled floor plans showing device locations • Enlarged communication rooms (and other IT spaces as required) 			
4	Drawings complete with notes developed to a preliminary level			

2010-4. 70 Percent Completion – Preliminary Construction Documents Submittal

- 4.1. General.** In the 70 percent preliminary construction documents phase, the Designer of Record refines the approved design development information to establish the requirements for the construction of the work. The 70 percent construction documents will include near-complete drawings and specifications to establish in detail the quality levels and construction of building materials, components, and systems. The content of the 70 percent construction documents package shall include, but not be limited to, the following information:

70% Submittal Requirements – Preliminary Construction Documents Phase				
General				
Item No.	Submittal Requirement	Yes	No	N/A
1	Update the previous schedule for milestones, submittals, contracting, and construction.			
2	Develop probable costs based upon the preliminary construction documents information. Cost estimates are to be presented by division and section according to CSI <i>MasterFormat</i> . In the event the estimated project cost exceeds the established budget, the Designer of Record shall make recommendations necessary to bring the project within budget and notify the Contracting Officer, in writing, before proceeding.			
3	Coordinate LEED documentation for 70% preliminary construction documents, indicating proposed strategies for compliance with LEED requirements and ways to achieve certification goals.			
4	Incorporate all approved comments from the BIA review of the 40% design development submittal.			

70% Submittal Requirements – Preliminary Construction Documents Phase				
Civil				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative.			
2	Integrate the approved site development and data into working drawings.			
3	Provide location and vicinity maps.			
4	Develop detail sheets with proper references.			
5	Complete geometric layout of all items of new work using offset dimensions from existing structures, or use coordinates for locating new work.			

6	Develop new site grading, street plan, and profile with proper drainage, and include information of specific items of work, soil boring locations, and designations, coordinated with test hole locations and logs.			
7	Complete the legend using all items and symbols shown on the plan, maintaining consistency between drawings.			
8	Indicate limits of construction disturbance, and provide narrative delineating areas to be restored.			
9	Provide an erosion control plan, including control objectives comparing post- and pre-development conditions.			
10	Describe temporary and permanent erosion and storm water control measures.			
11	Describe type and frequency of required maintenance activities for erosion control facilities.			
12	Provide complete storm drainage design calculations consistent with previous design submittals.			
13	Provide a map outlining drainage areas.			
14	Provide calculations for sizing retention and/or detention ponds.			
15	Provide watertight joints for drainage pipe under all pavements when the pipe is in non-cohesive soil.			
16	Complete and present flexible and rigid pavement design calculations.			
17	Describe nature of paving materials and provide typical pavement sections, as well as minimum compaction requirements.			
18	Include all items of work superimposed on the existing topography, and establish a base control system for locations (buildings, streets, walks, etc.).			
19	Indicate proposed contours for new grading and provide spot elevations as required to facilitate site layout.			
20	Lay out storm drainage using symbols per legend; identify drainage structures; provide profiles for all storm drains and culverts.			
21	Indicate top and flowline elevations of all drainage structures, size and invert elevations for storm pipe, ground profile, and new or existing utility crossings.			
22	Locate monuments and benchmarks for horizontal and vertical control.			
23	Indicate finished floor elevations of the new buildings.			
24	Show on the plan the construction centerline, right-of-way limits, and all important topographical features such as fences, buildings, streams, railroads, etc.			

25	Provide complete survey information necessary for establishment of the survey centerline, including pertinent bearings.			
26	Profiles shall provide elevations at points where changes of grade occur, as well as stationing elevations.			
27	Include typical sections through the site as required for clarity, as well as a legend.			
28	Include concrete joint details, layout, and sidewalk joints.			
29	Include storm drainage pipe and structure schedule.			
30	Include parking layout.			
31	Include roadway widening details and super-elevation information.			
32	Provide detailed floor plans and sections of treatment plants and pumping stations, with equipment layout, piping, and sufficient dimensions and elevations to physically locate all items of equipment, piping, etc.			
33	Provide instrumentation and control schematics for pertinent machine systems, as well as equipment size, horsepower rating, and sequences of operation.			
34	Provide a site plan showing all existing and new valves, fire hydrants, manholes, pumping stations, laterals, meters, etc.			
35	Indicate all sizes of waterlines, sanitary sewers, and force mains.			
36	Provide invert and rim elevations for all manholes.			
37	Provide profiles of gravity sewers, and existing sewer line crossings; double lines are required for profile piping.			
38	Provide details for connecting new lines to existing systems.			
39	Provide profiles for water distribution and supply lines where crossings of other new or existing utilities occur.			
40	Provide layout of solid waste disposal system equipment and mode of operation.			
41	Provide plan of irrigation and/or sprinkler system, with flow requirements for each area.			
42	Provide complete specifications.			
43	Provide detailed calculations/criteria for items listed above.			

