

## Special Requirements for Shell Buildings

### I. General Requirements:

All drawings, shall be sealed, signed, and dated, by a design professional (licensed architect or engineer).

All drawings must be neatly drawn with clean, crisp lettering --- they must remain legible after reduction for microfilming.

Computer-generated vicinity maps obtained from web-based services (such as *MapQuest*) are acceptable, as long as the roadways or street names are legible and will remain that way after reduction for microfilming.

A Pennsylvania Department of Transportation (PennDOT) permit allowing access to a highway under its jurisdiction is not required at the time that application is made for a UCC building permit. If the highway occupancy permit issued by PennDOT requires a location of the building/structure differing from that approved under the UCC building permit, applicants must send the Department a letter requesting a determination whether a revision of approved plans will be required.

Three (3) sets of drawings, four (4) site plans and one (1) set of specifications must be included in the application package. **In addition, using the sheets provided in this document (see pages 6 and 7), we must receive the design assumptions and phased approval certification required for all shell building approvals.**

### II. Design Parameters:

Using page 6 (make multiple copies if required, **numbering them in sequence**):

1. Stipulate the anticipated uses and anticipated number of occupants, per each floor in the shell building.
2. Stipulate any anticipated special conditions that have been designed into this shell building.
3. Provide the design parameters for each of the following:
  - Structural loads
  - Egress Units
  - Electrical Rough-Ins
  - Mechanical Rough-Ins
  - Plumbing Rough-Ins

Review of the construction documents will not be initiated, if these items are not addressed in detail and submitted with all other required items.

### III. Phased Approval Certification:

Technically, a building shell approval is a phased approval. Thus, it is imperative that both the design professional and building owner(s) agree to the terms of this limited approval by submitting page 7 of this document as part of the application package.

Review of the construction documents will not be initiated, if this form is not completed and submitted with all other required items.

#### IV. Site Plans and Construction Drawings Requirements

##### SITE PLANS

- a. Site plans shall be prepared to scale (not less than 1"=20'), with legend, north arrow, and separate vicinity (site location) map.
- b. Show the correct street address, parcel number and required municipal zoning (if there is local zoning ordinance) on the site plans.
- c. Show and identify all property lines and rights-of-way, with distance from property lines and adjacent buildings on site plans.
- d. Show all accessible parking spaces and signage per ICC/ANSI A117.1 and the *International Building Code* on site plan.
- e. Show accessible curb cuts, ramps and access ways to the building.
- f. Show all proposed driveway entrances.
- g. Identify adjacent land uses and zoning.
- h. Show all easements, flood ways, and required buffers.
- i. Show existing and proposed utilities (with backflow preventers) to serve the site.
- j. Show existing and proposed finish grades.
- k. Show details, sections, and elevations needed for construction.
- l. Show all buffer and screening landscaping.
- m. Show all required parking and loading spaces and calculations.

##### ARCHITECTURAL PLANS

- a. Show architectural floor plans of each floor. These pages must be at least 18" x 24" in size (but not more than 36" x 42"), drawn to a scale of not less than 1/8" = 1'. Indicate (or reproduce) the approved, tested hourly rating, number and location of all rated members and assemblies (walls, columns, beams, floor and ceiling, and ceiling and roof fire-rated design assemblies). Show all fire-rated walls (both existing and new) with their ratings, if not shown elsewhere. Drawings submitted without required fire-rated walls shown will be rejected.
- b. Show the square footage of each floor on the corresponding floor plans.
- c. Furnish door schedule(s), including size, type, rating (if any) and hardware.
- d. Provide all window schedules.
- e. Show elevations with dimensions defining overall building height, floor-to-floor heights, or heights to ridge and eave as applicable to the type of building construction listed on the UCC application. (Note: Where an existing building is involved, photographs of all sides of the building may be submitted to show elevations. **These will be acceptable only if they show all elements necessary to determine compliance with the UCC.**)
- f. Provide basement percentage-below-grade calculations.
- g. Indicate roof slopes, drainage system and sized through wall scuppers, if applicable to the project.
- h. Show wall sections with proposed material sizes, construction and fire-rated assemblies.
- i. Show proposed plumbing fixtures and privacy screens on the plans.
- j. If masonry construction is proposed, include the following information:
  - \_\_\_ Type of brick ties and spacing of weep holes
  - \_\_\_ Control joints
  - \_\_\_ Placement of wall flashing and reinforcement.
- k. If appropriate for the proposed occupancy, plans should identify all hazardous material control areas, fire barriers and the required fire-resistance ratings for these barriers. All identified control areas shall list the name, class, quantity and method of storage of all hazardous materials processed, manufactured or used in a manufacturing process and contained within its fire barriers. Provide a

