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MOUNT HOPE



GENERAL STOREHOUSE AND BRIDGE



SECTION OF INTERIOR STOREHOUSE



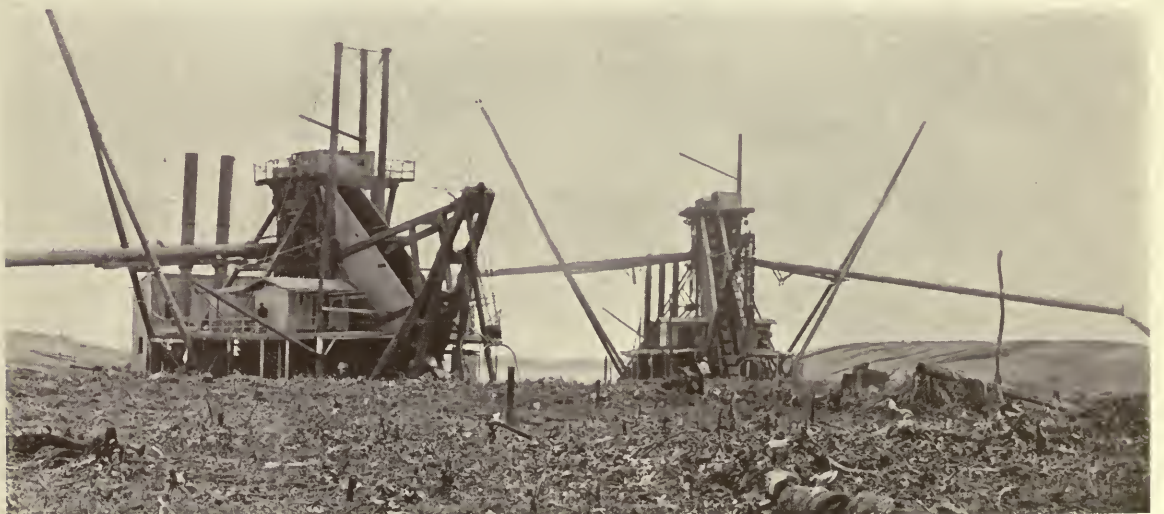
SECTION OF STORAGE YARD



PRINTING PLANT

Supplies are shipped from the general storehouse at this point to the various subdivisions of the canal work for which they are purchased, or they are placed in storehouses along the line for issue when required. The Government Printing Plant is situated here, and in addition to the ordinary work prints the "Canal Record."

:-: MINDI :-:



A group of old photographs showing phases of dredging in the French canal at Mindi during the days of the first French Company. The suction dredges, with the carrying pipes, were effective in excavating, but did not carry the spoil far enough.



Old village of Gatun in 1907, showing the beginning of construction of Gatun dam. To the left is the first dam across the Chagres River. The Spillway is on the other side of the houses in the distance. Old Gatun railroad station at extreme left. View from the lock-site.



Gatun of the present day in comparison. All the buildings were removed from the old town-site and rebuilt by the I. C. C. on the new site. The twin locks in three flights are shown to the left.

∴ GATUN ∴



Above is shown the first camp at Gatun. As quickly as possible quarters were erected for both married and single employees. When suitable quarters were extensively erected by the I. C. C., not only was the idea of creating home life on the Zone accomplished, but the health of employees was improved.

:-: GATUN :-:



DIVISION ENGINEER'S OFFICE



RAILWAY STATION



FROM DIVISION ENGINEER'S OFFICE



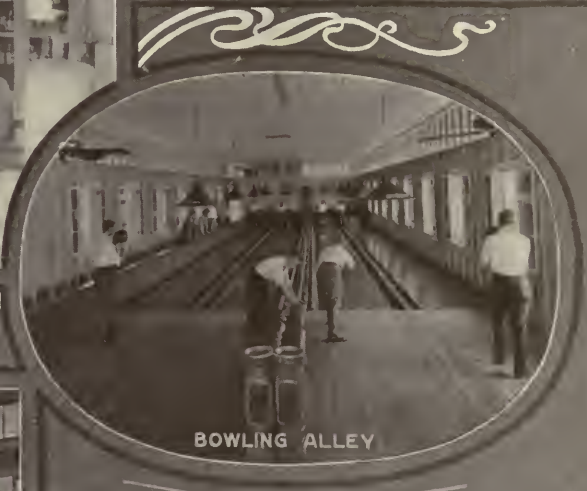
HIGH SCHOOL



POLICE STATION

Gatun is the engineering headquarters for the Atlantic Division. This Division embraces the engineering construction from deep water in the Caribbean Sea to include the Gatun locks and dam. The Gatun concrete railway station was the first permanent station built on the line.

:-: GATUN :-:



The Commission Clubhouses, built by the I. C. C., of which there are seven on the Zone, under the management of the Y. M. C. A., furnish attractive places for the men to congregate. The social work consists of entertainments brought from the States, as well as local dramatic, musical, minstrel and vaudeville productions.

