

Chapter Three

PROJECT DESIGN

3.01 INITIATING DESIGN

A. Design Services

1. The Designer provides professional services for the project in accordance with the [Terms and Conditions](#) of the [Agreement](#). Toward fulfilling those obligations, the Designer shall adhere to the following procedures unless specifically approved otherwise by the Owner.
2. The Designer shall utilize the STREAM Designer Direction and Design Guidelines document ([Appendix A](#) to Chapter 3) for developing the design of this work. The intent of this document is to maintain a level of standardization and minimum design standards with all general government projects. Deviations from these standards must be approved in writing by the STREAM representative.
3. Where the project is intended to be constructed using a Construction Manager / General Contractor (CM/GC) the Designer will be required to coordinate directly with the CM/GC during all phases of design once a CM/GC is selected. For the process to select a CM/GC, the Designer will provide documents appropriate to the current phase (normally Program Verification) for the Owner to release as additional information in the Request for Proposals. The Scope of Services related to the CM/GC's pre-construction roles and responsibilities can be found in the STREAM CM/GC Preconstruction Scope of Services ([Appendix B](#) to Chapter 3).

B. General Procedures (all phases)

1. Exact SBC project title and SBC number and current phase shall be included on all project related communications, correspondence, documents, and deliverables (i.e. e-mails, reports, submittals, drawings, etc.).
2. All document submittals to Owner shall bear a reference date (i.e. date of issue.)
3. All digital deliverables to Owner shall be labeled according to Owner's [file naming convention](#) and, unless directed otherwise, submitted in a .pdf format.
4. All building measurements and area calculations must comply with the ANSI/BOMA standards specific to the building type(s) of the project.
5. Unless specifically indicated herein, the Designer must coordinate with the Owner for all project related matters.
6. Standard Design Phases and associated submittals reflect Owner's typical project. Variations will be considered for projects of limited scope. Designer must review the project requirements and recommend alternative phasing to Owner for approval during the Program Verification Phase.
7. Unless specifically indicated herein, the Designer must receive written authorization regarding the required number and distribution of document submittal sets. See Paragraph 3.06, A.9, for limits on printing costs for the bidding phase.
8. Unless indicated otherwise, Designer is responsible for the scheduling, organizing, preparation of agendas and recording of all project team meetings/events whenever they are in attendance. Designer shall provide draft to Owner written minutes within two working days of the meeting/event. Owner will review and issue comments, if any, within two working days of receipt. If necessary, Designer shall revise and issue final written minutes within six working days of meeting/event date.

3.01 INITIATING DESIGN

9. Designer will receive written approval, in the form of a Notice to Proceed (NTP), from the Owner upon initiation of the Program Verification Phase and at the satisfactory completion of each subsequent phase.
 - a. Designer shall NOT proceed to the next phase without receipt of an NTP from the Owner.
 - b. For design phases requiring submittal of a construction cost estimate: These phases cannot be considered complete until the submitted design and deliverables support a construction cost estimate with a value at or below the SBC-1 Bid Target.
 10. Refer to [Chapter 2](#) for payment procedures.
 11. Designer shall participate in the tracking and resolution of design issues through an issues/comments log.
 12. Designer shall create and maintain a design and construction quality management plan through the life of the project.
 13. At a minimum, the Owner will conduct a written performance audit of the Designer upon completion of each design phase, as a formal means of feedback to the Designer. This audit will comprise the basis for completion of the [Designer Evaluation Form – Small Project](#), [Designer Evaluation Form](#), and [Contractor Evaluation Form](#), both found in Appendix 1 – *Administrative Forms*. These forms will be made available to the SBC for their review.
- C. The design must follow three prescripts as required by the SBC:
1. The design shall be within the project Scope;
 2. The design's construction cost estimate shall be within the Bid Target (Maximum Allowable Construction Cost (MACC) less contingency as shown on SBC-1)
 - a. A cost estimate that is less than the Bid Target does not allow for the addition of out-of-scope design elements unless approved by the SBC.
 - b. A cost estimate that is greater than the Bid Target must be approved by the Contracting Agency and the State Architect for Owner assurance that a sufficient contingency will be available to complete the construction work.
 - c. Bid alternates are used only to bring the base bid cost estimate to within the Bid Target. Bid alternates can only be used for in-scope items, shall be no more than four in number, with the item(s) listed in descending order of need; and,
 3. The design shall meet all applicable requirements of the High Performance Building requirements (HPBr), Owner's Performance Requirements (OPR), and/or Building Information Modeling (BIM) Standards, as defined by the Office of the State Architect.
- D. **Building Codes and Regulatory Requirements**
1. A listing of applicable building codes and regulatory requirements used on SBC projects, and their sources, are identified in [Section 01 41 15 - Basic Regulatory Requirements](#), found in Appendix 2 - *Bidding Documents*.
 - a. Depending on the project, other codes or regulations may also apply.
 - b. Designer is responsible for a comprehensive code review/analysis specific to the project and a full determination of all applicable requirements.
 - c. Applicable codes/regulations may be revised or augmented during the execution of the Project Design. Designers shall keep themselves apprised of code revisions and their adoption dates. Design must be compliant with applicable regulatory requirements in effect at the time stamped and signed bid ready documents are submitted to the Owner's Contract Administration Group (CAG).

