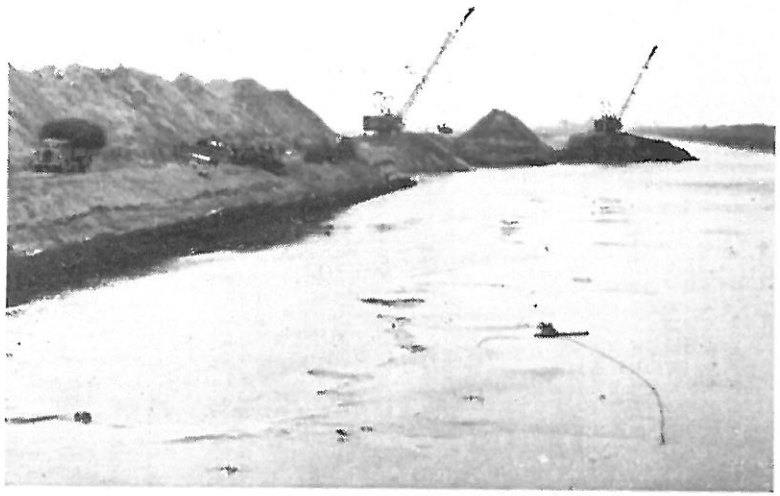


SURFLEET TO FULNEY. DREDGING COMMENCED.

SURFLEET TO FULNEY. TRAINING GROYNES IN PLACE.

Three sets of pointing doors were installed, two pointing downstream to permit the passage of boats through the lock and one set pointing upstream to maintain fresh water at a predetermined level.

The main contract was carried out by W. A. Dawson Ltd., Luton, and the sub contractors for the lock gates were Ransomes & Rapier Ltd., Ipswich.

5a. LOCK'S MILL TO CROWLAND BRIDGE.

Early in 1951 tenders were obtained for this work which consisted of 1,500,000 cu. yds. of excavation for forming a channel with a bed width of 100 ft., and constructing a new wash cradge bank and soke dyke for a distance of 8 miles and reinforcing Deeping High Bank. The bulk excavation was carried out by G. Wimpey & Co. The bank formation, trimming and soke dykes were carried out by direct labour with hired plant, and this has shown a large saving in cost.

In 1951 the work was virtually completed to Four Mile Bar, a distance of approximately 4 miles, and the remainder to Crowland Bridge was completed in 1952. A new footbridge was constructed at Four Mile Bar.

Crowland Bridge was reconstructed in reinforced concrete on piled foundations to the requirements of the Holland County Council with 5 spans of 33 ft. respectively. The deck slab was constructed in precast prestressed concrete beames. The contract was carried out by W. & C. French Ltd.

Two large weirs 100 ft. long were constructed by direct labour at Four Mile Bar and adjacent to Crowland Bridge in the Wash Counter bank to discharge flood water on to the Crowland and Cowbit Washes when conditions in the river are such that reservoir capacity is required to avoid danger to the main barrier banks.

The weirs consist of 8 bays 12 ft. wide with timber stop logs which are removable by chains fixed to each timber. Access is gained by a footbridge in each case.

5b. CROWLAND BRIDGE TO FOLLY RIVER.

This section of the scheme was carried out in 1953 and was a continuation of the previous section. It consisted of 463,000 cu. yds. of excavation for forming the

CROWLAND BRIDGE TO FOLLY RIVER. SHOWING OLD AND NEW CHANNELS.

CROWLAND BRIDGE TO FOLLY RIVER. WIDENING NEARING COMPLETION.

The final line of the channel involved the construction of seven road bridges, a railway bridge, flood banks, soke dykes and a syphon under the new channel to evacuate the water from the severed portion of the South Holland Drainage Board's area.

The land required for the cut consisted mainly of agricultural land. Although it all lay within a mile of the centre of Spalding, no residential properties were demolished, and all land purchase was carried out by private negotiation without compulsory powers being required in any instance.

The channel was constructed through sub-soil consisting of silt at the upstream and downstream ends with a length of clay in the Cunninghams Drove Area. This latter caused considerable engineering difficulties, and the batters and bank formations were determined after scientific investigations of the sub-soil. It should be noted that in the clay area the slope of the batters is 3 : 1, whereas in the silt areas the slopes are 2 : 1. The channel dimensions consist of a bed width of 90 ft. rising from a level of -2.0 O.D.N. at Marsh Road to 0.0 O.D.N. at Cowbit Road. The berm level is 12.0 O.D.N. throughout and the bank levels are 20.0 O.D.N. to give adequate freeboard for the worst tidal or flood conditions that could prevail.

Extensive faggoting and protection works have been carried out by the Board's workmen in all places where scour might occur, and all the batters have been turfed or grass seeded, and a good vegetation growth has been established.