:-: GATUN :-:



The dam is constructed by forming two toes, one on each side of the structure, and depositing spoil, mostly rock, obtained from Culebra, Gatun lock-site and Mindi. The area between the toes thus formed is filled with material pumped in by suction dredges, making an impervious center. Gatun Lake is formed by the big dam holding back the waters of the Chagres and will have an ultimate elevation of 85 feet above sea level.



∴ GATUN ∴



EXPERIMENTAL  
SPILLWAY



SPILLWAY  
GATES



SPILLWAY CHANNEL

Fluctuations in Gatun Lake due to floods are to be controlled by regulating works constructed in Spillway Hill. The Spillway dam is of concrete. Gates will close the openings and complete this portion of the dam. The surplus water will pass through the spillway into the old bed of the Chagres.

:-: GATUN :-:



PIPE LINE SUCTION DREDGE



PRESIDENT TAFT AT THE LOCKS



CLAM SHELL BUCKET AT WORK



LOCK CULVERT FORMS



SAND AND STONE UNLOADING CABLEWAYS



CONCRETE MIXING PLANT

There are eight concrete mixers of the cube type, all mounted in one building on the west side of the lock site. They are arranged so that four dump in one direction, and four directly opposite, thus permitting the use of two tracks under the mixers. For the locks, dams and structures of the entire canal, 4,500,000 barrels of cement will be used.

:-: GATUN :-:



UPPER LOCK SITE 1906



UPPER LOCK SITE 1908



EXCAVATING FOR LOWER LOCK

Photographs showing the various stages of lock excavation since 1906. Much of the material removed was rock, and required blasting to enable the shovels to handle it expeditiously. The largest part of the drilling has been done by churn or well drills, though tripod drills have been used.

:-: GATUN :-:

