

SUBMISSION GUIDE FOR ARCHITECTS

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SECTION 6.01
SUBMISSION REQUIREMENTS FOR
PRESERVATION DEVELOPMENTS

6.01.1. OBJECTIVE

For purposes of this document, the term “ Preservation” refers to PHFA’s goal of preserving existing developments as affordable housing by remodeling them to the extent necessary for them to remain decent, safe and sanitary housing for the next twenty years. PHFA has set aside funds for this purpose as well as the funds made available through the normal PennHOMES application process.

Submission requirements for new construction must be followed except as modified by this section.

Preservation Developments must follow these guidelines to the greatest extent practical. It is not our intent to burden a development with unnecessary work, however, we do expect the development to have a minimum twenty (20) year life expectancy after preservation work is completed.

6.01.2. PHYSICAL NEEDS ASSESSMENT

- A.** The Physical Needs Assessment procured by the Owner must be prepared by an independent third party consultant **not involved with the design or preparation of drawings and specification for the project.** The Assessment must follow the requirements set forth in the Multifamily Housing Application & Guidelines.
- B.** During the application process, PHFA staff will visit the site and compare the physical needs assessment to the physical condition of the building(s) in question. At this site visit, the staff may add, subtract, and/or alter the work outlined in the Scope of Work to better suit the intent of the preservation program.
- C.** It is the Sponsors responsibility to assure that the Architect is given a copy of the physical needs assessment to incorporate its findings in the Scope of Work.
- D.** It is the Sponsors and the Architects responsibility to assure that the Scope of Work is adequately communicated to the Contractor so they can prepare a cost estimate for the work.
- E.** Allowances in the construction budget are not permitted. The Architect must clearly identify the scope of all work in the Contract Documents.

6.01.3 ENERGY AUDIT

- A.** A diagnostic energy audit must be performed by a Building Performance Institute (BPI) certified Multifamily Building Analyst in conformance with PHFA Audit Guidelines. **(Guidelines can be found in Tab 34 of the 2011 PHFA Multifamily Housing Application & Guidelines)**

- B. An energy audit report must be prepared which includes the findings of the on-site observations and testing, an analysis of past energy use, and a list of energy conservation measures that were evaluated.
- C. In general, recommended energy conservation measures identified in the energy audit report with a pay back of less than 10 years and a savings-to-investment ratio (SIR) greater than 1.0 should be included in the scope of work.

6.01.4. ENVIRONMENTAL REQUIREMENTS

- A. As part of the physical needs assessment, tests for the following environmental hazards shall be performed by the Sponsor with results reported in the application. The Architect shall include remediation measures for any hazardous materials found in the Scope of Work for cost estimation by the Contractor.
 - 1. Lead-based paint
 - 2. Lead in the water
 - 3. Asbestos containing materials
 - 4. Radon.

6.01.5 ACCESSIBILITY REQUIREMENTS

- A. Pennsylvania Uniform Construction Code.
- B. Section 504 of the Rehabilitation Act of 1973, as amended, requires that if the project consists of fifteen (15) or more dwelling units and the cost of the alterations is 7.5% or more of the replacement costs, the new construction provision for accessibility shall apply.
- C. In order to provide equal housing opportunities to all residents of the Commonwealth, PHFA strongly suggests that Accessibility Standards for new construction be followed to the greatest extent possible for all preservation developments. Applicants will be asked to explain why these requirements cannot be met if it appears that they have not been met to the greatest extent possible by the reviewing staff.

SECTION 6.02
SCHEMATIC SUBMISSION REQUIREMENTS
FOR PRESERVATION DEVELOPMENTS

6.02.1. COMMITMENT PROCESSING MEETING

Some form of Schematic Design Documents are typically included with the PHFA application. Usually, these documents are insufficient to describe the project adequately. A Schematic Design Submission should be made to PHFA as soon as practical after the **Feasibility Approval is obtained**. The same level of documentation is required to be submitted for design-bid-build, negotiated and design-build methods of development delivery. Preservation developments shall include the following documentation as applicable to each project. Contact the Technical Services Division Review Architect for approval of the scope of documentation acceptable to PHFA for submission. Based on the completeness of the architectural documents submitted with the Application, the Schematic Design Submission may be waived at the discretion of the PHFA Technical Services staff.