The main contract for the excavation of the channel was carried out by Geo. Wimpey & Co. Ltd. and consisted of 500,000 cu. yds. approx. of excavation and formation of flood banks. The dredging under the bridges was carried out on the completion of the constructional works.

THE BRIDGES OVER THE CORONATION CHANNEL.

Cowbit Road Bridge and Sluices.

The excavations for the foundations of this bridge were carried down to a level of -3.50 O.D.N. in running

SURFLEET TO FULNEY. ORIGINAL CHANNEL.

SURFLEET TO FULNEY. WIDENING AND PROTECTION.

The excavations for foundations at this site were carried down to -7.00 O.D.N. in running silt with a ring main of dewatering plant.

Sheet steel cut off piles enclose the whole site, and the floor of sluiceways and aprons is of mass concrete 5 ft. thick.

Walls and abutments are of mass concrete gravity type and are founded on 308 No. 14" x 14" R.C. Piles 35 ft. long and 144 No. 25 ft. long.

The three span bridge deck and sluice platform are of reinforced concrete beam and slab construction.

The upstream gates are similar to those at Cowbit Road, three vertical lift gates 30 ft. wide by 19 ft. deep. The electrical equipment for operating the gates is housed in the control cabin erected alongside the sluice walls.

The cycloidal gates, the largest of this type manufactured for use in Great Britain, are 30 ft. wide and 18 ft. deep, and prevent the access of tidal waters into the new channel.

Approach ramps to the bridge deck were again necessary and the site incorporates a new bungalow for the housing of the sluice operator.

Main Contractors — W. & C. French Ltd.

Sluice gates and erection — Ransomes & Rapier Ltd.

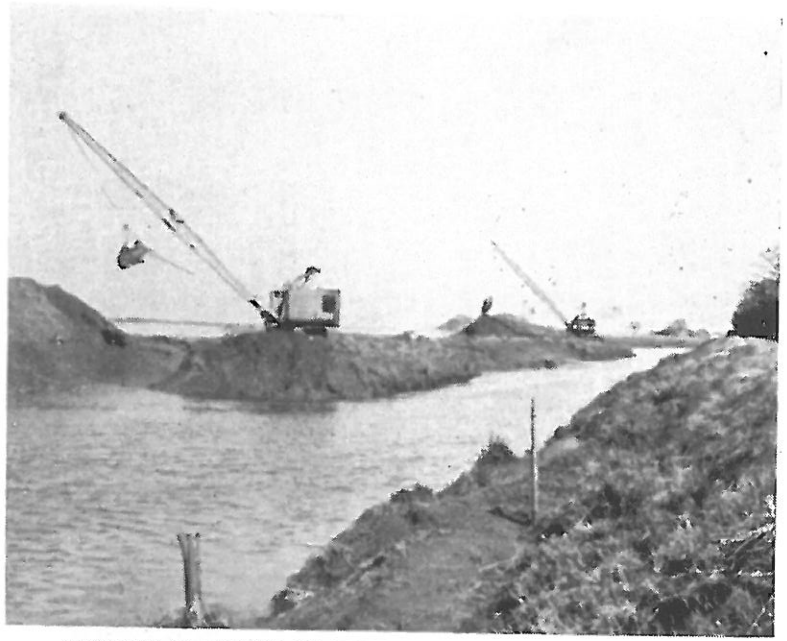
The Coronation Channel was officially opened by the Minister of Agriculture and Fisheries the Rt. Hon. Sir Thomas Dugdale, Bt., M.P., on 24th September, 1953.

