

WVU DESIGN GUIDELINES & CONSTRUCTION STANDARDS

DIVISION 0 – PROFESSIONAL SERVICES

SECTION AE – 005003 – DESIGN PHASE DELIVERABLE REQUIREMENTS

Part 1: GENERAL

1.1 Scope of Standard

- A. The purpose of this section is to provide the items listed below WVU would like to see at each design phase of the project. They do not necessarily reflect the considerations of contract between the Owner and the Architect. These guidelines should be addressed with both the Architect and Owner early in the design process to ensure coordinated expectations.
- B. These deliverables are the road map for contract documents. They do not necessarily reflect the limits of documentation required, but reflect a minimum standard of completeness to optimize value to the owner. Early packages for utilities, foundations, steel, etc. have specific deliverables depending on the scope and construction / delivery method. Project type may affect the deliverables listed below.

1.2 Responsibility

- A. The following people are responsible for the standard:
 - 1) Project Managers
 - 2) Architects
 - 3) Engineers

PART 2: EXECUTION

A. Program Phase:

Typically, the Program estimate phase is done via a narrative prepared by the architect. This narrative should include information based on the owners requirements, goals and objectives and be descriptive enough to clean information about systems (architectural, structural, Site and MEP) to create an estimate and therefore set the budget that can be carried through all stages of design. The narrative should minimally include drawings, diagrams, sketches, renderings, and written descriptions that contain:

1. General

- Narrative of facility or infrastructure use and project objectives: both overview & by discipline, using a "design vocabulary" to convey the intent and scope of the project.
- Master Plan showing relationship and adjacent physical elements
- Funding sources or restrictions
- Contract requirements / expectations

- Introduction of specialty consultants
- Green Building / LEED requirements

2. Civil

- Site layout showing; major grades (existing and proposed), structures and improvements (existing and proposed), site utilities (existing and proposed)
- Site development requirements - spot topographic elevations & features / geotech & characteristics / site utilities / site improvements
- Soils report or initial proposed earthwork recommendations / necessities

3. Architectural / MEP

- Proposed block diagram floor plans showing functional space locations / requirements
- Space / Facility requirements, current, projected and future
- Block diagram or existing plans of building or areas of proposed renovation
- Description of the building envelope including wall systems, window types, glazing types.
- Environmental requirements / issues, from all sources
- Appearance requirements - both written & perspective sketches
- Finishes – description by areas / departments / floors
- Assumptions - system(s) capacities, in matrix or tabulated format.
- MEP basic narrative
- Phased development criteria - work sequencing / user systems & operational time constraints / municipal & utility restrictions, etc
- Structural narrative / criteria including seismic requirements
- Special project requirements (including labor, material, vendor, contract)
- Space utilization including shelled areas
- Preliminary schedules - Construction as well as design phase milestones
- Project FF & E items identified
- Energy / utility sources or goals

B. SCHEMATIC DESIGN PHASE:

In the Schematic Design Phase, the Architect shall provide those drawings and other documents illustrating the general scope, scale and relationship of Project components. Designs should be conceptual in character and based on the requirements developed under previous phases [Pre-design, Site Analysis] or on program requirements provided by the Owner and consisting of preparation of conceptual site and building plans.

The schematic design stage should include enough information and sufficiently reflect the architect's design intent. Information must be complete enough for the constructor to determine an accurate budget based upon information within these drawings.