6.02.2. GENERAL REQUIREMENTS – The Schematic Submission must include the following in duplicate:

- A. Schematic Drawings** – Of any new construction and substantial rehabilitation. Maximum drawing size shall be 30"x 42".
- B. Outline Specifications** in the CSI format.
- C. Preliminary Construction Cost Estimate.**

6.02.3. DRAWING REQUIREMENTS

A. Cover and Title Sheet must include:

- 1. Name of the proposed development.
- 2. Development address.
- 3. PHFA development number.
- 4. Developer's name and/or entity.
- 5. Design Architect's name.
- 6. Date of submission.

B. Site Plans:

- 1. Minimum scale of 1" = 30'.
- 2. Indicate property lines with bearings and distances.
- 3. Indicate all building, sidewalks, paved areas and site features such as trash enclosures and recreation areas.
- 4. Existing and proposed contours at one-foot intervals **at areas where sitework is planned and as required to confirm accessibility.**

5. Ground floor elevations for all buildings.
6. Identify the locations of accessible and hearing/vision units for townhouse developments and accessible parking spaces.
7. Number all buildings for ease of reference.
8. Indicate site acreage.
9. Indicate location of **any new** utility tie-ins and proposed on-site layout.
10. Indicate building setbacks.

C. Floor Plans:

1. Building Floor Plans:
 - a. Scale: $\frac{1}{8}'' = 1'-0''$.
 - b. Include all floors.
 - c. Indicate locations of accessible and hearing/vision units.
 - d. Indicate gross square footage per floor.
 - e. Include overall dimensions.
2. Dwelling Unit Plans:
 - a. Scale: $\frac{1}{4}'' = 1'-0''$.
 - b. Provide plans for all unit types and sizes, including accessible units.
 - c. Indicate furnishings.
 - d. Indicate clear floor area requirements in accessible and VisitAble units.
 - e. Indicate gross and net square footage for each unit plan.
 - f. Include overall dimensions and room sizes.

D. Elevations:

1. Include all sides and orientations.
2. Indicate all exterior finishes.

D. Typical Exterior Wall Section:

1. Scale: $\frac{3}{4}'' = 1'-0''$.
2. Show materials and method of construction from foundation to roof.
Distinguish new from existing materials.
3. Indicate insulation levels with R- values.

4. If more than one type of construction is proposed, provide a wall section for each type.
5. Provide dimensions from footing to finish grade and finish floor to ceiling.

F. Mechanical and Electrical Plans:

1. If available, provide building plans showing schematic layout of mechanical and electrical systems **indicating proposed work**.
2. If available, provide unit plans showing preliminary mechanical and electrical layouts **indicating proposed work**.

G. Specifications:

1. Provide outline specifications in CSI 16 Division format.
2. Include a brief description of all major materials, finishes, products, equipment and systems proposed.

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SECTION 6.03
DESIGN DEVELOPMENT REQUIREMENTS CHECKLIST
FOR PRESERVATION DEVELOPMENTS

Development Name: _____ PHFA No.: _____

The undersigned certifies that all items checked have been provided in the drawings and/or the specifications.

Design Architect (Print or type): _____

Design Architect (Signature): _____

Date: _____

Check the appropriate line if the development conforms to the requirement. Note N/A if it is not applicable.

The Design Development requirements for Preservation Developments will be reviewed on an individual development basis, but the below listed requirements will apply to the greatest extent possible.