4. TIDAL LOCK AT PIGEON END.

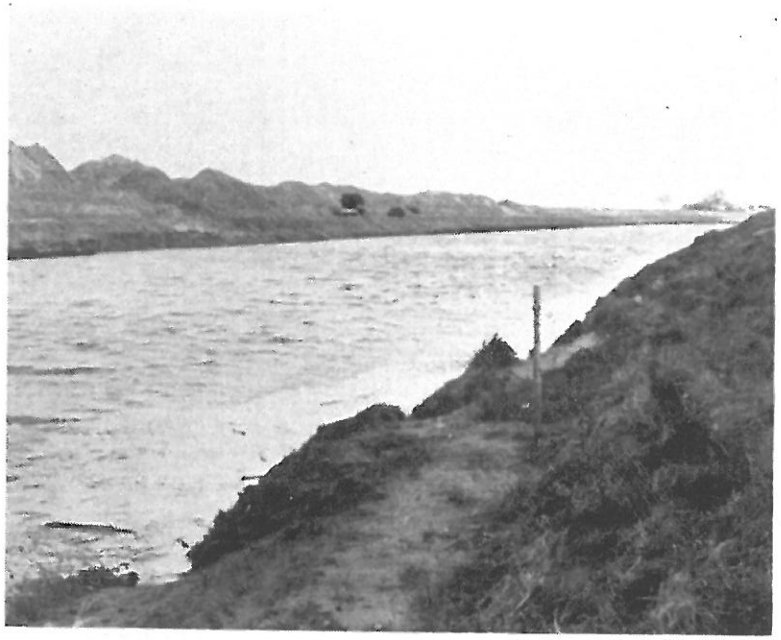
The lock was sited at the confluence of the Coronation Channel and the old Welland Channel to cut off tidal water and to maintain a constant level of fresh water in the town of Spalding and further upstream. A lock with unlimited headroom was required by the Ministry of Transport to maintain the right of navigation to Spalding High Bridge. The lock 110 ft. long by 30 ft. wide was constructed on piled foundations in the old river channel with steel piled walls and reinforced concrete cills. The lock gate walls and surrounds were constructed in reinforced concrete.

LOCKS MILL TO CROWLAND BRIDGE. 80 TON EXCAVATOR BOGGED BY RISING FLOOD WATERS.

LOCKS MILL TO CROWLAND BRIDGE. TRANSPORT DIFFICULTIES. COLLAPSE OF ROAD FOUNDATIONS ON PASSAGE OF 60 TON EXCAVATOR.

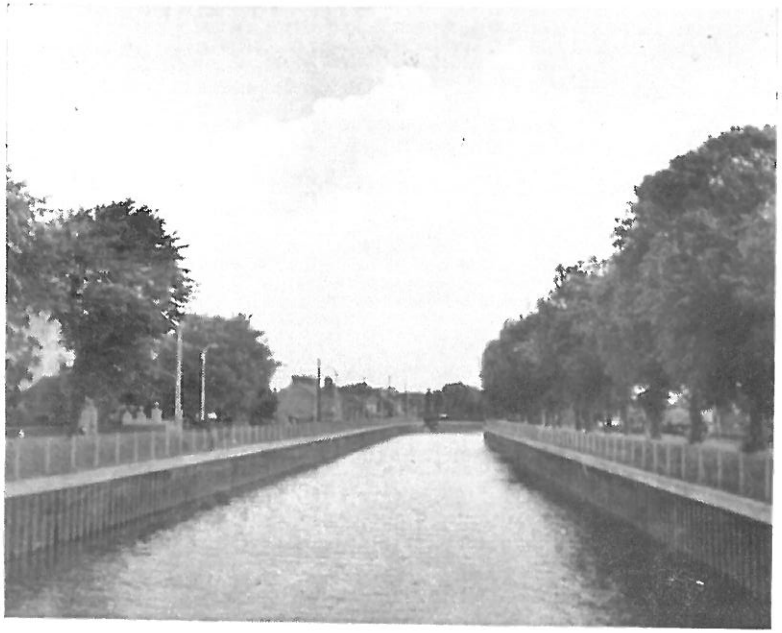


SURFLEET TO FULNEY. WIDENING ABOVE COWHIRNE IN PROGRESS.



SURFLEET TO FULNEY. WIDENING ABOVE COWHIRNE COMPLETED.

COWBIT ROAD BRIDGE TO LOCKS MILL. REMOVING SOIL IN FRONT OF STEEL PILING.



COWBIT ROAD BRIDGE TO LOCKS MILL. COMPLETED WORKS.

Wisbech Road Bridge.

This bridge of seven spans carries the road from Spalding to Wisbech and is 48 ft. wide. This large width is to allow for curvature of the road at this point, and for future widening operations.

The reinforced concrete piers and abutments founded at approximately 4.00 O.D. are carried on 126 No. 14" x 14" R.C. Piles 45 ft. long.

The bridge deck is 249 ft. long, again of the reinforced concrete flat slab type of construction with cantilever ends and supported spans. Approach ramps were again necessary and were included in the contract.

Contractors — W. & C. French Ltd.

Holbeach Road Bridge.

This three span bridge carries the main road from Spalding to King's Lynn and is 47 ft. wide. The reinforced concrete piers again founded at approximately 4.00 O.D.N. are carried on 30 No. 14" x 14" R.C. Piles 25 ft. long.

Owing to the close proximity of the buildings, especially the Church, sheet steel piling 28 ft. long has been carried through the bridgeway on either side of the channel, thus allowing abutments to be dispensed with, and the ends of the bridge deck are carried directly on 22 No. 14" x 14" R.C. Piles 35 ft. long.

The bridge deck is 113 ft. long, again of the reinforced concrete flat slab type of construction with cantilever ends and supported centre span.

