

stream. The former headgates were of timber, with a pile and timber bulkhead extending 350 feet above and 1,400 feet below the structure. The Bow River at this point has a width of stream bed of about 500 feet and is maintained in its channel by high bluffs on the north, the south bank being low and subject to flooding at periods of extreme high water. The completed works consist of the concrete headgates for the canal, waterway for the weir structure, and a stop-log section across the river terminating in a dyke running up-stream along the south bank for a distance of 1,200 ft.

The headgates structure was completed during the winter of 1912-13 and consists of four sluiceways approxi-

The dam consists of a structure approximately 707 feet long face to face of abutments, having a stop-log section of heavy concrete piers alternating with sluice openings with a length of 555 feet, and a moveable steel sector dam 152 feet long, together with a dyke and breaching section along the south bank of the river to a point well above any possible amplitude limit. The stop-log section consists of 23 openings 20 ft. wide, founded on a heavy scour mattress with sheet pile cut-off wall, and carrying a reinforced concrete deck upon which travels an electric winch for handling the stop-logs. The trolley winch travels on 50-lb. steel rails on the deck, with three electric motors for performing its functions of traction,

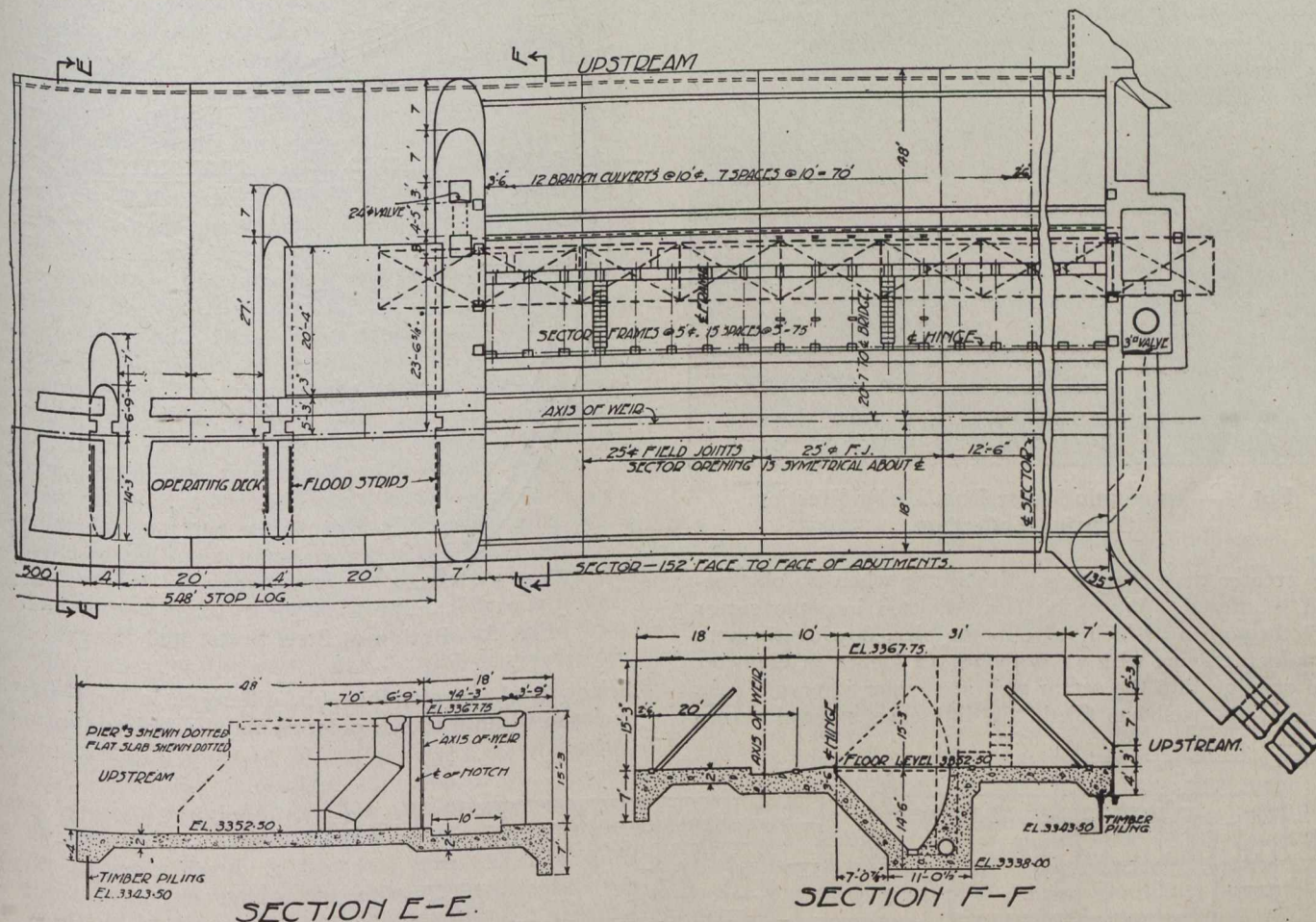


Fig. 3.—Layout Plan and Sections of Hydraulically Operated Sector Intake Weir.

mate 20 ft. 6 in. in width, having balanced steel Stoney gates operated by individual electric motors. A heavy scour mattress, 3 ft. 6 in. thick, acts as the foundation for the gates structure, and there are wing walls of the gravity type, running well back into the embankment up-stream and connecting with the pier for the weir down-stream. At the toe of the mattress there is a curtain of wooden sheet piling, and beneath the gates there is a core wall of heavy steel sheet piling. A reinforced concrete slab 10 ft. 6 in. wide and 15 ft. above the gate sills provides a crossing, the operating deck being 8 ft. 3 in. higher, and but 8 ft. 8½ in. wide. The gates consist of a skin-plate ¾ in. thick, supported by 9-in. at 25-lb. I-beams, the skin-plate being 19 ft. 3 in. wide by 22 ft. 9 in. high. The gates have 5-inch diameter cast steel rollers operating on a 7-in. I-beam guide track and are lifted vertically by 5 h.p. motors operating through gear and pinion.

traversing, and raising or lowering the stop-logs. The stop-logs are 12-in. by 18-in. timbers, 21 ft. 11 in. long, eleven logs to each section, with cast iron slots in each end for the needles of the winch.

At the north end of the stop-log section is a long pier, extending 47 ft. up-stream from the stop-log dam, forming the south abutment for the weir and containing the inlet valve for the sector well; the adjacent pier extends 34 ft. up-stream, all the other piers extending but 14 ft. up-stream. The north abutment of the weir, adjoining the headgates structure, contains the discharge well. All the concrete construction is heavy mass work, all walls and piers being of the gravity type. The steel sector dam has a total length of 152 ft. and consists of a trussed steel frame conforming to the sector of a circle having a radius of 15 ft. 5 in., with a central angle of 45 deg. The curved surface and top deck have riveted ¾-in. watertight skin-plates. The steel dam consists of 50