

**CHAPTER 4645**  
**DEPARTMENT OF HEALTH**  
**HOSPITAL CONSTRUCTION AND EQUIPMENT**

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**4645.0200 CONSTRUCTION DEFINED.**

The term "construction" as used in parts 4645.0200 to 4645.5200 means the erection of new buildings and the additions to existing buildings commenced on or after the effective date of these rules.

Prior to the final selection of a hospital site, it is suggested that a request be made to the commissioner of health for a study and recommendations relative to the choice of a site. It is recommended that a site survey and soil investigation be completed prior to starting work on the building design.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

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**4645.0300 DESIGN AND CONSTRUCTION.**

All design and construction shall conform to all applicable portions of parts 4645.0200 to 4645.5200 of these hospital rules.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.0400 COMPLIANCE.**

All construction including exit lights and fire towers; heating, piping, ventilation, and air-conditioning; plumbing and drainage; electrical installations; elevators and dumbwaiters; refrigeration; kitchen equipment; laundry equipment; and gas piping shall be in strict compliance with all applicable state and local codes, ordinances, and rules not in conflict with the provisions contained in parts 4645.0200 to 4645.5200.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.0500 HOSPITALS OF LESS THAN 50 BEDS.**

In hospitals of less than 50 beds, the size of the various departments will be generally smaller and will depend upon the requirements of the particular hospital. Some of the functions allotted separate spaces or rooms may be combined in such hospitals provided that the resulting plan will not compromise the best standards of medical and nursing practice. In other respects the rules as set forth herein, including the area requirements, shall apply.

**Statutory Authority:** *MS s 144.55; 144.56*

**FACILITIES IN GENERAL HOSPITALS****4645.0600 ADMINISTRATION DEPARTMENT.**

The administration department shall consist of a business office with information counter, administrator's office, medical record room, staff lounge, lobby, and public toilets for each sex. If over 100 beds, the following additional areas shall be provided: director of nurses' office, admitting office, library, conference, and board room.

It is recommended that the following be provided: a PBX board and night information for all hospitals; director of nurses' office in hospitals under 100 beds; medical social service room, and retiring room in hospitals over 100 beds.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.0700 ADJUNCT DIAGNOSTIC AND TREATMENT FACILITIES.**

Subpart 1. **Laboratory.** Adequate facilities and equipment for the performance of routine clinical diagnostic procedures and other laboratory techniques in keeping with the services rendered by the hospital shall be provided. Approximately 4-1/2 square feet of floor space per patient bed shall be provided.

Subp. 2. **Basal metabolism and electrocardiography.** One room shall be provided for basal metabolism and electrocardiography in hospitals with 100 beds or more.

Subp. 3. **Recommended facilities.** It is recommended that these facilities, except for morgue and autopsy, be located convenient to both inpatients and outpatients.

It is recommended that space be provided for electrotherapy, hydrotherapy, massage, and exercise in hospitals with 100 beds or more.

Subp. 4. **Radiology.** Radiographic room or rooms with adjoining darkroom, toilet, dressing cubicles, and office shall be provided. Protection against radiation hazards shall be provided for the patients, operators, and other personnel. To assure adequate protection against radiation hazards, X-ray apparatus and protection shall be installed in accordance with the applicable standards prescribed in Handbook 41, issued March 30, 1949, entitled Medical X-ray Protection up to Two Million Volts and Handbook 50, issued May 9, 1952, entitled X-Ray Protection Design by the National Bureau of Standards, U.S. Department of Commerce, Superintendent of Documents, Washington 25, D.C., which standards are hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth in and written as part of this subpart.

Subp. 5. **Pharmacy.** A drug room shall be provided.

Subp. 6. **Morgue and autopsy room.** A morgue and autopsy room shall be provided in hospitals with 100 beds or more. Where morgue and autopsy rooms are provided, they shall be properly equipped and ventilated and of sufficient size to allow for the performance of satisfactory pathological examinations. Definite arrangements for space and facilities for the performance of autopsies outside the hospital shall be made if the hospital does not have an autopsy room.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### 4645.0800 NURSING DEPARTMENT.

Subpart 1. **Patients' rooms.** All patients' rooms shall be outside rooms and have direct access to a hall. The window area shall not be less than one-eighth of the total floor area. No bedrooms shall be located below grade. Minimum room areas shall be 80 square feet per bed in rooms having two or more beds and 100 square feet in single rooms. No bedroom shall have more than four beds. Each bedroom or its adjoining toilet or bathroom shall have a lavatory equipped with gooseneck spout and wrist-action controls. A locker shall be provided for each patient.

Subp. 2. **Areas to be provided.** The following areas shall be provided in each nursing unit: nurses' station, utility room divided into dirty and clean areas, bedpan facilities, toilet facilities for each sex in a ratio of one toilet for each eight patients or fraction thereof, bathtubs or showers in a ratio of one tub or shower for each 30 patients or fraction thereof, linen and supply storage, and janitors' closet. Each nursing floor shall have a floor pantry and nurses' toilet room. Separate subutility, toilet, and bathing facilities shall be provided for the maternity section.

It is recommended that a stretcher alcove, treatment room, and solarium be provided.

A psychiatric or quiet room is recommended in general hospitals not providing a psychiatric unit.

Adjustments will be made where patients' rooms are provided with individual toilets.

Subp. 3. **Nurses' station.** Each nurses' station shall be conveniently located for patient service and observation of signals. It shall have a locked, well-illuminated medicine cabinet. Where narcotics are kept on the nursing station, a separate, locked, permanently secured cabinet for narcotics shall be provided. Adequate lighting, hand-washing facilities, space for keeping patients' charts, and for personnel to record and chart shall be provided. Refrigeration storage shall be provided for medications and biologics unless provided elsewhere.

Subp. 4. **Isolation suite.** One isolation suite shall be provided in each hospital unless a contagious disease nursing unit is available in the hospital. The isolation suite shall consist of one or more patients' rooms, each having an adjacent toilet equipped with bedpan lugs and spray attachment. Each suite shall have a subutility room equipped with utensil sterilizer, sink, and storage cabinets.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.0900 SURGICAL DEPARTMENT.

Subpart 1. **Location.** The surgical department shall be so located to prevent routine traffic through it to any other part of the hospital and completely separated from the obstetrical department.

