



PRINCE WILLIAM COUNTY
Department of Development Services – Building Development Division

DATA CENTER NEW STRUCTURE POLICY
COMMERCIAL PLANS CHECKLIST

Version 2021-07-08

<i>Staff Use Only</i> BLD _____ - _____
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PROJECT NAME _____

Lead Designer Certification		
All members of the Design Team have reviewed the Quality Control Checklist, and I have accurately completed the Checklist on behalf of the Design Team to the best of my knowledge.		
Name:	Signature:	Date:
Phone:	Email:	
Other Contacts: <i>To ensure the customer's project team (i.e., tenant, building owner; contractor; permit expeditor) receives automated email notices, please ensure they have an account through the customer ePortal where the permit holder is able to add additional contacts.</i>		

This Checklist provides the minimum essential building code information required on plans prior to submission of the Building Permit Application. Providing all the information listed will support positive communication between the designers and plan reviewers, which will expedite the overall review process.

ADDRESSING

- Show the complete address and suite numbers (if applicable) on the Cover Page and in the Title Blocks of the “A” sheets of the Architectural Plans (if applicable). The complete address should include address number, street name, street type, city, state, zip code and any suite or unit numbers associated with the building(s). You may contact the GIS Office Staff at 703-792-6840 or PWCMaps@pwcgov.org to verify the correct information before adding it to your plan. Please ensure the address of the sprinkler room is also identified on the drawings.

GENERAL REQUIREMENTS

- The full name and complete address of the proposed project.
- Pay the Filing Fee at the time of processing of the Building Permit Application, this will be invoiced via the ePortal. The Filing Fee is calculated at 35% of Building Permit Fee (*NOTE: Refer to the approved [Building Development Fee Schedule](#) for the Building Permit Fee Calculation*)
- Submit electronic plans for Building Development Review. Minimum paper size 24” x 30”. Minimum drawing scale 1/8” = 1’
- Submit one electronic copy of the current civil site plan as submitted to [Land Development Division](#) of the [Department of Development Services](#) showing all utilities; dimensioned distances to public way, property lines and adjacent buildings; building height and area, fire walls; # stories or mezzanine; finish floor elevation; and exits.
- Energy compliance for all disciplines must use the same standard, IECC or ASHRAE

SUBMISSION REQUIREMENTS:

- File names meet the File Naming Convention found in the [Customer ePlans Guide](#).
- Plans and other required documents meet the credentialing requirements in the [Customer ePlans Guide](#).
- Plan set including all trades is in a single PDF file.
- Files are not locked or password protected.
- PDF files do not contain layers or comments.
- Plan sheets are bookmarked which include the sheet number and page title.
- Plan set is landscape and pages are aligned.
- An open 3”x3” space for the County Reviewed stamp is provided in the same location on each sheet.
- Plans are monochrome, not in color.

ARCHITECTURAL

Sheet #	Code Analysis:
	1. Provide a complete set of all plans in accordance with the Virginia Uniform Statewide Building Code. On the Plan Coversheet, list the codes used for project design. Please see the YUSBC webpage to determine the codes and code year.
	2. Use Group per Chapter 3; Construction Type per Chapter 6
	3. Building Height; Building Square Foot Area
	4. Building height and area calculations with all allowable modifications per Chapter 5
	5. Occupant load including employees calculated on square foot area per Chapter 10
	6. Number of exits required and provided per Chapter 10
	7. Compliance with Mixed Occupancy Use and requirements and design method per Chapter 5
	8. Whether or not the building is fire suppressed and supervised/monitored per Chapter 9
	9. Incidental Uses and Accessory Occupancies compliance with Chapter 5.
	Architectural Plans, Elevations, Sections, Details:
	10. Label all rooms with names.
	11. Number all doors.
	12. Provide a complete door Schedule including door number, size, type, latching, closers, hardware and fire rating in hours. <i>Note: Security hardware systems designed to interface with fire alarm systems will require a Fire Protection Permit.</i>
	13. Show the locations of all fire rated assemblies with the UL design numbers on plan.
	14. State all materials used for construction to meet the requirements of Chapter 6 based on Construction Type.
	15. Provide on the roof plan: the roof slope, high points, low points, and the location of drains.
	16. State on the plans the dimensions of corridors and aisle widths.
	17. Provide story above grade details.
	18. Show on all plans systems furniture or shelving layout as appropriate to show egress.
	19. Provide floor plans and elevations for racking systems showing egress and clearance for sprinkler systems. Provide classification of materials stored.
	20. Plans need to show location of the Sprinkler Room and Underground Fire Main with an exterior door
	21. Show on the plans interior finishes; flame spread/smoke developed index.
	22. Provide details of all ramps and stairs with required handrails, guardrails and landings.
	23. Provide floor elevations with changes in floor level.
	24. Coordinate the electrical plan with Architectural plans to show all required lighted exit signs, interior and exterior, normal and emergency lighting. Architectural Plans are permitted to identify the page(s) of the electrical plans that shows the required Emergency lighting and Exits signs for egress.
	Fire rated construction:
	25. Locate fire resistive rated construction including firewalls on architectural plans.
	26. Locate firewalls on civil drawings.
	27. Reference UL Directory (or other) design numbers; key into Partition Types.
	28. Incorporate UL Directory (or other) referenced tested fire-rated assemblies directly onto reproducible original drawings.
	29. Provide section details of rated construction showing compliance including continuity and supporting construction where applicable.
	30. When roof system penetrates fire barrier, provide details to maintain the continuity of the fire barrier.

