THE BISMARCK BRIDGE.

HISTORY OF THE GREAT WORK NOW FINISHED.

The Dakota and Missouri Divisions of the Northern Pacific Railroad Connected by this Magnificent Structure.

An Important Event.

Although the original scheme of the Northern Pacific railroad contemplated a bridge across the Missouri river at or near Bismarck, no definite action with reference to the construction of this bridge was taken until the winter of 1880, when Mr. George S. Morison was requested to examine the river at this point in conjunction with Gen. A. Anderson, engineer in chief, and to prepare a report on the best method of crossing the river.

The first careful examination was begun in April, 1880. The fact that the railroad was already built from the east into the city of Bismarck and westward from Mandan made it important that the crossing of the river should be as nearly as practicable on a direct line between those two points; but the examination was extended down the river to Fort Abraham Lincoln, and about an equal distance up the river. The crossing at Fort Lincoln possessed the great advantage of a river less than 1,000 feet wide; but as the silt bearing characteristics of the Missouri favor the contraction of the river to about this width by artificial means, it was decided that if a good bottom could be found near the direct line it would be wiser to incur the additional expense of works to make an artificial contraction than to increase the length of the line several miles, as would be done by crossing at Fort Lincoln.

THE CROSSING DEFINITELY LOCATED.

In July, 1880, the preliminary examinations were completed, and the location of the bridge virtually fixed. The point selected was within two or three hundred feet of the line on which the proposed bridge has now been built, this location being determined as combining to the best advantage directness of route with a favorable bottom. The river at this point was about 2,800 feet wide, and the channel variable, about two-thirds of the whole width of the river being occupied, except at extreme high water, by sand bars, as is the universal case on the Missouri where the width between high water banks exceeds 1,000 or 1,200 feet.

The report of July, 1880, proposed to cross the river with a bridge consisting of three spans of 400 feet each, resting on solid piers of granite masonry. A dyke was to be built from the west shore to within 1,000 feet of the east shore, which is here a high bluff of extremely hard clay, thus confining the river within a width favorable to the maintenance of a fixed channel.

The bridge was to be located about 500 feet below the dyke, and to provide for contingencies, was made 200 feet longer than the width of the confined river. This plan of operations has now been carried out, and the completed work differs in no essential respect from the plans contemplated in the report of July, 1880.

Although the report was received with favor by the board of directors, the finances of the Northern Pacific railroad company were not in such condition as to warrant the immediate construction of the bridge; but it was decided to proceed at once with the building of the dyke. Materials were collected at once for this purpose, and the

CONSTRUCTION OF THE DYKE

was begun in the fall of 1880. Unfortunately while waiting for materials, the main navigable channel of the river moved over to the west shore, and when work was actually begun it was found necessary to leave this channel open for navigation. A wired willow mattress was built, however, on the proposed location of the dyke from the east side of the navigable channel to the point fixed for the west boundary of the corrected channel, leaving a space between the mattress and either shore.

Toward the end of 1880 the general mortgage loan of the Northern Pacific railroad company was negotiated on such terms as wholly changed the financial position of the corporation, and it was determined to proceed at once with the construction of the Bismarck Bridge.

On the 16th of December a vote was passed by the board of directors by which the immediate construction of the bridge was determined upon, and the work was placed in the hands of the engineer under whose charge it has been completed.

THE WINTER OF 1880-81

was one of unusual severity, with long continued cold weather and a heavy snow fall. Fortunately on the line of the Northern Pacific railroad there was comparatively little wind, and the road was kept open through the cold season.

On the 7th of January Mr. H. W. Parkhurst, who had been appointed by Mr. Morison first assistant engineer, arrived at Bismarck and took charge of the work on the river. The state of affairs at this time was very perplexing. The flexible foundation for a dyke had been laid, but the main channel of the river was on the wrong side of the dyke, and the short time remaining before the season when the ice would break up showed that all efforts must be concentrated in putting the work already done in such shape as to prevent its destruction. The next six weeks were spent in this way, a low crib of cottonwood logs being built on the mattress foundation and loaded down with stone and frozen earth.

In March the river rose to a height some feet above the ordinary level of the summer flood, and on the 30th the ice moved out with unusual violence, the river rising thirteen feet above the ordinary summer floods, overflowing the entire bottom land and standing four feet deep in the streets of Mandan, which was supposed to have been located above high water. The ice passed over the dyke, which was left comparatively uninjured, but the channel remained next to the west shore.

CONTRACTS.

