

cement factory, each containing not less than ninety-four (94) pounds net weight of cement.

SAND AND GRAVEL

The sand shall be clean, sharp river sand, hard and durable, free from mica, oil, or organic matter. The gravel shall be hard and durable, the largest piece of which shall be, in its largest dimensions not greater than two (2) inches.

CONCRETE

The concrete for the floors of manholes and flushtanks shall be composed of one (1) part Portland Cement and two (2) parts sand and four (4) parts screened gravel.

MANHOLES

Manholes shall be constructed in accordance with, and at the locations shown on the plans. Manholes shall have a concrete foundation covering the entire area of the base, said foundation being of the dimensions shown on the detail plan. The base shall be circular in form and shall have an internal diameter of four (4) feet in the clear. This size shall be carried to a point three and one-half (3½) feet below the top of the manhole, and the walls shall then be gradually and uniformly drawn into a circle, six (6) inches below the top of the manhole and having a clear internal diameter of two feet. The walls shall be of brick, eight (8) inches thick and every fourth course shall be laid as headers. The brick shall be thoroughly saturated with water before laying and shall be laid with push joints in full bed or mortar. All joints shall be left full of mortar and inside joints shall be neatly struck. The inside of the

walls and the floor of the manholes shall be plastered with a one-half (½) inch coat of cement mortar composed of one part Portland Cement and two parts screened sand.

Manholes shall be capped with cast iron frames and covers of patterns shown on the plans and weighing not less than three hundred and fifty (350) pounds and set in concrete, as shown on the plan.

The casting shall be sound, free from cracks or flaws, and thoroughly cleaned. Ladder rungs of three-quarter (¾) inch round iron shall be securely bedded in the sidewalls of manhole fifteen (15) inches apart vertically as indicated on the plans, and shall be painted with asphaltum paint.

CONNECTIONS

The contractor shall not allow any drains to be connected with the sewer before completion and acceptance of the same.

The contractor shall remove all rubbish or surplus material occasioned by the work, from the work after its completion and before he makes application for the acceptance of the work.

The words "connecting sewers" as herein used shall mean the connecting sewers extending from the main sewer to be constructed as herein provided to the adjacent curb line as shown on the plans and shall be constructed of four inch clay pipe and shall be connected with the main sewer in the street with eight inch by four inch wyes.

FINISH ON STREET

Extra earth derived from the trenches in streets shall be carefully and neatly graded over the trenches and the streets left in a

smooth and finished condition. Extra earth at manholes shall be removed from the streets by the contractor. During the refilling the sheeting shall be carefully withdrawn in such manner as to prevent raving. All openings caused by the removal of such sheeting shall be filled with good earth. In extra streets the surface shall be left at the original grade of the street.

GENERAL REQUIREMENTS

All work shall be executed in a thorough and workmanlike manner. The contractor is required to preserve all monuments and all stakes set for lines, levels or measurements for work in their proper place until authorized to remove them by the City Engineer, and any expense in replacing said monuments or stakes which the contractor or his subordinates may have failed to preserve, shall be borne by the contractor.

LABOR: The contractor shall not employ any laborer, workman or mechanic who is not a qualified elector of the County of San Bernardino, according to Ordinance No. 1446 of the City of San Bernardino, California. The contractor employing any laborer, workman or mechanic who is not a qualified elector of the County of San Bernardino, California, shall be subject to the penalties as set forth in said Ordinance No. 1446. The contractor shall abide by the City Charter, also Resolution No. 789, and all other ordinances or resolutions pertaining to labor.

INSPECTION: The contractor shall prosecute work only in the presence of the City Engineer or an Inspector appointed by the City Engineer in event the Council shall direct that the work be done

to the satisfaction of the Engineer, and any work done in the absence of the Engineer or Inspector shall be subject to rejection. The contractor shall furnish reasonable facilities for obtaining such information at all times respecting the progress and nature of the work and the character of the materials.

No work which may be defective in its construction or deficient in any of the requirements of these specifications will be considered as accepted in consequence of the failure of any officer of the City or Inspector connected with the work to point out said defects or deficiency during the construction, and the contractor shall be required to correct any imperfect work before the final acceptance of the work.

Any material which fails to comply with these specifications and is condemned for use on the work shall be immediately removed from the location of the work by the contractor and shall not again be brought on to the site of the work.

The contractor assumes all risk of variance in any computation of statement of amounts or quantities necessary to complete the work required by the contract and agrees to furnish all necessary labor and material and to fully complete said work in accordance with the plans and specifications.

Bidders must examine and judge for themselves as to the location of the proposed work, the nature of the excavation to be made and the work to be done.

The contractor shall give 24 hours notice in writing when he shall require the services of the City Engineer for laying out any

portion of the work.

The contractor shall be required to remove at his own expense all obstructions, such as trees, stones, rubbish, etc. that may be in the way of making said improvements.

No more than one cross street shall be closed at any one time.

The contractor shall be required to observe all ordinances of the City of San Bernardino in relation to the obstruction of streets, keeping open passageways, and protecting the same by erecting a fence or proper barrier along the line of the work and across the ends of the same in order to guard the public effectively from danger during the progress of the work, and he shall post all proper notices and signals to the public on the street while the work is in progress.

A red light must be maintained at night at each end of the barrier from sunset until sunrise.

In case it should be necessary to move the property of any owner of a public utility or franchise, such owner will, upon proper application by the contractor, be notified by the City Engineer to move such property within a specified reasonable time, and the contractor shall not interfere with said property until after the expiration of the time specified.

The right is reserved to the City and owners of public utilities and franchises to enter upon the street for the purpose of making repairs or changes that may be necessary by the work.

Before the work will be considered completed in accordance with the specifications and before the contractor shall make application for the acceptance of the work, the entire area of the street between

the property lines shall be placed in a neat and orderly condition, conforming to the plans and specifications in all respects.

All surplus material and rubbish occasioned by the work shall be removed from the work.

The contractor shall notify the City Engineer when he desires a final inspection of the work, when the latter will, as soon as possible, make the necessary examination, and if the work is found in compliance with the above specifications, the City Engineer will furnish the contractor with a certificate to that effect.

Whenever the word "Contractor" is used in these specifications, it refers to the parties of the second part in the agreement for the construction of the work herein specified.

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Office of the City Engineer.

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