Approach ramps were again necessary, and incidental works to entrances, including the Church were carried out. The parapet walls of this bridge are of red brickwork to tone with the facade of the Church.

Contractors — W. & C. French Ltd.

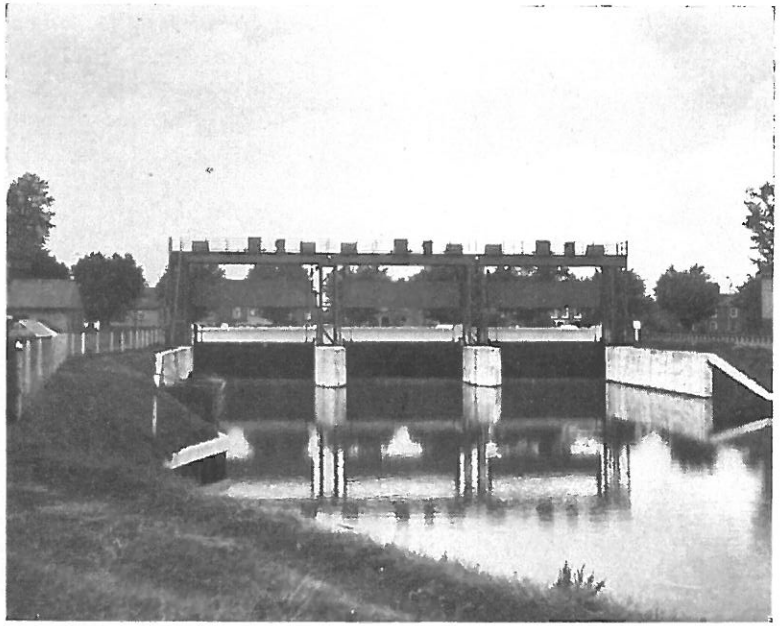
Marsh Road Bridge and Sluices.

This structure at the downstream end of the by-pass channel was the biggest undertaking and is 156 ft. long, by 132 ft. wide, and carries a secondary road 33' 6" wide.

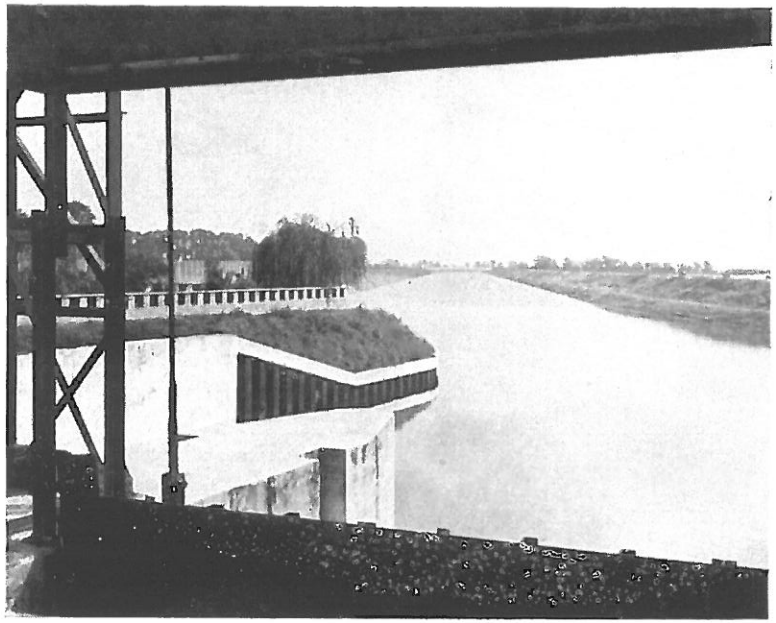
LOCKS MILL TO CROWLAND BRIDGE. THE GULL CORNER SHOWING NEW PILOT CHANNEL AND OLD RIVER.

LOCKS MILL TO CROWLAND BRIDGE. THE GULL CORNER COMPLETED WORKS.