Subp. 2. **The operating suite.** The operating suite shall consist of major operating room or rooms, each having an area of not less than 270 square feet with a minimum width of 15 feet; separate scrub-up area adjacent to operating room; cleanup room; storage areas for instruments, sterile supplies, and anesthesia equipment; and a janitors' closet. In hospitals consisting of 50 or more beds, a surgical supervisor's station, doctors' locker room and toilet, and nurses' locker room and toilet shall be provided. In hospitals of less than 50

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beds, doctors' and nurses' locker and toilet rooms may be provided in a convenient location outside the operating and delivery suites to serve both units.

A stretcher alcove and a recovery (postanesthesia) room are recommended.

Subp. 3. **Central sterilizing and supply room.** A central sterilizing and supply room shall be provided and divided into work space, sterilizing space, and separate storage areas for sterile and unsterile supplies. Sterilizers and autoclaves for adequate sterilization of supplies and utensils shall be provided.

Provision of sterile water in flasks is recommended.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.1000 EMERGENCY ROOM.**

An emergency room shall be provided separate from the operating and delivery suites.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.1100 OBSTETRICAL DEPARTMENT.**

Subpart 1. **Location.** The obstetrical department shall be so located to prevent routine traffic through it to any other part of the hospital and completely separated from the surgical department. A combination classroom-parent teaching room is recommended in the obstetrical departments, outside the delivery suite.

Subp. 2. **The delivery suite.** The delivery suite shall consist of delivery room or rooms, each having an area of not less than 270 square feet with a minimum width of 15 feet; separate scrub-up area adjacent to delivery room; cleanup room; storage areas for instruments and sterile supplies; and a janitors' closet. In hospitals consisting of 50 or more beds, an obstetrical supervisor's station, doctors' locker room and toilet, and nurses' locker room and toilet shall be provided. In hospitals of less than 50 beds, doctors' and nurses' locker and toilet rooms may be provided in a convenient location outside the delivery and operating suites to serve both units. A stretcher alcove is recommended.

Subp. 3. **Delivery room.** One delivery room shall be provided for each 20 maternity beds.

Subp. 4. **Labor room.** A labor room with a lavatory and an adjacent toilet shall be provided in a convenient location with respect to the delivery room. One labor bed shall be provided for each 10 maternity beds. The labor room shall be acoustically treated or so located to minimize the possibility of sounds reaching other patients.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.1200 NURSERY DEPARTMENT.**

Subpart 1. **Size.** Each hospital providing a maternity service shall have a nursery department of sufficient size to accommodate the anticipated load.

Subp. 2. **Newborn nursery.** A minimum floor area of 24 square feet per bassinet shall be provided in each newborn nursery with not more than 12 bassinets in each nursery. A connecting examination and work room shall be provided.

A separate premature nursery and work room are recommended for hospitals with 25 or more maternity beds on the basis of 30 square feet per incubator and a maximum of six incubators per nursery.

Subp. 3. **Suspect nursery.** A suspect nursery with a separate connecting workroom shall be provided in hospitals of 50 beds or more. At least 40 square feet of floor area shall be provided for each bassinet with no more than six bassinets in each suspect nursery.

Subp. 4. **Formula room.** A formula room shall be provided in the nursery area or in the dietary department where adequate supervision can be provided. This room shall be used exclusively for the preparation of infant formulas. The formula room shall contain a lavatory with gooseneck spout and wrist-action controls, a two-compartment sink for washing and rinsing bottles and utensils, and adequate storage and counter space. The

work space shall be divided into clean and dirty sections. Equipment shall be provided for sterilization. Refrigerated storage space sufficient for one day's supply of prepared formulas shall be provided in this room or in the nursery workroom. Terminal sterilization is recommended.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.1300 SERVICE DEPARTMENT.**

Subpart 1. **Dietary facilities.** Dietary facilities shall consist of main kitchen with provision for the protected storage of clean dishes, utensils, and foodstuffs; day storage room; adequate refrigeration; dishwashing facilities; and the necessary space and provisions for the handling and disposal of garbage. A dietitian's office shall be provided in hospitals of 50 or more beds. Hand-washing facilities with hot and cold water, soap, and individual towels shall be accessible for the use of all food-service personnel and so located to permit direct observation by the supervisor. Dining space for personnel, allowing 12 square feet per person, shall be provided. This space may be designed for multiple seatings.

Subp. 2. **Laundry facilities.** Each hospital shall have a laundry of sufficient capacity to process a full seven days' laundry during the work week unless commercial or other laundry facilities are available. It shall include sorting area; processing area; and clean linen and sewing room separate from the laundry. The sewing room may be combined with the clean linen room in hospitals of less than 100 beds. Where no laundry is provided in the hospital, a soiled linen room and a clean linen and sewing room shall be provided.

Subp. 3. **Housekeeper's office.** A housekeeper's office shall be provided. This may be combined with the clean linen room in hospitals of less than 100 beds.

Subp. 4. **Mechanical facilities.** A boiler and pump room with engineers' space and maintenance shop shall be provided. In hospitals of more than 100 beds, separate areas for carpentry, painting, and plumbing shall be provided.

Shower and locker facilities are recommended.

Subp. 5. **Employees facilities.** Locker rooms with lockers, rest rooms, toilets, and showers for nurses and female help; and a locker room with lockers, toilets, and showers for male help shall be provided.

Subp. 6. **Storage.** Inactive record storage shall be provided. General storage of not less than 20 square feet per bed shall be provided. General storage shall be concentrated in one area in so far as possible.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **SPECIALIZED UNITS OF THE GENERAL HOSPITAL**

##### **4645.1400 CONTAGIOUS DISEASE NURSING UNIT.**

When ten or more beds are provided for contagious disease, they shall be contained in a separate nursing unit. Each patient room shall have a view window from the corridor, a separate toilet, a lavatory in the room, and shall contain no more than two beds. Each nursing unit shall contain a nurses' station, utility room, nurses' work room, treatment room, scrub sinks conveniently located in the corridor, serving pantry with separate dishwashing room adjacent, doctors' locker space and gown room, nurses' locker spare and gown room, janitors' closet, and a storage closet.

Glazed partitions between beds and a stretcher alcove are recommended.

**Statutory Authority:** *MS s 144.55; 144.56*

##### **4645.1500 PEDIATRIC NURSING UNIT.**

Where there are 16 or more pediatric beds a separate pediatric nursing unit shall be provided. Minimum room areas shall be 100 square feet in single rooms, 80 square feet per bed in rooms having two or more beds, and 40 square feet per bassinets in nurseries.