- d. Where differences exist between the requirements of local ordinances or codes and the requirements of state statutes or codes, including different code versions or more stringent local requirements, the state statute or code shall be adhered to, although every attempt should be made to comply with local requirements. If a local requirement conflicts with a state requirement, or is considered an undue burden on the state, the designer shall notify the state of the issue and recommend a solution. Even though the state may have sovereign immunity from local codes and ordinances, the designer shall not deviate from any local requirements without first recommending said solution and then requesting and obtaining written consent from the state.
2. Projects related to buildings or districts fifty years or older fall under the jurisdiction of the [Tennessee Historical Commission \(THC\)](#). Designer is responsible for determination and coordination of all THC requirements and reviews on applicable buildings.
3. Designer is responsible for quantifying all associated regulatory fees/costs required for the completion of the project.
4. Designer will cooperate with representatives of Owner, the State Fire Marshal's Office, and other regulatory authorities to develop solutions to conflicts arising between code/regulatory requirements and user requirements. Final solutions shall meet the criteria for the project and be in compliance with all applicable regulations.

E. State Fire Marshal (SFM) Review

1. Designer shall obtain a written determination from the SFM as to the requirement to, or exemption from, submitting for SFM review and approval. Construction is defined in Tennessee Code Annotated (T.C.A.) §0780-02-03-.01(1)(b). Project review exemptions must be forwarded to the Owner early in the design process.
2. For all projects requiring SFM reviews:
 - a. Obtain a concept review from the SFM early in the project, to allow ample opportunity for early identification of problems,
 - b. T.C.A. §0780-02-03-.02(1) requires plans and specifications to be submitted to and approved by the SFM prior to commencing construction on a State project. The SFM final approval, no review letter, or transfer to field letter must be obtained and forwarded to the Owner before a bid date will be assigned by the Owner's Contract Administration Group, and
 - c. Designer shall make submittals directly to and coordinate submittal requirements with the SFM's office. The Plans Review Submittal Form needed with the first submittal is available from the SFM's Office.
3. Designer calculates but does not pay review fee; Owner is responsible for costs associated with the SFM review. In estimating the review fee for the Plans Review Submittal Form, pay careful attention to the fee table and exemption provisions on the form. Forward a draft to the Owner for review prior to submittal to the SFM.
4. The duration of time necessary for the processing of and subsequent review by the SFM falls within the contracted design timeframe. Designer is responsible for preparing, submitting, and receiving SFM approvals with sufficient time to meet the contracted construction document phase submittal deadlines. No additional time will be granted for this purpose.