On January 28th, 1881, a contract was let to the well-known firm of Saulpaugh & Co., of Rock Island, Ill., for the construction of the substructure of the bridge, this including the foundation and masonry of the four piers. In April the quarrying of stone was begun near Watab Station, in Minnesota, but the quarry not proving a good one, another was subsequently opened near East St. Cloud. This last quarry, now known as the "Rock Island quarry," furnished four-fifths of the stone used in the Bismarck Bridge. A sub contract for the pneumatic work of the two channel piers was made by Messrs. Saulpaugh & Co. with Messrs. Rust & Cooldige, of Chicago.

On February 2nd, 1881, a contract was awarded to the Detroit Bridge and Iron Works, of Detroit, Mich., for the manufacture and erection of the superstructure, consisting of three through spans of 400 feet each, and two deck spans of 113 feet each, the work to be built in all respects according to the detailed plans and specifications prepared by the engineer of the bridge.

In April the construction was fairly begun, though ground was not actually broken until May.

The construction of the Bismarck Bridge involved three totally different pieces of work:

First, the control and rectification of the river.

Second, the bridge proper.

Third, the approaches.

THE CONTROL AND RECTIFICATION

of the river consisted in confining it to the 1,000 feet limit between the east shore and the end of the dyke, and the protection of the east shore with rip-rap so as to render it doubly secure from the eroding action of the water. After the ice went out the main channel was left between the uncompleted dyke and the west shore, and the action of the current during the spring and summer floods wore away about 200 feet of this portion of the dyke.

The relative amount of water passing through the east and west channels changed gradually, until by the end of April, 1881, the amount of water passing through the east channel was decidedly more than that through the west channel. In May an attempt was made to close the west channel, and piles were driven for a bridge to connect the west end of the dyke with the west shore; but this work was destroyed by high water before it could be completed, this destruction not being wholly unexpected.

On the 25th of July, 1881, when the summer floods had receded about six feet from the maximum height, the driving of this pile bridge was begun again, and it was completed in August. A track was then laid to the end of the dyke, which has ever since been maintained.

During the spring and summer the east end of the dyke was strengthened by rip-rap, which was boated to it from the east shore. After the track was completed to the end of the dyke rip-rap was brought there on cars and unloaded directly into position. In this way the end of the dyke was maintained for several months against the strongest current in the river and with a depth of water of 50 feet immediately outside of it.

The west channel silted up rapidly during the fall months and in the early winter was finally closed by filling the pile bridge with earth. The dyke has been finished at about the level of ordinary summer high water; it has been maintained for two seasons against the full current rent of the river, the only weakness shown being a settlement some distance back from the end which occurred during the summer flood of 1882.

At this date there have been used in the construction of this dyke 30,000 tons of granite boulders for rip-rap, besides a large quantity of brush and crib-logs, and upwards of 22,000 cubic yards of clay.

Although not yet entirely completed, the action of the dyke has been such as to satisfy the engineers of the correctness of their plans. The river has been permanently confined to a width of 1,000 feet adjoining the east shore. A thick growth of willows has already started spontaneously on the deposit formed by the river in what was a year and a half ago the main navigable channel adjoining the west shore. The course of the channel is gradually improving, and the indications are that at the close of another season it will follow an easy curve along the east bluff, leaving the dyke buried in a deposit of silt.

The elevation of the top of the dyke was purposely fixed at about the level of ordinary summer floods, this height being thought likely to secure a larger deposit both above and below the dyke than if finished at a higher level. When the ice goes out, about the first of April, the water usually rises some feet above the top of this dyke, and a secondary embankment, intended only to resist the action of ice, has been built immediately alongside of the trestle approach, this embankment finishing nearly 20 feet higher than the top of the dyke.

THE BRIDGE PROPER

consists of three through spans, each measuring 400 feet between centres of end pins, and two approach spans each 113 feet. It is a high bridge, the bottom chord of the three main spans being placed fifty feet above the level of the highest summer flood, thus giving head room to pass steamboats at all navigable stages of the river. The head room above the extreme high water of 1881 is forty-two feet, but this water was an exceptional result of an ice gorge which necessarily put a stop to all navigation. Practically the bridge gives four feet more head room than many of the bridges on the lower river.

The variable channel and the high bluff on the east side were alone sufficient reasons for adopting the high bridge plan in preference to a low bridge with a draw. The violent action of the ice and the excessive height of the ice floods was, however, the controlling element in the selection of the high bridge plan. To secure safety a low bridge would have had to be placed at least thirty feet above the highest water of navigation and the pivot pier and draw protection would have had to be constructed in an unusually solid and substantial manner. The high bridge plan seemed to be not only the most economical but really the only safe solution of the problem.