70% Submittal Requirements – Preliminary Construction Documents Phase				
Landscape				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative. Additional submittal requirements include the following:			
2	Planting legend and details			
3	Landscape plan illustrating all plant types, quantities, locations, size and condition			
4	Site amenities plan			
5	Site layout plan			
6	Landscape details			
7	Irrigation plan			
8	Irrigation details			
9	Site details			
10	Complete specifications for landscape and irrigation systems			

70% Submittal Requirements – Preliminary Construction Documents Phase				
Architectural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative. Additional submittal requirements include the following:			
2	Floor plans indicating door swings, room names, general dimensions, location and identification of equipment, etc., coordinated with engineering disciplines			
3	Enlarged plans for detailed areas, including toilet rooms, mechanical rooms, etc.			
4	Stair and elevator core plans and sections			
5	Reflected ceiling plans indicating ceiling heights, finishes, and coordination with engineering disciplines			
6	Building sections as necessary indicating vertical dimensions, construction systems, and coordination with engineering disciplines			
7	Exterior building elevations indicating building dimensions, materials, and coordination with engineering disciplines			

8	Typical details and wall sections indicating materials, major features including beams, joists, foundations, etc., and illustrating bearing heights, finished floor elevations, etc.			
9	Finish plan and schedule			
10	Door and window elevations and schedule			
11	Casework elevations			
12	Equipment layouts			
13	Kitchen equipment plans and details			
14	Furniture, furnishings, and equipment selections			
15	Interior construction details			
16	Complete specifications of all materials and systems			

70% Submittal Requirements – Preliminary Construction Documents Phase

Structural

Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative. Additional submittal requirements include the following:			
2	Design criteria and general notes on the drawings			
3	Structural foundation plan showing all foundation elements			
4	Structural floor framing plan showing all floor framing members and sizes			
5	Structural roof framing plan showing all roof framing members.			
6	Complete structural specifications			

70% Submittal Requirements – Preliminary Construction Documents Phase

Mechanical/Fire Protection

Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative. Additional submittal requirements include the following:			
2	Updated mechanical/plumbing legends			
3	Updated mechanical schedules			
4	Complete mechanical specifications			

5	HVAC plans, sections, and details, including: <ul style="list-style-type: none"> • Enlarged mechanical plans • Details of pumps, coils, chiller, boiler, AHU, etc. • Location and sizes of all equipment/systems • Two-lined ductwork • Sections of kitchen, multi-purpose, shops, and mechanical rooms 			
6	Plumbing plans, including: <ul style="list-style-type: none"> • Roof drainage • Waste/vent/water plumbing • Restroom and kitchen riser diagrams • Enlarge bathrooms and kitchens 			
7	Temperature controls/EMS design, including: <ul style="list-style-type: none"> • Updated control drawings • Location plans for sensors/control devices and controllers • Updated I/O list and sequence of control in specification 			
8	Fire protection design, including: <ul style="list-style-type: none"> • Updated performance specifications and equipment location drawings 			
9	Updated calculations, including: <ul style="list-style-type: none"> • All systems • Seismic, acoustics, and piping stress calculations (as required) • Final building energy modeling 			
10	Review of design for compliance with LEED requirements: <ul style="list-style-type: none"> • Review final LEED score card with team 			

70% Submittal Requirements – Preliminary Construction Documents Phase

Electrical

Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative. Additional submittal requirements include the following:			
2	Site plan: <ul style="list-style-type: none"> • Utility meter and CT locations • Duct bank locations and details • Cathodic protection • Lighting circuiting 			