3.02 PROGRAM VERIFICATION PHASE (PV)

- A. Owner will have a Program sufficiently well developed**, as called for under the terms of the [Agreement](#) for the project. This may include a project charter, testing reports, and other programming documents, which will be presented and discussed at the pre-design conference. These documents will establish the Owner's functional objectives, including space requirements and relationships, time and budget constraints, and other special criteria in sufficient detail to allow the Designer to carry out the design.
- B. The PV of the project will begin with a Pre-Design Conference (PDC).** Prior to the PDC:
1. The Project Manager shall:
 - a. Schedule and prepare an agenda for the PDC. The meeting will include personnel representing Owner, the User Agency, the Designer, and other related project stakeholders; and,
 - b. Prepare a NTP to Program Verification, have it authorized, and distribute to the Designer at or before the PDC.
 2. The Designer shall:
 - a. Establish a design project team and provide all contact information to the Owner;
 - b. Source and/or request necessary project/property documents and data; and,
 - c. Become familiar with the requirements of the [Agreement](#), this Designers' Manual (<https://www.tn.gov/generalservices/real-estate-/redirect-stream/designers-consultants/designers--manual1.html>), HPBr, OPR, BIM, and other related documents, the State Building Commission By-Laws, as applicable.
- C. Suggested agenda for a PDC**
1. The Team
 - a. Introduction of PDC attendees,
 - b. Other team members not in attendance, and
 - c. Design team sub-consultants.
 2. The Program: Discussion/review of Project Charter to include:
 - a. Scope,
 - b. Budget,
 - c. Schedule,
 - d. Review of Owner's needs,
 - e. Constraints and opportunities,
 - f. Accessibility, HPBr, OPR, BIM, commissioning criteria,
 - g. Applicability of Storm Water Pollution Prevention Plan (SWPPP), and
 - h. Real property considerations.
 3. Procedures:
 - a. Roles and responsibilities of the Designer, Owner, State Building Commission, and User Agency,
 - b. Sources of funding,
 - c. Centralized vs. non-centralized projects,
 - d. Adherence to this Designers' Manual,
 - e. Adherence to State mandated requirements (SFM, HPBr, OPR, BIM, historic, etc.),
 - f. Adherence to other regulatory requirements (local, regional, federal, and special authorities, etc.),
 - g. Requests for additional services,

- h. Obtaining existing project documents and data (original drawings, utility providers, energy usage, etc.),
- i. Designer and construction schedule,
- j. Designer submittals/deliverables,
- k. Architectural/Engineering Graphic Standards and minimum size/formatting requirements,
- l. Owner's file naming convention,
- m. Design reviews (Owner and Regulatory),
- n. Designer invoices and reimbursable expenses,
- o. Communications protocol,
- p. Project authority protocol,
- q. Site visit/access protocol, and
- r. Resolution of conflicting instructions.

D. Designer shall verify the Program. Program verification leading to a successful design solution by the Designer shall include, at a minimum:

1. Site visit/evaluation(s), to include:
 - a. Site visit to become familiar with site conditions,
 - b. Site/property conditions assessment relevant to the project/scope,
 - c. Interview facility managers, staff, end-users, and
 - d. Photography relevant to the project/scope.
2. Articulation of the functional and departmental objectives of the project based on the Program.
3. Advisement with respect to confirmation of:
 - a. Scope,
 - b. Budget,
 - c. Schedule,
 - d. Site selection
 - e. Relationship of the project to other structures and facilities,
 - f. Functional aspects,
 - g. Required design phases, and
 - h. Permitting fees.
4. Acknowledgement of project related requirements, as applicable, including but not limited to:
 - a. SFM,
 - b. Storm water,
 - c. ADA,
 - d. Life safety and egress,
 - e. Environmental/hazardous issues,
 - f. Applicable regulatory authorities,
 - g. HPBr, OPR, and/or BIM compliance,
 - h. Commissioning by third party,
 - i. Historic designation and compliance,
 - j. Design and construction quality management,
 - k. Additional services, and
 - l. Coordination with Owner provided items (i.e. furniture, fixtures, equipment, etc.).

E. PV Submittal:

1. Deliverables:
 - a. The components of Paragraph 3.02D, in narrative form, at a minimum,
 - b. Any other pertinent programming considerations, analysis, findings,
 - c. Design issues/comments list,
 - d. Designer's quality management plan, and
 - e. Acknowledgement letter indicating the Program has been verified and determined to be in sufficient detail to allow the Designer to carry out the design.

3.02 PROGRAM VERIFICATION PHASE (PV)

2. Submittal Review

- a. Owner shall review and return comments to the designer within the designated project review times.
- b. A PV review meeting may be required, depending on the complexity of the project and the extent to which the Owner needs to clarify the Program.

