

February 19, 2016

**DEPARTMENT OF VETERAN AFFAIRS  
SAN DIEGO HEALTHCARE SYSTEM**

**Sewer Line Replacement Final Narrative**

**Schwab Project #S215.181.00**



**FULL SERVICE ENGINEERING & CONSTRUCTION SUPPORT SERVICES**

## INTRODUCTION

The following narrative describes the intent of the contractual scope of work for this project.

All of the sanitary lines from 5 feet outside Building No. 1, Building No. 11 and the Central Plant (Building No. 2) to the property line, as designated by the VA Medical Center, La Jolla, CA (VAMCSD), are to be replaced. An evaluation of all sanitary sewer lines on the VA Medical Center, La Jolla, CA (VAMCSD) property will be completed through the use of a video survey. As determined from the video survey a forensic test for Asbestos will be performed on any sewer lines which visually appears to be a type a pipe that may contain Asbestos.

The two 5,000 gallon grease interceptors currently serving Building No. 1 are to be removed and replaced with one 10,000 gallon grease interceptor in the same general area.

The existing sewer line which currently discharges into a new sewage ejector in the Basement of Building No. 1 by the Loading Docks, will be disconnected from the sewage ejector and extended to the main to the north of the facility.

## APPLICABLE CODES, REFERENCES AND STANDARDS

Upgrades of the sanitary sewer system will conform to the applicable codes and standards and the requirements of the Authorities Having Jurisdiction. Which including the following:

- VA Plumbing Design Manual
- International Plumbing Code 2012 Edition

## METHODOLOGY ANALYSIS

Discussions with the VA project personnel revealed that there may be some damage to the exterior underground sanitary piping that was installed as part of the original facility construction and that there is also a concern that the pipe material used may be “Transite” or ACP pipe which may contain Asbestos.

The VA project personnel indicated that the sewer piping which is not part of this evaluation are any pipe which will be replaced as part of the new SCI Building Construction, replaced as part of the B-27 Project and the sewer lines not on the facilities property.

It was also stated that one of the 5,000-gallon grease interceptors for Building No. 1, at the northwest corner of the building, has been abandoned and the other 5,000-gallon grease interceptor is leaking and needs replacement.

The intent of this project is to indicate all sanitary piping and associated system components on record drawings which are to be replaced. This will be completed by first reviewing all the available drawings and then contracting with a company which uses video cameras in the sewer lines to determine their locations and depths. From the video information obtain, the condition and the material of construction of the sewer lines can be determined. All piping that may contain Asbestos will be tested by another party. All piping identified as non-Asbestos containing material would not be tested. The materials identified by the video investigating contractor are indicated in the Attachment No. 1.

A forensic test for Asbestos will be performed on any sewer line which has been identified by the video investigating contractor as potentially containing Asbestos. A contractor specializing in forensic asbestos testing will be engaged for such testing.

To aid in the replacement of the sanitary piping, all utilities in the vicinity of the sewer lines will be identified, located and their depths determined. This work will also be performed by the contractor who did the video investigation.

Knowing the piping which contains Asbestos and the locations of all the utility piping, a replacement plan for the complete sewer piping will be developed.

Phasing of the propose work will be discussed with VAMCSD to establish a replacement program to ensure a minimum disruption to medical care facility.

## **EXISTING SEWER SYSTEM**

The sanitary sewer system of the facility has provided approximately 47 years of service and is reaching its life expectancy of 50 to 75 years of normal operation.

There are two grease interceptors in the parking lot located northwest of Building No. 1. There also are two 6-inch grease waste lines leaving Building No. 1 in the same vicinity. Each of these lines originally entered their own grease interceptors, but at some time in the past one of the grease

