



Capital
Development
Board
Building a Better Illinois



PROGRESSIVE DESIGN-BUILD DESIGN AND CONSTRUCTION MANUAL

2026



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Article 1 **BASIC INFORMATION**

- 1.1 General.** This guide has been prepared for use with the 2026 Standard Documents for Progressive Design-Build Projects (PDB-SD).
- 1.2 Website.** All CDB manuals and forms are available on CDB's Internet site (<https://cdb.illinois.gov/>).
- 1.3 Benchmarks.** The PDB entity is required to provide or obtain surveys essential to the design and construction of the project. The PDB entity is responsible for obtaining its own benchmarks, location of utilities and topographical information for establishing building and site improvement locations.
- 1.4 Meeting Minutes.** The PDB entity shall record minutes of all meetings held throughout the course of the project and distribute copies to participants and other project team members as directed by the CDB PM within seven (7) calendar days. Minutes shall be recorded for all significant meetings, including but not limited to:
 - A. Orientation/Preconstruction Services Negotiation
 - B. Design Submittal Review
 - C. Weekly Construction Progress/Pay
 - D. Substantial Completion
 - E. Final Acceptance
- 1.5 Monthly Progress Reports.** The PDB entity shall submit monthly progress reports of design/construction activities to the CDB Project Manager on the 1st of each month or next closest business day. Failure to submit monthly reports may result in delay to the PDB entity's progress payments. The report shall include:
 - A. Activities completed since last report, items pending from last report
 - B. Projected progress
 - C. Comparison of schedule and actual progress
 - D. Decisions or information required
 - E. Log(s) showing status of all Allowances, Change Order Requests, and Contractor Contingency
 - F. RFI Log
 - G. Safety Log including information such as First Aid, Lost Time, and Recordables
- 1.6 CDB 3rd Party Representative.** This entity performs services under a separate contract with CDB, as applicable, which may include the following representatives: Commissioning Agent (CxA), Construction Manager, Owner's Advisor, and/or Indefinite Delivery Indefinite Quantity (IDIQ) firm.

Article 2 CODES AND STATUTORY REQUIREMENTS

2.1 General. The PDB entity shall comply with all State and Federal requirements governing the design of the project and this agreement.

2.2 Building Codes.

A. All projects shall be designed in accordance with the following codes:

1. Fire Prevention and Safety Rules including National Fire Protection Association (NFPA) 101, Life Safety Code. Consult the State Fire Marshal's office to determine the adopted edition.
2. NFPA 70, National Electric Code latest edition or the edition referenced by the IBC. Projects in the City of Chicago shall comply with the Chicago Electrical Code or NFPA 70, whichever is more stringent.
3. NFPA 72 National Fire Alarm and Signaling Code.
4. Illinois Stretch Energy Code.
5. Illinois Plumbing Code. Consult the Illinois Department of Public Health to determine the most current edition.
6. 2018 Illinois Accessibility Code and 2010 Americans with Disabilities Standards for Accessible Design (2010 ADA Standards), whichever is more stringent.
7. All projects outside the City of Chicago shall be designed in compliance with the International Building Code (IBC), current edition or most recent preceding edition (published by the International Code Council, 200 Massachusetts Ave. NW, Suite 250, Washington, DC 20001). The PDB entity shall document any additional building code requirements that are more stringent than the IBC and confer with CDB on which requirement to follow. Projects within the City of Chicago shall be designed in compliance with the current edition of the Chicago Building Code.
8. Projects may be designed in compliance with the International Existing Building Code, current edition or most recent preceding edition when it is applicable.

A. Approval by CDB is required for designs which deviate from required codes. In design documents, when "approval by local authority" or "authority having jurisdiction" is referenced, substitute CDB for the local authority.

B. Construction Documents shall be prepared in accordance with codes in effect at the time of authorization to proceed. Codes shall be mutually agreed upon by CDB and the Client Agency in consultation with the PDB entity, and shall be identified in the program analysis submittal.

C. The PDB entity shall provide code analysis with each review submittal. Code analysis shall be included on the Construction Documents and record documents. The Code Analysis Template is available on the CDB Website in the Reference Library.

2.3 Illinois Building Related Requirements. To assist the PDB entity in determining which codes might be applicable to a project, a [Directory of Illinois Construction-Related Statutes and Rules](https://cdb.illinois.gov/business/codes/buildingcodesregulations.html) which lists statutory requirements relative to state construction is available on CDB's website at: <https://cdb.illinois.gov/business/codes/buildingcodesregulations.html>. This directory also includes a table of primary codes/standards/specifications for State of Illinois Building Requirements. Use of this directory does not absolve the PDB entity from its responsibility for determining what codes are applicable.

2.4 Special Statutory Requirements

- A. The following are statutory requirements that may impact the project. This list is not exhaustive. Some of these requirements are unique to State projects.
- B. The PDB entity, in cooperation with CDB, shall review the project and determine if any of these statutory requirements apply.
- C. Major statutory requirements include:
 - 1. Illinois Energy Efficient Building Act
 - 2. Farmland Preservation Act
 - 3. Endangered Species Act
 - 4. Wetlands Policy Act
 - 5. Historic Preservation Act
 - 6. Archeological and Paleontological Resources Protection Act
 - 7. Steel Products Procurement Act
 - 8. Clean Water Act
 - 9. Art-in-Architecture Act
 - 10. Green Building Act
 - 11. Domestic Products Act
 - 12. Bird-Safe Buildings Act
 - 13. Equitable Restrooms Act
- D. Refer to [Appendix 1](#) for a more complete description of these requirements.

2.5 Design Policies. CDB has adopted certain design policies in force at the time of execution of this agreement. The PDB entity shall determine the policies required for the project and obtain the current policy from the CDB.

- A. **Flood Plain Construction Policy.** In response to Executive Order 2006-05, CDB has adopted the following policies. Assistance may be requested from Illinois Department of Natural Resources (IDNR) Office of Water Resources.
 - 1. All development shall comply with all requirements of the National Flood Insurance Program (44 C.F.R. 59, 60, and 65) and with all requirements of 17 Illinois Administrative Code 3700 or 17 Illinois Administrative Code 3708, whichever is applicable.
 - 2. All new Critical Facilities shall be located outside of the floodplain. Where this is not practicable, Critical Facilities shall be developed with the lowest floor elevation equal to or greater than the 500-year frequency flood elevation.
 - 3. All new buildings shall be developed with the lowest floor elevation equal to or greater than the Flood Protection Elevation or structurally dry floodproofed to at least the Flood Protection Elevation (one foot above the applicable base flood or 100-year frequency flood elevation).
 - 4. Modifications, additions, repairs or replacement of existing structures may be allowed so long as the new development does not increase the floor area of the existing structure by more than twenty (20) percent or increase the market value of the structure by fifty (50) percent, and does not obstruct flood flows.
 - 5. The PDB entity shall submit a statement with the PA/DD submittal affirming compliance with the Flood Plain Construction Policy.
- B. **Roofing Program Policy.** A comprehensive CDB roofing handbook, sample specifications, and a list of acceptable manufacturers that must be utilized for all projects which include new roofs, re-roofing, or

modifications, including penetrations, of existing roofs is available on the CDB website. The handbook addresses single and multi-ply membrane roofing and metal roofing and decking.

C. **Asbestos Abatement and other Hazardous Pollutants.** A comprehensive manual ([Project Manual Workbook for Asbestos, Lead, UST and PCB](#)) including estimating worksheets, requirements for inspection and sampling, abatement design and design review procedures, and complete bidding and construction phase procedures is available on the CDB website in the Reference Library.

D. **Buy Illinois Program.** CDB is encouraging PDB entities to voluntarily procure products manufactured in Illinois and will be tracking the value of the Illinois products used on state construction projects for a report to the Governor and General Assembly. To assist the PDB entities in this process:

1. When suitable products are available, the PDB entity will include Illinois products, as defined below, in the specifications (typically only when products are specified by manufacturers, product names, and/or numbers).
2. Illinois products, when specified, are to be identified with (IL) before the manufacturer's name. Materials specified by standards and/or codes and not by manufacturer will not be highlighted as Illinois products.
3. CDB has established a directory of products manufactured in Illinois which are used in the construction industry. To qualify as an Illinois product, the product must be manufactured, fabricated or assembled within the State of Illinois. The directory is available at:
<https://cdb.illinois.gov/professionalgrowth/buyillinoisdirectory.html>.

E. **Prohibited Products Policy.** The following products are prohibited from use on all CDB projects:

1. Asbestos and asbestos containing material (ACM).
2. Fire retardant treated (FRT) wood products in structural applications.
3. Chlorofluorocarbons (CFC).
4. Polychlorinated Biphenyl (PCB).
5. Lead Based Coatings.
6. Fire suppression systems using ozone depleting halons.

2.6 Permits. The PDB entity shall design to the standards necessary to receive permits from state and federal agencies having jurisdiction over any aspect of the project (including, but not limited to: US EPA, IEPA, IDNR, IDPH, and USACE) and is responsible to submit for and obtain such permits. As directed by CDB, other permits may be required pursuant to Section 10.20 of the Capital Development Board Act, 20 ILCS 3105.

2.7 Federally Funded Projects. Certain projects may be funded in full or in part with federal funds which may have specific restrictions. On federally funded projects, standards of the federal agency may supplement or take precedence. The CDB PM and the PDB entity will work together to determine special requirements.

2.8 Build America, Buy America. For federally funded projects, domestic content procurement preferences specified in the Build America, Buy America Act, 41 U.S.C. § 83, must be met. Domestic content procurement preference means that all iron, steel, manufactured products, and construction materials used in the project are produced in the United States. For steel and iron, all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States. Manufactured products must be manufactured in the United States and the cost of the components of the manufactured product that are mined, produced or manufactured in the United States must be greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation. For construction materials, all manufacturing processes for the construction materials must occur in the United States.

The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project.

The PDB entity shall notify CDB as soon as practical in the event that:

- A. Applying the domestic content procurement preference would be inconsistent with the public interest;
- B. The types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
- C. The inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent.

Additional guidance on the requirements and exemptions may be found in 2 C.F.R. 184 and OMB Memo, M-24-02 Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure (October 25, 2023). The PDB entity shall maintain and provide documentation supporting the above so that the State may request an exception from the Federal Awarding entity.

2.9 Art-in-Architecture Program

- A. **General.** The Art-in-Architecture (AIA) program, administered by the Capital Development Board, provides “for the promotion and preservation of the arts by securing suitable works of art for the adornment of public buildings constructed or subjected to major renovation by the State or which utilize State funds, and thereby reflecting the diverse cultural heritage of Illinois, with emphasis on the works of Illinois artists.” 20 ILCS 3105/14(a).
- B. **Website.** All AIA information, including the AIA Policy and Procedure Manual, is available at: <https://cdb.illinois.gov/professionalgrowth/art.html>.
- C. **Program Applicability.** The following criteria must be met for a project to be subject to the requirements of the AIA program:
 - 1. The project must have a total budget of \$1,000,000 or over.
 - 2. It must be a public building, and art must be in a place accessible to the general public.
 - 3. The art must be located in a permanent structure primarily intended for human services or occupations.
 - 4. Rehabilitation, renovation and repair projects qualify if they meet the above criteria (A) – (C) AND the work impacts the entire structure and not a single subsystem. Items such as roof repair, window replacement, HVAC projects and asbestos/hazardous material abatement are not applicable.
- D. **Exemptions.** Projects exempt from the AIA Program are structures that are not accessible to the general public, are not intended for human occupation, or are temporary. Projects not eligible for the AIA program include correctional facilities, mental health facilities, laboratories, buildings and yards used for maintenance, and animal barns.

- E. **Steering Committee.** The Steering Committee represents the interest of the Client Agency. Its mission is to ensure that the local voice is well represented. It provides one voting member to the Fine Arts Review Committee. As representative for the Client Agency, the PDB entity, CDB project manager, and the AIA coordinator are also part of the Committee and provide technical and resource information.
- F. **Fine Arts Review Committee.** As defined in legislation, the Fine Arts Review Committee (FARC) is appointed on a project-by-project basis to review and recommend artists and/or works of art for final selection by the Chair of the Illinois Arts Council (20 ILCS 3105/14). The AIA Coordinator organizes the group and meetings but does not vote. The FARC is subject to the Open Meetings Act (5 ILCS 120), and FARC members must complete State of Illinois Ethics Training.

The FARC consists of:

PDB entity Architect of Record
Illinois Arts Council Agency designee
Illinois State Museum designee
Client Agency designee
AIA Coordinator (non-voting)

- G. **Additional Responsibilities.** The PDB entity shall cooperate (where applicable) by:
1. Attending Client Agency Steering Committee meetings.
 2. Attending all Fine Art Review Committee meetings as set forth in statute.
 3. Providing CDB necessary documents, drawings, renderings, specifications, product data, etc. to assist the artist in the design and installation of the artwork.
 4. Attending meetings with CDB, the artist, and user to coordinate work.
 5. Reviewing artwork shop drawings.
 6. Provide on-site observation and report field conditions as necessary to coordinate artwork installation.
 7. Attend the substantial completion inspection of the artwork.

Article 3 DESIGN GUIDELINES

3.1 General. Most CDB projects are funded with State of Illinois 25-year Bond Funds. Therefore, building systems and materials incorporated into our projects are required to have an average life span of 25 years or longer. CDB recognizes that some items, such as roofing materials and mechanical equipment, will not achieve 25-year life spans. Other systems and materials, such as building shells, etc. must then be designed and specified to exceed a 25-year life span.

3.2 Green Building Requirements

- A. For all new buildings and major renovation projects (defined as 40% of the replacement cost of the building or more), the project shall comply with the requirements in the Green Buildings Act (20 ILCS 3130). Projects that are 10,000 square feet and over, must achieve a minimum of United States Green Building Council's LEED silver certification or an equivalent standard including but not limited to a two-globe rating from the Green Building Initiative. Projects under 10,000 square feet shall be designed to meet these same standards but certification will not be required.
- B. The PDB entity shall design all new buildings and major renovations to incorporate maximum LEED points within practical, scope and budgetary limits.
- C. Buildings that are not comfort conditioned shall be exempted from these standards.
- D. Waivers will be granted when an applicant can demonstrate that meeting the standards causes:
 - 1. An unreasonable financial burden, taking into account the operating and construction costs over the life of the building and the total cost of ownership of the building;
 - 2. An unreasonable impediment to construction;
 - 3. An impairment of the principal function of the building; or
 - 4. A compromise to the historic nature of the structure.
- E. For all CDB projects, when a green building certification is being sought, a LEED or other green building rating checklist shall be completed and submitted with all design submittal phases. For those projects where no certification is required, a LEED or other green building rating checklist shall be completed and submitted with the 100% design submittal. For any criterion on the checklist that do not apply to the project, "N/A" should be noted.

3.3 Utilities.

- A. The PDB entity is responsible for design coordination with any/all project applicable utility companies and assisting CDB in drafting any/all utility agreements. The PDB entity shall develop load requirements, contact the respective utilities to determine how that load can be accommodated and what procedures the utility will require for the connection, and determine where and by whom the connections will be made. Failure of the PDB entity to coordinate with applicable utilities shall constitute an omission to the PDB entity.
- B. The PDB entity shall locate all utility connection points on the drawings. If a connection must be made to a public utility, the PDB entity shall include name and phone number of the person at the utility familiar with the facility/project.

