



**KEY**


**PROTECTED FIRE ZONE:** Shown in Green.


**NOTE.**—For description of fire protection, etc., see other side.

Elevations range from 100 to 220 feet above mean sea level.

*Water mains 8 inches and larger in diameter* 

*Water mains 6 inches in diameter* 

*Water mains 4 inches in diameter* 

*Fire hydrants shown thus* 

THE FIRE INSURANCE RATING  
ORGANIZATION OF N. J.  
ENGINEERING DEPARTMENT  
NEWARK 2, N. J.

**Princeton Borough**  
Mercer County, New Jersey

FEBRUARY 15, 1949



# PRINCETON BOROUGH, MERCER COUNTY, NEW JERSEY.

Population — Census of 1940 was 7,719.

**IN GENERAL:** Located on State Highway No. 27 about 3 miles north from the main line of the Pennsylvania Railroad at Princeton Junction. It is the site of Princeton University, Princeton Theological Seminary and other institutions of learning. Practically every form of business is related in some way to these institutions. Area about 1.8 square miles. Elevations range from 110 to 227 feet. Main roads are concrete, others macadam in good condition. No features which might seriously affect the operations of the fire department.

**WATER SUPPLY:** Water supply for domestic and fire protection purposes is furnished by the Princeton Water Company which owns supply works and distribution system and supplies water to Princeton Borough and Princeton Township. Main office at 166 Nassau Street and shop and supply yard at Stony Brook Pumping Station. **Organization:** Includes 3 executive officers, 1 office assistant, 1 superintendent, 4 station operators and 4 maintenance and repair men. Two well-equipped trucks are provided. Superintendent and 1 employee respond to alarms of fire prepared to render emergency aid. Repairs and extensions are made under the direction of the superintendent with laborers as needed. Records consist of operating data and a detailed map showing hydrant and valve locations. **Supply Works:** Built in 1883 and subsequently improved. Water is obtained from 7 deep wells in the vicinity of the two pumping stations. Total safe well yield estimated to be about 1,196 m.g.d. Wells discharge to receiving reservoirs from which high lift pumps take suction and discharge to distribution system with elevated tank acting as equalizer. **Wells—Stony Brook Station:** Wells are housed in 1-story small area frame structures with composition roofs and wood floors. One 8-inch, two 10-inch and one 14-inch wells ranging in depth from 300 to 500 feet. They are equipped with Worthington deep well pumps with normal individual capacities of 800, 600, 350 and 300 g.p.m. and are driven respectively by 40-, 40-, 40-, and 30-h.p. G. E. electric motors. There are 3 discharge lines, one from the 800-g.p.m. well, one from the 600- and 350-g.p.m. and one from the 300-g.p.m. wells. Wells discharge to a concrete receiving basin 73 feet in diameter and 8 feet in depth with a capacity of 250,000 gallons. **Harrison Street Station:** Well pumps are housed in three 1-story frame and 1 brick small area structures with composition roofs and wood floors in good condition. Two 14-inch and one 16-inch wells in West Windsor Township ranging in depth from 300 to 500 feet. They are equipped with Worthington deep well pumps with normal individual capacities of 190, 350 and 400 g.p.m. and are driven respectively by 20-, 30-, 40- and 50-h.p. G. E. electric motors. Wells discharge through a single line to a concrete covered reservoir 110' x 110' x 15' with a capacity of 950,000 gallons. **Pumping Stations—Stony Brook Station:** Located at Princeton Basin in Princeton Township as shown on map. Building is a large area one-story brick structure with a slate roof, concrete floor, overhead Crain system of steam heat, and electric lights. Exposures negligible. Hand protection consists of a standpipe with 100 feet of 1½-inch hose and a 2½-gallon soda and acid extinguisher. Wiring standard in conduit. Housekeeping good. Elevation of pump room floor 70 feet. **Equipment:** One De Laval centrifugal pump, capacity 1,000 g.p.m., driven by a 100-h.p. G. E. electric motor. One De Laval centrifugal pump, 350 g.p.m. capacity driven by a 60-h.p. G. E. electric motor. There are always 15 to 25 tons of coal available for heater. **Harrison Street Station:** Located on Harrison Street in Princeton Township as shown on map. Erected in 1930. Building is a modern one-story stone structure with a slag roof, concrete floor, electric lights, electric heat, and 2 hand extinguishers. Exposures negligible. Wiring standard in conduit. Housekeeping good. Elevation of pump room floor about 70 feet. **Equipment:** One De Laval centrifugal pump of 850 g.p.m. capacity, driven by a 100-h.p. G. E. electric motor. One De Laval centrifugal pump of 500 g.p.m. capacity driven by a 60-h.p. G. E. electric motor. **Distribution System:** In one service; see map. Supply to district is through one 14-inch main from Harrison Street Pumping Station and through two 10-inch mains from the Stony Brook Pumping Station. Arterial and gridiron system is good. **Elevated Tank:** Located as shown on the map, steel construction on a 89.5-foot tower, 45' x 30', capacity 535,000 gallons. Elevation of base 198. Elevation of overflow 317.5. **Consumption:** The average and maximum daily consumption in the entire territory served during 1942 was 0.727 and 1.726 m.g.d. On January 1st, 1943 there were 2,471 services in the entire territory served, all of which were metered. **Pipe:** Cast iron, tar coated, bell and spigot joint, laid with a 3½-foot cover. Total length, 114,900 feet; 39.0% 4-inch, 47.3% 6-inch, 0.4% 8-inch, 8.3% 10-inch, 3.4% 14-inch, and 1.6% 16-inch. No trouble reported from frozen mains or electrolysis. **Gate Valves:** There are 216 of Rennselaer, Eddy, and Mueller makes, set with iron boxes at grade; 8 operate right hand, the remainder operate left hand. Valves are inspected semi-annually. Fire department notified when valves affecting hydrant supply are operated. **Hydrants:** There are 123 of Corey and Mueller makes of standard type with 4- and 6-inch gated branches with two 2½- and one 4½-inch outlets. The 2½-inch outlets are National Standard, but the steamer outlets are 4-13/16 inches outside diameter with 6 threads per inch. They are inspected semi-annually and after each fire. Those operated during inspection were found to be in good condition. **Pressures:** Readings taken at 5 hydrants widely distributed showed pressures ranging from 53 to 84 pounds with an average of 65 pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on November 17th, 1938 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow, and pressure during flow were as follows:

Nassau St., E. of S. Tulane St., 1,030—53—50.  
Lafayette Rd. and Cleveland Lane, 515—55—16.  
Linden Lane and Hawthorne Ave., 680—76—19.  
Snowden Lane and Nassau St., 480—84—13.  
Alexander St. and College Rd., 460—55—44.

**FIRE DEPARTMENT:** A volunteer organization of 3 companies under full control of the borough which appropriated \$11,775 for the support of the department in 1943. The borough owns all the equipment except the Hook and Ladder Company house. Officers including a chief, and 2 assistant chiefs are elected annually by companies and confirmed by the borough council. Three foremen are appointed by each company. There are 5 part paid drivers who are appointed by the borough to maintain and drive apparatus. First member to arrive may drive apparatus to fires where on arrival of paid driver he takes over. Total membership 143, of whom 120 are available in day and 125 during the night.

**Companies—Hook and Ladder Company No. 1:** Membership 43. Located on Witherspoon Street between Nassau and Spring Streets. Building is a 3-story joisted brick structure with a slate roof, concrete apparatus floor, electric lights, steam heat, telephone, and electric siren controlled from police headquarters. **Equipment:** One 1941 Seagrave aerial ladder truck equipped with a 3-section 65-foot aluminum aerial ladder with hydraulic hoist and 8 other ladders ranging from 10 to 50 feet and totaling 275 feet, a 150-g.p.m. booster pump, a 100-gallon booster tank, 150 feet of booster hose and considerable other equipment. One 1931 Buffalo booster car carrying a 100-g.p.m. booster pump, a 650-gallon booster tank, 450 feet of booster hose, a 35-foot extension ladder, 2 Indian pump tanks, 1 door opener and considerable minor equipment. One 1942 Ford-Hale booster car carrying a 100-g.p.m. booster pump, a 450-gallon booster tank, 400 feet of booster hose, and fair minor equipment. **Engine Company No. 1:** Membership 46. Located on Chestnut Street between Nassau and Spruce Streets. Building is a 2-story joisted brick structure with a slate roof, concrete apparatus floor, electric lights, steam heat, telephone, and air whistle. **Equipment:** One 1926 American La France 600-g.p.m. double combination pumping engine carrying 1,000 feet of 2½-inch hose, 300 feet of 1½-inch hose and considerable minor equipment. **Mercer Engine Company No. 3:** Membership 54. Located on Chambers Street between Nassau and Hulth Streets. Building is a 2-story joisted brick structure with a slag roof, concrete apparatus floor, electric lights, hot water heat, and tower bell. **Equipment:** One 1924 American La France 1,000-g.p.m. double combination pumping engine carrying 1,100 feet of 2½-inch hose, 300 feet of 1½-inch hose, and considerable minor equipment; also quartered in this building is the borough ambulance and first-aid squad. All apparatus is well equipped with salvage covers, shut-off nozzles gated wyes and siamese connections. All suction hose is hard rubber. A sufficient number of all-service masks, Indian pump tanks, deluge sets, battering ram, and door openers are provided. **Hose:** All 2½-inch hose is C.R.L. with National Standard screw couplings and is carried on the apparatus. It is not tested or shifted due to lack of reserve hose. After fires it is dried on a rack located at Engine Company No. 3. No hose is over 5 years old. **Operations:** Department is governed by municipal ordinance. Chief has control of apparatus at all times and of men at fires and drills. Chief may not suspend members, but companies may. Motors started daily. Thirty members including the part paid members are appointed drivers. **Drills and Training:** Drills are held bi-monthly under the supervision of foremen of the various companies. They consist of pump operation, ladder work, and use of equipment. **Fire Methods:** Booster streams with shut-off nozzles are used reinforced by engine streams. All-service gas masks are carried; heavy stream equipment and salvage covers are