1. Civil

- Site plan should illustrate relationship between new and existing structures, traffic flow, existing and proposed topography (Contours), landscape features, roads & parking (pavings), walks and major utility connections (typically at 1/20" scale.)
- Site Survey indicating property lines and / or limits of construction
- Soils Report - Complete geotechnical report (preliminary or final), including boring maps & drilling logs
- Utilities - Preliminary / initial utility plans showing all on site utility's basic materials & systems to be used on site should include;
 - Water (domestic & fire), sanitary, primary electrical power & site lighting, telephone, special services such as; tel-com / gas / steam & chilled water, fuel systems, etc.
 - Preliminary all on or off-site utility systems including preliminary connection locations.
 - Preliminary site stormwater drainage pattern or layout of storm lines and structures
- Hardscapes - Plan drawing(s) of all proposed hardscape work: roads / curb & gutters / walks & stairs / retaining walls / fences / planters & other surface structures or features
- Site Lighting - Preliminary site lighting layout
- Landscapes - Plan drawing(s) showing development of conceptual design solutions for land forms, lawns and plantings based on program requirements, physical site characteristics, design objectives and environmental determinants. Plans should include indication of proposed softscape / landscape conditions: detention areas / plantings / beddings / soil treatments and irrigation system(s), seeding & sodding etc. - Or Allowance Budget from Architect
- Preliminary or outline specifications of all key material systems, equipment, specialties, special construction, etc for divisions of work that relate to Civil work above.
- Any special dewatering or earthwork requirements such as over-excavation, lime stabilization, contaminated soils, earth retention, rock excavation etc.
- Preliminary fence limits / boundaries and equipment locations should be included
- Set building elevations
- Provide narrative of all systems

2. Architectural

- A separate fire protection & egress set of plans including fire ratings and area separations (per preliminary code requirements) should be included.
- Code Analysis - provide a written statement describing the methods proposed to comply with governing codes and regulations, including zoning, occupancy, life safety, fire resistance, fire protection and structural adequacy.
- Description of proposed alternates or funding
- Typical floor plans - for each building level. Single line drawings are acceptable. Plans should be 1/16" scale minimum (1/8" preferred). Each floor plan should convey basic interior space allocation / function of major areas and core areas and their relationships with designated Nomenclature.
- Preliminary floor plan(s) of both existing building & proposed select demolition conditions (where applicable) in addition to new proposed renovated layout, at same 1/16" scale or larger.
- New and remodel work should be clearly delineated and defined. For existing / remodel work existing building plans should be included and demolition should be clearly indicated. Owner salvaging requirements should be defined
- Typical floor plans should reflect the intended partition layout. Single line drawings are sufficient.
- Enlarged floor plans - Enlarged floor plans or areas at 1/8" scale or greater for special plan conditions, to more clearly convey intent of design scope such as mechanical & electrical rooms, toilet rooms, labs, vestibule & lobbies, offices, patient & OR spaces, etc.
- Roof plans - Roof plan(s) at 1/16" scale including proposed roof elevation(s) and major conditions such as roof slope / roof drainage method / pitch / penetrations / roof mounted features like skylights, hatches, ladders, window washing equipment davits or tie-downs, stair & elevator penthouse structures, helipad / heliport, expansion joints, etc.
- Identify Roof System, deck membrane, access, flashing and drainage technique.
- Elevations - All typical building elevations at 1/8" scale; selection & notation of exterior wall elements i.e.: doors, windows, wall types & special conditions / features, such as shades / sunscreens, ornamentation, signage, canopy(s) etc and supplemented with written definition of those proposed exterior wall / feature systems.
- Buildings sections - Several representative building sections at 1/8" scale or greater, both longitudinal & transverse or as floor plans require to depict floor to floor height or to convey level changes within the facility and/or abutting / adjacent buildings.
- Wall sections- Initial representative wall sections at 1/8" scale for all typical exterior wall systems as well as important interior wall conditions such as stairwell / elevator & mechanical shafts / balcony & bridge design features, etc and should indicate preliminary selection of building systems and materials

- Extent of basements should be depicted
- Details - Preliminary typical architectural details
- Door schedule - Preliminary door schedule or description of door materials and special considerations.
- Finish schedule - Preliminary room finish schedule or descriptive narrative of areas and finishes. Should include consideration of alternate materials.
- Specs - Preliminary or outline specifications of all key material systems, equipment, specialties, special construction, etc
- Equipment furnishings - Illustrate preliminary equipment & furnishings plan(s) separate from typical architectural floor plans at 1/8" scale or greater that influences the POR design criteria for "proof of scheme" to this stage of design. This should include MEP equipment also.
- Preliminary responsibility matrix / description
- Area Calculations - Provide the Architect's gross & net area calculations, including roof areas by level
- Models - Provide design perspective(s) and study model(s) for additional illustrative communication of design intent. These are optional.
- Expectations of required mock-ups
- Expanded written narrative of scope intent for all space / function program areas should be address if not previously defined in program narrative or clearly expressed by SD plans specifications documents above.
- Conveying systems criteria should be preliminarily established. As well as any requirements for material transport or pneumatic tube.
- Room Data sheets
- Provide exterior renderings