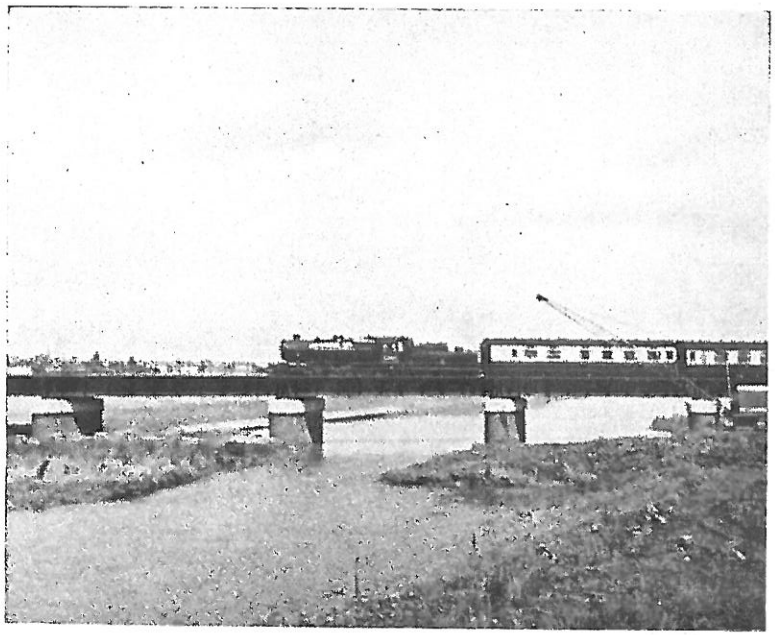
CORONATION CHANNEL. AERIAL VIEW FROM MARSH ROAD SLUICES.
(Free Press Photograph)



CORONATION CHANNEL. COWBIT ROAD SLUICES.
(Times Photograph)



CORONATION CHANNEL. DOWNSTREAM FROM COWBIT ROAD SLUICES.
(*Times Photograph*)



CORONATION CHANNEL. RAILWAY BRIDGE. CHANNEL EXCAVATION IN PROGRESS.

The bridge deck 240 ft. long consists of 3 No. 80 ft. span Double/Single Bailey Bridge members and box panel steel deck units surfaced with asphalt.

The filling and construction of road ramps and approaches was carried out by direct labour.

Contractors — W. & C. French Ltd.

Cunninghams Drove Bridge.

This bridge of nine spans is founded on 14" x 14" R.C. Piles 35 ft. and 45 ft. long.

Seventy No. R.C. Piles carry the reinforced concrete piers and abutments which again are founded at approximately 4.00 O.D.N.

The bridge deck 292 ft. long and 21' 6" wide consists of the reinforced concrete flat slab type of construction with cantilever ends and supported spans. The contract also included filling and formation of approach ramps.

Contractors — W. & C. French Ltd.

Railway Bridge.

Before the construction of this bridge could commence a temporary by-pass track approximately ¾ mile long had to be laid and then maintained throughout the course of the works.

This line, from Bourne to King's Lynn, is carried over the new channel on a five span bridge. Abutments and piers which are of mass concrete faced with red engineering bricks are carried on 64 No. 14" x 14" R.C. Piles 40 ft. long. The overall length of the bridge is 271 ft. and steel girders support the reinforced concrete deck which carries a single track line.

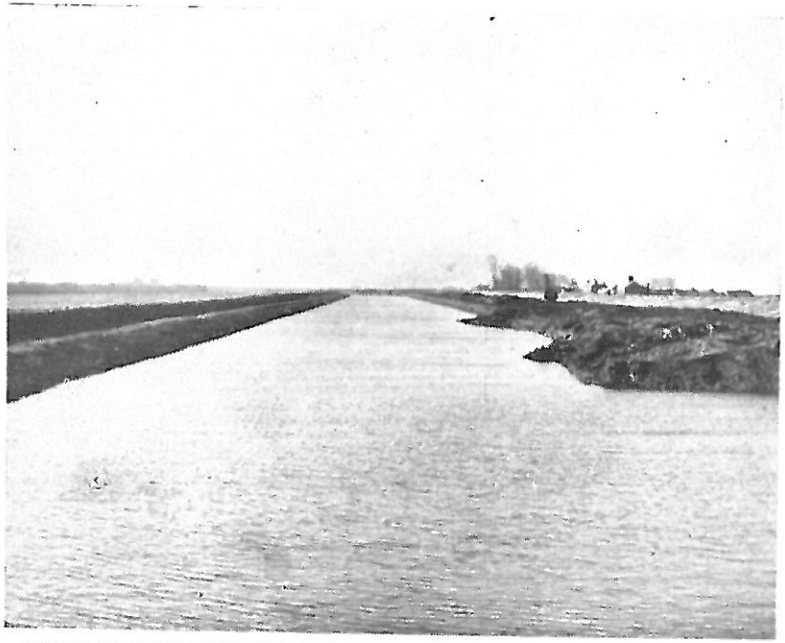
The elevation of the track is now 9 ft. above the original, and approach embankments have been formed for approximately ½ mile on each side the bridge.

Main Contractors — W. & C. French Ltd.

Steelworks — The Butterley Co. Ltd.