1. **Unit Size Requirements** – The following matrix indicates the **recommended** minimum and maximum **net** square footage area recommended for units funded by PHFA. **Net** square footage shall be measured from the inside face of the exterior walls to the inside face of interior demising walls. **Gross** square footage shall be measured from the outside face of exterior walls to the centerline of interior demising walls. Rehabilitation developments may vary from the maximums and minimums by 10%. Accessible units may vary from the maximums as required to provide an accessible route and accessible clearances. Preservation developments may apply for a waiver from these requirements. **List the actual net square footage for each unit size. If sizes vary, list the minimum and maximum.**

	<u>FLATS</u>	<u>MULTI-FLOOR UNITS</u>	<u>ACTUAL</u>
____ SRO	90 to 200		_____
____ EFF	400 to 600		_____
____ 1 BR	50 to 850	650 to 950	_____
____ 2 BR	700 to 1,100	850 to 1,300	_____
____ 3 BR	950 to 1,350	1,000 to 1,550	_____
____ 4 BR	1,100 to 1,550	1,200 to 1,750	_____
____ 5 BR	1,300 to 1,750	1,400 to 2,000	_____

2. **Minimum Room Size Requirements** - A 10% maximum deviation may be permitted at PHFA's discretion for preservation developments based on a functional furnishings plan. Identify on the plans, all room areas and dimensions that do not meet the requirements.

- ___ A. Primary or master bedroom – 120 sq. ft. (least dimension 10'-0")
- ___ B. Second bedroom – 100 sq. ft. (least dimension 9'-0")
- ___ C. Additional bedrooms – 90 sq. ft. (least dimension 9'-0")
- ___ D. Living room – 150 sq. ft. (least dimension 11'-0")

3. **Elderly Facilities Amenities:**

- ___ A. Physical and design accommodation features and amenities such as:
 1. Handrails on one side of corridors
 2. Lever hardware
 3. Community spaces with kitchens and storage
 4. Coat closets and generous general storage in units
 5. Emergency call provisions
 6. Accessible public restrooms
 7. Air conditioning

4. **Accessibility (Facilities, Apartments and Parking)** (Also see Section 1.02)

- ___ A. All applicable Local, State and Federal regulations and PHFA requirements shall be followed to the greatest extent possible. Refer to Section 6.01.5. of this TAB for additional information.
- ___ B. A full width kick plate must be provided on both sides of all common use doors, unit entrances, and apartment interior doors that permit passage.
- ___ C. Wall corner guards (textured, vinyl 1-1/2" X 1-1/2" minimum) must be provided on walls along accessible routes and inside accessible units.
- ___ D. All bathrooms with roll-in showers should include a drain in the bathroom floor as well as in the shower(s), where feasible.

- ___ 5. **Community Space** – All developments, except for scattered sites and those with 11 or less units, should be designed with adequate community space to accommodate functions and services offered at the facility. Developments should also provide a rental office and a public restroom.

Community rooms should be a single room sized to provide at least fifteen (15) sq. ft. per unit **as a goal**, for developments with 12 to 50 units. Community rooms in developments with more than 50 units **should** be a minimum of 750 sq. ft. in size **as a goal**. A kitchen or kitchenette **should** be provided in, or adjacent to, the community room in elderly developments.

- _____ 6. **VisitAbility_{cm*} Goal** – PHFA has adopted the goal of providing access to as many units as possible for the purpose of allowing persons with disabilities the ability to visit neighbors and friends. Refer to PHFA’s VISITABILITY_{cm*} GUIDELINES included within this *Guide*.

- _____ 7. **Air-Conditioning** – Please refer to the Mechanical Requirements Checklist.

- _____ 8. **Building Security:**
 - _____ A. All developments with shared entrances (high, mid-rise and garden apartments) should be equipped with an apartment intercom/security system or equivalent to control access to the building.

 - _____ B. All apartment entrance doors should be equipped with an apartment identification number.

- _____ 9. **Bathrooms:**
 - _____ A. Bathroom floor finish must be ceramic tile or sheet vinyl.