3. Structural

- A predetermined structural system w/design loads and criteria should be depicted in plan and include any considerations for an alternate structural systems. Preliminary sizes for all main structural members should be provided.
- Preliminary foundation & framing plans for all levels at 1/16" scale minimum (1/8" preferred) which show / describe proposed material types, foundation types, mud slab requirements, typical framing modules & slab system types, along with structural criteria to be employed, such as tonnage or reinforcing weight per unit (sf, cy,).
- Preliminary structural floor plan should indicate overall dimensions and floor elevations.
- Preliminary foundation, footing, shear wall, column & beam schedules
- Representative sections & detail cuts of the foundations / framing structure & slab systems.
- Preliminary or outline specifications of all key material systems, equipment, specialties, special construction,
- Indications of special foundation problems such as shoring or underpinning, rock, soft soil, etc.
- Waterproofing requirements should be indicated.

- Deep foundation criteria if applicable.
- Provide narrative of all systems

4. M E P and Fire Protection

- Schematic Narrative / Description of MEP Systems with recommendations regarding basic materials and systems. Should indicate relationships with existing systems
- Nomenclature / Symbols list
- Define Commissioning requirements / responsibilities (3rd Party)
- Phasing, premium time and tie-in requirements
- Energy source(s) should be indicated through description and / or drawings.
- Any necessary energy conservation requirements / criteria should be addressed in the documents. LEED requirements
- Floor plans should indicate all mechanical equipment spaces / Preliminary Mechanical room layouts (major Equipment only) and roof mounted equipment layout. Space requirements should be indicated.
- Preliminary floor plans indicating all major mechanical equipment and plumbing fixtures, floor drains and roof drains
- Any special features should be identified such as underfloor raceways, access flooring, medical / kitchen / lab equipment, etc
- Fuel oil requirements
- Preliminary one-line HVAC duct layouts
- One line diagrams for; chilled water, condenser water, heating hot water, steam and condensate
- Intake / exhaust restriction
- Snow melt, heat trace requirements
- Medical gas requirements
- Fire Alarm / Life Safety - description of systems
- Fire protection zones / fire protection pumps and standpipes
- Fire protection special systems / FM, pre-action systems
- Building Management System description (where applicable)
- Power Service and distribution should be indicated.
- Preliminary Electrical one-line distribution diagram. Indicate preliminary location of service entry, switchboards, motor control centers, panels, transformers and emergency generator, etc. if required.
- Preliminary core lighting layout with fixture allowance. Typical lighting types and levels defined.
- Telephone / Data / Technology infrastructure requirements, locations, criteria or description.
- Security infrastructure criteria, locations, requirements or description.
- Any special electrical systems should be explained.
- Communications, alarm and emergency systems should be defined.
- Process system description or one-line drawings.
- Alternative systems defined if required

- Outline MEP Specifications - should indicate quality level and acceptable manufacturers of all major materials and equipment.
- Estimate total loads

5. Management Overview

- Determine that the established submittal requirements have been fulfilled
- Check schematic design submittal against Program
- Involve Fire Marshall for review
- Review budget and cost data
- Document of findings of deficiency, required modification, changes and/or action and communicate to Owner
- Transmit above documentation to all concerned parties
- Quality Assurance program to take place prior to issuing to the Owner
- Owner to sign on Schematic Design package before starting next phase

C. DESIGN DEVELOPMENT PHASE:

Design Development Documents should consist of drawings and other documents to fix and describe the size and character of the entire Project, including architectural, structural, mechanical and electrical systems, materials, equipment and labor, construction sequencing and scheduling, economic analysis of construction and operations, use safety and maintenance requirements, and energy conservation.

The Design Development plans should be a continued development of the Schematic design, logically giving more detail and information than the schematic plans.