Material Safety Data Sheet for each listed hazardous material. See sections 414 and 415 of the *International Building Code*.

- l. Show the floor slab vapor barrier.
- m. Show foundation water-proofing, if applicable.
- n. All penetrations of fire-rated construction must be per manufacturer's details. The details shall meet or exceed the rating of construction being penetrated. The penetration details shall be exactly as tested by an approved testing laboratory or agency and shall include their system numbers. New penetrations of existing fire-rated walls and assemblies shall be shown with appropriate designs.
- o. Show penthouse drawings.
- p. Provide on the drawings the calculations for the means of egress widths for the entire floor occupancy load and the existing capacity of all exits including all stairs, doors, corridors and ramped exits.
- q. Show required ventilation louvers and vent sizes.

## **STRUCTURAL PLANS**

- a. Show foundation plans indicating the proposed slab elevations and type of foundation (i.e., mat foundation, caissons, spread footings, etc.).
- b. Provide preliminary soil analysis data done by a licensed engineer, if required.
- c. Indicate dimensions of foundations.
- d. Show type, size and location of piling and pile caps for pile foundation.
- e. Indicate grade beam sizes.
- f. Indicate a footing schedule defining footing sizes and the required reinforcing.
- g. Show the established footing depth below grade and method of frost protection allowed in section 1805.2.1 of the *International Building Code*.
- h. Indicate the thickness of the floor slab, size of reinforcing, slab elevations, and type and details of foundations.
- i. Indicate location, size and amount of reinforcing steel.
- j. Show foundation corner reinforcing bars and minimum overlapping (as applicable to project structure).
- k. Provide strength of concrete according to designed soil reports.
- l. Show beams, joists, girders, rafters, and/or truss layouts and details of connections, structural steel stud gage, gage size, and connections.
- m. Indicate the sizes and species of all wood members and their respective design strength.
- n. Show all columns, girders, joists, purlins, beams and base plates; for wood construction show all headers.
- o. Provide a complete lintel schedule.
- p. Indicate the type of anchoring for steel bearing directly on masonry.
- q. Indicate design dead and live, wind, snow, seismic loads for floor areas, roofs, balconies, porches, breezeways, corridors, stairs, mezzanines and platforms. Show concentrated loads, i.e. file rooms, machinery and forklift areas, if greater than those shown on the Code Summary Sheet. Identify shear walls, bracing, strapping fastening, reinforcement and any special anchoring required.
- r. Where applicable, indicate on roof framing plan where concentrated loads (mechanical equipment, cranes, etc.) will be placed.
- s. Indicate on foundation and framing plans the location and lateral load resisting system. (Show walls, braced frames, moment connections, etc.)

## **FIRE PROTECTION PLANS**

Typically, shop drawings for sprinkler systems are not available at the time of initial plan submission. If sprinklers will be required as part of fire protection required in this shell building, note the following:

- These shop drawings must be submitted for Department review and approval **at least two weeks before the projected installation date**.
- Failure to obtain approval of these drawings before installation could result not only in delay of the final inspection and issuance of an occupancy permit, but also in removal and reconstruction of installations which fail to meet UCC requirements.