3. Programming Approval

Upon acceptance of the content, level of completion, and quality of the PV submittal by the Owner:

- a. The Designer shall request written approval, and
- b. The Owner shall issue a NTP to the next approved design phase.

3.03 SCHEMATIC DESIGN PHASE (SD)

A. Designer shall develop a Schematic Design based on the approved PV, which will include at a minimum (if applicable):

1. An analysis of Owner needs, including but not limited to:
 - a. Egress/ life safety,
 - b. Functional relationships,
 - c. HPBr, OPR, and/or BIM compliance with identification of sustainable features to be incorporated into the design,
 - d. Utility connections,
 - e. Commissioning, and
 - f. Permitting fees.
2. An analysis of the site, including but not limited to:
 - a. Determination of flood zone designation(s), based on highest risk flood zone for insurance purposes,
 - b. Relationship to master plans,
 - c. Land use/zoning,
 - d. Site, building, environmental permits,
 - e. Other applicable permits,
 - f. Circulation,
 - g. Mass transportation,
 - h. Traffic, and
 - i. Parking.
3. An analysis of the existing building(s) or scope-related portions of the building(s).
4. An analysis of scope related considerations, including but not limited to:
 - a. Site, building, environmental permits and reviews;
 - b. Other applicable permits and reviews;
 - c. Life safety and egress;
 - d. Fire safety and access;
 - e. Utility providers;
 - f. Utility usage patterns and history;
 - g. Projected utility costs;
 - h. Lifecycle operations and maintenance;
 - i. Projected operational costs;
 - j. Environmental considerations, including air quality;
 - k. Hazardous materials and exposures;
 - l. Building systems and equipment;
 - m. Telecommunications;
 - n. Security; and,
 - o. Construction and operational safety.
5. An estimate of probable project construction cost.
6. Confirmation of the remainder of the schedule.
7. Any other pertinent schematic design considerations, analysis, or findings.
8. Additional consultant services, reimbursable expenses, etc.

B. Additional Services, as required

1. Upon determination and acceptance of a programmatic need, and as early as possible within the SD, the Designer is to pursue the required components of a formal Additional Services Request (ASR), as follows:

- a. Prepare and issue a Request For Proposal (RFP) that includes recommended preliminary scope of work, with detailed follow-up studies and reports,
 - b. Distribute to sufficient qualified service providers to solicit a minimum of three responses, and
 - c. Identify a timetable for obtaining services that provides adequate time for Owner to review and approve proposal.
2. The ASR submittal will include:
- a. Listing of firms that submitted proposals, their prices, and the recommended firm for providing services (cost should be considered as one of the factors in determining which firm to recommend; however, cost may not necessarily be the controlling factor),
 - b. Scope for the additional services,
 - c. Detailed entitlement statement with contract references,
 - d. Listing of expected deliverables,
 - e. Itemization of direct costs from the service provider,
 - f. Projected maximum Owner's cost including applicable Designer multiplier,
 - g. Impact to the project schedule due to ASR, and
 - h. Any related HPBr, OPR, and/or BIM Checklist items.
3. Owner shall review the submittal and if found acceptable, authorize its inclusion into the [Agreement](#).

C. SD Submittals

If invoicing is desired in intervals during this phase, deliverable documents must be provided commensurate with proportion as allowed by the Contract.

1. Deliverables:
 - a. Conceptual diagrams, visual studies, graphs, charts, models, and/or schematic drawings representing the listed components of Paragraph 3.03B;
 - b. A narrative description of the listed components of Paragraph 3.03B., that cannot be defined graphically;
 - c. A listing of proposed HPBr, OPR, and/or BIM features to be included in the design;
 - d. Technical and operational information related to new building systems or equipment;
 - e. Estimate of probable construction cost arranged by current Construction Specification Institute (CSI) divisions;
 - f. Updated Schedule;
 - g. Updated issues/comments List;
 - h. Updated Designer's Quality Management Plan;
 - i. Preliminary drawing sheet index; and,
 - j. Preliminary specification table of contents.
2. Submittal Reviews
 - a. Owner shall review and return preliminary comments to the designer prior to the SDP review meeting.
 - b. A schematic design review meeting will be scheduled, within seven days of submittal.
3. **Suggested agenda for the SD review meeting**
 - a. Submittal Review:
 - i. Submitted documents fully define all scope items,
 - ii. Cost estimate/budget confirmation,
 - iii. Schedule confirmation,
 - iv. Site considerations, and
 - v. Interim review/determination of HPBr, OPR, and/or BIM, energy analysis and proposed energy efficiency and water conservation strategies.