Sheet #	Accessibility requirements per ICC/ANSI A117.1:
	31. Show all Wheelchair Turning Space, Clear Floor Space, Knee and Toe Clearance.
	32. Show all maneuvering clearances at doors per Accessible Routes.
	33. Show all toilet room clearances and equipment locations per Plumbing Elements and Facilities.
	34. Specify Pictograms per ICC/ANSI A117.1.

STRUCTURAL

Note: All plans, technical reports and calculations shall bear the original seal, signature and date of a registered design professional.

Sheet #	General:
	1. Provide a copy of Geotechnical report.
	2. Provide a copy of structural calculations for changes or additional work made to Critical Structure plans and permits
	3. State on the plans the frame reactions at the base of all pre-fabricated structures. The values stated shall be those used by the SER to design the support for the pre-fabricated structure.
	4. Provide general design requirements including ground snow load, wind and seismic design data, soil bearing value, soil lateral pressure value.
	5. Provide notes on structural materials used.
	6. Provide structural design and support calculations for racking systems in compliance with RMI/ANSI MH 16.1.
	Foundation:
	7. Provide complete foundation plans with cross sections and details.
	8. Provide anchor bolt details, embedment length, size and spacing.
	9. Provide all hairpin details where applicable.
	Floor:
	10. Provide cross-sections and details.
	11. Provide complete floor framing plans for all levels including: the top of floor elevation; the size and spacing of joists and beams. Specify the joist manufacturer where applicable.
	Roof:
	12. Provide complete roof framing plans, including bearing elevations. Provide size and spacing of rafters, joists and trusses. Specify the joist manufacturer where applicable.
	13. Provide location of rooftop mechanical equipment with dimensions and weight. Provide cross sections and details.
	14. Provide the location of all mechanical equipment and provide dimension and estimated weight for each unit.
	15. Provide the locations and structural details pertaining to the structural components of mechanical equipment, hanging transformers, hanging mechanical equipment, sprinkler feed/cross mains, large suspended electrical troughs/conduits/busways, etc.
	Shop drawings:
	16. Provide a copy of approved shop drawings for pre-fabricated structures, tilt-up panels, pre-stressed members, pre-cast members, roof trusses/joists and floor trusses/joists
	Special Inspection Requirements (When applicable per VUSBC):
	17. Provide a Statement of Special Inspections , prepared by the Registered Design Professional in Responsible Charge (RDPRC), per County requirement in accordance with VUSBC.