3.4 Civil.

- A. Any project site larger than one acre must have a storm water discharge permit under NPDES. The PDB entity shall follow IEPA guidelines including design of a SWPPP and inclusion of the NOI and NOT with the appropriate specification section. Additional information is available in [Appendix 1](#).

- B. The PDB entity shall use the current edition of the IDOT Standard Specifications for Road and Bridge Construction including Supplemental Specifications and Recurring Special Provisions for site work including roads, bridges and miscellaneous concrete. Provide reference to appropriate articles when applicable.
- C. The PDB entity may use the latest edition of Illinois Society of Professional Engineers (ISPE) Standard Specifications for Water and Sewer Main Construction in Illinois for preparing water and sewer specifications. Provide reference to appropriate sections as applicable. Copies of the latest edition are available from ISPE, 100 East Washington Street, Springfield, IL, 62701.
- D. The PDB entity shall comply with local regulations for storm water piping or retention and notify CDB at program analysis if there is an absence of local governing agency criteria.
- E. Parking lots shall be designed to accommodate a minimum five-year storm.
- F. Buildings shall be protected from the effects of a 100-year storm and located above the 500-year flood plain.
- G. New grading plan shall consider adequate site drainage including building and paved areas, and shall consider erosion and sediment control.
- H. Geotechnical and Environmental Studies
 - 1. Geotechnical Testing and Reports
 - a. For a new building, addition, or other project requiring excavation and removal of soil, the PDB entity and/or their geotechnical consultant shall investigate and present a report which considers the engineering implications of all available information and data. This shall include the review of available documents such as aerial photography; USDA/SCS reports; topographic, pedologic, bedrock surface, geologic and quaternary deposits maps; and other pertinent studies which have been completed for and near the project site. The report shall also document existing weather conditions when the samples are taken and special features of the area such as slope cuts, quarries, gravel pits, strip mines, springs, and caverns. The report shall include a separate section describing any treatments necessary to provide a stable platform for the construction. All soil and subgrade recommendations must be specific to certain locations, lengths, depths, and types of treatment that the designer can use to calculate plan quantities.
 - b. The locations and sampling frequencies for subgrade borings shall be at such intervals as to allow the identification of all soil types, the water table elevation, and bedrock that would impact the proposed project. In areas or sites where the building footprint will be located, minimum soil borings per the table below or as recommended by the PDB entity in coordination with their geotechnical consultant shall be provided. The PDB entity shall also provide an additional boring for each specialty feature such as elevator pits, deep basements, concentrated heavy loads, and locations where deep fill or irregular subsurface conditions have been discovered.
 - c. Soil boring requirements and testing for roadway, civil structure, or parking lot design shall follow IDOT's Geotechnical Manual or as determined by the PDB entity in coordination with their geotechnical consultant. The PDB entity shall provide one additional boring for each major specialty feature such as storm water detention systems. The borings should, at a minimum, extend through the pavement through the sub-base to sound material.

BUILDING FOOTPRINT SIZE	SUGGESTED BORING REQUIREMENT
Less than 5,000 SF	Minimum 2 borings
5,000 SF to 20,000 SF	2 to 4 borings
20,000 SF to 40,000 SF	4 to 6 borings
40,000 to 60,000 SF	1 boring per 10,000 SF, plus 1 boring for each 400 LF

	of building perimeter
Over 60,000 SF	1 boring per 10,000 SF, plus 1 boring for each 500 LF of building perimeter
Specialty Feature	1 boring per specialty feature listed above
Test for Contamination	1 test per 10,000 SF building footprint per disturbed layer
References	NAVFAC DM7.01, Chapter 2.

ROADWAY OR PARKING LOT	SUGGESTED BORING REQUIREMENT
Road, parking lot, or civil structure	Minimum 2 borings plus 1 per 10,000 SF of improvement
Specialty Feature	1 boring per specialty feature listed above
Test for Contamination	1 test per 10,000 SF of improvement per disturbed layer
References	IDOT Geotechnical Manual, Dec 2015, Revised Dec. 2020, or latest edition.

2. Environmental Testing and Reports

- a. For a new building, addition, or other project requiring excavation and removal of soil, the PDB entity shall investigate and present a report on previous use and owners of the site for the past 100 years as part of the initial submittal package. This is also known as an IEPA Level 1 investigation. If a Level 1 investigation yields suspicion of contaminated material, then a Level 2 investigation is warranted and shall be performed to determine and delineate those soils which cannot be disposed of in clean construction or demolition debris (CCDD) or standard landfill.
 - b. If hazardous chemicals or other contaminants are found such that soil would be required to be disposed of as a 'special waste' or a 'hazardous waste' during the soil boring process, sufficient borings and tests shall be made to delineate the area and depth of the 'special waste' or 'hazardous waste' soil with a minimum of one boring per 1500 square feet or as recommended by the PDB entity.
 - c. The soil report shall include specific recommendations for use or disposal of soils, and clearly describe limitations on use or disposal of 'special waste' or 'hazardous waste' soil.
- I. Use IDOT Standard Specifications for Road and Bridge Construction for specifying measurement and disposal of soils (e.g. 202.07 and 669.10).
 - J. The compaction requirements and bearing limits of soils and fill material shall be based on the recommendation of the geotechnical consultant or structural engineer.
 - K. Only ACI or ASTM standards shall be specified in Division 03 "Concrete" specifications, except as otherwise approved for IDOT projects, which shall be governed by IDOT's Standard Specifications and Design Manual for concrete as noted in [Article 3.4 B.](#) above.
 - L. Fire hydrants shall be located within 10 feet of a road or a fire lane and at least 50 feet from the building. Any point on the perimeter of any building shall be covered with a maximum hose length of 300 feet.
 - M. The use of coal-tar based or high polycyclic aromatic hydrocarbon sealant products in pavements is prohibited.

3.5 Architectural.

- A. Include building expansion and control joints at intervals determined by the applicable code, structural requirements and best practices. Provide complete expansion joints between existing and new structures.

- B. All masonry shall be designed in accord with building code requirements for masonry structures (ACI 530) and standards set forth by the Brick Industry Association (BIA) technical notes.
- C. Metal stud exterior wall systems with brick veneer.
 - 1. These systems are not allowed for use in state buildings unless approved by CDB.
 - 2. If brick veneer and metal stud wall systems are to be considered for design, the following requirements apply:
 - a. A cost analysis comparison with other wall systems is required with Program Analysis.
 - b. The PDB entity shall calculate location of dewpoint within the wall, and verify that dewpoint falls within the cavity or brick veneer. The PDB entity shall submit these calculations to CDB for review with the initial submittal.
 - 3. Upon approval by CDB, the design shall include a 2-inch air gap behind the brick, the brick will not act as part of the structural lateral resistance system, metal studs and the exterior wall sheathing shall limit the out of plane wall deflections at service load levels to exceed BIA recommendations of 1/600, and the metal studs shall be galvanized at G90 standards. An air barrier shall be installed on the outside face of the exterior sheathing. The insulation shall be placed on the outside face of the exterior sheathing. Masonry flashing shall seal to the wall to preclude water from entering the wall space below the flashing. Metal two-piece masonry ties shall be attached soundly to the studs per building code.
 - 4. If included in the project, metal stud exterior wall systems with brick veneer will be considered “Critical Work Items” (see [Article 6.5 K1](#)).
- D. Provide roofing design in compliance with CDB’s Roofing Program Handbook.
- E. The use of sloped glazing is discouraged.
- F. The use of curved wall construction is discouraged.
- G. Exterior Insulation and Finish System (EIFS) shall not be used unless approved by CDB.

3.6 Structural.

- A. Design for optimum use of materials. Allowable Stress Design or Load and Resistance Factor Design in steel or timber, Allowable Stress Design or Strength Design in masonry, and ultimate strength design in concrete construction shall be considered for more economical and efficient use of materials.
- B. Submit design calculations for structural design when requested by CDB.
- C. Design roof drainage slope into the structural system for all new buildings. See CDB’s Roofing Program Handbook.
- D. Include Structural notes on design drawings in accordance with IBC 1603.
- E. State buildings which are administrative (including National Guard armories, State Police headquarters, Emergency Operation facilities), residential (including hospitals, skilled care), or institutional facilities (including K-12 schools, prisons, mental health centers) shall be considered essential facilities for assignment of importance factors.

IDOT buildings used for vehicle storage, if they are identified by IEMA as part of a statewide emergency plan to be utilized for emergency maintenance or inspection of essential routes, shall be considered essential facilities for assignment of importance factors.

State buildings in the community college system or state university system that accommodate the congregation of students shall be considered assembly structures for assignment of importance factors.

F. Durability:

Reinforcement in concrete structures which are exposed to outdoor condition, exterior walls and slabs, concrete subjected to frequent wet conditions, and buried structures shall be epoxy coated.

G. Seismic design requirements:

1. The PDB entity shall use the International Building Code to calculate seismic design requirements for all structures (unless the local code is more stringent).

In accordance with International Building Code, use Maximum Considered Earthquake (MCE) Ground Motion parameters as specified in Chapter 16 and follow code procedure to determine S_{DS} and S_{DI} values.

2. The PDB entity will verify project location within the county and will be conservative if using linear interpolation for seismic values.
3. Seismic design criteria will be included with the submittal for the Design Development phase.
4. The PDB entity will ensure the seismic performance Seismic Design Category, the Spectral Response Coefficients S_{DS} and S_{DI} , the Site Class, the Basic Seismic-Force Resisting System, the Design Base Shear, and the Analysis Procedure are added to the structural notes on the drawings. Component importance factors should be listed for piping, ductwork, power distribution, or other building systems included in the project. Attachments for curbs or other roof mounted equipment, as well as any required restraints or bracing for essential systems and components, must be detailed in the project documents.

H. Snow load design requirements.

In accordance with IBC 2024 and applicable building codes, with the following modification: Roofs for the new buildings shall be designed to support a snow load using a Ground Snow Load Factor P_g in accordance with ASCE 7-22 for the site-specific location of the project. The minimum Ground Snow Load Factor P_g shall be 30 psf in Northern Illinois (Peoria and north), 25 psf in Central Illinois (south of Peoria through Carbondale), and 20 psf in Southern Illinois (south of Carbondale).

I. Applicable Codes and Standards:

1. Minimum Design Loads and Associated Criteria for Buildings and Other Structures – ASCE/SEI 7.
2. Building Code Requirements for Reinforced Concrete - ACI 318.
3. Steel Construction Manual - AISC.
4. Specification for Structural Steel Buildings – AISC.
5. Seismic Design Manual – AISC.
6. North American Specifications for the Design of Cold-Formed Steel Structural Members – AISI S100.
7. Structural Welding Code -- AWS.
8. Steel-- AWS D1.1.
9. Sheet Steel-- AWS D1.3.
10. National Design Specification for Wood Construction with Supplemental Design Values for Wood Construction -- NDS.
11. Special Design Provisions for Wind and Seismic – NDS.
12. Building Requirements and Specification for Masonry Structures – TMS 402/602.

13. Specifications for the Design and Construction of Load-Bearing Concrete Masonry - NCMA.
14. Recommended Practice for Engineered Brick Masonry - BIA.
15. Metal Building Systems-Metal Building Mfg. Association.
16. Code of Recommended Standard Practice for Composite Deck, Form Deck, and Roof Deck Construction - SDI Design Manual.
17. Standard Specification for Steel Joists, Including Load and Weight Tables, SJI.
 - a. Open Web-Type K Series.
 - b. Long Span and Deep Long Span-Type LH and DLH Series.
 - c. Joist Girders.
 - d. Certification that fabricator is a member in good standing with SJI. Requirement for certification may be waived by CDB if circumstances warrant.
18. When project design includes pre-cast concrete, the PDB entity shall include the Precast/Prestressed Concrete Institute Plant Certification Program in the appropriate sections of the specifications. If amount of pre-cast concrete is minor, this requirement may be waived by CDB.
19. LRFD Guide Specifications for the Design of Pedestrian Bridges – AASHTO.

3.7 Plumbing.

- A. Specify dielectric insulating unions between all dissimilar metals.
- B. Specify insulation thickness in accordance with the latest adopted Illinois Energy Conservation Code or Illinois Commercial Stretch Energy Code, as applicable.
- C. Show **all** piping on drawings (domestic water, waste and vent, pumped waste, roof drain, storm and sanitary sewers - if part of plumbing contract, water service - if part of plumbing contract, natural gas piping, etc.). Do not call for piping in the specifications if not shown on the drawings. Clearly define who provides the water meter (utility company or PDB entity). Also, contact all utility companies that will be involved in the project to determine their requirements.
- D. See ASHRAE *Application Handbook* for seismic design requirements for piping systems. Consult IBC to determine when seismic supports are necessary. See [Article 3.6 G](#).
- E. Prepare and submit calculations for fixture counts/occupancy requirements according to the Illinois State Plumbing Code and the local building code requirements. Provide fixtures according to the more stringent of the requirements.
- F. The use of pipe heat tracing systems in lieu of pumped recirculation systems must be approved by CDB.
- G. Design roof drains in accordance with requirements of the locally adopted code. Built-in gutters are subject to approval by CDB.
- H. Place rooftop piping and conduit on factory fabricated pipe supports. Consult CDB Roofing Program Handbook for height requirements. Wood blocking is not acceptable.
- I. Sprinkler Systems shall be designed in compliance with NFPA 13 and the Illinois State Plumbing Code.
 1. The water line and water hydrants outside the building and entering the building, including the backflow preventer, are plumbing work. Sprinkler work begins at the outlet of the backflow preventer.
 2. Design sprinkler work as a separate bid where it is a major portion of a project. When specifying matching fire protection components, include cabinet, hose, extinguisher, etc. in the general contract.
 3. All sprinkler designs shall include flow testing from the nearest hydrant when bidders are required to size the system.
- J. Any testing of the plumbing system shall be specified as part of the plumbing PDB entity's portion of

the work.

3.8 Heating.

- A. Refrigerants/Halons. Specifications should be written for the refrigerant offering the best life cycle cost commensurate with engineering judgment as to industry trends. Consult with the CDB project manager for current guidance.
- B. When specifying chillers, condensing units, heat pumps, roof top units, and other types of air conditioning and refrigeration equipment, include a minimum warranty of 5 years from the time of substantial project completion for parts and labor on the compressors. See Progressive Design-Build Standard Documents (PDB-SD) Section 01 78 36 for more information.
- C. See ASHRAE *Application Handbook* for seismic design requirements for piping systems. Consult IBC to determine when seismic supports are necessary. See [Article 3.6 G](#).
- D. Specify dielectric insulating unions between all dissimilar metals.
- E. List the pressures and temperatures associated with each class (high, medium, low) of steam or hot water. Specify the **correct** (material, pressure rating and temperature rating) type of piping, fittings and valves for each class of steam, condensate return or hot water.
- F. Specify insulation thickness per latest adopted edition of the Illinois Stretch Energy Code.
- G. The use of pipe heat tracing systems (instead of adding glycol to the piping system) for chilled water piping located outside must be approved in writing by CDB.
- H. HVAC temperature controls and building automation systems shall comply with the latest adopted edition of the Illinois Stretch Energy Code.
- I. Mount rooftop equipment on a curb or on supports that provide a minimum of 24" clearance above the roof. Avoid interior angles to facilitate flashing. Consult CDB Roofing Program Handbook.
- J. Place rooftop piping and conduit on factory fabricated pipe supports. Consult CDB Roofing Program Handbook for height requirements. Wood blocking is not acceptable.
- K. When not included in the PDB entity's contract, testing and balancing may be specified as part of the PDB entity's work or as a separate contract.