## **PLUMBING PLANS**

To the extent known:

- a. Show a site utilities plan, if not provided with the civil drawings.
  1. Show the domestic water, fire, and irrigation services.
  2. Show the location of water meters, backflow protection type and location.
  3. Show the sanitary sewer service from building to public sewer or approved private sewage disposal system.
- b. Show interceptors as applicable to project and size by flow rate. (i.e., grease, oil, lint, acid, sand).
- c. Provide plumbing plan layouts for each floor. These should show the water distribution and drain-waste-vent piping, and all details, notes, legends, and schedules necessary to define the system being installed.
- d. Show the location of all major components required for a complete system.
- e. Provide fixture and equipment schedule showing fixture number, detailed description, hot water, cold water, waste and vent connection sizes and other pertinent data.
- f. Identify all fixtures on floor plans and in riser diagrams with the plumbing fixture schedule number.
- g. Supply and Waste/Vent piping shall be shown on the floor plans. All pipe sizes shall be clearly shown. In congested areas (e.g., restaurants, grocery stores, etc.), isometrics are required.
- h. On buildings two stories and above, provide isometric diagrams and/or schematic riser diagrams for Supply and Waste/Vent piping and identify the risers by number (e.g., R1, R2, etc.). Show where all riser base terminations connect to the building drain, along with all interconnected piping on each floor plan. All pipe sizes shall be clearly defined.
- i. Show the water, sanitary drain-waste-vent piping and storm leaders/drains. Indicate sizes and materials for above/below grade.
- j. Show slope of horizontal sanitary and storm drains that equal or exceed 3" diameter, if less than 1/8" per foot.
- k. Indicate roof drains and emergency roof drains/scuppers with the areas they impact. Note that "emergency" = "secondary" = "overflow," see following roof drainage examples:
  - Roof Drain - 6" RD (16880 SF)
  - Emergency Roof Drain - 6" ERD (8180 SF)
  - Parapet Wall Scupper - 8" x 5" WS (4000 SF)
  - Emergency Scupper - 8" x 7" ES (4200 SF)
- l. Show toilet room layouts with minimum of 1/4" = 1 foot scale.
- m. Show drinking fountain locations.
- n. Provide minimum facilities calculations.
- o. Column line notations, if provided on the architectural/structural plans, shall be indicated on the plumbing plans.

## **MECHANICAL PLANS**

To the extent known:

- a. Show all required wall louvers, penetrations and fans.
- b. Show all mechanical equipment, piping, ductwork (above/below slab) on the mechanical floor and/or roof plan.
- c. Provide mechanical plans for each floor and the roof. These shall show the ductwork layouts, schedules, notes, legends, piping schematics, and details necessary to define the system being installed.
- d. Indicate air distribution devices and show cfm for all supply, return and exhaust devices.
- e. Indicate the location of all equipment components required for a complete system.
- f. Show the smoke ventilation of atriums and pressurization of high-rise stairwells.
- g. Show condensation drains, primary and secondary, from the unit to the point of discharge.
- h. Indicate toilet exhaust requirements.

- i. Show mechanical room layouts at sufficient scale for dimensions and details to be ascertained.
- j. Show the size of duct runs.
- k. Indicate controls for fan shutdown: emergency manual and automatic smoke detection.
- l. Show the location of all UL 555-certified fire dampers, ceiling radiation dampers, smoke dampers, and fire doors.
- m. Show all fire-rated walls (both existing and new) with their ratings on the mechanical plans.
- n. All penetrations of fire-rated construction must be per manufacturer's details.
- o. Provide outside air ventilation rate per the *International Mechanical Code*.
- p. Column line notations, if provided on the architectural/structural plans, shall be identified on the mechanical plans.
- q. Provide gas piping layout on the floor plan for each floor. If it is a multi-story building, all gas piping shall be shown per floor. Include pipe sizes, water column, and type of material. Provide a schedule of connected equipment, total BTUH demand, total equivalent length, and most remote gas appliance.

