



PLAN SUBMITTAL REQUIREMENTS FOR COMMERCIAL AND INDUSTRIAL BUILDINGS

GENERAL SUBMITTAL INFORMATION

- Submit five (5) complete sets of plans in blueprint or photocopy form.
 - o To include full site plan identify the grading and erosion control plan, all utility details, post construction storm management systems. Pencil drawing on original drawings are not acceptable.
- Architects and professional engineers are required to design, sign, and seal drawings, specifications and accompanying data for the following buildings and structures as required by the State of Nebraska Engineers and Architects Regulation Act.
- The individual project coordinating professional's seal, signature, and statement must appear on the each print of the cover/index sheet.
- The seal of the individual design professional and signature must appear on each print of drawings, specifications and accompanying data as prepared by that discipline and the seal shall indicate the that specific discipline (i.e. mechanical, electrical, plumbing, fire sprinkler, and structural).
- The cover sheet for the plans must indicate the square footage break-down, providing all areas separately.
- Provide two (2) copies of the state energy code report for compliance using the approved Comcheck report or provide construction documents regulated code design with current state adopted IECC.
- Plans must be drawn to an approved scale and fully dimensioned.
- Minimum paper size for all plans is 11 x 17.
- Revisions to plans must be made on the original drawings and new blueprints or photocopies shall be resubmitted. No pencil drawings or marks will be accepted on plans at submittal.
- Additions, remodels and tenant improvement plans must have complete, existing layout (floor) plan, showing what was/is existing prior to remodel or addition. Indicate and label the use of each existing room within the structure along with the door and window locations and sizes.

Plans and specifications must be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provision of the technical codes and all relevant laws, ordinances, rules and regulations. The following information is standard requirement for the construction documents.

NOTE: It shall be the responsibility of the submitting party to ensure that one (1) full set of plans be submitted to the Nebraska State Fire Marshal's Office for plan review. This includes new building and structures, additions, remodels, and tenant improvements. In no case shall a permit for building be issued until said plan review has been approved and received by this office.

BUILDING PLAN REVIEW REQUIREMENTS

1. Complete architectural plans, structural plans and material specs of all work.
2. A site plan including the following information:
 - a. Size and location of all new construction and all existing structure on the site.
 - b. Setback distances from lot line.
 - c. Established street grades and proposed finished grades.
3. Architectural plans and specs to include the following information:
 - a. Description of the proposed use groups for all portions of the building. The design approach for mixed uses, if applicable.
 - b. Proposed type of construction.

- c. Full dimensioned drawing to determine the area and building height.
 - d. Adequate details and dimension to evaluate means of egress, including occupant load for each floor, exit arrangement and sizes, corridors, doors, stairs, etc.
 - e. Exit signs/means of egress lighting, including power supply.
 - f. Accessibility scoping provisions.
 - g. Description and details of proposed special occupancies such as covered mall high-rise, mezzanine, atrium, public garage, etc.
 - h. Adequate details to evaluate fire resistive construction requirements, including data substantiation required ratings.
 - i. Details of plastic, insulation, and safety glazing installation.
 - j. Details of required fire protection systems.
4. Structural plans, specifications, and engineering details are to include:
- a. Soils report indicating the soil type and recommended allowable bearing pressure and foundation type.
 - b. Signed and sealed structural design calculations which support the member sized on the drawings.
 - c. Details of foundations and superstructure.
 - d. Provisions for required special inspections.
 - e. Applicable construction standards and material specifications.
 - f. Design criteria:
 - i. Ground snow load: 30
 - ii. Wind speed: 90
 - iii. Seismic design category: B
 - iv. Weathering: Severe
 - v. Frost depth: 42"
 - vi. Termite: MH
 - vii. Decay: SM
 - viii. Winter design temp: -3