3.9 Ventilation.

- A. Specify insulation thickness per latest adopted edition of the Illinois Stretch Energy Code.
- B. Ductwork:
 - 1. Underfloor duct systems must be approved in writing by CDB. The A/E's written request shall include groundwater evaluation, water table location, and a description of the engineering controls necessary to prevent moisture from entering the system.
 - 2. Fiberboard ductwork shall not be specified.
 - 3. Reference SMACNA duct gauges for all ductwork.
 - 4. See SMACNA manuals and ASHRAE *Application Handbook* for information on seismic design of ventilation systems. Consult IBC to determine when seismic supports are necessary. See [Article 3.6 G](#).
- C. When specifying condensing units, heat pumps, roof top units, and other types of air conditioning equipment, include a minimum warranty of 5 years from the time of substantial project completion for

parts and labor on the compressors. See Progressive Design Build Standard Documents (PDB-SD) Section 01 78 36 for more information.

- D. HVAC temperature controls shall comply with the applicable edition of the Illinois Stretch Energy Code.
- E. Mount rooftop equipment on a curb or on supports that provide a minimum of 24" clearance above the roof. Avoid interior angles to facilitate flashing. Consult CDB Roofing Program Handbook. Attachments for roof mounted systems and equipment shall comply with the local wind loads from the IBC.
- F. Place rooftop piping and conduit on factory fabricated pipe supports. Consult CDB Roofing Program Handbook for height requirements. Wood blocking is not acceptable.

3.10 Electrical.

- A. Electrical power and lighting systems shall comply with the Illinois Stretch Energy Code.
- B. The PDB entity to provide details and specifications that are applicable to the project, having the correct voltage, circuit elements, products, and wiring methods for the particular work at hand. Assignment of responsibility for disconnect of existing electrical equipment should be specified. Specifications, notes and symbols that do not apply to the particular project shall not be included.
- C. The PDB entity shall perform the load analysis calculations necessary to determine service size, panel and transformer capacities. Calculations will be made available to CDB upon request.
- D. Short circuit, overcurrent device coordination and arc flash studies shall be performed in accordance with NFPA and IEEE standards by an Illinois licensed professional engineer. The studies shall be reviewed by the PDB entity. The accepted copy of the studies shall be submitted to CDB.
- E. Transient voltage surge suppression shall be provided in the main disconnect in all buildings. Additional transient protection shall be provided for sensitive electronic equipment.
- F. Illumination levels listed in the I.E.S. Lighting Handbook shall be used.
- G. All transformers shall comply with the current U.S. Department of Energy Efficiency Levels.
- H. Select service voltages to minimize energy losses and reduce service ampacities. The use of 480Y/277 volt system is encouraged. When large capacity service equipment is required, the service disconnect should be located in a separate enclosure or vertical section to allow distribution sections to be completely de-energized for service.
- I. Controls for lighting, motors and other systems shall be shown on the drawings.
- J. Conduit:
 - 1. Electrical Metallic Tubing fittings shall be Steel Compression Type only.
 - 2. All cable shall be installed in conduit. (Exceptions may be made on a case by case basis. The PDB entity to submit request and justification during the Pre-Construction Phase.)
 - 3. Minimum conduit size shall be 3/4", 1/2" for single switch legs only.
 - 4. Install an equipment grounding conductor in all conduits.
 - 5. Telecommunications wiring may be installed without conduit when specifically requested by the Client Agency.
- K. Panel Boards:
 - 1. Provide at least three spare conduits, stubbed into an accessible ceiling space, for each flush mounted

- panel board.
 - 2. Provide a minimum of 10% spare breaker space and load capacity.
 - 3. Spare breakers shall not exceed 10% of the available poles in the panel.
 - 4. All panel boards and distribution equipment shall be fully rated. (Series rated equipment shall not be allowed.)
- L. Lighting:
 - 1. The use of solid state lighting is required and shall be tested and labeled in accordance with IESNA LM-79 and LM-80.
 - 2. Light fixtures shall have a minimum warranty of 5 years from the time of substantial project completion.
- M. Lamps and ballasts shall be recycled by a company that specializes in lamp and ballast recycling. Contact the Department of Central Management Services I-Cycle Program for information on recycling requirements and vendors with state contracts.
- N. Cable Testing:
 - 1. When medium voltage cable testing is required, specify that it shall be performed by a firm employed by the PDB entity, other than the installing PDB entity, with the PDB entity assisting.
 - 2. If a fault in a cable, splice, termination, etc. is noticed during testing, the fault shall be cleared, necessary repairs or replacement made, and the cable retested.
- O. Telecommunications or radio equipment for State facilities (other than universities and colleges) generally falls under the jurisdiction of the Department of Innovation & Technology (DoIT). For universities and colleges, telecommunications or radio equipment fall under the jurisdiction of the university or college. Please consult CDB's website for specific requirements.
 - 1. Consult with the telephone company to establish network point of presence (NET POP) at the building (for a single building facility) or at a common distribution point for a multi-building complex.
 - 2. Consult with PM early in design to determine if telephone system beyond NET POP will be provided by Client Agency, DoIT, or as part of project. The PM will coordinate with DoIT and the PDB entity to ensure information is shared.
 - 3. Consult with DoIT during the design phase to determine their telecommunications requirements.

3.11 Value Engineering.

- A. The PDB entity shall continuously monitor Project costs throughout the Preconstruction Phase and promptly notify the CDB if the estimated Cost of the Work, projected Guaranteed Maximum Price (GMP), or Project budget is anticipated to exceed the CDB's established budget. Upon identification of a potential budget variance, the PDB entity shall collaborate with CDB, the CDB 3rd Party Representative (if applicable), and other Project stakeholders to perform cost optimization and value analysis activities and develop recommendations to align with the Project budget.
- B. The PDB entity shall evaluate and recommend alternatives related to design, systems, materials, equipment, constructability, procurement, phasing, and other Project elements while maintaining the Owner's Project Requirements, operational requirements, security requirements, quality standards, performance criteria, and schedule. Prior to submission of the GMP Proposal, the PDB entity shall document the measures evaluated and implemented to align the proposed GMP with the Project budget. No reduction in scope, quality, performance, security, or other Owner requirements shall be made without the CDB's prior written approval.

3.12 Unit Prices.

- A. The use of unit prices is discouraged.
- B. CDB must approve the use of unit prices in any construction contract prior to receiving the GMP Proposal.
- C. When unit prices are used, it is preferable that they be extended to, and included in, the GMP Proposal. The PDB entity shall establish a baseline quantity for inclusion in the GMP Proposal.
- D. CDB may allow unit prices to be utilized that are not included in the GMP Proposal and is for informational purposes only. At the discretion of CDB, the PDB entity may be required to write a justification why the unit prices should not be included in the GMP Proposal.
- E. Unit price estimates shall include overhead, profit and all related costs (e.g. demolition, debris removal, additional supports, time) within the unit price.
- F. The PDB entity shall utilize CDB's sample specification section 01 22 00 Unit Prices when unit prices are incorporated into the project.

Article 4 **PROJECT BUDGET AND ESTIMATING**

- 4.1 General.** Estimating is an integral part of the design process. No design, or phase of design, is complete without the related detailed estimate.
- 4.2 Construction Budget.** The construction budget is the balance of funds available for construction after subtracting the value of the PDB entity's preconstruction contract amount and any miscellaneous items (such as Art-in Architecture or moveable equipment) required by state statute or CDB policy from the total project budget.
- 4.3 Design Budget.** The design budget is set at 90% of the construction budget; 10% of the construction budget shall be set aside for the project contingency. The PDB entity shall make all requests to exceed the 90% threshold in writing to the PM and include appropriate documentation, including a detailed estimate. Evaluation of such request shall be at the Construction Administrator level and the PDB entity shall be notified in writing of the result.
- 4.4 Proposed Project Cost Budget Form.** The PDB entity shall use the Proposed Project Cost Budget form (PPCB) to show the distribution of the project costs. The PM shall furnish the PDB entity any miscellaneous costs to be deducted from the project budget for inclusion on this form. This form is to be used as a summary of project costs and updated and submitted with each design review phase. This form does not satisfy the requirement of a detailed construction cost estimate as described herein.
- 4.5 Contract Administration Fee (CAF).** The CAF is required for **each** construction contract. The CAF shall be estimated as set forth in the CDB PPCB form as three percent (3%) of the base bid estimate plus all the alternate estimates rounded **down** to the next hundred dollars.
- 4.6 Estimates.** The PDB entity shall employ a Target Value Design approach whereby design development is continuously informed by current cost information. Cost information shall be provided on an open-book basis and shall include sufficient detail to permit the Owner and Owner's Representative to understand the basis of the estimate, quantity assumptions, unit pricing, subcontractor input, allowances, contingencies, escalation assumptions, and market conditions influencing Project costs. Budget compliance shall be considered a fundamental objective of the design process. Provide updated cost models and budget status reports no less than monthly and at each design deliverable as noted in Exhibit A of the Contract.

A. The estimate should include, but is not limited to:

1. Current estimated Cost of the Work
2. Comparison to approved Project Budget
3. Cost trend log
4. Allowance status
5. Contingency status
6. Escalation assumptions
7. Procurement status
8. Identified cost risks and opportunities
9. Forecasted GMP development
10. Contract Administration Fee

B. As an initial task, the PDB entity shall review the budgeted direct construction cost and determine whether it is sufficient to construct the Project. The PDB entity shall prepare a cost estimate and evaluate the estimate against the construction budget and, if necessary, recommend appropriate actions to avoid potential cost overruns. The PDB entity shall establish target values for the cost of each Project element to serve as the basis for design and cost monitoring throughout the design phase. The PDB entity shall

continuously monitor the budget as compared to the Project scope throughout design. If proposed changes to the Project scope may result in cost overruns, the PDB entity shall notify the CDB in writing as part of the regular Project development meetings and jointly coordinate with CDB on a solution.

- C. The PDB entity shall submit these estimates with each review submittal. These estimates shall be prepared in greater detail as the design progresses. Authorization to proceed is contingent on CDB acceptance of the GMP proposal submitted by the PDB entity.
- D. In the early phases of design, the estimate may be presented as scope items and their anticipated cost. Parameter based estimating is acceptable at this phase. For example:
 - 1. Install fire detection system \$5.00 per bldg gsf
 - 2. Replace bituminous paving \$15.00 per sy
- E. At the intermediate phases of the design, estimates can be based on components of the work. Components costs as illustrated in R.S. MEANS Square Foot Costs or Assemblies Cost Data manuals is the level of detail required at these stages of design development. For example:
 - 1. Roofing, built-up tar and gravel \$1.65 per sf of roof
 - 2. 2-1/2 inch bituminous overlay \$4.50 per sy paving
 - 3. 6 inch aggregate base \$8.75 per sy paving
- F. When project design stages are combined, the PDB entity shall provide the more detailed estimate level of the combined stages.

Article 5 PROGRAM ANALYSIS AND DESIGN DEVELOPMENT PHASE (Initial Design Phase)

5.1 Project Scope.

- A. CDB will supply a project scope statement.
- B. For new construction and major rehabilitation projects, CDB may provide a program statement describing proposed program activities, space requirements, and equipment needs.
 - 1. When a movable equipment line item is included in the budget, the responsibility for specifying, purchase and installation is directed by the FF&E Responsibility Matrix. If not already available, this should be developed during Program Analysis.
 - 2. The PDB entity shall cooperate by providing the Client Agency with the dimensional, color, finish, etc. information necessary to specify any equipment not included in the CDB project.
- C. The PDB entity will utilize the information above as the basis of their design effort.

5.2 CDB Review Checklist. CDB Review Checklists for Program Analysis, Design Development and 50% Design submittals are available on the CDB website in the Reference Library.

- A. The PDB entity and CDB PM together will determine the relevant sections of the checklist to be completed for the project.
- B. The PDB entity will submit the appropriate checklist with each submittal.
- C. The PDB entity will review the submittal and checklist and mark each item on the checklist as either included or not relevant to the project.
- D. Submittals without the appropriate checklist will be rejected.

5.3 Program Analysis Phase.

- A. Review and coordinate the data contained in the project scope statement, consult with designated representatives of CDB and the Client Agency when required and visit the project site to obtain a thorough understanding of the existing conditions and the project.
- B. If the project is eligible for Art-in-Architecture funds, consult with the CDB Art-in-Architecture Coordinator and the Client Agency to determine how artwork will be part of the project.
- C. Provide a program analysis report containing the coordinated project scope supplemented by all other information necessary to form a complete basis for the project design, including field verification of any information provided by CDB and the Client Agency.
- D. Requirements for the program analysis submittal vary with the scope of the project, but generally include the following:
 - 1. Narratives and diagrams required to show all program functions, off-site elements, and their relationships. Provide flow diagrams showing the movement of persons (visitors, staff and residents) and traffic when appropriate.
 - 2. Space itemization including: function and size (show as net assignable sq. ft./area), number and classification of occupants, type and quantity of fixed and movable equipment (noting required utilities), special environmental and/or system requirements.

3. Total of all program areas including a percentage allowance for circulation, mechanical and maintenance functions.
 4. Code analysis report indicating all regulatory agencies, permits, building codes, and standards that apply to the project. Include in this report an action checklist indicating all required regulatory agency reviews and permits. A Code Analysis Template is available on the CDB website in the Reference Library for use in developing the code analysis information. The information included in the Code Analysis Template is required for every submittal.
 5. For renovation projects, the A/E shall provide a statement of the status of asbestos inspections and/or abatement. The A/E shall review the asbestos inspection report and/or management plan. Provide a listing of the type and quantity of materials tested positive that will be disturbed. Note also any materials listed as “assumed” to be positive for containing asbestos and indicate the quantity of samples proposed to be taken and tested to verify the “assumed” condition. CDB Form 9 as provided in the [A/E Manual of Procedures for Asbestos Inspections and Management Plans](#) (and on the website) is an acceptable format for this purpose. The PDB entity may copy Form 9 from the management plan for each area to be disturbed. If new (previously unsurveyed) ACM (asbestos containing material) is discovered, the PDB entity must complete Form 9 for that ACM.
 6. Opinion of probable construction costs including asbestos abatement in scope itemization format per [Article 4.6 D](#) and the PPCB form.
 7. Estimated duration of project construction schedule including asbestos abatement.
 8. Completed Program Analysis checklist.
 9. Completed LEED checklist (if applicable).
- E. Resolve, in consultation with CDB and the Client Agency, any discrepancies in the project scope or budget prior to proceeding to the next design phase.

5.4 Schematic Design

- A. When provided for in Appendix A to the agreement, the PDB entity shall prepare up to three design studies for review and consideration by CDB and the Client Agency, either as part of Program Analysis or as a separate phase.
- B. Design studies may include written alternatives, drawings, or other documents as appropriate. Drawings can be sketch format, single line drawings or other as appropriate to illustrate basic information. Submittal shall include written analysis of the advantages and disadvantages of each alternative.
- C. Provide PPCB form and cost estimates for each schematic design study in project component format per [Article 4.6 E](#).
- D. Provide LEED checklist for each schematic design study (if applicable).
- E. Design Development will be based on the alternative accepted by CDB and the Client Agency, as modified by their comments during the review process.

5.5 Design Development Phase.

- A. Prepare design development submittal based on the program analysis (and accepted schematic design). Submittal shall illustrate the resolution of all building and site elements. Fix and illustrate the scope, scale and relationship of the project components for structural, mechanical and electrical systems. Identify materials and specify performance characteristics and quality standards.