 - _____ B. Accessories – Vanity bases should be provided for all bathrooms and powder rooms. Removable fronts are suggested for handicapped adaptable units. All bathrooms should have a minimum of two 24” towel bars, a tooth brush/tumbler holder, a toilet paper holder, a soap dish and shower rod in tub/shower unit, and a medicine cabinet with mirror. A light fixture must be located over the mirror.

- _____ 10. **Kitchens:**
 - _____ A. Ducted range hoods with fans and lights should be provided above all ranges. **Exceptions:** Recirculating range hoods may be used in kitchens where **recirculating type range hoods currently exist**.

 - _____ B. **All new** kitchen cabinets must meet AN SI/KCMA A161.1, and PHFA standards. Refer to PHFA KITCHEN CABINET MINIMUM STANDARDS. Cabinets in accessible units must have loop type hardware throughout.

 - _____ C. Refrigerators must be provided with all units. All refrigerators must be frost-free and must have two doors (separate doors for freezer and refrigerator compartments). Minimum sizes **for new refrigerators** must be:

1 Bedroom: 11.5 cu. ft.

2 Bedroom: 13.0 cu. ft.

3 Bedroom: 15.0 cu. ft.

4 Bedroom: 17.0 cu. ft.

- ____ E. Ranges must be provided in all units. All units with two or more bedrooms must be equipped with 30" wide ranges (30" ranges are preferred for all units). If the range abuts a partition or tall cabinet on one side, a protective shield must be located on that partition or cabinet. Ranges less than 30" in width must not be located abutting partitions. A protective shield must be provided for the section of wall directly behind all ranges and on any abutting partitions. The protection must extend from the top of the range to the underside of the hood or cabinet above for the width of the range or more. Protective shields must be high pressure plastic laminate, enameled steel or stainless steel.
- ____ F. **Where kitchen sinks will be replaced in** general occupancy units with 2 or more bedrooms, double bowl sinks are required unless dishwashers are provided.
- ____ G. Where dishwashers are supplied, they must be 24" wide, full size, under-counter type.

11. **Carpeting:**

- ____ A. Carpet must meet the acceptance criterion of Federal Standard DOCF1-70 for Flammability or Class II, 0.22 watts/cm per the International Building Code, whichever is greater. Carpeting in units must be a minimum of 24 oz. goods, and in public spaces--a minimum of 28 oz. goods. Carpet must meet HUD UM-44D requirements. Parquet, hardwood, tile or equal quality flooring may be substituted where sound transmission is not a factor.
- ____ B. Where provided, carpet padding must be a minimum of Class 2, 8.5# density goods meeting HUD UM-72 requirements except as indicated below.
- ____ C. Direct glued down carpet should be considered in elderly units.
- ____ D. Direct glued down carpet must be used in units for persons with disabilities.
- ____ E. Provide carpeting in public corridors and lobbies with the exception of the entrance vestibules where a hard surface and a floor mat should be provided.
- ____ F. Provide carpeting throughout the apartments with the exception of utility closets, laundry areas, bathrooms, kitchens and entrance foyers where entry is directly from outside, (e.g., a sign townhouses).

12. Furnishings and Signage:

- ___ A. All windows, sliding doors and patio doors within habitable spaces must be equipped with: (1) curtain rod and vinyl shade, or (2) mini-blinds.
- ___ B. Community areas must be furnished with drapery tracks, drapes and liners, blinds, shades, etc., as appropriate for the intended use of the space.
- ___ C. Room identification signs must be provided for all community, management, maintenance and public spaces.

___ 13. **Lobbies** – A durable, washable wall covering must be provided for elevator lobby walls. A floor identification sign must be provided on the wall opposite the elevator doors.

