

SPECIFICATION NO. 1950

SPECIFICATION FOR SEWER IN THIRTY-THIRD STREET BETWEEN
STREET AND CRESCENT AVENUE AND IN CRESCENT AVENUE BETWEEN
THIRTY-THIRD STREET AND FORTY-FOURTH STREET, IN THE
CITY OF SAN BERNARDINO, CALIFORNIA.

Approximate estimate of work to be done.

To furnish all labor and materials necessary for and to construct
a vitrified pipe sewer together with manholes, connecting sewer, lamp-
hole and wyes as shown on the plans.

Lineal feet of 8" vitrified pipe sewer including 8"x4" wyes	548.60
Lineal feet of 4" vitrified pipe connecting sewer	70.00
Number of 8" x 4" wyes and 4" connecting sewer	6
Number of manholes	2
Number of lampholes	1

PLAN AND PROFILE

The work herein provided for shall be done in accordance with these
specifications, plans and profiles on file in the office of the City
Engineer of the City of San Bernardino.

EXCAVATION

The subgrade for pipe sewers shall be the exterior bottom of the
pipe and the excavation shall be made a sufficient distance between
the depth indicated by the grade line on the profile and shown on the
grade stakes set by the City Engineer as shown on the plans, to allow
for the placing of the sewer invert.

The width of the trench shall be at least twelve (12) inches more
than the exterior diameter of the pipes.

The material taken from the trench shall be deposited neatly at the
sides in such manner as to obstruct the sides as little as possible, and
a clear space of at least two (2) feet next the trench shall be left
on the side on which the Engineer places stakes. Great care shall be
taken to preserve and not to cover up the stakes set by the Engineer.

All soft and spongy material shall be removed to a depth of one
(1) foot below grade and shall be replaced with clean sand or gravel
which shall then be moistened and tamped until it is solid. Passageway
six (6) feet wide shall be kept open on lines of intersecting
sidewalks and free access must be left to all fire hydrants and water
gates.

SHEATHING

Whenever necessary to prevent caving of the banks or injury to
adjacent pipes, the contractor shall, at his own expense brace and
sheath the trenches sufficiently to overcome the difficulty to the
satisfaction of the City Engineer. If such bracing and sheathing
is left permanently in the trench by order of the City Engineer, it
shall on refilling, be cut off one foot below the finished grade of
the street and shall be paid for by the City but otherwise the con-
tractor will receive no extra compensation for it.

WATER IN TRENCHES

In general all water encountered in trenches must be drained
away through sub-drains or pumped or bailed out, and the trenches
must be kept dry for pipe laying. In no case shall the sewer be
used as a drain for such water. The ends of the sewer pipe must be
kept properly blocked during the time that the sewer pipe is not
being laid. All necessary precautions shall be taken to prevent
entrance of mud, sand or other obstruction materials into the sewer
and on completion of the work, any such materials which may have

entered must be cleared out and the sewer left clean and unobstructed.

REFILLING

After a section of the pipe sewer has been laid and the mortar
used in the joints has sufficiently set, earth free from stones shall
be carefully placed by hand, under and around the pipe, and to the
height of one foot above the top of the sewer.

The remainder of the refilling shall be carefully done.

Scrapers may be used if desired. The refilling shall be thor-
oughly flooded according to the directions of the City Engineer.

Surplus material not required in refilling the trenches shall
be promptly removed by the contractor as the refilling progresses
and disposed of by him, and in case of deficiency of material, it
shall be supplied by the contractor.

All pavement cutting, trench backfilling and pavement replace-
ment shall be done in accordance with Ordinance No. 1079. The ditch
must not be filled until after the wyes are measured.

When existing sewer, water or gas mains are encountered in the
work, all necessary precautions shall be taken to prevent injury to
them and in case of injury, it shall be made good by the contractor
without additional compensation.

SEWER PIPE

All sewer pipe shall be of the first quality, vitrified clay
cover pipe, of the hub and spigot pattern, of standard thickness and

dimensions of hubs.

The dimensions of hubs shall be sufficient to leave an annular
space for cement of at least three-eighths (3/8) inch thickness for
four (4), six (6), eight (8) and ten (10) inch pipe, and one-half
(1/2) inch thickness for larger diameters.

All pipes and specials shall be sound and well burned, with a
clear ring, and smooth on the inside and free from blisters, lumps
or flakes which are thicker than one-eighth (1/8) the normal thick-
ness of the pipe and whose largest diameters are greater than one-
eighth (1/8) of the inner diameter of said pipe, and all pipe having
broken blisters, lumps or flakes of any size shall be rejected unless
the pipe can be so laid as to bring all of these defects on the top
of the sewer.

Pipes having fire-cracks of any kind extending through the thick-
ness shall be rejected. No pipe shall be used, which, designed to be
straight, varies from a straight line more than one-eighth (1/8) inch
per foot of length, nor shall there be any variations between any two
diameters of a pipe greater than one-twenty-fourth (1/24) of the nor-
mal diameter.

No pipe shall be used which has a piece broken from the spigot
and deeper than one (1) inch or longer at any point than one-fourth
(1/4) the diameter of the pipe, nor which has a piece broken from the
bell end if the fracture extends into the body of the pipe, or if
such fracture cannot be placed at the top of the sewer. Any pipe