1. Civil

- Soils Report - Complete final geotechnical report, including boring maps & drilling logs that indicate soil and underground water conditions including rock strata and underground obstruction criteria and foundation recommendations
- Utilities - Utility plans showing all on site utility's basic materials & systems to be used on site should be further development of SD requirements that includes preliminary locations and sizes of lines and structures. Plans should define tie-in points and should include typical connection locations, details and special instruction.
- Site electrical layout including site lighting, power and communication items as well as site transformers, equipment and service.
- Hardscapes - Plan drawing(s) of all proposed hardscape work: roads / curb & gutters / walks & stairs / retaining walls / fences / planters & other surface structures or features. Typical and special details are to be included.
- Landscapes - Plan drawing(s) showing final layout for land forms, lawns and plantings, proposed softscape / landscape conditions: detention areas / plantings beddings / soil treatments and irrigation system(s). Plans should include indication of material / planting schedule and typical details

for landscape features to be coordinated with civil and architectural layouts / features.

- Site amenities should be clearly indicated in plan and specification as to material, manufacturer, quantity and location.
- Entry and exit conditions, signalization, on site roadway, construction and final traffic flow.
- Parking layouts, including showing limits of lighting, curbing, pavement types.
- Plans should include typical sections through paving, walkways and curbs. Provide other typical details as necessary.
- All underground utilities, piping and services. Sized and sited to include profiles and elevations.
- Sediment Control plans
- Existing and final elevations of proposed site contours.
- Fence boundaries and equipment locations should be included. Staging area should be depicted on plans through coordination with Owner.

2. Architectural

Architectural Design/Documentation Should include expanded information from the SD criteria and plans should reflect the following information:

- Preliminary Specifications providing a description of proposed materials and equipment, systems, acceptable manufacturers, cut sheets, specific project requirements, etc. in CSI format (2004 MasterFormat or UniFormat).
- Draft front end and general condition information should be included with Design development submittal.
- Typical floor plans - Architectural Floor plans for each floor including basement, interstitial, tunnel and mezzanine areas should be double lined and scaled (minimum 1/8") identifying existing and new construction and including equipment and furniture plans, graphics and signage, reflected ceiling plans and exterior dimensions.
- Room Locations - All Rooms (to include electrical, tele and data closets, mechanical shaft and spaces, circulation corridors, stairs, elevators and automatic conveyances) are located and labeled.
- Floor Plans – Special floor plans of special areas or special design features at 1/4" scale minimum. Special design features should include elevations, sections and details
- Roof Plans - Roof Plans including final layout of penthouses, major mechanical equipment, dunnage / curbs walkways, expansion joints and all penetrations and projections.
- Roofing / sheet metal details
- Elevations - 1/8" scale minimum to indicate all exterior facades; include floor relationships / elevations, fenestrations, screenwalls, louvers, total building height and enlargement of special details or wall configurations. Identify all exterior materials, systems and glazing types.

- Sections - One eighth inch (1/8") scale minimum; number as required to reasonable illustrate floor relationships (floor to floor heights), ceiling heights, relationship of windows and cladding, exterior wall system, construction thickness and profiles, vertical circulation, parapets, relationship to finished grade and special features. typical wall section(s) of each major type of wall treatment indicating basic flashing, wall composition and materials
- Typical interior details noted.
- Typical Details - Not smaller than 1/2-inch scale, including special connections, conditions and design features.
- Typical door and window details
- Interior railings indicated in plan and elevation with typical detail.
- Partitions - Final partition locations and types indicated including shafts and fire or smoke separation walls. Indicate all openings including doors, windows, etc.
- Reflected ceiling plans including bulkhead / soffits, light coves, diffusers, light fixtures and all devices that penetrate or are mounted in / upon finished ceiling.
- Finishes - Decorative flooring & ceiling patterns / elements indicated on plans.
- Finish Schedules (walls, floors, base and ceiling for each room) - Format as intended for construction documents. To depict final materials selection. Should include all ceiling heights for all major areas and typical spaces
- Interior Elevations - Interior elevations for unique and typical areas
- Door & Window Schedule - Door and window schedule to include types, lites, frame and finish. Indicate any special hardware requirements.
- Indicate typical borrowed light conditions
- Stairs - Typical stair construction and details are to be included.
- Equipment & Furnishings - Furniture, furnishings and equipment selections should be preliminarily addressed and requirements indicated on plans.
- Equipment and Furnishings layout - Expand schematic design requirements. Include a list on a room number basis, noting both new and existing equipment to be used. With existing equipment, note location and what, if any, modifications to the equipment will be necessary to adapt it to its new locations. Indicate owner furnished items and contractor furnished items and installation assignments (OFCL, CFCL, etc.). To include Loading Dock eqpt, fixed eqpt, medical eqpt. specifications should indicate manufacturer, model number and connection type, etc. Indicate any special equipment types and locations
- Equipment schedules (e.g. Food service, laboratory equipment, etc.).
- Casework and millwork requirements and locations. Indicate in plan and elevation with typical details. Indicate materials and layout.
- Plans should clearly differentiate between casework / millwork and furnishings.