3.03 SCHEMATIC DESIGN PHASE (SD)

- b. Design solutions and alternatives.
 - c. Final code/permitting analysis and associated costs.
 - d. Identify possible unit prices.
 - e. Specifications requirements
 - i. Specifications shall only be included in the Project Manual. They shall not be included in the drawings except for items with very limited scope.
 - ii. Include sections representing all known components of the project.
 - iii. Coordinate with drawing content.
 - iv. Tailor to represent the specific scope and conditions of the project. Unedited boiler plate sections shall not be used.
 - f. Review of Designer's Quality Management Plan.
 - g. Outstanding issues.
4. Submittal Approval:
- Upon acceptance of the content, level of completion, and quality of the SD submittal by the Owner:
- a. The Owner will return final, written comments to the Designer
 - b. The Designer shall request written approval, and
 - c. The Owner shall issue a NTP to the next approved design phase.

D. State Fire Marshal Concept Submittal

- 1. If applicable, prepare and issue a SFM concept review submittal.
- 2. Forward all comments and findings to the Owner.

3.04 EARLY DESIGN PRESENTATION (EDP)

A. EDP

When the project involves a new facility or major addition, a presentation of the design concept to the SBC is required.

1. The Designer may either make such presentation during a regular-scheduled SBC meeting or to the State Architect for recommendation in accordance with 3.03 of the SBC Bylaws Policy and Procedure.
2. EDP should occur during the DD phase when the Owner and Designer are confident that the scope, schedule and budget are in alignment and the project is ready to move forward into the Construction Documents and Construction Phases.
3. All EDP's shall be reviewed with the OSA prior to approval by the State Architect or presentation to the SBC.

B. EDP Summary Sheet

1. SBC meeting date,
2. State procurement agency,
3. Project title,
4. User agency,
5. Location,
6. Designer,
7. Contractor (if available),
8. SBC number,
9. SBC approval date,
10. Targeted substantial completion date,
11. On schedule (yes or not),
12. Bid target,
13. Designer's estimated cost,
14. Scope square footage,
15. Estimated cost per square foot,
16. In budget (yes or no),
17. Purpose of project,
18. Brief project description,
19. Any premium first costs of construction (if so, please provide written description and associated cost of each item, and
20. Any features which are anticipated to provide savings in lifecycle costs (if so, please provide written description and associated estimated savings of each items).

C. Prepare to discuss any aspect of the design and to present:

1. **Preliminary drawings**, to be presented in digital format (.ppt or .pdf.) for projections in the SBC meeting, conceptual and accurate, but not so detailed as to detract from the legibility and

3.04 EARLY DESIGN PRESENTATION (EDP)

functional relationships of structures. Designer shall be prepared for brief oral comments on any project aspect in response to questions from SBC members. Include:

- a. A vicinity plan showing the relationship of the project to the surrounding campus or community,
- b. A site plan showing relationships to site features and adjacent structures,
- c. Floor plans, and
- d. Elevations or perspective (preferred).

2. Project Summary

- a. Purpose of project, brief project description, and general program spaces, along with overall square footage.
- b. The site, its location, and the results of geotechnical investigations and other test reports.
- c. The facility plan, relation to Master Plan, and major functional relationships of the building.
- d. The systems used for foundation, structure, walls, roof, windows, finishes, plumbing, HVAC, and electrical service.
- e. Energy efficiencies and applicability of the HPBr.
- f. Fire protection systems, barrier-free accommodations, and other special features contributing to the solution.
- g. Commissioning scope, if required.
- h. Efficiency analysis of gross, net, and usable square footage.
- i. SBC approved bid target versus Designer's construction cost estimate.
- j. Building cost estimate and cost per square footage.
- k. Site cost estimate.
- l. Anticipated construction start date and completion date and compliance with schedule.