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Each nursing unit shall contain a nursery with bassinets in cubicles, isolation suite, treatment room, nurses' station with adjoining toilet room, utility room, floor pantry, play room or solarium, bath and toilet room with raised free-standing tub and 50 percent children's fixtures, bedpan facilities, janitors' closet, and a storage closet.

Glazed cubicles for each bed in multibed rooms, clear glazing between rooms and in corridor partitions, and a wheel chair and stretcher alcove are recommended.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.1600 PSYCHIATRIC NURSING UNIT.**

Where a psychiatric nursing unit is provided, the principles of psychiatric security and safety shall be followed throughout. Layout and design shall be such that the patient will be under close observation and will not be afforded opportunity for hiding, escape, or suicide. Care shall be taken to avoid sharp projections, exposed pipes, fixtures, or heating elements to prevent injury by accident. Minimum room areas shall be 100 square feet in single rooms, 80 square feet per bed in rooms having two or more beds, and 25 square feet per patient in dayrooms. Each nursing unit shall contain a doctors' office, examination room, nurses' station, dayroom, pantry, dining room, utility room, bedpan facilities, toilet rooms for each sex, shower and bathroom, continuous tub room for disturbed patients, patients' personal laundry for women's wards only, patients' locker room, storage closet for therapy equipment, stretcher closet, linen closet, supply closet, and a janitors' closet.

**Statutory Authority:** *MS s 144.55; 144.56*

**CHRONIC DISEASE HOSPITALS FACILITIES****4645.1700 ADMINISTRATION DEPARTMENT.**

Where not available in an adjoining general hospital, the following facilities shall be provided in the administration department: a business office with information counter, telephone switchboard, cashiers' window, administrator's office, medical director's office, medical record room, medical social service office, combination conference room and doctors' lounge, lobby and waiting room, public toilets, and a locker room and toilets for personnel.

For efficiency and economy of operation, a chronic disease hospital is best located as an integral part or unit immediately adjacent to and operated in connection with a large, modern, well-equipped, and completely staffed acute general hospital. Essentially all of the services of the general hospital are necessary for the complete care of the chronic disease patient. The rehabilitation services and facilities of the chronic hospital should be readily available to the acute patient in need of such services and also available on an outpatient basis. The medical and nursing staff of the general hospital can also serve the chronic unit. Some of the basic services (food service, laundry, boiler plant, etc.) can be provided through the general hospital thus making construction and operational costs less expensive.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.1800 ADJUNCT DIAGNOSTIC AND TREATMENT FACILITIES.**

Where not available in an adjoining general hospital, adjunct diagnostic and treatment facilities shall be provided.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.1900 SPECIALIZED TREATMENT FACILITIES.**

Subpart 1. **Physical therapy.** Space and equipment shall be provided for electrotherapy, massage, hydrotherapy, and exercise. In the larger unit, an office shall be provided for the physical therapist and a conference room shall be provided near the physical therapy area.

Subp. 2. **Occupational therapy.** Space and equipment shall be provided for diversified occupational therapy work. An exhibit space shall be provided. In the larger unit, an office shall be provided for the occupational therapist.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.2000 SPECIAL SERVICE ROOMS.

Where not available in the adjoining general hospital, the following special service rooms shall be provided: eye, ear, nose, and throat room; dental facilities; doctors' office; and a treatment room which may also be used as an emergency operating room. Provision shall also be made for a nurses' office and a patients' waiting room and toilets.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.2100 NURSING DEPARTMENT.

A nursing unit shall not exceed 50 beds unless additional services and facilities are provided. No room shall have more than six beds and not more than three beds deep from the outside wall. A quiet room shall be provided. Room locations, areas, and equipment as specified for general hospitals shall apply. In addition to the requirements for the general hospital, the following shall be provided: bathtubs or showers in the ratio of one tub or shower for each 20 patients or fraction thereof; wheelchair parking area; treatment room, one for each two nursing units on a floor; dayrooms or solariums for each nursing floor providing 25 square feet per patient; a dining room with a minimum of 15 square feet for each ambulatory patient, which may be designed for multiple seatings; assembly room, capable of seating the entire ambulant population with ample space for wheelchairs, adjacent wash rooms and toilets adequate in size to accommodate wheelchairs; and projection facilities. Provision shall be made for beauty parlor and barber shop services.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.2200 SERVICE DEPARTMENT.

Subpart 1. **Kitchen area for preparation of special diets.** In addition to the requirements for the general hospital, adequate space in the main kitchen shall be provided for the preparation of special diets.

Subp. 2. **Storage.** In addition to the requirements for the general hospital, a patient's clothes storage room shall be provided. Adequate storage space shall be provided for reserve equipment.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.2300 SPACE ALLOWANCES FOR WHEELCHAIRS.

Space allowance shall be more generous than in other types of hospitals to allow for wheelchair traffic in such areas as dining rooms, recreation rooms, and toilets. Corridors shall be not less than eight feet wide with handrails on both sides. Water closet enclosures, urinals, showers, and tubs shall be easily accessible and provided with grab bars. Lavatories shall be of sufficient height to allow for use by wheelchair patients. Doorways shall not have raised thresholds. Ten-foot corridors are recommended. It is recommended that walls of corridors, toilet rooms, etc. be constructed of durable material to the level of the hand rails in order to withstand the impact of wheelchairs and heavy equipment. Adjustable height beds are recommended.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.2400 DETAILS AND FINISHES, GENERAL REQUIREMENTS FOR ALL HOSPITALS.

Subpart 1. **Ceilings.** The ceilings of the following areas shall have smooth, water-proof painted, glazed, or similar finishes: operating rooms, delivery rooms, sculleries, and

kitchens. The ceilings of the following areas shall be acoustically treated: corridors in patient areas, nurses' stations, floor pantries, quiet rooms, and pediatric rooms. The ceiling of the labor room shall be acoustically treated unless it is located apart from the patient areas.

Ceiling heights shall be at least eight feet clear except for storage closets and other minor auxiliary rooms where they may be lower. Ceiling heights for laundry and kitchen shall be at least nine feet clear. Special equipment such as X-ray and surgical lights may require greater ceiling heights. Ceilings of boiler rooms located below occupied spaces shall be insulated or the temperatures otherwise controlled to permit comfortable occupancy of the spaces above.

Subp. 2. **Corridor widths.** Corridor widths shall be not less than seven feet. A greater width shall be provided at elevator entrances and in areas where special equipment is to be used.

