

long, and one uncovered or lightorage pier, 60 ft. wide and of the same length. The three slips between these four piers are 200 and 250 ft. wide, and have been dredged to a depth of 35 ft. at low water. An additional depth of 5 ft. in one of the slips is under advisement.

The three covered piers are identical in construction and dimensions, except for a slight increase in length from north to south to conform to the pier head line; the three pier sheds, however, are of the same length. The piers are founded on untreated wooden piles, from 40 to 65 ft. long, driven by a water jet in the sand and gravel formation.

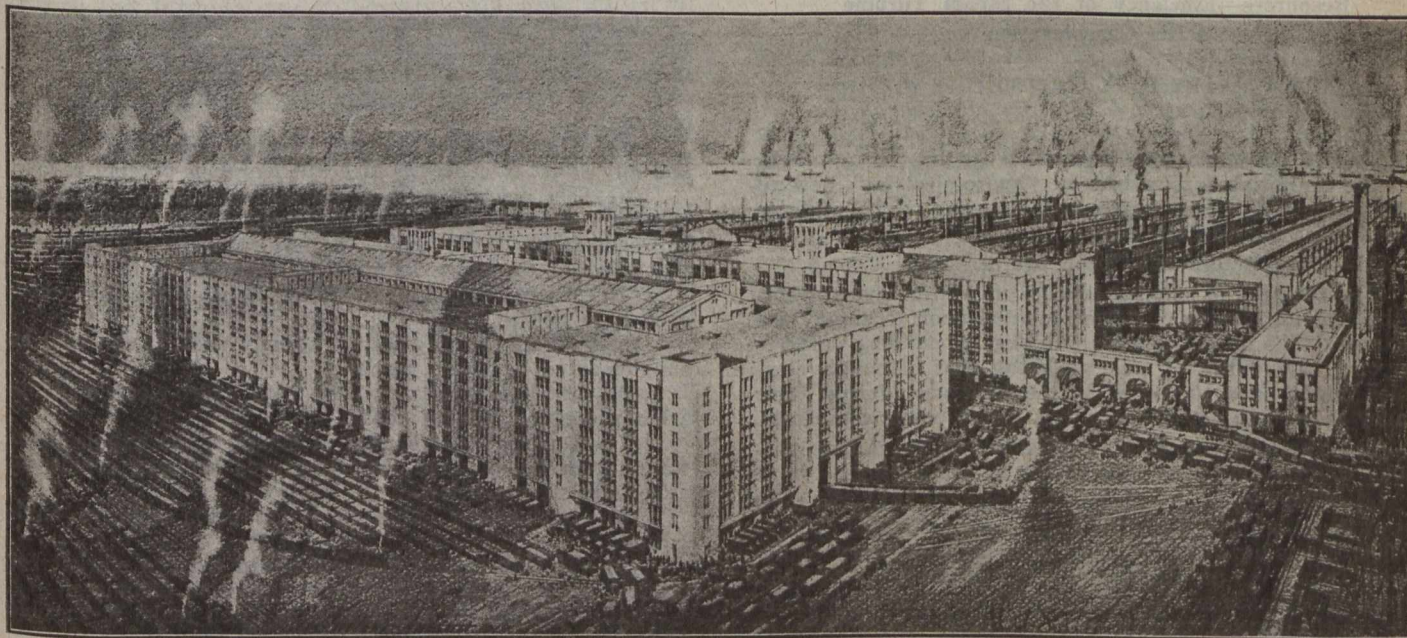
Bents are 10 ft. from centre to centre, and, in general, the piles are 5 ft. from centre to centre in the bents, except under the railroad tracks and the shed column footings, where they are closer. The piles are cut off above high water, and are capped by 12 by 12-in. wooden timbers which support a 10½-in. reinforced concrete deck.