- B. Requirements for the design development submittal vary with the scope of the project, but generally include the following:
1. Project Manual:
 - a. Table of Contents
 - b. Specification section outlines for each anticipated specification section
 - c. Unedited master specification sections are not acceptable as an outline specification
 2. Site Plan. Locate each building, existing and finished contours, ground floor elevations, roads, walks, parking areas, utilities (existing, new, and relocated), other site construction, and limits of the construction zone. (Coordinate any proposed interruptions to services, roads, etc. with the Client Agency.)
 3. Estimate of probable construction cost per [Article 4.6 E](#) and a PPCB form.
 4. Current project schedule.
 5. Life Cycle Cost Analysis if requested by CDB, or for each alternative energy or building system proposed by the PDB entity.
 6. A statement indicating compliance with the Illinois Stretch Energy Code.
 7. An area analysis tabulation comparing the net and gross square footage with those provided in the Program Analysis Phase.
 8. Floor Plans. Identify room numbers, names, and mechanical spaces.
 9. All elevations showing finishes, window and door styles, etc.
 10. Vertical building sections.
 11. Location and type of primary structural members.
 12. Utility service requirements, including temporary service.
 13. Basic plumbing layouts and fixtures.
 14. Basic HVAC systems and their major components.
 15. Basic layouts of lighting, power, fire alarm, emergency systems, security systems, exit signs, and communication/technology systems.
 16. Fixed equipment in tabular form with utility connection requirements noted.
 17. Identify areas requiring acoustical treatment.
 18. Model or rendering if included in the contract.
 19. Completed or updated LEED checklist (if applicable).
 20. BIM model if included in the contract.
 21. Completed Design Development checklist.

- C. The PDB entity shall not proceed beyond design development phase until provided with a written statement from CDB and the Client Agency signifying acceptance of the proposed design. This acceptance statement shall note all agreed upon revisions to the design development submittal.

Article 6 CONSTRUCTION DOCUMENT PREPARATION

6.1 General. The PDB entity shall prepare the construction documents (Project Manual, Drawings) based on the accepted design development submittal in conformance with applicable statutes and administrative rules, including the Illinois Procurement Code and CDB Rules and Regulations.

6.2 Application of Professional Seals.

- A. Construction documents shall contain a legible seal with signature, date signed and license expiration date of the architect, structural engineer and/or professional engineer responsible for the document or under whose supervision the document was prepared.
 - 1. Date signed is the date the documents are finalized for printing and the architect or engineer seals and signs the documents.
 - 2. The architect or engineer's license expiration date must be later than the date the documents are signed (e.g. license must be current when signing documents).
- B. The cover sheet and each sheet of the drawings shall be sealed in the manner prescribed above. All disciplines must seal the cover sheet.
- C. Project manuals shall be sealed by the design professional responsible for the overall coordination of the project. If more than one design professional has responsibility for portions of the work, additional seals may be provided on the cover or on a separate sheet immediately following the table of contents. Each design professional responsible for portions of the work must provide their seal either on the cover or a separate sheet following the cover sheet.

6.3 Design Firm Registration Number. The Illinois Department of Financial and Professional Regulation requires that all technical submissions prepared by a design firm contain the design firm registration number. This number shall be placed under the firm name on the cover of the project manual and on each sheet of the drawings.

6.4 Permits.

- A. The PDB entity shall apply for any required state or federal (IEPA, IDNR, Corps of Engineers, etc.) permits. As stated in [Article 2.6](#), the PDB entity must comply with all regulations of state and federal agencies necessary to obtain such permits. It is the PDB entity's responsibility to ensure that such permits are received in a timely fashion so as not to delay construction.
- B. When specifically directed by CDB, the PDB entity shall provide the local authority (or authorities, where more than one local authority has jurisdiction) with sufficient design documents as it may require for purposes of review and/or issuance of permits if applicable. Allow sufficient time as required by each agency.
- C. The PDB entity shall provide CDB with all review correction notices or comments issued by the local authority. When directed by CDB, the PDB entity shall make corrections to the documents and resubmit to the local authority for review and/or issuance of permits if applicable.

6.5 Reviews.

- A. The PM will schedule design review submittals and/or review meetings required by the agreement.
- B. Documents shall be submitted for review to CDB and the Client Agency at the stages of completion (e.g. DD, 50% and/or 75%) and at final completion (100%). The PDB entity shall provide electronic submittals as requested and/or up to fifteen (15) sets of review documents for CDB and Client Agency for each review.

- C. Each submittal will contain (at a minimum), the Project Manual, Drawings, updated LEED checklist (when applicable), detailed cost estimate and PPCB form. When an in-progress review is required by the agreement, the PDB entity shall include with the submittal package a “CDB Review Checklist” suitably marked by the PDB entity as to the topics to be reviewed per [Article 5.2](#).
- D. The review of documents by CDB does not constitute a complete and exhaustive review. CDB reviews the documents for general compliance with the program objectives, design standards, contract requirements and budget. CDB may also review for cost effective design, energy conservation, operating and maintenance costs, and general compliance with applicable codes, rules and regulations. CDB’s acceptance of the documents does not relieve the PDB entity of its responsibilities as a design professional.
- E. The Client Agency and other applicable regulatory agencies may review the documents for compliance with scope and design intent.
- F. Review comments prepared by CDB, the Client Agency and/or regulatory agencies will be provided to the PDB entity at or prior to the review meetings. When a meeting is not required, comments will be transmitted to the PDB entity by the PM.
- G. CDB will, in writing or at the review meeting, provide notice of the acceptance of the review documents or issue instructions regarding required resubmittal. If the required corrections are minor, CDB may conditionally accept and authorize the A/E to proceed to the next design phase. When documents are not accepted, a resubmittal will be required. In this instance, the A/E shall repeat the review stage (including another review meeting) at no additional compensation. The A/E may not be paid for completion of a design stage until the majority of the design document submittal for that stage has been accepted by the reviewers.
- H. CDB reserves the right to back charge the PDB entity if excessive re-reviews are required. If more than two resubmittals are required, the PDB entity’s prequalification status may be affected.
- I. The PDB entity shall ensure that all key design staff and consultants attend the review meeting(s).
- J. Following the reviews, the PDB entity shall:
 - 1. Prepare meeting minutes indicating issues discussed/resolved.
 - 2. Provide CDB with a written response to all review comments and questions within 14 calendar days.
 - 3. Copy reviewers on meeting minutes and responses to review comments.
- K. The Pre-Construction Documents submittal will include a final code analysis/regulatory review action checklist, copies of all permits and approvals, proposed list of critical work (below), energy code compliance forms, explanation of factors used in determining specified construction duration and executed utility agreements, as applicable.
 - 1. The PDB entity shall compile a list of work they have determined to be critical and submit it for CDB and Client Agency review at the Pre-Construction Documents stage of design. The submittal shall include justification of the need for on-site representation, the PDB entity staff responsible for observing the work and an estimate of the duration/frequency of the observation with the resulting cost and overall impact on the on-site representation budget. CDB, the PDB entity, and the Client Agency will reach consensus regarding the critical work list items.

2. Utility agreements are contracts between CDB and a utility company for the installation or relocation of utility service facilities in conjunction with a CDB project to be maintained by either the utility company or the customer (Client Agency). The PDB entity shall review such agreements to determine that the required utility service/equipment has been provided for the project and shall include the associated costs in the summary of proposed project costs.

6.6 Project Manual.

- A. Specifications shall be written as directions to the installing contractor under the supervision of the PDB entity and shall be in CDB outline format as per the example in Article 8.7 and Appendix 2. Please note that in all sample sections in this manual, items noted with an asterisk must be edited by the PDB entity's Designer of Record to suit the requirements of the current project.
- B. Written product specifications shall be included in the Project Manual and shall not be duplicated on the drawings.
- C. All material specifications shall be included in the Project Manual.
- D. Soil boring logs must be provided in the Project Manual.
- E. CDB has prepared draft specification sections for the PDB entity's use on selected project types such as roofing and pre-engineered buildings. Please contact your project manager for the current versions of these specifications if required for your project.
- F. Except as required by code, provision of spare parts, "attic stock", and/or maintenance services shall not be included in the bidding documents except as permitted below.
 1. At facilities that conduct 24/7 operations, where residents cannot be easily relocated such as DOC, DHS, and DVA facilities, a limited amount of spare parts for life safety systems shall be permitted when approved by CDB.
 2. Spare parts may not be included unless the PDB entity receives written approval from CDB.
 3. Requests for spare parts may be initiated by the PDB entity or the Client Agency and shall be in writing, addressed to the Project Manager. The PDB entity shall review and make recommendations, in writing, to CDB for any Client Agency Requests.
- G. Special tools which are required for the operation and/or maintenance of specified systems or equipment or are required by code may be included in the bid package(s). For example:
 1. Suction Cup Lifter: (*Access floor panels. One or two per facility depending on quantity of flooring.)
 2. Swimming Pool Accessories: (*First aid kit, life buoy, life pole, rope, water test kit. In accord with Illinois Department of Public Health requirements.)
 3. Hydrometer, Thermometer: (*Large storage battery rooms. May be augmented by special battery maintenance tools.)
 4. Elevator tools: Tools used for maintenance, operation or access to elevators when specific to a particular manufacturer.
 5. Hardware tools: Special wrenches, screwdrivers, etc., when required by manufacturer.
- H. Specify all tests required for all systems and devices to be tested. Where required, testing procedure shall also be specified.

- I. The PDB entity shall provide sufficient training of the Client Agency's designated personnel prior to substantial completion.
- J. Any warranties requested beyond two years for HVAC equipment, roof systems, carpet, etc. should be clearly specified by the PDB entity as warranties from the manufacturer. It is the PDB entity's responsibility to verify that such warranties are available and to include them in the appropriate Project Manual section and Section 01 78 36. The PDB entity is responsible for all warranties up to one (1) year and for one (1) year plus one (1) growing season for landscaping or two (2) years for seasonal equipment such as chillers. See current Progressive Design-Build Standard Documents for guidelines.
- K. Refer to the PMW for Asbestos, Lead, UST and PCB for procedures when abatement of hazardous materials is required for the project.

6.7 Drawings.

- A. Construction and Project Record Documents shall be submitted to CDB electronically. The PDB entity may utilize Autodesk software, including AutoCAD and Autodesk BIM software such as REVIT, for the preparation, coordination, and documentation of the Work. Regardless of the software platform used during design and construction, the final Project Record Document package shall include AutoCAD (.dwg) files that accurately document the completed Work and are compatible with the most current version of AutoCAD. When software other than AutoCAD is used to prepare the Record Documents, all drawings and supporting files shall be converted to AutoCAD format without loss of drawing elements or functionality. If an Autodesk BIM model was developed as part of the Project, the native model files shall also be provided to CDB for future reference.
- B. The title block and all related information shall appear on each sheet. Standard sheet size 30" x 42" maximum - 24" x 36" minimum unless otherwise approved by CDB.
- C. With CDB approval, the complete project or selected details may be prepared on 8 1/2" x 11", or 11" x 17" (folded to 8 1/2" x 11") paper and bound into the Project Manual.
 - 1. Drawings bound into the Project Manual shall be noted as such in section 00 01 15 and shall be located after the last technical specification section.
 - 2. All drawings shall comply with the requirements of this section. When bound into the Project Manual, a cover sheet is not required.
- D. Minimum scales of drawings, unless approved otherwise by the PM, shall be:
 - 1. Site Plan 1" = 30'
 - 2. Floor and Roof Plan 1/8" = 1'0"
 - 3. Temperature Control 1/16" = 1'0" (Schematics, not to scale, may be acceptable)
- E. All sheets shall contain a graphic scale (one for each different scale used on that sheet) and a north arrow. North shall be consistent between all sheets.
- F. Minimum acceptable lettering size is 3/32 inch, adequately spaced and legible.
- G. Line weights and other techniques shall be used appropriately to clearly communicate the work required and to delineate new work from existing conditions.
- H. Match lines shall be used to identify portions of buildings or sites shown on separate sheets. Match lines shall be consistent throughout drawing set.
- I. Other Drawing Requirements:

1. All floor plans and partial floor plans shall show consistent column grid line indications, room names and numbers and shall be to the same scale. Building elevations and sections shall also indicate column grid lines. Larger scale plans of special areas such as toilets (including elevations), lecture rooms, stairs, kitchens, shall be provided as necessary to show details of the work.
 2. The elevation of the finished floor shall be indicated under the title for each floor level (all disciplines).
 3. All details shown on drawings shall be applicable to the project. Details shall be drawn to scale.
 4. Designation for sections, details, etc. shall denote detail and sheet number on which it is detailed.
 5. Items shown on the drawings that are not a part of the contract shall be labeled as NIC (not in contract).
 6. Assign a number or name to all rooms, corridors, etc. for reference purposes. Names are preferred if they do not cause drawing congestion. For buildings, use the CDB building inventory number as assigned and the common name for the building. Ensure that numbers and names are identical for all drawings.
 7. Clearly identify and show all work involved in demolition, alternate bids, removals, abandonment, or other activities associated with the project.
 8. A key plan in the lower right-hand corner of the drawing shall be used to locate a building, a portion of a building or portion of a site in relation to the larger unit.
 9. All work shown is assumed to be new unless stated otherwise. Do not use the word "Proposed" on contract drawings when referring to required work. Existing items pertinent to the project may be marked as "existing" to avoid confusion with new work. Future work shall be shown only where necessary to coordinate with current project and shall always be noted as "NIC".
 10. Show all known asbestos-containing material (ACM) locations where the PDB entities' activities could accidentally damage the ACM. Include a note stating that this material is known or assumed to contain asbestos, that the workmen should exercise extreme caution to avoid damaging the material, that any accidental damage should be immediately reported to the PDB entity, CDB, and/or the facility's designated asbestos person and that if the material is damaged during the course of the work, the PDB entity will be required to reimburse CDB for any costs incurred which may include A/E services.
- J. All drawings shall be labeled for the appropriate division of work as set forth in [Article 9](#).