Subp. 3. **Door widths.** Door widths shall be not less than three feet eight inches at all bedrooms, treatment rooms, operating rooms, X-ray rooms, delivery rooms, labor rooms, solariums, and physical therapy rooms. No doors shall swing into the corridor except closet doors and exit and stairway doors required to swing in the lane of egress travel. The door-swing requirement does not apply to psychiatric units or mental hospitals.

Subp. 4. **Floors.** The floors of the following areas shall have smooth, water-resistant surfaces: toilets, baths, bedpan rooms, utility rooms, janitors' closets, floor pantries, pharmacies, laboratories, and patients' rooms. The floors of the food preparation and formula rooms shall be water-resistant, grease-resistant, smooth, and resistant to heavy wear. The floors of the operating rooms, delivery rooms, and rooms or spaces where explosive gases are used or stored shall have conductive flooring as defined in Part II of Standard No. 56, issued in May, 1954, entitled Recommended Safe Practice for Hospital Operating Rooms by the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts which part of said standard is hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth in and written as part of this subpart.

Subp. 5. **Laundry chutes.** Where laundry chutes are used, they shall be not less than two feet in diameter.

Subp. 6. **Stair widths.** Stair widths shall be not less than three feet eight inches. The width shall be measured between handrails where handrails project more than 3-1/2 inches. Platforms and landings shall be large enough to permit stretcher travel in emergencies.

Subp. 7. **Walls.** The walls of the following areas shall have smooth, waterproof painted, glazed, or similar finishes: kitchens, sculleries, utility rooms, baths, showers, dishwashing rooms, janitors' closets, sterilizing room, spaces with sinks or lavatories, operating rooms, and delivery rooms.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### STRUCTURAL WORK FOR ALL HOSPITALS

##### 4645.2500 DESIGN DATA.

The buildings and all parts thereof shall be of sufficient strength to support all dead, live, and lateral loads without exceeding the working stresses permitted for construction materials in generally accepted good engineering practice. Special provisions shall be made for machines or apparatus loads which would cause a greater load than the specified minimum live load. Consideration shall be given to structural members and connections of structures which may be subject to severe windstorms. Floor areas where partition locations are subject to change shall be designed to support, in addition to all other loads, a uniformly distributed load of 25 pounds per square foot.

**Statutory Authority:** *MS s 144.55; 144.56*



**4645.2600 LIVE LOADS.**

The following unit live loads shall be taken as the minimum distributed live loads for:

- A. bedrooms and all adjoining service rooms which comprise a typical nursing unit, except solariums and corridors, 40 pounds per square foot;
- B. solariums, corridors in nursing units, operating suites, examination and treatment rooms, laboratories, toilet and locker rooms, 60 pounds per square foot;
- C. offices, conference room, library, kitchen, radiographic room, corridors, and other public areas on first floor, 80 pounds per square foot;
- D. stairways, laundry, large rooms used for dining, recreation, or assembly purposes, workshops, 100 pounds per square foot;
- E. records file room, storage and supply rooms, 125 pounds per square foot;
- F. mechanical equipment room, 150 pounds per square foot;
- G. roofs, 40 pounds per square foot; and
- H. wind loads, as required by design conditions, but not less than 15 pounds per square foot for buildings less than 60 feet above ground.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.2700 CONSTRUCTION.**

Foundations shall rest on natural solid ground and shall be carried to depth of not less than one foot below the estimated frost line or shall rest on leveled rock or load-bearing piles when solid ground is not encountered. Footings, piers, and foundation walls shall be adequately protected against deterioration from the action of groundwater. Reasonable care shall be taken to establish proper soil-bearing values for the soil at the building site. If the bearing capacity of a soil is not definitely known or is in question, a recognized load test shall be used to determine the safe bearing value. Hospitals shall be constructed of incombustible materials, using a structural framework of reinforced concrete or structural steel except that masonry walls and piers may be utilized for buildings up to three stories in height not accounting for penthouses. The various elements of such buildings shall meet the following fire-resistive requirements:

- A. party and firewalls, four hours;
- B. exterior bearing walls, three hours;
- C. exterior panel and curtain walls, three hours;
- D. inner court walls, three hours;
- E. bearing partitions, three hours;
- F. non-load-bearing partitions, one hour;
- G. enclosures for stairs, elevators and other vertical openings, two hours;
- H. columns, girders, beams, trusses, three hours;
- I. floor panels, including beams and joists in same, two hours; and
- J. roof panels, including beams and joists in same, two hours.

Stairs and platforms shall be reinforced concrete or structural steel with hard incombustible materials for the finish of risers and treads. Rooms housing furnaces, boilers, combustible storage or other facilities which may provide fire hazards shall be of three-hour fire-resistive construction.

**Statutory Authority:** *MS s 144.55; 144.56*

**MECHANICAL WORK FOR ALL HOSPITALS****4645.2800 HEATING, PIPING, VENTILATION, AND AIR-CONDITIONING.**

The heating system, piping, boilers, ventilation, and air-conditioning shall be furnished and installed to meet the requirements as set forth herein and the requirements of Part II

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of Standard No. 56, issued in May, 1954, entitled Recommended Safe Practice for Hospital Operating Rooms by the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts, which part of said standard is hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth in and written as part of this part. It is recommended that ventilating systems be designed for air cooling or for the future addition of air cooling.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

## 4645.2900 BOILERS.

Boilers shall have the necessary capacity to supply the heating, ventilating, and air-conditioning systems and hot water and steam operated equipment, such as sterilizers and laundry and kitchen equipment. Spare boiler capacity shall be provided in a separate unit to replace any boiler which might break down. Standby boiler feed pumps, return pumps, and circulating pumps shall be provided.

**Statutory Authority:** *MS s 144.55; 144.56*

## 4645.3000 HEATING.

Subpart 1. **Heating system.** The building shall be heated by a hot water, steam, or equal type heating system. Each radiator shall be provided with a hand control or automatic temperature control valve. The heating system shall be designed to maintain a minimum temperature of 75 degrees Fahrenheit in nurseries, delivery rooms, operating and recovery rooms, and similar spaces and a minimum temperature of 70 degrees Fahrenheit in all other rooms and occupied spaces. The outside design temperature for the locality shall be based on the information contained in that portion of chapter 12 of the publication, issued in 1954, entitled Heating Ventilating Air Conditioning Guide by the American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York, New York, starting with Design Outdoor Weather Conditions on page 240 and ending on page 247 which portion of chapter 12 of said guide is hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth in and written as part of this subpart.