MECHANICAL

Sheet #	General:
	1. Provide ventilation calculations, including occupancy and the intended use of each space.
	2. Provide Mechanical Equipment Schedules, including supply CFM, outdoor air CFM, cooling capacity (total and sensible), heating capacity (input and output), type of fuel, efficiency rating, and equipment weight.
	3. Provide required access, ladders and guards for rooftop equipment, where applicable.
	4. Provide means for make-up and combustion air for all fuel-fired equipment.
	5. Provide details for boilers (low water cut-off, pressure relief, pressure gauges, blow down tank, expansion tanks, and piping). (NOTE: All commercial boilers 200mbh and greater shall be inspected by the Virginia Department of Labor & Industry.)
	International Energy Code:
	6. Provide heat loss / heat gain calculations
	7. Provide exterior envelope worksheet (e.g., ComCheck).
	8. Provide R-values of all insulation in exterior construction components (e.g., walls, floors, roof and perimeter insulation).
	9. Option for Compliance per IECC Section C407 Total Building Performance
	Duct Systems:
	10. Show the location of all mechanical systems' supply registers, return grilles, outdoor air intakes, exhaust, and all duct sizes. Maintain required clearances for intake/exhaust.
	11. Show CFM at each supply outlet, return, and exhaust grille.
	12. Provide shop drawings on commercial hoods with dimensions, weights, material, make-up and exhaust air. Provide drawing details of hood exhaust duct from the hood to the exterior termination.
	13. Show required fire dampers, smoke dampers, and ceiling radiation dampers. (As per the listing of the Fire Rated Assemblies)
	Refrigeration Equipment:
	14. Provide equipment list and BTUs for each, system classification, refrigerant type, pounds of refrigerant.
	15. Show location and detail of refrigeration equipment and required clearances for equipment located on roof.
	16. Provide piping materials and methods to comply with IMC.
	Gas:
	17. Gas piping riser diagram and floor plan with fully developed length, design pressure of gas, CFH or MBH of each appliance, specific gravity, pressure drop and the type of gas piping with the correct sizing per IFGC.
	18. Provide listing and labeling for appliances and equipment.

PLUMBING AND ACCESSIBILITY – VUSBC, IPC, ICC/ANSI

Sheet #	Item
	1. Show all plumbing facilities and label with restroom dimensions to scale.
	2. Water closets, lavatories, drinking fountain and a service sink are required for all uses.
	3. Plumbing floor plans and riser diagrams for all new plumbing fixtures, including sanitary, water and storm piping with fixture identification and complete pipe sizing.
	4. Identify backflow protection and other water control devices required on equipment.
	5. Coordinate points of connection between new plans and site plans.
	6. The plumbing floor plan and riser diagram shall indicate the type and quantity of fixtures being installed

ELECTRICAL

Sheet #	<i>Service Equipment and Panels:</i>
	1. Provide NEC-compliant load calculations for feeders and service including demands per Art. 220 NEC.
	2. Provide panel schedules with branch circuit numbers, breaker size, load descriptions, poles, loads per pole in KVA, voltage, AIC rating, available short circuit current.
	3. Location, size and capacity of service, metering equipment, include complete riser to the service point with all panels, conductors and conduit sizes with grounding details, include bonding of service per Art. 250.92. Provide complete Details and riser for all Emergency and standby power systems per NEC Art. 700 & Art. 702
<i>Lighting and Power Plans:</i>	
	4. Floor plans showing light fixture layouts, receptacle locations, and branch circuits; include exit/emergency lighting showing compliance with IBC Section 1008 and 700.12(I) & 700.16 NEC.
	5. Provide an electrical site plan for site/parking lot lighting and a copy of the associated civil site lighting plan.
	6. Provide pole base detail for lights over 30' above grade.
	7. Light fixture schedule including fixture input power.
	8. Show that branch circuits are numbered, identified in the panel schedule and on the floor plans; show wiring methods
	9. Provide listing details showing that electrical equipment penetrating rated assemblies are listed for that specific design number.
	10. Indicate equipment is suitable for the installation environment to include temperature rating.
<i>Mechanical Equipment, Motors, etc:</i>	
	11. Provide details for all equipment wiring, overcurrent protection, disconnection means, and specifications.
	12. Show that branch circuits are numbered, identified in the panel schedule and on the floor plans; show wiring methods.
<i>International Energy Conservation Code:</i>	
	13. Construction documents shall be submitted per VUSBC 109. Note: Energy compliance for all disciplines must use the same standard, IECC or ASHRAE.
	14. Provide documents with calculations to show compliance with IECC/ASHRAE for lighting power for interior & exterior lighting.
	15. Show lighting controls / switching per IECC/ASHRAE.
<i>Hazardous Locations:</i>	
	16. Identify and delineate all Hazardous/Classified Locations on the construction documents per NEC Article 500.4 and 500.5.