- Special Conditions - Identification of any special conditions such as raised flooring, shielding requirements, automatic doors etc.
- Specialties - All specialties should be indicated on floor plan and / or elevations.
- Conveying system - indicate cab size and requirements (capacity, speed, type, travel distance, finishes etc).
- Pneumatic tube system should be indicated. Stations located on plans.
- Major elements such as entrances, elevators, toilet rooms, mechanical spaces and shafts further developed and depicted and located.
- Further development of basement, including layout and details.
- Three dimensional sketch(es).
- Study model(s) as prepared as a part of the project (optional per architectural contractual obligations)

3. Structural

Sub-structure

- All Structural Plans should be at the same scale and overlaid on the architectural plans indicating bay sizes and overall dimensions.
- Foundation plans indicating footings and foundations layout, dimensions, depths and reinforcing requirements including deep foundations (piles / caissons), caps, grade beams, mat slab design if applicable. Slab elevations and bottom of footing elevations noted.
- Typical and special substructure details indicating sizes and reinforcing requirements.
- Schedule of foundation systems, by type, indicating size and reinforcing requirements.
- Type of and length of piles / caissons including amount of rock socketing. Include loading requirements.
- Note pre-auguring, casing and types of and number of test requirements.
- Quantifiable tie-back criteria, if required.
- Typical Slab on Grade details indicating thickness and reinforcing requirements.
- Special waterproofing and foundation drainage standard details.
- Sheeting, shoring or underpinning requirements, with scaled plan locating sheeting, etc. with typical details and elevations

Super-structure

- Typical floor framing plans including; sizes and types of framing including; girders, beams, joists and columns, floor and roof openings, slab thicknesses, moment connections and bracing locations, depressions / pads, penetrations, expansion and seismic joints.
- Non typical floor framing plans where required (e.g. lobbies, interstitial spaces, penthouses, canopies etc)
- Typical reinforcing criteria / details at slab, beam, floor & roof openings with quantity allowance.

- Any additional secondary framing requirements noted. (e.g. mezzanines, stages, stairs, ramps, etc.).
- Column criteria, preferably, a schedule w/ base & leveling plate(s) information.
- Shear wall locations and details.
- Embed requirements (e.g. Loading dock angles, sleeves, steel support plates, etc.).
- Representative sections & detail cuts of the foundations / framing structure & slab systems to adequately indicate structural system. To include edge of slab condition / detail.
- Typical connection and special connection details. (e.g. pipe conditions).
- Preliminary details of major unique conditions.
- Requirements for future expansion if necessary.
- Priming / painting criteria.
- Fireproofing requirements
- Design development Specifications of all key material systems, equipment, specialties, special construction, etc for divisions of work that relate to Structural work; CSI Divisions
- Criteria for curtain wall wind bracing loads and criteria for skylight supports.
- Tie-rod & cable requirements.
- Typical beam opening details
- Typical Slab on deck details indicating thickness and reinforcing requirements.
- Slab locations, thickness and deck type / size.
- Slab placement criteria.
- Finishing & curing criteria.
- Number of shear connectors noted.
- Post tensioning requirements or design criteria
- Caulking criteria (pre-cast systems, etc.)
- Final structural design criteria should be substantially established / finalized.
- Special provisions for concentrated loads, openings & equipment loads should be substantially established.
- Critical condition clearances - sections at critical clearance areas should be detailed (with dimensions)

4. M E P and Fire Protection

Mechanical Design/Documentation consisting of continued development and expansion of mechanical / electrical Schematic Design Documents and development of outline specifications to establish:

- Mechanical/Electrical Provisions - 1/8" scale drawings coordinated with the architectural and structural plans to illustrate equipment, duct work, principal piping, specialty piping, lighting layouts and other typical systems; provide double line drawings in equipment rooms and restricted areas at scale as required to illustrate adequacy of area and clearances.