The east end of the east approach span is supported by a small abutment of granit masonry founded on the natural ground of the bluff. The west end of the west approach span is supported by an iron bent resting on two Cushing cylinders which are supported by piles driven into the sand bar.

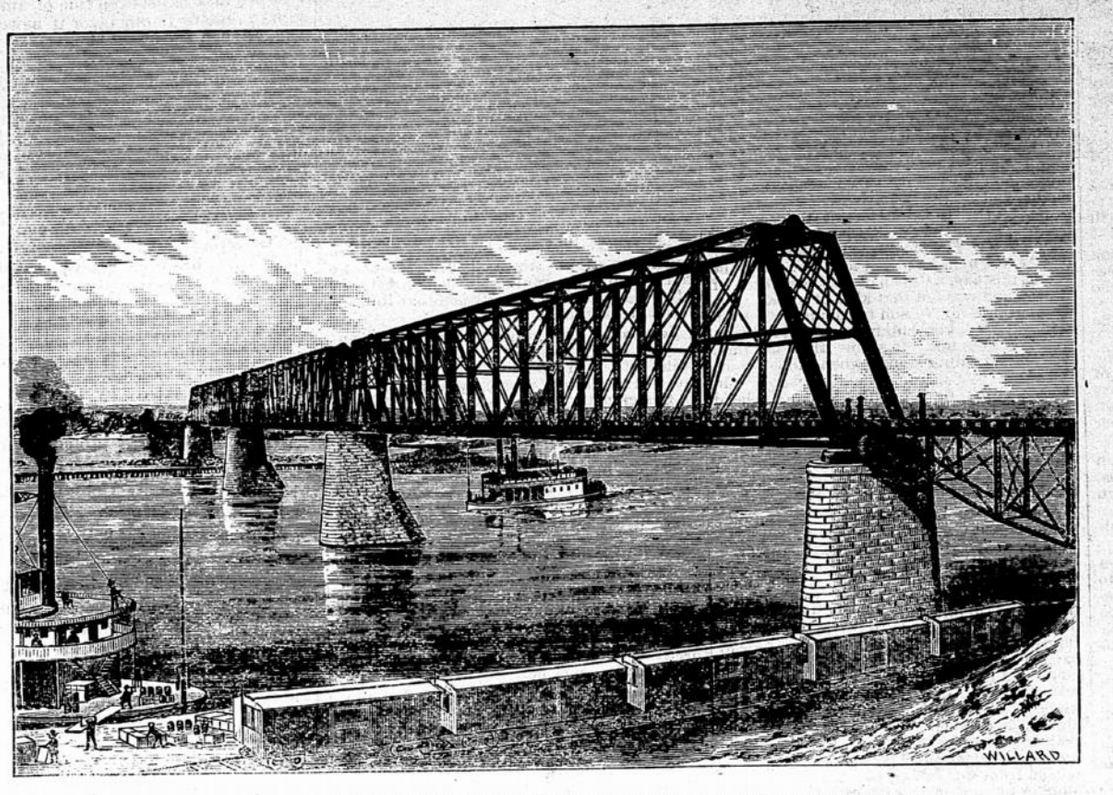
The three long spans are supported on four granite piers.

Pier 1, the easterly pier, rests on a concrete foundation, the base of which is twenty feet below ordinary low water and sixteen feet below the estimated extreme low water due to ice gorges.

Piers 2 and 3, which are in the channel of the river, are founded on pneumatic caissons sunk into the underlying clay to a depth of about 50 feet below ordinary low water, and 10 feet below the surface of the clay.

Pier 4 is situated on the sand bar on the west side of the river below the protection of the dyke, and rests on a foundation of 160 piles, which were driven with a Nasmyth steam hammer.

Ground was first broken at the bridge site on the 12th of May, 1881, when the small excavation was made for the east abutment. On the following day the excavation of the pit for the foundation of pier 1. was begun, though little was done here until July.