Article 7 FRONT END DOCUMENTS

- 7.1 Front end division sections shall be developed by the PDB entity in coordination with CDB related to GMP(s) as applicable for the project.
- 7.2 **Cover.** Professional seals and signatures shall comply with the current requirements of the various professional practice acts. Other notes or certifications required by authorities having jurisdiction shall also be shown. List CDB building numbers for buildings affected by the project.
- 7.3 **00 01 10 - Table of Contents.** The numbering of sections or schedules through division 1 substantially complies with the latest CSI Master Format. Note that CDB has added certain sections required by our bidding process and other procedures. For spec sections in divisions 2 onwards the PDB entity should use the latest CSI Master Format numbering.
- 7.4 **00 01 15 - Drawings, Schedules, & Details Listing.** Section 00 01 15 of the project manual shall contain a listing of all drawings, schedules, books and details issued separately or as part of the project manual. Note that all documents shall bear the same date of issuance as the project manual.
- 7.5 **01 22 00 - Unit Prices.** The PDB entity shall include this section if unit prices are to be included in the GMP(s). Unit price work must be listed in the appropriate specification section as well as on the CSV and in this section. Use of unit priced work must be approved in writing by CDB.
- 7.6 **00 31 32 - Soil Report.** When soil reports are provided as part of the PDB entity services they should be inserted into the manual as part of section 00 31 32.
- 7.7 **01 31 00 - Coordination.** This section should be used to specify coordination requirements for the installation of equipment, devices, and wiring to ensure proper location and function of equipment or systems.
- 7.8 **01 32 00 - Construction Schedule, Non-CPM Option.** This is an optional section that complements Article 01 32 00 of the PDB-SD which requires the use of a critical path method of scheduling the project. CPM is required on all projects, unless otherwise allowed by the project manager.
- 7.9 **01 32 23 - Survey and Layout Data.** This section is required in order to designate PDB entity responsibility for grades, lines and levels needed for the work.
- 7.10 **01 32 33 - Construction Photographs.** This is an optional section for use when progress photos are deemed appropriate and required by CDB.
- 7.11 **01 33 23 - Shop Drawings, Product Data, & Samples.** This is a required section if any submittals are required. If a large number of submittals is expected, a schedule of submittals is suggested instead of a list.
- 7.12 **01 35 16 - Remodeling Project Procedures.** This is an optional section for appropriate projects.
- 7.13 **01 35 53 - Security. Specify responsibility for security and level required.** Check with Client Agency and CDB PM for site specific requirements. Coordinate with Division 01 11 00 paragraph 12 Site Security.
- 7.14 **01 41 00 - Regulatory Requirements.** This section is required for all project manuals. The A/E shall edit this section leaving only those regulatory requirements that pertain to the work. Any regulatory requirements not listed that pertain to the project shall be added when appropriate, e.g. local codes. Be sure to include the date of the code for each code used in the project design.
- 7.15 **01 45 29 - Testing Laboratory Services, Supplemental to the PDB-SD.** This section is required when construction phase testing will be provided by the A/E. Specify testing required. The A/E is to submit a list of proposed tests with the 50% submittal.

- 7.16 01 51 00 - Temporary Utilities.** This section is generally included in all projects; however, it must be carefully written so as to be applicable to the specific project conditions. The A/E is to be sure to assign temporary utilities to the correct trade. The A/E may not specify temporary use of permanent systems without permission from PM.
- 7.17 01 51 50 - Use of Existing Facilities.** This is an optional section intended for small projects.
- 7.18 01 54 00 - Construction Aids.** This is an optional section and is to be used only with the express permission of CDB. The Standard Documents for Progressive Design-Build require that all PDB Entities provide their own construction aids. If there is a need for one PDB entity to provide a common construction aid, request approval of such from the project manager.
- 7.19 01 55 00 - Access Roads, Parking Areas, & Traffic Control.** This is an optional section to be used when restricted use of the project site is required.
- 7.20 01 56 00 - Barriers.** Specify required construction barriers appropriate to the project.
- 7.21 01 66 00 - Storage & Protection.** This is an optional section for use where there are restrictions on storage or where off-site storage may be contemplated. Use when appropriate.
- 7.22 01 73 29 - Cutting & Patching.** This is an optional section that supplements the basic requirement for cutting and patching included in Article 01 73 29 of the PDB-SD. This section may be used to modify, add to, or delete the requirements of Article 01 73 29, if that paragraph does not meet the project requirements.
- 7.23 01 74 13 - Construction Cleaning.** Assign responsibility for cleaning and degree of cleaning required during the course of the project.
- 7.24 01 74 23 - Final Cleaning.** This is a required section for the purpose of assigning responsibility for final cleaning.
- 7.25 01 78 23 - Operating & Maintenance Data.** This is a schedule of the O&M data required to be submitted and complements Article 01 78 23 of the PDB-SD. This is a required schedule if any O & M manuals are required.
- 7.26 01 78 36 - Extended Warranties & Bonds.** This is a schedule of the extended warranties and bonds to be furnished by the PDB entities. This schedule complements Article 01 78 36 of the PDB-SD. This schedule is required only if warranties or bonds with a warranty period longer than one year are specified. See PDB-SD section 01 78 36.2 for required extended warranties.
- 7.27 01 78 39 - Project Record Documents.** This is a required section to ensure that CDB receives suitable documents for record purposes.

Article 8 PREPARATION OF DIVISIONS 02 AND FOLLOWING

- 8.1 Master Format.** The use of the Construction Specifications Institute's (CSI) Master Format for specification titles and numbers is preferred by CDB for developing sections beginning with Division 02. Specifications developed using this edition of the DCM will use the 6-digit numbering format of CSI's 2004 Master Format.
- 8.2 CDB Format.** Please note that the first section of each specification section must follow CDB's format ([Article 8.7](#) below) rather than the CSI format.
- 8.3 Listing Sections.** Save space wherever possible. Do not list sections or sub-sections as "not applicable". Just leave them out.
- 8.4 Sub-headings.** Do not use a lone sub-heading in the outline if only one sub-heading applies. Begin text immediately following the heading.
- 8.5 Abbreviations.** Do not spell out "Capital Development Board", "Project Manager", or "Progressive Design-Build entity". Once they are clearly identified, use "CDB", "PM", or "PDB entity" or "PDBE".
- 8.6 Outline,** Break down sub-paragraphs using the following outline definition:

0.0
 A.
 1.
 a.
 1)
 a)

- 8.7 Paragraph 1.1 Example.** Following is a guide for use in preparing Paragraph 1.1 of a technical specification section. Options are flagged with an asterisk (*). The PDB entity must insert appropriate data or information wherever there is an asterisk. Notes to the PDB entity are included where appropriate.

Section 1 General

1.1 WORK INCLUDES

- A. (* List each contractor who has work in this section)
1. (*) Contractor:
- a. (PDB entity: briefly summarize work in this section)
2. (*Continue for any other contractor who has work under this section)
- B. Unit Prices: (*) Describe unit price work applicable to this section)
1. (*) PDB entity:
- a. (briefly summarize work)

Article 9 PREPARATION OF DRAWINGS

9.1 Cover Sheet. Cover sheet shall be prepared per standard cover sheet available on the CDB Website.

- A. When appropriate for the project, include applicable building codes, building square footage, occupancy classification, type of construction and fire resistance rating.
- B. On small projects, symbols and abbreviations may be listed on the cover page.
- C. Edit symbol and abbreviations lists to include only those items used on the drawings.
- D. List CDB Building Identification number(s) for each building affected by the project. CDB building numbers are available from the PM.
- E. Cover sheets, drawing index sheets, and information sheets shall be designated: G.

9.2 Civil Drawings. Civil drawings shall include the following, as applicable to the project.

- A. Site development work, storm sewers, and landscaping shall be included in the general work contract. Water service and sanitary sewer may be included in either the general or plumbing work contract. Electrical and telecommunications service shall be included in the electrical contract.
- B. New contours shall be labeled, and contrast with labeled existing contours. New contours shall indicate adequate drainage patterns. Each fifth contour shall be shown as an index contour.
- C. Show all new topography, newly established levels and grades, existing structures, new structures, roadways, walks, location of nearest drainage/sewer connections, other identifiable features and areas to be seeded and landscaped. All structures and improvements which are to be removed under the construction contract shall be shown.
- D. Profiles and cross sections shall be provided for all new roadways. Cross sections shall be provided for each type of sidewalk and curb design. Expansion joints shall be shown in plan view and details shall be provided of each joint type used.
- E. Profiles shall be provided for all sewers. Show invert elevations of all sewers, manholes and catch basins. Show frame and grate elevations of all manholes and catch basins.
- F. Show the Stormwater Pollution Prevention Plan (SWPP) and details for erosion and sediment control.
- G. Standard drawing designations for civil work include:
 - 1. Civil C
 - 2. Fencing F
 - 3. Well Drilling WD

9.3 Architectural Drawings. Architectural drawings shall include the following, as applicable to the project.

- A. Plan of each floor and roof.
- B. Elevations of each facade.
- C. Longitudinal and transverse sections through entire building.
- D. Schedule of finishes, doors, and accessories.

- E. Roof plan showing high and low elevations; show exact slopes.
- F. Wall sections at relative elevations, including flashing details.
- G. Miscellaneous details, sections, and enlarged plans to effectively communicate the design.
- H. Reflected ceiling plans showing all ceiling elements visible on the ceiling, such as lighting fixtures, exit signs, speakers, detectors, diffusers, sprinkler heads, and suspended ceiling grids. All reflected ceiling plans must be coordinated between all applicable trades.
- I. Standard drawing designations for architectural work include:

1. Architectural	A
2. Carpet	CPT
3. Painting	PNT
4. Demolition	D

9.4 Structural Drawings. Structural drawings shall be separated from architectural work. Drawings shall include the following as appropriate for the project.

- A. Include the following information in general notes:
 - 1. Governing structural codes with year of edition.
 - 2. Design live, wind, earthquake and any loads required by code, or design coefficients used as a basis for structural design.
 - 3. Detailed breakdown of all loads associated with the structure so the load path calculations may be made.
 - 4. Net allowable soil bearing capacity.
 - 5. Strength of all structural materials.
 - 6. Other information required as a basis for structural evaluation.
- B. Show overall dimensions, center lines, location of members and offsets.
- C. Show all columns on grids.
- D. Schedule (as required) footings, columns, beams, girders, slabs, lintels, and reinforcement.
- E. Detail all special connections, assemblies, and expansion joints.
- F. Show connection details or required design reaction loads for all structural steel framing connections.
- G. For new construction, unless otherwise approved by CDB, design roof drainage slope into the structural system.
- H. Show elevations for top of beams and slabs; top and bottom of columns; bottom of footings, etc.
- I. Drawings must be sealed by a Structural Engineer or Architect licensed in the State of Illinois.
- J. Standard drawing designations for structural work include:

1. Structural	S
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9.5 Plumbing Drawings. Plumbing drawings shall include the following as applicable to the project.

- A. Show where the work of others (contractors, utilities, existing work, etc.) stops and where the plumbing work begins.
- B. Show underground plumbing work on a footing plan or foundation drawing.
- C. Show all connections to all equipment (electrical, etc.) and note contractor responsible.
- D. Show piping over 12" to scale in double lines.
- E. Detail major plumbing equipment such as PRV stations, pumps, water heaters, flash tanks, and boilers showing valves, gauges, thermometers, unions, drains, etc.
- F. Show all work spaces (tube pull area, coil pull area, access space, etc.) for all equipment requiring same.
- G. Show all cleanouts on plumbing drawings.
- H. Show all valves, cocks, unions, strainers, gauges, traps, etc., on plan or in typical details.
- I. Schedule plumbing fixtures including kitchen equipment, drinking fountains, electric water coolers, water heaters and water treatment equipment. Schedules on drawings are preferred.
- J. Provide waste and vent, hot and cold water riser diagrams; and isometrics for all plumbing fixtures or fixture groups. Number all fixture groups. Show air chambers on isometrics and shock absorbers where provided on multiple fixture groups in lieu of air chambers.
- K. Show and size all sprinkler mains and risers. Show all head locations. Specify code.
- L. Show all fire hose cabinets (provided by general contractor) on plumbing drawings or sprinkler system if a separate contract.
- M. Identify equipment provided by other contractors to be installed or connected by the plumbing contractor.
- N. Standard drawing designations for plumbing work include:
 - 1. Plumbing P
 - 2. Pipe covering and insulation INSL
 - 3. Sprinkler FP

9.6 Heating Drawings. Heating drawings shall include the following as applicable to the project.

- A. Show where the work of others (contractors, utilities, existing work, etc.) stops.
- B. Show all connections to all equipment (electrical, etc.).
- C. Show duct work or piping over 12" to scale in double lines.
- D. Clearly label High Pressure Steam, Medium Pressure Steam, Low Pressure Steam and Condensate Return piping (high, medium or low pressure). Clearly label High Temperature Hot Water, Medium Temperature Hot Water and Low Temperature Hot Water piping.

- E. Schedule equipment such as coils, pumps, chillers, cooling towers, boilers, unit heaters, convectors, air separators, radiation traps, etc. Include technical information (capacity, power requirements, motor sizes, etc.) only. Indicate each contractor's responsibilities where interface is required.
- F. Detail major heating equipment such as pumps, coils, boilers, and chillers showing valves, gauges, thermometers, unions, drains, etc.
- G. Show all work spaces (tube pull area, coil pull area, access space, etc.) for all equipment requiring same.
- H. Where rooftop equipment is used, provide a roof plan showing all equipment (units, exhaust fans, cowl, etc.).
- I. Standard drawing designations for heating work include:

1. Heating	H
2. Temperature Control/Building Automation	TC

9.7 Ventilating Drawings. Ventilating drawings shall include the following as applicable to the project.

- A. Show where the work of others (contractors, utilities, existing work, etc.) stops.
- B. Show all connections to all equipment (electrical, etc.).
- C. Show duct work or piping over 12" to scale in double lines.
- D. Schedule equipment such as air handling units, fans, coils, diffusers, registers, grilles, pumps, unit heaters, convectors, air separators, radiation traps, etc. Include technical information (capacity, power requirements, motor sizes, etc.) only. Schedules on drawings are preferred. Indicate each contractor's responsibilities where interface is required.
- E. Detail major ventilating equipment such as pumps, coils, chillers and air handling units showing gauges, thermometers, drains, etc.
- F. Show all work spaces (tube pull area, coil pull area, access space, etc.) for all equipment requiring same.
- G. Where rooftop equipment is used, provide a roof plan showing all equipment (units, exhaust fans, cowl, etc.).
- H. Show all devices (balancing dampers, fire dampers, turning vanes, extractors, splitters, etc.) and access panels on drawings for contractor providing them.
- I. Standard drawing designations for ventilating work include:

1. Ventilating	V
2. Test and Balance	T&B

9.8 Electrical Drawings

- A. Single line diagram with all primary and secondary distribution equipment and loads, including feeder identification with conductor and raceway size and type.
- B. Primary distribution equipment and all other loads located in plan view, with initial spatial coordination done by the design professional.

- C. Service entrance arrangements with the serving utility, made, confirmed, and noted by the design professional.
- D. Branch circuiting with voltage drop considerations, for both power and lighting, including switching, dimming, special controls, and home run designations.
- E. Mechanical equipment power requirements and physical locations, including special information as to who mounts, connects, tests, etc.
- F. Control diagrams and schematics revealing interactive relationships as well as operating logic for all systems. Information should be adequate to understand and install appropriate wiring.
- G. Provide a one line diagram for all special systems (e.g. Fire Alarm, Security, PA and Nurse Call Systems) specific to the project.
- H. Schedules of fixtures, panelboards, switchgear and other equipment, including sizes, types, styles, catalog numbers, and other pertinent characteristics.
- I. Provide the foot candle level and the watts per square foot for each room. Provide total wattage for building.
- J. Define equipment grounding system, including special requirements for telecommunications, interference shielding, isolated systems, filters, etc., when used. Verify compatibility with ground fault protection systems used.
- K. Schedule light fixtures and lamps. Include the type designation, the number, type, and size of lamps per fixture, and the accessories and methods necessary for mounting the type of fixture.
- L. Define lightning protection system, if applicable.
- M. Include electrical power, telecommunications and other electrical systems on the site drawings or combined site plans. Designate as the work of the electrical contractor.
- N. Completely circuit and define all work. Do not leave for contractor to design.
- O. Show a one-line diagram of power distribution, including emergency power distribution and ground fault protection. Use riser diagrams, if appropriate, to further define distribution.
- P. Show power distribution and special systems layouts separate from lighting layouts for clarity. Provide separate plans for each system.
- Q. Draw major items of electrical equipment such as switch gear, transformers, panels, lighting fixtures, etc., to scale, making sure that the largest of the three specified pieces of equipment will fit.
- R. Schedule motor control, including auxiliaries, overload protection, interlocking, etc.
- S. Show a detailed schedule for each panel board, switchboard, motor control center, etc. Include breaker size, fusible switch size, or fuse size, frame size and trip setting, usage of circuit, spares, spaces, connected load for each circuit, etc. Preferably, show schedule on the drawing depicting wiring from that unit.
- T. Identify equipment provided by another contractor to be wired by the electrical contractor.