5. HVAC

- Approximate equipment sizes and capacities.
- Preliminary equipment layouts.
- Size, Location and routing of ductwork and piping, with sizes and capacities.
- Diagrams, identify heating zones, VAV boxes etc.
- Equipment schedule with sizes and capacities.
- Mechanical area floor plans should indicate required space for equipment.
- Required chases and clearances should be shown in plans and details if appropriate.
- Acoustical and vibration control issues should be addressed.
- Energy conservation measures should be further developed including a temperature control system description
- Coordinate with commissioning agent
- All exterior louvers and vents that penetrate exterior envelopes shall be located
- Typical and major details shall be defined

6. Plumbing

- Indicate all plumbing fixtures including drains. Include schedule / locations.
- Equipment Schedules with sizes and capacities / locations.
- Specify pipe, fixture and equipment materials.
- Indicate roof drainage size / location.
- Provide sanitary and storm system waste and vent riser diagrams with types / size / location.
- Indicate special systems. Equipment and piping required
- Indicate all piping mains with sizes

7. Fire Protection System

- Identify fire pump requirements and size and other equipment schedule / locations.
- Specify sprinkler system types (dry and wet, special, etc.).
- Specify sprinkler head type (concealed, semi-recessed, exposed).
- Identify sprinkler areas located with hazard classification.
- Stand pipe locations
- Special site conditions

8. Electrical

- Light fixture layout should be shown in plan (RCP) with fixtures labeled or preliminary fixture schedule, should include fixture (including exit and emergency lights) and switches identified (including dimming) requirements and located.
- Special Systems, communications and alarm system should be indicated (including telephone, paging / music, intercom /, Nurse-call, sound

masking, data processing, MATV, fire alarm (including zoning), (door, CCTV and miscellaneous) - Identify telephone, data and duplex layout lightning protection, clock and security systems.

- Specify layout data technology system.
- Preliminary equipment layouts and schedule with sizes and capacities / locations.
- Motor control and schedule with starter and circuit sizing.
- Provide panel and equipment schedule.
- Any special features (underfloor raceways, access flooring, etc.) should be further detailed.
- Mechanical area floor plans should indicate required space for electrical equipment.
- Required chases and clearances should be shown in plans and details if appropriate.
- Further development of 1 line diagram, including normal / emergency power, UPS and information.
- Power distribution equipment (schedule and locations), feeder sizes, emergency generator size / location.
- Any Special or unique conditions identified.
- Security electronics and telecommunications shall be defined

9. Bidding

- Develop Division 1 specifications
- Establish contractor's list for bidding
- Determine if pre-qualification of bidders will be utilized

10. Management Overview

- Determine that the established submittal requirements have been fulfilled
- Check design submittal against Program and all applicable codes
- Involve Fire Marshal for review
- Review budget and cost data
- Review critical date schedule
- Document of findings of deficiency, required modification, changes and/or action and communicate to Owner
- Transmit above documentation to all concerned parties
- Confirm that the depth of ceiling cavity works for all components especially at major shafts and at mechanical rooms
- Review supplementary conditions with the Owner
- Quality Assurance program to take place prior to issuing to the Owner
- Owner to sign on Design Development package before starting next phase

D. CONSTRUCTION DOCUMENT PHASE:

The Construction Document Phase shall be a refinement of the Design Development Drawings. No new items are to be included at this stage but all

portions of documents shall be fully detailed. The more detail included with the plans ensures the best project both in quality of the finished product and least costly in terms accurate pricing and lower number of RFI's or change orders.

At this stage of the plans all standard details shall be modified to suit the specific project conditions. All non-applicable information shall be deleted.