Subp. 2. **Auxiliary heat.** Auxiliary heat supply shall be provided for heating in operating rooms, delivery rooms, and nurseries to supply heat when the main heating system is not in operation. This may be accomplished by proper separate zoning.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

## 4645.3100 PIPING.

Subpart 1. **Pipe used in heating system.** Pipe used in heating and steam systems shall not be smaller in size than that prescribed in that portion of chapter 21 of the publication, issued in 1954, entitled Heating, Ventilating, Air Conditioning Guide, by the American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York, New York, starting with "Sizing Piping for Steam Heating Systems" on page 491 and continuing through "Sizing Piping for Indirect Heating Units" on page 506, which portion of chapter 21 of said guide is hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth in and written as part of this subpart. The ends of all steam mains and low points in steam mains shall be dripped.

Subp. 2. **Valves.** Steam return and heating mains shall be controlled separately by a valve at boiler or header. Each steam and return main shall be valved. Each piece of equipment supplied with steam shall be valved on the supply and return ends.

Subp. 3. **Thermostatic control.** The heating system shall be thermostatically controlled using one or more zones.

Subp. 4. **Coverings.** Boilers and smoke breeching shall be insulated with covering having a thermal resistance (1/c) value of not less than 1.96 and one-half inch plastic asbestos finish covered with four ounce canvas. All high-pressure steam and return piping shall be insulated with covering not less than the equivalent of one inch four-ply asbestos covering. Heating supply mains in the boiler room, in unheated spaces, unexcavated spaces, and where concealed, shall be insulated with a covering of asbestos air cell having a thickness of not less than one inch.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### **4645.3200 VENTILATION.**

Sterilizer rooms, sterilizer equipment chambers, bathrooms, hydrotherapy rooms, garbage storage, and can washing rooms shall be provided with forced or suitable exhaust ventilation to change the air at least once every six minutes. A similar ventilating system shall be provided for rooms lacking outside windows such as utility rooms, toilets, and bedpan rooms. Kitchens, morgues, and laundries which are located inside the hospital building shall be ventilated by exhaust systems which will discharge the air above the main roof or at least 50 feet from any window. The ventilation of these spaces shall comply with the state or local codes but if no code governs, the air in the work spaces shall be exhausted at least once every ten minutes with the greater part of the air being taken from the flat work ironer and ranges. All exhaust ducts shall be provided with control dampers. Summertime ventilation rate of laundry, in excess of equipment requirements, may be introduced through doors, windows, or louvers in laundry room walls and be exhausted by exhaust fans located in walls generally opposite from intakes or arranged to provide the best possible circulation within the room. Rooms used for the storage of inflammable material shall be ventilated in accordance with the requirements of the state fire marshal. The operating and delivery rooms shall be provided with a supply ventilating system with heaters and humidifiers which will change the air at least eight times per hour by supplying fresh filtered air humidified to reduce the electrostatic hazard. Humidifiers shall be capable of maintaining a minimum relative humidity of 55 percent at 75 degrees Fahrenheit temperature. No recirculation shall be permitted. The air shall be removed from these rooms by a forced system of exhaust. The sterilizing rooms adjoining these rooms shall be furnished with an exhaust ventilating system. The supply air to operating rooms may be exhausted from operating rooms to adjoining sterilizer or work rooms from where it shall be exhausted. Exhaust systems of ventilation shall be balanced with an approximately equal amount of supply air delivered directly into the rooms or areas being exhausted or to other spaces of the hospital such as corridors. All outdoor supply air shall be tempered and filtered. All outdoor air intake louvers shall be located in areas relatively free from dust, obnoxious fumes, and odors.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.3300 INCINERATOR.**

An incinerator shall be provided to burn dressings, infectious materials, and amputations. When garbage is incinerated, the incinerator shall be of a design that will burn 50 percent wet garbage completely without objectionable smoke or odor. The incinerator shall be designed with drying hearth, grates, and combustion chamber lined with fire brick. The gases shall be carried to a point above the roof of the hospital. Provisions for air supply to the incinerator room shall be made. Gas- or oil-fired incinerators are desirable.

**Statutory Authority:** *MS s 144.55; 144.56*

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## 4645.3400 WATER SUPPLY.

The water supply shall be of safe sanitary quality, suitable for use, and shall be obtained from a water supply system, the location, construction, and operation of which are acceptable to the commissioner of health.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

## 4645.3500 PLUMBING AND DRAINAGE.

Subpart 1. **Problems.** Problems of a special nature applicable to the hospital plumbing system include the following.

Subp. 2. **Vapor vent systems.** Permanently installed pressure sterilizers, other sterilizers which are provided with vent openings, steam kettles, and other fixtures requiring vapor vents shall be connected with a vapor venting system extending up through the roof independent of the plumbing fixture vent system. The vertical riser pipe shall be provided with a drip line which discharges into the drainage system through an air-gap or open fixture. The connection between the fixture and the vertical vent riser pipe shall be made by means of a horizontal offset.

Subp. 3. **Plumbing fixtures.** Water closets in and adjoining patients' areas shall be of a quiet-operating type. Flush valves in rooms adjoining patients' rooms shall be designed for quiet operation with quiet-acting stops. Gooseneck spouts and wrist-action controls shall be used for patients' lavatories, nursery lavatories, and sinks which may be used for filling pitchers. Foot, knee, or elbow-action faucets shall be used for doctors' scrub-up, including nursery work room; utility and clinic sinks; and in treatment rooms. Elbow or wrist-action spade handle controls shall be provided on other lavatories and sinks used by doctors or nurses.

Subp. 4. **Special precautions for mental patients.** Plumbing fixtures which require hot water and which are accessible to mental patients shall be supplied with water which is thermostatically controlled to provide a maximum water temperature of 110 degrees Fahrenheit at the fixture. Special consideration shall be given to piping, controls, and fittings of plumbing fixtures as required by the types of mental patients. No pipes or traps shall be exposed and fixtures shall be substantially bolted through walls. Generally, for disturbed patients, special-type water closets without seats shall be used and shower and bath controls shall not be accessible to patients.