THE BISMARCK BRIDGE OVER THE MISSOURI RIVER. OPENED FOR TRAFFIC OCTOBER 21, 1882

With the exception of some thin strata of soft sand-stone of irregular thickness and extent, no rock is found in position in the part of Dakota. The entire country is underlaid with a very hard stratified clay, the depth of which has not been ascertained. Borings proved this clay to be at least 100 feet thick on the line of the bridge, and a hole intended for an artesian well has since been sunk within the Bismarck city limits to a depth of over 400 feet, and is still in the clay. This clay however is in many respects more like a rock than a clay; small specimens tested for compression have sustained a weight of over 300 pounds per square inch without crushing, and when they gave way yielded like rock, and showed no tendency to bulge out at the sides. Water has little or no effect upon this clay, even where the current is extremely strong, but when exposed to the dry air the clay slacks rapidly and crumbles to pieces.

On the 15th of July, 1881, the excavation for the foundation of pier 1 was resumed in earnest. Although close to the river this excavation was carried down through the hard stratified clay without the aid of a pump, the only water found in the pit being a strongly alkaline spring water, which evidently had no connection with the Missouri river, and which was easily kept out by occasional bailing. The first concrete in this foundation was put in on the 6th of September, 1881, and on the 1st of October the concrete filling was finished. The laying of masonry was begun on the 4th of October, and the pier completed on November 20th, 1881.

THE CAISSONS

on which piers 2 and 3 are founded, are built of pine timber, sheathed with two thicknesses of three inch oak plank. They measure 74 feet long by 26 feet wide, by 17 feet high on the outside. The lower portion of the caisson forms a working chamber 7 feet high, with flat roof and inclined sides. The upper portion of the caisson is a cribwork of timber filled throughout with Portland cement concrete. Each caisson contained 133,000 feet, board measure, of timber, and 82,000 pounds of iron, besides nearly 500 cubic yards of concrete.

The caissons were built on shore, launched and towed into position. After the caisson had been placed, the concrete above the working chamber was put in, the air locks put in position, and air pumped into the working chamber, which was thus converted into a great diving-bell, until the water was expelled. A force of men was then put to work in the working chamber who excavated the sand, which was carried off in columns of water, and the caisson was forced down gradually by its own weight as the excavation proceeded. The masonry was laid on the roof of the caisson and continued as the sinking progressed, the top of the masonry being always kept above water. This laying of masonry on a sinking foundation was a source of serious perplexity to the masons, who were greatly troubled when they found they could no longer make use of a level to set their stone, one man making the brilliant discovery that the level must not be used, but that everything must be set with the plumb.

The caisson for pier 2 was launched August, 6th, 1881. A sand-bar had formed in front of the launching ways, and it was necessary to drop the caisson a quarter of a mile down stream and tow it up against the current. This towing was performed by the transfer steamer, Northern Pacific, No. 1, under the direction of Capt. R. F. Wolfolk, and was probably the hardest service which this boat will ever be called upon to undergo. The towing of a large and heavy caisson, drawing five feet of water, taxed the boat to the utmost capacity. On the twelfth of August the caisson was correctly placed in position, and on the twentieth air pressure was put on. On the 1st of September the laying of masonry was begun, and on the 29th of September the caisson grounded on the clay. On the 9th of November the final depth was obtained, the caisson having an average penetration of ten feet into the clay. On the 13th of November the work of filling the working chamber was begun and on the 16th of November, the entire working chamber, air lock and shafts having been filled with concrete, the foundation was completed. On the 19th of January, 1882, the masonry of this pier was done.

The caisson for pier 3 was launched October 21, 1881, and the concrete filling begun on the 26th. Air pressure was put on on the 24th of November, using the machinery which had been relieved from work at pier 2. On the 16th of December clay was struck, and on the 17th of January, 1882, the foundation was completed. The laying of masonry was interrupted by the spring flood and was not completed until the 3d of June, this pier being the last one finished.

The excavation at the site of pier 4 was begun on the 15th of September, 1881, but carried on slowly. Pile driving was begun on the 26th of November and completed December 27th. The laying of masonry was begun in January, 1882, and the pier was finished the 12th of May.

THE QUANTITIES OF MASONRY

in the Bismarck bridge are as follows:

	Masonry.	Concrete.	Total.
East Abu't	70 cu. yds.	23 cu. yds.	93 cu. yds.
Pier I.	952 "	779 "	1,731 "
Pier II.	2,705 "	847 "	3,552 "
Pier III.	2,653 "	860 "	3,513 "
Pier IV.	1,090 "	264 "	1,354 "
Totals.	7,470 cu. yds.	2,773 cu. yds.	10,243 cu. yds.

There have been used in the masonry of the Bismarck bridge more than 7,500 barrels of imported Portland cement and over 3,000 barrels of American cement. Nearly all the concrete was made with Portland cement, which was also used for the face stone of the masonry and for the backing in very cold weather.