Architectural Design /Documentation services during the Construction Document Phase shall consist of the preparation of the drawings, based on the approved Design Development Documents, setting forth in detail the construction requirements for the project.

1. Civil

- Final site grading plan - Existing and new elevations and contours. Include at structures corners, entrances and other critical areas.
- Final utility plan of site utilities (storm water management, sanitary system, water, gas, telephone, cable and electric, etc.) Showing all sizes, inverts, top elevations, profiles and details specific to local governing standards / requirements.
- Final Sediment Control plans.
- Final hardscapes plans
- Final landscape plans outlining areas of work location of trees, shrubs and lawns, plant material listing / schedule, special surface materials, irrigation, planting details and all site development features.
- Details and sections of all site development features, sidewalks, curbs, paving, paving stones, bollards, ramps, exterior stairs, lawn areas, etc.

2. Architectural

- Complete Specification providing a description of proposed materials and equipment, systems, acceptable manufacturers, specific project requirements, etc. in CSI format with no sole source limitations
- Completed floor plans for every level at 1/8" scale minimum with a grid or column reference system showing overall building layout dimensions, core spaces, floor opening penetrations.
- A dimensioned floor plan locating all interior and exterior wall partitions from the grid or column reference system.
- Fire ratings of all partitions and doors shall be clearly indicated.
- Partition schedule and section details for all wall conditions.
- Floor plan should include all room and workstation designations (titles) and numbers as well as interior and exterior door and window designations.
- Final interior elevations for standard rooms and all non-standard.
- Final casework floor plan complete with schedule, details and elevations
- Final interior and exterior window door and frame schedule complete with elevations and details for all head, jamb and sill conditions
- Final hardware schedule – Complete.
- Final finish schedule to be complete, including color and material selection.

- Exposed finish mechanical and electrical items shall be clearly addressed.
- A reflected ceiling plan showing all soffits, bulkheads, grid, access doors drapery tracks, light fixtures, grills, diffusers, sprinkler heads, security devices, fire alarm devices, intercom system, exit devices and acoustic treatment. Ceiling / bulkhead and soffit heights and type should be indicated.
- Final details shall be provided for transitions between finish materials and wall types.
- A sufficient number of building sections shall be provided to indicate relationships between floors, existing / other buildings.
- A sufficient number of details shall be provided to clearly indicate the method of construction for all building components and shall include but is not limited to the following; exterior wall parapet and soffit, waterproofing systems, insulating systems, roofing systems, interior and exterior finishes, architectural details, interior stairs, rails, casework, millwork, blocking, elevators, etc.
- Final exterior elevations showing all exterior wall areas with labeled exterior finish materials, exterior door and window openings and designations, lights, louvers, grills, shades, scuppers, signage, speakers, etc.
- Final roof plan showing all roofing materials, roof drains, plaza roofs, green roofs, overflows, scuppers, access hatches, roof drainage slopes / crickets, skylights, parapets, curbs, mechanical and electrical penetrations, davits / tie-offs, etc.
- Final details shall provide for all edge, curb, parapet, penetrations and flashing conditions.
- Interior signage locations shall be shown on the floor plan complete with details and schedules
- All structural members included in or enclosed by the architectural details shall be detailed and coordinated with and the size verified by the structural engineer. Details shall indicate the framing and furring method wherever appropriate.
- All MEP Items included in or enclosed by the architectural details shall be detailed and coordinated with and the size verified by the structural engineer. Details shall indicate the framing and furring method wherever appropriate.
- Architectural drawings shall be coordinated with the structural, mechanical and electrical drawings as well as the project specifications.

3. Structural

- A final dimensioned foundation plan showing and locating in plan and in elevation all footings, foundations, and special foundations
- A dimensioned floor plan for each floor, showing all beams, beam sizes, duct and piping penetrations,
- Indicate final Construction joints, expansion joints, edge conditions, embedded anchors and frames, thickened slabs, recessed slabs, stair penetrations, elevator shafts, top of structure elevation and reinforcement.

- Complete Footing, column, grade beam, caissons, piers, reinforcement and beam schedules.
- Dimensioned, to scale details showing all conditions, connections and structural sizes.