Two standard gauge railroad tracks occupy the centre of the pier for its full length, and under these the slab is increased to 15 ins. in depth. Pile spacing and slabs are de-

A concrete wall, of gravity section, is built in the front of the platform, with its top 10½ ft. above M.L.W. To provide easy access to the piers from Warehouse "A," a 4-span steel truss bridge, with a reinforced concrete deck, is to be built from each pier to the warehouse. The floor of the bridge is at the elevation of the second deck of the pier and enters the warehouse at the third-floor level. The roof and sides of the bridge housing are of reinforced concrete, with glazed sash—at intervals—along the sides.

The "farm" area, between Warehouse "A" and the bulkhead, as well as certain other areas in and around the buildings, will be paved with bitulithic pavement laid on a concrete sub-base. The first deck of the piers and certain trucking areas in the buildings are to be paved with asphalt blocks with sand-filled joints.

The whole project has been under the sole authority of the Construction Division of the United States Army in all matters pertaining to the design, engineering and letting of contracts and the supervision of building operations. The designs were made and the work carried out by an architect



THIS U.S. ARMY SUPPLY BASE HAS ABOUT 4,000,000 SQ. FT. FLOOR AREA IN ITS TWO MAIN BUILDINGS, 20 MILES OF RAILWAY TRACKS AND 4 BIG PIERS—COST TO DATE, \$32,500,000

signed to carry a 500-lb. live load on the first deck and a 300-lb. load on the second deck of the pier shed.

The shed columns are founded on concrete footings supported on pile clusters, cut off at half tide and capped with 12-in. timbers on which a 4-in. plank platform is laid to receive the concrete. These footings are 20 ft. from centre to centre, longitudinally, and approximately 46 ft. transversely, the outside line of footings being about 5 ft. from the edge of the pier.

The pier shed consists of a double-deck steel structure, with a timber roof covered with 5-ply felt and slag roofing. The second deck, which is 28 ft. above the first, is a beam and slab construction of reinforced concrete with a granolithic finish troweled smooth, supported on brackets riveted to the main transverse trusses. A steel cargo beam and walkway is provided for whatever freight-handling devices may be erected subsequently, and provision is made for twelve large freight handling-elevators, of which six are to be put in at this time. Double-leaf, vertical-lift, folding doors are provided for the sixty-one openings between columns on each side of the pier, on both the upper and lower decks.

The bulkhead, which runs along the whole water front length of the property, is of the usual platform type founded on wooden piles cut off at low water and capped with 12 by 12-in. timbers. The pile bents are 4 ft. from centre to centre, and the piles are 4 ft. apart in the bent. The platform is 24 ft. wide.

and general contractor whose work was subject in all respects to the approval of the Constructing Quartermaster.

On April 6th, 1918, the general requirements for the Base were laid down by Gen. George W. Goethals, Director of Storage and Traffic; on April 27th, the Secretary of War authorized construction, and on the same date H. S. Crocker, Lieutenant-Colonel, Quartermaster Corps, was ordered to proceed to the site to take charge of the construction as Constructing Quartermaster. On May 6th, the initial allotment of \$32,500,000 was made for the cost of the project, including the site. There have been no subsequent allotments.

The Constructing Quartermaster formally took over the site on May 17th, 1918. Work, however, had begun on May 15th, by starting a steam shovel on the excavation for Warehouse "B." The driving of Raymond concrete piles was begun under Warehouse "B," north end, on May 18th, and finished on July 8th, 5,829 piles having been driven in 43 working days.

The concreting of the footings was begun June 1st; the first concrete in the superstructure was poured on July 3rd, and all buildings were under roof on September 26th, within which time 183,173 cu. yds. of concrete were poured in the two warehouses. This corresponds to an average day's run of 1,926 cu. yds., with a maximum of 4,500 cu. yds., both per 10-hour day. The dredging in the slips was begun on June 22nd, and has progressed at the rate of about 10,000 cu. yds. per 24-hour day. Pile driving on the piers was begun on July 25th. The following table shows the quantities of the