14. Closets:

- ___ A. All closets must have doors that fully conceal the contents of the closet.
- ___ B. All **new** closet shelves and rods 5’-0” or longer must be provided with center supports, except accessible units must meet ADA Guidelines.
- ___ E. Provide adequate storage space – All unit types should **have a goal of a** minimum of ten (10) sq. ft., plus ten (10) additional sq. ft. in each bedroom within a unit. Family units should have **a goal of** an additional twelve (12) sq. ft. outside of the unit in a basement or other space for bikes, tires, etc.

15. Laundry Facilities:

- ___ A. **Central** laundry facilities must be provided unless individual washers and dryers are provided in each unit. For developments consisting of numerous buildings, several small facilities may be provided in lieu of one facility.
- ___ B. If central facilities are provided, at least one washer and one dryer must be provided for every twelve (12) general occupancy units or every twenty (20) elderly units, with a minimum of two (2) washers and (2) dryers required for all developments.
- ___ C. A minimum of one front-loading washer and dryer must be provided in each common laundry facility and in accessible units with laundry facilities.
- ___ D. A built-in sorting counter, hanging rod or space for a table and portable hanger should be provided, as well as space for chairs in all laundry facilities.
- ___ E. The equipment may be coin operated type leased from a concessionaire.

16. Development Facilities and Maintenance:

- ___ A. Maintenance space for storage of building and ground maintenance equipment, tools and supplies, and a workshop should be provided. Note that where hazardous materials such as gasoline are stored, special precautions must be taken (does not apply if all maintenance services and repairs are contracted out).
- ___ B. Space for lockable tenant storage bins may be provided elsewhere on the development if sufficient storage space cannot be provided within the apartments.

___ **17. Natural Light and Ventilation** – Must be provided in all living rooms and bedrooms.

18. Interior Painting:

- ___ A. A semi gloss, egg shell or equivalent high quality washable latex paint should be specified for all kitchens, bathrooms and public restrooms throughout the unit for developments with children and for all public stairs, corridors and vestibules, unless a protective wall covering such as vinyl wall covering or paneling is provided.
- ___ B. Semi gloss or high gloss enamel must be specified for laundry, maintenance, storage and utility rooms.

___ **19. Parking:**

- ___ A. A minimum of 5% of the total number of parking spaces must meet the latest accessibility standards. If the total number of parking spaces is less than 20, at least two (2) spaces for persons with disabilities must be provided. Refer also to SECTION 1.02, ACCESSIBILITY REQUIREMENTS.
- ___ B. All parking lots must be paved.

20. Outdoor Furnishings, Equipment, Landscape and Recreational Structure:

- ___ A. Benches, tables, chairs and play equipment and structures must be of the following materials or combinations thereof:
 1. Wood must be decay-resistant species, pressure-treated (labeled in accordance with the applicable AWPB Standard), vacuum and non-pressure treated (conforming to NWMA-IS-A and bearing the NWMA seal of approval) or a minimum of two (2) coats of high-quality exterior grade sealer, stain or paint must be applied on all sides, edges and ends. The wood must be guaranteed for a minimum of one (1) year to be free of objectionable splinters, checks, shakes, warping, loose knots, decay and stains.