- A. Designer shall execute the DD based on the approved Schematic Design Phase, which will include at a minimum:
1. Progression, refinement, and representation (graphic and written) of all the components defined in Paragraph 3.03A, to a level of completion where Design is considered completed and these elements will not change any further but may be detailed to a greater extent.
 2. Consideration/resolution of internal and external coordination issues such as for land acquisition, utility connections, site staging & closures, equipment, furniture, etc.
 3. Gross and net area calculations.
 4. Specialized consultation and incorporation of related design requirements, with the following project stakeholders ([see 1.03](#)).
 - a. **F&A Office of Strategic Technology Solutions (STS)** shall be consulted whenever a project involves telecommunications/computer networks.
 - b. **Owner's Interior Design** shall be consulted whenever a project involves space utilization (but normally office space) involving complex spatial relations.
 - c. **Owner's State Environmental Management** shall be consulted whenever a project involves the installation or removal of hazardous substances, radioactive materials or equipment, or their containers (such as fuel storage tanks).
 - d. **Agency Facilities** of the User Agency (and Tenant Agency if in FRF buildings) shall be consulted for all other facilities related items including access controls, video management, building automation systems, and other facilities systems.
 - e. **Third Party Commissioning** (if included) shall be consulted for all systems to be commissioned. Typical sections include mechanical, electrical, and plumbing systems, but may include building enclosures and other specialty systems.
 5. A concept review with the SFM's office once design development is considered by the Designer to be complete. Concept review must be completed prior to DD review meeting.
 6. Determine if a building plaque is required. If so, Owner will provide a conceptual plaque layout. Refer to the [Sample Building Plaque](#) in Appendix 1. The layout will include the verbiage required and general order of appearance necessary for the Designer to develop a scaled design.
 7. Initiation of HPBr submittals such as energy use analysis, projected utility operational costs, energy efficiency and water conservation approach and design features, and energy management systems to demonstrate compliance with Owner's energy efficiency design requirements.
 8. Resolution of drawing sheet size and formatting.
 9. Completion of the Design Development phase shall be considered completion of the design work for the project. If design work is utilizing BIM, this is the point where the model is complete and no further changes to the model should occur.

B. DD Submittal

If invoicing is desired in intervals during this phase, deliverable documents must be provided commensurate with proportion as allowed by the Contract.

1. Deliverables:
 - a. Scaled drawings in final sheet size,
 - b. Site plan, with contours and applicable cross-sections,
 - c. Floor plan,
 - d. Elevations,
 - e. Building sections,
 - f. Design detail,
 - g. Exterior perspectives, model, or renderings, if required,
 - h. Preliminary furnishings and equipment list and plans, if required,
 - i. Plumbing, Electrical, Mechanical, Architectural, Civil, and Structural plans, or any other discipline as applicable,
 - j. Preliminary specifications,
 - k. Building systems narrative,
 - l. Updated Designer's Quality Management Plan with listing of any special quality control issues/requirements and possible third party delivery method,
 - m. Detailed cost estimate in CSI division format, with escalation factors to projected bid date,
 - n. Updated schedule,
 - o. Updated issues/comments list, SFM concept review letter/findings,
 - p. Draft of HPBr, OPR, and/or BIM checklist/submittals,
 - q. Conceptual [Sample Building Plaque](#), if required,
 - r. SDP markup set, and
 - s. [Sole Source/Proprietary Procurement Request Form](#) back-up/attachments, if needed.
2. Submittal Reviews
 - a. Owner shall review and return preliminary comments to the designer prior to the DD document review meeting.
 - b. A design development review meeting will be scheduled within seven days of submittal.
3. **Suggested agenda for a DD review**
 - a. Submittal Review:
 - a. Submitted documents address all scope items,
 - b. Cost estimate budget confirmation,
 - c. Project schedule confirmation,
 - d. DD submittal reviews/comments,
 - e. Final determination of HPBr criteria, and
 - f. Status of concept/preliminary reviews by regulatory authorities.
 - b. Bidding and Contract Documents:
 - a. Evaluate administrative and procedural needs,
 - b. Begin defining [Allowances](#), [Unit Prices](#), and [Alternates](#), if any are to be used,
 - c. Select appropriate front-end documents,
 - c. Review of Designer's Quality Management Plan.
 - d. Outstanding issues.
4. Approval

Upon acceptance of the content, level of completion, and quality of the DD Submittal by the Owner:

 - a. The Owner will return final, written comments to the Designer,
 - b. The Designer shall request written approval,
 - c. The Owner may modify the Design fee, and
 - d. The Owner shall issue a NTP to next approved design phase

A. During the CD, the Designer shall execute bid ready construction documents based on the approved DD, which shall include, at a minimum:

1. Full development, resolution, and representation (graphic and written) of all the components defined in Section 3.05, in the following incremental completion levels:
 - a. Draft 100% CD documents at Owner final review,
 - b. 100% CD documents to SFM, and
 - c. 100% of CD documents at Owner's CAG review and bid advertisement.