U. Fire Alarm Systems

1. For projects with sprinkler systems, kitchen hood fire extinguishing systems, or other special systems, include the devices and circuiting to actuate the system. Duct smoke detectors, fan shutdown and smoke evacuation devices shall be considered part of the fire alarm system. Duct smoke detectors which are not readily accessible should be provided with remote controls.
2. When fire alarm systems are provided, include both audible and visual alarms in compliance with the Illinois Accessibility Code.

V. Standard drawing designations for electrical work include:

- | | |
|----------------------------|-----|
| 1. Electrical | E |
| 2. Fire Alarm | FA |
| 3. Security/Communications | COM |

9.9 Other Drawings. Standard drawing designations for other work include:

- | | | |
|----|-------------------------|-----|
| A. | Equipment | EQP |
| B. | PCB Equipment Disposal | PCB |
| C. | UST Removal/Replacement | UST |
| D. | Asbestos Abatement | ASB |

Article 10 MISCELLANEOUS CONSTRUCTION PHASE RESPONSIBILITIES

10.1 Construction Documents. The PDB entity shall not commence work without the Contract Documents that have been incorporated into an approved GMP.

10.2 PDB Entity and Tradesmen Licensing. The PDB entity is responsible for compliance with all applicable contractor and trades person licensing with the appropriate authority in accordance with Section 00 73 40 of the PDB-SD. The PDB entity shall receive and review all applicable licenses prior to that contractor or tradesman commencing any work.

- A. The PDB entity shall not knowingly allow any activity to commence or accept any work installed by a non-licensed firm or tradesman where licensure is required.
- B. The PDB entity shall also receive and review all certificates called for by the specifications (e.g. welding certificate).
- C. The PDB entity shall submit a list of all required licenses and certificates with copies of each of the required licenses and certificates attached to Designer of Record.

10.3 PDB Entity Submittals/Shop Drawings, Product Data, Samples.

- A. The Designer of Record shall review and monitor all required submittals for timeliness and conformance with the contract documents and project schedule. The Designer of Record shall review and respond to submittals within fourteen (14) calendar days or other time as approved in writing by CDB.
- B. Each submittal shall be stamped, dated, and either initialed or signed by the reviewer. The reviewer shall provide clear instruction to the contractor of any corrective action to be taken.
- C. The PDB entity shall only review those materials and equipment specified in the contract documents. The PDB entity shall not make changes in the contract requirements through the review of submittals.
- D. The PDB entity may not submit and gain approval of material substitutions through the shop drawing review process. In this event, the CDB PM or the CDB 3rd Party Representative Designer of Record shall return the submittal without review and advise the PDB entity that a request to initiate a material substitution change order in accordance with the substitution clause of the Standard Documents for Progressive Design-Build must occur.
- E. If in reviewing the submittal the CDB PM or the CDB 3rd Party Representative Designer of Record determines that contract changes are required, the submittal shall then be returned to the PDB entity with the note that a change order request is contemplated.
- F. No activity requiring review of submittals may be started without CDB PM or the CDB 3rd Party Representative Designer of Record approval. The CDB PM or the CDB 3rd Party Representative Designer of Record shall notify the PDB entity to cease the activity until approval is obtained. The PDB entity shall be liable to replace any work that is not in compliance with the subsequently reviewed submittal.
- G. **Interpretations.** When requested by CDB or a contractor, the Designer of Record shall provide interpretation of the contract documents, including, but not limited to, RFIs and ASIs. The Designer of Record shall prepare and distribute supplementary drawings, specifications and instructions as necessary to communicate the interpretation. The Designer of Record shall expedite all interpretations in such a manner as to not adversely affect the project schedule or sequence of work. The Designer of Record shall expedite all interpretations in such a manner as to not adversely affect the project schedule or sequence of work.

- H. **Construction Testing.** A representative of the Designer of Record shall witness field tests, review and evaluate test reports and notify CDB of any deficiencies. Field tests may be specified to be conducted by the contractor employing a testing firm to provide assistance and/or analysis, or conducted by the PDB entity employing a testing firm as a reimbursable expense to provide assistance and/or analysis. In either case, a copy of all test results and/or reports shall be provided to CDB directly from the testing firm.

10.4 PDB Entity's Schedule of Values (CSV).

- A. PDB entity is required to prepare the CDB CSV form and submit it to the CDB PM for review and approval prior to the first pay/progress meeting. This form is a detailed breakdown of the contract amount and is the basis for the PDB entity's Affidavit and Sworn Statement (CASS) form of the progress payment requests.
- B. The CDB PM shall review the CSV to ensure each item of work required for the contract is listed and all values are expressed in separate line-item costs for material and labor. The CDB PM may request the PDB entity provide sub-contracts and relevant documentation to substantiate the values indicated.
- C. The CDB PM will also review to confirm that the PDB entity has properly noted "Buy Illinois" products, if any, on the CSV.
- D. The CSV must be approved by the CDB PM and FEP technician (if applicable) prior to submission of the first pay request. The CDB PM and FEP technician (if applicable) must also approve all changes to the CSV during the course of the project.

10.5 PDB Entity's Record Drawings. Record drawings shall be reviewed by the CDB PM and/or CDB's 3rd Party representative prior to the pay/progress meeting. Failure to maintain up-to-date records in accordance with the contract documents may in delay of the PDB entity's pay requests until record drawings are up to date.

10.6 Construction Schedule. The construction schedule is to be prepared by the PDB entity with the input and concurrence of all designated subcontractors, and submitted to the CDB PM prior to the first pay/progress meeting. The CDB PM and/or CDB's 3rd Party representative shall review the schedule for conformance with the contract requirements. Schedules shall be in the format specified in the project manual and shall include activities including but not limited to submittals (shop drawings, product data and material samples), major equipment order and delivery dates, on-site construction activities, the design professional of record's critical work list items, commissioning activities, Client Agency training, and any other activities deemed important by the project team. These activities should be added at required monthly schedule updates as they become known or could be reasonably estimated throughout preconstruction, design, and construction phases.

Article 11 **OBSERVATION OF THE WORK**

11.1 Designer of Record Responsibilities

- A. As a basic service of the agreement, the PDB entity shall retain the Designer of Record to provide, in a professional capacity, timely construction administration services. These services shall include shop drawing reviews, response to requests for information regarding the construction documents, and periodic visits to the site to observe the quality of the work during the pre-GMP phase of work. Once the final GMP has been established, a representative of the Designer of Record shall be continuously present onsite to provide construction administration services as the project schedule requires.
- B. The representative of the Designer of Record shall observe the construction operations, and for each site walk-through, report on the progress and quality of the work being performed to determine, in general, that the work is proceeding in accordance with the materials, finishes and workmanship are in accordance with the contract documents.
- C. CDB shall be notified immediately if the report findings indicate the materials, finishes and/or workmanship do not conform to the contract documents, require special inspection or testing (beyond the specified requirements), or have been disapproved or rejected by the Designer of Record.
- D. The PDB entity shall be liable for the replacement and/or any damages incurred as a result of knowingly permitting non-specified material, or otherwise non-conforming work, to be incorporated into the project.
- E. **On-Site Representative.** The Designer of Record shall provide one or more representatives on-site during Construction to facilitate the progress of the project and report on overall progress, special conditions, schedule milestones, critical installations, and other activities directed by the PDB entity and/or CDB.
- F. When specifically requested by CDB, or by a PDB entity with CDB concurrence, provide field clarification of document interpretations issued in accordance with [Article 10.3 G](#).
- G. Notify CDB immediately with any concerns regarding material installation and workmanship. Notify the CDB PM or the CDB 3rd Party Representative immediately with any concerns regarding material installation and workmanship.

11.2 Observation Reports.

- A. A written report shall be submitted to the CDB PM for each on-site representative's visit. Reports shall be submitted in a timely manner as the construction activity dictates. In no case shall the submission interval exceed seven (7) calendar days from the date of the site visit.
- B. Each report shall include general and specific information regarding the project as follows:
 - 1. General Information
 - a. CDB Project Number
 - b. Project Name and Location
 - c. A/E Name and Phone Number
 - d. Report Preparers' Name
 - e. The Designer of Record Name
 - f. Date of Site Visit
 - g. Date of Report
 - h. Report Number
 - i. Weather Conditions

2. Specific Information
 - a. Purpose of Site Visit
 - b. Basic Services or On-Site Representative visit
 - c. Names of All Observers Present
 - d. Names of PDB Entities On-Site
 - e. Size of the PDB entity's Workforce
 - f. Nature and Location of Work Being Performed
 - g. Progress of the Work
 - h. Items Inspected
 - i. Problems Resolved
 - j. Verbal Interpretations Given to PDB entity
 - k. Tests Witnessed/Performed
 - l. Site Visitors

Article 12 COMMISSIONING ACTIVITIES FOR PDB ENTITY

12.1 General. CDB may retain an independent Commissioning Agent (CxA) at the discretion of CDB. In the event CDB does not hire a CxA, all commissioning activities would be the responsibility of the PDB entity. The CxA shall report directly to CDB and/or CDB's 3rd Party representative and shall function independently from the PDB entity.

12.2 Coordination items with a 3rd Party CxA

- A. The PDB entity shall engage the CxA no later than the completion of programming and shall include the CxA in all major design reviews, value management workshops, cost reconciliation meetings involving building systems, and operational readiness planning sessions, as applicable.
- B. The PDB entity shall fully cooperate with the CxA throughout the Project and shall provide access to Project personnel, design documents, construction documents, schedules, equipment submittals, testing procedures, and other information reasonably necessary for the performance of commissioning services.
- C. During pre-construction, the PDB entity shall collaborate with the CxA to ensure that the Project design satisfies the Owner Project Requirements (OPR). The PDB entity shall participate in commissioning design reviews and shall respond in writing to comments and recommendations provided by the CxA.
- D. Design review comments issued by the CxA shall be tracked through resolution. The PDB entity shall document the disposition of each comment and provide responses acceptable to CDB.
- E. The PDB entity shall attend and participate in commissioning meetings, workshops, design reviews, constructability reviews, and testing coordination meetings as requested by the CDB, Construction Manager/Owner's Representative, or CxA.
- F. The PDB entity shall support the development and implementation of the commissioning plan prepared by the CxA. The PDB entity shall incorporate commissioning requirements into project schedules, subcontract agreements, procurement activities, startup procedures, testing procedures, and training programs.
- G. The PDB entity shall provide equipment and system submittals to the CxA for commissioning review concurrently with other required submittal reviews. Review by the CxA shall not relieve the PDB entity of responsibility for compliance with the contract documents.
- H. The PDB entity shall coordinate with the CxA in the development and delivery of operations and maintenance training programs. Training shall be completed and validated prior to substantial completion unless otherwise approved by the Owner.
- I. The CxA shall have authority to review, observe, test, document, and report on the performance of building systems and commissioning activities. The CxA may identify deficiencies, request additional testing, and recommend corrective actions to the Owner.
- J. The CxA shall not have authority to direct the means, methods, techniques, sequences, procedures, safety practices, or construction operations of the PDB entity, nor shall the CxA have authority to modify the contract documents.

12.3 PDB Entity Acting as CxA Responsibilities

- A. The PDB entity shall include commissioning activities in its planning, scheduling, design, procurement, construction, testing, training, and closeout processes.
- B. The PDB entity shall identify appropriate representatives from its design, construction, controls, and trade contractor teams to participate in commissioning activities.

- C. The PDB entity shall coordinate and support all commissioning activities, including startup, pre-functional testing, functional performance testing, integrated systems testing, seasonal testing, and corrective action verification.
- D. The PDB entity shall provide qualified personnel, controls technicians, vendors, and trade contractors necessary to execute commissioning activities and demonstrate system performance.
- E. The PDB entity shall promptly correct deficiencies identified through commissioning activities and shall retest affected systems at no additional cost to CDB until the required performance criteria have been achieved.
- F. The PDB entity shall maintain and regularly update a commissioning issues log documenting identified deficiencies, corrective actions, responsible parties, and resolution status.
- G. The PDB entity shall incorporate all commissioning activities into the project schedule, including design reviews, submittal reviews, equipment startup, testing, integrated systems testing, operator training, seasonal testing, and final acceptance activities.
- H. Commissioning milestones shall be identified as critical Project activities and shall be coordinated to avoid delays to Owner occupancy.
- I. The PDB entity shall provide all documentation required to support commissioning, including as-built drawings, sequences of operation, controls documentation, testing reports, operation and maintenance manuals, and warranty information.
- J. As applicable, Commissioning activities shall include, at a minimum, HVAC systems, emergency power systems, security electronics systems, access control systems, video surveillance systems, detention control systems, courtroom technology systems, fire alarm systems, communications systems, building automation systems, and integrated operational scenarios identified in the Owner Project Requirements.

Article 13 PAY/PROGRESS MEETINGS

- 13.1** Meeting dates are established by the CDB PM at the pre-construction meeting.
- 13.2** The meeting shall be attended by the CDB PM, any additional CDB or the CDB 3rd Party Representative staff as designated by the PM, the PDB entity, the Client Agency representative.
- 13.3** Minimum agenda will consist of reviewing PDB entity's progress, noting projections for work to be completed in the next month and comparing this information to the current approved project construction and submittal schedule, discussing project problems and proposed contract changes (claims, RFI, and/or RFP logs), and reviewing and reconciling PDB entity's pay applications using CDB forms CASS (PDB entity's Affidavit and Sworn Statement) and CSV.
- 13.4** Approximately one week prior to the pay/progress meeting, or as directed by the CDB project manager, the PDB entities will submit copies of the draft CSV, CASS and SML, if utilized, to the Client Agency, CDB PM and the CDB 3rd Party Representative.
- 13.5** The draft CSV, CASS and SML will be reviewed by the participants and corrected, as required. The corrected drafts will be signed by all participants. A copy of the CSV and CASS will be retained by each party as a record of any objections/approvals noted during the meeting.
- 13.6** Approximately one week before meeting, the CDB PM or the CDB 3rd Party Representative will verify that PDB entities are keeping record drawings up-to-date. Failure to keep record drawings current may result in delay to the pay application.

Article 14 REVIEW OF PDB ENTITY PAY REQUESTS

14.1 General. The CDB PM or the CDB 3rd Party Representative shall review and certify PDB entity's applications for payment and maintain a record of payments and contract balances and all proposed and approved changes thereto. The CDB PM or the CDB 3rd Party Representative shall reconcile and maintain files for the CASS forms and PDB entity's and sub-PDB entity's and/or supplier's waivers of lien.

14.2 PDB Entity's Affidavit and Sworn Statement (CASS). The CDB PM or the CDB 3rd Party Representative will ensure that the CASS was completed by the PDB entity in accordance with the amounts on the draft CASS approved at the pay/progress meeting. This form must be dated, signed and notarized.

14.3 Federal Certified Payroll. On projects with Federal funding, PDB entities may be required to submit Federal Certified Payroll reports. The CDB PM or the CDB 3rd Party Representative will ensure that these reports are submitted by the PDB entities and transmitted to the proper authorities.