interceptors became non-operational and both grease waste lines were combined and entered the one operational grease interceptor. There is an 8-inch sanitary line leaving the west side of Building No. 1 which connects to a sewer main running south. The discharge of the grease interceptor enters the 8-inch line sanitary line which continues south and connects to a 12-inch main in front of Building No. 1. Between Buildings No. 1 and No. 11 there are two 8-inch sewer lines leave Building No. 1 and one 8-inch sewer line from Building No. 11 which connect to a 10-inch sewer line heading south. The area between these two buildings is a very confined space. The 10-inch line then continues south and passes under the tunnels between Buildings No. 1 and No. 11. A third 8-inch sewer line from Building No. 1 connects to the line running south, which at this point becomes a 10-inch line. On the south side of the connector between Buildings No. 1 and No. 11 there is a significant number of utilities that will need to be avoided. A 6-inch sewer line from the Central Plant connects to the 10-inch line. This sewer line is to be replaced as part of the new SCI/CLC Building. It is at this point that the sewer line becomes a 12-inch and continues south and connect to a 12-inch sewer main on the south side of the Building No. 1. This section of sewer main is planned to be replaced as part of the new SCI/CLC Building. On the south side of Building No. 1 there are three (2) 8-inch sewer lines leaving the building and all connect to the 12-main in front of the building. This 12-inch main runs west and connects to the city main in La Jolla Drive.

There is a 6-inch sewer line to the east of the Central Plant (Building 2) that runs to the north. A 4-inch lateral and 6-inch lateral from the Central Plant connect to this main. The 6-inch lateral from the Central Plant is very close to the existing cooling towers and the underground water tanks. This same line passes under a wide variety of utilities, the gas meters and the main gas supply to the VA facility. The 4-inch lateral from the Central Plant was determined to be replaced as part of the work required for the new SCI/CLC Building. The 6-inch main continues north to a manhole in a parking lot which is not on the VA property.

On the north side of the facility there a 4-inch sewer main leaving the MRI Building, which continues to the east. This main continues until it connects to the same manhole as the 6-inch main which is to the east of the Central Plant. From this manhole, a 6-inch line continues to the east.

From the video information obtained of the existing sanitary piping and the report provided by the Contractor it was first determined that the existing piping consisted of a mixture of Steel, PVC, concrete and Vitrified Clay pipe.

Based on the findings of the video investigating contractor, it was determined that the following manholes needed to be entered for testing of the sewer lines. Manhole No. 3 needed to be entered and the 12-inch sewer main that runs from the east to the west tested. Manhole No. 2 needed to be entered and the 12-inch sewer main running from the east to the west tested. Manhole No. 12 needed to be entered and the 8-inch lateral from the building to the manhole tested.

Based on the findings of the video survey an investigation by a forensic testing contractor resulted in the following: Access into Manhole No. 3 was not possible. The condition of the ladder was so bad that they could not support the individual who was trying to perform the tests. The east-west sewer line as tested in Manhole No. 2 was determined to contain Asbestos. The lateral into the building was tested and was found to contain Asbestos. Manhole No. 5 was entered and the lateral to the building tested. It was determined that this sewer line contains Asbestos. The north-south sewer line as tested in Manhole No. 12 was determined to contain Asbestos. The requested lateral from the building was not tested however the Contractor stated that the material for the lateral and the material for the north-south sewer line were the same. This would imply that the lateral also contained Asbestos. The Contractor also tested the manholes he entered. None of the manholes tested positive for Asbestos.

Based on the information obtained, Manhole No. 2, No. 5 and No. 12, it would seem that the pipe material originally identified by the videotaping contractor was not correct.

Based on the wide spread nature of the Asbestos containing material for the sewer system it is our professional opinion that all the piping around Building No. 1 contains Asbestos and the piping materials for the piping leaving the Central Plant to the east as well as the north-south sewer piping should be assumed to be Asbestos containing. This would also be true for the sewer piping north of Building No. 1 and to the west of Building No. 1.

## PROPOSED REPLACEMENT

The sanitary sewer piping which needs replacement will be accomplished in a phased manner to minimize the interruption of the Facility operation. The phasing of this work will be coordinated by the Construction Contractor with the Facility.

A new 12-inch sewer line would be installed on the south side of Building No. 1 all the way to the city sewer main in Villa La Jolla Drive. There would be two portions of this line which would not be removed, but rather filled with concrete and abandoned in place.

One such portion of the existing sewer system which would be filled with concrete and abandoned in-place would be that which is running under the front entrance. The removal of this piping will most likely severely damage the front entrance to Building No. 1.

The other portion of the existing sewer system which would be filled with concrete and abandoned in-place would be that which is running passes under the trees by the main entrance. The removal of this line would kill these trees.