The use of Portland cement mortar, salted whenever necessary, combined with the mildness of the winter, rendered it possible to lay masonry with little interruption through the whole season.

THE SUPERSTRUCTURE.

The approach spans are deck trusses of the fish-bellied or inverted bow-string pattern, this form being adopted to keep away from the slope of the embankment. They are entirely of wrought iron, except the pins, which are of steel, and the wall plates, which are of cast iron. Each span contains 88,954 pounds of wrought iron, 2,825 pounds of steel, and 5,686 pounds of cast iron, the total weight being 97,515 pounds.

Each of the three main channel spans measures 400 feet from centre to centre of end pins, divided into sixteen panels of twenty-five feet each. The trusses are of the double system Pratt or Whipple type, are fifty feet deep from center to center of chords, and spaced twenty-two feet apart between centers. The pedestals, the end posts, top chords, the ten center panels of the bottom chord, and all the pins and expansion rollers are of steel. All other parts are of wrought iron; except the filling rings, wall plates, and ornamental work, which are of cast iron.

Each span contains 600,950 pounds of wrought iron, 348,797 pounds of steel, and 25,777 pounds of cast iron, the total weight of each span being 975,524 pounds.

THE STEEL.

was manufactured in an open hearth furnace and under the most rigid inspection. It is of such character that small sample bars were bent double and flattened back on themselves without any crack on the outside; one of the full sized bars intended for the bridge, when tested to breaking was stretched four feet in twenty-five before fracture took place. The long spans are proportioned to carry two seventy-five ton locomotives followed by a train of 30-foot cars, each loaded with twenty tons. With this assumed moving load the strains on the different parts of the structure are about ten to twenty per cent less per square inch than the limits which good practice has sanctioned in many other bridges.

The manufacture of the steel proved a source of serious delay as the parties who originally undertook to furnish it wholly failed in doing so. Had the superstructure been promptly manufactured, the bridge could have been opened at least two months earlier than it was.

THE FLOOR

is placed above the bottom chord, the floor beams being riveted to the vertical posts, thus increasing the vertical stiffness of the structure and reducing the apparent height to about forty-five feet. The main and counter ties which are more than seventy feet long are made in two lengths and coupled on a pin which passes through the center of each vertical post, this arrangement at once sustaining the tie from deflection, and holding the post against flexure at the center. The end posts are stiffened by a strut connecting them at the center with the stiff center of the first vertical post. The vertical posts are connected transversely at the center by struts which are attached to the central pins by small pins, which pass through the ends of the strut and through the main pins and serve also for the connection of a set of transverse diagonal rods reaching to the top lateral system; each pair of vertical posts is thus united into a stiff bent with a perfect system of bracing from the center up, and a stiff base made by the floor beam connection. The end posts are made proportionately stiff by a wrought iron portal above the center, the sides of which are extended down the sides of the

THE EXTREME HEIGHT

from the bottom of the deepest foundation to the top chord of the bridge is 190 feet. Every precaution has been taken to provide for the special strains due to the violent gales which at times prevail in the Missouri valley, and the bridge is as safe to resist

The east approach span was erected in April and the west approach span in May.

The erection of the long spans was postponed until after the summer flood. Each span was subdivided into three spans of about 130 feet each by two timber piers, which supported Howe trusses of design similar to those commonly used on railroads. On these Howe trusses was placed a floor 30 feet wide, on which ran a traveling derrick 65 feet high, which spanned the permanent structure. This derrick was moved from panel to panel, as the work proceeded, and the great trusses were erected without any stationary staging above the floor. All the hoisting was done by steam, the engines being mounted on a low flat car entirely independent of the traveler.

THE FIRST SPAN ERECTED

was that between piers 1 and 2. The first iron was placed on Thursday, July 27, 1882, and the span was swung off so as to carry its own weight on Saturday, August 12th. Exactly four weeks later, on Saturday, Sept. 9th, the second span, that between piers 2 and 3, was swung, and four weeks after that, on Saturday, October 7th, the last span carried its own weight, requiring only the addition of the floor and the riveting of some of the details to make the bridge complete.

The floor is formed of oak timbers 9 inches square and 15 feet long, spaced only 6 inches apart in the clear. On this are laid the steel rails of the track, inside of which are placed angle irons of wrought iron, bolted to every tie in a manner which is believed to make the floor perfectly safe from accidents due to derailment.

APPROACHES TO THE BRIDGE.