1. Concrete must be precast reinforced concrete, sealed with a minimum of two (2) coats of acrylic sealer. If color is specified, it must be cast integrally.
 2. Metals must be anodized aluminum or galvanized steel.
 3. Fiberglass must be “super strength” fiberglass. Lightweight fiberglass is not permitted.
- ___ B. All hardware must be corrosion and vandal resistant, (e.g., hot dipped galvanized or high tensile, strength bolted connections requiring special wrenches for dismounting, galvanized nails for fencing and enclosures).
- ___ C. All railroad ties used for curbs, steps, wheelstops, retaining walls, etc., must be pressure-treated CCA-C AWFA C2, C9 .40 pcf.
- 21. Waste Disposal** – (Check applicable system used):
- ___ A. Trash room(s).
- ___ B. Trash compactor.
- ___ C. Dumpster(s).
- ___ D. Recycling provisions - The size, number and design of collection area(s) must conform to the requirements of the local recycling ordinance.
- ___ E. Outdoor collection – See Section 2.01.B.15.E.
- ___ **22. Fire Extinguishers** – Provide a minimum of one 5 pound 2A-10B-C rated fire extinguisher in all units with a range or cook top. Other fire extinguishers must be provided for the development as required by code.
- ___ **23. Windows** – At least one window per room must be a ventilating type window with a full screen for the operable area of window.
- ___ **24. Environmental Remediation Requirements** – The Architect must indicate in the Contract Documents any environmental remediation work to be performed on the site. This must be shown as part of the Scope of Work described in the Contract Documents. This is required to identify that remediation work needs to be done, so the proper officials will be made aware of the need to certify the work was properly performed. In the case where the environmental remediation work is not part of the Scope of Work, it must be clearly noted in order to place the responsibility clearly on the party responsible for the work.

_____ 25. **Sound Insulation:** Only applicable where party walls and floor/ceiling assemblies are being renovated.

<u>Location</u>	<u>IIC*</u>	<u>STC**</u>
Partitions		50(55)***
Floor/Ceiling	50(55)***	50(55)***

* **Impact Isolation Class** for floor/ceiling assemblies separating living units from other living units, and from public spaces and service areas with moderate noise levels.

** **Sound Transmission Class** for partitions separating living units from other living units and from public spaces and service areas with moderate noise levels.

*** **(55)** Represents the IIC and STC Class for separations between living units and high-noise areas, e.g., mechanical, emergency generator and trash compactor rooms, elevator, trash chases and chutes, laundry and maintenance areas, etc.

The Owner must submit a written request to PHFA for any waiver of the PHFA Development Requirements.

SECTION 6.04
DESIGN DEVELOPMENT SUBMISSION REQUIREMENTS
FOR PRESERVATION DEVELOPMENTS

6.04.1. GENERAL

- A.** After PHFA has reviewed the Schematic Submission, the Owner must direct the Design Architect to prepare the Design Development Drawings and Specifications. The same level of documentation is required to be submitted for Preservation Developments as any other project. Preservation developments must include the following documentation as it applies to each development. Contact the Technical Services Division review Architect for approval of the scope of documentation acceptable to PHFA for submission. The Design Development Submission must include, but is not limited to, the following:
1. Two (2) sets of drawings. The level of completion must be sufficient (90% - 100% of contract drawings) for the Contractor to prepare the Construction Cost Estimate and for PHFA to conduct a cost review. The maximum drawing size shall be 30"x 42".
 2. Two (2) sets of specifications of an equal level of completion as the drawings. Please refer to the enclosed Specifications Procedures.
 3. Where additions are proposed **or sitework is proposed**, one (1) copy of the boundary outline survey, surveyor's report and legal description. The survey must conform to the instructions listed on the back of the Surveyor's Report in Section 2.02.G. The survey must be signed and sealed by a surveyor registered in the Commonwealth of Pennsylvania.
 4. One (1) copy of the completed Construction Cost Estimate.
 5. Structural Engineer's Report by a registered Structural Engineer, if required by PHFA.
 6. Subsoil Investigation Report with design recommendations by a qualified geotechnical firm (for new construction and new additions only).
 7. One (1) completed copy of each of the following checklists included in this Guide as they apply to the preservation project. Mark "N/A" to items that do not apply.
 - a. 6.03 Design Development Requirements Checklist for Preservation Developments.
 - b. 2.02.C Development Tabular Schedule (also include the same information on the cover sheet of the drawings).
 - c. 2.02.D Development Security and Maintenance Requirements Checklist for Urban Locations.

- d. 2.02.E Mechanical Requirements Checklist.
 - e. 2.02.F Electrical Requirements Checklist.
 - f. 2.02.H Estimated Utility Costs.
8. Proof of compliance with all certificates submitted as part of the loan application.