MECHANICAL PLAN REVIEW REQUIREMENTS

1. Complete plans and specification of all heating, ventilation and air-conditioning work.
2. Complete information on all the mechanical equipment and material including listing, labeling, scintillation and compliance with specified quality control standards.
3. A ventilation schedule indicating the outdoor air rates, the estimated occupant load per 1000 square feet, the floor area of the space and the amount of outdoor air supplied to each space.
4. The location of all outdoor air intakes with respect to sources of combustibles.
5. Duct construction and installation methods, flame spread/smoke development rating of materials, flexible air duct and connector listing and duct support spacing.
6. Condensate disposal, routing of piping and auxiliary and secondary drain systems.
7. Required exhaust systems, routing of piping auxiliary and secondary drain systems.
8. Complete details of Type I and II kitchen hoods, grease duct construction and velocity, clearance to combustible and fire suppression system.
9. Details of all duct penetrations through fire resistance rated assemblies including shaft, fire dampers and smoke damper locations.
10. Method of supplying combustion air to all fuel fired appliances, the location and size of openings and criteria used to size the openings.
11. Details on the vents used to vent the products of the combustion from all fuel burning appliances including the type of venting systems, the sizing criteria required for the type of vent and routing of the vent.
12. Boiler and water heater equipment and piping details including safety controls and distribution piping layout.
13. Details on the type of refrigerant, calculations including the quantity of refrigerant and refrigerant piping material and the type of connections.
14. Complete details of the gas piping system including materials, installation, valve locations, sizing criteria and calculations (i.e. the longest run of piping, the pressure and pressure drop).

PLUMBING PLAN REVIEW REQUIREMENTS

1. Complete plans and specifications of all plumbing work.
2. Plumbing fixture specifications including identification of the applicable referenced quality control standards and the maximum flow rates for the plumbing fixtures.
3. The basis for the number of plumbing fixtures provided including the occupant load use, the use group and fixtures rate from the plumbing code.
4. Complete dimensions for bathrooms, the location of plumbing fixtures and the wall and floor surface materials.
5. Site plan which indicates the routing of the sanitary, storm and water service with the burial depths for all sewers and water service.
6. Water distribution system sizing criteria and calculations.
7. Water supply and distribution piping plan showing the incoming water supply, distribution piping, and pipe size, the location of the water hammer arrestors and the location of the valves.
8. The location of all backflow preventers, the type of backflow preventers provided for each piece of equipment or outlet and the specified quality control standards referenced in the code.

9. Drainage system piping plan showing the layout of all piping, of plumbing fixtures and the location of cleanouts.
10. Riser diagram(s) of the drain waste and vent piping including the building drain, all horizontal branches and the connections and layout of all fixtures. Pipe sizes, directions of flow, grade of horizontal piping, drainage fixture loads and the method of venting all plumbing fixtures.
11. The location of all indirect waste connections, standpipes, grease traps and separators. (and sizing if applicable).
12. Complete details of the water heater, the method of supplying tempered water to accessible fixtures and the temperature and pressure relief valve discharge.
13. Complete details of the method of draining storm water from the roof including calculations to verify pipe and for gutter size, the location of all roof drains and the roof area that each group of roof drains is intended to serve and an independent secondary roof drainage system.
14. Piping material specifications to verify compliance with the specified quality control standards for all sanitary, storm and potable water piping (e.g., ASTM B88 for cooper pipe), the type of joints and connections for all piping, the pipe hanger support spacing and details of anchorage and bracing.

ELECTRICAL PLAN REVIEW REQUIREMENTS

1. Complete plans and specifications of all electrical work.
2. Labeling criteria of all electrical equipment.
3. Lighting floor plan including electrical circuits indicating conduit and wiring sizes.
4. Power floor plans including electrical circuits indicating conduit and wiring sizes, equipment and disconnect switches.
5. Exit sign/means of egress lighting location and power supply.
6. Single line diagram including the available fault current and bus bracing.
7. Panel board schedule.
8. Lighting fixtures schedule.
9. Symbol schedule and diagrams.
10. Provide all service and load calculation.
11. Specifications to include requirements for:
 - a. Raceway and conduit with fittings.
 - b. Wire and cable.
 - c. Electrical boxes, fittings and installation.
 - d. Electrical connections.
 - e. Electrical wiring devices.
 - f. Circuit and motor disconnects.
 - g. Hangers and supporting devices.
 - h. Electrical identification.
 - i. Electrical identification.
 - j. Over-current protection.
 - k. Switchboards,
 - l. Grounding.
 - m. Transformers.
 - n. Panel boards,

- o. Motor control centers.
- p. Lighting fixtures.

