

feet further seaward from the bulkhead and parallel to it. They were set six feet in the sand with a six-inch space between each; in back of this was placed a brush mattress two feet high and eight feet wide, fastened securely to the piling and firmly anchored. At intervals of four hundred feet crib jetties extending three hundred feet seaward, while in other places sand bags were piled, and at the mouth of the inlet two large coal barges were filled with rock and sunk obliquely across the current.

The object of all this was to turn the current off shore, make a gradually sloping beach, and to protect the bulkhead, behind which reposed our jealously guarded sand. By the addition of two extra rows of piling, eight feet centre to centre, and ten feet apart, parallel and adjacent to the bulkhead on the land side, and with three by eight inch stringers and two by ten inch by twenty feet plank, a broadwalk was constructed along the entire ocean front for the entire length of the property.

This construction necessitated a heavier plant, floating pile-driver and jet scows and tug, worked constantly at low water, for, owing to the current, nothing could be done at high tide.

On the completion of the dredging and bulkheading we were now ready to proceed with the other improvements, and three corps were placed in the field—one to lay out the streets and give grades and levels; the second to lay out the sewer system and water mains and to give locations for telephone ducts and railroad; while the third had the location of building and lot lines, sidewalks and grades.

It may be well to mention at this point that on the two main streets, instead of having one large sewer in the centre of the streets as is customary, two smaller sizes were laid under each sidewalk; while between the sidewalk line and the property line in a strip eight feet wide that had been reserved for this purpose were located the water and gas mains, telephone and electric conduits. The reason of this change was that it was proposed to lay a vitrified block pavement, one of the features to be permanency, which could not be had if every public service corporation that desired could rip up the pavement and replace it in any half-hearted way that they chose; and from investigations that had been made it was found that if success were attained in getting the pavement down at all, it would not be in such a way that it could be tampered with.

To serve the buildings a system of terra cotta pipe sewers were built. The trench for the entire distance, sixteen miles, was through quicksand, known locally as "boiling sand." This was both expensive and difficult work, as it was difficult to keep the

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