6.04.2. DRAWING REQUIREMENTS – ARCHITECTURAL

- A. Cover and Title Sheet** – Same as for the Schematic Submission with revised date and a schedule of drawings.
- B. Site Plan** – Same as for the Schematic Submission with the following added:
- 1. The relationship of the development to adjacent storm water flow or drainage, and vice versa.
 - 2. Ground floor finish elevations for all new buildings and areas within buildings where a change in elevation occurs.
 - 3. Spot elevations where necessary.
 - 4. Passive and active recreational areas.
 - 5. Landscape planting plan including details and plants schedule (common name, number and size for all materials) **for any new landscaping.**
 - 8. Accessible route details to accessible, adaptable, and Visitable units.
 - 9. Positive drainage away from all buildings.
 - 10. Evidence of Land Development Planning Approval (if applicable and available).
 - 11. A copy of the Survey and Surveyor's Report must accompany the Submission for review by Technical Services staff. The deed and legal description will be submitted by the Owner to PHFA prior to initial closing.
- C. Typical Floor Plans** – Same as for the Schematic Drawings with all dimensions shown.
- 1. Basement and roof plans must be included where applicable.
 - 2. Unit plans should be drawn at ¼" = 1'0" scale.
 - 3. All rooms and spaces shall be identified.
- D. Schedules and Details** – Must include the following:
- 1. Room finish schedule.

2. Door and window schedules, elevations, and jamb, sill and head details (for new windows and doors). Key to floor plans and building elevations.
3. Typical details for clothes, storage and linen closets, including mounting heights and details for rods and shelves.
4. List of work items.
5. Other as applicable.

E. Elevations – Must include:

1. Exterior Elevations – For new additions and where work is proposed:
 - a. Exterior elevations for each orientation clearly indicating:
 - 1) All exterior finishes, openings and fenestrations and all new work.
 - 2) Relationship of finished floor to finished grade for ground floor basements.
 - 3) Approximate height of each story (floor-to-floor) or parapet or roof.
2. Interior Elevations:
 - a. For all new kitchens and bathrooms, including dimensions, materials and mounting heights.
 - b. Any other new work required, (e.g., gang mailboxes, lobbies, etc.).

F. Building Sections – Must include the following as applicable to the building type:

1. Typical exterior walls (including roof and foundation). Distinguish new work from existing.
2. All typical new interior walls, partitions and chases.

G. Building Details – Must be included as necessary for any new construction.

H. Specifications – Must be prepared in accordance with the CSI format.

6.04.3. DRAWING REQUIREMENTS – STRUCTURAL

- A. Plans, Sections, Details and Notes** – Must be included in a scope sufficient to construct the particular development. The scope will vary depending upon the type of development. At a minimum, the following must be included where alterations to the existing structure are proposed:

1. Design loads.
2. Framing systems and sizes of members.
3. Governing codes, regulations and standards.

6.04.4. DRAWING REQUIREMENTS – MECHANICAL

A. General – The intent of this submission is to set forth Design Development for mechanical work in sufficient detail to:

1. Clearly define the concept and elements of the mechanical systems proposed for the development.
2. Provide proper coordination with architectural, structural and electrical specifications.
3. Allow for technical review of adequacy, economy and compliance of proposed design with applicable regulations and codes.
4. Prepare a detailed cost estimate for mechanical work in accordance with cost estimate requirements specified above.
5. Identify specific items of material and equipment contained in specifications for the work prepared in accordance with instructions noted above.