14.4 Stored Material Log (SML), if applicable.

- A. Definition. Stored materials are materials purchased by the PDB entity, which are ready to be installed and which are either stored on or off the site.
- B. The SML form must be submitted to the CDB PM or the CDB 3rd Party Representative for review. The CDB PM or the CDB 3rd Party Representative will inspect the stored materials and attest to their existence, security, and identification by initialing the items listed on the SML. This certification must be obtained by the PDB entity prior to the pay/progress meeting. The SML will be submitted each month until all stored materials are installed.
- C. The value of stored material approved for payment shall be incorporated into the CASS.
- D. Off site storage.
 - 1. CDB does not usually pay for materials stored out-of-state or at a manufacturer's facility.
 - 2. All material stored off the site must be clearly tagged and labeled with the CDB project name and number and is to be available for inspection by the CDB 3rd Party Representative, CDB and the Client Agency, upon reasonable notice.
 - 3. When material is stored off site, pay requests must be accompanied by a certificate of insurance for each off site storage location.
 - 4. If stored in a bonded warehouse, the PDB entity must provide the CDB project manager with a copy of the bond, along with the certificate of insurance.

14.5 Partial Waivers of Lien.

- A. All waivers must use the CDB Partial Waiver of Lien form and bear the signatures of the president or vice-president and secretary or assistant secretary. The corporate seal is not a required element.
- B. PDB entity: A Partial Waiver of Lien for the full amount of the payment is required from the submitting PDB entity with each pay request.
- C. Subcontractors and suppliers: Waivers for subcontractors are not required with the first payment package, unless the PDB entity is requesting more than 50% of its total contract. Each subsequent payment package must include Partial Waivers of Lien from each subcontractor and supplier included in the immediately preceding payment package, in the amount of that prior payment.

14.6 Invoice-Voucher (Form C-13)

- A. If all above items have been submitted and are correct, the CDB PM or the CDB 3rd Party Representative will review the invoice-voucher for agreement with the CASS form approved at the pay/progress meeting and sign where indicated.
- B. Signatory must be a licensed architect or engineer.
- C. The PDB entity shall submit the completed, signed invoice package to the CDB PM.

Article 15 REVIEW OF REQUESTS FOR REDUCTION OF RETAINAGE

- 15.1** PDB entities who have completed 50% of the project work and are in compliance with all project requirements (supervision, submittals, schedule, etc.) will have their retention reduced from 10% to 5%. CDB will be responsible for approving, processing and distributing the 10/5 RRR. Payment requests including the reduced retention amount may not be submitted until the 10/5 RRR is approved by CDB and must comply with [Article 15.5](#) below.
- 15.2** Under certain circumstances, the PDB entity may request a reduction in retainage to less than 5%. Any such request must follow the procedures below. The request for reduction in retainage shall be submitted 1 month prior to the payment request on which retention is reduced.
- 15.3** Request for Reduction of Retainage form (RRR). The PDB entity completes the top of this form and attaches the Surety Letter of Consent with power of attorney and jurat. The percentage of work completed is based on the PDB entity's approved payment applications. Stored materials, bonds and insurance are not included in this percentage.
- 15.4** The completed RRR is reviewed by the CDB PM and, if the PDB entity's performance is considered satisfactory, the reduction in retention must be approved by: the PDB entity, the Client Agency, and the CDB Project Manager and/or Regional Manager. All parties must agree for the reduction to be approved.
- 15.5** For the pay request following approval of the RRR by CDB, the new retention percentage will be used to calculate the "total retained," automatically returning a portion of the previous retainage to the PDB entity in that payment request. All changes in retainage must be reflected on the CASS form.
- 15.6** In certain instances, upon the PDB entity's request, the CDB may release all retention to subcontractors whose work may have been completed during the early stages of a project. The PDB entity shall make and concur in such requests, and assume all liability for any incomplete or defective work of the subcontractor.

Article 16 REVIEW OF REQUESTS FOR PROPOSAL AND CHANGE ORDER

- 16.1** A change order must be issued whenever it becomes necessary to modify any of the elements of a contract, which include scope, compensation, and time.
- 16.2** Specific procedures and standard CDB forms required for preparing and processing construction contract changes have been developed by CDB and are included in Procedures and Forms - Construction Phase manual.
- 16.3** Requests for a change must be initiated in writing. Sub-PDB entities' requests shall be directed to their PDB entity. From there the PDB entity may send this request to the CDB PM who may include the CDB 3rd Party Representative, as applicable.
- 16.4** At the discretion of the CDB PM, the Designer of Record can be designated to prepare a Request for Proposal/Change Order (RFP/CO).
- A. The PDB entity shall provide an 'order of magnitude' level estimate for each proposed RFP/CO and submit to the PM within ten (10) calendar days of request.
 - B. CDB may prepare and issue a RFP/CO over the PDB entity's objection.
- 16.5** The CDB PM shall prepare an RFP/CO coversheet related to the proposed change. Additional information including supplemental drawings and/or specifications to fully describe the change in the work shall be provided by the Designer of Record.
- A. Each RFP/CO package should be self-explanatory.
 - B. The Designer of Record will complete the RFP/CO form through Section 5. Sufficient information must be provided in Sections 2, 3 and 4 on the front of the form to adequately describe the change and explain the reason for the change. Include attachments only as needed to adequately describe the change and its reason.
 - C. Sole and/or dual sourcing via change order is prohibited.
 - D. When requested by the CDB PM, the Designer of Record shall submit a cover letter to the change order package explaining the need for the contract change.
 - E. The Designer of Record transmits two sets of the RFP/CO package, one for CDB and one for PDB entity use.
- 16.6** Stringing of change orders (multiple change orders in small amounts addressing the same, or similar, problem), is prohibited.
- 16.7** The PDB entity submits one copy of their proposal package (including back-up for their own work as well as back-up for work performed by their sub-PDB entities) to CDB.
- 16.8** The CDB PM or the CDB 3rd Party Representative shall review the PDB entity's proposal for completeness and conformance with the RFP/CO and contract documents. Where change orders require additional clarification or additional back-up, the CDB PM or the CDB 3rd Party Representative shall obtain such information from the PDB entities prior to forwarding the change order package to CDB. See Procedures and Forms - Construction Phase for detailed information on required forms and back-up. At a minimum, the A/E shall review RFP/COs for:
- A. Signatures of PDB entity, subcontractors, and suppliers
 - B. PDB entity's proposal meets and matches approved RFP language
 - C. CPBS form, summary computations form, labor wage breakdown sheet, and material back-up for PDB entity and subcontractors

- D. Correct labor and material quantities, prices, and math
- E. On a Client Agency requested change order, a letter of request on the Client Agency's letterhead or by email, signed by the Client Agency.

16.9 When requested by CDB, the PDB entity shall be required to attend Board meetings to explain and/or may be required to provide written explanation of any change orders presented for Board approval.

Article 17 SUBSTANTIAL COMPLETION

- 17.1** Substantial Completion occurs when CDB accepts the certification of the PDB entity that construction on the project or a designated portion thereof is sufficiently complete in accordance with the contract documents that it may be occupied or utilized for the use for which it is intended.
- 17.2** The PDB entity notifies the CDB PM or the CDB 3rd Party Representative in writing that the work or a designated portion thereof is substantially complete and submits a list of incomplete items.
- 17.3** If the CDB PM or the CDB 3rd Party Representative and the PDB entity are in agreement that the project is substantially complete the PDB Entity will notify the CDB project manager to schedule a substantial completion inspection. The PDB entity should not recommend substantial completion if the punch list would be excessive or critical elements of the project are not operational or incomplete.
- 17.4** The substantial inspection date will be scheduled by the CDB PM after agreement that the project appears to be substantially complete. Notice for the inspection will be issued by the CDB PM.
- 17.5** The PDB entity will prepare a preliminary punch list prior to the scheduled inspection.
- 17.6** Attending the inspection will be, at a minimum:
- A. The PDB entity
 - B. Designer of Record
 - C. Client Agency representative
 - D. CDB PM
 - E. Additional parties as mutually agreed upon by the PDB entity and CDB.
- 17.7** The final punch list will be developed from the preliminary list submitted by the PDB entity and the Designer of Record's list, with input from the Client Agency representative and the CDB PM.
- 17.8** After the inspection, participants:
- A. Discuss the punch list items and determine the final completion dates.
 - B. Discuss the date and time the Client Agency will take occupancy.
 - C. Review the Client Agency or PDB entity responsibilities for:
 - 1. Insurance
 - 2. Utilities
 - 3. Operation of mechanical, electrical and other systems
 - 4. Maintenance and cleaning
 - 5. Security
 - D. The PDB entity sign agreed upon punch list.
 - E. All participants complete and sign the Substantial Completion Form.
- 17.9** Each PDB entity will submit a Substantial Completion package which consists of the following:
- A. Completed Guaranties, Warranties, Bonds form (GWB) and all warranties required by the specifications. Each PDB entity must also include its one-year warranty on labor and materials for all work in their contract, unless a longer period is specified in the contract.
 - B. Certificate of Operating and Training Instruction.
 - C. One complete set of approved shop drawings.

- D. Operating and maintenance manuals and parts lists for equipment installed in the project in quantity specified.
- E. A written confirmation from the Client Agency for all materials turned over to the using agency.
- F. A list of all suppliers and subcontractors with complete names, addresses and telephone numbers of persons to be contacted for service and/or replacement of materials and equipment.

17.10 The Designer of Record reviews the submittals for accuracy and compliance with the contract documents, attaches the Certificate of Substantial Completion and the punch list and forwards the package to the CDB PM.

- A. Review guarantees, warranties and bonds for coverage, start date and duration in accordance with the contract documents.
- B. Ensure that the PDB entity complies with the requirements of sections [01 78 23](#) and [01 78 36](#) of the Project Manual PDB-SD.
- C. Confirm that all extra material, salvaged material, and equipment specified in the contract documents which are the property of CDB are properly identified, delivered and stored. The PDB entity shall obtain and transmit signed receipts of such deliveries by the PDB entity to the authorized agency or the Client Agency accepting the delivery. Proper identification shall include the CDB project number; project specification number; description of the item and its purpose for use; name, address and phone number of the PDB entity who provided the item.

Article 18 FINAL ACCEPTANCE

- 18.1** Final acceptance is a condition which occurs when the CDB PM authorizes the PDB entity to receive final payment in full including all retainage.
- 18.2** Final acceptance is dependent only on the PDB entity's performance. Upon completion of contractual obligations, the PDB entity's contract will be closed out.
- 18.3** To initiate close-out, the PDB entity notifies the CDB PM, in writing, that:
- A. All punch list items have been completed or corrected.
 - B. Contract documents have been reviewed and the project has been inspected for compliance with the contract.
 - C. Equipment and systems have been tested in the presence of the Client Agency representative and are operational.
 - D. The Client Agency's personnel have been instructed in the operation and maintenance of all equipment and systems.
 - E. The project is complete and ready for final inspection.
- 18.4** When CDB considers the work is complete in accordance with contract requirements, the final acceptance and final payment submittal will be submitted and reviewed.
- 18.5** A formal final acceptance meeting may be held at the option of the CDB PM. Verification of completion of the punch list will be made by the Designer of Record and the CDB PM or the CDB 3rd Party Representative. The final acceptance form will be signed at the meeting or forwarded to the appropriate parties for signature.
- 18.6** The final close out package from the PDB entity consists of the following:
- A. Certificate of Final Acceptance
 - B. The final payment package:
 - 1. Invoice Voucher
 - 2. Final CSV marked as "FINAL"
 - 3. PDB entity Affidavit and Sworn Statement (CASS)
 - 4. PDB entity Final Declaration with Power of Attorney
 - 5. Final Waivers of Lien from each sub-PDB entity and supplier for the full amount of their contract (as shown on the current CSV) on CDB forms only.
 - C. Testing and balancing reports
 - D. Marked-up specifications and addenda
 - E. Project record documents
 - F. Guarantees, Warranties and Bonds (GWB) form and warranties for items on the Punch List GWB duration for all punch list items begins on the date of final acceptance.
 - G. All Formal Manufacturer Warranties; fully registered and executed as applicable.
 - H. Copy of the transmittal letter to the Client Agency for O&M manuals, shop drawings, as-builts, etc.
 - I. Any items not submitted at Substantial Completion.
 - J. Certificate of Operating and Training Instruction
- 18.7** The CDB PM or the CDB 3rd Party Representative reviews the submittal for completeness and accuracy.
- 18.8** CDB and Client Agency complete Performance Evaluation forms. The PDB entity Performance Evaluation Form may be initiated at any time; however, it is always submitted during the final close-out.

18.9 Record Construction Drawings. Prior to submitting the PDB entity's final payment request, the designer of record shall submit to CDB revised contract documents labeled "Record Drawings," with a Record Drawing Date located in the Revisions section of the title block on all sheets. The Record Drawings shall show all changes reported by the PDB entity(s), all changes made by change orders, and any clarifications made by the PDB entity during construction.

A. Document Requirements

1. A complete electronic set of "Record Drawing" drawings and specifications are required.
2. See CDB's A/E Electronic Submittal Form located in the reference library on CDB's website. CDB's reference library can be found at <https://cdb.illinois.gov/business/library.html>.

B. The electronic submittal shall be accompanied by the Record Drawing Certification Form located in the CDB Reference Library under "A/E Electronic Submittal Form".

C. The PDB entity will provide the CDB PM with one set of electronic record drawings and support files (consult with PM for delivery method); and a black line print paper copy for the Client Agency. Verify requirements with the CDB PM.

D. For asbestos abatement projects and projects that included asbestos abatement, the PDB entity shall complete an Asbestos Abatement Project Summary Report. The report shall be submitted to the CDB PM (consult with PM for delivery method) within 60 calendar days of final clearance testing. The report format can be found in the Project Manual Workbook for Asbestos, Lead, UST and PCB on the website. Supplemental Sampling reports shall be submitted electronically for any sampling done as part of the project.

Article 19 NINE MONTH INSPECTION

- 19.1** CDB shall notify the PDB entity, and the CDB PM shall make arrangements with the Client Agency for an inspection of the contracted work nine months after substantial completion of the project. The PDB entity shall exercise care and judgment to determine corrective action to be taken under warranties or guarantees as opposed to abuse, misuse, normal wear and tear or lack of proper maintenance. The PDB Entity shall provide a written report of the inspection to CDB and the Client agency within seven calendar days. CDB will notify the PDB entity of any required corrective action noted in the report.