3	Renewable energy source: <ul style="list-style-type: none"> • Size and characteristics • Utility company coordination 			
4	Power plans: <ul style="list-style-type: none"> • Device circuiting • Mechanical equipment locations • Special system equipment locations • Correct physical sizing of panelboards, switchgear, transformers, etc., shown on the plans 			
5	Lighting plans: <ul style="list-style-type: none"> • Fixture circuiting • Lighting controls 			
6	Fire alarm plans: <ul style="list-style-type: none"> • Fire protection requirements 			
7	One-line diagram: <ul style="list-style-type: none"> • Wire and conduit size 			
8	Electrical details			
9	Schedules: <ul style="list-style-type: none"> • Panel • Mechanical • Kitchen 			
10	Specifications <ul style="list-style-type: none"> • Updated edit 			
11	Review of design for compliance with LEED requirements			

70% Submittal Requirements – Preliminary Construction Documents Phase

Information Technology

Item No.	Submittal Requirement	Yes	No	N/A
1	Include preliminary construction document level completion of all previous 40% submittal requirements with the exception of an updated design narrative. Additional submittal requirements include the following:			
2	Preliminary specifications			
3	Drawings developed to a near-final level, setting forth in detail the IT construction requirements, including equipment layout and routing.			
4	Wall and equipment rack elevations added to the enlarged communications room(s) drawings			
5	Detail drawings developed to a preliminary level			
6	Drawings complete with notes developed to a near-final level			

2010-5. 99 Percent Completion – Completed Construction Documents Submittal

- 5.1. General.** In the 99% completed construction documents phase, the Designer of Record refines the approved preliminary construction documents information to establish the completed requirements for the construction of the work. The completed construction documents will include all drawings and specifications to establish in detail the quality levels and construction of building materials, components, and systems. The content of the 99% completed construction documents package shall include, but not be limited to, the following information:

99% Submittal Requirements – Completed Construction Documents Phase				
General				
Item No.	Submittal Requirement	Yes	No	N/A
1	Update the previous schedule for milestones, submittals, contracting, and construction.			
2	Develop probable costs based on the completed construction documents. Cost estimates are to be presented in CSI format.			
3	Coordinate LEED documentation for 99% completed construction documents, including fully documented strategies for compliance with LEED requirements and ways to achieve certification goals.			
4	Incorporate all approved comments from the BIA review of the 70% preliminary construction documents submittal.			

99% Submittal Requirements – Completed Construction Documents Phase				
Civil				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements.			
2	Provide complete civil and site drawings.			
3	Show refined grades, dimensions, complete legends, specific and general notes, north arrows, etc.			
4	Ensure correct cross-referencing among site drawings for appropriate details, sections, match lines, etc.			
5	Eliminate all conflicts (horizontal and vertical) among site plans and architectural, structural, and utilities plans.			
6	Verify that terminology is consistent between plans and specifications for notations on specific items of work.			
7	Perform check for adequate referencing of construction details.			
8	Complete storm, water, and sanitary sewer drawings.			
9	Provide final erosion control plan (complete).			

10	Provide final drainage report and plan.			
12	Provide final civil construction specifications.			
12	Provide final detailed calculations/criteria for the items listed above.			

99% Submittal Requirements – Completed Construction Documents Phase
Landscape

Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements. Additional submittal requirements include the following:			
2	Completed planting legend and details			
3	Completed landscape plan illustrating all plant types, quantities, locations, size, and condition			
4	Completed site amenities plan			
5	Completed site layout plan			
6	Completed landscape details			
7	Completed irrigation plan			
8	Completed irrigation details			
9	Completed site details			
10	Complete specifications for landscape and irrigation systems			

99% Submittal Requirements – Completed Construction Documents Phase
Architectural

Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements. Additional submittal requirements include the following:			
2	Completed floor plans indicating door swings, room names, general dimensions, location and identification of equipment, etc., coordinated with engineering disciplines			
3	Completed enlarged plans for detailed areas, including toilet rooms, mechanical rooms, etc.			
4	Completed stair and elevator core plans and sections			
5	Completed reflected ceiling plans indicating ceiling heights, finishes, and coordination with engineering disciplines			
6	Completed building sections as necessary indicating vertical dimensions, construction systems, and coordination with engineering disciplines			

7	Completed exterior building elevations indicating building dimensions, materials, and coordination with engineering disciplines			
8	Completed details and wall sections as required to clearly delineate the construction requirements			
9	Completed finish plan and schedule			
10	Completed door and window elevations and schedule			
11	Completed casework elevations			
12	Completed equipment layouts			
13	Completed kitchen equipment plan and details			
14	Furniture, furnishings, and equipment selections			
15	Interior details of construction			
16	Final construction specifications of all materials and systems			

99% Submittal Requirements – Completed Construction Documents Phase

Structural

Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements. Additional submittal requirements include the following:			
2	Geotechnical certification letter			
3	Final structural construction specifications			

99% Submittal Requirements – Completed Construction Documents Phase

Mechanical/Fire Protection

Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements. Additional submittal requirements include the following:			
2	Final mechanical/plumbing legends			
3	Final mechanical schedules			
4	Final mechanical specifications			
5	Final HVAC plans, sections, and details			
6	Final plumbing plans			
7	Final temperature control/EMS drawing			
8	Final mechanical construction specifications			
9	Final fire protection performance specification and drawings			
10	Final calculations			

99% Submittal Requirements – Completed Construction Documents Phase				
Electrical				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements. Additional submittal requirements include the following:			
2	Site plan: <ul style="list-style-type: none"> • Final plan 			
3	Renewable energy source: <ul style="list-style-type: none"> • Final design • Tie to power distribution 			
4	Power plans: <ul style="list-style-type: none"> • Final plans 			
5	Lighting plans: <ul style="list-style-type: none"> • Final plans 			
6	Fire alarm plans: <ul style="list-style-type: none"> • Final plans • Coordination with mechanical equipment 			
7	One-line diagram: <ul style="list-style-type: none"> • Final plans • Final load calculations • Short-circuit ratings • Coordination of breaker settings 			
8	Final electrical construction specifications			

99% Submittal Requirements – Completed Construction Documents Phase				
Information Technology				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include completed construction document level development of all previous 70% submittal requirements. Additional submittal requirements include the following:			
2	Final IT construction specifications			
3	Final drawings setting forth in detail the IT construction requirements			

2010-6. 100 Percent Completion – Final Construction Documents Submittal

- 6.1. General.** In the 100 percent final construction documents phase, the Designer of Record finalizes the construction documents information to establish the completed requirements for the construction of the work, including incorporation of all accepted review comments. The final construction documents shall include all drawings and specifications to establish in detail the quality levels and construction of building materials, components, and systems. The content of the 100 percent final construction documents package shall include, but not be limited to, the following information:

100% Submittal Requirements – Final Construction Documents Phase				
General				
Item No.	Submittal Requirement	Yes	No	N/A
1	Update the previous schedule for milestones, submittals, contracting, and construction.			
2	Incorporate all approved comments from the BIA review of the 99% completed construction documents submittal.			
3	Coordinate LEED documentation for 100% final construction documents, including fully documented strategies for compliance with LEED requirements and ways to achieve certification goals.			

100% Submittal Requirements – Final Construction Documents Phase				
Civil				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			

100% Submittal Requirements – Final Construction Documents Phase				
Landscape				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			

100% Submittal Requirements – Final Construction Documents Phase				
Architectural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			

100% Submittal Requirements – Final Construction Documents Phase				
Structural				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			
4	Final structural calculations			

100% Submittal Requirements – Final Construction Documents Phase				
Mechanical/Fire Protection				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			

100% Submittal Requirements – Final Construction Documents Phase				
Electrical				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			

100% Submittal Requirements – Final Construction Documents Phase				
Information Technology				
Item No.	Submittal Requirement	Yes	No	N/A
1	Include all requirements of the 99% submittal plus the following:			
2	Final specifications revised to reflect final review comments			
3	Drawings revised to reflect final review comments			