The east approach to the Bismarck bridge leaves the old main line at Bismarck station, and is exactly two miles long. It differs in no essential respect from other portions of the Northern Pacific railroad through this section of the country, except that some heavy work and sharp curvature is encountered on the face of the bluffs adjoining the bridge.

The west approach is 6,000 feet long from the west end of the permanent bridge to the old track on the low bottom land between the river and Mandan. This approach has a grade of one per cent, (52.8 feet per mile,) descending westward. The eastern 1,500 feet of the west approach, is built across the space reclaimed from the Missouri river by the action of the dyke, which is now a sand bar already covered with a fair growth of willows. This part of the approach consists of a timber trestle, the maximum height of which is about 60 feet. This trestle spans the main steamboat channel of 1880, which is now a willow swamp. To protect this trestle from destruction by ice, another large embankment is now being built on the upstream side of the trestle which will be finished 6 feet higher than the great flood of March 30th, 1881. This embankment will stop the flow of ice which may be carried over the top of the dyke. It is designed ultimately to fill the timber trestle with earth, and the protection embankment is so located that it will form a portion of the final filling.

The remainder of the west approach consists of an earth embankment, having a maximum height of 43 feet, which runs out to nothing at the west end.

THE BISMARCK BRIDGE

is the first bridge which has been built across that portion of the Missouri river, which is subject to ice gorges, and the question has been raised as to the effect of the bridge on the movement of ice.

The piers are of unusual size, with long raking ice breakers shod with steel. They are at once of such a shape as to cut readily the large sheets of ice with whose movement the breaking up begins, and to afford the least possible obstruction to the moving mass of broken ice which follows the first shove. Their stability far exceeds any force which the ice can possibly exert. As to the effects upon the movements of the ice, experience only can prove whether gorges will occur more frequently or less frequently at the bridge site than elsewhere. But since the contraction of the river bed has been accompanied by an increased depth of channel, it is not expected that gorges at the bridge will be much more frequent than elsewhere.

ICE GORGES.

Gorges, however, are liable to occur at any point on this portion of the Missouri, and the effect of these gorges is to form a complete dam across the channel of the river. When such a dam is formed the only outlet for the discharge of the Missouri is over the frozen bottom land. The track across the low bottom land between Mandan and the river is 10 feet below the high water of 1881, and this low bottom land is regarded as a safety-valve through which the discharge of the river can pass in case an ice gorge is formed at or near the bridge. When experience has shown just what is required, an inexpensive bridge can be built, if found necessary across this low bottom land and the track raised above the danger of overflow.

The Bismarck bridge and approaches form an integral part of the Northern Pacific railroad, being the absolute property of the Northern Pacific railroad company and being built under the general charter granted by the national government to that company.

All accounts and reports relating to the bridge passed through the construction department, of which Gen. A. Anderson, engineer in chief, is the head.

The personnel of the Bismarck Bridge during construction has been as follows:

ENGINEERING STAFF.

George S. Morison, engineer and superintendent.

Resident assistants—Henry W. Parkhurst, first assistant engineer; Benjamin L. Crosby, assistant engineer; Geo. A. Lederle, assistant engineer and draughtsman.

Non-resident assistants—C. C. Schneider, assistant engineer superstructure; William F. Zimmerman, inspector of steel and iron; James Sanderson, inspector of shop work.

Local inspectors—B. A. Sawyer, inspector of stone at quarries; Robert Ross, inspector of masonry.

CONTRACTORS.

Sub-structure: Saulpaugh & Co., general contractors for sub-structure. Rust & Cooldige, sub-contractors for pneumatic work.

Superstructure—Detroit Bridge & Iron Works.

Grading approaches—Bellows, Fogarty & Co.

Timber trestle—Winston Brothers.

Rip-rap stone—C. W. Thompson.

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Sheriff's Sale.

TERRITORY OF DAKOTA, COUNTY OF Burleigh, SS.

McLean & Macnider vs Luke M. Harriman.

Notice is hereby given, that by virtue of an execution to me directed and delivered, and now in my hands, issued out of the clerk's office of the Third Judicial District Court, Territory of Dakota, in and for the county of Burleigh upon a judgment rendered in said court in favor of McLean and Macnider and against Luke M. Harriman, I have levied upon the following described personal property of said defendant, to-wit: One hundred and fifty bushels of wheat; and that I shall, on the first day of November, A. D. 1882, at the hour of 10 o'clock a. m. of said day, in front of McLean & Macnider's warehouse in said county and territory, proceed to sell all the right, title and interest of the above named Luke M. Harriman in and to the above described property to satisfy said judgment and costs, amounting to two hundred and four and 66-100 dollars, together with all accruing costs of sale and interest on the same from the 19th day of October, 1882, at the rate of 7 per cent per annum, at public auction, to the highest bidder for cash, ALEXANDER MCKENZIE, Sheriff.