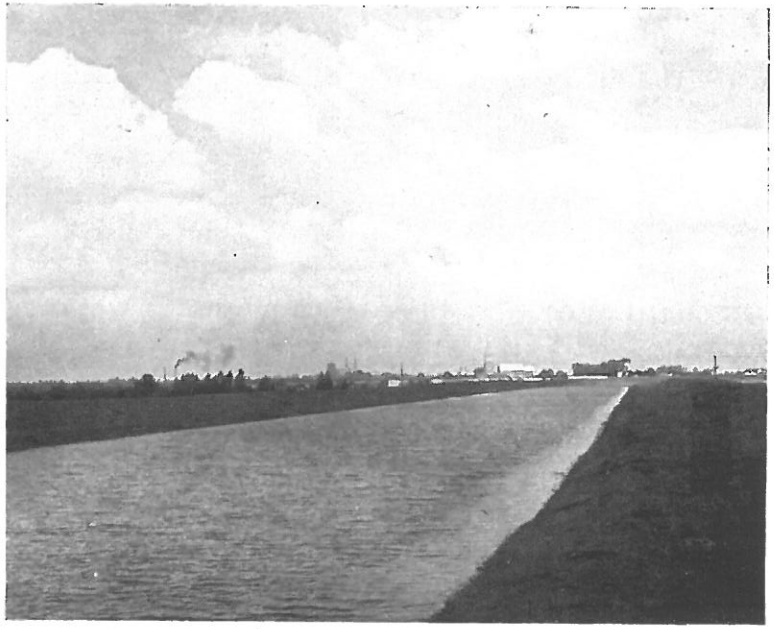
Temporary Diversion — The Eagre Construction Co. Ltd.

LOCKS MILL TO CROWLAND BRIDGE. WIDENING AND FILLING OLD RIVER ABOVE FOUR MILE BAR.



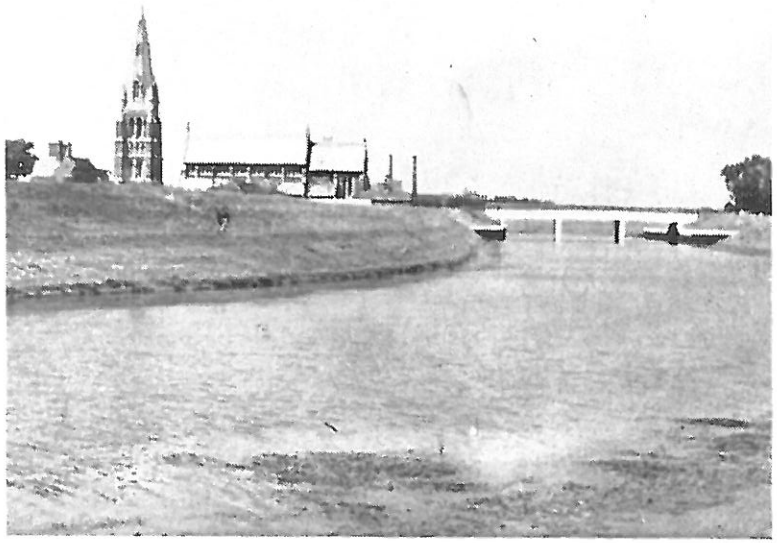
LOCKS MILL TO CROWLAND BRIDGE. COMPLETION OF WORKS ABOVE FOUR MILE BAR.

CORONATION CHANNEL. WORK IN PROGRESS BETWEEN WISBECH ROAD AND HOLBEACH ROAD BRIDGES.



CORONATION CHANNEL. LOOKING DOWNSTREAM FROM WISBECH ROAD BRIDGE. (*Times Photograph*)

CORONATION CHANNEL. COMMENCEMENT OF CUT UPSTREAM OF HOLBEACH ROAD BRIDGE.



CORONATION CHANNEL. COMPLETED WORK UPSTREAM OF HOLBEACH ROAD BRIDGE.

silt, which necessitated the use of dewatering equipment.

The walls and abutments are of mass concrete gravity type, and founded on 232 No. 14" x 14" R.C. Piles 30 ft. long. Sheet steel cut off piles enclose the whole site, and the floor and aprons of the structure are of mass concrete 3' 6" thick.

To avoid approach ramps the bridge deck was constructed of prestressed concrete 16" thick. The tensioning of the cables for the 3 No. 30 ft. spans was carried out on site by the Freyssinet system.

The sluices consist of three vertical lift gates 30 ft. wide by 19 ft. deep. These are electrically operated from motors on the overhead platform.

Main Contractors — W. & C. French Ltd.

Sluice Gates and erection — Ransomes & Rapier Ltd.

Spalding Drove Bridge.

This bridge of five spans is founded on 14" x 14" R.C. Piles 28 ft. long. 48 No. R.C. Piles carry the abutments and piers which are founded at a level of approximately 4.00 O.D.N. This saved the considerable expense of dewatering the site. Excavation through the bridgeway down to bed level was carried out by draglines after the structure was completed.