4. M E P and Fire Protection

All systems shall be finalized in the CD drawings. Areas with a potential for coordination problems with the trades such as corridor, mechanical rooms and other areas should be shown in cross sections at minimum 1/2" scale, depicting utility placements, both new and existing. All trades to be indicated including structural members. All drawings shall be coordinated with the final layouts of the architectural and structural disciplines

5. HVAC / Plumbing / Fire protection

- Final arrangement of mechanical room equipment is shown.
- Final duct and pipe sizing shall be complete
- Final equipment schedules with all information
- Unique details are explained on the drawings through elevations, sections and legends.
- Final sections through equipment rooms
- Areas that are complicated or restricted shall be detailed at 1 / 4" scale
- Final flow and control diagrams completed
- All special systems shall be finalized

6. Electrical

- Final transformer vaults and pad mounted transformer locations are shown with dimensions of equipment and required clearances.
- The electrical plot plan locates primary feeder and service entrance.
- Final lighting, power, distribution and special systems plans are complete
- The main telephone frame room and all electrical and telephone closets and distribution panels are finalized
- Final One line riser diagram of the electrical power distribution system and the auxiliary power system is provided.
- Final locations of primary distribution switchgear, engine generator sets, unit substation and other major items of equipment are indicated.
- Final electrical floor plans include room number and titles and locate the outlets for power, signal systems and special systems and equipment.
- Final lighting plans indicate all lighting fixtures and fixture types, including a fixture schedule.
- Final Site electrical plan
- Circuiting completed for all lighting, power and special electrical systems
- Final technology systems along with responsibilities matrix
- Final special systems along with responsibilities matrix
- Final data systems along with responsibilities matrix
- Final communications systems along with responsibilities matrix
- Final safety / security systems along with responsibilities matrix

7. Bidding

- Establish bidders list
- Establish how packages will be issued
 1. Early purchase of material and equipment
 2. Early award packages
 3. One complete package
- Establish the following with Owner (Owner's Representative)
 1. Invitation to bid
 2. Instruction to bidders
 3. Form of Proposal
 4. Alternatives
 5. Unit Prices
 6. General Conditions
 7. Supplementary Conditions

8. Management Overview

- Determine that the established submittal requirements have been fulfilled
- Check design submittal against Program and all applicable codes
- Involve Fire Marshal for review
- Review budget and cost data
- Review critical date schedule
- Document of findings of deficiency, required modification, changes and/or action and communicate to Owner
- Transmit above documentation to all concerned parties
- Confirm that the depth of ceiling cavity works for all components especially at major shafts and at mechanical rooms
- Review general and supplementary conditions with the Owner
- Confirm with Owner who will pay for the bid sets and how payment will be made. Establish cost of bidding documents and method of issuance and payment
- Determine number of sets of drawings required for issue (fire Marshall, underwriter, Owner and bid sets)
- Quality Assurance program to take place prior to issuing to the Owner
- Owner to sign on 95% Construction Documents package before starting next phase

E. Bid Set Documents Phase

1. General

This phase is to provide for the orderly progress of the project from its Status as a set of approved contract documents through the actual award of the construction contract.

Communicate with bidders should be kept only to the Project Manger
Provide "for construction" set of documents at the end of the bid period including all addenda.

2. Issuance

- Issue documents to bidders (maintain documents log)

3. Addenda

- All revisions must be issued officially by Addenda
- Verbal revisions or instructions should never be given to bidders
- All revisions are to be made to the original drawings
- All people holding bid sets must be copied on the Addenda

4. Pre-bid Conference

- Conduct a pre-bid conference two weeks prior to bid date
- Verbal changes or instructions should not be given during this meeting
- Agenda of meeting
 1. Introduction of team members
 2. Overview of Project
 3. Schedule
 4. Specific or unusual requirements
 5. Question and answer period
- Any questions from pre-bid meeting requiring response should be issued by Addenda
- Provide a sign-in sheet for all attendees

5. Bid Evaluation

- Evaluate bids for completeness with Owner
- Keep all information confidential
- Revise budget and cost data as well as critical date schedule with bids
- If low bidder is not accepted, provide documentation that the winner bidder was subjected to the same scrutiny/reference as the rejected bidder