provided. **Response to Alarms:** The entire department responds to all general alarms in the borough and township. Booster car responds to all brush or grass fires. Outside aid may be secured cooperatively from Trenton, Kingston, Lawrenceville, and New Brunswick. **Building Inspection:** Inspections are made of all mercantile buildings at least twice a year by fire chief and assistant chief. Reports are made to borough council. **Records and Reports:** A complete record of cause, location of fire, apparatus used, and property involved is made of each fire and monthly reports are submitted to borough council. **Fire Alarm System:** System is part of the fire department and is maintained by a local electrician. Headquarters equipment is located in a non-standard enclosure in the basement of borough hall, a 2-story joisted brick structure. Apparatus is of Gamewell manufacture and consists of a 4-circuit slate operating board with the usual devices for testing and operation. There is a single circuit divided into two loops. Circuits are protected on operating board by 6-ampere fuses. Current for operation of system is supplied by two Gamewell oxide film rectifiers serviced from the 110-volt lighting circuit with two banks of storage batteries of 32 cells each floating. Batteries are located in room with operating board and are well mounted. They are protected by 10-ampere fuses. Rectifiers are protected by 10-ampere fuses. There is a tape register in each house, an air whistle, a siren, a break wheel transmitter in police station, and 25 Gamewell fire alarm boxes, 4 of which are non-interfering and remainder are interfering. Box keys are under glass. They are located on utility company poles and pedestals at or near street intersections but they are not conspicuously designated by lights or bands. Boxes inspected during survey were found in poor condition and poorly maintained. There is about 10½ miles of wire, of which about 10 miles is 22-, 24- and 26-copper wire located in telephone company ducts and ½-mile is No. 8 hard drawn, triple braid, weatherproof, located on utility poles below power wires. Wiring in fire station and borough hall is in conduit. Circuits are tested twice monthly for voltage and amperage, and apparatus is tested weekly on Wednesdays by operating breakwheel transmitter. Alarms may be telephoned to police station in borough hall where they are sounded, by deskman, on breakwheel transmitter.

**POLICE DEPARTMENT:** Consists of a chief, a lieutenant, 2 sergeants, and 8 patrolmen working in 8-hour shifts. Deskman on duty 24 hours. Two police cars equipped with two-way radio are provided; each car provided with 1 Indian pump tank and 1 carbon tetrachloride fire extinguisher. Patrolmen respond to alarms of fire and report unauthorized building construction to building inspector.

**BUILDING LAWS:** Code adopted December 13th, 1931 provides for the appointment of a competent building inspector, requires that plans and specifications be submitted and permits secured for building operations. Code compares favorably with the building code recommended by the National Board of Fire Underwriters, but is not as comprehensive with regard to height and area requirements. Adequate fire limits are established which include the business district outlined in the zoning ordinance. Combustible roofs are prohibited within business district. The building department is well organized with a competent inspector. Records are kept and filing provisions are satisfactory.

**EXPLOSIVES AND FLAMMABLES:** Building code contains some regulations with regard to storage of explosives and flammables. In many instances requirements are those recommended by the National Fire Protection Association. State laws adequately cover the storage and shipment of explosives and flammables and the construction of motion picture booths. They also restrict the discharge of fireworks to responsible bonded parties.

**ZONING ORDINANCE:** Adopted November 17th, 1941.