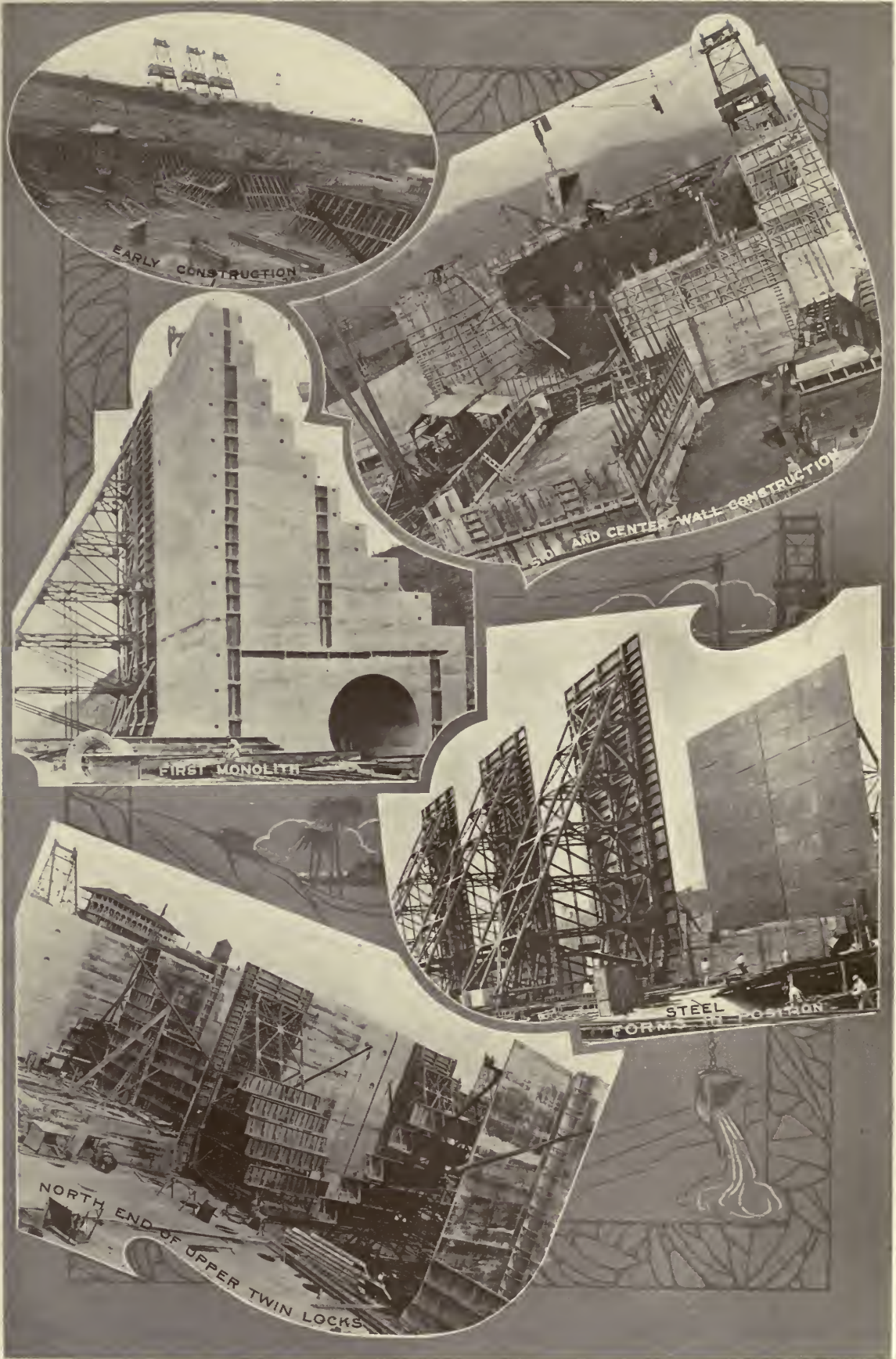


Installing concrete floor and lateral culverts. The circular holes in the floor are to admit the water to all the locks. The floor varies in thickness from 13 to 20 feet of solid concrete.



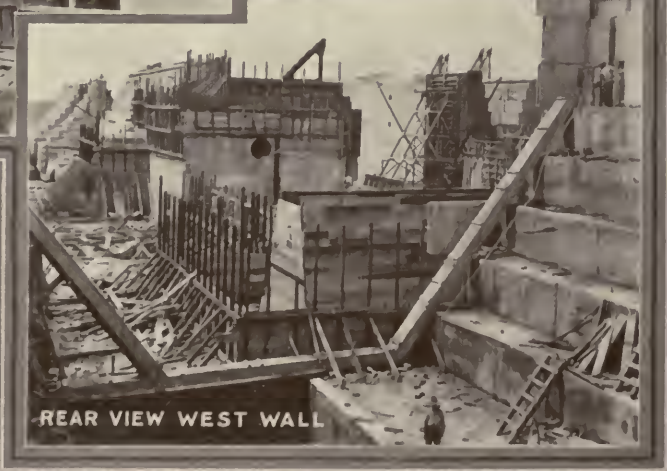
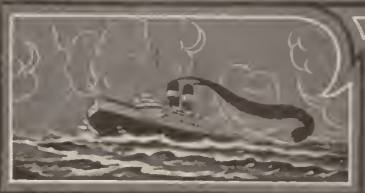
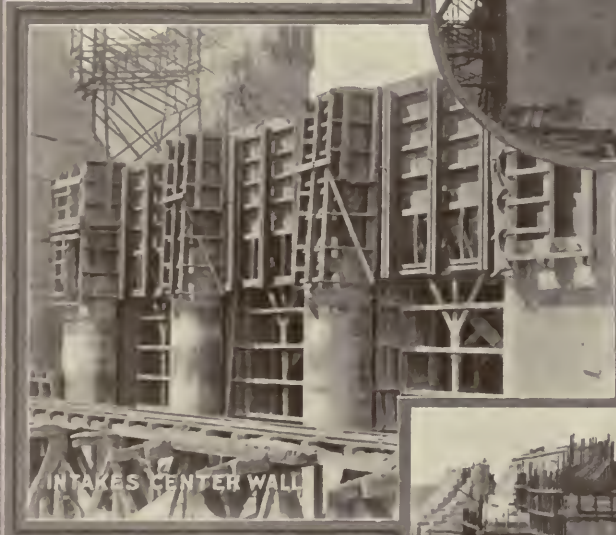
The locks are in pairs, so that if any lock is out of service navigation will not be interrupted. One also may be used for the ascent and the other for descent of vessels. The locks are 110 feet wide and have usable lengths of 1,000 feet.

∴ GATUN ∴



Showing early stages of construction of the walls of the upper locks. The timber forms show where concrete was laid in sections. The buckets of concrete are conveyed by aerial cableways, which place their loads where required. The steel forms are used for the massive portions of the walls.

:-: GATUN :-:



The transverse culvert, shown in the center wall, is so large that a full-sized train, locomotive and all, could go through. The side walls also have culverts of the same size, which feed in both directions through laterals controlled by valves designed to operate against a head from either direction.

∴ GATUN ∴



COMPLETED SILLS FOR GATES



MITRE SILLS FOR INTERMEDIATE GATES



UPPER AND MIDDLE LOCKS AT INTERSECTION



MIDDLE LOCK SHOWING CONCRETE CARRYING TRESTLE



LOWER END MIDDLE LOCK



LOOKING SOUTH FROM LOWER END MIDDLE LOCK

The gates for the locks are built of steel girders, covered with steel plate, forming water-tight compartments. Each leaf, of which there are two in a gate, is 7 feet thick, 65 feet long, and range in height from 47 feet to 82 feet. The material for the gates is lowered by a locomotive crane, operating on a bridge over the lock chamber.