which betrays the use of improper or insufficient meterials or mothods in its manufacture shall be rejected.

PIPF LATING

In laying the pipe each piece sust be set exectly to grade by seasuring from the invert to a tightly stretched cord set parallel to the grade line of the sever, according to stakes given by the City

In making each joint, care must be taken so as to make the inverts match exactly, giving a true, smooth flow line. The joints shall be tightly pecked full and levelled off with a one (1) to tue (2) Portland coment and sand morter. The bell shall them be immedistely filled up so as to hold the rement in place. Special care must be taken in forming with the joints on the under side of the pipe. The pipe shall be laid with the socket and up hill.

MORTAR

All mortar for brick work shall be composed of one (1) para Portland Coment to three ()) parts sand. All morter for pipe joints shall be ecoposed of one (1) part Portland Coment to two (2) parts said. All sand shall be clean, sharp, river sand, free from mice, oil, clay, silt, or organic matter. It shall be thoroughly missed be-

The brick shall be hard, sell burned, equal to a No. 2 paving brick. All sofe brick will be rejected.

to prestor them the average tensile strength in seven (7) days.

The City Engineer shall have the authority to require any lot of coment to be held in storate until seven (7) days test can be completed where the cement is of a brand not previously tested by him or where previous samples of the some brand tested by him have fallen below the requirements herein set forth. The City Engineer shall have the authority to require the reconstruction of the work in which connect has been used which subsequent test show to be not in conformity with requirements.

Commont shall be received on the job in sacks filled at the coment factory, each containing not less than ninety-four (94) pounds not weight of comest.

SAID IND CRAYER.

The sand shall be clean, sharp river sand, hard and durable, free from mice, 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.

COMPRESE

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

Manholes shall be constructed in accordance with, and at the locations them on the plant, Manholes shall have a concrete found-

All coment used shall be Pertland Coment and meet confers to the following requirements and be winiset to the following test, which will be open at all times to the contractor.

- (a) FIREMENS. The residue on a 200 mesh screen shall not estcood twenty-two (22) per cont by weight.
- (b) SOUNDHESS. A pat of coment paste about three (3) inches in diameter and one-half (1/2) tuch in thickness at the center, tapering to a thin edge, stored in moist air for tweaty-four (24) hours and then kept in an atmosphere of steem of minoty-eight (98) to one hundred (100) degrees centigrade for five (5) hours, shall show no signs of distortion, creeking, checking or disintergration.
- (c) TIME OF SETTING. The coment shall not develop initial set in less than forty-five (45) minutes when tested with a Vicet meedle, nor in less than sixty (60) minutes when tested with a Gilmore meedle. Final set shall be attained within ten (10) hours.
- (d) TENSILE STRENGTH. The average tensile strength in pounds per square inch of not less than three (3) merter briquettes, composed of one (1) part by weight of coment and three (3) parts by weight of sand, shall not be less than the fellowing: Storage of Briquettes Pounds Per Sq. In.

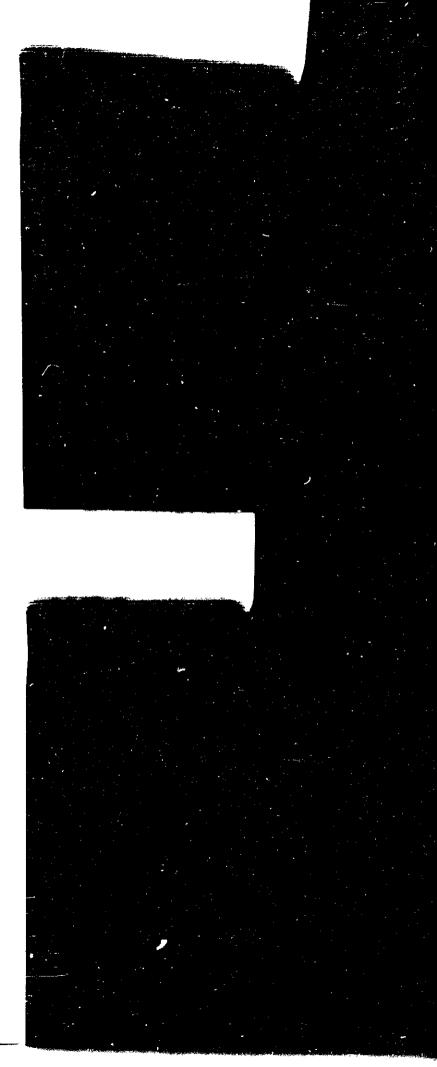
7 Days 1 day in moist air, 6 days in water 28 Days 1 day in moist air, 27 days in water

The average tensile strength in twenty-eight (28) days shall

ation sovering 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 (3 1/2) feet below the top of the surfole, 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 (2) 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 morter. All joints shall be left full of sorter and inside joints shall be neatly struck. The inside of the walls and the floor of the manholes shall be plastered with a onehelf (1/2) inch coat of cement mortar composed of one (1) part Portland Coment and two (2) 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 ()50) pounds and set in concrete, as shown on the plan.

The cesting shall be sound, free from cracks or flaws, and thoroughly cleaned. Ladder rungs of three-quarter (3/4) 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 sopheltum paint.



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