Subp. 5. **Hot water heaters and tanks.** The hot water heating equipment shall have sufficient capacity to supply at least five gallons of water at 150 degrees Fahrenheit per hour per bed for hospital fixtures, and at least eight gallons at 180 degrees Fahrenheit per hour per bed for the laundry and kitchen. The hot water storage tank or tanks shall have a capacity equal to 80 percent of the heater capacity. Where direct-fired hot water heaters are used, they shall be of the high-pressure cast iron type. Submerged steam heating coils shall be of copper. Storage tanks shall be of corrosion-resistant metal or be lined with corrosion-resistant material. Tanks and heaters shall be fitted with vacuum and relief valves, and where the water is heated by coal or gas, they shall have thermostatic relief valves. Heaters shall be thermostatically controlled.

Subp. 6. **Water supply systems.** Cold water and hot water mains and branches from the cold water service and hot water tanks shall be run to supply all plumbing fixtures and equipment which require cold or hot water or both for their operation. Pressure and pipe size shall be adequate to supply water to all fixtures with a minimum pressure of 15 pounds at the top floor fixtures during maximum demand periods. Where booster systems are necessary, water shall be supplied to the booster pump through a receiving tank in which the water level is automatically controlled. The receiving tank shall have a properly constructed and screened opening to the atmosphere and a watertight, overlapping cover. The receiving tank and booster pump shall be situated entirely above the ground level. If a pressure tank is employed in the booster system, it shall also be situated above ground level. Hot water

circulating mains and risers shall be run from the hot water storage tank to a point directly below the highest fixture at the end of each branch main. Where the building is higher than three stories, each riser shall be circulated.

Subp. 7. **Roof and area drainage.** Leaders shall be provided to drain the water from roof areas to a point from which it cannot flow into the basement or areas around the building. Courts, yards, and drives which do not have natural drainage from the building shall have catch basins and drains to low ground, storm water system, or dry wells. Where dry wells are used, they shall be located at least 20 feet from the building.

Subp. 8. **Valves.** Each main, branch main, riser, and branch to a group of fixtures of the water systems shall be valved.

Subp. 9. **Insulation.** Hot water tanks and heaters shall be insulated with covering equal to one inch, four-ply air cell. Hot water and circulating pipes shall be insulated with covering equal to canvas jacketed three-ply asbestos air cell. Cold water mains and exposed rain water leaders in occupied spaces and in store rooms shall be insulated with canvas-jacketed felt covering to prevent condensation. All pipes in outside walls shall be insulated to prevent freezing.

Subp. 10. **Tests.** Water pipe shall be hydraulically tested to a pressure equal to twice the working pressure.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.3600 STERILIZERS.

Sterilizers and autoclaves of the required types and necessary capacity shall be provided to sterilize instruments, utensils, dressings, water, and other materials and equipment. The flasking system for sterile water supply is recommended. The sterilizers shall be of recognized hospital types with approved controls and safety features.

**Statutory Authority:** *MS s 144.55; 144.56*

#### 4645.3700 SEWAGE AND WASTE DISPOSAL.

All building sewage shall be discharged into a municipal sanitary sewer system, if available, otherwise an independent sewage disposal system shall be provided which is constructed in accordance with the requirements of the commissioner of health.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### 4645.3800 GAS PIPING.

Gas appliances shall bear the stamp of approval of the American Gas Association. Oxygen piping outlets and manifolds where used shall be installed in accordance with publication No. 565, issued in 1951, entitled Standard for Nonflammable Medical Gas Systems by the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts, which standard is hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth and written as part of this part.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### 4645.3805 REFRIGERATION.

Subpart 1. **Extent of coverage.** This part shall include portable refrigerators, built-in refrigerators, garbage refrigerators, ice-making and refrigerator equipment, and morgue boxes.

Subp. 2. **Box construction.** Boxes shall be lined with nonabsorbent sanitary material which will withstand the heavy use to which they will be subjected and shall be constructed so as to be easily cleaned. Refrigerators of adequate capacity shall be provided in all kitchens and other preparation centers where perishable foods will be stored. In the main

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kitchen, a minimum of two separate sections or boxes shall be provided, one for meats and dairy products, and one for general storage.

Subp. 3. **Refrigerator machines.** Toxic, "irritant," or inflammable refrigerants shall not be used in refrigerator machines located in buildings occupied by patients. The compressors and evaporators shall have sufficient capacity to maintain temperatures of 35 degrees Fahrenheit in the meat and dairy boxes, and 40 degrees Fahrenheit in the general storage boxes when the boxes are being used normally. Compressors shall be automatically controlled.

Subp. 4. **Tests.** Compressors, piping, and evaporators shall be tested for leaks and capacity.

**Statutory Authority:** *MS s 144.55; 144.56*

**ELECTRICAL INSTALLATIONS FOR ALL HOSPITALS****4645.3900 ELECTRICAL SYSTEMS.**

Electrical systems shall be furnished and installed to meet the requirements as set forth herein and the requirements of part 2 of the Standard No. 56 issued in May 1954, entitled "Recommended Safe Practice for Hospital Operating Rooms," by the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts, which part of said standard is hereby adopted by the commissioner of health with the same force and effect as if the same were fully set forth and written as part of this part.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

**4645.4000 FEEDERS AND CIRCUITS.**

Separate power and light feeders shall be run from the service to a main switchboard and from there, subfeeders shall be provided to the motors and power and light distributing panels. Where there is only one service feeder, separate power and light feeders from the service entrance to the switchboard will not be required. From the power panels, feeders shall be provided for large motors, and circuits from the light panels shall be run to the lighting outlets. Large heating elements shall be supplied by separate feeders from the local utility and installed as directed. Independent feeders shall be furnished for X-ray equipment.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.4100 LIGHT PANELS.**

Light panels shall be provided on each floor for the lighting circuits on that floor. Light panels shall be located near the load centers not more than 100 feet from the farthest outlet.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.4200 LIGHTING OUTLETS, RECEPTACLES, AND SWITCHES.**

All occupied areas shall be adequately lighted as required for the duties performed in the space. Patients' bedrooms shall have as a minimum: general illumination, a bracket or receptacle for each bed, a duplex receptacle for each two beds for doctor's examining light, and a night light. Where ceiling lights are used in patients' rooms, they shall be of a type which does not shine in the patients' eyes. The outlets for night lights shall be independently switched at the door. Receptacles for special equipment shall be of a heavy duty type on separate circuits. Switches in patients' rooms shall be of an approved mercury or equal, quiet-operating type, except for cord operated switches on fixtures. No lighting fixtures, switches, receptacles or electrical equipment shall be accessible to disturbed mental patients. Operating and delivery rooms shall be provided with special lights for the tables, each on an independent circuit, and lights for general illumination. Not less than three explosion-proof receptacles shall be provided in each operating and delivery room except that the explosion-proof type will not be required if the receptacles are above the five-foot

level. Each operating room shall have a film-viewing box. All switches, viewing boxes, and equipment controls installed below the five-foot level shall be explosion-proof.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.4300 EMERGENCY ELECTRICAL SYSTEM.**

Each hospital shall have a source of emergency power which may be an entirely separate outside source from an independent generating plant, a generator operated by a prime mover, or a battery with adequate means for charging. Where the installation consists of a standby generator operated by a prime mover, it shall be of a size sufficient to supply all estimated current demands for required areas. The system shall be so arranged that, in the event of failure of the principal source of current, the emergency system shall be automatically placed in operation. Emergency lighting shall be provided for: stairs; exits; patient corridors; corridors leading to exits; exit signs; operating, delivery, and emergency rooms; telephone switchboard room; nurseries; emergency generator room; boiler room; and all psychiatric patient areas.