By L. N. Griffin, Deputy.

Dated October 19, 1882.

Flannery & Wetherby, Plaintiffs' Attorneys, 18-24

Mortgage Sale.

DEFAULT having been made in the payment of the sum of four hundred and twenty-six dollars and sixty-six cents, which is claimed to be due at the date of this notice upon a certain mortgage, duly executed and delivered by Nils Larson and Elna Larson, his wife, mortgagors to John A. McLean and Robert Macnider, partners as McLean and Macnider, mortgagees, bearing date the 13th day of March, A. D. 1882, and duly recorded in the office of the register of deeds in and for the county of Burleigh, and territory of Dakota on the 14th day of March, A. D. 1882, at 4 o'clock p. m., in Book "B" of mortgages, on page 366, and no action or proceeding at law or otherwise having been instituted to recover the debt secured by said mortgage or any part thereof; Now therefore, notice is hereby given, that by virtue of a power of sale contained in said mortgage and pursuant to the statute in such cases made and provided, the said mortgage will be foreclosed, and the premises described in and covered by said mortgage, viz: Lot number six, (6) in block No. thirteen (13) in the Northern Pacific addition to the city of Bismarck, according to the plat thereof recorded in the office of the register of deeds in Burleigh county, and territory of Dakota, with the hereditaments and appurtenances, will be sold at public auction, to the highest bidder for cash, to pay said debt and interest, and the taxes, if any, on said premises, and fifty dollars attorney's fee, as stipulated in and by said mortgage in case of foreclosure, and the disbursements allowed by law; which sale will be made by the sheriff of Burleigh county, at the front door of the court house, in the city of Bismarck, in said county and territory, on the 25th day of November, A. D. 1882, at 2 o'clock p. m. of that day, subject to redemption at any time within one year from the day of sale, as provided by law.

Dated October 3d, A. D. 1882.

McLEAN & MACNIDER

FLANNERY & WETHERBY, Mortgagees.

18-24 Attorneys for Mortgagees.

Mortgage Sale.

DEFAULT having been made in the payment of the sum of five hundred and sixty-nine dollars and fifty four cents, which is claimed to be due at the date of this notice upon a certain mortgage, duly executed and delivered by Celia Brown, mortgagor to John A. McLean and Robert Macnider, partners as McLean & Macnide, mortgagees, bearing date the 19th day of June, A. D. 1879, and duly recorded in the office of the register of deeds in and for the county of Burleigh, and territory of Dakota, on the 28th day of July, A. D. 1879, at 2 o'clock p. m. in Book "B," of mortgages, on page 140, and no action or proceeding at law or otherwise having been instituted to recover the debt secured by said mortgage, or any part thereof. Now therefore, notice is hereby given, that by virtue of a power of sale contained in said mortgage and pursuant to the statute in such case made and provided, the said mortgage will be foreclosed, and the premises described in and covered by said mortgage, viz: Lots number nine, (9) ten (10), eleven (11), and twelve (12), in block one hundred and twelve, (112), in the city of Bismarck, according to the plat thereof, recorded in the office of the register of deeds in Burleigh county, and territory of Dakota, with the hereditaments and appurtenances, will be sold at public auction, to the highest bidder for cash, to pay said debt and interest, and the taxes, if any, on said premises, and fifty dollars attorney's fee, as stipulated in and by said mortgage in case of foreclosure, and the disbursements allowed by law; which sale will be made by the sheriff of Burleigh county, at the front door of the court house, in the city of Bismarck, in said county and territory, on the 25th day of November, A. D. 1882, at 2 o'clock p. m. of that day, subject to redemption at any time within one year from the day of sale, as provided by law.

Dated October, 3d, A. D. 1882.

McLEAN & MACNIDER

FLANNERY & WETHERBY, Mortgagees.

18-24 Attorneys for Mortgagees

TERRITORY OF DAKOTA, County of Burleigh, ss. In probate court in and for said county.

In the matter of the estate of F. A. McCreary, deceased.