B. Mechanical Plans:

1. The orientation of mechanical drawings must follow the same pattern as established on the architectural drawings. Titles of rooms corresponding to titles on the architectural drawings must be noted on the mechanical plans.
2. In general, Design Development Drawings must include site plans, floor plans, schematic and riser diagrams, necessary equipment schedules and pertinent details **as required for the work proposed**.
3. Site plans must show the routing of all **new** underground services, site drainage, manholes, catch basins and connections to existing systems, meter locations, etc. Crossovers which are possible points of conflict with work to be done by other trades, **existing conditions**, or under different contracts must be shown with inverts given and clearances worked out. Details of connections to utility company lines, building entrances and manholes must be shown.
4. Floor plans must show each typical area indicating location and space requirements for equipment, fixtures, piping, air ducts, grilles, diffusers and any other pieces of equipment. Care should be taken in working out hung ceiling depth, equipment rooms and shafts with adequate clearances provided

5. Routing of major ductwork and piping may be shown as single line. Schematic and/or riser diagrams must show all major pieces of equipment, piping, ductwork, etc., with capacities and sizes listed for each. A schedule of all pertinent data for each piece of equipment proposed must be provided.
6. Drawings must be checked for completeness, clearness, interference with structural features and other branches of the electrical or mechanical equipment, and coordinated with the architectural drawings.

C. Other Requirements – The enclosed Mechanical Requirements Checklist and applicable portions of the Estimated Utility Costs must be completed and submitted to PHFA.

6.04.5. DRAWING REQUIREMENTS – ELECTRICAL

A. General – The intent of this submission is to set forth Design Development for electrical work in sufficient detail to:

1. Clearly define the concept and elements of the electrical systems proposed for the development.
2. Provide proper coordination with architectural, structural and mechanical drawings and specifications.
6. Allow for technical review of adequacy, economy and compliance of proposed design with applicable regulations and codes.
7. Prepare a detailed cost estimate for electrical work in accordance with cost estimate requirements specified above.
8. Identify specific items of material and equipment contained in the specifications for the work prepared in accordance with instructions noted above.

B. Electrical Plans:

1. The orientation of electrical drawings must follow the same pattern as established on the architectural drawings. Titles of rooms corresponding to titles on the architectural drawings must be noted on the electrical plans.
2. In general, Design Development electrical drawings must include site plan, floor plans, details, schedules and a one-line schematic, all as outlined below.
3. Site plans must show:
 - a. Utilities – proposed and existing.
 - b. Site lighting and circuitry.
 - c. Meter locations.

- d. Building outline.
 - e. Pertinent dimensions.
4. Floor plans must show each typical area indicating the location and electrical circuitry **for new**:
- | | |
|----------------------|-----------------------------|
| Outlets | Electrical equipment |
| Switches | Receptacles |
| Special systems | Lighting fixtures |
| Mechanical equipment | Panel boards |
| Smoke detectors | Hearing and vision fixtures |
5. Details (as required by individual development) **for new work** must include:
- | | |
|---------------------|----------------------|
| Transformer pads | Site luminaries |
| Counterpoise | Emergency system |
| Grounding | Generator including: |
| Manholes | duct systems |
| Concrete structures | exhaust systems |
| | and fuel systems |
6. Schedules (as required by individual development) **for new work** must include:
- | | |
|-------------------------|------------------------------|
| Lighting fixtures | Transformers |
| Electrical equipment | Special apparatus |
| Panel boards | Mechanical equipment |
| Main distribution board | requiring electrical service |
| Heat transfer appliance | |
- Schedules must show (as applicable) symbols, abbreviations, interrupting capacity, etc.
9. One-line schematic (depending upon the scope of the development) **for new work** must show:
- | | |
|--------------------|--------------------------|
| Service entrance | Security |
| Power distribution | Fire alarms |
| Grounding | TV system |
| Telephone | Heat and smoke detectors |

Communications

10. Other requirements:

The enclosed ELECTRICAL REQUIREMENTS CHECKLIST and the applicable portions of the ESTIMATED UTILITY COSTS must be completed and submitted to PHFA.

6.04.6 SPECIFICATIONS

- A.** Specifications must be prepared in accordance with the CSI 16 Division, 3-part format. Masterspec version or similar templates may be used. Outline specifications template may not be used.

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