It is recommended that emergency power be provided for the operation of at least one boiler.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.4400 NURSES' CALL.**

Each patient shall be furnished with a nurses' call which will register at the corridor door, at the nurses' station, and in each floor kitchen and utility room of the nursing unit. A duplex unit may be used for two patients. Indicating lights shall be provided at each station where there are more than two beds in a room. Nurses' call stations will not be required for psychiatric occupancies, pediatric rooms, and nurseries where an emergency call shall be available in each room for the use of the nurse. A call station shall be provided in each operating and delivery room.

**Statutory Authority:** *MS s 144.55; 144.56*

### **ELEVATORS AND DUMBWAITERS FOR ALL HOSPITALS**

#### **4645.4500 NUMBER OF CARS.**

Any hospital with patients on one or more floors above the first floor or where the operating or delivery rooms are not on the first floor shall have at least one mechanically driven elevator. Hospitals with a bed capacity of from 60 to 200 above the first floor shall have not less than two elevators. Hospitals with a bed capacity of from 200 to 350 above the first floor shall have not less than three elevators, two passenger and one service.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.4600 CABS.**

Cabs shall be constructed with fireproof material. Passenger cab platforms for the minimum required number of elevators shall be not less than five feet four inches by eight feet with a capacity of at least 3,500 pounds. Cab and shaft doors shall be not less than three feet ten inches clear opening. Service elevators shall be of sufficient size to receive a stretcher with patient.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.4700 CONTROLS.**

Elevators, for which operators will not be employed, shall have automatic push-button control, signal control, or dual control for use with or without operator. Where two push-button elevators are located together and where one such elevator serves more than three floors and basement, they shall have collective or signal control. Where the car has a speed of more than 100 feet per minute or has a rise of four or more floors, the elevator shall be equipped with automatic self-leveling control which will automatically bring the car platform level with the landing with no load or full load. Multivoltage or variable voltage

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machines shall be used where speeds are greater than 150 feet per minute. For speeds above 350 feet per minute, the elevators shall be of the gearless type.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.4800 DUMBWAITERS.**

Dumbwaiter cabs shall be not less than 24 inches by 24 inches by 36 inches of steel with one shelf to operate at a speed of 50 feet to 100 feet per minute when carrying a load of 100 pounds. Dumbwaiters serving basement and four floors shall have a minimum speed of 100 feet per minute.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.4900 TESTS.**

Elevator machines shall be tested for speed and load with and without loads in both directions and shall be given overspeed tests as required by the Minnesota Department of Labor and Industry.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.5000 [Renumbered 4645.3805]****SERVICE FACILITIES FOR ALL HOSPITALS****4645.5100 KITCHEN EQUIPMENT FOR ALL HOSPITALS.**

Subpart 1. **Equipment.** The equipment shall be adequate, properly constructed, and so arranged as to enable the storage, preparation, cooking, and serving of food and drink to patients, staff, and employees to be carried out in an efficient and sanitary manner. The equipment shall be selected and arranged in accordance with the types of food service adopted for the hospital. Cabinets or other enclosures shall be provided for the storage or display of food, drink, and utensils and shall be designed as to protect them from contamination by insects, rodents, other vermin, splash, dust, and overhead leakage. All utensils and equipment surfaces with which food or drink comes in contact shall be of smooth, nontoxic, corrosion-resistant material, free of breaks, open seams or cracks, chipped places, and V-type threads. Sufficient separation shall be provided between equipment and the walls or floor to permit easy cleaning or the equipment shall be set tight against the walls or floor and the joint properly sealed.

Subp. 2. **Dishwashing facilities.** The necessary equipment shall be provided to accomplish either of the two methods of dishwashing as described under part 4640.2900.

**Statutory Authority:** *MS s 144.55; 144.56*

**4645.5200 LAUNDRY FOR ALL HOSPITALS.**

Where laundries are provided, they shall be complete with washers, extractors, tumblers, ironers, and presses which shall be provided with all safety appliances and meet all sanitary requirements.

**Statutory Authority:** *MS s 144.55; 144.56*

**PLANS AND SPECIFICATIONS****4645.5300 PRELIMINARY PLANS.**

When construction is contemplated for new buildings, additions to existing buildings, or for major remodeling or alterations of existing buildings, the preliminary plans or sketches shall be submitted to the commissioner of health for review and approval before the preparation of working drawings is undertaken. The preliminary plans shall be drawn to scale and shall indicate the type of construction, the assignment of all spaces, sizes of areas and rooms, and the location and kind of fixed equipment. The proposed roads and



walks, service and entrance courts, parking, and orientation shall be shown on either a small plot plan or the first floor plan.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

**4645.5400 FINAL WORKING DRAWINGS AND SPECIFICATIONS.**

Subpart 1. **Plans submitted to the commissioner of health.** Before construction is begun, plans and specifications covering the construction of new buildings, additions to existing buildings, or for major remodeling or alterations of existing buildings shall be submitted in duplicate to the commissioner of health for its approval. These plans shall show the general arrangement of the building, including a room schedule and fixed equipment of each room, together with other pertinent information. Separate drawings shall be prepared for each of the following branches of work: architectural, structural, mechanical, and electrical. They shall include or contain the information in subparts 2 to 5.

Subp. 2. **Architectural drawings.** Architectural drawings must include:

- A. approach plan showing all topography; newly established levels and grades; existing structures on the site, if any; new buildings and structures; roadways and walks;
- B. plan of each floor and roof;
- C. elevations of each facade;
- D. sections through building;
- E. scale and full size details as necessary;
- F. schedule of finishes; and
- G. large scale drawings of typical and special rooms indicating all fixed equipment.