On reading and filing the petition of R. B. Mason, administrator of the said estate, representing among other things that said deceased died seized of certain real estate therein described which was the homestead of said deceased, and the whole thereof is subject to a mortgage and mechanic's liens and that it is necessary to sell the same to pay the valid claims against said property and praying for license to sell the same, and it appearing to the court that it is necessary to sell the same for that purpose, it is

Ordered, That said petition be heard at a special term of said probate court to be held in and for said county at the court house, in the city of Bismarck, on the 4th day of November, 1882, at 10 o'clock in the forenoon of said day. It is further ordered that this order be published at least four successive weeks in the Bismarck WEEKLY TRIBUNE a paper printed and published at Bismarck, in said county, before the day fixed for hearing of said petition, and that a copy of this order be served personally on all persons interested in said estate and residing in this county, at least ten days before said day of hearing.

Dated Oct. 5, 1882.

By the court, E. N. COREY.

JOHN E. CARLAND. Judge of Probate.

Attorney for administrator. 18-22

TERRITORY OF DAKOTA, in District Court County of Burleigh, s.s.—In Third Judicial District.

John Hindley, plaintiff, vs. Nancy J. Hindley, defendant.

The Territory of Dakota, to the above named defendant: You, Nancy J. Hindley, are hereby summoned and required to answer the complaint in the above entitled action, which was filed with the clerk of said court, September 23, 1882, and to serve a copy of your answer to the said complaint on the subscriber, at his office in the city of Bismarck, in the county of Burleigh, and territory aforesaid, within thirty days after the service of this summons upon you, exclusive of the day of such service; and if you fail to answer the said complaint within the time aforesaid, the plaintiff in this action will apply to the court for the relief demanded in the complaint.

Dated at Bismarck, D. T., this 23d day of September, 1882. JOHN E. CARLAND

18-24 Plaintiff's Attorney, Bismarck, D. T.

Notice.

CITY HALL, Sept. 2, 1882.

The mayor and common council of the city of Bismarck deeming it necessary to grade and improve Main, Meigs, Thayer and Rosser streets between Washington avenue and Ninth street and Washington and Mandan avenues, and First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth and Ninth streets, between Main street and Avenue A, in the city of Bismarck, D. T., be it resolved, that it is necessary to grade all of said street running east and west between Washington avenue and Ninth street, and all of said streets running north and south between Main street and Avenue A in the city of Bismarck, in accordance with the grade of each street and avenue respectively as fixed and established by ordinance.

Attest. J. W. RAYMOND, Mayor.

WM. WOODS, City Clerk. 17-21

Notice of Pre-Emption Final Proof.

U. S. LAND OFFICE AT BISMARCK, D. T. September 30, 1882.

Notice is hereby given that the following-named settler has filed notice of his intention to make final proof in support of his claim, and secure final entry thereof at this office at 2 o'clock p. m. on the 21st day of November, 1882, viz.:

Loren W. Sloan,

Declaratory statement No. 478, filed March 27 1882, alleging settlement same day, for the west half of south east quarter, section 34, township 139 north, range 79 west, and names the following as his witnesses to prove his continuous residence upon and cultivation of said tract, viz: W. A. Simons, Francis R. Simons, Wm. D. Smith and L. W. Fox all of Burleigh county, D. T.; postoffice address, Bismarck.

18-22pd JOHN A. REA, Register.

Notice of Final Proof.

LAND OFFICE AT BISMARCK, D. T., October 4, 1882.

Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and secure final entry thereof at this office at 2 o'clock p.m. on the 2d day of December, 1882, viz:

William Caine.

H. E. No. 411, made September 12, 1881, for the northeast quarter, section 28, township 139 north range 79 west, and names the following as his witnesses, viz: Richard V. Firu, Hamlet Livens, Michael Mayock and Thomas Griffin, all of Burleigh county, D. T., postoffice address Bismarck.

JOHN A. REA.

18-22pd. Register.

Notice of Final Proof.

LAND OFFICE at Bismarck, D. T., Sept. 23, 1882.

Notice is hereby given that the following-named settler has filed notice of his intention to make final proof in support of his claim, and secure final entry thereof at this office at 2 p. m., on the 10th day of October, 1882, viz.:

Jeremiah Sullivan,

Homestead entry No. 322, made May 13, 1880, for the s e¼ Sec. 12, township 138 north, range 79 west, and names the following as his witnesses, viz: Michael O'Shea, John McConvill, Wm. Pennell and Jesse McGee, all of Burleigh county, D. T., post office address Bismarck.

17-21 JOHN A. REA, Register.