The bridge deck, 169 ft. long and 25 ft. wide, consists of the reinforced concrete flat slab type of construction. The two end spans are cantilevered over the piers and carry a suspended slab in the centre portion.

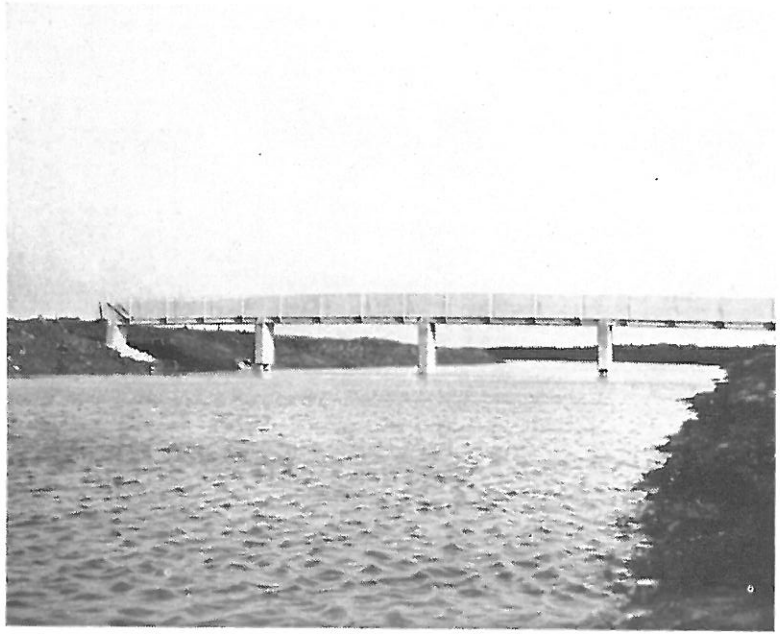
Owing to close proximity of buildings, realignment of the road was necessary to accommodate the approach ramps to the new bridge.

Contractors — W. & C. French Ltd.

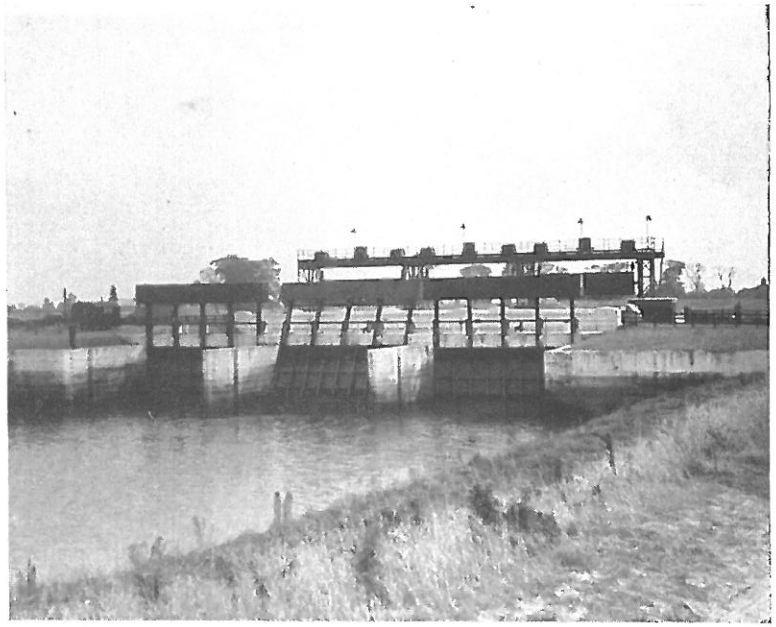
Pecks Drove Bridge. (Accommodation Road).

This bridge of three spans is founded on 14" x 14" R.C. Piles 41 ft. long and 12 No. R.C. Piles carry the reinforced concrete piers and abutments which are also founded at approximately 4.00 O.D.N.

