

SANITARY SEWER SYSTEM

Western State Hospital has a total of 10,041 feet of sanitary sewer lines ranging in size from 3” to 12” in diameter. The system was installed in various stages between 1950 when the first building was constructed on the new site and 1983 when the last building was constructed on the new site. The entire system is gravity flow to a collection point and is constructed of a variety of materials, including vitrified clay, concrete, terra cotta and cast iron. The depth to which lines are buried range from 3 to 14 feet.

The water to the hospital and the sewage from the hospital is metered. Based on the difference in meter readings, the sewer system experiences an average of 2,000,000 gallons of infiltration a month. This high degree of infiltration results in additional costs of \$48,000 per year.

In 1950, when the first building was constructed, the sewage treatment plant consisted of one digester, one trickling filter, and two drying beds with the necessary pumps, and other auxiliary equipment. As the hospital was enlarged, the Sewage Treatment plant was expanded to include two digesters, one high-rate trickling filter, and four drying beds with the necessary pumps and auxiliary equipment. In 1975, the Department of Mental Health, Mental Retardation and Substance Abuse Services participated with the Augusta County Service Authority in the construction of a regional sewage treatment facility. At that time the hospital’s Sewage Treatment Plant was converted to a pumping station and the hospital’s sewage was delivered to the Augusta County Service Authority Sewage mains along Route 250.

In 1975, a contractor inspected the sewer lines with a television camera and according to the inspector’s reports, 719 feet of line were found to be crushed, cracked or otherwise severely damaged. Damage to other sections of the sewer line ranged from “slight” to “severe.” This damage included broken bells and misaligned pipes. Standing water was found in various areas of the sewer system, indicating the existence of low places.

The hospital has submitted a Capital Outlay Request for the replacement of 4,835 linear feed of the existing sewer line system. A breakdown of the replacement request is as follows:

2,080 linear feet – 12” sewer line
443 linear feet – 10” sewer line
1,710 linear feet – 8” sewer line
602 linear feet – 6” sewer line

All replacement pipes are to be PVC pipes. The Capital Outlay Request includes replacement or repair of 22 manholes in the sanitary sewer system. The total funds requested for this project is \$170,110.

With the completion of the above mentioned replacement of sanitary sewer piping and repair or replacement of manholes, a planned maintenance program of the sewer line should be effected. This program should include a television camera of the system every 10 years and all damaged or defective piping should be replaced after each inspection.

As stated above, the Sewage Disposal Plant was converted to a pumping station in 1975. The current pumping station consists of two pumps each with a 418 gallon per minute capacity which

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pumps the sewage through 300 feet of 8" force main to a surge box. The sewage then flows by gravity through 2,800 feet of 12" concrete pipe to the property line where this pipe is connected to the Augusta County Service Authority main sewer.

Around 1970, the hospital constructed a lagoon for emergency situations such as power outages, pump and or motor failures and problems with the outfall line from the Sewage Treatment Plant pumping station. The lagoon is situated east of the pumping station and can hold approximately seven to 10 day's accumulation of hospital sewage. This allows time for necessary repairs and provides the hospital with the option, once repairs are effected of pumping the raw sewage from the lagoon back into the sewage system for delivery to the Augusta County Service Authority through the usual means.

While the Treatment Plant was in operation, the facility employed fully certified operators, and the system operated within the required standards and complied with applicable codes. The affluent was discharged through the current outfall line; however, instead of connecting to the Augusta County Service Authority sewer main, the pipe ran parallel to Route 250 for approximately two miles east of the hospital and discharged into Christians Creek.

With the implementation of this plan, the sanitary sewer system should be adequate for the facility for the foreseeable future, because there are no future plans for expansion of this facility.

The locations of all sanitary sewer lines can be found on prints dated July 18, 1973, Job #706-S-70-1, in Physical Plant Services.