APPENDICES

Appendix 1 STATUTORY REQUIREMENTS

1. **Energy Efficient Building Act.** The Energy Efficient Building Act, 20 ILCS 3125/1 et seq., is intended to reduce air pollutant emissions from energy consumption, moderate future peak electric power demand, ensure reliability of the electrical grid and an adequate supply of heating fuel, and control energy costs in the State of Illinois.
 - 1.1 All projects shall comply with the Illinois Stretch Energy Code, 20 ILCS 3125/55.
 - 1.2 Buildings that do not use either electricity or fossil fuel for comfort conditioning and do not have an electrical service in excess of 100A shall be exempt from this Act.
2. **Farmland Preservation Act.** The Farmland Preservation Act, 505 ILCS 75/1 et seq., seeks to “minimize the conversion of prime farmland that results from the direct or indirect effects of State programs...”. In compliance with that Act, CDB has adopted an Agricultural Land Preservation Policy and a working agreement with the Department of Agriculture.
 - 2.1. No State funds may be committed for land acquisition or construction unless it is provided for in an exception in CDB’s working agreement with the Department of Agriculture or until a study of the agricultural impact has been completed by the Department of Agriculture.
 - 2.2. If required, CDB shall notify the Dept. of Agriculture if the proposed project will lead to conversion of farmland to nonagricultural purposes. The PDB entity may be directed to mitigate the conversion to greatest extent possible. This policy does not affect the agreement and any effort involved is considered part of the basic services.
3. **Endangered Species Act.** The Illinois Endangered Species Protection Act, 520 ILCS 10/1 et seq., provides protection for the State’s threatened or endangered flora and fauna. It is the public policy that all agencies, through a consultation process with the Department of Natural Resources, determine whether any action funded by CDB is “likely to jeopardize the continued existence of Illinois listed endangered and threatened species or are likely to result in the destruction or adverse modification of the designated essential habitat of such species...”. CDB may request the PDB entity to prepare or cause to be prepared a determination of the project impact on any endangered flora and fauna at the site. This study would be an additional service under the agreement.
4. **Wetlands Policy Act.** The Interagency Wetlands Policy Act of 1989, 20 ILCS 830/1 et seq., requires State agencies to avoid impacting wetlands. If impacts are unavoidable, compensation is required. This Act is administered by the Department of Natural Resources through administrative rules that the department has and may promulgate.
 - 4.1. Any CDB project having an adverse impact to a wetland is subject to compliance with this Act and the associated administrative rules. No project impacting a wetland shall commence without review and approval of the compensation plan by the Department of Natural Resources.
 - 4.2. The PDB entity shall prepare, or cause to be prepared, a wetland impact determination according to the administrative rules. In addition to the project identifying information, the A/E shall provide the alternative actions considered and the justification for the selected alternative that may or is likely to adversely impact a wetland.
 - 4.3. The PDB entity may be requested to prepare a wetlands compensation plan when the wetland determination which adversely impacts a wetland is approved. This plan must be developed in cooperation with the Client Agency and CDB.
 - 4.4. If the project impacts a wetland, both the determination and the compensation plans must be approved by the Department of Natural Resources prior to commencement of the design.

- 4.5. The preparation of a wetland determination and compensation plan is an additional service to the agreement.
- 4.6. Use the technical procedures approved by or recommended by the Interagency Wetlands Committee.
 - A. Illinois Urban Manual
5. **Historic Resources Preservation Act.** The Illinois State Agency Historic Resources Preservation Act, 20 ILCS 3420/1 et seq., grants the Illinois Department of Natural Resources (DNR) certain jurisdiction over CDB projects.
 - 5.1. Any project that is subject to the provisions of this Act may require review for adverse effect by DNR early in the design process. The CDB PM shall provide the A/E with a copy of the IHPA Architectural/Engineering Review handout when applicable.
6. **Archaeological and Paleontological Resources Protection Act.** The Archaeological and Paleontological Resources Protection Act, 20 ILCS 3435/.01 et seq., regulates the exploring, excavating, and surveying of all such archaeological or paleontological resources on public land through the Department of Natural Resources (DNR). Archaeological resources are defined as any significant material remains or localities of past human life or activities. Paleontological resources are defined as any significant fossil or material remains. A permit from DNR is required before the exploration, excavation or collection of any resources protected by this Act is commenced.
 - 6.1. CDB may request the PDB entity to prepare, or cause to be prepared, an application for a permit from DNR when CDB believes that significant archaeological or paleontological resources exist on a project site. CDB may also request the PDB entity or its consultant to explore, survey, and collect information on the resources on the site. This would be an additional service to the agreement.
 - 6.2. If during the life of the project, archaeological or paleontological resources are unexpectedly discovered on the project site, the Designer of Record shall issue directives to protect the resources and advise CDB immediately of the findings.
7. **Steel Products Procurement Act.**
 - 7.1. The Steel Products Procurement Act, 30 ILCS 565/1 et seq., requires that all contracts for the construction, reconstruction, or improvement of public works contain a provision that steel products used or supplied by the contract or a subcontract thereto, shall be manufactured or produced in the United States. Steel products means “products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two or more such operations, from steel made in the United States by open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.”
 - 7.2. The exceptions to the Act are:
 - A. Where the expenditure is less than \$500.
 - B. Where the Executive Director of CDB certifies in writing that:
 1. The specified product is not manufactured or produced in the United States in sufficient quantity to meet the project needs.
 2. The specified product cannot be manufactured or produced in the United States in necessary time to meet the project needs.
 3. Obtaining the product manufactured or produced in the United States would increase the cost of the contract by more than 10 percent.
 - C. When the application of the Act is not within the public interest.
 - 7.3. The PDB entity shall select products for inclusion in the project specifications that meet the requirements of the Act.

7.4. The Act provides that CDB may not authorize payment to any PDB entity in violation of the Act.

8. Clean Water Act

8.1. All discharges of pollutants into waters of the United States are illegal unless they comply with a permit or with approved standards. ‘Pollutants’ includes solid waste, garbage, chemical wastes, discarded equipment, rock, and sand. ‘Waters of the United States’ includes any body of water that eventually reaches a navigable body of water by an overland route, including streams and ditches that may be dry for most of the year.

8.2. The Clean Water Act, 33 U.S.C. 1251 et seq., calls for two types of permits: NPDES (National Pollutant Discharge Elimination System) under Section 402 or the discharge of dredged and fill material permits under Section 404.

8.3. NPDES permits are required on construction sites when storm waters may carry soil or other pollutants into waters of the United States. NPDES permits are issued in Illinois by the Illinois Environmental Protection Agency (ILR 10).

8.4. For further information, contact the IEPA: 217/782-0610.

9. Art-in-Architecture Program

9.1. Section 14 of the Capital Development Board Act, 20 ILCS 3105/14, provides “for the promotion and preservation of the arts by securing suitable works of art for the adornment of public buildings constructed or subjected to major renovation by the State or which utilize State funds.”

9.2. For eligible projects, the Capital Development Board sets aside ½ of 1 percent of the amount authorized and appropriated for construction or reconstruction. The ½ of 1 percent is applied only to the state portion of the Capital Development Board construction appropriation.

9.3. Construction and renovation projects with an appropriation of \$1,000,000 or over are eligible for the AIA program. In addition, the building being constructed or renovated must be accessible to and used by the general public, and the artwork provided must be permanent, and in a prominent location.

10. Green Buildings Act

10.1. The Green Buildings Act, 20 ILCS 3130/1 et seq., requires all new state-funded building construction and major renovation of existing facilities be designed to a minimum of silver certification by the Leadership in Energy and Environmental Design, two-globe rating in the Green Globes USA design program, or equivalent.

10.2. A new building with 10,000 contiguous square feet or more or a major renovation with a construction budget of 40% or more of the building’s current replacement cost is subject to the Act.

10.3. This Act only applies to buildings that are comfort conditioned. Agencies can apply for waivers in the case of unreasonable financial burden, impediment to construction, functional impairment of the building, or if standards would compromise the historic nature of the structure.

10.4. The A/E must provide documentation to confirm that LEED, Green Globes, or equivalent standards have been followed.

11. Procurement of Domestic Products Act

11.1. The Procurement of Domestic Products Act, 30 ILCS 517/1 et seq., requires each purchasing agency making purchases of procured products to promote the purchase of and give preference to manufactured articles, materials, and supplies that have been manufactured in the United States or Illinois.

- 11.2. "Manufactured in Illinois" means, in the case of assembled articles, materials, or supplies, having been designed, finally assembled, processed, packaged, tested, or otherwise processed in Illinois in a manner that adds value, quality, or reliability.
- 11.3. "Manufactured in the United States" means, in the case of assembled articles, materials, or supplies, that design, final assembly, processing, packaging, testing, or other process that adds value, quality, or reliability occurs in the United States.
- 11.4. The Capital Development Board is exempt from requirements of this Act with respect to a specific project if (i) the project is too complex to identify the numerous individual procured products required for the project or (ii) the procured products required for the project are too numerous or complex to be able to efficiently assess the sites where manufactured.
- 11.5. The PDB entity shall make the determination whether the project can meet the requirements of the Procurement of Domestic Products Act or whether the exemption should apply. The PDB entity will then complete Paragraph No. 9 in Division 01 11 00 – Project Summary. This determination will be submitted as part of the 100% design review submittal.

12. Bird-Safe State Buildings Act

- 12.1. The Bird-Safe State Buildings Act, 20 ILCS 405/405-317, is applicable to state buildings under the management or control of the Illinois Department of Central Management Services in cases of new construction, newly acquired buildings, and alterations of 50% or more of the façade of an existing building.
- 12.2. From the ground level to 40 feet, 90% of façade material shall not be composed of glass and above 40 feet, 60% of façade material shall not be composed of glass, or if glass is used it must satisfy at least one of the following criteria:
 - A. Use elements that preclude bird collision without obscuring vision, such as secondary facades, netting, screens, shutters, and exterior shades.
 - B. Ultraviolet patterned glass with UV-reflective or contrasting patterns visible to birds.
 - C. Patterns on glass designed in accordance with a rule that restricts horizontal spaces to less than 2 inches high and vertical spaces to less than 4 inches wide.
 - D. Opaque, etched, stained, frosted, or translucent glass.
- 12.3. All glass adjacent to atria or courtyards containing water features, plants and other materials attractive to birds shall meet the criteria in 11.2.
- 12.4. Outside lighting shall be appropriately shielded and minimized subject to security and other mission related requirements.

13. Equitable Restrooms Act

- 13.1. The Equitable Restrooms Act, 410 ILCS 35, is applicable to places of public accommodation and state-owned buildings. The Act concerns equitable plumbing fixtures between women's and men's restrooms based on the maximum legal occupancy, adult changing stations in the State Capitol Building and rest stops on interstate highways, baby changing stations, and single and multiple occupancy all-gender restrooms.

Appendix 2 TECHNICAL SPECIFICATION FORMAT

DIVISION – (*DIVISION NUMBER & TITLE)
Section – (*Section Number & Title)
(*Header at the top of the first page of each section)

1. GENERAL

1.1 WORK INCLUDES

A. Base Scope of Work: (List each contractor who has work in this section)

1. (*_____) PDB entity:

a. (briefly summarize work in this section)

2. (*Continue for any other contractor who has work under this section)

B. Alternate Bids: (*) (list all alternate work applicable to this section by PDB entity and alternate number)

1. (*_____) PDB entity:

a. Alternate Bid (*letter)-(*1):

1.) (A/E: briefly summarize work)

2. (*Continue as appropriate)

C. Unit Prices: (*) (Describe unit price work applicable to this section)

1. (*_____) PDB entity:

a. (briefly summarize work)

1.2 RELATED WORK (*) (The following sub-sections should be closely coordinated with sub-section 1.1.)

A. Specified elsewhere: (List Sections that require direct coordination with this section. Do not include any General Condition or Division 00 & 01 Sections.)

B. Installed but furnished by others: (Specify who furnishes and who installs.)

1.3 Furnished, but installed by others: (Specify who furnishes and who installs.)

1.4 SYSTEM DESCRIPTION (*) (Use this to describe any special or complex building systems. Include definitions.)

1.5 QUALITY ASSURANCE (*) (Include any special qualifications for manufacturer, installer, supplier, etc., particularly where a performance specification is used for the product or its installation.)

- 1.6 REGULATORY REQUIREMENTS (*) (List special codes, national standards, etc. that apply to section. For individual product requirements, this information should be located in sub-section 2.)
- 1.7 ABBREVIATIONS (*) (List those unique to this section.)
- 1.8 SUBMITTALS (*) (Cross reference and include on Schedule 01 33 23.)
 - A. Shop drawings: (*)
 - B. Samples: (*)
 - C. Product data: (*)
 1. Manufacturer's catalogs: (*)
 2. Test reports: (*Source quality control)
 3. Certifications: (*ANSI, UL, FM, etc.)
 - D. Mock-up: (*)
 - E. Operating and maintenance data required. (*) (Coordinate with and include on Schedule 01 78 23.)

2. PRODUCTS

- 2.1 (*Item 1 – Title of material, product, equipment, etc.)

- A. (*) (Describe as appropriate.)

1. Size
2. Color
3. Finish
4. Utility Requirements
5. Features
6. (*)

(Utilize one of the three following formats for specifying products, equipment, etc. Utilize the performance specification option only when necessary.)

- B. Acceptable Products: (Minimum of 3 required without written approval from CDB. Matrix format preferred. List manufacturer's address and city only when not well known.)

	Manufacturer (*Address, City)	Model, Product, Catalog No.
1.	*(IL) _____	_____
2.	_____	_____
3.	_____	_____

* * * OR * * *

Article 1 (Provide competitive performance specification. Include form, fit and function characteristics. Specify post-award review requirements.)

* * * OR * * *

Article 2 (Specify national standard (ANSI, ASTM, etc.) to which product must comply.)

C. (Specify special requirements for fabrication, tolerances, etc.)

D. Special Warranty. In addition to that required by the Standard Documents for Construction: (Use this only for warranties beyond the PDB entity's one-year guarantee.)

1. (*_____) Manufacturer (*)
2. (*_____) PDB entity (*)

2.2 (*Item 2) (Continue for each material, product, equipment, etc.)

2.3 SCHEDULES (do not duplicate schedules on Drawings and Specs.)

- A. Hardware.
- B. Paint.
- C. Color.
- D. Equipment.
- E. Lighting Fixture.
- F. (*)

Article 3 EXECUTION

3.1 ENVIRONMENTAL CONDITIONS (Specify any special weather, temperature, ventilation, etc. conditions that must be considered for the performance of the work.)

3.2 SEQUENCING/SCHEDULING (Specify any special scheduling requirements of user, delivery, early occupancy, etc.)

3.3 REMOVAL OF EXISTING CONSTRUCTION (*)

A. Temporary removals: (*Remove, store, protect, recondition, replace in original location.)

B. Remove and relocate existing construction: (*)

C. Remove and dispose: (*)

3.4 PREPARATION (Be specific to avoid disputes.)

- A. Site clearing: (*)
- B. Fine grading: (*)
- C. Sanding: (*)
- D. Priming: (*)

3.5 (*INSTALLATION) (*APPLICATION) (*PERFORMANCE) (*ERECTION) (*)

- A. Methods (Do not tell the PDB entity how to do basic work. Where possible, reference national standard or trade association installation standards.)
 - B. Tolerances: (*)
- 3.6 FIELD QUALITY CONTROL (Specify who will take tests, when, and routing of results. Coordinate test requirements with applicable codes and the DCM.)
- A. Soils
 - B. Piles
 - C. Concrete
 - D. Piping Systems
 - E. Electrical Systems
 - F. High Voltage Cable
 - G. Special Inspections
 - H. (*Continue as appropriate.)
- 3.7 PROTECTION (Describe any special protection required; carpet, mechanical equipment, etc.)
- 3.8 CLEAN UP (Describe any special clean up requirements only)
- 3.9 CLOSEOUT (Specify if building or system commissioning is applicable to this section.)
- 3.10 EXTRA STOCK/SPARE PARTS (When financed by Bonds all extra stock or spare parts must meet bondability guidelines. The CDB restricts this to the following):
- A. Keys: (*All locksets. Specify type and quantity in accord with Client Agency needs. Include master and submaster.)
 - B. Sprinkler System Accessories: (*Sprinkler heads, special wrench in cabinet. Quantity as required by Code, NFPA 13.)

END (*)