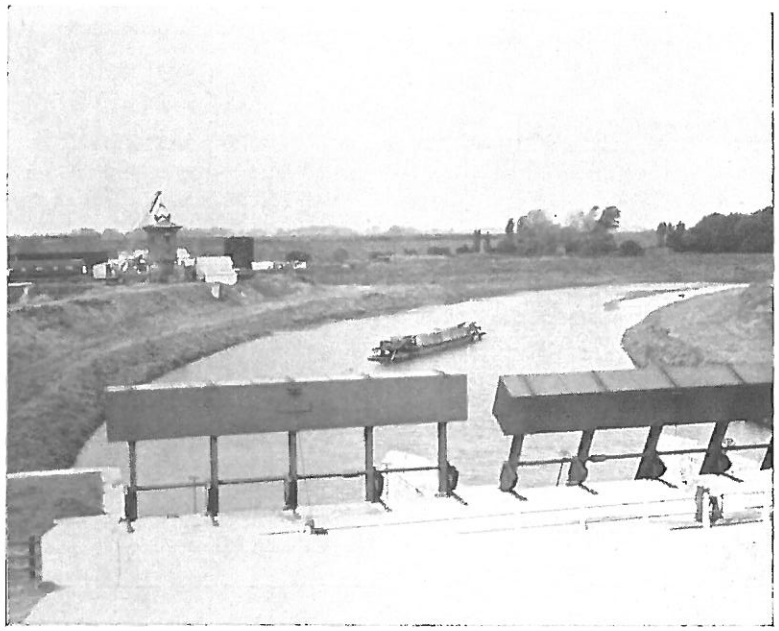
LOCKS MILL TO CROWLAND BRIDGE. WIDENING AND FILLING OLD RIVER BELOW FOUR MILE BAR.



LOCKS MILL TO CROWLAND BRIDGE. FOUR MILE BAR NEW FOOTBRIDGE.

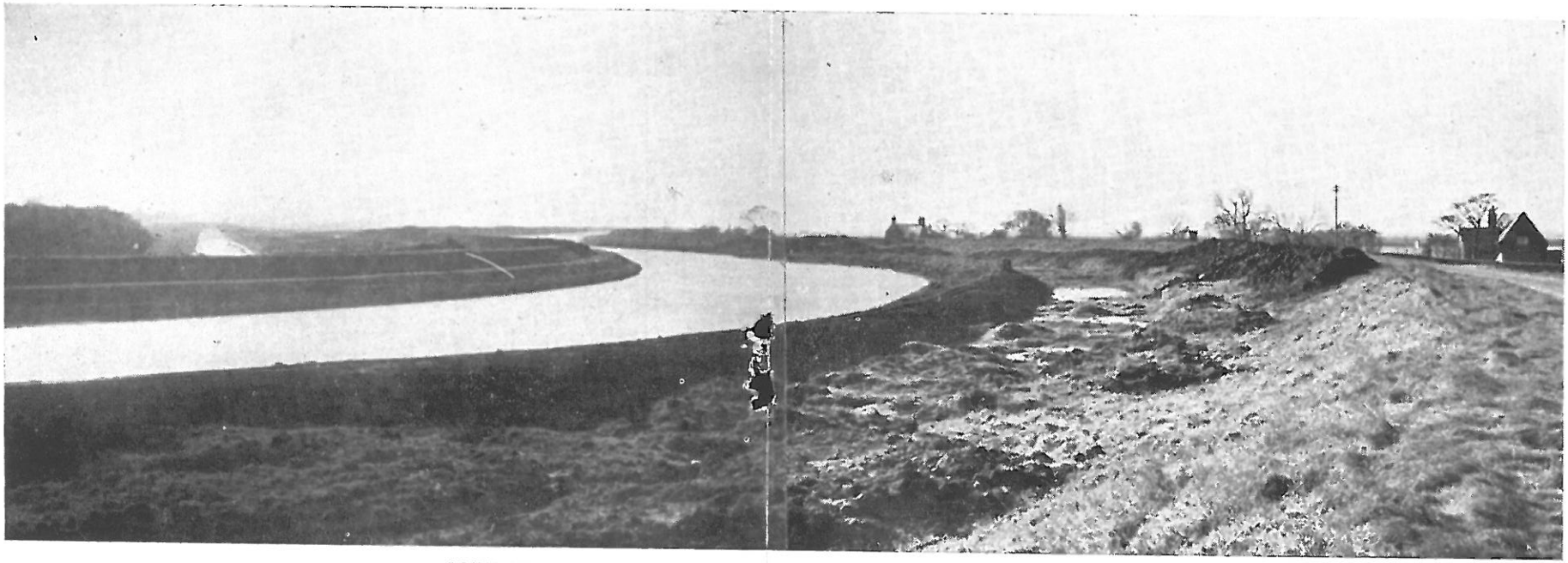


CORONATION CHANNEL. MARSH ROAD BRIDGE AND SLUICES. *(Times Photograph)*



CORONATION CHANNEL. OUTFALL TO MAIN RIVER DOWNSTREAM OF MARSH ROAD SLUICES. *(Times Photograph)*

LOCKS MILL TO CROWLAND BRIDGE. THE SCHOOL CORNER ORIGINAL CHANNEL.



LOCKS MILL TO CROWLAND BRIDGE. THE SCHOOL CORNER WORKS COMPLETED.