ENERGY PLAN REVIEW REQUIREMENTS

Commercial Energy Plan Reviews are based on Chapter 7 of the IECC or the referenced edition of *ASHRAE/IES 90.1-1989, Energy Code for Commercial and High-Rise Residential Buildings* as applicable. In order to perform a thorough Energy Plan Review, the following specifications, drawings and details should be submitted:

Envelope

1. Architectural plans and specifications to include:
 - a. Description of uses and the proposed use group(s) for all portions of the building.
 - b. Thermal performance of envelope components.
 - c. Fenestration performance details (U-factor, SC, SHGC, VLT, air leakage rates, etc.).
 - d. Fully dimensioned drawings to determine gross and net areas of all envelope components.
 - e. Details of vapor barrier and insulation installation, caulking, gasketing, weather-stripping and other means of sealing joints, cracks, holes and penetrations in the building envelope.
 - f. ENVSTD output (where applicable).
2. Design conditions (interior and exterior) consistent with local climate.

Electrical Power & Lighting

1. **Complete plans and specifications** of all electrical work.
2. Riser diagrams(s) of the distribution system indicating:
 - a. Check metering provisions for individual dwelling units.
 - b. Subdivision of feeders by end use:
 - i. Lighting
 - ii. HVAC
 - iii. SWH and systems over 20 kw.
3. Lighting fixture schedule(s) depicting location, fixture lamps, ballasts, fixture input watts, fixture wiring methods power factor, etc.
4. Lighting plans(s) for building exterior including total exterior Connected Lighting Power (CLP).
5. Lighting and power floor plans for building interiors including total interior CLP.
6. LTGSTD output (where applicable).
7. Interior and exterior means of lighting control.
8. Electric motor schedule including type, HP and efficiencies.

MECHANICAL SYSTEMS & EQUIPMENT

1. Mechanical equipment data, plans and specifications of all mechanical work including:
 - a. Equipment type, capacity (Btu) and efficiency (peak and part-load).
 - b. System design air flow rates (cfm).
 - c. Details of equipment/system sizing.
 - d. System and / or zone control capabilities including terminal device schedule, provisions for humidity control (where applicable) and the corresponding testing of system controls.
 - e. Provisions for automatic setback/shutdown.
 - f. Indicate supply and exhaust systems to have automatic shut-off or volume reduction dampers.
 - g. Energy consumed by fans in the form of an Air Transport Factor (ATF) and pumps.
2. Economizers (air or water) including provisions for integrated control.
3. Duct construction and system static pressure(s), including provisions for sealing.
4. Duct and/or hydronic-piping lining and insulation materials.
5. Provisions for air and/or hydronic system balancing.
6. Boiler and water heater equipment and piping details including safety controls and distribution piping layout.

Service Water Heating ISWH1

1. SWH equipment data including type, capacity and efficiency.
2. SWH pipe insulation, thickness, conductivity and vapor retarder (where appropriate).
3. Water conservation requirements.
4. Energy conservation measures for swimming pools (where applicable).

ACCESSIBILITY PLAN REVIEW REQUIREMENTS

Accessibility Plan Reviews are based on the specified edition of the ICC/ANSI A117.1 standard as referenced by the building code. In order to perform a thorough Accessibility Plan Review, the following specifications, drawings and details should be submitted:

1. Complete architectural plans and material specifications of all work. Details and plans drawn to scale with sufficient clarity, details and dimensions to show the nature and extent of the work proposed.
2. A site plan including the following information:
 - a. Size and location of all new construction and all existing structures on the site.
 - b. Location of any recreational facilities (i.e., pool, tennis courts, etc.)
 - c. Established street grades and proposed finished grade.
 - d. Accessible parking, other locations of public access to the facility, accessible exterior routes and locations of accessible entrances.
3. Architectural plans and specifications to include:
 - a. Description of uses and the proposed use group(s) for all portions of the building. The design approach for mixed-uses (as applicable).
 - b. Fully dimensioned drawings to determine areas and building height.
 - c. Adequate details and dimensions to evaluate accessible means of egress, including occupant loads for each floor, exit arrangement and sizes, corridors, doors, stairs, areas of refuge, etc.
 - d. Adequate details and dimensions to evaluate the accessible route to areas required to be accessible, including corridors, doors, protruding objects, maneuvering clearances, clear floor space at fixtures and controls, etc.
 - e. Accessibility provisions including, but not limited to, access to services, seating, listening systems, accessible fixtures, elevators, work surfaces, etc.
 - f. Accessible plumbing facilities and details.
 - g. Tactile signage provided.
 - h. Details of required fire protection systems.

Note: The Accessibility Review will cover the scoping requirements in Chapter 11 of the IBC and other accessibility related requirements mainstreamed throughout the applicable building code. Technical requirements covered will be based on the applicable edition of ICC/ANSI A117.1