## **ELECTRICAL PLANS**

To the extent known:

- a. Provide panel schedules with circuit and feeder loading, overcurrent protection, and NEC load summaries for all new and/or affected panels and services (loading has to be evaluated by highest phase); include fault current data, short circuit ratings and fault current protection co-ordination.
- b. Provide a single line riser diagram showing all new and/or affected services, feeders, wire sizes and insulation types, and conduit sizes and types.
- c. Indicate number of services and their physical locations; clearly indicate mains and characteristics.
- d. Indicate the grounding electrode conductor size with new and/or affected services and transformers; where necessary provide details or notes on methods.
- e. Show physical locations of all new and/or affected panels and switchgear (indicate front).
- f. Indicate receptacle plans with circuitry.
- g. Indicate lighting plans with circuitry.
- h. Show electrical plans for each affected floor, including the roof.
- i. Show wiring method(s), conduit sizes and types, termination temperature (60,75,90) requirements, conductor sizes and insulation types.
- j. Indicate the design and/or operation for any of the following applicable life safety systems: emergency generators, smoke evacuation, shaft pressurization and relief, smoke detection, egress and emergency lighting, and fire alarms.
- k. Indicate how special needs such as classified (hazardous), corrosive and patient care are treated. Provide detailed plan of classified areas, the classifications and how complied with (i. e. hangers, waste treatment and collection, flammable dusts, gases or liquids, spray booths, vehicle servicing and parking, etc.).
- l. Provide all HVAC nameplate data, including MCA and MOCP. List all other appliance and/or equipment (other than those which will be connected to a general use receptacle) with nameplate data (i.e., voltage, phasing, HP, KVA, FLA, RLA, etc.).
- m. Indicate all motor horse power ratings, if not supplied elsewhere.
- n. Indicate the certified testing laboratory or agency (e.g., UL), their test # and hourly ratings of all new and/or affected rated members and assemblies (i.e. columns, beams, floor/ceiling, and ceiling/roof fire-rated design assemblies). Show all new and/or affected fire-rated walls with their ratings, if not shown elsewhere.
- o. Provide all applicable *International Energy Conservation Code* compliance data on the Building Code Summary sheet or on the electrical plans.
- p. All submittals should include a listing and labeling statement. (All electrical materials, devices, appliances and equipment shall be labeled and listed by a certified testing laboratory or agency.)

File No.	_____
Date	_____
<b>M1</b>	

**DESIGN BASIS DOCUMENTATION (Shell Building)**

Project/Building Name: \_\_\_\_\_

Project Address: \_\_\_\_\_

\_\_\_\_\_

Name(s) of Building Owner(s): \_\_\_\_\_ Telephone: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Design Professional Name: \_\_\_\_\_

Contact Information for Design Professional:

\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

<b>PHASED CONSTRUCTION CERTIFICATION (Shell Building)</b>	
Project/Building Name: _____	
Project Address: _____	
_____	
Name(s) of Building Owner(s): _____	Telephone: _____
_____	
_____	
Design Professional Name: _____	Contact Information for Design Professional:
	Telephone: _____
	Fax: _____
	E-mail: _____

By signing this document, we acknowledge and agree to abide by the following terms and conditions:

- **That the design professional is authorized to submit the application for a building permit for the construction of a shell building.**
- **That the issuance of a permit for this phased construction provides no assurance that the Department will grant approval of any UCC permits needed for future tenants of unapproved spaces within this shell building.**
- **That before a certificate of occupancy is issued for this building a complete code analysis may be required demonstrating that the tenant spaces do not exceed the original design parameters and assumptions on which the shell building permit approval was granted.**
- **That the owner(s) assume full responsibility that the building or structure will fully comply with all UCC requirements before its partial or complete occupancy/use by tenants.**

Design professional name: _____	Owner name: _____
Signature of design professional: _____	Signature of owner: _____
Date: _____	Date: _____
	Owner name: _____
	Signature of owner: _____
	Date: _____