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**Canadian Society of Civil Engineers.**

INCORPORATED 1887.

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**TRANSACTIONS.**

N.B.—This Society, as a body, does not hold itself responsible for the facts and opinion stated in any of its publications.

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Paper 10.

**THE WORKS ON THE RIVER MISSOURI AT ST. JOSEPH.**

BY H. H. KILLALY, M. CAN. SOC. C.E.

(To be read on Thursday, Dec. 1.)

The works which form the subject of these notes were undertaken in connection with a bridge, which was, at the same time, being built across the Missouri River, at St. Joseph, Missouri.

A general description of the latter, as to location, etc., is necessary to explain the circumstances under which the former were undertaken.

These works were built under authority of an "Act of Congress," approved March 5th, 1872; and entitled: "An Act to authorize the construction of a bridge across the Missouri River, at or near St. Joseph, Missouri." In this Act it is stated "that the corporation building said bridge may, if not unauthorized by the provisions of its charter of incorporation, enter upon the banks of said river, either above or below the point of the location of said bridge for a distance of seven miles; and erect and maintain break-waters; or use such other means as may be necessary to make a channel for said river; and confine the flow of the water to a permanent channel; and to do whatever may be necessary to accomplish said object; but shall not impede or obstruct the navigation of the said river; and all plans for such works or erections upon the banks of the river shall first be submitted to the Secretary of War for his approval.

"This Act also provides that the bridge, at the option of the corporation building the same, may be built as a drawbridge, with a pivot or other form of draw, or with unbroken continuous spans; provided, that if the same shall be made of unbroken continuous spans, it shall not be of less elevation in any case than fifty (50) feet above extreme high-water mark, nor shall the spans of said bridge be less than three hundred and fifty (350) feet in length. That if a bridge shall be built under this Act, as a drawbridge, the same shall be constructed as a pivot drawbridge, with a draw over the main channel at an

mitted to the Secretary of War for his approval