All documents delivered to the owner or other entities as outlined above are required to be sealed and signed.

2. A Project Manual which shall be in compliance with [Chapter 4 - Project Manual Guide](#), and shall utilize [Appendix 2- Bidding Documents](#); both as included in the current Designers' Manual. Designer shall:
 - a. Fill in information required in the [Invitation to Bid](#) (except establishment of bid date);
 - b. Review [Instructions to Bidders](#), and applicable supplementary instructions;
 - c. Confer and agree with Owner on construction timetable, contract days, and liquidated damages; and,
 - d. Include list of drawings that matches the drawing index on the plan set.
3. On federally funded projects ONLY, incorporation/final revisions of Owner-provided Department of Labor and Workforce Development, Division of Labor Standards forms for:
 - a. Wage Rate Determination,
 - b. Notice of Pre-Construction Conference, to be completed by the Designer and returned to Labor Standard Division per instructions, and
 - c. Job-Site Postings - Building Rates and/or Highway Rates provided in English and Spanish for issue at the Pre-Construction Conference to the Contractor for posting at the Job Site.
4. Confirm scope compliance and advise Owner in writing of any change.
5. Confirm schedule and advise Owner in writing of any change.
 - a. Determine timetable for completion of CD and commencing to bid phase as outlined on the following pages.
 - b. Designer is to make revisions identified by Owner prior to printing.
6. Confirm cost estimate and advise Owner in writing of any change.
7. Confirm HPBr, OPR, and/or BIM compliance, and advise Owner in writing of any change.
8. Confirm distribution and status of documents submitted to the regulatory authorities (SFM, etc.), so that approvals are in-hand prior to release for bids.
9. Confer and agree with Owner on cost and number of bid sets. Obtain an estimate from the printer prior to proceeding. If the estimated amount exceeds \$1,200.00, written pre-approval from the Owner must be obtained prior to execution of printing.
10. Coordinate Bidding/Negotiation Phase, with particular emphasis on:
 - a. Public advertisement,
 - b. Document distribution,
 - c. Pre-Bid Conference and agenda,
 - d. Bid opening procedures and Bid Tab, and
 - e. Bid notifications and recommendations.
11. Advertisement for bids is published in newspaper(s) by Owner's CAG.

B. CD Submittals

If invoicing is desired in intervals during this phase, deliverable documents must be provided commensurate with proportion as allowed by the Contract.

1. Draft 100% Owner Submittals:
 - a. Scaled drawings in digital (.pdf) format and a hard copy set in final sheet size, blacklined, and bound,
 - b. Title sheet to include site location map, and list of drawings,
 - c. Site plan, with contours and applicable cross-sections,
 - d. Floor plans,
 - e. Elevations,
 - f. Building sections,
 - g. Wall sections,
 - h. Design details,
 - i. Exterior perspectives, model, or renderings, if required,
 - j. Final furnishings and equipment list and plans, if required,
 - k. Plumbing, Electrical, Mechanical, Architectural, Civil, and Structural Plans, or any other disciplines as applicable,
 - l. Project manual/specifications in digital (.pdf) format and hard copy, 8 ½ inch wide by 11 inch pages. Printed two-sided with each section beginning on a right-hand page, and comb bound on the left margin,
 - m. Final building systems narrative,
 - n. Final HPBr, OPR, and/or BIM submittals including energy use analysis, projected utility operational costs, energy efficiency and water conservation approach & design features, and energy management systems to demonstrate compliance with Owner's energy efficiency design requirements and HPBr, OPR, and/or BIM,
 - o. Updated detailed cost estimate in CSI division format with escalation factors to be projected to bid date,
 - p. Updated schedule,
 - q. Updated issues/comments list,
 - r. Updated Designer's Quality Management Plan,
 - s. Final [Sample Building Plaque](#), if required,
 - t. [Sole Source/Proprietary Procurement Request Form](#), if needed, and
 - u. Front-End Checklist completed.