Subp. 3. **Structural drawings.** Structural drawings must meet the following requirements in items A to E.

- A. Plans of foundations, floors, roofs, and all intermediate levels shall show a complete design with sizes, sections, and the relative location of the various members. A schedule of beams, girders, and columns shall be included.
- B. Floor levels, column centers, and offsets shall be dimensioned.
- C. Special openings and pipe sleeves shall be dimensioned or otherwise noted for easy reference.
- D. Details of all special connections, assemblies, and expansion joints shall be given.
- E. Notes on design data shall include the name of the governing building code, values of assumed live loads, wind loads, and soil-bearing pressures.

Subp. 4. **Mechanical drawings.** These drawings with specifications shall show the complete installations and equipment as follows:

- A. heating, piping, ventilation, and air-conditioning:
  - (1) radiators and steam heated equipment, such as sterilizers, warmers, and steam tables;
  - (2) heating mains and branches with pipe sizes and provisions for expansions;
  - (3) diagram of heating risers with pipe sizes;
  - (4) sizes, types, and heating surfaces of boilers, furnaces, with firing equipment;
  - (5) pumps, tanks, boiler breeching, and piping and boiler room accessories;
  - (6) exhaust and supply ventilating systems with steam connections and piping. A supply and exhaust fan schedule shall be shown; and

(7) air-conditioning systems with refrigerators, water, and refrigerant piping and ducts;

B. plumbing, drainage, stand pipe systems, and gas piping:

(1) size, location, and elevation of: street sewer, house sewer, house drains, street water main, and water service into the building;

(2) location and size of soil, waste, and vent stacks with connections to house drains, fixtures, and equipment;

(3) roof and surface drainage systems;

(4) size and location of hot, cold, and circulating mains, branches, and risers from the service entrance and tanks;

(5) riser diagram to show all plumbing stacks with vents, water risers, and fixture connections;

(6) plumbing fixtures and fixtures which require water and drain connections. A fixture schedule shall be shown unless included in the specifications;

(7) standpipe and sprinkler system, if required; and

(8) gas, oxygen, and special connections;

C. elevators and dumbwaiters. Shaft details and dimensions, size of car platform and doors, travel, pit, and machine room; and

D. kitchens, laundry, laboratories, boiler room, and mechanical equipment rooms shall be detailed at a satisfactory scale to show the location, size, and connections of all fixed and movable equipment.

Subp. 5. **Electrical drawings.** Drawings shall show all electrical wiring, outlets, and equipment which require electrical connections as follows:

A. Electrical service entrance with service switches, service feeders to the public service feeders, and characteristics of the light and power current. Transformers and their connections, if located in the building, shall be shown.

B. Plan and diagram showing main switchboard, power panels, light panels, and equipment. Feeder and conduit sizes shall be shown with schedule of feeder breakers or switches.

C. Light outlets, receptacles, switches, power outlets, and circuits.

D. Telephone layout showing service entrance, telephone switchboard, strip boxes, telephone outlets, and branch conduits as approved by the telephone company. Where public telephones are used for intercommunication, equipment shall be provided as required by the telephone company.

E. Nurses' call systems with outlets for beds, duty stations, door signal lights, annunciators, and wiring diagrams.

F. Doctors' call and doctors' in-and-out systems with all equipment wiring, if provided.

G. Fire alarm system with stations, gongs, control board, and wiring diagrams.

H. Emergency lighting system with outlets, transfer switch, source of supply, feeders, and circuits.

Subp. 6. **Additions to existing buildings.** The procedures and requirements for working drawings and specifications shall be followed and in addition the following information shall be submitted:

A. plans and details showing attachment of new construction to the existing structure and mechanical systems as well as a plan of the functional layout of the existing building designating bedrooms and service areas; and

B. type of construction of existing building and number of stories.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### **4645.5500 SPECIFICATIONS.**

Specifications shall supplement the drawings and shall comply with the following:

A. The specifications shall fully describe, except where fully indicated and described on the drawings, the materials, construction, the kind, sizes, capacities, finishes, and other characteristics of all materials, products, articles, and devices.

B. The specification shall include:

- (1) cover or title sheet;
- (2) general index and index to each section;
- (3) general conditions;
- (4) general and special requirements; and
- (5) sections describing material and construction in detail for each class of

work.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *17 SR 1279*

#### **4645.5600 PLANS FOR WATER SUPPLY AND SEWERAGE SYSTEMS.**

No water supply or plumbing system or system for the disposal of sewage, garbage, or refuse shall be installed nor shall any such existing system be materially altered or extended until complete plans and specifications for the installation, alteration, or extension, together with such additional information as the commissioner of health may require, have been submitted to the commissioner of health in duplicate and approved. The plumbing installation in the existing building shall upon completion comply with the Minnesota Plumbing Code, chapter 4715.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

#### **4645.5700 PREPARATION OF PLANS AND SPECIFICATIONS BY A REGISTERED ARCHITECT OR ENGINEER.**

Plans and revisions shall be prepared and certified by an engineer or architect registered to practice in the state of Minnesota as provided by state laws.

Minnesota Statutes, sections 326.02 and 326.03, require that plans be prepared by a registered architect or registered engineer if the total cost of the improvement exceeds \$2,000 paid in whole or in part from public funds, or if the total cost exceeds \$10,000, paid from funds not public.

**Statutory Authority:** *MS s 144.55; 144.56*

#### **4645.5800 COMPLIANCE WITH APPROVED PLANS.**

All hospital construction shall take place in accordance with the approved completed plans. If it is desired to make deviations from the approved plans, the commissioner of health shall be consulted and approval of the proposed changes obtained before construction changes are started.

**Statutory Authority:** *MS s 144.55; 144.56*

**History:** *L 1977 c 305 s 39*

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### **4645.5900 DELAYED CONSTRUCTION.**

Unless construction is commenced within one year of approval of final working drawings and specifications, the drawings shall be resubmitted for renewal of review and approval.

**Statutory Authority:** *MS s 144.55; 144.56*

### **4645.6000 FIRE MARSHAL APPROVAL REQUIRED.**

Fire protection for the hospital shall be provided in accordance with requirements of the state fire marshal. Approval by the state fire marshal of the fire protection of a hospital shall be a prerequisite for licensure.

**Statutory Authority:** *MS s 144.55; 144.56*