The 8-inch laterals leaving the southwest corner of Building No. 1 will be filled with concrete and abandoned in-place. This is being done to limit the amount of new construction being removed to install a new 8-inch lateral.

The 8-inch sewer main on the west side of Building No. 1 will be cleaned, lined with epoxy and reused. To remove and replace this line would entail the removal of some of the portables on the west side of Building No. 1 and a disruption of the emergency road for ambulances. Neither of these were deemed acceptable.

All the piping between Buildings No. 1 and No. 11 will be removed and replaced. This would include the three 8-inch laterals from Building No. 1.

The 12-inch sewer line from Manhole No. 5 and No. 8 will be cleaned, lined with epoxy and reused.

The 6-inch sewer line to the east of the Central Plant (Building 2) that runs to the north will be replaced. The 4-inch lateral would not be replaced since it is part of the SCI/CLC Building. The 6-inch lateral from the Central Plant would be cleaned, lined with epoxy and reused. There is little or no space to install a parallel sewer line that will not potentially endanger the existing cooling

towers and the existing underground tanks. The existing sewer line also runs beneath the existing gas meters which is very congested with gas piping and other utilities.

The existing 4-inch sewer line from the MRI Building to the point where it leaves the property would be removed and replaced with a new 6-inch sewer line. The remaining 4-inch sewer which runs under the parking lot would be capped and abandoned in-place. The new 6-inch line would be extended to the new manhole being installed as part of the work required for the new sewer line on the east side of the Central Plant.

Manholes 5, 8, 9, 10, 11, 13, 14 will be retained. Manholes A, 1, 2, 3, 6, 7, 12, 15 will be removed and new ones installed. .

The above work plan would require the replacement of approximately 2,900 linear feet of 4", 8" and 12" sewer lines and the replacement of 6 manholes.

The existing grease interceptors would be removed and replaced with on 10,000 gallon grease interceptor in the same location. The removal of the existing 5,000 gallon operational grease interceptor is Deductive Alternate No. 1.

The sewer line which entered the sewage ejector by the Loading Docks in Building No. 1 will be routed around the ejector and taken by gravity to the north where it will be connected to the new 6-inch main. This is part of Deductive Alternate No. 2.

Some sections of the existing sewer system are proposed to be lined with epoxy, remain in place and reused. One such section would be from Manhole 13 to Manhole No. 5. This pipe will be lined with epoxy and reused. This existing sewer line between Building No. 1 and Building No. 11 is in a very confined space and the sewer is quite deep (+/- 19' to 20'). The excavation of this area for the removal and replacement of the sewer may severely damage the existing building foundations. It is important to note that the existing sewer line runs under the existing tunnel between the two buildings. To remove the sewer line below the tunnel a new line would need to be jacked and bored under the tunnel. The excavation of this area for the removal and replacement of the sewer may severely damage the existing building foundations. The area to the south of the tunnel is extremely congested and therefore the replacement of the piping would be very difficult.

It is for these reasons that the lining of the sewer line is recommended. This part of Deductive Alternate No. 3.

There is an 8-inch lateral from Building No. 1 under the congested area south of the tunnel between Buildings No. 1 and No. 11 which will be lined with epoxy for the same reasons as discussed above. This part of Deductive Alternate No. 3.

The portion of the sewer main leaving the property would also be filled with concrete and abandoning them in-place. This is part of Deductive Alternate No. 3.

The 6-inch sewer line running south of the existing parking lot, on the north side of the facility, from the point where the existing 4-inch sewer line was disconnected to the connection to Manhole No. 20 is Deductive Alternate No. 4.

It is proposed to line and reuse the 12-inch sewer line from Manhole No. 5 to Manhole No. 8. This is recommended because it is understood that the construction of the new SCI/CLC Building may be postponed. This is Deductive Alternate No. 5.

## IMPLEMENTATION OF WORK

Means and Methods criteria would be applicable for the renovation of the replacement sanitary lines.

All work will be coordinated with the VA Facility for the excavation, pipe removal, pipe installation, backfill and installation the finish surface.

## ESTIMATED COST

Refer to the probable cost of construction estimate.

## RECOMMENDATIONS

It is recommended that Deductive Alternate Nol. 1, No. 2, No. 3, No. 4 and No. 5 be implemented to ensure that the cost of the project is within the allotted funds.