Upon completion of submittals, the Owner shall review and return comments to the designer prior to the CD review meeting. A CD review meeting will be scheduled within seven days of the 95% CD submittal.

A suggested agenda for Draft 100% CD review:

- i. Scope compliance,
- ii. Budget compliance,
- iii. Schedule compliance,
- iv. HPBr compliance,
- v. CD submittal reviews/comments,
- vi. Confirm schedule,
- vii. Pre-bid conference,
- viii. Contract award process and pre-construction conference,
- ix. Confirm design team's representatives for the CD,
- x. Discuss commissioning specifications and implementation issues, if required,
- xi. Review of Designer's Quality Management Plan, and
- xii. Outstanding issues.

2. 100% SFM Submittals:

A complete set of registrant sealed design drawings much include (this is a brief and is not intended to include all items necessary for a complete submittal):

- a. A **Cover sheet** drawing showing a code analysis for the building with any currently adopted minimum building, fire, life safety, and accessibility codes enforceable at the time of the submittal.
- b. **Civil/Site plans** with grading, underground utilities, underground fire protection sprinkler piping, fire department access, exit discharge from the building, accessibility from exterior exit discharge to a public way, and fire hydrant location with hydrant test data.
- c. **Life Safety Plan** showing use for each space with occupant loads based on occupant load factors, exiting paths with exit occupant load and capacity of the exit door or exit stairway; common path and travel distance; limits and enclosures of smoke partitions, smoke barriers, one/two hour Fire resistance rated partitions, and 2/3/4 hour fire resistance rated fire walls with appropriate legends.
- d. **Architectural floor plans** showing the use of each space, dimensions, door, door hardware schedules, window schedule, sections, details, UL fire resistance rated assembly details for rated walls, rated floor/ceiling assemblies, rated roof/ceiling assemblies, rated columns, girders, and beams; head of wall joints, and floor to exterior wall joints.
- e. **Structural design plans** and details with seismic and other minimum design loads and location and details of any 2/3/4 hour fire resistance rated fire walls.
- f. **Mechanical HVAC system design** drawings which include fire, smoke, and combination fire/smoke damper locations, gas furnace/boiler combustion air, fire resistance rated wall limits and legend that matches architectural plans, UL firestopping details for penetrations through rated assemblies.
- g. **Plumbing systems design** drawings including fire resistance rated wall limits and legend that matches architectural plans and UL firestopping details for penetrations through rated assemblies.
- h. **Fire protection sprinkler/standpipe/fire pump systems design** drawings (when included or required) including fire resistance rated wall limits and legend that matches architectural plans and UL firestopping details for penetrations through rated assemblies.
- i. **Electrical design** drawings including complete fire alarm system, emergency lighting, exit signs, duct smoke detectors for HVAC fan shut down, including fire resistance rated wall limits and legend that matches architectural plans and UL firestopping details for penetrations through rated assemblies.

3. 100% CAG/Bid Advertisement Submittals:

In addition to the Draft 100% Owner Submittals with all corrections made.

- a. Markup set of previous submittal with corrected mark-ups highlighted and omitted mark-ups explained,
- b. Updated detailed DD and CD cost estimate in CSI division format with escalation factors to be projected to bid date,
- c. The drawings and project manual must have professional seals, signatures, and dates of all architects and engineers, and
- d. SFM response.

Owner shall review and return comments to the Designer within two weeks of bid date request approval.

Upon acceptance of the content, level of completion, and quality of the 100% CD submittal by all the reviewers:

- i. The Owner's CAG shall issue a notice of acceptance of bid documents,
- ii. Owner's CAG shall review the on-street documents,

3.06 CONSTRUCTION DOCUMENTS PHASE (CD)

- iii. All revisions, after notice of acceptance, to the on-street documents will be issued as an addendum to the released bid documents.

CHAPTER 3 END

See Chapter 4- Project Manual Guide and 5 – Procurement/Bidding for further and more detailed instructions with some of the above items.