ADDENDUM:

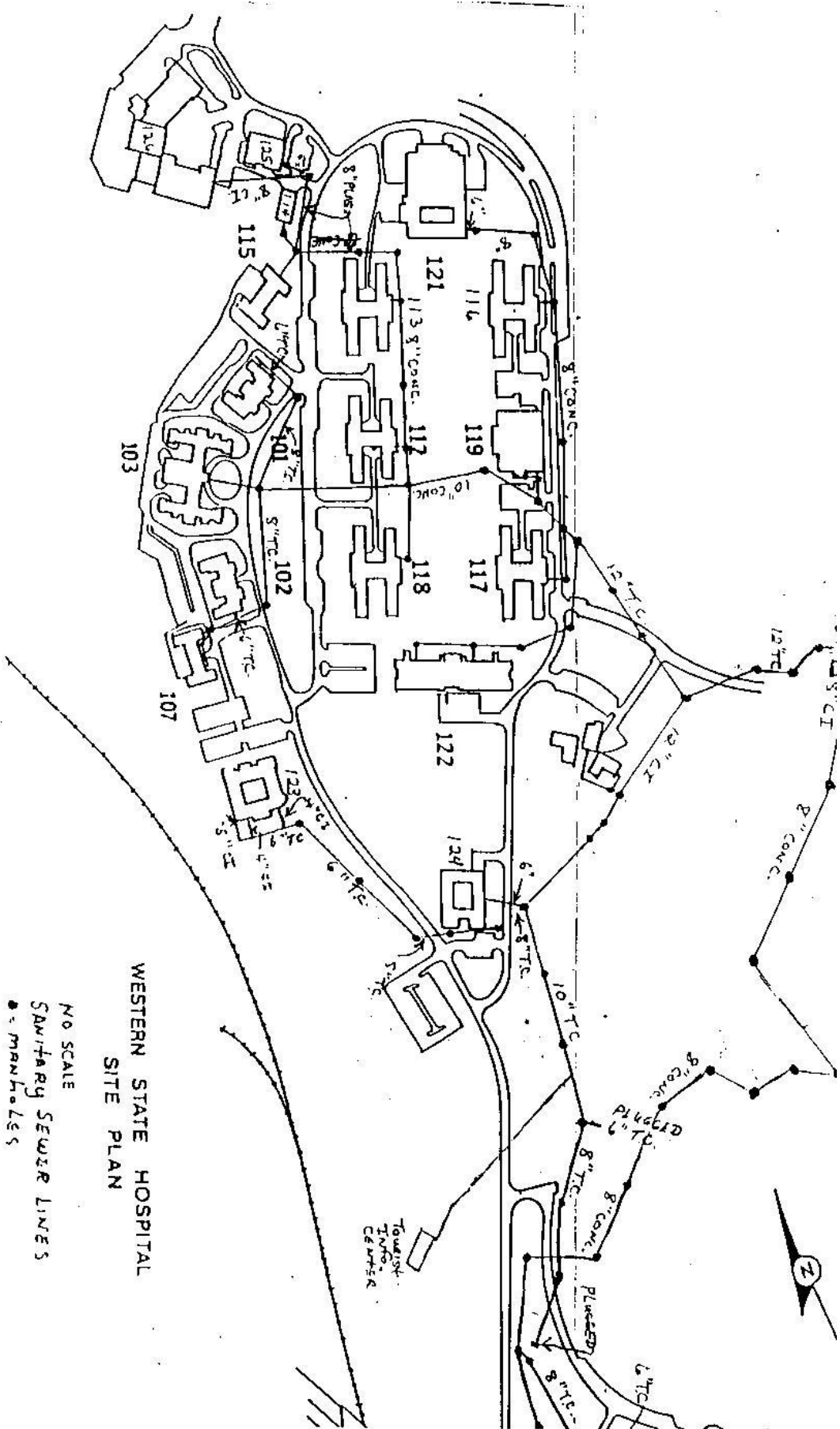
Sewer line replacement project 720/706-10880 was started in the spring of 1989 and completed in 1990.

In this project, the original terracotta and/or concrete sewer lines were replaced with PVC, starting at the Pumping Station and extending to all building connections.

Most new lines follow the path of the original with the major exception being the north-south line, which parallels the sidewalk across from buildings 116, 117 and 119. It was not put under the street but placed on the bank immediately east of the sidewalk.

Cost of this project was approximately \$330,000.

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WESTERN STATE HOSPITAL
SITE PLAN

NO SCALE
SANITARY SEWER LINES
● MANHOLES